# Preliminary
# Water Quality Management Plan

**For:**

## Tentative Tract Map 20707
## Residential Sub-divisions Single Family Dwellings

San Bernardino, CA 92407
APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

**Prepared for:**
Verdemont Heights, LLC
434 N Second Avenue
Upland, CA 91786
(909) 949-1400

**Prepared by:**
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**Submittal Date:** **November 22, 2024**

**Revision Date:**

**Approval Date:_____**

# Project Owner's Certification

This Water Quality Management Plan (WQMP) has been prepared for Verdemont Heights, LLC by Joseph E. Bonadiman & Associates, Inc. The WQMP is intended to comply with the requirements of the City of San Bernardino and the NPDES Areawide Stormwater Program requiring the preparation of a WQMP. The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with San Bernardino County's Municipal Storm Water Management Program and the intent of the NPDES Permit for San Bernardino County and the incorporated cities of San Bernardino County within the Santa Ana Region. Once the undersigned transfers its interest in the property, its successors in interest and the city/county shall be notified of the transfer. The new owner will be informed of its responsibility under this WQMP. A copy of the approved WQMP shall be available on the subject site in perpetuity.

"I certify under a penalty of law that the provisions (implementation, operation, maintenance, and funding) of the WQMP have been accepted and that the plan will be transferred to future successors."

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| Project Data | | | |
|---|---|---|---|
| Permit/Application Number(s): | TBD | Grading Permit Number(s): | TBD |
| Tract/Parcel Map Number(s): | TTM 20707 | Building Permit Number(s): | TBM |
| CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): | | | APN(s): 0348-121-14, -27, -28, and 0261-011-02, -03 -10 |

| Owner's Signature | | |
|---|---|---|
| **Owner Name:** Felizardo Robles Jr. | | |
| Title | | |
| Company | Verdemont Heights, LLC | |
| Address | 434 N Second Avenue, Upland, CA 91786 | |
| Email | | |
| Telephone # | (909) 949-1400 | |
| Signature | Date | |

# Preparer's Certification

| Project Data | | | |
|---|---|---|---|
| Permit/Application Number(s): | TBD | Grading Permit Number(s): | TBD |
| Tract/Parcel Map Number(s): | TTM 20707 | Building Permit Number(s): | TBD |
| CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): | | | APN(s): 0348-121-14, -27, -28, and 0261-011-02, -03 -10 |

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan were prepared under my oversight and meet the requirements of Regional Water Quality Control Board Order No. R8-2010-0036."

| **Engineer:** James Stanton | | PE Stamp Below |
|---|---|---|
| Title | Engineer | |
| Company | Joseph E. Bonadiman & Associates, Inc. | |
| Address | 234 North Arrowhead Avenue<br>San Bernardino, CA 92408 | |
| Email | | |
| Telephone # | (909) 885-3806 | |
| Signature | | |
| Date | | |



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# Section 1 Discretionary Permit(s)

## Form 1-1 Project Information

| | | | | | |
|---|---|---|---|---|---|
| Project Name | TTM 20707 | | | | |
| Project Owner Contact Name: | Verdemont Heights, LLC | | | | |
| Mailing Address: | 434 N Second Avenue<br>Upland, CA 91786 | E-mail Address: | | Telephone: | (909) 949-1400 |
| Permit/Application Number(s): | TBD | Tract/Parcel Map Number(s): | TTM 20707 | | |
| Additional Information/ Comments: | None | | | | |
| Description of Project: | The proposed project, TTM 20707, is residential development that encompasses approximately 107.7 (+/-) acres, located in the City of San Bernardino's Verdemont Heights Community. An estimated 43.2 acres will be designated for the residential homes while the remaining 64.5 acres will be considered off-site tributary.<br><br>Southwest of the site is Cable Creek Channel, Ronald Reagan Park and the Verdemont Heights Community. To the north is the San Bernardino National Forest, to the west is vacant land, to the east is existing residential development. The proposed project site is subdivided into 108 numbered lots and several lettered lots to accommodate the following uses: residential (10,000 SF – 25,000 SF lots), open space, landscaping and water quality basins.<br><br>Parking is anticipated to consist of both covered and uncovered parking spaces. Total parking shall be consistent with the City of San Bernardino parking requirements.<br>Open space/landscaping areas will consist of common landscape lots and slopes, parkway landscaping, and private landscaping areas. Total open space/landscaping area is anticipated to consists of approximately 52.6% of the overall developed Tract area, or 31.1 acres.<br>Anticipated paved/impervious areas include project streets, driveways, buildings and sidewalks. Total paved/impervious area is anticipated to consist of approximately 29.8% of the overall developed tract area, or 17.6 acres.<br>Common area amenities include parkway landscaping and common landscape slopes<br>Typical household wastes are anticipated to be generated. It is anticipated that each residential unit will have trash and recycle bins located/stored within the private areas of each unit. Trash is to be collected on a weekly basis for disposal. | | | | |
| Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy. | TBD | | | | |

# Section 2 Project Description

## 2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for Conceptual/ Preliminary WQMP should give sufficient detail to identify the major proposed site design and LID BMPs and other anticipated water quality features that impact site planning. Final Project WQMP must specifically identify all BMP incorporated into the final site design and provide other detailed information as described herein.

The purpose of this information is to help determine the applicable development category, pollutants of concern, watershed description, and long term maintenance responsibilities for the project, and any applicable water quality credits. This information will be used in conjunction with the information in Section 3, Site Description, to establish the performance criteria and to select the LID BMP or other BMP for the project or other alternative programs that the project will participate in, which are described in Section 4.

**Form 2.1-1 Description of Proposed Project**

**1** Development Category (Select all that apply):

| | | | |
|---|---|---|---|
| ☐ Significant re-development involving the addition or replacement of 5,000 ft² or more of impervious surface on an already developed site | ☒ New development involving the creation of 10,000 ft² or more of impervious surface collectively over entire site | ☐ Automotive repair shops with standard industrial classification (SIC) codes 5013, 5014, 5541, 7532- 7534, 7536-7539 | ☐ Restaurants (with SIC code 5812) where the land area of development is 5,000 ft² or more |
| ☐ Hillside developments of 5,000 ft² or more which are located on areas with known erosive soil conditions or where the natural slope is 25 percent or more | ☐ Developments of 2,500 ft² of impervious surface or more adjacent to (within 200 ft) or discharging directly into environmentally sensitive areas or waterbodies listed on the CWA Section 303(d) list of impaired waters. | ☐ Parking lots of 5,000 ft² or more exposed to storm water | ☐ Retail gasoline outlets that are either 5,000 ft² or more, or have a projected average daily traffic of 100 or more vehicles per day |

☐ Non-Priority / Non-Category Project *May require source control LID BMPs and other LIP requirements. Please consult with local jurisdiction on specific requirements*.

| | | | | | |
|---|---|---|---|---|---|
| **2** Project Area (ft2): | 2,118,697 sf | **3** Number of Dwelling Units: | 108 | **4** SIC Code: | N/A for residential homes |

**5** Is Project going to be phased? Yes ☐ No ☒ *If yes, ensure that the WQMP evaluates each phase as a distinct DA, requiring LID BMPs to address runoff at time of completion.*

**6** Does Project include roads? Yes ☒ No ☐ *If yes, ensure that applicable requirements for transportation projects are addressed (see Appendix A of TGD for WQMP)*

# 2.2 Property Ownership/Management

Describe the ownership/management of all portions of the project and site. State whether any infrastructure will transfer to public agencies (City, County, Caltrans, etc.) after project completion. State if a homeowners or property owners association will be formed and be responsible for the long-term maintenance of project stormwater facilities. Describe any lot-level stormwater features that will be the responsibility of individual property owners.

## Form 2.2-1 Property Ownership/Management

Describe property ownership/management responsible for long-term maintenance of WQMP stormwater facilities:

A Homeowners' Association (HOA) shall be responsible for the long-term funding and implementation of the project's private common areas and improvements, as it pertains to the HOA's jurisdiction. This responsibility shall be identified in the project's Covenants, Conditions and Restrictions (CC&Rs).

The HOA shall be responsible for the maintenance of all private common areas within its jurisdiction, including any private parkways, project slopes and slope drains, common area, open space, landscape lots and the project's Low Impact Development (LID) BMPs. Individual homeowners shall be responsible for all areas within each private lot. The City of San Bernardino shall be responsible for all public improvements, including public streets, parkways and public storm drain facilities, including main storm drain lines and catch basins.

Prior to the formation of the HOA and turnover of long-term maintenance responsibilities to the HOA and the City, the developer for the project shall be the entity responsible for all site improvements.

# 2.3 Potential Stormwater Pollutants

Determine and describe expected stormwater pollutants of concern based on land uses and site activities (refer to Table 3-3 in the TGD for WQMP).

| Form 2.3-1 Pollutants of Concern | | | |
|---|---|---|---|
| Pollutant | Please check: E=Expected, N=Not Expected | | Additional Information and Comments |
| Pathogens (Bacterial / Virus) | E ☒ | N ☐ | Potential sources of pathogens from the project include pet wastes, open space areas (natural), sediment, landscaping and food wastes. |
| Nutrients - Phosphorous | E ☒ | N ☐ | Potential sources of phosphorus from the project include fertilizer use from the project's landscaping areas (landscaped lots, slopes, park areas and homeowners). |
| Nutrients - Nitrogen | E ☐ | N ☒ | Potential sources of nitrogen from the project include fertilizer use from the project's landscaping areas (landscaped lots, slopes, park areas and homeowners). |
| Noxious Aquatic Plants | E ☒ | N ☐ | |
| Sediment | E ☒ | N ☐ | Potential sources of sediment for the project include landscaping areas and open space areas. |
| Metals | E ☒ | N ☐ | Potential sources include vehicles from uncovered parking areas and project streets. |
| Oil and Grease | E ☒ | N ☐ | Anticipated sources of oil and grease include driveways, project streets, parking lots, parking areas and leaking vehicles. |
| Trash/Debris | E ☒ | N ☐ | Potential sources of trash / debris include common litter and trash cans from homeowners and commercial visitors. |
| Pesticides / Herbicides | E ☒ | N ☐ | Potential sources of pesticides from the project include fertilizer use from the project's landscaping areas (landscaped lots, slopes, park area and homeowners). |
| Organic Compounds | E ☒ | N ☐ | Potential sources of organic compounds onsite include the project's landscaping and landscaping maintenance activities, as well as leaked vehicle fluids and improperly stored or spilled solvents/cleaners from vehicles. |
| Other: | E ☐ | N ☐ | |
| Other: | E ☐ | N ☐ | |
| Other: | E ☐ | N ☐ | |
| Other: | E ☐ | N ☐ | |

# 2.4 Water Quality Credits

A water quality credit program is applicable for certain types of development projects if it is not feasible to meet the requirements for on-site LID. Proponents for eligible projects, as described below, can apply for water quality credits that would reduce project obligations for selecting and sizing other treatment BMP or participating in other alternative compliance programs. Refer to Section 6.2 in the TGD for WQMP to determine if water quality credits are applicable for the project.

## Form 2.4-1 Water Quality Credits

| | | | |
|---|---|---|---|
| **1** Project Types that Qualify for Water Quality Credits: *Select all that apply* | | | |
| ☐ Redevelopment projects that reduce the overall impervious footprint of the project site. [Credit = % impervious reduced] | Higher density development projects<br>☐ Vertical density [20%]<br>☐ 7 units/ acre [5%] | ☐ Mixed use development, (combination of residential, commercial, industrial, office, institutional, or other land uses which incorporate design principles that demonstrate environmental benefits not realized through single use projects) [20%] | ☐ Brownfield redevelopment (redevelop real property complicated by presence or potential of hazardous contaminants) [25%] |
| ☐ Redevelopment projects in established historic district, historic preservation area, or similar significant core city center areas [10%] | ☐ Transit-oriented developments (mixed use residential or commercial area designed to maximize access to public transportation) [20%] | ☐ In-fill projects (conversion of empty lots & other underused spaces < 5 acres, substantially surrounded by urban land uses, into more beneficially used spaces, such as residential or commercial areas) [10%] | ☐ Live-Work developments (variety of developments designed to support residential and vocational needs) [20%] |
| **2** Total Credit % *(Total all credit percentages up to a maximum allowable credit of 50 percent)* | | | |
| Description of Water Quality Credit Eligibility (if applicable) | Not Applicable. | | |
| | | | |

# Section 3 Site and Watershed Description

Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and sub-watershed DMAs) is conveyed to the site outlet(s). Refer to Section 3.2 in the TGD for WQMP. The form below is provided as an example. Then complete Forms 3.2 and 3.3 for each DA on the project site. ***If the project has more than one drainage area for stormwater management, then complete additional versions of these forms for each DA / outlet.***

## Form 3-1 Site Location and Hydrologic Features

| Site coordinates *take GPS measurement at approximate center of site* | Latitude 34.210028° N | Longitude -117.361131°W | Thomas Bros Map page: 545, Grids H2 & H3 |
|---|---|---|---|

**1** San Bernardino County climatic region: ☐ Valley ☒ Mountain

**2** Does the site have more than one drainage area (DA): Yes☒ No☐ *If no, proceed to Form 3-2. If yes, then use this form to show a conceptual schematic describing DMAs and hydrologic feature connecting DMAs to the site outlet(s). An example is provided below that can be modified for proposed project or a drawing clearly showing DMA and flow routing may be attached*




| | |
|---|---|
| Conveyance | Briefly describe on-site drainage features to convey runoff that is not retained within a DMA |
| Drainage Area 1 | DA 1 consist of the western portion of the residential site and Basin "A". All flows are collected in proposed catch basin's and directed via proposed storm drain pipes to proposed water quality Basin "A". |
| Drainage Area 2 | DA 2 consist of the eastern portion of the residential site and Basin "B". All flows are collected in proposed catch basin's and directed via proposed storm drain pipes to proposed water quality Basin "B". |
| Drainage Area 3 | UNDEVELOPED AREA NOT TRIBUTARY TO ON-SITE BMP'S |
| Drainage Area 4 | UNDEVELOPED AREA NOT TRIBUTARY TO ON-SITE BMP'S |

| Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1 | | | | |
|---|---|---|---|---|
| For Drainage Area 1's sub-watershed DMA, provide the following characteristics | DMA A | DMA B | DMA C | DMA D |
| **1** DMA drainage area ($ft^2$) | 1,817,597 sf<br>41.7 ac | 301,100 sf<br>6.9 ac | | |
| **2** Existing site impervious area ($ft^2$) | 0 | 0 | | |
| **3** Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf* | II | II | | |
| **4** Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/* | A | A | | |
| **5** Longest flowpath length (ft) | **See Hydrology Report** | | | |
| **6** Longest flowpath slope (ft/ft) | | | | |
| **7** Current land cover type(s) *Select from Fig C-3 of Hydrology Manual* | 86 | 86 | | |
| **8** Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating* | Fair | Fair | | |

| Form 3-2 Existing Hydrologic Characteristics for Drainage Area 1 (use only as needed for additional DMA w/in DA 1) | | | | |
|---|---|---|---|---|
| For Drainage Area 1's sub-watershed DMA, provide the following characteristics | DMA E | DMA F | DMA G | DMA H |
| **1** DMA drainage area ($ft^2$) | | | | |
| **2** Existing site impervious area ($ft^2$) | | | | |
| **3** Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf* | | | | |
| **4** Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/* | | | | |
| **5** Longest flowpath length (ft) | | | | |
| **6** Longest flowpath slope (ft/ft) | | | | |
| **7** Current land cover type(s) *Select from Fig C-3 of Hydrology Manual* | | | | |
| **8** Pre-developed pervious area condition: *Based on the extent of wet season vegetated cover good >75%; Fair 50-75%; Poor <50% Attach photos of site to support rating* | | | | |

## Form 3-3 Watershed Description for Drainage Area

| | |
|---|---|
| Receiving waters<br>*Refer to Watershed Mapping Tool - http://permitrack.sbcounty.gov/wap/ See 'Drainage Facilities" link at this website* | Cable Creek<br>Devil Creek Diversion Channel<br>Cajon Creek Wash<br>Lytle Creek Wash<br>Lytle-Cajon Channel<br>Warm Creek<br>Santa Ana River Reach 4<br>Santa Ana River Reach 3<br>Santa Ana River Reach 2<br>Santa Ana River Reach 1 |
| Applicable TMDLs<br>*Refer to Local Implementation Plan* | Santa Ana River Reach 3 – Indicator Bacteria, Nitrate |
| 303(d) listed impairments<br>*Refer to Local Implementation Plan and Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/ and State Water Resources Control Board website – http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/index.shtml* | Lytle Creek Wash – Pathogens<br>Santa Ana River Reach 4 - Pathogens<br>Santa Ana River Reach 3 – Copper, Lead, Pathogens<br>Santa Ana River Reach 2 – Indicator Bacteria |
| Environmentally Sensitive Areas (ESA)<br>*Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/* | None |
| Unlined Downstream Water Bodies<br>*Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/* | Cable Creek, Lytle Creek Wash, Santa Ana River |
| Hydrologic Conditions of Concern | ☒ Yes *Complete Hydrologic Conditions of Concern (HCOC) Assessment. Include Forms 4.2-2 through Form 4.2-5 and Hydromodification BMP Form 4.3-10 in submittal*<br>☐ No |
| Watershed–based BMP included in a RWQCB approved WAP | ☐ Yes *Attach verification of regional BMP evaluation criteria in WAP*<br>• *More Effective than On-site LID*<br>• *Remaining Capacity for Project DCV*<br>• *Upstream of any Water of the US*<br>• *Operational at Project Completion*<br>• *Long-Term Maintenance Plan*<br>☒ No |

# Section 4 Best Management Practices (BMP)

## 4.1 Source Control BMP

### 4.1.1 Pollution Prevention

Non-structural and structural source control BMP are required to be incorporated into all new development and significant redevelopment projects. Form 4.1-1 and 4.1-2 are used to describe specific source control BMPs used in the WQMP or to explain why a certain BMP is not applicable. Table 7-3 of the TGD for WQMP provides a list of applicable source control BMP for projects with specific types of potential pollutant sources or activities. The source control BMP in this table must be implemented for projects with these specific types of potential pollutant sources or activities.

The preparers of this WQMP have reviewed the source control BMP requirements for new development and significant redevelopment projects. The preparers have also reviewed the specific BMP required for project as specified in Forms 4.1-1 and 4.1-2. All applicable non-structural and structural source control BMP shall be implemented in the project.

## Form 4.1-1 Non-Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, if not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| N1 | Education of Property Owners, Tenants and Occupants on Stormwater BMPs | ☒ | ☐ | The HOA/Property Management shall periodically provide environmental awareness education materials to all HOA/Property Management members and residents. Materials to include proper use of household chemicals, proper disposal of household wastes, awareness of storm drain conveyance systems and good housekeeping practices. The educational materials available from the County Stormwater Program can be downloaded at http://www.sbcountystormwater.org. |
| N2 | Activity Restrictions | ☒ | ☐ | Conditions, Covenants, and Restrictions (CC&Rs) shall be prepared for the purpose of surface water quality protection required of each property owner. Requirements of the final CC&Rs will be provided in this WQMP when available. The requirements shall be enforced by the HOA/Property Management. |
| N3 | Landscape Management BMPs | ☒ | ☐ | Ongoing maintenance in common landscaped areas shall consist of proper collection of mowing wastes, trimmings and debris, and proper disposal of wastes to prevent discharge to storm drains. Any fertilizer and/or pesticide usage shall be consistent with City and County use guidelines and per manufacturer's recommendations. HOA shall be the mechanism to ensure compliance with N3. Landscaping areas shall be inspected for signs of erosion, vegetation health and mulch depth regularly with landscaping maintenance activities or at minimum once per month. Identified eroded areas, decaying or dying vegetation and bare areas shall be repaired, replaced and/or mulched as soon as possible to minimize exposed sediment and potential for erosion. |
| N4 | BMP Maintenance | ☒ | ☐ | The Home Owners Association (HOA)/Property Management and its officers shall be responsible for the inspection and maintenance of structural BMPs within their boundaries per the procedures documented in Form 5-1 of this report. All records shall be maintained for a minimum of five years after generation, by the HOA. |
| N5 | Title 22 CCR Compliance (How development will comply) | ☐ | ☒ | Proposed facility will not generate waste subject to Title 22 CCR compliance. |
| N6 | Local Water Quality Ordinances | ☒ | ☐ | Through CC&R's, this development shall comply with all residential regulations listed in the City of San Bernardino Storm Water Quality Ordinance. |
| N7 | Spill Contingency Plan | ☐ | ☒ | Proposed facilities will not generate waste or store materials subject to the requirements of Chapter 6.95 of the CA Health and Safety Code. |

| Form 4.1-1 Non-Structural Source Control BMPs | | | | |
|---|---|---|---|---|
| N8 | Underground Storage Tank Compliance | ☐ | ☒ | None proposed. |
| N9 | Hazardous Materials Disclosure Compliance | ☐ | ☒ | Proposed project will not store or generate hazardous materials subject to agency requirements. |

## Form 4.1-1 Non-Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, if not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| N10 | Uniform Fire Code Implementation | ☐ | ☒ | Per County TGD, BMP N10 applies to facilities subject to Article 80 of the UFC. Proposed facility does not propose to store toxic or highly toxic compressed gases. |
| N11 | Litter/Debris Control Program | ☒ | ☐ | Litter patrol, emptying of trash receptacles in common areas, and noting trash disposal violations by residents and reporting the violations to the HOA/Property Management for investigation shall be conducted. |
| N12 | Employee Training | ☒ | ☐ | All employee training/education programs will be established as it would apply to all employees and contractors of the site to inform and train employees engaged in maintenance activities regarding the impact of improper disposal of sediments, wastes, chemicals and other potential pollutants. |
| N13 | Housekeeping of Loading Docks | ☐ | ☒ | No loading docks proposed. |
| N14 | Catch Basin Inspection Program | ☒ | ☐ | HOA/Property Management shall have at least 100% of all privately maintained drainage facilities inspected and if necessary, cleaned and maintained, on an annual basis. 100% of the facilities shall be inspected within a two-year period. Cleaning should take place in the late summer/early fall prior to the start of the rainy season. Drainage facilities include catch basins, storm drain lines, slope drains, common area drains (park site), detention basins and water quality basins. |
| N15 | Vacuum Sweeping of Private Streets and Parking Lots | ☒ | ☐ | HOA/Property Management shall have all project streets and parking areas swept on a regular basis, based on facility use and field observation of accumulated sediment and trash. At minimum, all areas shall be swept in late summer or early fall, just prior to the rainy season, and per City's sweeping frequency. |
| N16 | Other Non-structural Measures for Public Agency Projects | ☐ | ☒ | Project is a private development. |
| N17 | Comply with all other applicable NPDES permits | ☒ | ☐ | Prior to construction of each phase of this development, each developer shall apply for coverage under the Statewide Construction General Permit for Stormwater Discharges and shall comply with all requirements of the permit during and after construction. |

## Form 4.1-2 Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, If not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| S1 | Provide storm drain system stencilling and signage (CASQA New Development BMP Handbook SD-13) | ☒ | ☐ | All storm drain inlets and catch basins, constructed or modified, within the Project area shall be stenciled or labeled. Signs ("No Dumping – Drains to River" or similar language) which prohibit illegal dumping shall be posted legibly adjacent to each catch basin. Legibility of stencils and signs shall be maintained by the HOA/Property Management. |
| S2 | Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34) | ☐ | ☒ | Project does not proposed outdoor storage areas and CC&R's prohibit outdoor material storage. |
| S3 | Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32) | ☒ | ☐ | All trash storage areas shall be constructed in such a way to prevent run-on flow. |
| S4 | Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Statewide Model Landscape Ordinance; CASQA New Development BMP Handbook SD-12) | ☒ | ☐ | The timing and application methods of irrigation water in common areas shall minimize the runoff of excess irrigation water into the stormwater conveyance system through the use of automatic controllers that monitor weather conditions and/or soil moisture. Inspect system for leaks and broken parts. The HOA/Property Management, through its landscape maintenance contractor, shall ensure that irrigation systems are functioning as intended and repaired as needed |
| S5 | Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement | ☒ | ☐ | Where feasible, the finished grade of landscaping areas (such as parkway landscaping) shall be depressed 1"-2" to retain runoff from storm events and irrigation. |
| S6 | Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10) | ☒ | ☐ | Project slopes will be equipped with slope drains to convey runoff and shall be planted with ground cover and irrigated to minimize slope erosion. |
| S7 | Covered dock areas (CASQA New Development BMP Handbook SD-31) | ☐ | ☒ | No dock areas proposed for project. |
| S8 | Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31) | ☐ | ☒ | No maintenance bays proposed. |
| S9 | Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No community wash areas proposed. Project's Covenants, Conditions and Restrictions (CC&Rs) to prohibit individual owners from washing personal vehicles and equipment onsite. |

| | | | | |
|---|---|---|---|---|
| S10 | Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36) | ☐ | ☒ | No outdoor processing areas proposed. |

## Form 4.1-2 Structural Source Control BMPs

| Identifier | Name | Check One | | Describe BMP Implementation OR, If not applicable, state reason |
|---|---|---|---|---|
| | | Included | Not Applicable | |
| S11 | Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No wash areas proposed. Project's Covenants, Conditions and Restrictions (CC&Rs) to prohibit individual owners from washing personal vehicles and equipment onsite. |
| S12 | Fueling areas (CASQA New Development BMP Handbook SD-30) | ☐ | ☒ | No fueling areas proposed. |
| S13 | Hillside landscaping (CASQA New Development BMP Handbook SD-10) | ☐ | ☒ | No hillsides onsite. |
| S14 | Wash water control for food preparation areas | ☐ | ☒ | No food service facilities proposed. |
| S15 | Community car wash racks (CASQA New Development BMP Handbook SD-33) | ☐ | ☒ | No community wash areas proposed. Project's Covenants, Conditions and Restrictions (CC&Rs) to prohibit individual owners from washing personal vehicles and equipment onsite. |

### 4.1.2 Preventative LID Site Design Practices

Site design practices associated with new LID requirements in the MS4 Permit should be considered in the earliest phases of a project. Preventative site design practices can result in smaller DCV for LID BMP and hydromodification control BMP by reducing runoff generation. Describe site design and drainage plan including:

- A narrative of site design practices utilized or rationale for not using practices
- A narrative of how site plan incorporates preventive site design practices
- Include an attached Site Plan layout which shows how preventative site design practices are included in WQMP

Refer to Section 5.2 of the TGD for WQMP for more details.

**Form 4.1-3 Preventative LID Site Design Practices Checklist**

| Site Design Practices<br>*If yes, explain how preventative site design practice is addressed in project site plan. If no, other LID BMPs must be selected to meet targets* |
|---|
| Minimize impervious areas: Yes ☒ No ☐<br>Explanation: Project will minimize impervious area by constructing road widths and sidewalks to minimum widths allowable wherever feasible, maintaining greater than 50% project area with open space for landscaping improvements, recreation and preservation. |
| Maximize natural infiltration capacity: Yes ☒ No ☐<br>Explanation: Site Design will provide infiltration of runoff collected within parkway areas and other landscape areas. |
| Preserve existing drainage patterns and time of concentration: Yes ☒ No ☐<br>Explanation: Project design has been prepared to be consistent with the site's existing runoff patterns. Based on the project's hydrology report, the developed project will be capable of routing the 24-hour 100-year storm event. |
| Disconnect impervious areas: Yes ☒ No ☐<br>Explanation: Project site will consist of parkway landscaping and open space lots which will disconnect impervious areas. |
| Protect existing vegetation and sensitive areas: Yes ☒ No ☐<br>Explanation: A large portion of the project site will remain in a natural and undisturbed state. |
| Re-vegetate disturbed areas: Yes ☒ No ☐<br>Explanation: Project will re-vegetate and stabilize all disturbed areas prior to completion. |
| Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐<br>Explanation: Project will minimize unnecessary compaction within the basin area. |
| Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: Yes ☒ No ☐<br>Explanation: Where feasible, lot drainage will utilize swales, and the use of area drains will be minimized. |
| Stake off areas that will be used for landscaping to minimize compaction during construction : Yes ☒ No ☐<br>Explanation: When feasible, compaction within dedicated landscaping areas will be minimized. |

## 4.2 Project Performance Criteria

The purpose of this section of the Project WQMP is to establish targets for post-development hydrology based on performance criteria specified in the MS4 Permit. These targets include runoff volume for water quality control (referred to as LID design capture volume), and runoff volume, time of concentration, and peak runoff for protection of any downstream waterbody segments with a HCOC. ***If the project has more than one outlet for stormwater runoff, then complete additional versions of these forms for each DA / outlet.***

Methods applied in the following forms include:

- For LID BMP Design Capture Volume (DCV), the San Bernardino County Stormwater Program requires use of the $P_6$ method (MS4 Permit Section XI.D.6a.ii) – Form 4.2-1
- For HCOC pre- and post-development hydrologic calculation, the San Bernardino County Stormwater Program requires the use of the Rational Method (San Bernardino County Hydrology Manual Section D). Forms 4.2-2 through Form 4.2-5 calculate hydrologic variables including runoff volume, time of concentration, and peak runoff from the project site pre- and post-development using the Hydrology Manual Rational Method approach. For projects greater than 640 acres (1.0 $mi^2$), the Rational Method and these forms should not be used. For such projects, the Unit Hydrograph Method (San Bernardino County Hydrology Manual Section E) shall be applied for hydrologic calculations for HCOC performance criteria.

Refer to Section 4 in the TGD for WQMP for detailed guidance and instructions.

## Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 1)

| **1** Project area DA 1 ($ft^2$): 1,817,597 sf 41.7 ac | **2** Imperviousness after applying preventative site design practices (Imp%): 36.0% | **3** Runoff Coefficient (Rc): 0.25758 *$R_c = 0.858(Imp\%)^{\wedge 3}-0.78(Imp\%)^{\wedge 2}+0.774(Imp\%)+0.04$* |
|---|---|---|

**4** Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.876 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

**5** Compute $P_6$, Mean 6-hr Precipitation (inches): P6 = 1.672 ( 0.876 * 1.909 )

*$P_6$ = Item 4 *$C_1$, where $C_1$ is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

**6** Drawdown Rate

*Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*

24-hrs ☐
48-hrs ☒

**7** Compute design capture volume, DCV ($ft^3$): 128,053 cf (2.94 ac-ft)

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * $C_2$], where $C_2$ is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*
*Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*

*DCV = 1/12 * [1,817,597 * 0.25758 * 1.672 * 1.963] = 128,053 cf*

## Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (DA 2)

| **1** Project area DA 1 ($ft^2$): 301,100 sf 6.9 ac | **2** Imperviousness after applying preventative site design practices (Imp%): 36.9% | **3** Runoff Coefficient (Rc): 0.26251 *$R_c = 0.858(Imp\%)^{\wedge 3}-0.78(Imp\%)^{\wedge 2}+0.774(Imp\%)+0.04$* |
|---|---|---|

**4** Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.876 http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html

**5** Compute $P_6$, Mean 6-hr Precipitation (inches): P6 = 1.672 ( 0.876 * 1.909 )

*$P_6$ = Item 4 *$C_1$, where $C_1$ is a function of site climatic region specified in Form 3-1 Item 1 (Valley = 1.4807; Mountain = 1.909; Desert = 1.2371)*

**6** Drawdown Rate

*Use 48 hours as the default condition. Selection and use of the 24 hour drawdown time condition is subject to approval by the local jurisdiction. The necessary BMP footprint is a function of drawdown time. While shorter drawdown times reduce the performance criteria for LID BMP design capture volume, the depth of water that can be stored is also reduced.*

24-hrs ☐
48-hrs ☒

**7** Compute design capture volume, DCV ($ft^3$): 21,619 cf (0.50 ac-ft)

*DCV = 1/12 * [Item 1* Item 3 *Item 5 * $C_2$], where $C_2$ is a function of drawdown rate (24-hr = 1.582; 48-hr = 1.963)*
*Compute separate DCV for each outlet from the project site per schematic drawn in Form 3-1 Item 2*

*DCV = 1/12 * [1,817,597 * 0.26251 * 1.672 * 1.963] = 21,619 cf*

## Form 4.2-2 Summary of HCOC Assessment (DA 1)

Does project have the potential to cause or contribute to an HCOC in a downstream channel: Yes ☒ No ☐

*Go to*: *http://permitrack.sbcounty.gov/wap/*

If "Yes", then complete HCOC assessment of site hydrology for 2yr storm event using Forms 4.2-3 through 4.2-5 and insert results below

*(Forms 4.2-3 through 4.2-5 may be replaced by computer software analysis based on the San Bernardino County Hydrology Manual)*

If "No," then proceed to Section 4.3 Project Conformance Analysis

| Condition | Runoff Volume ($ft^3$) | Time of Concentration (min) | Peak Runoff (cfs) |
|---|---|---|---|
| Pre-developed | **1** *Form 4.2-3 Item 12* | **2** *Form 4.2-4 Item 13* | **3** *Form 4.2-5 Item 10* |
| Post-developed | **4** *Form 4.2-3 Item 13* | **5** *Form 4.2-4 Item 14* | **6** *Form 4.2-5 Item 14* |
| Difference | **7** *Item 4 – Item 1* | **8** *Item 2 – Item 5* | **9** *Item 6 – Item 3* |
| Difference (as % of pre-developed) | **10** % *Item 7 / Item 1* | **11** % *Item 8 / Item 2* | **12** % *Item 9 / Item 3* |

Per Figure F-1 of the WQMP TGD and http://sbcounty.pemitrack.com/WAP, the project does have the potential to cause or contribute to an HCOC.

In place of Form 4.2-3 to 4.2-5 for HCOC Assessment for Runoff Volume and Peak Runoff, refer to the project's Hydrology Report. Based on the findings of the project's hydrology study, post-development flows and volumes for all storm events analyzed (2-year, 10-year, 100-year) are less than the pre-development (existing) condition with implementation of onsite project controls.

## Form 4.2-3 HCOC Assessment for Runoff Volume (DA 1)

| **Weighted Curve Number Determination for: Pre-developed DA** | DMA A | DMA B | DMA C | DMA D | DMA E | DMA F | DMA G | DMA H |
|---|---|---|---|---|---|---|---|---|
| **1a** Land Cover type | | | | | | | | |
| **2a** Hydrologic Soil Group (HSG) | | | | | | | | |
| **3a** DMA Area, $ft^2$ *sum of areas of DMA should equal area of DA* | | | | | | | | |
| **4a** Curve Number (CN) *use Items 1 and 2 to select the appropriate CN from Appendix C-2 of the TGD for WQMP* | | | | | | | | |
| **Weighted Curve Number Determination for: Post-developed DA** | DMA A | DMA B | DMA C | DMA D | DMA E | DMA F | DMA G | DMA H |
| **1b** Land Cover type | | | | | | | | |
| **2b** Hydrologic Soil Group (HSG) | | | | | | | | |
| **3b** DMA Area, $ft^2$ *sum of areas of DMA should equal area of DA* | | | | | | | | |
| **4b** Curve Number (CN) *use Items 5 and 6 to select the appropriate CN from Appendix C-2 of the TGD for WQMP* | | | | | | | | |

| | | |
|---|---|---|
| **5** Pre-Developed area-weighted CN: | **7** Pre-developed soil storage capacity, S (in): *S = (1000 / Item 5) - 10* | **9** Initial abstraction, $I_a$ (in): *$I_a$ = 0.2 * Item 7* |
| **6** Post-Developed area-weighted CN: | **8** Post-developed soil storage capacity, S (in): *S = (1000 / Item 6) - 10* | **10** Initial abstraction, $I_a$ (in): *$I_a$ = 0.2 * Item 8* |

**11** Precipitation for 2 yr, 24 hr storm (in):
*Go to: http://hdsc.nws.noaa.gov/hdsc/pfds/sa/sca_pfds.html*

**12** Pre-developed Volume ($ft^3$):
*$V_{pre}$ =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 9)^2 / ((Item 11 – Item 9 + Item 7)*

**13** Post-developed Volume ($ft^3$):
*$V_{pre}$ =(1 / 12) * (Item sum of Item 3) * [(Item 11 – Item 10)^2 / ((Item 11 – Item 10 + Item 8)*

**14** Volume Reduction needed to meet HCOC Requirement, ($ft^3$):
*$V_{HCOC}$ = (Item 13 * 0.95) – Item 12*

# Form 4.2-4 HCOC Assessment for Time of Concentration (DA 1)

Compute time of concentration for pre and post developed conditions for each DA *(For projects using the Hydrology Manual complete the form below)*

| Variables | Pre-developed DA1 *Use additional forms if there are more than 4 DMA* | | | | Post-developed DA1 *Use additional forms if there are more than 4 DMA* | | | |
|---|---|---|---|---|---|---|---|---|
| | DMA A | DMA B | DMA C | DMA D | DMA A | DMA B | DMA C | DMA D |
| **1** Length of flowpath (ft) *Use Form 3-2 Item 5 for pre-developed condition* | | | | | | | | |
| **2** Change in elevation (ft) | | | | | | | | |
| **3** Slope (ft/ft), $S_o$ *= Item 2 / Item 1* | | | | | | | | |
| **4** Land cover | | | | | | | | |
| **5** Initial DMA Time of Concentration (min) *Appendix C-1 of the TGD for WQMP* | | | | | | | | |
| **6** Length of conveyance from DMA outlet to project site outlet (ft) *May be zero if DMA outlet is at project site outlet* | | | | | | | | |
| **7** Cross-sectional area of channel ($ft^2$) | | | | | | | | |
| **8** Wetted perimeter of channel (ft) | | | | | | | | |
| **9** Manning's roughness of channel (n) | | | | | | | | |
| **10** Channel flow velocity (ft/sec) $V_{fps}$ *= (1.49 / Item 9) * (Item 7/Item 8)^0.67 * (Item 3)^0.5* | | | | | | | | |
| **11** Travel time to outlet (min) $T_t$ *= Item 6 / (Item 10 * 60)* | | | | | | | | |
| **12** Total time of concentration (min) $T_c$ *= Item 5 + Item 11* | | | | | | | | |
| **13** Pre-developed time of concentration (min): *Minimum of Item 12 pre-developed DMA* | | | | | | | | |
| **14** Post-developed time of concentration (min): *Minimum of Item 12 post-developed DMA* | | | | | | | | |
| **15** Additional time of concentration needed to meet HCOC requirement (min): $T_{C\text{-}HCOC}$ *= (Item 13 * 0.95) – Item 14* | | | | | | | | |

# Form 4.2-5 HCOC Assessment for Peak Runoff (DA 1)

| Compute peak runoff for pre- and post-developed conditions | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variables | | Pre-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)* | | | Post-developed DA to Project Outlet (*Use additional forms if more than 3 DMA)* | | |
| | | DMA A | DMA B | DMA C | DMA A | DMA B | DMA C |
| **1** Rainfall Intensity for storm duration equal to time of concentration<br>*$I_{peak}$ = 10^(LOG Form 4.2-1 Item 4 - 0.6 LOG Form 4.2-4 Item 5 /60)* | | | | | | | |
| **2** Drainage Area of each DMA (Acres)<br>*For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)* | | | | | | | |
| **3** Ratio of pervious area to total area<br>*For DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)* | | | | | | | |
| **4** Pervious area infiltration rate (in/hr)<br>*Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP* | | | | | | | |
| **5** Maximum loss rate (in/hr)<br>*$F_m$ = Item 3 * Item 4*<br>*Use area-weighted $F_m$ from DMA with outlet at project site outlet, include upstream DMA (Using example schematic in Form 3-1, DMA A will include drainage from DMA C)* | | | | | | | |
| **6** Peak Flow from DMA (cfs)<br>*$Q_p$ =Item 2 * 0.9 * (Item 1 - Item 5)* | | | | | | | |
| **7** Time of concentration adjustment factor for other DMA to site discharge point<br>*Form 4.2-4 Item 12 DMA / Other DMA upstream of site discharge point (If ratio is greater than 1.0, then use maximum value of 1.0)* | DMA A | *n/a* | | | *n/a* | | |
| | DMA B | | *n/a* | | | *n/a* | |
| | DMA C | | | *n/a* | | | *n/a* |

| **8** Pre-developed $Q_p$ at $T_c$ for DMA A: | **9** Pre-developed $Q_p$ at $T_c$ for DMA B: | **10** Pre-developed $Q_p$ at $T_c$ for DMA C: |
|---|---|---|
| *$Q_p$ = Item $6_{DMAA}$ + [Item $6_{DMAB}$ * (Item $1_{DMAA}$ - Item $5_{DMAB}$)/(Item $1_{DMAB}$ - Item $5_{DMAB}$)* Item $7_{DMAA/2}$] + [Item $6_{DMAC}$ * (Item $1_{DMAA}$ - Item $5_{DMAC}$)/(Item $1_{DMAC}$ - Item $5_{DMAC}$)* Item $7_{DMAA/3}$]* | *$Q_p$ = Item $6_{DMAB}$ + [Item $6_{DMAA}$ * (Item $1_{DMAB}$ - Item $5_{DMAA}$)/(Item $1_{DMAA}$ - Item $5_{DMAA}$)* Item $7_{DMAB/1}$] + [Item $6_{DMAC}$ * (Item $1_{DMAB}$ - Item $5_{DMAC}$)/(Item $1_{DMAC}$ - Item $5_{DMAC}$)* Item $7_{DMAB/3}$]* | *$Q_p$ = Item $6_{DMAC}$ + [Item $6_{DMAA}$ * (Item $1_{DMAC}$ - Item $5_{DMAA}$)/(Item $1_{DMAA}$ - Item $5_{DMAA}$)* Item $7_{DMAC/1}$] + [Item $6_{DMAB}$ * (Item $1_{DMAC}$ - Item $5_{DMAB}$)/(Item $1_{DMAB}$ - Item $5_{DMAB}$)* Item $7_{DMAC/2}$]* |

| | |
|---|---|
| **10** Peak runoff from pre-developed condition confluence analysis (cfs): | *Maximum of Item 8, 9, and 10 (including additional forms as needed)* |

| **11** Post-developed $Q_p$ at $T_c$ for DMA A: | **12** Post-developed $Q_p$ at $T_c$ for DMA B: | **13** Post-developed $Q_p$ at $T_c$ for DMA C: |
|---|---|---|
| *Same as Item 8 for post-developed values* | *Same as Item 9 for post-developed values* | *Same as Item 10 for post-developed values* |

| | |
|---|---|
| **14** Peak runoff from post-developed condition confluence analysis (cfs): | *Maximum of Item 11, 12, and 13 (including additional forms as needed)* |
| **15** Peak runoff reduction needed to meet HCOC Requirement (cfs): | *$Q_{p\text{-}HCOC}$ = (Item 14 * 0.95) – Item 10* |

# 4.3 Project Conformance Analysis

Complete the following forms for each project site DA to document that the proposed LID BMPs conform to the project DCV developed to meet performance criteria specified in the MS4 Permit (WQMP Template Section 4.2). For the LID DCV, the forms are ordered according to hierarchy of BMP selection as required by the MS4 Permit (see Section 5.3.1 in the TGD for WQMP). The forms compute the following for on-site LID BMP:

- Site Design and Hydrologic Source Controls (Form 4.3-2)
- Retention and Infiltration (Form 4.3-3)
- Harvested and Use (Form 4.3-4) or
- Biotreatment (Form 4.3-5).

At the end of each form, additional fields facilitate the determination of the extent of mitigation provided by the specific BMP category, allowing for use of the next category of BMP in the hierarchy, if necessary.

The first step in the analysis, using Section 5.3.2.1 of the TGD for WQMP, is to complete Forms 4.3-1 and 4.3-3) to determine if retention and infiltration BMPs are infeasible for the project. For each feasibility criterion in Form 4.3-1, if the answer is "Yes," provide all study findings that includes relevant calculations, maps, data sources, etc. used to make the determination of infeasibility.

Next, complete Forms 4.3-2 and 4.3-4 to determine the feasibility of applicable HSC and harvest and use BMPs, and, if their implementation is feasible, the extent of mitigation of the DCV.

If no site constraints exist that would limit the type of BMP to be implemented in a DA, evaluate the use of combinations of LID BMPs, including all applicable HSC BMPs to maximize on-site retention of the DCV. If no combination of BMP can mitigate the entire DCV, implement the single BMP type, or combination of BMP types, that maximizes on-site retention of the DCV within the minimum effective area.

If the combination of LID HSC, retention and infiltration, and harvest and use BMPs are unable to mitigate the entire DCV, then biotreatment BMPs may be implemented by the project proponent. If biotreatment BMPs are used, then they must be sized to provide sufficient capacity for effective treatment of the remainder of the volume-based performance criteria that cannot be achieved with LID BMPs (TGD for WQMP Section 5.4.4.2). **Under no circumstances shall any portion of the DCV be released from the site without effective mitigation and/or treatment**.

## Form 4.3-1 Infiltration BMP Feasibility (DA 1)

Feasibility Criterion – Complete evaluation for each DA on the Project Site

[1] Would infiltration BMP pose significant risk for groundwater related concerns? Yes ☐ No ☒
*Refer to Section 5.3.2.1 of the TGD for WQMP*

If Yes, Provide basis: (attach)

[2] Would installation of infiltration BMP significantly increase the risk of geotechnical hazards? Yes ☐ No ☒
(Yes, if the answer to any of the following questions is yes, as established by a geotechnical expert):

- The location is less than 50 feet away from slopes steeper than 15 percent
- The location is less than eight feet from building foundations or an alternative setback.
- A study certified by a geotechnical professional or an available watershed study determines that stormwater infiltration would result in significantly increased risks of geotechnical hazards.

If Yes, Provide basis: (attach)

[3] Would infiltration of runoff on a Project site violate downstream water rights? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[4] Is proposed infiltration facility located on hydrologic soil group (HSG) D soils or does the site geotechnical investigation indicate presence of soil characteristics, which support categorization as D soils? Yes ☐ No ☒

If Yes, Provide basis: (attach)

[5] Is the design infiltration rate, after accounting for safety factor of 2.0, below proposed facility less than 0.3 in/hr (accounting for soil amendments)? Yes ☒ No ☐

If Yes, Provide basis: (attach)

[6] Would on-site infiltration or reduction of runoff over pre-developed conditions be partially or fully inconsistent with watershed management strategies as defined in the WAP, or impair beneficial uses? Yes ☐ No ☒
*See Section 3.5 of the TGD for WQMP and WAP*

If Yes, Provide basis: (attach)

[7] Any answer from Item 1 through Item 3 is "Yes": Yes ☐ No ☒
*If yes, infiltration of any volume is not feasible onsite. Proceed to Form 4.3-4, Harvest and Use BMP. If no, then proceed to Item 8 below.*

[8] Any answer from Item 4 through Item 6 is "Yes": Yes ☒ No ☐
*If yes, infiltration is permissible but is not required to be considered. Proceed to Form 4.3-2, Hydrologic Source Control BMP. If no, then proceed to Item 9, below.*

[9] All answers to Item 1 through Item 6 are "No":
*Infiltration of the full DCV is potentially feasible, LID infiltration BMP must be designed to infiltrate the full DCV to the MEP. Proceed to Form 4.3-2, Hydrologic Source Control BMP.*

### 4.3.1 Site Design Hydrologic Source Control BMP

Section XI.E. of the Permit emphasizes the use of LID preventative measures; and the use of LID HSC BMPs reduces the portion of the DCV that must be addressed in downstream BMPs. Therefore, all applicable HSC shall be provided except where they are mutually exclusive with each other, or with other BMPs. Mutual exclusivity may result from overlapping BMP footprints such that either would be potentially feasible by itself, but both could not be implemented. Please note that while there are no numeric standards regarding the use of HSC, if a project cannot feasibly meet BMP sizing requirements or cannot fully address HCOCs, feasibility of all applicable HSC must be part of demonstrating that the BMP system has been designed to retain the maximum feasible portion of the DCV. Complete Form 4.3-2 to identify and calculate estimated retention volume from implementing site design HSC BMP. Refer to Section 5.4.1 in the TGD for more detailed guidance.

**Form 4.3-2 Site Design Hydrologic Source Control BMPs (DA 1)**

| | | | |
|---|---|---|---|
| **1** Implementation of Impervious Area Dispersion BMP (i.e. routing runoff from impervious to pervious areas), excluding impervious areas planned for routing to on-lot infiltration BMP: Yes ☐ No ☒ *If yes, complete Items 2-5;* ***If no, proceed to Item 6*** | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **2** Total impervious area draining to pervious area ($ft^2$) | | | |
| **3** Ratio of pervious area receiving runoff to impervious area | | | |
| **4** Retention volume achieved from impervious area dispersion ($ft^3$) *V = Item2 * Item 3 * (0.5/12), assuming retention of 0.5 inches of runoff* | | | |
| **5** Sum of retention volume achieved from impervious area dispersion ($ft^3$): | $V_{retention}$ *=Sum of Item 4 for all BMPs* | | |
| **6** Implementation of Localized On-lot Infiltration BMPs (e.g. on-lot rain gardens): Yes ☐ No ☒ *If yes, complete Items 7-13 for aggregate of all on-lot infiltration BMP in each DA;* ***If no, proceed to Item 14*** | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **7** Ponding surface area ($ft^2$) | | | |
| **8** Ponding depth (ft) | | | |
| **9** Surface area of amended soil/gravel ($ft^2$) | | | |
| **10** Average depth of amended soil/gravel (ft) | | | |
| **11** Average porosity of amended soil/gravel | | | |
| **12** Retention volume achieved from on-lot infiltration ($ft^3$) $V_{retention}$ *= (Item 7 *Item 8) + (Item 9 * Item 10 * Item 11)* | | | |
| **13** Runoff volume retention from on-lot infiltration ($ft^3$): | $V_{retention}$ *=Sum of Item 12 for all BMPs* | | |

# Form 4.3-2 Site Design Hydrologic Source Control BMPs (DA 1)

## Form 4.3-2 cont. Site Design Hydrologic Source Control BMPs (DA 1)

| | | | |
|---|---|---|---|
| **14** Implementation of evapotranspiration BMP (green, brown, or blue roofs): Yes ☐ No ☒ *If yes, complete Items 15-20.* ***If no, proceed to Item 21*** | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **15** Rooftop area planned for ET BMP ($ft^2$) | | | |
| **16** Average wet season ET demand (in/day) *Use local values, typical ~ 0.1* | | | |
| **17** Daily ET demand ($ft^3$/day) *Item 15 * (Item 16 / 12)* | | | |
| **18** Drawdown time (hrs) *Copy Item 6 in Form 4.2-1* | | | |
| **19** Retention Volume ($ft^3$) $V_{retention}$ *= Item 17 * (Item 18 / 24)* | | | |
| **20** Runoff volume retention from evapotranspiration BMPs ($ft^3$): $V_{retention}$ *=Sum of Item 19 for all BMPs* | | | |
| **21** Implementation of Street Trees: Yes ☐ No ☒ *If yes, complete Items 22-25.* ***If no, proceed to Item 26*** | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **22** Number of Street Trees | | | |
| **23** Average canopy cover over impervious area ($ft^2$) | | | |
| **24** Runoff volume retention from street trees ($ft^3$) $V_{retention}$ *= Item 22 * Item 23 * (0.05/12) assume runoff retention of 0.05 inches* | | | |
| **25** Runoff volume retention from street tree BMPs ($ft^3$): $V_{retention}$ *= Sum of Item 24 for all BMPs* | | | |
| **26** Implementation of residential rain barrel/cisterns: Yes ☐ No ☒ *If yes, complete Items 27-29;* ***If no, proceed to Item 30*** | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **27** Number of rain barrels/cisterns | | | |
| **28** Runoff volume retention from rain barrels/cisterns ($ft^3$) $V_{retention}$ *= Item 27 * 3* | | | |
| **29** Runoff volume retention from residential rain barrels/Cisterns (ft3): 0 $V_{retention}$ *=Sum of Item 28 for all BMPs* | | | |
| **30** Total Retention Volume from Site Design Hydrologic Source Control BMPs: 0 *Sum of Items 5, 13, 20, 25 and 29* | | | |

### 4.3.2 Infiltration BMPs

Use Form 4.3-3 to compute on-site retention of runoff from proposed retention and infiltration BMPs. Volume retention estimates are sensitive to the percolation rate used, which determines the amount of runoff that can be infiltrated within the specified drawdown time. The infiltration safety factor reduces field measured percolation to account for potential inaccuracy associated with field measurements, declining BMP performance over time, and compaction during construction. Appendix D of the TGD for WQMP provides guidance on estimating an appropriate safety factor to use in Form 4.3-3.

If site constraints limit the use of BMPs to a single type and implementation of retention and infiltration BMPs mitigate no more than 40% of the DCV, then they are considered infeasible and the Project Proponent may evaluate the effectiveness of BMPs lower in the LID hierarchy of use (Section 5.5.1 of the TGD for WQMP)

If implementation of infiltrations BMPs is feasible as determined using Form 4.3-1, then LID infiltration BMPs shall be implemented to the MEP (section 4.1 of the TGD for WQMP).

.

## Form 4.3-3 Infiltration LID BMP - including underground BMPs (DA 1)

| | | | |
|---|---|---|---|
| **1** Remaining LID DCV not met by site design HSC BMP ($ft^3$): 128,053 cf *$V_{unmet}$ = Form 4.2-1 Item 7 - Form 4.3-2 Item 30* | | | |
| BMP Type *Use columns to the right to compute runoff volume retention from proposed infiltration BMP (select BMP from Table 5-4 in TGD for WQMP) - Use additional forms for more BMPs* | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **2** Infiltration rate of underlying soils (in/hr) *See Section 5.4.2 and Appendix D of the TGD for WQMP for minimum requirements for assessment methods* | | | |
| **3** Infiltration safety factor *See TGD Section 5.4.2 and Appendix D* | | | |
| **4** Design percolation rate (in/hr) *$P_{design}$ = Item 2 / Item 3* | | | |
| **5** Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1* | | | |
| **6** Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details* | | | |
| **7** Ponding Depth (ft) *$d_{BMP}$ = Minimum of (1/12*Item 4*Item 5) or Item 6* | | | |
| **8** Infiltrating surface area, *$SA_{BMP}$* ($ft^2$) *the lesser of the area needed for infiltration of full DCV or minimum space requirements from Table 5.7 of the TGD for WQMP* | | | |
| **9** Amended soil depth, *$d_{media}$* (ft) *Only included in certain BMP types, see Table 5-4 in the TGD for WQMP for reference to BMP design details* | | | |
| **10** Amended soil porosity | | | |
| **11** Gravel depth, *$d_{media}$* (ft) *Only included in certain BMP types, see Table 5-4 of the TGD for WQMP for BMP design details* | | | |
| **12** Gravel porosity | | | |
| **13** Duration of storm as basin is filling (hrs) *Typical ~ 3hrs* | | | |
| **14** Above Ground Retention Volume ($ft^3$) *$V_{retention}$ = Item 8 * [Item7 + (Item 9 * Item 10) + (Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]* | | | |
| **15** Underground Retention Volume ($ft^3$) *Volume determined using manufacturer's specifications and calculations* | | | |
| **16** Total Retention Volume from LID Infiltration BMPs: *(Sum of Items 14 and 15 for all infiltration BMP included in plan)* | | | |
| **17** Fraction of DCV achieved with infiltration BMP: % *Retention% = Item 16 / Form 4.2-1 Item 7* | | | |
| **18** Is full LID DCV retained onsite with combination of hydrologic source control and LID retention/infiltration BMPs? Yes ☐ No ☒ *If yes, demonstrate conformance using Form 4.3-10; If no, then reduce Item 3, Factor of Safety to 2.0 and increase Item 8, Infiltrating Surface Area, such that the portion of the site area used for retention and infiltration BMPs equals or exceeds the minimum effective area thresholds (Table 5-7 of the TGD for WQMP) for the applicable category of development and repeat all above calculations.* | | | |

## 4.3.3 Harvest and Use BMP

Harvest and use BMP may be considered if the full LID DCV cannot be met by maximizing infiltration BMPs. Use Form 4.3-4 to compute on-site retention of runoff from proposed harvest and use BMPs.

Volume retention estimates for harvest and use BMPs are sensitive to the on-site demand for captured stormwater. Since irrigation water demand is low in the wet season, when most rainfall events occur in San Bernardino County, the volume of water that can be used within a specified drawdown period is relatively low. The bottom portion of Form 4.3-4 facilitates the necessary computations to show infeasibility if a minimum incremental benefit of 40 percent of the LID DCV would not be achievable with MEP implementation of on-site harvest and use of stormwater (Section 5.5.4 of the TGD for WQMP).

**Form 4.3-4 Harvest and Use BMPs (DA 1)**

| | | | |
|---|---|---|---|
| **1** Remaining LID DCV not met by site design HSC or infiltration BMP ($ft^3$): *$V_{unmet}$ = Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16* | | | |
| BMP Type(s) *Compute runoff volume retention from proposed harvest and use BMP (Select BMPs from Table 5-4 of the TGD for WQMP) - Use additional forms for more BMPs* | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
| **2** Describe cistern or runoff detention facility | | | |
| **3** Storage volume for proposed detention type ($ft^3$) *Volume of cistern* | | | |
| **4** Landscaped area planned for use of harvested stormwater ($ft^2$) | | | |
| **5** Average wet season daily irrigation demand (in/day) Use local values, typical ~ 0.1 in/day | | | |
| **6** Daily water demand ($ft^3$/day) *Item 4 * (Item 5 / 12)* | | | |
| **7** Drawdown time (hrs) *Copy Item 6 from Form 4.2-1* | | | |
| **8** Retention Volume ($ft^3$) *$V_{retention}$ = Minimum of (Item 3) or (Item 6 * (Item 7 / 24))* | | | |
| **9** Total Retention Volume ($ft^3$) from Harvest and Use BMP *Sum of Item 8 for all harvest and use BMP included in plan* | | | |
| **10** Is the full DCV retained with a combination of LID HSC, retention and infiltration, and harvest & use BMPs? Yes ☐ No ☒ *If yes, demonstrate conformance using Form 4.3-10. If no, then re-evaluate combinations of all LID BMP and optimize their implementation such that the maximum portion of the DCV is retained on-site (using a single BMP type or combination of BMP types). If the full DCV cannot be mitigated after this optimization process, proceed to Section 4.3.4.* | | | |

## 4.3.4 Biotreatment BMP

Biotreatment BMPs may be considered if the full LID DCV cannot be met by maximizing retention and infiltration, and harvest and use BMPs. A key consideration when using biotreatment BMP is the effectiveness of the proposed BMP in addressing the pollutants of concern for the project (see Table 5-5 of the TGD for WQMP).

Use Form 4.3-5 to summarize the potential for volume based and/or flow based biotreatment options to biotreat the remaining unmet LID DCV w. Biotreatment computations are included as follows:

- Use Form 4.3-6 to compute biotreatment in small volume based biotreatment BMP (e.g. bioretention w/underdrains);
- Use Form 4.3-7 to compute biotreatment in large volume based biotreatment BMP (e.g. constructed wetlands);
- Use Form 4.3-8 to compute sizing criteria for flow-based biotreatment BMP (e.g. bioswales)

### Form 4.3-5 Selection and Evaluation of Biotreatment BMP (DA 1)

| | |
|---|---|
| **1** Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment ($ft^3$): **128,053 cf** *Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9* | List pollutants of concern *Copy from Form 2.3-1.*<br>Pathogens (Bacterial / Virus)<br>Nutrients – Phosphorous<br>Noxious Aquatic Plants<br>Sediment<br>Metals<br>Oil and Grease<br>Trash/Debris<br>Pesticides / Herbicides<br>Organic Compounds |

| **2** Biotreatment BMP Selected *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)* | Volume-based biotreatment *Use Forms 4.3-6 and 4.3-7 to compute treated volume* | Flow-based biotreatment *Use Form 4.3-8 to compute treated volume* |
|---|---|---|
| | ☐ Bioretention with underdrain<br>☐ Planter box with underdrain<br>☐ Constructed wetlands<br>☐ Wet extended detention<br>☒ Dry extended detention | ☐ Vegetated swale<br>☐ Vegetated filter strip<br>☐ Proprietary biotreatment |

| **3** Volume biotreated in volume based biotreatment BMP ($ft^3$): 128,053 cf *Form 4.3-6 Item 15 + Form 4.3-7 Item 13* | **4** Compute remaining LID DCV with implementation of volume based biotreatment BMP ($ft^3$): **128,053 cf** *Item 1 – Item 3* | **5** Remaining fraction of LID DCV for sizing flow based biotreatment BMP: **100 %** *Item 4 / Item 1* |
|---|---|---|

**6** Flow-based biotreatment BMP capacity provided (cfs): N/A *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*

**7** Metrics for MEP determination:

- Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development: ☐ *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*

# Form 4.3-5 Selection and Evaluation of Biotreatment BMP (DA 2)

| | |
|---|---|
| **1** Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment ($ft^3$): **21,619 cf** *Form 4.2-1 Item 7 - Form 4.3-2 Item 30 – Form 4.3-3 Item 16- Form 4.3-4 Item 9* | List pollutants of concern *Copy from Form 2.3-1.*<br>Pathogens (Bacterial / Virus)<br>Nutrients – Phosphorous<br>Noxious Aquatic Plants<br>Sediment<br>Metals<br>Oil and Grease<br>Trash/Debris<br>Pesticides / Herbicides<br>Organic Compounds |

| **2** Biotreatment BMP Selected *(Select biotreatment BMP(s) necessary to ensure all pollutants of concern are addressed through Unit Operations and Processes, described in Table 5-5 of the TGD for WQMP)* | Volume-based biotreatment *Use Forms 4.3-6 and 4.3-7 to compute treated volume* | Flow-based biotreatment *Use Form 4.3-8 to compute treated volume* |
|---|---|---|
| | ☐ Bioretention with underdrain<br>☐ Planter box with underdrain<br>☐ Constructed wetlands<br>☐ Wet extended detention<br>☒ Dry extended detention | ☐ Vegetated swale<br>☐ Vegetated filter strip<br>☐ Proprietary biotreatment |

| **3** Volume biotreated in volume based biotreatment BMP ($ft^3$): 21,619 cf *Form 4.3-6 Item 15 + Form 4.3-7 Item 13* | **4** Compute remaining LID DCV with implementation of volume based biotreatment BMP ($ft^3$): **21,619 cf** *Item 1 – Item 3* | **5** Remaining fraction of LID DCV for sizing flow based biotreatment BMP: **100 %** *Item 4 / Item 1* |
|---|---|---|

**6** Flow-based biotreatment BMP capacity provided (cfs): N/A *Use Figure 5-2 of the TGD for WQMP to determine flow capacity required to provide biotreatment of remaining percentage of unmet LID DCV (Item 5), for the project's precipitation zone (Form 3-1 Item 1)*

**7** Metrics for MEP determination:

- Provided a WQMP with the portion of site area used for suite of LID BMP equal to minimum thresholds in Table 5-7 of the TGD for WQMP for the proposed category of development: ☐ *If maximized on-site retention BMPs is feasible for partial capture, then LID BMP implementation must be optimized to retain and infiltrate the maximum portion of the DCV possible within the prescribed minimum effective area. The remaining portion of the DCV shall then be mitigated using biotreatment BMP.*

## Form 4.3-6 Volume Based Biotreatment (DA 1) – Bioretention and Planter Boxes with Underdrains

| Biotreatment BMP Type *(Bioretention w/underdrain, planter box w/underdrain, other comparable BMP)* | DA DMA BMP Type | DA DMA BMP Type | DA DMA BMP Type *(Use additional forms for more BMPs)* |
|---|---|---|---|
| **1** Pollutants addressed with BMP *List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP* | | | |
| **2** Amended soil infiltration rate *Typical ~ 5.0* | | | |
| **3** Amended soil infiltration safety factor *Typical ~ 2.0* | | | |
| **4** Amended soil design percolation rate (in/hr) $P_{design}$ *= Item 2 / Item 3* | | | |
| **5** Ponded water drawdown time (hr) *Copy Item 6 from Form 4.2-1* | | | |
| **6** Maximum ponding depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **7** Ponding Depth (ft) $d_{BMP}$ *= Minimum of (1/12 * Item 4 * Item 5) or Item 6* | | | |
| **8** Amended soil surface area ($ft^2$) | | | |
| **9** Amended soil depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **10** Amended soil porosity, *n* | | | |
| **11** Gravel depth (ft) *see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **12** Gravel porosity, *n* | | | |
| **13** Duration of storm as basin is filling (hrs) *Typical ~ 3hrs* | | | |
| **14** Biotreated Volume ($ft^3$) $V_{biotreated}$ *= Item 8 * [(Item 7/2) + (Item 9 * Item 10) +(Item 11 * Item 12) + (Item 13 * (Item 4 / 12))]* | | | |
| **15** Total biotreated volume from bioretention and/or planter box with underdrains BMP: 0 *Sum of Item 14 for all volume-based BMPs included in this form* | | | |

# Form 4.3-7 Volume Based Biotreatment (DA 1) – Constructed Wetlands and Extended Detention

| Biotreatment BMP Type<br>*Constructed wetlands, extended wet detention, extended dry detention, or other comparable proprietary BMP. If BMP includes multiple modules (e.g. forebay and main basin), provide separate estimates for storage and pollutants treated in each module.*<br>***Dry extended detention basin with vegetated sand filter outlet structure*** | DA 1 DMA A<br>BMP Type **Dry E.D.B.** | | DA 2 DMA B<br>BMP Type **Dry E.D.B.** | |
|---|---|---|---|---|
| | Forebay | Basin | Forebay | Basin |
| **1** Pollutants addressed with BMP forebay and basin<br>*List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in Table 5-5 of the TGD for WQMP* | Sediment, Trash, Debris | Pathogens Metals, Nutrients Sediment, Organic Comp. Pesticides, Trash, Debris Oil and Grease | Sediment, Trash, Debris | Pathogens Metals, Nutrients Sediment, Organic Comp. Pesticides, Trash, Debris Oil and Grease |
| **2** Bottom width (ft) | 44 | 142 | 18 | 80 |
| **3** Bottom length (ft) | 44 | 142 | 18 | 100 |
| **4** Bottom area ($ft^2$) $A_{bottom}$ = *Item 2 * Item 3* | 1936 | 20,400 | 325 | 7,860 |
| **5** Side slope (ft/ft) | 4:1 | 4:1 | 4:1 | 4:1 |
| **6** Depth of storage (ft) | 2 | 5 | 2 | 4 |
| **7** Water surface area ($ft^2$)<br>$A_{surface}$ =*(Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))* | 1936 | 34,160 | 325 | 14,657 |
| **8** Storage volume ($ft^3$) *For BMP with a forebay, ensure fraction of total storage is within ranges specified in BMP specific fact sheets, see Table 5-6 of the TGD for WQMP for reference to BMP design details*<br>V =*Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)^0.5]* | 3842 cf | 124,211 cf | 650 cf | 20,969 cf |
| **9** Drawdown Time (hrs) *Copy Item 6 from Form 2.1* | 48 | | 45 | |
| **10** Outflow rate (cfs) $Q_{BMP}$ = *(Item $8_{forebay}$ + Item $8_{basin}$) / (Item 9 * 3600)* | 0.74 cfs | | 0.125 cfs | |
| **11** Duration of design storm event (hrs) | 3 | | 3 | |
| **12** Biotreated Volume ($ft^3$)<br>$V_{biotreated}$ = *(Item $8_{forebay}$ + Item $8_{basin}$) +( Item 10 * Item 11 * 3600)* | 128,053 cf | | 21,619 cf | |
| **13** Total biotreated volume from **extended dry detention basins 1 & 2** : 149,672 cf<br>*(Sum of Item 12 for all BMP included in plan)* | | | | |

## Form 4.3-8 Flow Based Biotreatment (DA 1)

| Biotreatment BMP Type<br>*Vegetated swale, vegetated filter strip, or other comparable proprietary BMP* | DA DMA<br>BMP Type | DA DMA<br>BMP Type | DA DMA<br>BMP Type<br>*(Use additional forms for more BMPs)* |
|---|---|---|---|
| **1** Pollutants addressed with BMP<br>*List all pollutant of concern that will be effectively reduced through specific Unit Operations and Processes described in TGD Table 5-5* | | | |
| **2** Flow depth for water quality treatment (ft)<br>*BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **3** Bed slope (ft/ft)<br>*BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **4** Manning's roughness coefficient | | | |
| **5** Bottom width (ft)<br>$b_w$ *= (Form 4.3-5 Item 6 * Item 4) / (1.49 * Item 2^1.67 * Item 3^0.5)* | | | |
| **6** Side Slope (ft/ft)<br>*BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **7** Cross sectional area ($ft^2$)<br>*A = (Item 5 * Item 2) + (Item 6 * Item 2^2)* | | | |
| **8** Water quality flow velocity (ft/sec)<br>*V = Form 4.3-5 Item 6 / Item 7* | | | |
| **9** Hydraulic residence time (min)<br>*Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details* | | | |
| **10** Length of flow based BMP (ft)<br>*L = Item 8 * Item 9 * 60* | | | |
| **11** Water surface area at water quality flow depth ($ft^2$)<br>$SA_{top}$ *= (Item 5 + (2 * Item 2 * Item 6)) * Item 10* | | | |

## 4.3.5 Conformance Summary

Complete Form 4.3-9 to demonstrate how on-site LID DCV is met with proposed site design hydrologic source control, infiltration, harvest and use, and/or biotreatment BMP. The bottom line of the form is used to describe the basis for infeasibility determination for on-site LID BMP to achieve full LID DCV, and provides methods for computing remaining volume to be addressed in an alternative compliance plan. If the project has more than one outlet, then complete additional versions of this form for each outlet.

### Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate (DA 1)

**1** Total LID DCV for the Project DA-1 ($ft^3$): 128,053 *Copy Item 7 in Form 4.2-1*

**2** On-site retention with site design hydrologic source control LID BMP ($ft^3$): 0 *Copy Item 30 in Form 4.3-2*

**3** On-site retention with LID infiltration BMP ($ft^3$): 0 *Copy Item 16 in Form 4.3-3*

**4** On-site retention with LID harvest and use BMP ($ft^3$): 0 *Copy Item 9 in Form 4.3-4*

**5** On-site biotreatment with volume based biotreatment BMP ($ft^3$): 128,053 *Copy Item 3 in Form 4.3-5*

**6** Flow capacity provided by flow based biotreatment BMP (cfs): 0 *Copy Item 6 in Form 4.3-5*

**7** LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP: Yes ☐ No ☒
  *If yes, sum of Items 2, 3, and 4 is greater than Item 1*
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☒ No ☐
  *If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized*
- On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☒
  *If yes, Form 4.3-1 Items 7 and 8 were both checked yes*

**8** If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture: ☐
  *Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance,* $V_{alt}$ *= (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*
- An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility: ☐
  *Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed*

# Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate (DA 2)

**1** Total LID DCV for the Project DA-1 ($ft^3$): 21,619 *Copy Item 7 in Form 4.2-1*

**2** On-site retention with site design hydrologic source control LID BMP ($ft^3$): 0 *Copy Item 30 in Form 4.3-2*

**3** On-site retention with LID infiltration BMP ($ft^3$): 0 *Copy Item 16 in Form 4.3-3*

**4** On-site retention with LID harvest and use BMP ($ft^3$): 0 *Copy Item 9 in Form 4.3-4*

**5** On-site biotreatment with volume based biotreatment BMP ($ft^3$): 21,619 *Copy Item 3 in Form 4.3-5*

**6** Flow capacity provided by flow based biotreatment BMP (cfs): 0 *Copy Item 6 in Form 4.3-5*

**7** LID BMP performance criteria are achieved if answer to any of the following is "Yes":

- Full retention of LID DCV with site design HSC, infiltration, or harvest and use BMP: Yes ☐ No ☒
  *If yes, sum of Items 2, 3, and 4 is greater than Item 1*
- Combination of on-site retention BMPs for a portion of the LID DCV and volume-based biotreatment BMP that address all pollutants of concern for the remaining LID DCV: Yes ☒ No ☐
  *If yes, a) sum of Items 2, 3, 4, and 5 is greater than Item 1, and Items 2, 3 and 4 are maximized; or b) Item 6 is greater than Form 4.3--5 Item 6 and Items 2, 3 and 4 are maximized*
- On-site retention and infiltration is determined to be infeasible and biotreatment BMP provide biotreatment for all pollutants of concern for full LID DCV: Yes ☐ No ☒
  *If yes, Form 4.3-1 Items 7 and 8 were both checked yes*

**8** If the LID DCV is not achieved by any of these means, then the project may be allowed to develop an alternative compliance plan. Check box that describes the scenario which caused the need for alternative compliance:

- Combination of HSC, retention and infiltration, harvest and use, and biotreatment BMPs provide less than full LID DCV capture: ☐
  *Checked yes for Form 4.3-5 Item 7, Item 6 is zero, and sum of Items 2, 3, 4, and 5 is less than Item 1. If so, apply water quality credits and calculate volume for alternative compliance, $V_{alt}$ = (Item 1 – Item 2 – Item 3 – Item 4 – Item 5) * (100 - Form 2.4-1 Item 2)%*
- An approved Watershed Action Plan (WAP) demonstrates that water quality and hydrologic impacts of urbanization are more effective when managed in at an off-site facility: ☐
  *Attach appropriate WAP section, including technical documentation, showing effectiveness comparisons for the project site and regional watershed*

## 4.3.6 Hydromodification Control BMP

Use Form 4.3-10 to compute the remaining runoff volume retention, after LID BMP are implemented, needed to address HCOC, and the increase in time of concentration and decrease in peak runoff necessary to meet targets for protection of waterbodies with a potential HCOC. Describe hydromodification control BMP that address HCOC, which may include off-site BMP and/or in-stream controls. Section 5.6 of the TGD for WQMP provides additional details on selection and evaluation of hydromodification control BMP.

- Per Figure F-1 of the WQMP TGD and http://permitrack.sbcounty.gov/wap/, the project does have the potential to cause or contribute to an HCOC in a downstream Channel.
- See the project's hydrology report in regards to hydromodification determination and mitigation. Per the hydrology report, the overall proposed peak storm runoff is less than existing levels for the 2-year, 10-year and 100-year storm events.

### Form 4.3-10 Hydromodification Control BMPs (DA 1)

**1** Volume reduction needed for HCOC performance criteria ($ft^3$):
**See HCOC calcs in Appendix**
*(Form 4.2-2 Item 4 * 0.95) – Form 4.2-2 Item 1*

**2** On-site retention with site design hydrologic source control, infiltration, and harvest and use LID BMP ($ft^3$): 0 *Sum of Form 4.3-9 Items 2, 3, and 4 Evaluate option to increase implementation of on-site retention in Forms 4.3-2, 4.3-3, and 4.3-4 in excess of LID DCV toward achieving HCOC volume reduction*

**3** Remaining volume for HCOC volume capture ($ft^3$): See HCOC calcs in Appendix *Item 1 – Item 2*

**4** Volume capture provided by incorporating additional on-site or off-site retention BMPs ($ft^3$): 0 *Existing downstream BMP may be used to demonstrate additional volume capture (if so, attach to this WQMP a hydrologic analysis showing how the additional volume would be retained during a 2-yr storm event for the regional watershed)*

**5** If Item 4 is less than Item 3, incorporate in-stream controls on downstream waterbody segment to prevent impacts due to hydromodification ☒ *Attach in-stream control BMP selection and evaluation to this WQMP*

**6** Is Form 4.2-2 Item 11 less than or equal to 5%: Yes ☒ No ☐

*If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:*

- Demonstrate increase in time of concentration achieved by proposed LID site design, LID BMP, and additional on-site or off-site retention BMP ☐
  *BMP upstream of a waterbody segment with a potential HCOC may be used to demonstrate increased time of concentration through hydrograph attenuation (if so, show that the hydraulic residence time provided in BMP for a 2-year storm event is equal or greater than the addition time of concentration requirement in Form 4.2-4 Item 15)*
- Increase time of concentration by preserving pre-developed flow path and/or increase travel time by reducing slope and increasing cross-sectional area and roughness for proposed on-site conveyance facilities ☐
- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

**7** Form 4.2-2 Item 12 less than or equal to 5%: Yes ☐ No ☐

*If yes, HCOC performance criteria is achieved. If no, select one or more mitigation options below:*

- Demonstrate reduction in peak runoff achieved by proposed LID site design, LID BMPs, and additional on-site or off-site retention BMPs ☐
  *BMPs upstream of a waterbody segment with a potential HCOC may be used to demonstrate additional peak runoff reduction through hydrograph attenuation (if so, attach to this WQMP, a hydrograph analysis showing how the peak runoff would be reduced during a 2-yr storm event)*
- Incorporate appropriate in-stream controls for downstream waterbody segment to prevent impacts due to hydromodification, in a plan approved and signed by a licensed engineer in the State of California ☐

# 4.4 Alternative Compliance Plan (if applicable)

Describe an alternative compliance plan (if applicable) for projects not fully able to infiltrate, harvest and use, or biotreat the DCV via on-site LID practices. A project proponent must develop an alternative compliance plan to address the remainder of the LID DCV. Depending on project type some projects may qualify for water quality credits that can be applied to reduce the DCV that must be treated prior to development of an alternative compliance plan (see Form 2.4-1, Water Quality Credits). Form 4.3-9 Item 8 includes instructions on how to apply water quality credits when computing the DCV that must be met through alternative compliance. Alternative compliance plans may include one or more of the following elements:

- On-site structural treatment control BMP - All treatment control BMP should be located as close to possible to the pollutant sources and should not be located within receiving waters;
- Off-site structural treatment control BMP - Pollutant removal should occur prior to discharge of runoff to receiving waters;
- Urban runoff fund or In-lieu program, if available

Depending upon the proposed alternative compliance plan, approval by the executive officer may or may not be required (see Section 6 of the TGD for WQMP).

**The project is able to meet onsite treatment of the DCV via onsite infiltration BMPs. Therefore, an alternative compliance plan is not applicable to this project.**

# Section 5 Inspection and Maintenance Responsibility for Post Construction BMP

All BMP included as part of the project WQMP are required to be maintained through regular scheduled inspection and maintenance (refer to Section 8, Post Construction BMP Requirements, in the TGD for WQMP). Fully complete Form 5-1 summarizing all BMP included in the WQMP. Attach additional forms as needed. The WQMP shall also include a detailed Operation and Maintenance Plan for all BMP and may require a Maintenance Agreement (consult the jurisdiction's LIP). If a Maintenance Agreement is required, it must also be attached to the WQMP.

**Form 5-1 BMP Inspection and Maintenance**

| BMP | Reponsible Party(s) | Inspection/ Maintenance Activities Required | Minimum Frequency of Activities |
|---|---|---|---|
| N1 Education of Property Owners, Tenants, Occupants and Contractors on Stormwater BMPs | HOA/Property Management | HOA/Property Management will insure that all owners & tenants will be given a copy of the recorded CC&R's which will contain a section outlining the environmental awareness education materials at the close of escrow.<br>HOA shall distribute appropriate materials to owners, tenants, occupants and contractors via contract language, mailings, website or meeting.<br>Materials can be downloaded from http://www.sbcountystormwater.org. | Information to be initially provided to owners & tenants upon sale or lease agreement. Educational materials will be provided to owners and/or tenants annually, thereafter. |
| N2 Activity Restrictions | HOA/Property Management | Within the CC&R's, the following activity restrictions shall be enforced: Proper disposal of hazardous materials, requirements/restrictions for vehicle washing, repair and engine degreasing, household material use and storage, pet waste and littering. | Continuous |

| | | | |
|---|---|---|---|
| N3 Common Area Landscape Management | HOA/Property Management | Landscape Management Includes:<br>• Proper containment and removal of landscape maintenance wastes.<br>• Mitigation of the potential dangers of fertilizer and pesticide usage through the incorporation of an Integrated Pest Management Program (IPM).<br>• Monitor for irrigation runoff and efficiency, regularly.<br>• Implementation of a water budget.<br>• Irrigation systems shall be automatically controlled and designed, installed, and maintained so as to minimize overspray and runoff onto streets, sidewalks, driveways, structures, windows, walls, and fences.<br>• Use of native and drought tolerant species when replanting.<br>• Inspect for signs of erosion, vegetation health and mulch depth.<br>• Repair/replant bare areas. | Inspected once a month or with scheduled landscaping service. |
| N4 BMP Maintenance | HOA / Property Management | HOA/Property Management shall inspect/maintain project BMPs per table herein. Retain all records for a minimum 5 years after generation. | BMPs maintained per specified BMP. |
| N11 Common Area Litter Control | HOA/Property Management | Weekly sweeping and trash pickup as necessary within all project areas and common landscape areas. Daily inspection of trash receptacles to ensure that lids are closed and pick up any excess trash on the ground, noting trash disposal violations by homeowners, proper disposal of pet, green and household wastes, and reporting the violations to the HOA/Property Management. | Daily inspection and bi-weekly sweeping and clean-up or as needed |
| N14 Common Area Catch Basin Inspection | HOA/Property Management | The project's catch basins, slope drains, common area drainage system (park) and main storm drain system shall be private, owned, inspected and maintained by the HOA/Property Management. All facilities shall be inspected and maintained as needed to ensure adequate capacity and flow. | All facilities shall be inspected annually, with 100% of all facilities inspected within a 2-year period. |

| | | | |
|---|---|---|---|
| N15 Street Sweeping | City | Vacuum street sweeping will occur on a regular basis, prior to the rainy season, and on an as needed basis. The City will vacuum sweep all public streets. | Once every 2 weeks and as needed. |
| S1 Provide storm drain system stenciling and signage (CASQA New Development BMP Handbook SD-13) | HOA/Property Management | All catch basins where applicable in paved areas, will be marked or stenciled with "No Dumping - Drains to River, No Descargue Basura" or similar language. This will be done in a location that can be clearly seen by all and will be routinely inspected and re-labeled, as necessary. Thereafter, the HOA/Property Management shall routinely inspect and re-label the catch basins, as necessary. | Catch basin labels will be inspected once annually and relabeled as necessary to maintain legibility. |
| S4 Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control (Stateside Model Landscape Ordinance: CASQA New Development BMP Handbook SD-12) | HOA/Property Management | Adjust duration, frequency and application methods for watering project landscaping in common areas to limit amount of non-storm water discharge. Inspect irrigation system with landscaping maintenance to ensure timers, shut off valves and other automatic irrigation devices are functioning adequately. Inspect system for broken parts and replace as needed to prevent leaks. BMP shall be implemented by the HOA/Property Management, through the landscape maintenance contractor. | Monthly with landscaping maintenance activities. |
| S5 Finish grade of landscaped areas at a minimum of 1-2" below top of curb, sidewalk or pavement | HOA/Property Management | Maintain vegetation height and finish grade to ensure area has ponding capacity. Inspect area for standing water, saturated soil or other nuisance conditions. Repair as needed. | Monthly with landscaping maintenance activities and after irrigation or storm events. |
| S6 Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10) | HOA/Property Management | Use native/drought tolerant vegetation onsite to limit water use to ensure plant viability to dry climates and good plant establishment. Group vegetation with similar water requirements. Replace dead/dying vegetation with same grouping as planting area. Repair rills and other signs of erosion as soon as possible. HOA/Property Managment shall ensure proper implementation by its contractors. Maintain irrigation of slopes to maintain vegetation on slopes. | Monthly with landscaping maintenance activities. |

| | | | |
|---|---|---|---|
| Water Quality Basin<br><br>Dry extended Detention Basin | HOA/Property Management | Ongoing including just before annual storm seasons and following rainfall events<br>• Maintain vegetation as needed. Use of fertilizers, pesticides and herbicides should be strenuously avoided to ensure they don't contribute to water pollution. If appropriate native plant selections and other IPM methods are used, such products shouldn't be needed. If such projects are used,<br>o Products shall be applied in accordance with their labeling, especially in relation to application of water, and in areas subjected to flooding.<br>o Fertilizers should not be applied within 15 days before, after, or during the rain season.<br>• Remove debris and litter from the entire basin to minimize clogging and improve aesthetics.<br>• Check for obvious problems and repair as needed. Address odor, insects, and overgrowth issues associated with stagnant or standing water in the basin bottom. There should be no long-term ponding water.<br>• Check for erosion and sediment laden areas in the basin. Repair as needed. Clean forebay as needed.<br>• Revegetate side slopes where needed.<br>Annually. If possible, schedule these inspections within 72 hours after a significant rainfall.<br>• Inspection of hydraulic and structural facilities. Examine the inlet for blockage, the embankment and spillway integrity, as well as damage to any structural element.<br>• Check for erosion, slumping and overgrowth. Repair as needed.<br>• Check basin depth for sediment build up and reduced total capacity. Scrape bottom as needed and remove sediment. Restore to original cross-section and infiltration rate. Replant basin vegetation.<br>• Verify the basin bottom is allowing acceptable infiltration. Use a disc or other method to aerate basin bottom only if there is actual significant loss of infiltrative capacity, rather than on a routine basis.<br>• No water should be present 48 hours after an event. No long term standing water should be present at all. No algae formation should be visible. Correct problem as needed. | As needed<br><br>Four times per year during wet season, including inspection just before the wet season |

# Section 6 WQMP Attachments

## 6.1. Site Plan and Drainage Plan

Include a site plan and drainage plan sheet set containing the following minimum information:

- Project location
- Site boundary
- Land uses and land covers, as applicable
- Suitability/feasibility constraints
- Structural Source Control BMP locations
- Site Design Hydrologic Source Control BMP locations
- LID BMP details
- Drainage delineations and flow information
- Drainage connections

## 6.2 Electronic Data Submittal

Minimum requirements include submittal of PDF exhibits in addition to hard copies. Format must not require specialized software to open. If the local jurisdiction requires specialized electronic document formats (as described in their Local Implementation Plan), this section will describe the contents (e.g., layering, nomenclature, geo-referencing, etc.) of these documents so that they may be interpreted efficiently and accurately.

## 6.3 Post Construction

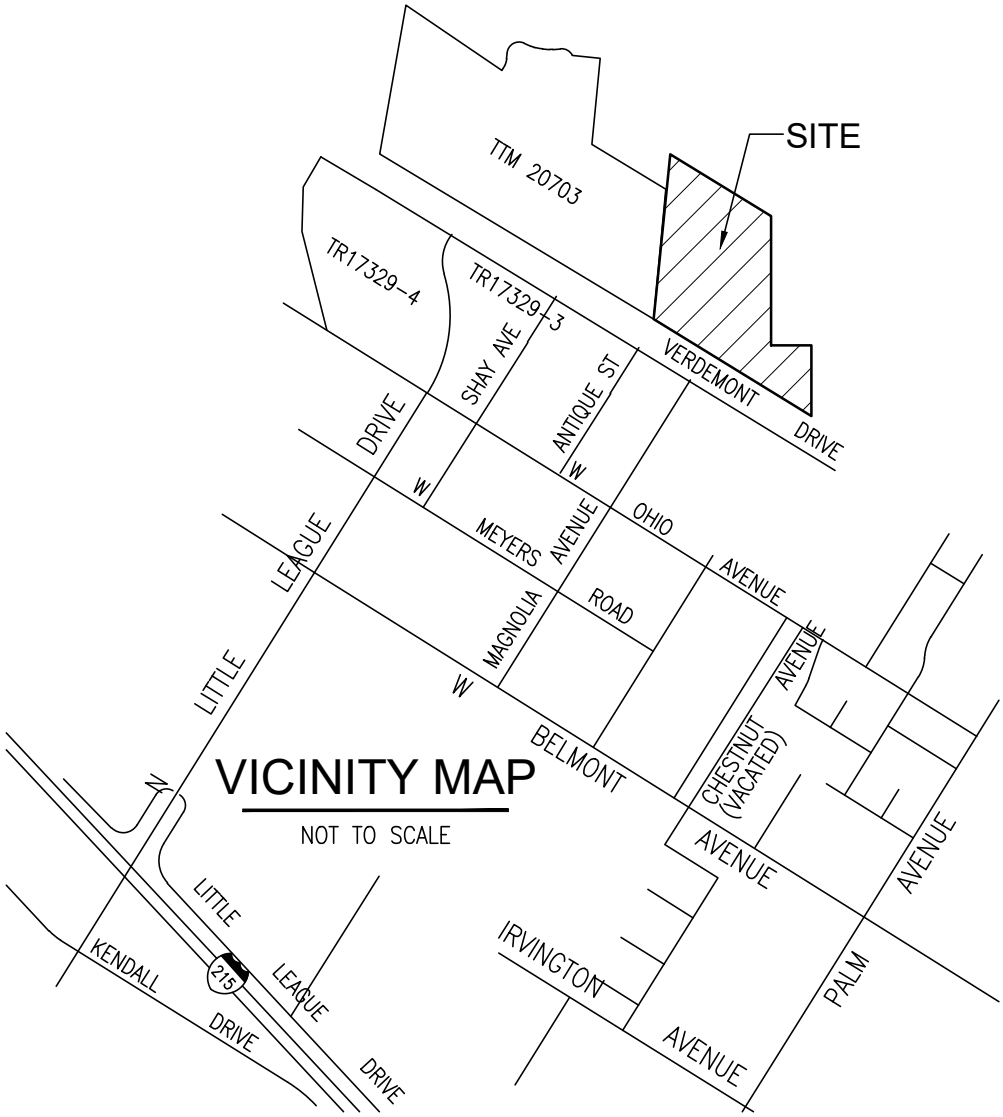
Attach all O&M Plans and Maintenance Agreements for BMP to the WQMP.

## 6.4 Other Supporting Documentation

- BMP Educational Materials
- Geotechnical Investigation/Infiltration Testing
- Preliminary BMP Details
- Preliminary Hydrology Study

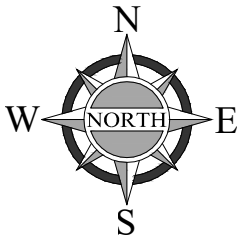
# Attachment 6.1 – Site Plan and Drainage Plan

# Vicinity Map




# VICINITY MAP

NOT TO SCALE




NOT TO SCALE

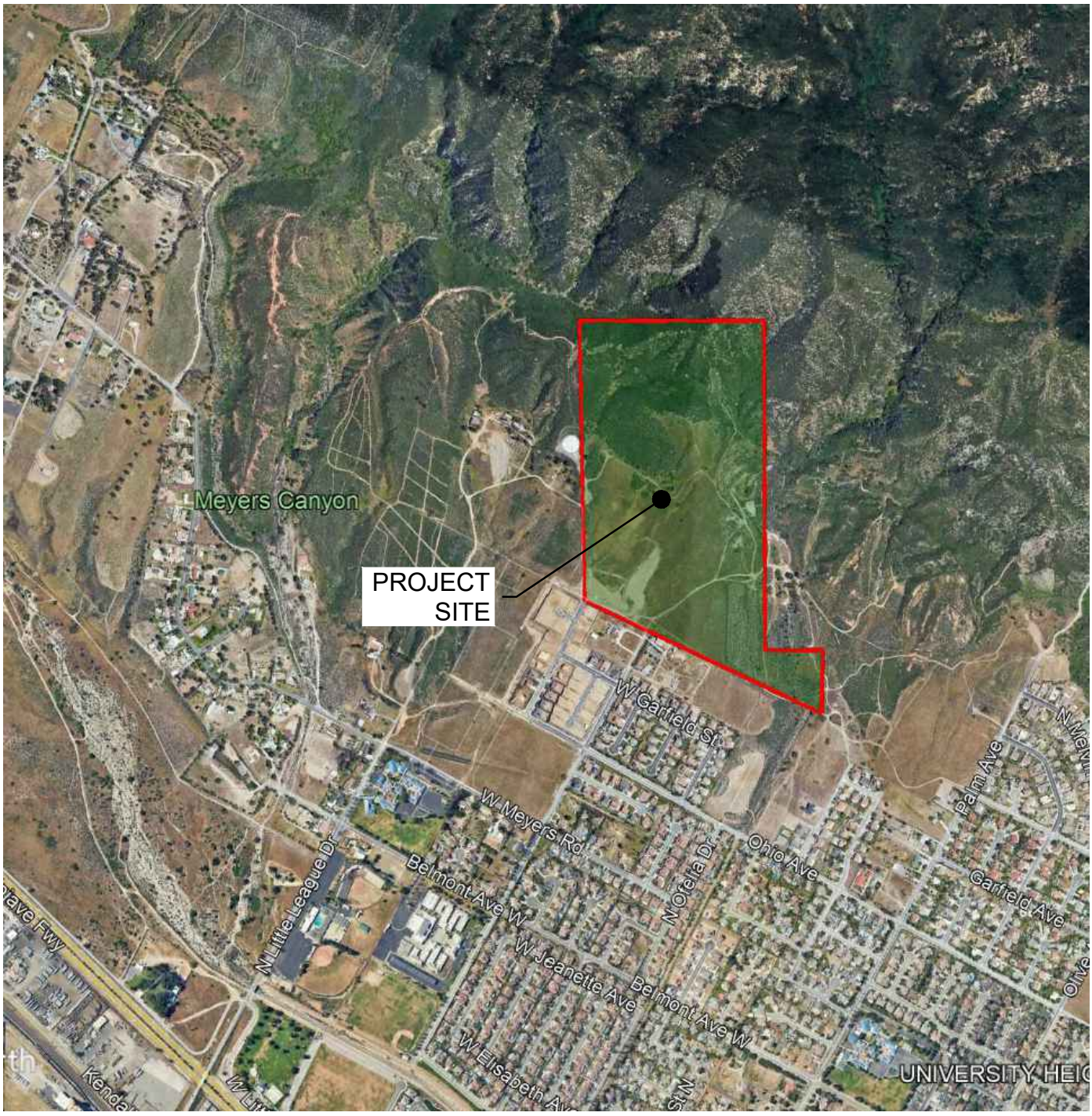
FIGURE 1: VICINITY MAP

SAN BERNARDINO CO.

APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

BONADIMAN
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
ENGINEERS • C.I.S. • SURVEYING • PLANNING
TEL. (909) 885-3806
294 NORTH ARROWHEAD AVE.
SAN BERNARDINO, CA 92408
FAX (909) 381-1781
www.bonadiman.com

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N
W NORTH E
S

FIGURE 2: AERIAL PHOTOGRAPH
SAN BERNARDINO CO.

APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

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# Preliminary WQMP Site Plan

ONSITE AREA
NOT TRIBUTARY
TO BMP

DMA 'E'
OFFSITE AREA
NOT TRIBUTARY
TO BMP

ONSITE AREA
NOT TRIBUTARY
TO BMP

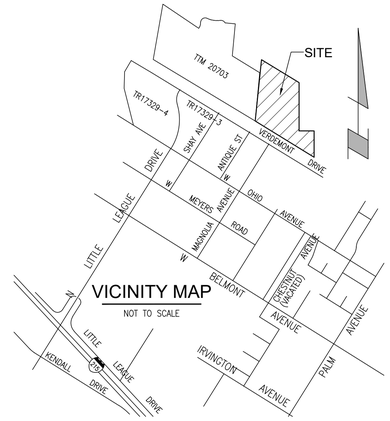
DMA 'A'

DMA 'B'

DMA 'C'
OFFSITE AREA
NOT TRIBUTARY
TO BMP

DMA 'D'
OFFSITE AREA
NOT TRIBUTARY
TO BMP

"A" STREET
"B" STREET
"C" STREET
"D" STREET
"E" STREET
"F" STREET
"G" STREET
VERDEMONT DRIVE
DEBRIS CHANNEL
OFF-SITE SEDIMENT CONTROL BASIN #5
OFF-SITE SEDIMENT CONTROL BASIN #4
WATER QUALITY BASIN #1
WATER QUALITY BASIN #2
CHESTNUT AVENUE DEBRIS BASIN #1 NOT A PART




VICINITY MAP
NOT TO SCALE

LEGEND

| | | |
|---|---|---|
| DRAINAGE MANAGEMENT AREA 'A' | = | 43.2 AC |
| DRAINAGE MANAGEMENT AREA 'B' | = | 6.9 AC |
| DRAINAGE MANAGEMENT AREA 'C' (OFF-SITE NAP) | = | 9.5 AC |
| DRAINAGE MANAGEMENT AREA 'D' (ON-SITE) | = | 0.8 AC |
| DRAINAGE MANAGEMENT AREA 'E' | = | 11.6 AC |
| ON-SITE NOT TRIBUTARY TO BMP | = | 46.7 AC |
| OFF-SITE AREA TRIBUTARY TO DMA 'D' | = | 35.9 AC |

N
W NORTH E
S

0 80 160 320
SCALE: 1" = 160'

**CITY OF SAN BERNARDINO**
**W.Q.M.P. EXHIBIT**

**DMA EXHIBIT**
**TENTATIVE TRACT MAP 20707**

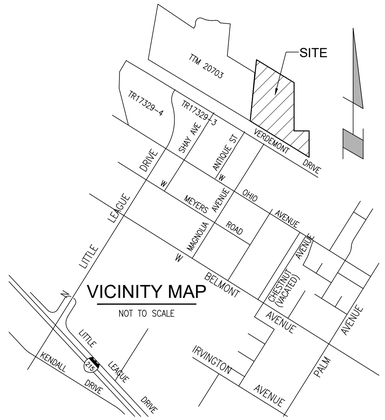
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| DATE: | NOV 2024 | BERNADIMAN | SHEET 1 |
| DESIGNED: | BRL | TEL: (909) 885-3996 | OF 2 SHEETS |
| CHECKED: | EB | | |
| PLN CK REF: | F.B. | C:\Users\brian\Desktop\work\00071 - TTM 20707\WQMP - PRELIM\Ports\Appendix 1 - Maps\00071-WQMP-DMA-MAP - 2024.dwg | DWG. NO. |

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## LEGEND

- NAP — NOT A PART
- PROPOSED STORM DRAIN & FLOW DIRECTION (ONSITE)
- EXISTING STORM DRAIN & FLOW DIRECTION (PUBLIC)
- DIRECTION OF SURFACE FLOW (ONSITE)
- DIRECTION OF SURFACE FLOW (OFFSITE)
- BUILDINGS
- LANDSCAPED SLOPES WITH BMPS SITE DESIGN/LANDSCAPE PLANNING SD-10 EFFICIENT IRRIGATION SD-12
- OPEN SPACE AREA
- DETENTION / WATER QUALITY BASIN
- PAVED AREA WITH STREET SWEEPING BMP
- TRAIL
- CATCH BASIN




## ACREAGE SUMMARY:

| | |
|---|---|
| IMPERVIOUS AREAS | |
| – BUILDINGS | = 6.2 AC. |
| – STREET/DRIVEWAYS | = 8.5 AC. |
| – SIDEWALK | = 2.9 AC. |
| SUB-TOTAL | = 17.6 AC. |
| PERVIOUS AREAS | |
| – LANDSCAPE SLOPES | = 11.7 AC. |
| – RESIDENTIAL LANDSCAPE | = 17.6 AC. |
| – DG TRAIL | = 0.3 AC. |
| – DETENTION / WATER QUALITY BASIN | = 1.5 AC. |
| SUB-TOTAL | = 31.1 AC. |
| OFF-SITE NOT TRIBUTARY TO BMPS | |
| – NATURAL AREA | = 57.1 AC. |
| – DEBRIS BASINS | = 2.0 AC. |
| SUB-TOTAL | = 59.1 AC. |
| TOTAL SITE AREA | = 107.7 AC. |

## LID PRACTICES TO BE IMPLEMENTED FOR THIS PROJECT INCLUDE:

- IMPERVIOUS AREA DISPERSION (HSC-2)
- BIORETENTION WITH NO UNDER DRAIN (INF-3)
- STREET TREES (HSC-3)

## SITE DESIGN AND SOURCE CONTROL BMP'S INCLUDE:

- INTEGRATED PEST MANAGEMENT (IPM) MEASURES
- SD-10 SITE DESIGN/LANDSCAPE PLANNING
- SD-11 ROOF RUNOFF CONTROLS
- SD-12 EFFICIENT IRRIGATION
- SD-13 STORM DRAIN SIGNAGE
- FIRE SPRINKLERS DRAIN TO PRIMED P-TRAP SANITARY SEWER
- SECONDARY CONTAINMENT FOR ANY ROOF AIR CONDITIONING UNITS

## ADDITIONAL STRUCTURAL AND NONSTRUCTURAL SOURCE CONTROL BMP'S (SEE PROJECT WQMP OPERATIONS AND MAINTENANCE PLAN FOR DETAILS):

- EDUCATION FOR TENANTS AND EMPLOYEES
- ACTIVITY RESTRICTIONS
- LANDSCAPE MANAGEMENT
- BMP MAINTENANCE
- TITLE 22 COMPLIANCE
- SPILL CONTINGENCY PLAN
- HAZARDOUS MATERIALS DISCLOSURE COMPLIANCE
- UNIFORM FIRE CODE IMPLEMENTATION
- PEAK STORM FLOW MITIGATION
- PRIVATE STREETS AND PARKING LOTS STREET SWEEPING
- DESIGN AND CONSTRUCT TRASH AND WASTE STORAGE AREAS
- EFFICIENT IRRIGATION SYSTEM AND LANDSCAPE DESIGN
- PROTECTION OF SLOPES AND CHANNELS
- AT GRADE LOADING DOCKS/DELIVERY AREAS
- LITTER CONTROL

NORTH

0 75 150 300

SCALE: 1" = 150'

**CITY OF SAN BERNARDINO**
**W.Q.M.P. EXHIBIT**

**BMP SITE PLAN**
**TENTATIVE TRACT MAP 20707**

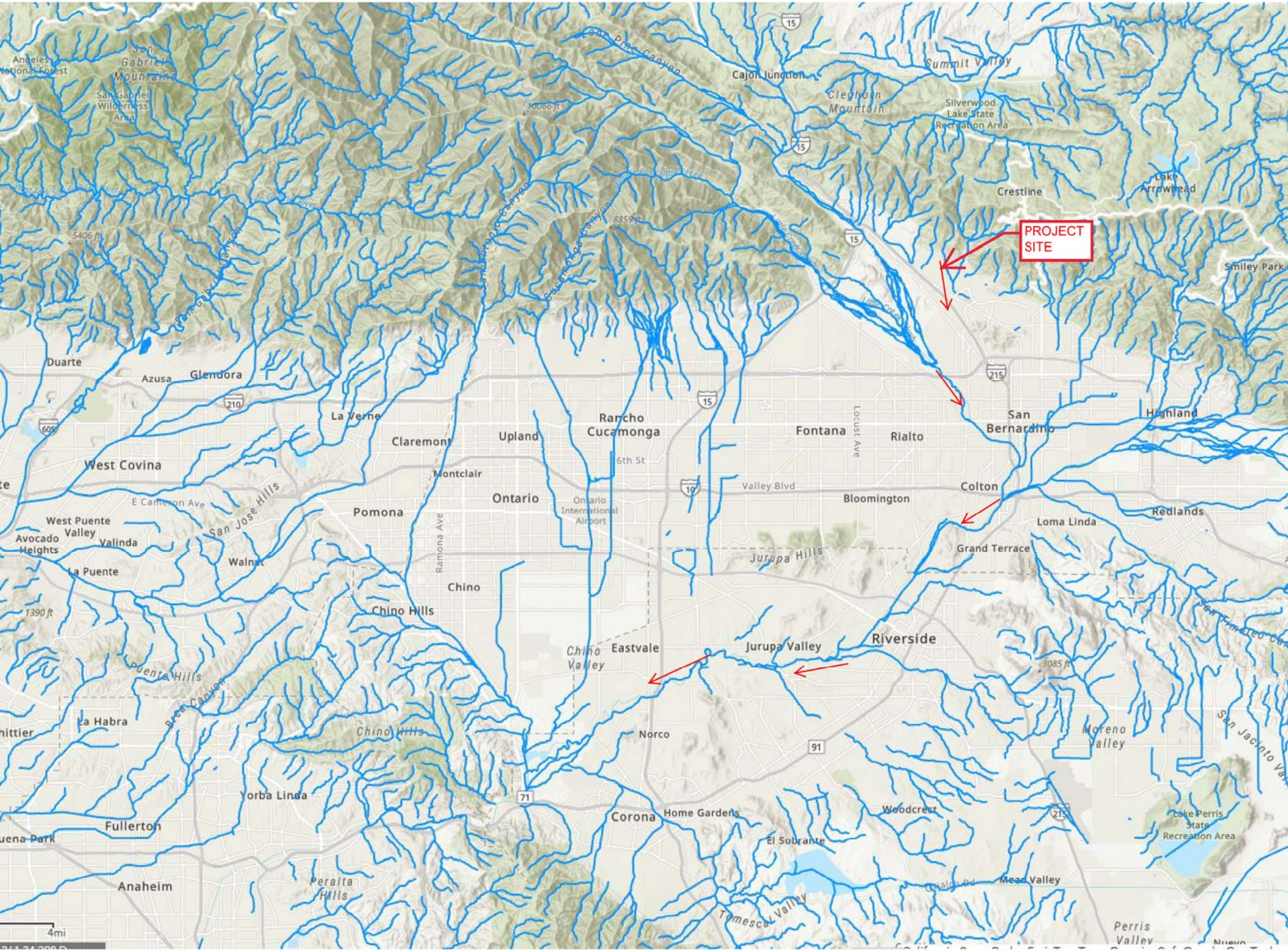
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|---|---|
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| DATE: NOV 2024 | SHEET 2 |
| DESIGNED: BRL | OF 2 SHEETS |
| CHECKED: EB | |
| PLN CK REF: | DWG. NO. |
| F.B. | |

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# Receiving Waters Exhibit


PROJECT SITE
Cajon Junction
Summit Valley
Cleghorn Mountain
Silverwood Lake State Recreation Area
Crestline
Lake Arrowhead
Smiley Park
Duarte
Azusa
Glendora
La Verne
Claremont
Upland
Rancho Cucamonga
Fontana
Rialto
San Bernardino
Highland
West Covina
Montclair
Ontario
Ontario International Airport
Pomona
Colton
Bloomington
Redlands
Loma Linda
Grand Terrace
West Puente Valley
Avocado Heights
Valinda
La Puente
Walnut
Chino
Chino Hills
Jurupa Hills
Eastvale
Jurupa Valley
Riverside
Chino Valley
Puente Hills
La Habra
Norco
Moreno Valley
Yorba Linda
Fullerton
Corona
Home Gardens
Woodcrest
El Sobrante
Lake Perris State Recreation Area
Mead Valley
Anaheim
Peralta Hills
Temescal Valley
Perris Valley
Nuevo
San Gabriel Mountains
San Gabriel Wilderness Area
Angeles National Forest
San Jose Hills
Ramona Ave
Locust Ave
6th St
Valley Blvd
E Cameron Ave
4mi

# Attachment 6.3 – Post Construction

# BMP Maintenance Agreement

To be provided in the Final WQMP Document

# Attachment 6.4 – Other Supporting Documentation

# CC&R's

To be provided in the Final WQMP Document

# Preliminary Hydrology Study

# Preliminary
# Hydrology Study and Drainage Analysis

## Tentative Tract Map 20707
## Residential Sub-divisions Single Family Dwellings

San Bernardino, CA 92407
APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

**Prepared For:**

Verdemont Heights, LLC
434 N Second Avenue
Upland, CA 91786
(909) 949-1400

**Prepared By:**

Joseph E. Bonadiman & Associates, Inc.
234 North Arrowhead Avenue
San Bernardino, CA 92408
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December 2024

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# Exhibits


| Exhibit | No. |
|---|---|
| Project Watershed – Aerial Photo | A |
| Project Watershed – USGS Quadrangle | B |
| FEMA FIRM | C |
| San Bernardino County Hydrology Manual - Isohyetal Map | D |
| San Bernardino County Hydrology Manual - Soils Map | E |
| Existing Hydrologic Conditions Study Map | F |
| Developed Hydrologic Conditions Study Map | G |

# Attachments


| Attachments | No. |
|---|---|
| Existing Conditions Rational Method Calculations | 1 |
| 100-Year, 1-Hour | |
| Existing Conditions Unit Method Calculations | 2 |
| 2-Year, 24-Hour | |
| 5-Year, 24-Hour | |
| 10-Year, 24-Hour | |
| 25-Year, 24-Hour | |
| 100-Year, 24-Hour | |
| Proposed Conditions Rational Method Calculations | 3 |
| 100-Year, 1-Hour | |
| Proposed Conditions Unit Hydrograph Calculations | 4 |
| 2-Year, 24-Hour | |
| 5-Year, 24-Hour | |
| 10-Year, 24-Hour | |
| 25-Year, 24-Hour | |
| 100-Year, 24-Hour | |

# A. Introduction

## 1.1 Purpose and Scope

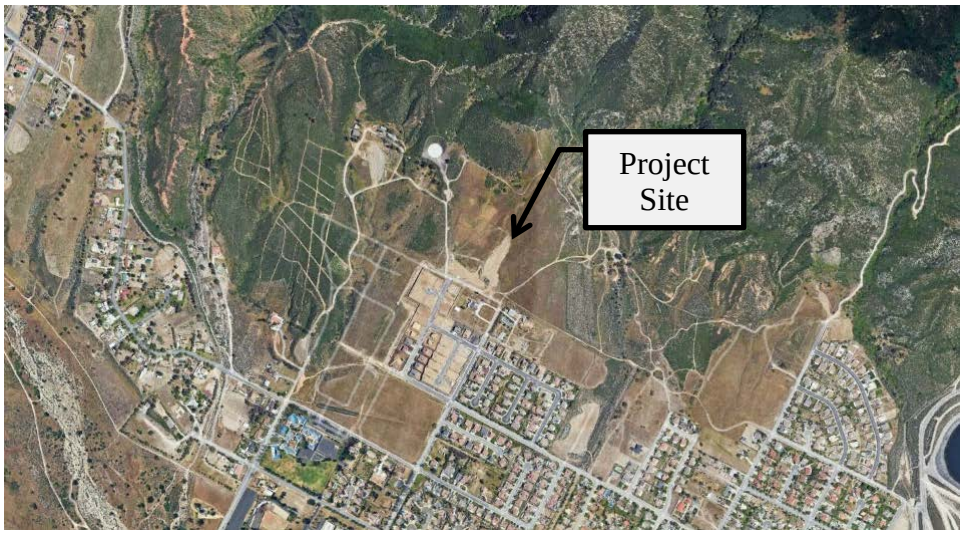
The following Final Hydrology and Hydraulics Report has been prepared for the development of a residential sub-division in San Bernardino, California. This report has been prepared to satisfy the City of San Bernardino Department of Public Works hydrology study requirements for this type of development.

**The scope of this report is as follows:**

- Identification of tributary flow impacting the project site.
- Identification of existing conditions, on-site drainage areas, and calculation of peak flow for these areas.
- Identification of developed conditions, on-site drainage areas and calculation of peak flow for these areas.
- Comparison of existing vs. developed peak flow rates and discussion of mitigation measures used to attenuate increases (if any) in peak flows.
- Identification of floodplain(s) impacting the site.
- Summary of finding and conclusion.

## 1.2 Project Overview

The proposed project consists of the development and construction of 155 residential single-family dwellings on approximately 107.7 acres of land total. An estimated 43.2 acres will be designated for the residential homes while the remaining 64.5 acres will be considered off-site tributary. The site is presently vacant. The project site is located to the north of Verdemont Drive and about 1.0 miles northeast of the 215-Freeway.




Site Location

## 1.3 Existing Conditions Drainage Tributary

The project site is located in the City of San Bernardino surrounded by residential and Spring Trails zoning. The existing tributary affecting and coving the project site consists of undeveloped foothill land cover in native chaparral. The development is proposed to drain to two proposed extended detention basins and will outflow to a proposed reinforced concrete pipe that will connect to the existing 63-inch Chestnut Avenue Storm Drain within Verdemont Avenue. The existing site generally drainage is towards the south.



Picture 1: Site



Picture 3: Site

## 1.4 References

Relevant portions of following documents have been made part of this study by reference:

1.) San Bernardino County Department of Public Works Hydrology Manual (August 1986).

2.) Ground topography executed by Joseph E. Bonadiman & Associates, Inc. (September 2021).

# B. Methodology

## 1.1 General Methodology

The requirements and recommendations found in the San Bernardino County Hydrology Manual (August 1986) provided by the San Bernardino County Department of Public Works was used as the basis for the methodology and calculations found in this report. On-site calculations were performed using the Rational and Unit Hydrograph methods to determine peak flow rates per County requirements.

For the 2, 5, 10 and 25-Year storm events, Antecedent Moisture Condition (AMC) I and II was used respectively. For the 100-Year storm event, Antecedent Moisture Condition (AMC) III was used. The San Bernardino County-approved software applications provided by CivilDesign® Corporation were used for all study calculations.

## 1.2 Sources of Topography

For the existing conditions on-site areas, mapping and topographic contours was provided by a survey conducted in 08-2017 per Tentative Tract Map No. 20707, Allard Engineering and Digital Mapping, Inc.

## 1.3 FEMA Floodplain Identification & Considerations

Per FEMA FIRM Panel No. 06071C7930J (Effective Date – September 2, 2016), the project site is located within unshaded Zone X ("Areas determined to be outside the 0.2% annual chance floodplain.").

Refer to Exhibit "C" for the FIRM used in this report.

## 1.4 Watershed Precipitation

Precipitation values used in this report were obtained from the isohyetal map(s) included in the San Bernardino County Hydrology Manual and are tabulated below. The slope of intensity duration curve value of 0.70 (mountain area) was used per the County Hydrology Manual.

Table 1 – Watershed Precipitation

| STORM | ATLAS 2 |
|---|---|
| 10-YEAR, 1-HOUR | 1.0" |
| 100-YEAR, 1-HOUR | 1.5" |
| 2-YEAR, 6-HOUR | 2.0" |
| 100-YEAR, 6-HOUR | 4.5" |
| 2-YEAR, 24-HOUR | 4.0" |
| 100-YEAR, 24-HOUR | 12.0 |

Refer to Exhibit "D" for the San Bernardino County Hydrology Manual Isohyetal Map(s) used in this report.

## 1.5 Watershed Losses

Soil types and SCS Curve Number (AMC II) used in this report were obtained from Figures C-6, included in the San Bernardino County Hydrology Manual and are tabulate below.

The site is composed of Type "A" and "B" soil. The existing condition study site is predominantly undeveloped with poor cover. The developed conditions site is proposed to be residential 3-4 dwelling. Referencing the San Bernardino County Hydrology Manual Figures C-3, the SCS Curve Numbers (AMC II) used for existing and developed conditions are as follows:

Table 2 – Watershed Losses

| COVER TYPE | SOIL TYPE | QUALITY OF COVER | SCS CURVE NO. (AMC II) |
|---|---|---|---|
| Undeveloped (Chaparral, Narrow Leaf) | A | Poor | 71 |
| | B | Poor | 82 |
| Residential (3-4 dwl per acre) | A | - | 32 |
| | B | - | 56 |

Refer to Exhibit "E" for the San Bernardino County Hydrology Manual SCS Curve Number per Figure C-2, C-3 and to C-6.

## 1.6 Rational Hydrology Method Calculations

The San Bernardino County Rational Method (CIVILD) software application provided by CivilDesign® Corporation was used for the rational method calculations included in this report.

# C. Existing Conditions Hydrology Calculations

## 1.1. Existing Conditions Rational Method Calculations

Input values for the existing conditions rational method calculations prepared for this report are tabulated below:

Table 3– Existing Conditions Rational Method Input Values

| AREA | SIZE (AC) | TYPE | SOIL | SCS (AMC II) | PERVIOUS RATIO | U.S. ELEV. (FT) | D.S. ELEV. (FT) | LENGTH (FT) |
|---|---|---|---|---|---|---|---|---|
| A1 | 9.37 | UNDEVELOPED (POOR) | A=50% B=50% | 72.5 | 1.0 | 2100.0 | 2025.0 | 789 |
| A2 | 7.33 | UNDEVELOPED (POOR) | A=95% B=5% | 67.55 | 1.0 | 2135.0 | 2025.0 | 997 |
| A3 | 1.81 | UNDEVELOPED (POOR) | A | 67.0 | 1.0 | - | - | - |
| | | | | | | | | |
| B1 | 1.81 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2405.0 | 2302.0 | 679 |
| B2 | 2.52 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2032.0 | 2135.0 | 434 |
| | | | | | | | | |
| C1 | 6.53 | UNDEVELOPED (POOR) | A | 67 | 1.0 | 2040.0 | 1960.0 | 964 |
| | | | | | | | | |
| D1 | 2.50 | UNDEVELOPED (POOR) | A | 73.6 | 1.0 | 2090.0 | 2050.0 | 800 |
| D2 | 7.02 | UNDEVELOPED (POOR) | A | 67 | 1.0 | 2050.0 | 1965.0 | 901 |
| | | | | | | | | |
| E1 | 2.57 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2270.0 | 2200.0 | 907 |
| E2 | 13.16 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2200.0 | 2100.0 | 1082 |
| E3 | 20.93 | UNDEVELOPED (POOR) | B | 72.5 | 1.0 | 2100.0 | 1996.0 | 1750 |
| | | | | | | | | |
| F1 | 6.71 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2302.0 | 2100.0 | 761 |
| | | | | | | | | |
| G-1 | 6.34 | UNDEVELOPED (POOR) | A | 67 | 1.0 | 2155.0 | 2070.0 | 768 |
| G-2 | 19.08 | UNDEVELOPED (POOR) | A | 67 | 1.0 | 2070.0 | 1987.0 | 997 |

Output for the existing conditions rational method calculations are tabulated as follows:

Table 4– Existing Conditions Rational Method Output Calculations

| AREA | NODE | ATLAS 2 $Q_{100}$ (CFS) | TC100 (MIN) |
|---|---|---|---|
| A | 103.1 | 70.7 | 12.1 |
| | | | |
| B | 202 | 18.7 | 10.9 |
| | | | |
| C | 301 | 25.1 | 13.5 |
| | | | |
| D | 402 | 30.5 | 15.7 |
| | | | |
| E | 503 | 107.1 | 17.6 |
| | | | |
| F | 601 | 31.5 | 9.7 |
| | | | |
| G | 702 | 89.9 | 13.7 |

Refer to Attachment No. 1 for printouts of the Existing Conditions Rational Method Calculations.
Refer to Exhibit "F" for the Existing Conditions Hydrology Study Map.

## 1.2. Existing Conditions Unit Hydrograph Method Calculations

Based on the output data from the Rational Method above the 100-year TC value was used. Input values for the developed conditions unit hydrograph method calculations prepared for this report are tabulated as follows:

Table 5 – Existing Conditions Unit Hydrograph Method Input Values

| DRAINAGE AREA | SIZE (AC) | SCS | PERVIOUS FRACTION | T.C. (HOUR) |
|---|---|---|---|---|
| A | 18.06 | 70.0 | 1.0 | 0.202 |
| | | | | |
| B | 4.33 | 78.0 | 1.0 | 0.182 |
| | | | | |
| C | 6.53 | 67.0 | 1.0 | 0.225 |
| | | | | |
| D | 9.52 | 68.7 | 1.0 | 0.262 |
| | | | | |
| E | 36.66 | 74.9 | 1.0 | 0.307 |
| | | | | |
| F | 6.71 | 78 | 1.0 | 0.162 |
| | | | | |
| G | 25.42 | 67.0 | 1.0 | 0.228 |

Output for the existing conditions unit hydrograph method calculations are tabulated as follows:

Table 6 – Existing Conditions Unit Hydrograph Method Output Calculations

| DRAINAGE AREA | SIZE (AC) | $Q_2$ (CFS) | $Q_5$ (CFS) | $Q_{10}$ (CFS | $Q_{25}$ (CFS) | $Q_{100}$ (CFS) | $LAG_{100}$ (HR) |
|---|---|---|---|---|---|---|---|
| A | 18.06 | 20.53 | 29.57 | 40.60 | 50.15 | 69.04 | 0.162 |
| | | | | | | | |
| B | 4.33 | 4.98 | 7.10 | 9.68 | 11.88 | 16.13 | 0.146 |
| | | | | | | | |
| C | 6.53 | 7.30 | 10.55 | 14.54 | 18.02 | 24.92 | 0.180 |
| | | | | | | | |
| D | 9.52 | 8.86 | 13.01 | 18.36 | 22.81 | 31.88 | 0.210 |
| | | | | | | | |
| E | 36.66 | 32.04 | 46.37 | 64.85 | 80.07 | 110.82 | 0.234 |
| | | | | | | | |
| F | 6.71 | 7.97 | 11.51 | 15.82 | 19.44 | 26.49 | 0.130 |
| | | | | | | | |
| G | 25.42 | 28.14 | 40.72 | 56.19 | 69.63 | 96.38 | 0.182 |
| | | | | | | | |
| A & G | 43.48 | 48.67 | 70.29 | 96.9 | 119.78 | 165.42 | ~ |
| B & F | 11.04 | 12.95 | 18.61 | 25.0 | 31.32 | 42.62 | |

| DRAINAGE AREA | SIZE (AC) | $VOL_2$ (AF) | $VOL_5$ (AF) | $VOL_{10}$ (AF) | $VOL_{25}$ (AF) | $Q_{100}$ (AF) | $LAG_{100}$ (HR) |
|---|---|---|---|---|---|---|---|
| A | 18.06 | 0.877 | 2.132 | 6.088 | 8.534 | 15.724 | 0.162 |
| B | 4.33 | 0.355 | 0.762 | 1.759 | 2.386 | 4.024 | 0.146 |
| C | 6.53 | 0.253 | 0.645 | 2.037 | 2.893 | 5.52 | 0.180 |
| D | 9.52 | 0.420 | 1.043 | 3.105 | 4.377 | 8.187 | 0.210 |
| E | 36.66 | 2.485 | 5.592 | 13.898 | 19.084 | 33.378 | 0.234 |
| F | 6.71 | 0.550 | 1.181 | 2.726 | 3.697 | 6.236 | 0.130 |
| G | 25.42 | 0.986 | 2.508 | 7.928 | 11.262 | 21.500 | 0.182 |
| A & G | 43.48 | 1.863 | 4.640 | 14.016 | 19.796 | 37.224 | ~ |
| B & F | 11.04 | 0.905 | 1.943 | 4.485 | 6.083 | 10.260 | ~ |

Refer to Attachment No. 3 for printouts of the Existing Conditions Unit Hydrograph Calculations.
Refer to Exhibit "F" for the Existing Conditions Hydrology Study Map.

# D. Developed Conditions Hydrology Calculations

## 1.1 Developed Conditions Rational Method Calculations

Input values for the developed conditions rational method calculations were adjusted accordingly and are tabulated below:

Table 7 – Developed Conditions Rational Method Input Values

| AREA | SIZE (AC) | TYPE | SOIL | SCS (AMC II) | PERVIOUS RATIO | U.S. ELEV. (FT) | D.S. ELEV. (FT) | LENGTH (FT) |
|---|---|---|---|---|---|---|---|---|
| A-1 NODE 100-101 | 1.99 | Residential (3-4 dwl per ac) | A & B | 39.2 | 0.6 | 2119.0 | 2093.9 | 470 |
| A-2 NODE 101-102 | 2.44 | Residential (3-4 dwl per ac) | A & B | 44.0 | 0.6 | 2093.9 | 2086.0 | 790 |
| A-3 NODE 102-103 | 1.04 | Residential (3-4 dwl per ac) | A & B | 48.8 | 0.6 | 2089.0 | 2007.0 | 900 |
| PIPE NODE 103-104 | ~ | ~ | ~ | ~ | ~ | 2000.0 | 1999.0 | 94 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 104 | | | | | | | | |
| A-4 NODE 105-106 | 1.83 | Residential (3-4 dwl per ac) | A | 32 | 0.6 | 2116.5 | 2093.8 | 580 |
| A-5 NODE 106-107 | 0.90 | Residential (3-4 dwl per ac) | A & B | 44.0 | 0.6 | 2093.8 | 2086.0 | 755 |
| A-6 NODE 107-108 | 3.09 | Residential (3-4 dwl per ac) | A & B | 46.4 | 0.6 | 2086.0 | 2011.2 | 760 |
| PIPE NODE 108-104 | ~ | ~ | ~ | ~ | ~ | 2003.0 | 1999.0 | 43 |
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 104 | | | | | | | | |
| PIPE NODE 104-109 | ~ | ~ | ~ | ~ | ~ | 1999.9 | 1996.5 | 230 |
| MAJOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 109 | | | | | | | | |
| A-08 NODE 110-111 | 4.13 | Residential (3-4 dwl per ac) | A & B | 41.6 | 0.6 | 2094.6 | 2032.0 | 800 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 111 | | | | | | | | |
| A-07 NODE 112-113 | 4.17 | Residential (3-4 dwl per ac) | A & B | 34.4 | 0.6 | 2094.6 | 2032.0 | 800 |
| PIPE NODE 113-111 | ~ | ~ | ~ | ~ | ~ | 2024.0 | 2022.0 | 38 |
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 111 | | | | | | | | |
| PIPE NODE 111-109 | ~ | ~ | ~ | ~ | ~ | 2022.0 | 1996.5 | 244 |
| MAJOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 109 | | | | | | | | |
| PIPE NODE 111-114.1 | ~ | ~ | ~ | ~ | ~ | 1996.5 | 1974.0 | 1288 |
| MAJOR CONFLUENCE CURRENT STREAM 1 OF 4 AT NODE 114.1 | | | | | | | | |
| A-21 NODE 126-127 | 0.9 | Residential (3-4 dwl per ac) | A | 32 | 0.6 | 2031.3 | 2002.0 | 500 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| A-19<br>NODE 127-128 | 1.42 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2002.0 | 1982.0 | 850 |
| PIPE NODE<br>128-114.2 | ~ | ~ | ~ | ~ | ~ | 1976.0 | 1974.0 | 35 |
| MAJOR CONFLUENCE CURRENT STREAM 2 OF 4 AT NODE 114.2 | | | | | | | | |
| A-9<br>NODE 100-129 | 0.38 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2119.0 | 2044.5 | 664 |
| A-15<br>NODE 129-130 | 0.42 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2044.5 | 1983.0 | 726 |
| PIPE<br>NODE 130-131 | ~ | ~ | ~ | ~ | ~ | 1975.3 | 1974.3 | 36 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 131 | | | | | | | | |
| A-13<br>NODE 118-132 | 4.62 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2056.7 | 2013.0 | 875 |
| A-19<br>NODE 132-131 | 0.19 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2013.0 | 1983.0 | 326 |
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 131 | | | | | | | | |
| PIPE NODE<br>131-114.3 | ~ | ~ | ~ | ~ | ~ | 1974.3 | 1974.0 | 38 |
| MAJOR CONFLUENCE CURRENT STREAM 3 OF 4 AT NODE 114.3 | | | | | | | | |
| A-12<br>NODE 112-118 | 3.27 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2094.6 | 2056.7 | 909 |
| PIPE<br>NODE 118-117 | ~ | ~ | ~ | ~ | ~ | 2048.0 | 2047.4 | 44 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 117 | | | | | | | | |
| A-11<br>NODE 115-116 | 2.84 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2094.2 | 2056.0 | 765 |
| PIPE<br>NODE 116-117 | ~ | ~ | ~ | ~ | ~ | 2048.0 | 2047.4 | 31 |
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 117 | | | | | | | | |
| PIPE<br>NODE 117-119 | ~ | ~ | ~ | ~ | ~ | 2047.4 | 2036.0 | 477 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 119 | | | | | | | | |
| A-10<br>NODE 105-120 | 1.41 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2116.5 | 2052.5 | 586 |
| PIPE<br>NODE 120-119 | ~ | ~ | ~ | ~ | ~ | 2044.5 | 2036.0 | 93 |
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 119 | | | | | | | | |
| PIPE<br>NODE 119-121 | ~ | ~ | ~ | ~ | ~ | 2036.0 | 2003.0 | 400 |
| MINOR CONFLUENCE CURRENT STREAM 1 OF 2 AT NODE 121 | | | | | | | | |
| A-20<br>NODE 124-125 | 2.43 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | 2032.5 | 2013.4 | 972 |
| PIPE<br>NODE 125-123 | ~ | ~ | ~ | ~ | ~ | 2005.0 | 2004.5 | 36 |
| A-22<br>ADD AREA | 3.91 | Residential<br>(3-4 dwl per ac) | A | 32 | 0.6 | ~ | ~ | ~ |
| PIPE<br>NODE 123-121 | ~ | ~ | ~ | ~ | ~ | 2004.5 | 2003.0 | 82 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MINOR CONFLUENCE CURRENT STREAM 2 OF 2 AT NODE 121 | | | | | | | | |
| PIPE NODE 121-114 | ~ | ~ | ~ | ~ | ~ | 2003.0 | 1974.6 | 265 |
| MAJOR CONFLUENCE CURRENT STREAM 4 OF 4 AT NODE 114.4 | | | | | | | | |
| A-18 ADD AREA | 1.83 | Residential (3-4 dwl per ac) | A | 67 | 0.6 | ~ | ~ | ~ |
| | | | | | | | | |
| B-1 NODE 200-201 | 4.12 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2405.0 | 2151.0 | 995 |
| B-2 NODE 201-202 | 7.49 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2151.0 | 2081.0 | 549 |
| | | | | | | | | |
| C-1 NODE 300-301 | 6.54 | Residential (3-4 dwl per ac) | A | 32 | 0.6 | 2041 | 1965 | 730 |
| PIPE NODE 301-302 | ~ | ~ | ~ | ~ | ~ | 1957 | 1956 | 35 |
| | | | | | | | | |
| D-1 NODE 400-401 | 2.50 | UNDEVELOPED (POOR) | A | 73.6 | 1.0 | 2090.0 | 2050.0 | 800 |
| D-2 NODE 401-402 | 7.02 | UNDEVELOPED (POOR) | A | 67 | 1.0 | 2050.0 | 1965.0 | 901 |
| | | | | | | | | |
| E-1 NODE 500-501 | 2.57 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2270.0 | 2200.0 | 907 |
| E2 NODE 501-502 | 13.16 | UNDEVELOPED (POOR) | B | 78 | 1.0 | 2200.0 | 2100.0 | 1082 |
| E3 NODE 502-503 | 20.93 | UNDEVELOPED (POOR) | B | 72.5 | 1.0 | 2100.0 | 1994.0 | 1570 |
| | | | | | | | | |

Output for the developed conditions rational method calculations are tabulated as follows:

Table 8– Developed Conditions Rational Method Output Calculations

| AREA | NODE | $Q_{100}$ (CFS) | $TC_{100}$ (MIN) |
|---|---|---|---|
| A | 114 | 143.2 | 11.7 |
| | | | |
| C | 302 | 30.4 | 9.1 |

Refer to Attachment No. 2 for printouts of the Developed Conditions Rational Method Calculations.
Refer to Exhibit "G" for the Developed Conditions Hydrology Study Map.

## 1.2 Developed Conditions Unit Hydrograph Method Calculations

Based on the output data from the Rational Method above the 100-year TC value was used. Input values for the existing conditions unit hydrograph method calculations prepared for this report are tabulated as follows:

Table 9 – Developed Conditions Unit Hydrograph Method Input Values

| DRAINAGE AREA | SIZE (AC) | SCS | PERVIOUS FRACTION | T.C. (HOUR) |
|---|---|---|---|---|
| A | 43.08 | 36.7 | 0.61 | 0.1953 |
| | | | | |
| B | 11.61 | 78.0 | 1.0 | 0.1933 |
| | | | | |
| C | 6.54 | 32.0 | 0.60 | 0.1515 |
| | | | | |
| D | 9.52 | 68.7 | 1.0 | 0.2622 |
| | | | | |
| E | 36.66 | 74.9 | 1.0 | 0.3073 |

Output for the existing conditions unit hydrograph method calculations are tabulated as follows:

Table 10 Developed Conditions Unit Hydrograph Method Output Calculations

| DRAINAGE AREA | SIZE (AC) | $Q_2$ (CFS) | $Q_5$ (CFS) | $Q_{10}$ (CFS | $Q_{25}$ (CFS) | $Q_{100}$ (CFS) | $LAG_{100}$ (HR) |
|---|---|---|---|---|---|---|---|
| A | 43.08 | 60.62 | 83.73 | 103.43 | 127.92 | 154.32 | 0.156 |
| B | 11.61 | 14.16 | 20.13 | 27.00 | 33.11 | 44.62 | 0.155 |
| C | 6.54 | 9.14 | 12.62 | 15.45 | 19.12 | 25.61 | 0.121 |
| D | No Change From Existing Condition | | | | | | |
| E | No Change From Existing Condition | | | | | | |

| DRAINAGE AREA | SIZE (AC) | $VOL_2$ (AF) | $VOL_5$ (AF) | $VOL_{10}$ (AF) | $VOL_{25}$ (AF) | $Q_{100}$ (AF) | $LAG_{100}$ (HR) |
|---|---|---|---|---|---|---|---|
| A | 43.08 | 5.79 | 8.63 | 12.24 | 16.58 | 30.42 | 0.156 |
| B | 11.61 | 0.95 | 2.04 | 4.72 | 6.40 | 10.79 | 0.155 |
| C | 6.54 | 0.8979 | 1.34 | 1.79 | 2.40 | 4.42 | 0.121 |
| D | No Change From Existing Condition | | | | | | |
| E | No Change From Existing Condition | | | | | | |

Refer to Attachment No. 4 for printouts of the Developed Conditions Unit Hydrograph Calculations.
Refer to Exhibit "G" for the Developed Conditions Hydrology Study Map.

# E. Detention Basin & Debris Basin Analysis

## 1.1 Detention Basin Analysis

A detention/retention basin is proposed to attenuate storm flows and to address water quality requirements for the site. The proposed basing will be sized to mitigate any increase in run-off associated with the proposed development.

- Drainage management area 'A' experienced the largest increase in storm volume over the existing condition during the 2 year 24 hour storm with an increase in storm volume of 4.06 ac-ft. the proposed water quality basin #1 will be designed to retain and meter out this increase in storm volume.

- Drainage management area 'C' experienced the largest increase in storm volume over the existing condition during the 2 year 24 hour storm with an increase in storm volume of 0.74 ac-ft. the proposed water quality basin #1 will be designed to retain and meter out this increase in storm volume.

- Basin design and routing analysis will be prepared during final engineering and will utilize the following design criteria

    - All detention basins shall be design based on the "Detention Basin Design Criteria for San Bernardino County", as follows:

        - When feasible no more than 50% of the basins volume shall be above natural grade.
        - 3:1 maximum slope on wet side and 2:1 maximum slope on dry side.
        - Maximum water depth should not exceed 6'.
        - A spillway shall be design to pass the fully developed 1000 year peak flow rate ($Q_{1000}$ = 1.35 $Q_{100}$).
        - A minimum of 1-foot of freeboard above the 1000-year HWL or 2-feet of freeboard above the 100 –year HWL, whichever is more stringent.
        - Access to the basin shall be gated and locked.

Refer to Attachment No. 5 for a printout of the 2-year, 10-year, 25-Year and 100-Year Hydrograph routing calculations for the proposed basins system.

## 1.2 Debris Basin Analysis

Debris basins are proposed to capture sediment and debris to avoid sedimentation of the infiltration basin. Debris yield calculations prepared for this report are tabulated as follows:

Table 13 – Detention Basins Output Calculations

| DEBRIS BASIN | DRAINAGE AREA (AC) | DRAINAGE AREA (SQ-MI) | DEBRIS YEILD (CY/SQ-MI) | DEBRIS YEILD (CY) | DEBRIS YEILD (AC-FT) |
|---|---|---|---|---|---|
| B | 11.61 | 0.0181 | 160,000 | 2,896 | 1.795 |
| | | | | | |
| E | 36.66 | 0.0573 | 160,000 | 9,168 | 5.682 |
| | | | | | |

Refer to Exhibit "E" for the Developed Conditions Hydrology Study Map.

# F. Summary and Conclusion

## 1.1 Summary

A summary of the results of the rational and unit hydrograph calculations are tabulated below:

Table 14 –Rational Method Calculations Summary

| AREA | STORM EVENT | EXISTING CONDITION PEAK Q (CFS) | PROPOSED CONDITION PEAK Q (CFS) | INCREASE (CFS) |
|---|---|---|---|---|
| A | 100 | 70.7 | 152.6 | -8.0 |
| G | 100 | 89.9 | | |
| B | 100 | 18.7 | 46.0 | -4.2 |
| F | 100 | 31.5 | | |
| C | 100 | 25.1 | 34.0 | 8.9 |
| D | 100 | 30.5 | 30.5 | 0.0 |
| E | 100 | 108.5 | 108.5 | 0.0 |

A summary of the results of the unit hydrograph calculations are tabulated below:

Table 15 –Unit Hydrograph Calculations Summary

| AREA | STORM EVENT | EXISTING CONDITIONS PEAK Q (CFS) | DEVELOPED CONDITIONS PEAK Q (CFS) | INCREASE (CFS)* | EXISTING CONDITIONS VOLUME (AF) | DEVELOPED CONDITIONS VOLUME (AF) | INCREASE (AF)* |
|---|---|---|---|---|---|---|---|
| Ex A & G VS Pr A | 2 | 48.67 | 55.44 | **6.77** | 1.86 | 5.92 | **4.06** |
| | 10 | 96.90 | 93.23 | **-3.67** | 14.02 | 12.30 | **-1.72** |
| | 25 | 119.78 | 114.93 | **-4.85** | 19.80 | 16.60 | **-3.20** |
| | 100 | 165.42 | 154.34 | **-11.08** | 37.22 | 30.29 | **-6.93** |

| AREA | STORM EVENT | EXISTING CONDITIONS PEAK Q (CFS) | DEVELOPED CONDITIONS PEAK Q (CFS) | INCREASE (CFS)* | EXISTING CONDITIONS VOLUME (AF) | DEVELOPED CONDITIONS VOLUME (AF) | INCREASE (AF)* |
|---|---|---|---|---|---|---|---|
| Ex C VS Pr C | 2 | 7.85 | 10.25 | **2.4** | 0.27 | 1.01 | **0.74** |
| | 10 | 15.64 | 17.33 | **1.69** | 2.19 | 2.01 | **-0.18** |
| | 25 | 19.37 | 21.45 | **2.08** | 3.11 | 2.69 | **-0.42** |
| | 100 | 26.79 | 28.67 | **1.88** | 5.94 | 4.95 | **-0.99** |

## 1.2 Conclusion

As indicated above, an increase in peak flow and runoff volume is expected due to the proposed development. The increase in flow rates shall be mitigated onsite as to reduce the total site discharge to 90% of the pre-development conditions per the San Bernardino County Hydrology Manual.

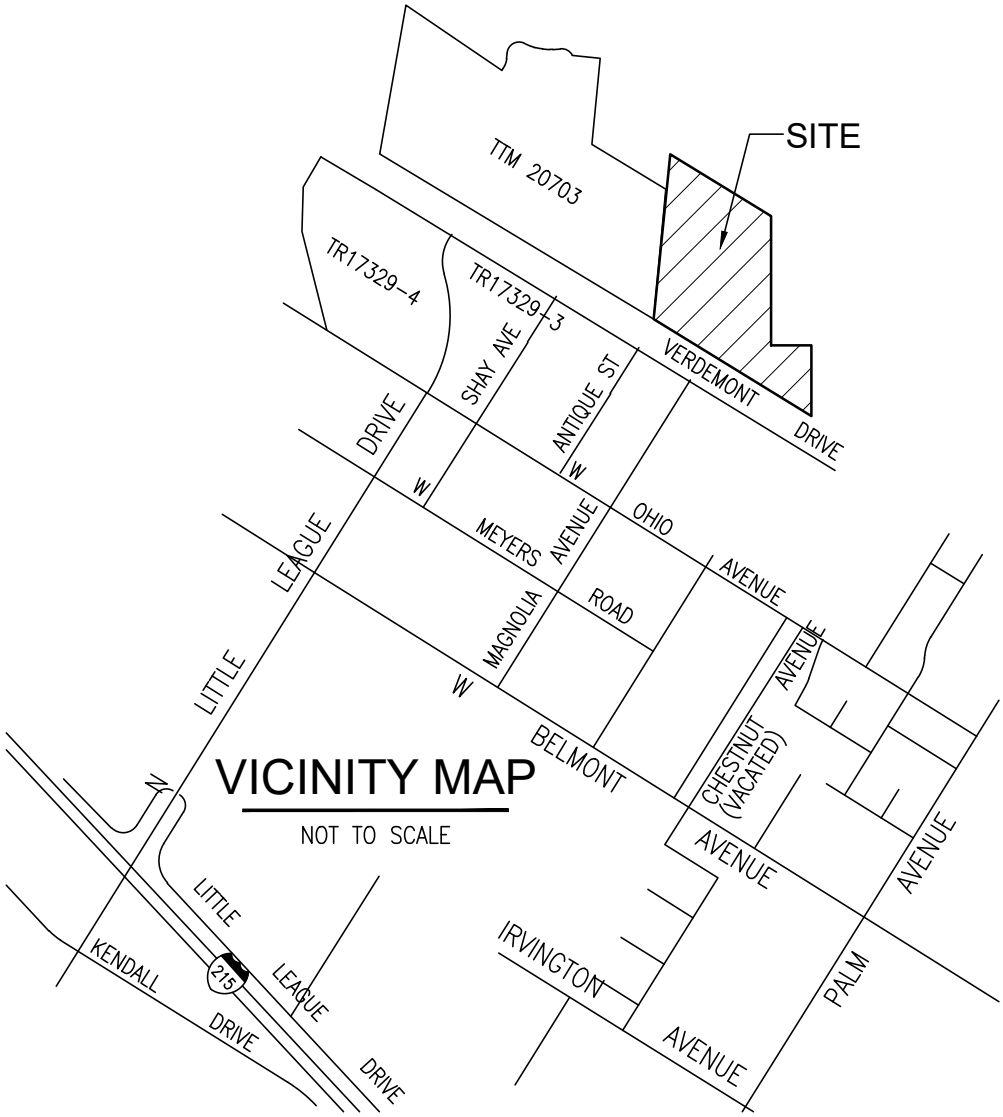
Per the San Bernardino County Hydrology Manual, developed sites shall not increase existing condition flow rate. In order to meet mitigation requirements per "San Bernardino County Detention Basin Design Criteria" post-development peak flow rates generated by the site shall be less than or equal to 90% of the pre-development peak flow rate based on shifting the rainfall values for the 10-year, 25-year and 100-years storms, providing a least a 50% confidence level that the detention basin outflow will not adversely impact downstream properties. This will be achieved with the use of on-site retention and water quality baisns designed to capture, treat for water quality objectives and meter out storm water effluent at or below the existing storm water flow rates.

With the above mitigation measure the development of the project, the site will not have a negative impact on downstream properties or facilities. Refer to project specific WQMP for additional requirements.

**(END)**

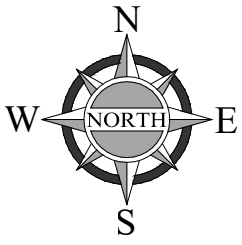
# EXHIBIT “A”

Aerial Photo




# VICINITY MAP

NOT TO SCALE




NOT TO SCALE

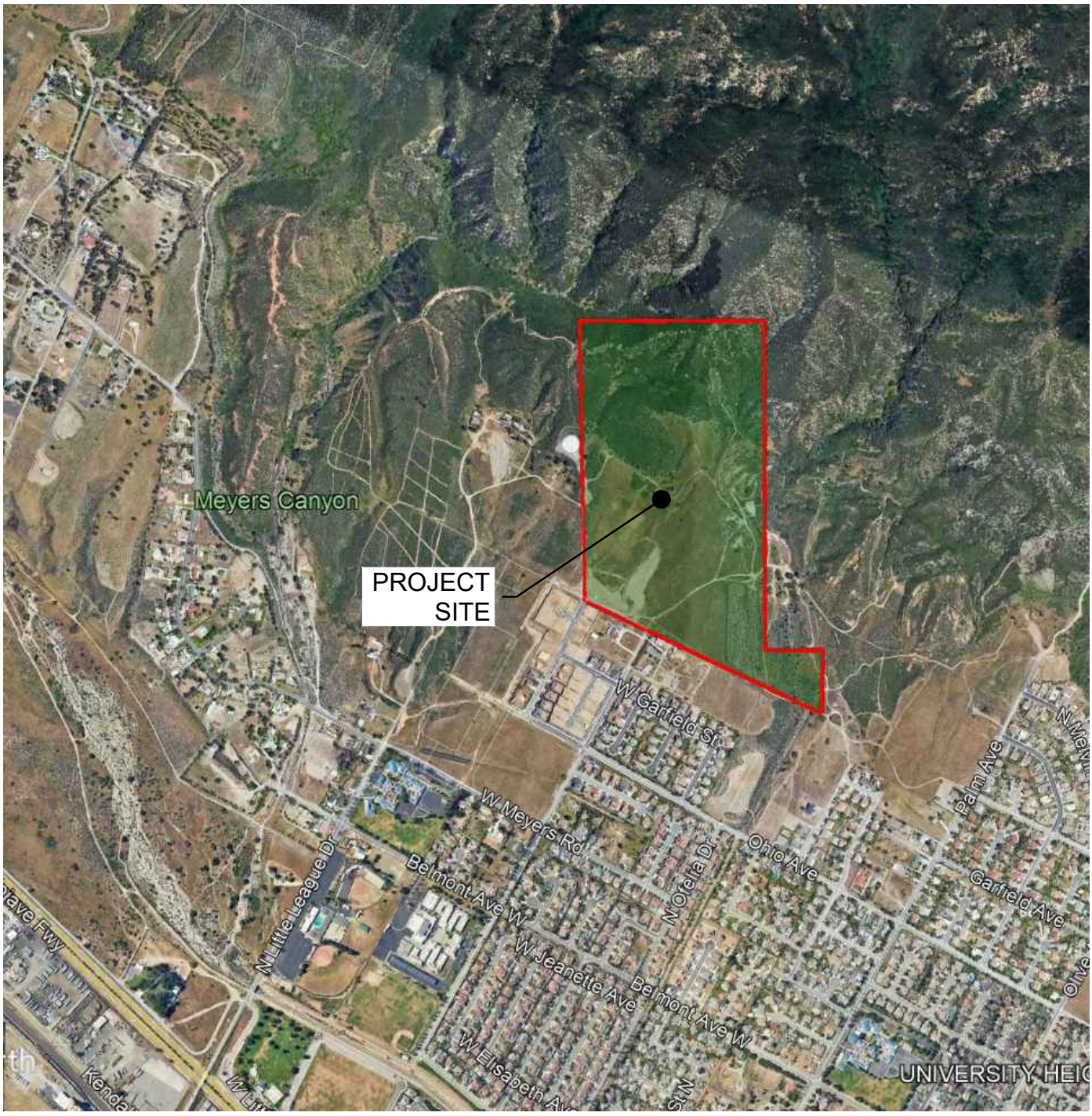
FIGURE 1: VICINITY MAP

SAN BERNARDINO CO.

APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

BONADIMAN
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
ENGINEERS • C.I.S. • SURVEYING • PLANNING
TEL. (909) 885-3806
294 NORTH ARROWHEAD AVE.
SAN BERNARDINO, CA 92408
FAX (909) 381-1781
www.bonadiman.com

Drawing2.dwg




N
W NORTH E
S

FIGURE 2: AERIAL PHOTOGRAPH
SAN BERNARDINO CO.

APN(s): 0348-121-14, -27, -28,
and 0261-011-02, -03 -10

NOT TO SCALE

BONADIMAN
JOSEPH E. BONADIMAN & ASSOCIATES, INC.
ENGINEERS • C.I.S. • SURVEYING • PLANNING
TEL. (909) 885-3806
FAX (909) 381-1721

C:\Users\brianl\Desktop\work\00071 – TTM 20707\HYDROLOGY–PRELIM\Parts\Maps\00071–Vicinity–Fig–1.dwg

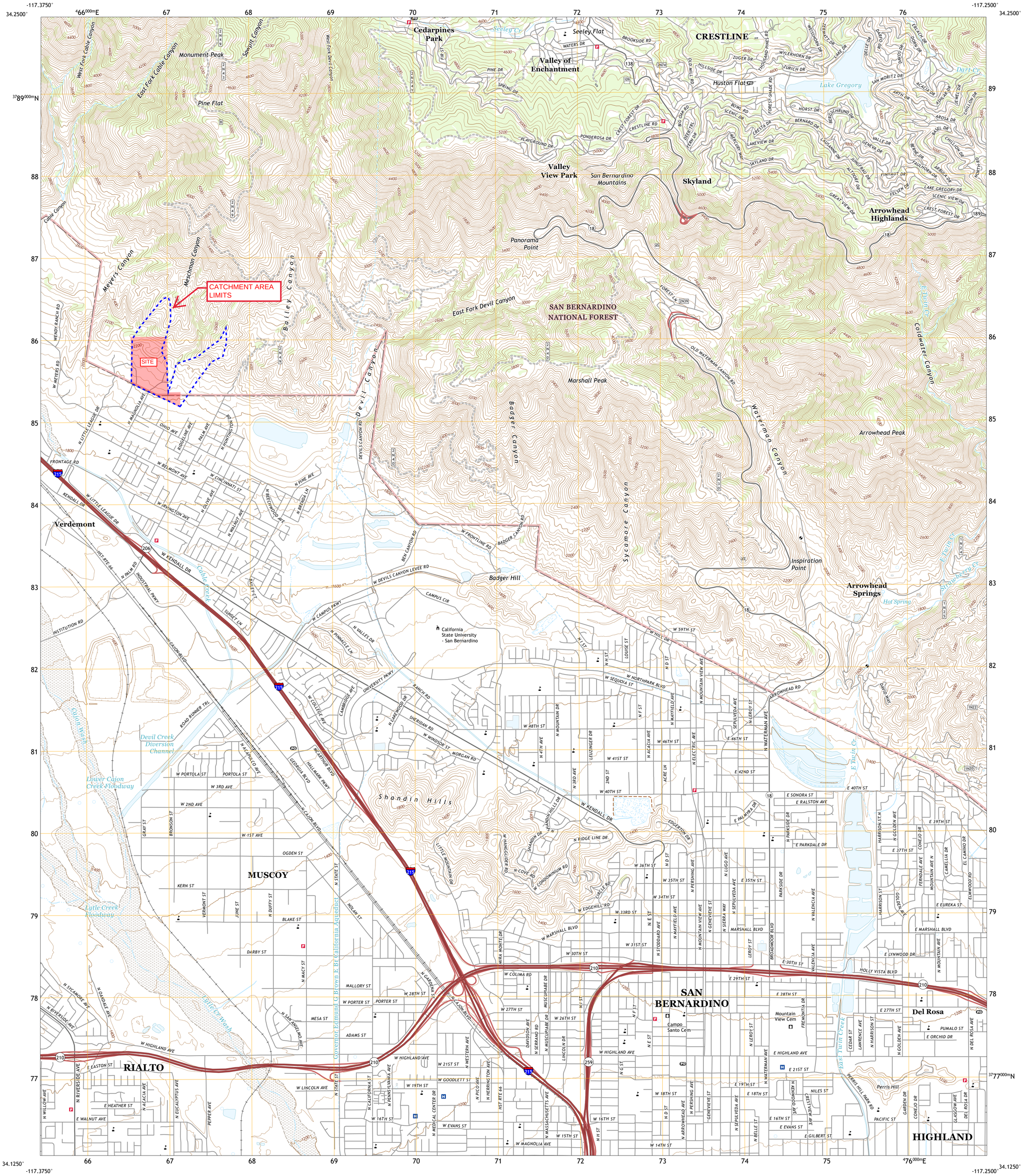
# EXHIBIT “B”

Project Watershed
USGS Quadrangle

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

# SAN BERNARDINO NORTH QUADRANGLE
CALIFORNIA - SAN BERNARDINO COUNTY
7.5-MINUTE SERIES




**Produced by the United States Geological Survey**
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 11S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, April 2020 - April 2020
Roads..... U.S. Census Bureau, 2016 - 2018
Roads within US Forest Service Lands.....FSTopo Data with limited Forest Service updates, 2018
Names.....GNIS, 1981 - 2021
Hydrography.....National Hydrography Dataset, 2001 - 2020
Contours.....National Elevation Dataset, 2019
Boundaries.....Multiple sources; see metadata file 2017 - 2021
Public Land Survey System.....BLM, 2020
Wetlands.....FWS National Wetlands Inventory Not Available

MN
GN
11°44′ 209 MILS
0°11′ 3 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
MT
Grid Zone Designation 11S

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard.

CALIFORNIA
QUADRANGLE LOCATION

| | | |
|---|---|---|
| 1 | 2 | 3 |
| 4 | | 5 |
| 6 | 7 | 8 |

ADJOINING QUADRANGLES
1 Cajon
2 Silverwood Lake
3 Lake Arrowhead
4 Devore
5 Harrison Mountain
6 Fontana
7 San Bernardino South
8 Redlands

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route
FS Primary Route
FS Passenger Route
FS High Clearance Route

Check with local Forest Service unit for current travel conditions and restrictions.

**SAN BERNARDINO NORTH, CA**
**2021**

NSN 7643016357606
NGA REF NO.USGSX24K71506

# EXHIBIT “C”

FEMA FIRM

# NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

**Coastal Base Flood Elevations (BFEs)** shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11 North. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

**Base map** information shown on this FIRM was provided in digital format by the San Bernardino County ISD.GIS Department, United States Geological Survey, the Bureau of Land Management, the United States Department of Agriculture, and the National Geodetic Survey. The imagery was flown by U.S. Department of Agriculture Farm Sevice Agency in 2012 and was produced with a 1-meter ground sampling distance.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

**Corporate limits** shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

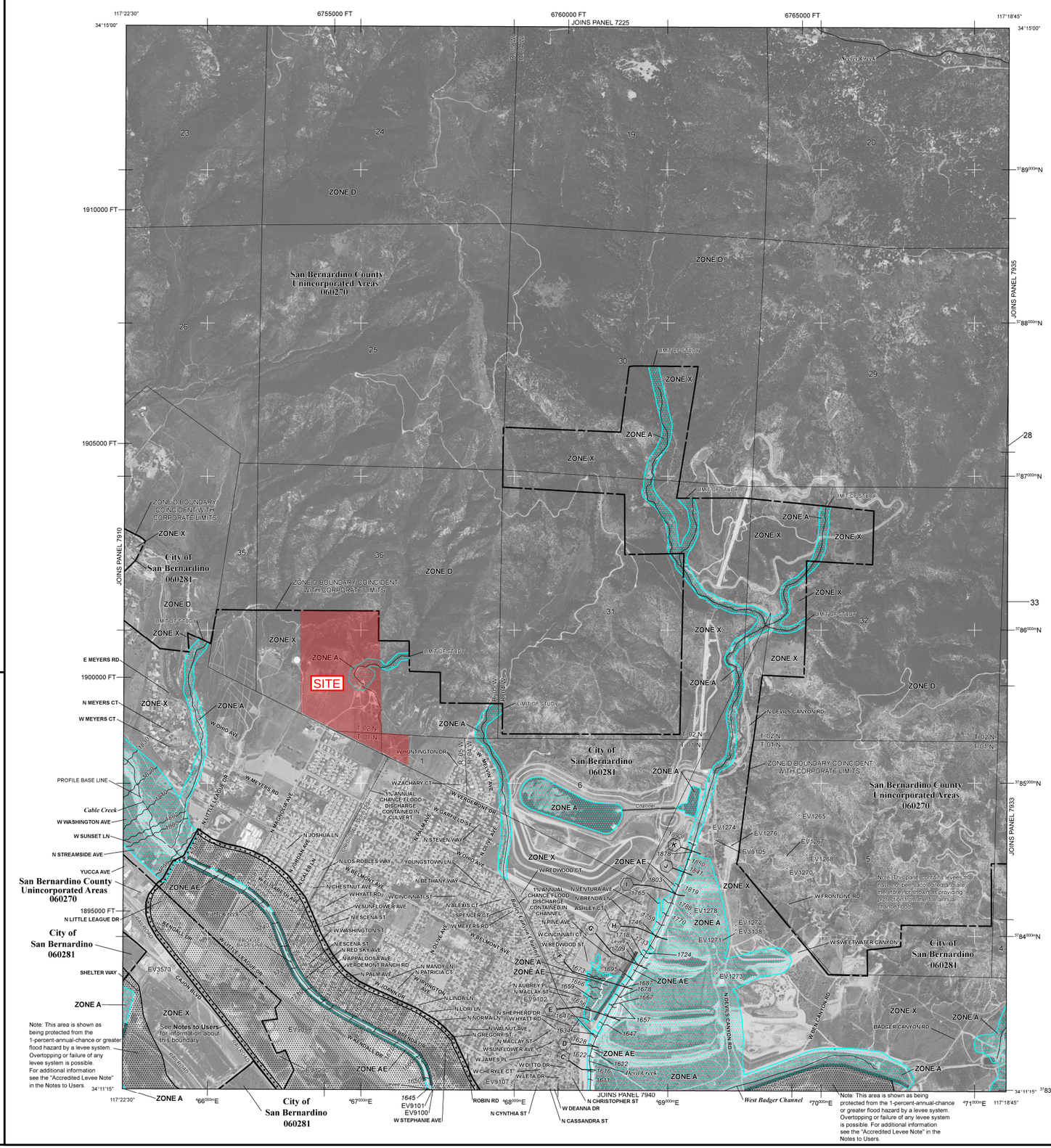
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

**ATTENTION:** The levee, dike, or other structure that impacts flood hazards inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside this boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD29 to NAVD88.

ACCREDITED LEVEE NOTES TO USERS: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA website at http://www.fema.gov/business/nfip/index.shtm.




# LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

**ZONE A** No Base Flood Elevations determined.

**ZONE AE** Base Flood Elevations determined.

**ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

**ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

**ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

**ZONE A99** Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

**ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

**ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

**ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

**ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.

**ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4775000mE — 1000-meter Universal Transverse Mercator grid values, zone 11
6000000 FT — 5000-foot grid ticks: California State Plane coordinate system, Zone V (FIPSZONE = 405), Lambert projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
September 2, 2016 – to change Base Flood Elevations, to add Base Flood Elevations, to change Special Flood Hazard Areas, to change zone designations, to incorporate previously issued Letters of Map Revision, and to reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

500 0 500 1,000 1,500 2,000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 7930J

# FIRM

## FLOOD INSURANCE RATE MAP

## SAN BERNARDINO COUNTY, CALIFORNIA AND INCORPORATED AREAS

## PANEL 7930 OF 9400

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| SAN BERNARDINO COUNTY | 060270 | 7930 | J |
| SAN BERNARDINO, CITY OF | 060281 | 7930 | J |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER**
**06071C7930J**

**MAP REVISED**
**SEPTEMBER 2, 2016**

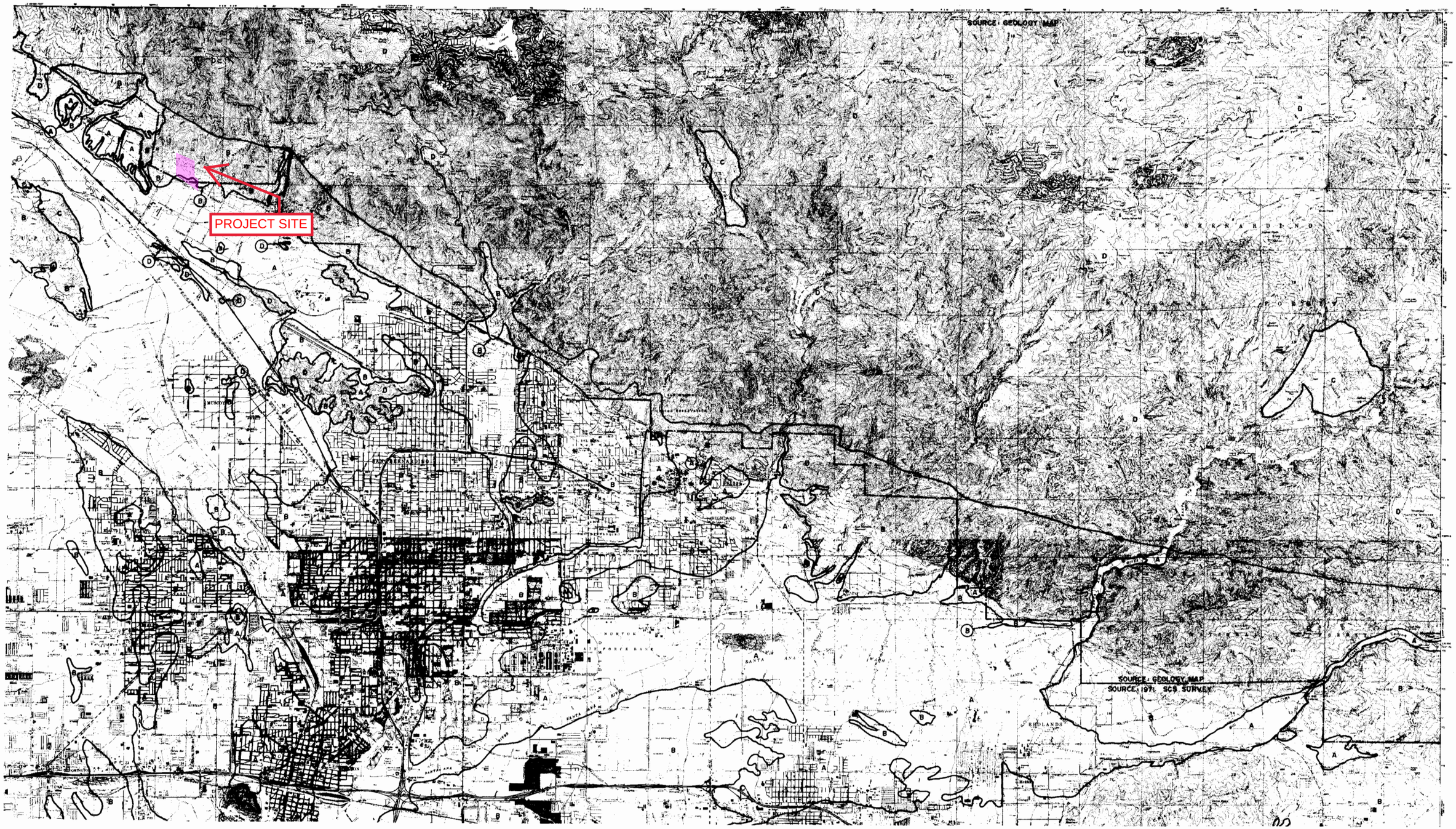
Federal Emergency Management Agency

# EXHIBIT “D”

San Bernardino County
Hydrology Manual
Rainfall Map

# EXHIBIT “E”

San Bernardino County Hydrology Manual
and NRCS Soils Data




**SAN BERNARDINO COUNTY**
HYDROLOGY MANUAL

**SCALE REDUCED BY 1/2**

HYDROLOGIC SOILS GROUP MAP
FOR
SOUTHWEST-B AREA



FIGURE C-14

PROJECT SITE
2Y 6H = 2.0 IN

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
2.0 ISOLINES PRECIPITATION (INCHES)

# SAN BERNARDINO COUNTY
## HYDROLOGY MANUAL

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

**VALLEY AREA**
ISOHYETALS
$X_1$ - 2 YEAR 6 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY
FLOOD CONTROL ENGINEER

| DATE | SCALE | FILE NO. | DRWG. NO. |
|---|---|---|---|
| 1982 | 1"=2 MI. | | 1 of 12 |

FIGURE B-1

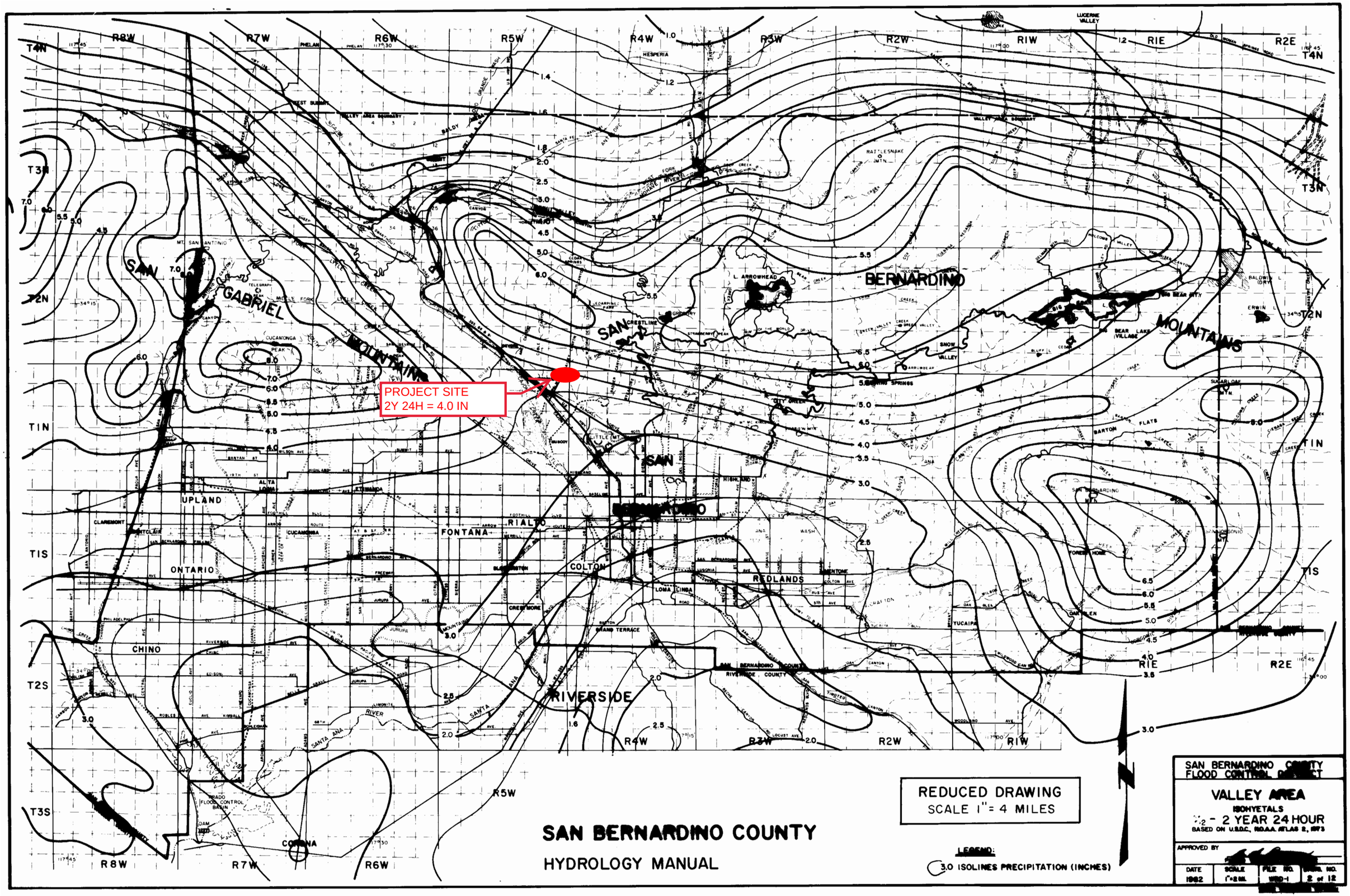
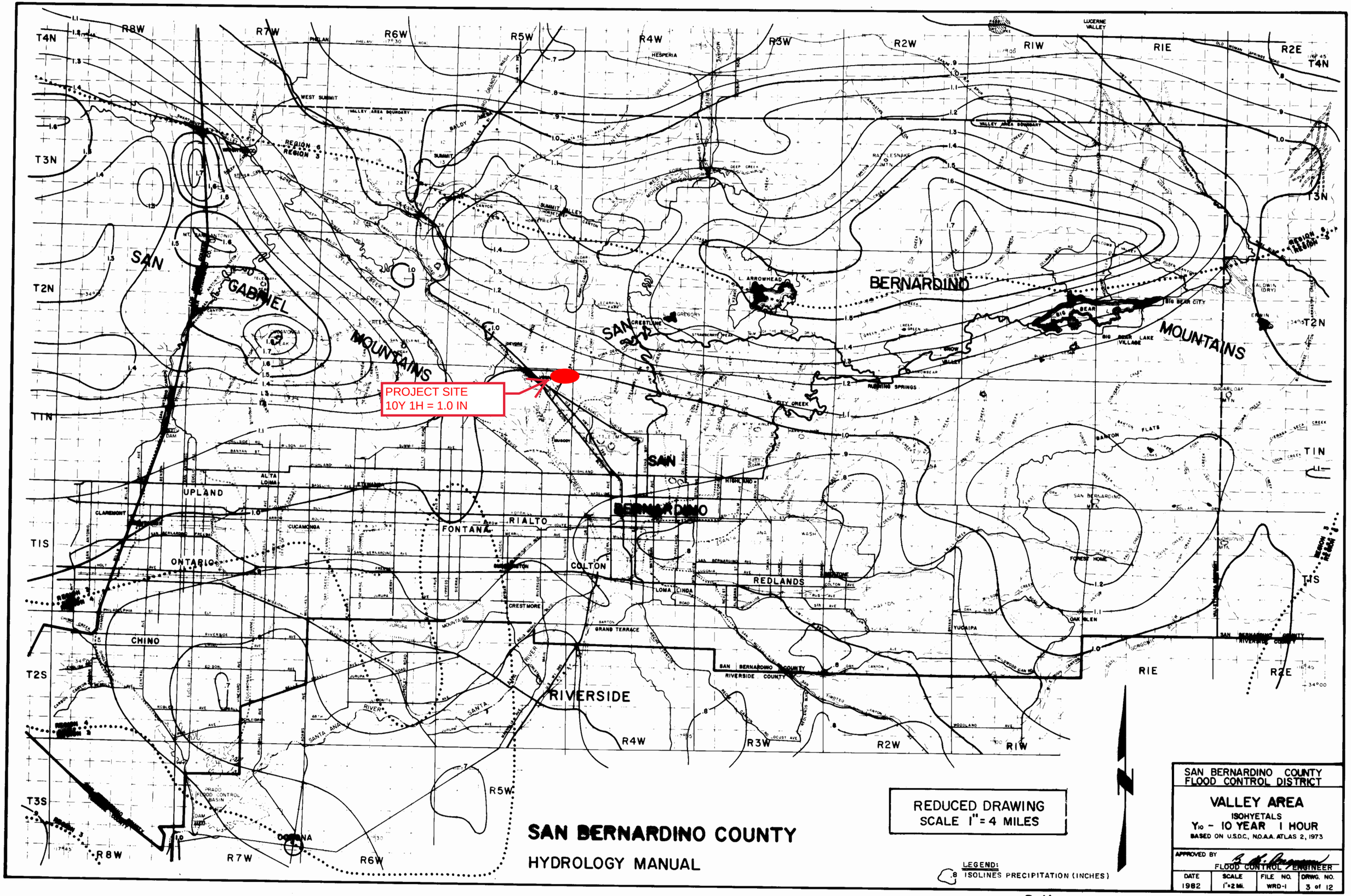

PROJECT SITE
2Y 24H = 4.0 IN
SAN BERNARDINO MOUNTAINS
SAN GABRIEL MOUNTAINS
SAN BERNARDINO
RIVERSIDE
UPLAND
ONTARIO
CHINO
FONTANA
RIALTO
COLTON
REDLANDS
LOMA LINDA
CRESTMORE
CORONA
BIG BEAR CITY
BIG BEAR LAKE
BIG BEAR VILLAGE
SNOW VALLEY
L. ARROWHEAD
L. GREGORY
L. ERWIN
L. BALDWIN (DRY)
SUGARLOAF
BARTON FLATS
YUCAIPA
CITY CREEK
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
T4N
T3N
T2N
T1N
T1S
T2S
T3S
R8W
R7W
R6W
R5W
R4W
R3W
R2W
R1W
R1E
R2E
REDUCED DRAWING
SCALE 1" = 4 MILES
LEGEND:
3.0 ISOLINES PRECIPITATION (INCHES)
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
2 - 2 YEAR 24 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973
APPROVED BY
DATE 1982
SCALE 1"=2 MI.
FILE NO. HYD-1
DRWG. NO. 2 of 12



FIGURE B-2




# SAN BERNARDINO COUNTY
## HYDROLOGY MANUAL

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
.8 ISOLINES PRECIPITATION (INCHES)

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

**VALLEY AREA**
ISOHYETALS
$Y_{10}$ - 10 YEAR 1 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY _____ FLOOD CONTROL ENGINEER

| DATE | SCALE | FILE NO. | DRWG. NO. |
|---|---|---|---|
| 1982 | 1"=2 Mi. | WRD-1 | 3 of 12 |



FIGURE B-3

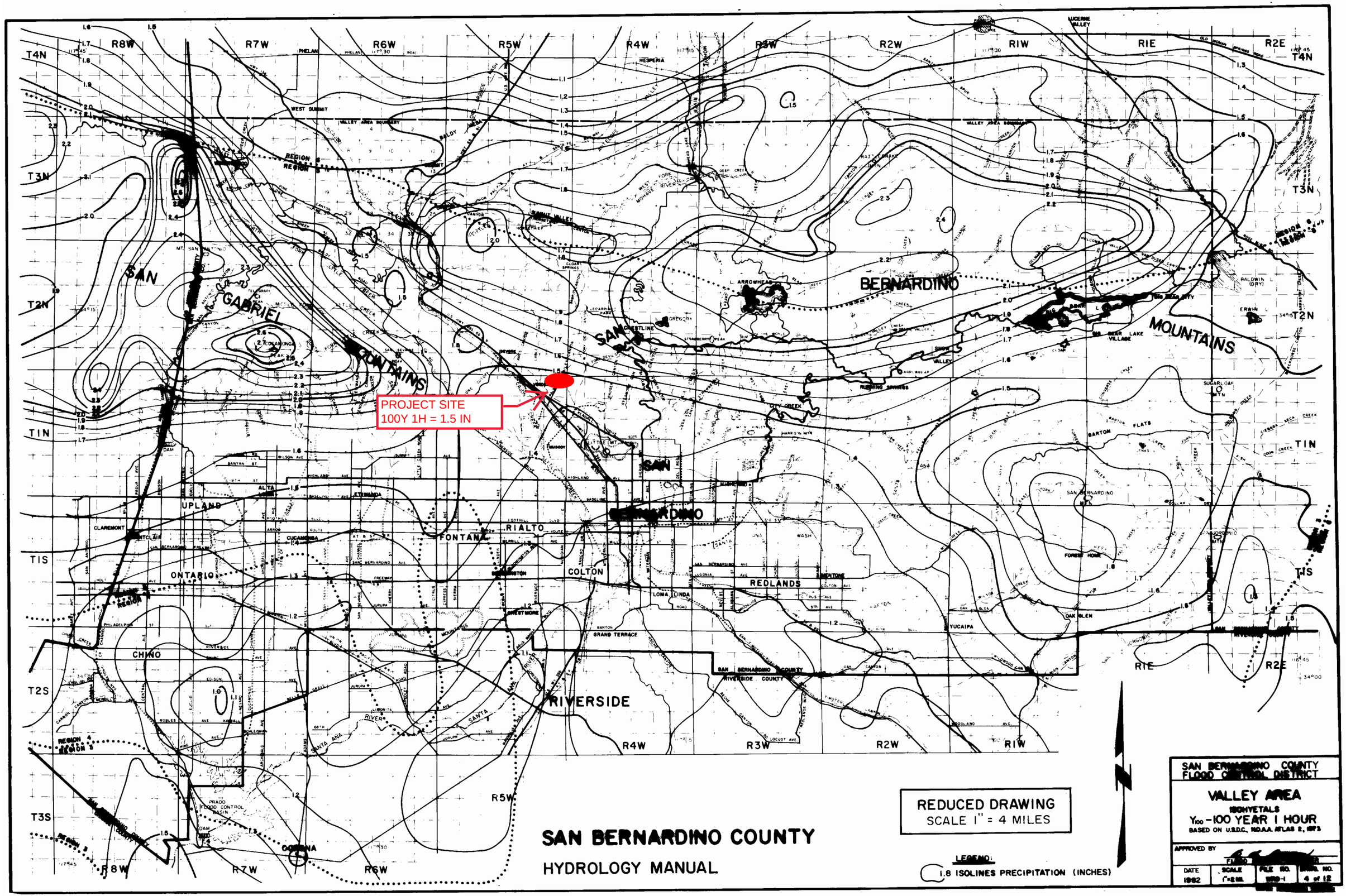

PROJECT SITE
100Y 1H = 1.5 IN
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
REDUCED DRAWING
SCALE 1" = 4 MILES
LEGEND:
1.8 ISOLINES PRECIPITATION (INCHES)
SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
Y100 - 100 YEAR 1 HOUR
BASED ON U.S.D.C., NOAA ATLAS 2, 1973
APPROVED BY
DATE 1982
SCALE 1"=2MI.
FILE NO. SBD-1
DWG. NO. 4 of 12
SAN GABRIEL MOUNTAINS
SAN BERNARDINO MOUNTAINS
SAN BERNARDINO
RIVERSIDE
UPLAND
ONTARIO
CHINO
CLAREMONT
FONTANA
RIALTO
COLTON
REDLANDS
LOMA LINDA
YUCAIPA
HIGHLAND
CRESTLINE
LAKE ARROWHEAD
BIG BEAR LAKE
RUNNING SPRINGS
SNOW VALLEY
BARTON FLATS
OAK GLEN
GRAND TERRACE
MONTCLAIR
ALTA LOMA
CUCAMONGA
PRADO FLOOD CONTROL BASIN
CORONA
HESPERIA
WEST SUMMIT
PHELAN
R8W
R7W
R6W
R5W
R4W
R3W
R2W
R1W
R1E
R2E
T4N
T3N
T2N
T1N
T1S
T2S
T3S



FIGURE B-4

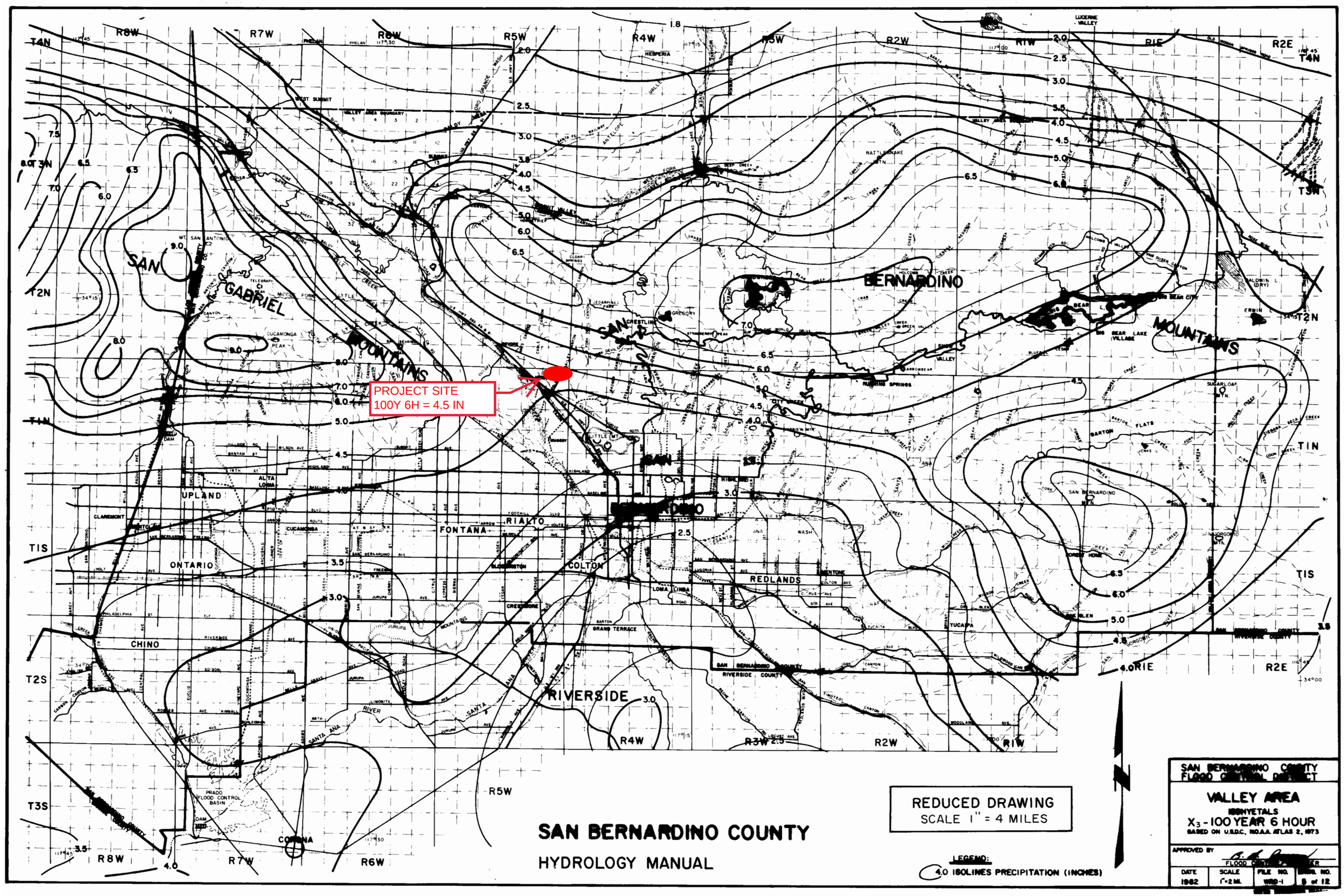

PROJECT SITE
100Y 6H = 4.5 IN
SAN BERNARDINO COUNTY
HYDROLOGY MANUAL
REDUCED DRAWING
SCALE 1" = 4 MILES
LEGEND:
4.0 ISOLINES PRECIPITATION (INCHES)
SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT
VALLEY AREA
ISOHYETALS
X3 - 100 YEAR 6 HOUR
BASED ON U.S.D.C., NOAA ATLAS 2, 1973
APPROVED BY
DATE 1982
SCALE 1"=2 MI.
FILE NO. WRD-1
SHEET NO. 8 of 12



FIGURE B-5

PROJECT SITE
100Y 24H = 12.0 IN

# SAN BERNARDINO COUNTY
## HYDROLOGY MANUAL

REDUCED DRAWING
SCALE 1" = 4 MILES

LEGEND:
6.0 ISOLINES PRECIPITATION (INCHES)

SAN BERNARDINO COUNTY
FLOOD CONTROL DISTRICT

VALLEY AREA
ISOHYETALS
$X_t$ - 100 YEAR 24 HOUR
BASED ON U.S.D.C., N.O.A.A. ATLAS 2, 1973

APPROVED BY _____
FLOOD CONTROL ENGINEER

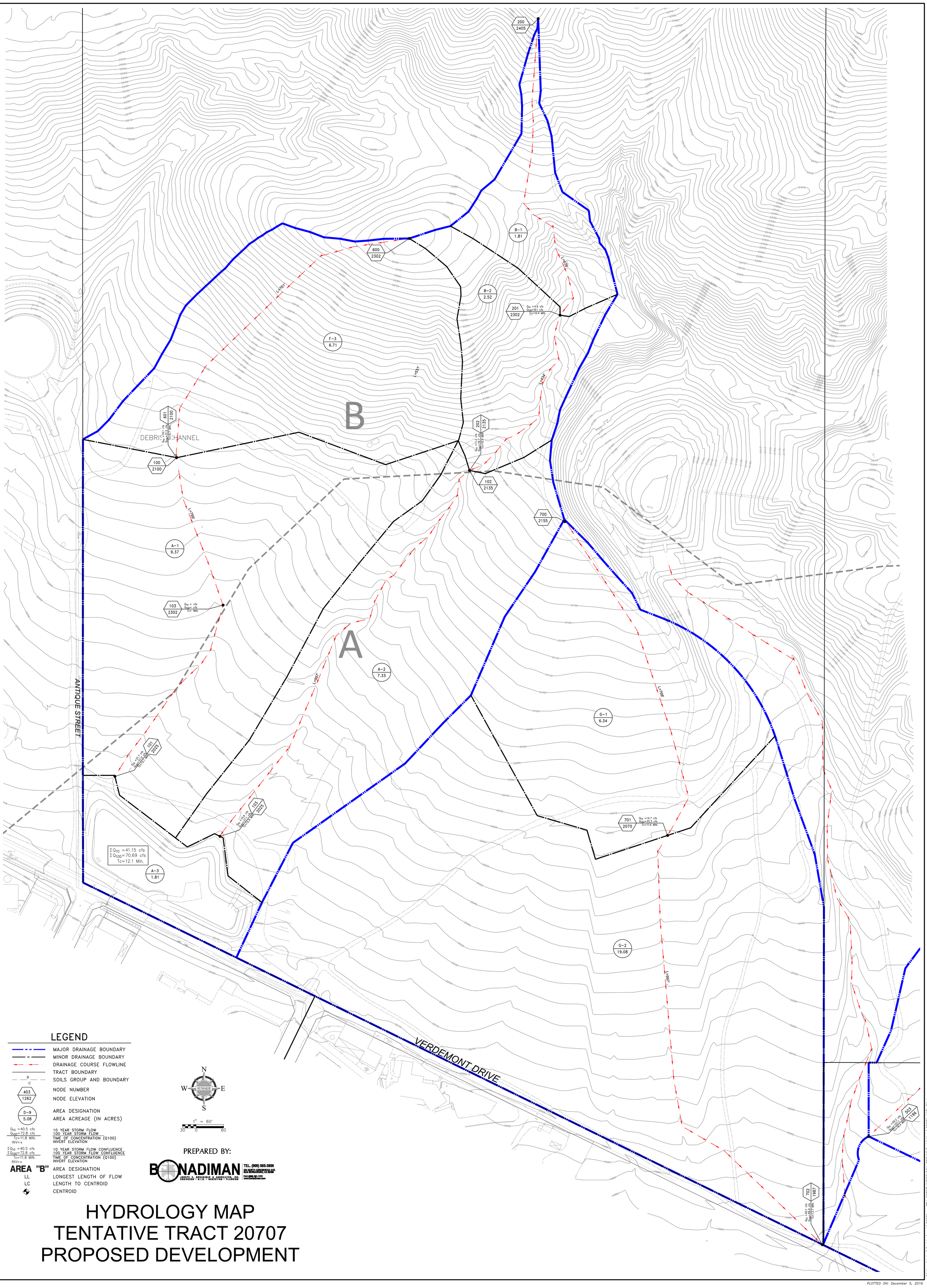
| DATE | SCALE | FILE NO. | DRWG. NO. |
|---|---|---|---|
| 1982 | 1"=2 MI. | WRD-1 | 6 of 12 |



FIGURE B-6

# EXHIBIT “F”

Existing Hydrologic Conditions
Study Map




## LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- DRAINAGE COURSE FLOWLINE
- TRACT BOUNDARY
- B / C — SOILS GROUP AND BOUNDARY
- 403 / 1262 — NODE NUMBER / NODE ELEVATION
- D-9 / 5.08 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- $Q_{10}$ =40.5 cfs / $Q_{100}$=72.8 cfs / Tc=11.8 MIN. / INV=x — 10 YEAR STORM FLOW / 100 YEAR STORM FLOW / TIME OF CONCENTRATION (Q100) / INVERT ELEVATION
- $\Sigma Q_{10}$ =40.5 cfs / $\Sigma Q_{100}$=72.8 cfs / Tc=11.8 MIN. / INV=x — 10 YEAR STORM FLOW CONFLUENCE / 100 YEAR STORM FLOW CONFLUENCE / TIME OF CONCENTRATION (Q100) / INVERT ELEVATION
- AREA "B" — AREA DESIGNATION
- LL — LONGEST LENGTH OF FLOW
- LC — LENGTH TO CENTROID
- CENTROID

N W HUNSAKER E S

1" = 60'
30 0 60

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SAN BERNARDINO, CA 92408
FAX (909) 381-1721
www.bonadiman.com

# HYDROLOGY MAP
# TENTATIVE TRACT 20707
# PROPOSED DEVELOPMENT

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PLOTTED ON: December 5, 2016

MATCHLINE SEE LEFT

MATCHLINE SEE RIGHT

500
2270

E-1
2.57

L=907'

501
2200
$Q_{10}$ =5.7 cfs
$Q_{100}$=9.6 cfs
Tc=13.4 MIN.

E-2
13.16

L=1082'

502
2100
$Q_{10}$ =30.5 cfs
$Q_{100}$=53.1 cfs
Tc=15.4 MIN.

400
2090

E-3
20.93

L=1750'

A

B

D-1
2.50

L=800'

401
2050
$Q_{10}$ =5.2 cfs
$Q_{100}$=9.0 cfs
Tc=13.9 MIN.

DEBRIS CHANNEL

300
2040

D-2
7.02

L=901'

503
1196
$Q_{10}$ =69.2 cfs
$Q_{100}$=120.1 cfs
Tc=16.6 MIN.

C-1
6.53

L=984'

702
1987
$Q_{10}$ =81.1 cfs
$Q_{100}$=139.3 cfs
Tc=13.7 MIN.

301
1960
$Q_{10}$ =11.3 cfs
$Q_{100}$=20.4 cfs
Tc=13.5 MIN.

402
1965
$Q_{10}$ =16.9 cfs
$Q_{100}$=29.2 cfs
Tc=13.7 MIN.

## LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- DRAINAGE COURSE FLOWLINE
- TRACT BOUNDARY
- B / C — SOILS GROUP AND BOUNDARY
- 403 / 1262 — NODE NUMBER / NODE ELEVATION
- D-9 / 5.08 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- $Q_{10}$ =40.5 cfs, $Q_{100}$=72.8 cfs, Tc=11.8 MIN., INV=x — 10 YEAR STORM FLOW / 100 YEAR STORM FLOW / TIME OF CONCENTRATION (Q100) / INVERT ELEVATION
- $\Sigma Q_{10}$ =40.5 cfs, $\Sigma Q_{100}$=72.8 cfs, Tc=11.8 MIN., INV=x — 10 YEAR STORM FLOW CONFLUENCE / 100 YEAR STORM FLOW CONFLUENCE / TIME OF CONCENTRATION (Q100) / INVERT ELEVATION
- AREA "B" — AREA DESIGNATION
- LL — LONGEST LENGTH OF FLOW
- LC — LENGTH TO CENTROID
- CENTROID

N W E S HUNSAKER

1" = 60'
30 0 60

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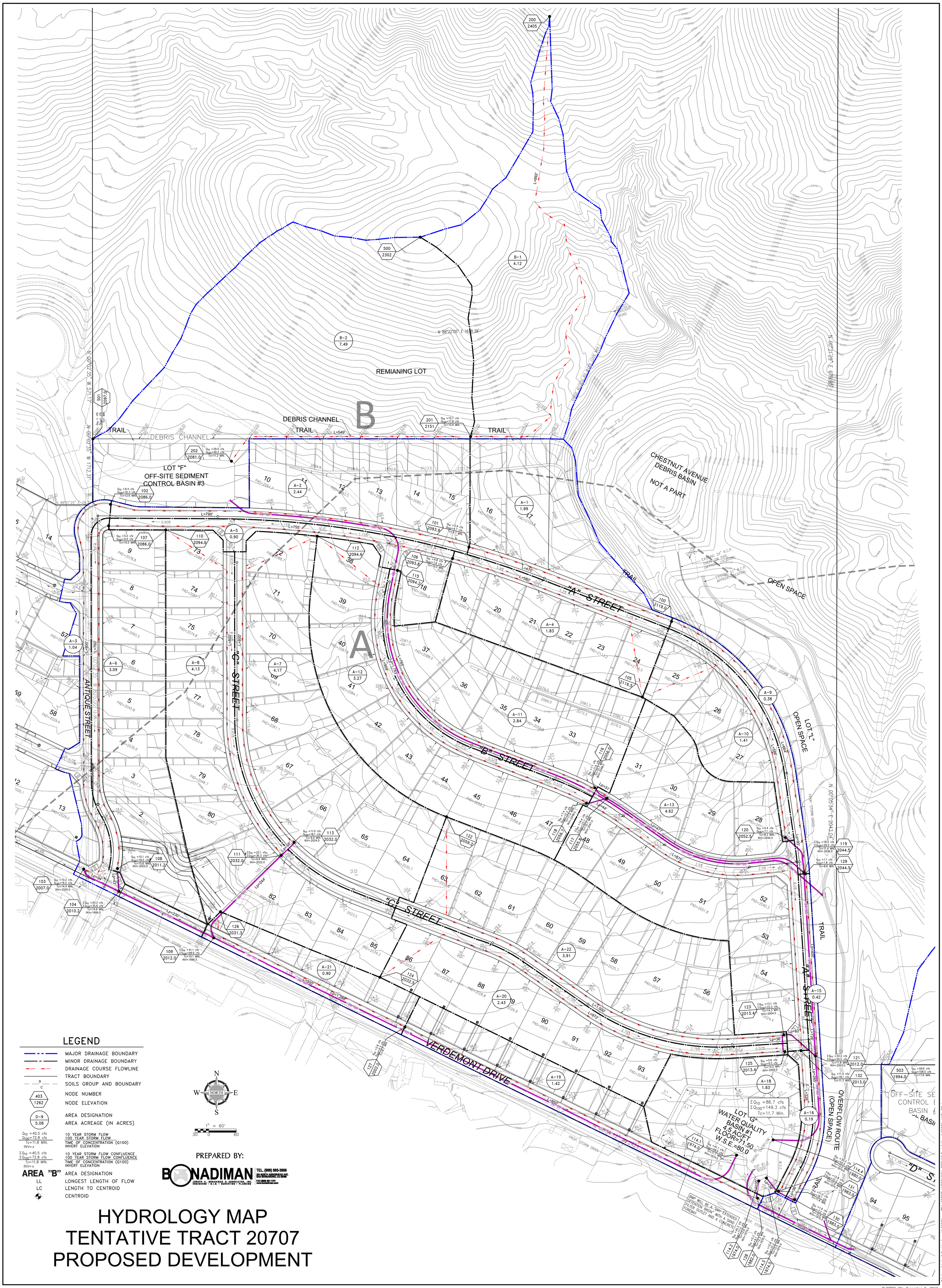
# HYDROLOGY MAP
# TENTATIVE TRACT 20707
# PROPOSED DEVELOPMENT

PLOTTED ON: December 5, 2016

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# EXHIBIT “G”

Developed Hydrologic Conditions
Study Map




## LEGEND

- MAJOR DRAINAGE BOUNDARY
- MINOR DRAINAGE BOUNDARY
- DRAINAGE COURSE FLOWLINE
- TRACT BOUNDARY
- B / C — SOILS GROUP AND BOUNDARY
- 403 / 1262 — NODE NUMBER / NODE ELEVATION
- D-9 / 5.08 — AREA DESIGNATION / AREA ACREAGE (IN ACRES)
- $Q_{10}$ = 40.5 cfs / $Q_{100}$ = 72.8 cfs — 10 YEAR STORM FLOW / 100 YEAR STORM FLOW
  Tc=11.8 MIN. — TIME OF CONCENTRATION (Q100)
  INV=x — INVERT ELEVATION
- $\Sigma Q_{10}$ = 40.5 cfs / $\Sigma Q_{100}$ = 72.8 cfs — 10 YEAR STORM FLOW CONFLUENCE / 100 YEAR STORM FLOW CONFLUENCE
  Tc=11.8 MIN. — TIME OF CONCENTRATION (Q100)
  INV=x — INVERT ELEVATION
- **AREA "B"** — AREA DESIGNATION
- LL — LONGEST LENGTH OF FLOW
- LC — LENGTH TO CENTROID
- CENTROID

N / W NORTH E / S

1" = 60'
30 0 60

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264 NORTH ARROWHEAD AVE.
SAN BERNARDINO, CA 92408
FAX (909) 381-1291
www.bonadiman.com

# HYDROLOGY MAP
# TENTATIVE TRACT 20707
# PROPOSED DEVELOPMENT

PLOTTED ON: December 5, 2016

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MATCHLINE SEE RIGHT

MATCHLINE SEE LEFT

500
2270

E-1
2.57

L=907'

501
2200
$Q_{10}$ =5.7 cfs
$Q_{100}$=9.6 cfs
Tc=13.4 MIN.

E-2
13.16

L=1082'

502
2100
$Q_{10}$ =30.5 cfs
$Q_{100}$=53.1 cfs
Tc=15.4 MIN.

400
2090

B

A

E-3
20.93

L=1570'

D-1
2.50

L=880'

D-2
7.02

L=901'

119
2044.5
$\Sigma Q_{10}$ =18.0 cfs
$\Sigma Q_{100}$=29.2 cfs
Tc=11.4 MIN.
INV=2036.0

129
2044.5
$Q_{10}$ =1.1 cfs
$Q_{100}$=1.8 cfs
Tc=8.6 MIN.

N 00°05'34" E 2043.04'

PROP. STORM DRAIN

TRAIL

L=1400'

A-15
0.42

L=726'

L=326'

A-16
0.19

OVERFLOW ROUTE (OPEN SPACE)

121
2012.0
$\Sigma Q_{10}$ =30.2 cfs
$\Sigma Q_{100}$=50.5 cfs
Tc=11.8 MIN.
INV=2003.0

132
2013.0
$Q_{10}$ =11.0 cfs
$Q_{100}$=18.1 cfs
Tc=11.3 MIN.

503
1994.0
$Q_{10}$ =59.6 cfs
$Q_{100}$=108.5 cfs
Tc=17.6 MIN.

DEBRIS CHANNEL

N 89°47'00" W 638.23'

DEBRIS CHANNEL

OFF-SITE SEDIMENT CONTROL BASIN #4

SEDIMENT BASIN #4

300
2041

103
PAD=2022.0

102
PAD=2022.0

101
PAD=2017.5

100
PAD=2001.7

105
PAD=2000.1

104
PAD=1999.1

C-1
6.54

"F" STREET

"D" STREET

114.4
1980.0
$\Sigma Q_{10}$ =32.2 cfs
$\Sigma Q_{100}$=58.4 cfs
Tc=10.5 MIN.
INV=1974.8

131
1983.0
$\Sigma Q_{10}$ =21.8 cfs
$\Sigma Q_{100}$=39.4 cfs
Tc=11.0 MIN.
INV=1974.5

130
1983.0
$Q_{10}$ =11.0 cfs
$Q_{100}$=19.9 cfs
Tc=11.9 MIN.
INV=1974.5

$Q_{10}$ =1.9 cfs
$Q_{100}$=3.3 cfs
Tc=10.5 MIN.
INV=1975.3

94
PAD=2000.0

95
PAD=1999.0

96
PAD=1998.0

97
PAD=1997.0

98
PAD=1996.3

99
PAD=1997.4

LOT "J" WATER QUALITY BASIN #2

0.95 AC/FT
FLOOR=54.7'
W.S.E.

WATER QUALITY BASIN #2

BMP WILL BE A "DRY EXTENDED DETENTION BASIN" WITH A SAND FILTER, OUTLET AND A CONCRETE FOREBAY

KEYSTONE TYPE WALL H=8' MAX. 2' MIN.

EXIST. STORM DRAIN

401
2050
$Q_{10}$ =5.2 cfs
$Q_{100}$=9.0 cfs
Tc=13.9 MIN.

D-2
7.02

301
1965
$Q_{10}$ =18.7 cfs
$Q_{100}$=35.4 cfs
Tc=11.1 MIN.
INV=1957.0

302
1956

402
1955
$Q_{10}$ =16.8 cfs
$Q_{100}$=31.8 cfs
Tc=11.7 MIN.

## LEGEND

| | |
|---|---|
| | MAJOR DRAINAGE BOUNDARY |
| | MINOR DRAINAGE BOUNDARY |
| | DRAINAGE COURSE FLOWLINE |
| | TRACT BOUNDARY |
| B / C | SOILS GROUP AND BOUNDARY |
| 403 / 1262 | NODE NUMBER / NODE ELEVATION |
| D-9 / 5.08 | AREA DESIGNATION / AREA ACREAGE (IN ACRES) |
| $Q_{10}$ =40.5 cfs, $Q_{100}$=72.8 cfs, Tc=11.8 MIN., INV=x | 10 YEAR STORM FLOW / 100 YEAR STORM FLOW, TIME OF CONCENTRATION (Q100), INVERT ELEVATION |
| $\Sigma Q_{10}$ =40.5 cfs, $\Sigma Q_{100}$=72.8 cfs, Tc=11.8 MIN., INV=x | 10 YEAR STORM FLOW CONFLUENCE / 100 YEAR STORM FLOW CONFLUENCE, TIME OF CONCENTRATION (Q100), INVERT ELEVATION |
| AREA "B" | AREA DESIGNATION |
| LL | LONGEST LENGTH OF FLOW |
| LC | LENGTH TO CENTROID |
| | CENTROID |

N
W NORTH E
S

1" = 60'
30 0 60

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# HYDROLOGY MAP
# TENTATIVE TRACT 20707
# PROPOSED DEVELOPMENT

PLOTTED ON: December 5, 2016

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# Attachment 1

# Existing Conditions
# Rational Method Calculations

Area 'A' – 10 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/14/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'A'
10 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      100.000 to Point/Station      101.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 72.50
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.493(In/Hr)
Initial subarea data:
Initial area flow distance =   789.000(Ft.)
Top (of initial area) elevation =  2100.000(Ft.)
Bottom (of initial area) elevation =  2025.000(Ft.)
Difference in elevation =    75.000(Ft.)
Slope =    0.09506  s(%)=       9.51
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.117 min.
Rainfall intensity =      3.064(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.755
Subarea runoff =     21.682(CFS)
Total initial stream area =        9.370(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.493(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      100.000 to Point/Station      101.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      9.370(Ac.)
Runoff from this stream =     21.682(CFS)
Time of concentration =   12.12 min.
Rainfall intensity =     3.064(In/Hr)
Area averaged loss rate (Fm) =    0.4932(In/Hr)
Area averaged Pervious ratio (Ap) = 1.0000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
```

```
**** INITIAL AREA EVALUATION ****
_____________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.950
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.55
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.570(In/Hr)
Initial subarea data:
Initial area flow distance =   997.000(Ft.)
Top (of initial area) elevation =  2135.000(Ft.)
Bottom (of initial area) elevation =  2025.000(Ft.)
Difference in elevation =   110.000(Ft.)
Slope =    0.11033  s(%)=      11.03
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.915 min.
Rainfall intensity =      2.930(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.725
Subarea runoff =     15.572(CFS)
Total initial stream area =        7.330(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.570(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** CONFLUENCE OF MINOR STREAMS ****
_____________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      7.330(Ac.)
Runoff from this stream =     15.572(CFS)
Time of concentration =   12.92 min.
Rainfall intensity =     2.930(In/Hr)
Area averaged loss rate (Fm) =    0.5700(In/Hr)
Area averaged Pervious ratio (Ap) = 1.0000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     21.68     9.370     12.12    0.493      3.064
2     15.57     7.330     12.92    0.570      2.930
Qmax(1) =
          1.000 *    1.000 *    21.682) +
          1.057 *    0.938 *    15.572) + =      37.120
Qmax(2) =
          0.948 *    1.000 *    21.682) +
          1.000 *    1.000 *    15.572) + =      36.125

Total of 2 streams to confluence:
Flow rates before confluence point:
      21.682      15.572
Maximum flow rates at confluence using above data:
       37.120       36.125
Area of streams before confluence:
        9.370        7.330
Effective area values after confluence:
       16.247       16.700
Results of confluence:
Total flow rate =     37.120(CFS)
Time of concentration =    12.117 min.
Effective stream area after confluence =     16.247(Ac.)
Study area average Pervious fraction(Ap) =  1.000
Study area average soil loss rate(Fm) =    0.527(In/Hr)
Study area total (this main stream) =      16.70(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      103.100
```

```
**** SUBAREA FLOW ADDITION ****
_____________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Time of concentration =    12.12 min.
Rainfall intensity =      3.064(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.744
Subarea runoff =      4.032(CFS) for    1.810(Ac.)
Total runoff =     41.152(CFS)
Effective area this stream =       18.06(Ac.)
Total Study Area (Main Stream No. 1) =       18.51(Ac.)
Area averaged Fm value =    0.532(In/Hr)
End of computations, Total Study Area =           18.51 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  70.0
```

Area 'A' – 100 Year 1 Hour - Existing Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/14/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'A'
100 YEAR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      100.000 to Point/Station      101.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 72.50
Adjusted SCS curve number for AMC 3 = 89.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.211(In/Hr)
Initial subarea data:
Initial area flow distance =   789.000(Ft.)
Top (of initial area) elevation =  2100.000(Ft.)
Bottom (of initial area) elevation =  2025.000(Ft.)
Difference in elevation =    75.000(Ft.)
Slope =    0.09506  s(%)=       9.51
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.117 min.
Rainfall intensity =      4.596(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.859
Subarea runoff =     36.984(CFS)
Total initial stream area =        9.370(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.211(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      100.000 to Point/Station      101.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      9.370(Ac.)
Runoff from this stream =     36.984(CFS)
Time of concentration =   12.12 min.
Rainfall intensity =     4.596(In/Hr)
Area averaged loss rate (Fm) =    0.2108(In/Hr)
Area averaged Pervious ratio (Ap) = 1.0000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
```

```
**** INITIAL AREA EVALUATION ****
_____________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.950
Decimal fraction soil group B = 0.050
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.55
Adjusted SCS curve number for AMC 3 = 85.04
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.282(In/Hr)
Initial subarea data:
Initial area flow distance =   997.000(Ft.)
Top (of initial area) elevation =  2135.000(Ft.)
Bottom (of initial area) elevation =  2025.000(Ft.)
Difference in elevation =   110.000(Ft.)
Slope =    0.11033  s(%)=      11.03
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.915 min.
Rainfall intensity =      4.396(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.842
Subarea runoff =     27.137(CFS)
Total initial stream area =        7.330(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.282(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** CONFLUENCE OF MINOR STREAMS ****
_____________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      7.330(Ac.)
Runoff from this stream =     27.137(CFS)
Time of concentration =   12.92 min.
Rainfall intensity =     4.396(In/Hr)
Area averaged loss rate (Fm) =    0.2822(In/Hr)
Area averaged Pervious ratio (Ap) = 1.0000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     36.98     9.370     12.12    0.211      4.596
2     27.14     7.330     12.92    0.282      4.396
Qmax(1) =
          1.000 *    1.000 *    36.984) +
          1.049 *    0.938 *    27.137) + =      63.687
Qmax(2) =
          0.954 *    1.000 *    36.984) +
          1.000 *    1.000 *    27.137) + =      62.428

Total of 2 streams to confluence:
Flow rates before confluence point:
      36.984      27.137
Maximum flow rates at confluence using above data:
       63.687       62.428
Area of streams before confluence:
        9.370        7.330
Effective area values after confluence:
       16.247       16.700
Results of confluence:
Total flow rate =     63.687(CFS)
Time of concentration =    12.117 min.
Effective stream area after confluence =     16.247(Ac.)
Study area average Pervious fraction(Ap) =  1.000
Study area average soil loss rate(Fm) =    0.242(In/Hr)
Study area total (this main stream) =      16.70(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

```
Process from Point/Station      103.000 to Point/Station      103.100
**** SUBAREA FLOW ADDITION ****
____________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
Time of concentration =    12.12 min.
Rainfall intensity =      4.596(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.852
Subarea runoff =      6.999(CFS) for    1.810(Ac.)
Total runoff =     70.685(CFS)
Effective area this stream =       18.06(Ac.)
Total Study Area (Main Stream No. 1) =       18.51(Ac.)
Area averaged Fm value =    0.247(In/Hr)
End of computations, Total Study Area =           18.51 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  70.0
```

## Area 'B' – 10 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/10/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'B'
10 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
_______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Initial subarea data:
Initial area flow distance =   679.000(Ft.)
Top (of initial area) elevation =  2405.000(Ft.)
Bottom (of initial area) elevation =  2302.000(Ft.)
Difference in elevation =   103.000(Ft.)
Slope =    0.15169  s(%)=      15.17
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.392 min.
Rainfall intensity =      3.412(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.794
Subarea runoff =      4.901(CFS)
Total initial stream area =        1.810(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.404(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
_______________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.572(Ft.), Average velocity =  12.379(Ft/s)
       ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1              0.00              5.00
       2             10.00              0.00
       3             20.00              5.00
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
Sub-Channel flow  =      8.094(CFS)
```

```
  '     '       flow top width =      2.287(Ft.)
  '     '    velocity=   12.379(Ft/s)
  '     '       area =      0.654(Sq.Ft)
  '     '       Froude number =     4.080

Upstream point elevation =  2302.000(Ft.)
Downstream point elevation =  2135.000(Ft.)
Flow length =   434.000(Ft.)
Travel time  =    0.58 min.
Time of concentration =   10.98 min.
Depth of flow =   0.572(Ft.)
Average velocity =  12.379(Ft/s)
Total irregular channel flow =     8.094(CFS)
Irregular channel normal depth above invert elev. =   0.572(Ft.)
Average velocity of channel(s) =  12.379(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Rainfall intensity =      3.284(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.789
Subarea runoff =      6.324(CFS) for    2.520(Ac.)
Total runoff =     11.224(CFS)
Effective area this stream =        4.33(Ac.)
Total Study Area (Main Stream No. 1) =        4.33(Ac.)
Area averaged Fm value =    0.404(In/Hr)
Depth of flow =   0.646(Ft.), Average velocity =  13.433(Ft/s)
End of computations, Total Study Area =            4.33 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area 'B' – 100 Year 1 Hour - Existing Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/10/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'B'
100 YEAR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Initial subarea data:
Initial area flow distance =   679.000(Ft.)
Top (of initial area) elevation =  2405.000(Ft.)
Bottom (of initial area) elevation =  2302.000(Ft.)
Difference in elevation =   103.000(Ft.)
Slope =    0.15169  s(%)=      15.17
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.392 min.
Rainfall intensity =      5.118(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.875
Subarea runoff =      8.109(CFS)
Total initial stream area =        1.810(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.140(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.692(Ft.), Average velocity =  14.058(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1             0.00             5.00
       2            10.00             0.00
       3            20.00             5.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
```

```
Sub-Channel flow  =     13.464(CFS)
  '     '       flow top width =      2.768(Ft.)
  '     '    velocity=   14.058(Ft/s)
  '     '       area =      0.958(Sq.Ft)
  '     '       Froude number =     4.212

Upstream point elevation =  2302.000(Ft.)
Downstream point elevation =  2135.000(Ft.)
Flow length =   434.000(Ft.)
Travel time  =    0.51 min.
Time of concentration =   10.91 min.
Depth of flow =   0.692(Ft.)
Average velocity =  14.058(Ft/s)
Total irregular channel flow =    13.464(CFS)
Irregular channel normal depth above invert elev. =   0.692(Ft.)
Average velocity of channel(s) =  14.058(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Rainfall intensity =      4.948(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.875
Subarea runoff =     10.627(CFS) for    2.520(Ac.)
Total runoff =     18.736(CFS)
Effective area this stream =        4.33(Ac.)
Total Study Area (Main Stream No. 1) =        4.33(Ac.)
Area averaged Fm value =    0.140(In/Hr)
Depth of flow =   0.783(Ft.), Average velocity =  15.269(Ft/s)
End of computations, Total Study Area =            4.33 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area 'C' – 10 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
--------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'C'
10 YEAR STORM
DECEMBER 17, 2024
--------------------------------------------------------------------------


Program License Serial Number 6407

--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Initial subarea data:
Initial area flow distance =   964.000(Ft.)
Top (of initial area) elevation =  2040.000(Ft.)
Bottom (of initial area) elevation =  1960.000(Ft.)
Difference in elevation =    80.000(Ft.)
Slope =    0.08299  s(%)=       8.30
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.489 min.
Rainfall intensity =      2.843(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.717
Subarea runoff =     13.307(CFS)
Total initial stream area =        6.530(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.578(In/Hr)
End of computations, Total Study Area =            6.53 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  67.0
```

Area ‘C’ – 100 Year 1 Hour - Existing Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'C'
100 YEAR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
Initial subarea data:
Initial area flow distance =   964.000(Ft.)
Top (of initial area) elevation =  2040.000(Ft.)
Bottom (of initial area) elevation =  1960.000(Ft.)
Difference in elevation =    80.000(Ft.)
Slope =    0.08299  s(%)=       8.30
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.489 min.
Rainfall intensity =      4.264(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.839
Subarea runoff =     23.355(CFS)
Total initial stream area =        6.530(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.290(In/Hr)
End of computations, Total Study Area =            6.53 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  67.0
```

Area 'D' – 10 Year 1 Hour - Existing Condition – Rational Method

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                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/10/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'D'
10 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      400.000 to Point/Station      401.000
**** INITIAL AREA EVALUATION ****
_______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.400
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 73.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.476(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
Top (of initial area) elevation =  2090.000(Ft.)
Bottom (of initial area) elevation =  2050.000(Ft.)
Difference in elevation =    40.000(Ft.)
Slope =    0.05000  s(%)=       5.00
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.855 min.
Rainfall intensity =      2.790(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.747
Subarea runoff =      5.207(CFS)
Total initial stream area =        2.500(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.476(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      402.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
_______________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.632(Ft.), Average velocity =   6.919(Ft/s)
       ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1              0.00              5.00
       2             20.00              0.00
       3             40.00              5.00
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
Sub-Channel flow  =     11.062(CFS)
```

```
  '     '       flow top width =      5.058(Ft.)
  '     '    velocity=    6.919(Ft/s)
  '     '       area =      1.599(Sq.Ft)
  '     '       Froude number =     2.169

Upstream point elevation =  2050.000(Ft.)
Downstream point elevation =  1965.000(Ft.)
Flow length =   901.000(Ft.)
Travel time  =    2.17 min.
Time of concentration =   16.03 min.
Depth of flow =   0.632(Ft.)
Average velocity =   6.919(Ft/s)
Total irregular channel flow =    11.062(CFS)
Irregular channel normal depth above invert elev. =   0.632(Ft.)
Average velocity of channel(s) =   6.919(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Rainfall intensity =      2.520(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.703
Subarea runoff =     11.657(CFS) for    7.020(Ac.)
Total runoff =     16.864(CFS)
Effective area this stream =        9.52(Ac.)
Total Study Area (Main Stream No. 1) =        9.52(Ac.)
Area averaged Fm value =    0.551(In/Hr)
Depth of flow =   0.741(Ft.), Average velocity =   7.688(Ft/s)
End of computations, Total Study Area =            9.52 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  68.7
```

Area 'D' – 100 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/10/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'D'
100 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      400.000 to Point/Station      401.000
**** INITIAL AREA EVALUATION ****
_______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.400
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 73.60
Adjusted SCS curve number for AMC 3 = 89.88
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.195(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
Top (of initial area) elevation =  2090.000(Ft.)
Bottom (of initial area) elevation =  2050.000(Ft.)
Difference in elevation =    40.000(Ft.)
Slope =    0.05000  s(%)=       5.00
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.855 min.
Rainfall intensity =      4.185(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.858
Subarea runoff =      8.978(CFS)
Total initial stream area =        2.500(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.195(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      402.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
_______________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.786(Ft.), Average velocity =   8.001(Ft/s)
       ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1             0.00              5.00
       2            20.00              0.00
       3            40.00              5.00
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
```

```
Sub-Channel flow  =     19.787(CFS)
  '     '       flow top width =      6.290(Ft.)
  '     '    velocity=    8.001(Ft/s)
  '     '       area =      2.473(Sq.Ft)
  '     '       Froude number =     2.249

Upstream point elevation =  2050.000(Ft.)
Downstream point elevation =  1965.000(Ft.)
Flow length =   901.000(Ft.)
Travel time  =    1.88 min.
Time of concentration =   15.73 min.
Depth of flow =   0.786(Ft.)
Average velocity =   8.001(Ft/s)
Total irregular channel flow =    19.787(CFS)
Irregular channel normal depth above invert elev. =   0.786(Ft.)
Average velocity of channel(s) =   8.001(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
Rainfall intensity =      3.829(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.838
Subarea runoff =     21.557(CFS) for    7.020(Ac.)
Total runoff =     30.535(CFS)
Effective area this stream =        9.52(Ac.)
Total Study Area (Main Stream No. 1) =        9.52(Ac.)
Area averaged Fm value =    0.265(In/Hr)
Depth of flow =   0.925(Ft.), Average velocity =   8.918(Ft/s)
End of computations, Total Study Area =            9.52 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  68.7
```

Area 'E' – 10 Year 1 Hour - Existing Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'E'
10 YEAR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      500.000 to Point/Station      501.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Initial subarea data:
Initial area flow distance =   907.000(Ft.)
Top (of initial area) elevation =  2270.000(Ft.)
Bottom (of initial area) elevation =  2200.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.07718  s(%)=       7.72
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.357 min.
Rainfall intensity =      2.862(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.773
Subarea runoff =      5.687(CFS)
Total initial stream area =        2.570(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.404(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      502.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.764(Ft.), Average velocity =   7.769(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1              0.00              5.00
       2             20.00              0.00
       3             40.00              5.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
Sub-Channel flow  =     18.136(CFS)
```

```
  '     '       flow top width =      6.112(Ft.)
  '     '    velocity=    7.769(Ft/s)
  '     '       area =      2.334(Sq.Ft)
  '     '       Froude number =     2.215

Upstream point elevation =  2200.000(Ft.)
Downstream point elevation =  2100.000(Ft.)
Flow length =  1082.000(Ft.)
Travel time  =    2.32 min.
Time of concentration =   15.68 min.
Depth of flow =   0.764(Ft.)
Average velocity =   7.769(Ft/s)
Total irregular channel flow =    18.136(CFS)
Irregular channel normal depth above invert elev. =   0.764(Ft.)
Average velocity of channel(s) =   7.769(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Rainfall intensity =      2.559(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.758
Subarea runoff =     24.822(CFS) for   13.160(Ac.)
Total runoff =     30.509(CFS)
Effective area this stream =       15.73(Ac.)
Total Study Area (Main Stream No. 1) =       15.73(Ac.)
Area averaged Fm value =    0.404(In/Hr)
Depth of flow =   0.928(Ft.), Average velocity =   8.848(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   1.161(Ft.), Average velocity =   8.234(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1             0.00              5.00
       2            20.00              0.00
       3            40.00              5.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
Sub-Channel flow  =     44.383(CFS)
  '     '       flow top width =      9.287(Ft.)
  '     '    velocity=    8.234(Ft/s)
  '     '       area =      5.390(Sq.Ft)
  '     '       Froude number =     1.905

Upstream point elevation =  2100.000(Ft.)
Downstream point elevation =  1996.000(Ft.)
Flow length =  1750.000(Ft.)
Travel time  =    3.54 min.
Time of concentration =   19.22 min.
Depth of flow =   1.161(Ft.)
Average velocity =   8.234(Ft/s)
Total irregular channel flow =    44.383(CFS)
Irregular channel normal depth above invert elev. =   1.161(Ft.)
Average velocity of channel(s) =   8.234(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
```

```
SCS curve number for soil(AMC 2)  = 72.50
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.493(In/Hr)
Rainfall intensity =      2.219(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.716
Subarea runoff =     27.687(CFS) for   20.930(Ac.)
Total runoff =     58.197(CFS)
Effective area this stream =       36.66(Ac.)
Total Study Area (Main Stream No. 1) =       36.66(Ac.)
Area averaged Fm value =    0.455(In/Hr)
Depth of flow =   1.285(Ft.), Average velocity =   8.811(Ft/s)
End of computations, Total Study Area =           36.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  74.9
```

Area ‘E’ – 100 Year 1 Hour - Existing Condition – Rational Method

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                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'E'
100 YEAR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      500.000 to Point/Station      501.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Initial subarea data:
Initial area flow distance =   907.000(Ft.)
Top (of initial area) elevation =  2270.000(Ft.)
Bottom (of initial area) elevation =  2200.000(Ft.)
Difference in elevation =    70.000(Ft.)
Slope =    0.07718  s(%)=       7.72
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   13.357 min.
Rainfall intensity =      4.293(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.871
Subarea runoff =      9.607(CFS)
Total initial stream area =        2.570(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.140(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      502.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.938(Ft.), Average velocity =   8.911(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1             0.00              5.00
       2            20.00              0.00
       3            40.00              5.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
```

```
Sub-Channel flow  =     31.395(CFS)
  '     '       flow top width =      7.508(Ft.)
  '     '    velocity=    8.911(Ft/s)
  '     '       area =      3.523(Sq.Ft)
  '     '       Froude number =     2.293

Upstream point elevation =  2200.000(Ft.)
Downstream point elevation =  2100.000(Ft.)
Flow length =  1082.000(Ft.)
Travel time  =    2.02 min.
Time of concentration =   15.38 min.
Depth of flow =   0.938(Ft.)
Average velocity =   8.911(Ft/s)
Total irregular channel flow =    31.395(CFS)
Irregular channel normal depth above invert elev. =   0.938(Ft.)
Average velocity of channel(s) =   8.911(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Rainfall intensity =      3.890(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.868
Subarea runoff =     43.478(CFS) for   13.160(Ac.)
Total runoff =     53.084(CFS)
Effective area this stream =       15.73(Ac.)
Total Study Area (Main Stream No. 1) =       15.73(Ac.)
Area averaged Fm value =    0.140(In/Hr)
Depth of flow =   1.143(Ft.), Average velocity =  10.162(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   1.449(Ft.), Average velocity =   9.545(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1              0.00              5.00
       2             20.00              0.00
       3             40.00              5.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
Sub-Channel flow  =     80.127(CFS)
  '     '       flow top width =     11.590(Ft.)
  '     '    velocity=    9.545(Ft/s)
  '     '       area =      8.395(Sq.Ft)
  '     '       Froude number =     1.976

Upstream point elevation =  2100.000(Ft.)
Downstream point elevation =  1996.000(Ft.)
Flow length =  1750.000(Ft.)
Travel time  =    3.06 min.
Time of concentration =   18.44 min.
Depth of flow =   1.449(Ft.)
Average velocity =   9.545(Ft/s)
Total irregular channel flow =    80.127(CFS)
Irregular channel normal depth above invert elev. =   1.449(Ft.)
Average velocity of channel(s) =   9.545(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
```

```
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 72.50
Adjusted SCS curve number for AMC 3 = 89.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.211(In/Hr)
Rainfall intensity =      3.426(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.853
Subarea runoff =     54.010(CFS) for   20.930(Ac.)
Total runoff =    107.095(CFS)
Effective area this stream =       36.66(Ac.)
Total Study Area (Main Stream No. 1) =       36.66(Ac.)
Area averaged Fm value =    0.180(In/Hr)
Depth of flow =   1.615(Ft.), Average velocity =  10.262(Ft/s)
End of computations, Total Study Area =           36.66 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  74.9
```

Area 'F' – 10 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/11/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'F'
10 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      600.000 to Point/Station      601.000
**** INITIAL AREA EVALUATION ****
_______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Initial subarea data:
Initial area flow distance =   761.000(Ft.)
Top (of initial area) elevation =  2302.000(Ft.)
Bottom (of initial area) elevation =  2100.000(Ft.)
Difference in elevation =   202.000(Ft.)
Slope =    0.26544  s(%)=      26.54
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.726 min.
Rainfall intensity =      3.574(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.798
Subarea runoff =     19.147(CFS)
Total initial stream area =        6.710(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.404(In/Hr)
End of computations, Total Study Area =            6.71 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area 'F' – 100 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/11/24
--------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'F'
100 YEAR STORM
NOVEMBER 4, 2024
--------------------------------------------------------------------------


Program License Serial Number 6407

--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      600.000 to Point/Station      601.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Initial subarea data:
Initial area flow distance =   761.000(Ft.)
Top (of initial area) elevation =  2302.000(Ft.)
Bottom (of initial area) elevation =  2100.000(Ft.)
Difference in elevation =   202.000(Ft.)
Slope =    0.26544  s(%)=      26.54
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.726 min.
Rainfall intensity =      5.361(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.876
Subarea runoff =     31.530(CFS)
Total initial stream area =        6.710(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.140(In/Hr)
End of computations, Total Study Area =            6.71 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area ‘G’ – 10 Year 1 Hour - Existing Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/14/24
-----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'G'
10 YEAR STORM
NOVEMBER 4, 2024
-----------------------------------------------------------------------


Program License Serial Number 6407

-----------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

-----------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      700.000 to Point/Station      701.000
**** INITIAL AREA EVALUATION ****
_______________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Initial subarea data:
Initial area flow distance =   768.000(Ft.)
Top (of initial area) elevation =  2155.000(Ft.)
Bottom (of initial area) elevation =  2070.000(Ft.)
Difference in elevation =    85.000(Ft.)
Slope =    0.11068  s(%)=      11.07
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.628 min.
Rainfall intensity =      3.154(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.735
Subarea runoff =     14.697(CFS)
Total initial stream area =        6.340(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.578(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      701.000 to Point/Station      702.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
_______________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.683(Ft.), Average velocity =   6.958(Ft/s)
       ******* Irregular Channel Data ***********
-----------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1              0.00              2.00
       2             20.00              0.00
       3             40.00              2.00
Manning's 'N' friction factor =   0.030
-----------------------------------------------------------------
Sub-Channel flow  =     32.430(CFS)
```

```
  '     '       flow top width =     13.654(Ft.)
  '     '    velocity=    6.958(Ft/s)
  '     '       area =      4.661(Sq.Ft)
  '     '       Froude number =     2.099

Upstream point elevation =  2070.000(Ft.)
Downstream point elevation =  1987.000(Ft.)
Flow length =   997.000(Ft.)
Travel time  =    2.39 min.
Time of concentration =   14.02 min.
Depth of flow =   0.683(Ft.)
Average velocity =   6.958(Ft/s)
Total irregular channel flow =    32.430(CFS)
Irregular channel normal depth above invert elev. =   0.683(Ft.)
Average velocity of channel(s) =   6.958(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
Rainfall intensity =      2.767(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.712
Subarea runoff =     35.385(CFS) for   19.080(Ac.)
Total runoff =     50.081(CFS)
Effective area this stream =       25.42(Ac.)
Total Study Area (Main Stream No. 1) =       25.42(Ac.)
Area averaged Fm value =    0.578(In/Hr)
Depth of flow =   0.804(Ft.), Average velocity =   7.756(Ft/s)
End of computations, Total Study Area =           25.42 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  67.0
```

Area ‘G’ – 100 Year 1 Hour - Existing Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 11/14/24
------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY RATIONAL
DRAINAGE AREA 'G'
100 YEAR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      700.000 to Point/Station      701.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
Initial subarea data:
Initial area flow distance =   768.000(Ft.)
Top (of initial area) elevation =  2155.000(Ft.)
Bottom (of initial area) elevation =  2070.000(Ft.)
Difference in elevation =    85.000(Ft.)
Slope =    0.11068  s(%)=      11.07
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.628 min.
Rainfall intensity =      4.731(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.845
Subarea runoff =     25.340(CFS)
Total initial stream area =        6.340(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.290(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      701.000 to Point/Station      702.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.000(CFS)
Depth of flow =   0.847(Ft.), Average velocity =   8.033(Ft/s)
       ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
       1             0.00              2.00
       2            20.00              0.00
       3            40.00              2.00
Manning's 'N' friction factor =   0.030
------------------------------------------------------------------
```

```
Sub-Channel flow  =     57.637(CFS)
  '     '       flow top width =     16.941(Ft.)
  '     '    velocity=    8.033(Ft/s)
  '     '       area =      7.175(Sq.Ft)
  '     '       Froude number =     2.175

Upstream point elevation =  2070.000(Ft.)
Downstream point elevation =  1987.000(Ft.)
Flow length =   997.000(Ft.)
Travel time  =    2.07 min.
Time of concentration =   13.70 min.
Depth of flow =   0.847(Ft.)
Average velocity =   8.033(Ft/s)
Total irregular channel flow =    57.637(CFS)
Irregular channel normal depth above invert elev. =   0.847(Ft.)
Average velocity of channel(s) =   8.033(Ft/s)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
Rainfall intensity =      4.219(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.838
Subarea runoff =     64.541(CFS) for   19.080(Ac.)
Total runoff =     89.881(CFS)
Effective area this stream =       25.42(Ac.)
Total Study Area (Main Stream No. 1) =       25.42(Ac.)
Area averaged Fm value =    0.290(In/Hr)
Depth of flow =   1.001(Ft.), Average velocity =   8.977(Ft/s)
End of computations, Total Study Area =           25.42 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  67.0
```

# Attachment 2

# Existing Conditions
# Unit Hydrograph Calculations

Area 'A' – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            18.06            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 70.0      51.0         18.06      1.000     0.797    1.000    0.797

Area-averaged adjusted loss rate Fm (In/Hr) =  0.797

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 18.06 | 1.000 | 70.0 | 51.0 | 9.61 | 0.092 |

Area-averaged catchment yield fraction, Y = 0.092
Area-averaged low loss fraction, Yb = 0.908
User entry of time of concentration = 0.202 (hours)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Watershed area = 18.06(Ac.)
Catchment Lag time = 0.162 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.5677
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.797(In/Hr)
Average low loss rate fraction (Yb) = 0.908 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 18.06(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.308(In)
30-minute factor = 0.999 Adjusted rainfall = 0.528(In)
1-hour factor = 0.999 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)

---

U n i t H y d r o g r a p h

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 218.41 (CFS)) | |
| 1 | 4.472 | 9.767 |
| 2 | 26.592 | 48.314 |
| 3 | 64.398 | 82.572 |
| 4 | 78.587 | 30.990 |
| 5 | 86.751 | 17.831 |
| 6 | 92.030 | 11.532 |
| 7 | 95.442 | 7.452 |
| 8 | 97.482 | 4.455 |
| 9 | 98.356 | 1.909 |
| 10 | 98.889 | 1.165 |
| 11 | 99.255 | 0.797 |
| 12 | 99.630 | 0.821 |
| 13 | 99.870 | 0.524 |
| 14 | 100.000 | 0.283 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3084 | 0.3084 |
| 2 | 0.3797 | 0.0713 |
| 3 | 0.4288 | 0.0491 |
| 4 | 0.4675 | 0.0387 |
| 5 | 0.4998 | 0.0324 |
| 6 | 0.5279 | 0.0281 |
| 7 | 0.5529 | 0.0250 |
| 8 | 0.5755 | 0.0226 |
| 9 | 0.5962 | 0.0207 |
| 10 | 0.6154 | 0.0191 |
| 11 | 0.6332 | 0.0178 |
| 12 | 0.6500 | 0.0167 |

| | | |
|---|---|---|
| 13 | 0.6834 | 0.0335 |
| 14 | 0.7160 | 0.0325 |
| 15 | 0.7477 | 0.0317 |
| 16 | 0.7786 | 0.0309 |
| 17 | 0.8087 | 0.0302 |
| 18 | 0.8383 | 0.0295 |
| 19 | 0.8672 | 0.0289 |
| 20 | 0.8956 | 0.0284 |
| 21 | 0.9234 | 0.0278 |
| 22 | 0.9508 | 0.0274 |
| 23 | 0.9777 | 0.0269 |
| 24 | 1.0041 | 0.0265 |
| 25 | 1.0302 | 0.0261 |
| 26 | 1.0558 | 0.0257 |
| 27 | 1.0812 | 0.0253 |
| 28 | 1.1061 | 0.0250 |
| 29 | 1.1307 | 0.0246 |
| 30 | 1.1550 | 0.0243 |
| 31 | 1.1791 | 0.0240 |
| 32 | 1.2028 | 0.0237 |
| 33 | 1.2262 | 0.0235 |
| 34 | 1.2494 | 0.0232 |
| 35 | 1.2724 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3175 | 0.0224 |
| 38 | 1.3397 | 0.0222 |
| 39 | 1.3617 | 0.0220 |
| 40 | 1.3835 | 0.0218 |
| 41 | 1.4051 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4476 | 0.0212 |
| 44 | 1.4687 | 0.0210 |
| 45 | 1.4895 | 0.0208 |
| 46 | 1.5102 | 0.0207 |
| 47 | 1.5307 | 0.0205 |
| 48 | 1.5510 | 0.0203 |
| 49 | 1.5712 | 0.0202 |
| 50 | 1.5912 | 0.0200 |
| 51 | 1.6111 | 0.0199 |
| 52 | 1.6308 | 0.0197 |
| 53 | 1.6504 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6892 | 0.0193 |
| 56 | 1.7084 | 0.0192 |
| 57 | 1.7274 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7652 | 0.0188 |
| 60 | 1.7839 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8209 | 0.0185 |
| 63 | 1.8393 | 0.0184 |
| 64 | 1.8575 | 0.0182 |
| 65 | 1.8757 | 0.0181 |
| 66 | 1.8937 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9295 | 0.0178 |
| 69 | 1.9472 | 0.0177 |
| 70 | 1.9649 | 0.0176 |
| 71 | 1.9824 | 0.0176 |
| 72 | 1.9999 | 0.0175 |
| 73 | 2.0137 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0411 | 0.0137 |
| 76 | 2.0547 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1212 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1472 | 0.0130 |

| | | |
|---|---|---|
| 84 | 2.1601 | 0.0129 |
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1857 | 0.0127 |
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2235 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2483 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2729 | 0.0123 |
| 94 | 2.2851 | 0.0122 |
| 95 | 2.2972 | 0.0121 |
| 96 | 2.3093 | 0.0121 |
| 97 | 2.3213 | 0.0120 |
| 98 | 2.3332 | 0.0119 |
| 99 | 2.3451 | 0.0119 |
| 100 | 2.3569 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3920 | 0.0116 |
| 104 | 2.4036 | 0.0116 |
| 105 | 2.4151 | 0.0115 |
| 106 | 2.4266 | 0.0115 |
| 107 | 2.4380 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4607 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4943 | 0.0112 |
| 113 | 2.5054 | 0.0111 |
| 114 | 2.5165 | 0.0111 |
| 115 | 2.5275 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5494 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5711 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5926 | 0.0107 |
| 122 | 2.6033 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6351 | 0.0106 |
| 126 | 2.6456 | 0.0105 |
| 127 | 2.6561 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6873 | 0.0104 |
| 131 | 2.6976 | 0.0103 |
| 132 | 2.7079 | 0.0103 |
| 133 | 2.7181 | 0.0102 |
| 134 | 2.7283 | 0.0102 |
| 135 | 2.7385 | 0.0102 |
| 136 | 2.7486 | 0.0101 |
| 137 | 2.7587 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7987 | 0.0099 |
| 142 | 2.8086 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8283 | 0.0098 |
| 145 | 2.8381 | 0.0098 |
| 146 | 2.8479 | 0.0098 |
| 147 | 2.8576 | 0.0097 |
| 148 | 2.8673 | 0.0097 |
| 149 | 2.8770 | 0.0097 |
| 150 | 2.8866 | 0.0096 |
| 151 | 2.8962 | 0.0096 |
| 152 | 2.9058 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |

| | | |
|---|---|---|
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9438 | 0.0095 |
| 157 | 2.9532 | 0.0094 |
| 158 | 2.9626 | 0.0094 |
| 159 | 2.9720 | 0.0094 |
| 160 | 2.9813 | 0.0093 |
| 161 | 2.9906 | 0.0093 |
| 162 | 2.9999 | 0.0093 |
| 163 | 3.0091 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0275 | 0.0092 |
| 166 | 3.0367 | 0.0092 |
| 167 | 3.0458 | 0.0091 |
| 168 | 3.0549 | 0.0091 |
| 169 | 3.0640 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0821 | 0.0090 |
| 172 | 3.0911 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1090 | 0.0089 |
| 175 | 3.1179 | 0.0089 |
| 176 | 3.1268 | 0.0089 |
| 177 | 3.1357 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1709 | 0.0088 |
| 182 | 3.1797 | 0.0087 |
| 183 | 3.1884 | 0.0087 |
| 184 | 3.1971 | 0.0087 |
| 185 | 3.2058 | 0.0087 |
| 186 | 3.2144 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2488 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2828 | 0.0085 |
| 195 | 3.2913 | 0.0085 |
| 196 | 3.2997 | 0.0084 |
| 197 | 3.3081 | 0.0084 |
| 198 | 3.3165 | 0.0084 |
| 199 | 3.3249 | 0.0084 |
| 200 | 3.3332 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3581 | 0.0083 |
| 204 | 3.3664 | 0.0083 |
| 205 | 3.3746 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3992 | 0.0082 |
| 209 | 3.4074 | 0.0082 |
| 210 | 3.4155 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4479 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4640 | 0.0080 |
| 217 | 3.4720 | 0.0080 |
| 218 | 3.4800 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4959 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5354 | 0.0079 |

| | | |
|---|---|---|
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5511 | 0.0078 |
| 228 | 3.5589 | 0.0078 |
| 229 | 3.5667 | 0.0078 |
| 230 | 3.5745 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5900 | 0.0077 |
| 233 | 3.5977 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6131 | 0.0077 |
| 236 | 3.6208 | 0.0077 |
| 237 | 3.6285 | 0.0077 |
| 238 | 3.6361 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6741 | 0.0076 |
| 244 | 3.6817 | 0.0076 |
| 245 | 3.6892 | 0.0075 |
| 246 | 3.6967 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7117 | 0.0075 |
| 249 | 3.7192 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7341 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7711 | 0.0074 |
| 257 | 3.7785 | 0.0074 |
| 258 | 3.7858 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8005 | 0.0073 |
| 261 | 3.8078 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8296 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8441 | 0.0072 |
| 267 | 3.8513 | 0.0072 |
| 268 | 3.8585 | 0.0072 |
| 269 | 3.8657 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8872 | 0.0072 |
| 273 | 3.8943 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9298 | 0.0071 |
| 279 | 3.9369 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9510 | 0.0070 |
| 282 | 3.9580 | 0.0070 |
| 283 | 3.9650 | 0.0070 |
| 284 | 3.9720 | 0.0070 |
| 285 | 3.9790 | 0.0070 |
| 286 | 3.9860 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 3.9999 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0063 | 0.0006 |
| 2 | 0.0070 | 0.0063 | 0.0006 |
| 3 | 0.0070 | 0.0063 | 0.0006 |

| | | | |
|---|---|---|---|
| 4 | 0.0070 | 0.0064 | 0.0006 |
| 5 | 0.0070 | 0.0064 | 0.0006 |
| 6 | 0.0070 | 0.0064 | 0.0007 |
| 7 | 0.0071 | 0.0064 | 0.0007 |
| 8 | 0.0071 | 0.0064 | 0.0007 |
| 9 | 0.0071 | 0.0064 | 0.0007 |
| 10 | 0.0071 | 0.0065 | 0.0007 |
| 11 | 0.0071 | 0.0065 | 0.0007 |
| 12 | 0.0072 | 0.0065 | 0.0007 |
| 13 | 0.0072 | 0.0065 | 0.0007 |
| 14 | 0.0072 | 0.0065 | 0.0007 |
| 15 | 0.0072 | 0.0066 | 0.0007 |
| 16 | 0.0072 | 0.0066 | 0.0007 |
| 17 | 0.0073 | 0.0066 | 0.0007 |
| 18 | 0.0073 | 0.0066 | 0.0007 |
| 19 | 0.0073 | 0.0066 | 0.0007 |
| 20 | 0.0073 | 0.0066 | 0.0007 |
| 21 | 0.0073 | 0.0067 | 0.0007 |
| 22 | 0.0074 | 0.0067 | 0.0007 |
| 23 | 0.0074 | 0.0067 | 0.0007 |
| 24 | 0.0074 | 0.0067 | 0.0007 |
| 25 | 0.0074 | 0.0067 | 0.0007 |
| 26 | 0.0074 | 0.0068 | 0.0007 |
| 27 | 0.0075 | 0.0068 | 0.0007 |
| 28 | 0.0075 | 0.0068 | 0.0007 |
| 29 | 0.0075 | 0.0068 | 0.0007 |
| 30 | 0.0075 | 0.0068 | 0.0007 |
| 31 | 0.0076 | 0.0069 | 0.0007 |
| 32 | 0.0076 | 0.0069 | 0.0007 |
| 33 | 0.0076 | 0.0069 | 0.0007 |
| 34 | 0.0076 | 0.0069 | 0.0007 |
| 35 | 0.0077 | 0.0070 | 0.0007 |
| 36 | 0.0077 | 0.0070 | 0.0007 |
| 37 | 0.0077 | 0.0070 | 0.0007 |
| 38 | 0.0077 | 0.0070 | 0.0007 |
| 39 | 0.0078 | 0.0070 | 0.0007 |
| 40 | 0.0078 | 0.0071 | 0.0007 |
| 41 | 0.0078 | 0.0071 | 0.0007 |
| 42 | 0.0078 | 0.0071 | 0.0007 |
| 43 | 0.0079 | 0.0071 | 0.0007 |
| 44 | 0.0079 | 0.0072 | 0.0007 |
| 45 | 0.0079 | 0.0072 | 0.0007 |
| 46 | 0.0079 | 0.0072 | 0.0007 |
| 47 | 0.0080 | 0.0072 | 0.0007 |
| 48 | 0.0080 | 0.0073 | 0.0007 |
| 49 | 0.0080 | 0.0073 | 0.0007 |
| 50 | 0.0080 | 0.0073 | 0.0007 |
| 51 | 0.0081 | 0.0073 | 0.0007 |
| 52 | 0.0081 | 0.0074 | 0.0007 |
| 53 | 0.0081 | 0.0074 | 0.0008 |
| 54 | 0.0082 | 0.0074 | 0.0008 |
| 55 | 0.0082 | 0.0074 | 0.0008 |
| 56 | 0.0082 | 0.0075 | 0.0008 |
| 57 | 0.0083 | 0.0075 | 0.0008 |
| 58 | 0.0083 | 0.0075 | 0.0008 |
| 59 | 0.0083 | 0.0076 | 0.0008 |
| 60 | 0.0083 | 0.0076 | 0.0008 |
| 61 | 0.0084 | 0.0076 | 0.0008 |
| 62 | 0.0084 | 0.0076 | 0.0008 |
| 63 | 0.0085 | 0.0077 | 0.0008 |
| 64 | 0.0085 | 0.0077 | 0.0008 |
| 65 | 0.0085 | 0.0077 | 0.0008 |
| 66 | 0.0085 | 0.0077 | 0.0008 |
| 67 | 0.0086 | 0.0078 | 0.0008 |
| 68 | 0.0086 | 0.0078 | 0.0008 |
| 69 | 0.0087 | 0.0079 | 0.0008 |
| 70 | 0.0087 | 0.0079 | 0.0008 |
| 71 | 0.0087 | 0.0079 | 0.0008 |
| 72 | 0.0087 | 0.0079 | 0.0008 |
| 73 | 0.0088 | 0.0080 | 0.0008 |
| 74 | 0.0088 | 0.0080 | 0.0008 |

| | | | |
|---|---|---|---|
| 75 | 0.0089 | 0.0081 | 0.0008 |
| 76 | 0.0089 | 0.0081 | 0.0008 |
| 77 | 0.0089 | 0.0081 | 0.0008 |
| 78 | 0.0090 | 0.0081 | 0.0008 |
| 79 | 0.0090 | 0.0082 | 0.0008 |
| 80 | 0.0091 | 0.0082 | 0.0008 |
| 81 | 0.0091 | 0.0083 | 0.0008 |
| 82 | 0.0091 | 0.0083 | 0.0008 |
| 83 | 0.0092 | 0.0083 | 0.0008 |
| 84 | 0.0092 | 0.0084 | 0.0009 |
| 85 | 0.0093 | 0.0084 | 0.0009 |
| 86 | 0.0093 | 0.0084 | 0.0009 |
| 87 | 0.0094 | 0.0085 | 0.0009 |
| 88 | 0.0094 | 0.0085 | 0.0009 |
| 89 | 0.0095 | 0.0086 | 0.0009 |
| 90 | 0.0095 | 0.0086 | 0.0009 |
| 91 | 0.0095 | 0.0087 | 0.0009 |
| 92 | 0.0096 | 0.0087 | 0.0009 |
| 93 | 0.0096 | 0.0087 | 0.0009 |
| 94 | 0.0097 | 0.0088 | 0.0009 |
| 95 | 0.0097 | 0.0088 | 0.0009 |
| 96 | 0.0098 | 0.0089 | 0.0009 |
| 97 | 0.0098 | 0.0089 | 0.0009 |
| 98 | 0.0099 | 0.0090 | 0.0009 |
| 99 | 0.0099 | 0.0090 | 0.0009 |
| 100 | 0.0100 | 0.0091 | 0.0009 |
| 101 | 0.0101 | 0.0091 | 0.0009 |
| 102 | 0.0101 | 0.0092 | 0.0009 |
| 103 | 0.0102 | 0.0092 | 0.0009 |
| 104 | 0.0102 | 0.0093 | 0.0009 |
| 105 | 0.0103 | 0.0093 | 0.0009 |
| 106 | 0.0103 | 0.0094 | 0.0010 |
| 107 | 0.0104 | 0.0094 | 0.0010 |
| 108 | 0.0104 | 0.0095 | 0.0010 |
| 109 | 0.0105 | 0.0095 | 0.0010 |
| 110 | 0.0106 | 0.0096 | 0.0010 |
| 111 | 0.0106 | 0.0097 | 0.0010 |
| 112 | 0.0107 | 0.0097 | 0.0010 |
| 113 | 0.0108 | 0.0098 | 0.0010 |
| 114 | 0.0108 | 0.0098 | 0.0010 |
| 115 | 0.0109 | 0.0099 | 0.0010 |
| 116 | 0.0110 | 0.0100 | 0.0010 |
| 117 | 0.0111 | 0.0100 | 0.0010 |
| 118 | 0.0111 | 0.0101 | 0.0010 |
| 119 | 0.0112 | 0.0102 | 0.0010 |
| 120 | 0.0113 | 0.0102 | 0.0010 |
| 121 | 0.0114 | 0.0103 | 0.0011 |
| 122 | 0.0114 | 0.0104 | 0.0011 |
| 123 | 0.0115 | 0.0105 | 0.0011 |
| 124 | 0.0116 | 0.0105 | 0.0011 |
| 125 | 0.0117 | 0.0106 | 0.0011 |
| 126 | 0.0118 | 0.0107 | 0.0011 |
| 127 | 0.0119 | 0.0108 | 0.0011 |
| 128 | 0.0119 | 0.0108 | 0.0011 |
| 129 | 0.0121 | 0.0109 | 0.0011 |
| 130 | 0.0121 | 0.0110 | 0.0011 |
| 131 | 0.0123 | 0.0111 | 0.0011 |
| 132 | 0.0123 | 0.0112 | 0.0011 |
| 133 | 0.0125 | 0.0113 | 0.0012 |
| 134 | 0.0125 | 0.0114 | 0.0012 |
| 135 | 0.0127 | 0.0115 | 0.0012 |
| 136 | 0.0127 | 0.0116 | 0.0012 |
| 137 | 0.0129 | 0.0117 | 0.0012 |
| 138 | 0.0130 | 0.0118 | 0.0012 |
| 139 | 0.0131 | 0.0119 | 0.0012 |
| 140 | 0.0132 | 0.0120 | 0.0012 |
| 141 | 0.0134 | 0.0121 | 0.0012 |
| 142 | 0.0135 | 0.0122 | 0.0012 |
| 143 | 0.0137 | 0.0124 | 0.0013 |
| 144 | 0.0137 | 0.0125 | 0.0013 |
| 145 | 0.0175 | 0.0158 | 0.0016 |

| | | | |
|---|---|---|---|
| 146 | 0.0176 | 0.0159 | 0.0016 |
| 147 | 0.0177 | 0.0161 | 0.0016 |
| 148 | 0.0178 | 0.0162 | 0.0016 |
| 149 | 0.0180 | 0.0164 | 0.0017 |
| 150 | 0.0181 | 0.0165 | 0.0017 |
| 151 | 0.0184 | 0.0167 | 0.0017 |
| 152 | 0.0185 | 0.0168 | 0.0017 |
| 153 | 0.0187 | 0.0170 | 0.0017 |
| 154 | 0.0188 | 0.0171 | 0.0017 |
| 155 | 0.0191 | 0.0173 | 0.0018 |
| 156 | 0.0192 | 0.0174 | 0.0018 |
| 157 | 0.0195 | 0.0177 | 0.0018 |
| 158 | 0.0196 | 0.0178 | 0.0018 |
| 159 | 0.0199 | 0.0180 | 0.0018 |
| 160 | 0.0200 | 0.0182 | 0.0019 |
| 161 | 0.0203 | 0.0185 | 0.0019 |
| 162 | 0.0205 | 0.0186 | 0.0019 |
| 163 | 0.0208 | 0.0189 | 0.0019 |
| 164 | 0.0210 | 0.0191 | 0.0019 |
| 165 | 0.0214 | 0.0194 | 0.0020 |
| 166 | 0.0216 | 0.0196 | 0.0020 |
| 167 | 0.0220 | 0.0200 | 0.0020 |
| 168 | 0.0222 | 0.0202 | 0.0021 |
| 169 | 0.0227 | 0.0206 | 0.0021 |
| 170 | 0.0229 | 0.0208 | 0.0021 |
| 171 | 0.0235 | 0.0213 | 0.0022 |
| 172 | 0.0237 | 0.0215 | 0.0022 |
| 173 | 0.0243 | 0.0221 | 0.0022 |
| 174 | 0.0246 | 0.0224 | 0.0023 |
| 175 | 0.0253 | 0.0230 | 0.0023 |
| 176 | 0.0257 | 0.0233 | 0.0024 |
| 177 | 0.0265 | 0.0240 | 0.0024 |
| 178 | 0.0269 | 0.0244 | 0.0025 |
| 179 | 0.0278 | 0.0253 | 0.0026 |
| 180 | 0.0284 | 0.0257 | 0.0026 |
| 181 | 0.0295 | 0.0268 | 0.0027 |
| 182 | 0.0302 | 0.0274 | 0.0028 |
| 183 | 0.0317 | 0.0288 | 0.0029 |
| 184 | 0.0325 | 0.0295 | 0.0030 |
| 185 | 0.0167 | 0.0152 | 0.0015 |
| 186 | 0.0178 | 0.0162 | 0.0016 |
| 187 | 0.0207 | 0.0188 | 0.0019 |
| 188 | 0.0226 | 0.0205 | 0.0021 |
| 189 | 0.0281 | 0.0255 | 0.0026 |
| 190 | 0.0324 | 0.0294 | 0.0030 |
| 191 | 0.0491 | 0.0446 | 0.0045 |
| 192 | 0.0713 | 0.0647 | 0.0066 |
| 193 | 0.3084 | 0.0665 | 0.2420 |
| 194 | 0.0387 | 0.0351 | 0.0036 |
| 195 | 0.0250 | 0.0227 | 0.0023 |
| 196 | 0.0191 | 0.0174 | 0.0018 |
| 197 | 0.0335 | 0.0304 | 0.0031 |
| 198 | 0.0309 | 0.0280 | 0.0029 |
| 199 | 0.0289 | 0.0263 | 0.0027 |
| 200 | 0.0274 | 0.0248 | 0.0025 |
| 201 | 0.0261 | 0.0236 | 0.0024 |
| 202 | 0.0250 | 0.0227 | 0.0023 |
| 203 | 0.0240 | 0.0218 | 0.0022 |
| 204 | 0.0232 | 0.0210 | 0.0021 |
| 205 | 0.0224 | 0.0204 | 0.0021 |
| 206 | 0.0218 | 0.0198 | 0.0020 |
| 207 | 0.0212 | 0.0192 | 0.0020 |
| 208 | 0.0207 | 0.0188 | 0.0019 |
| 209 | 0.0202 | 0.0183 | 0.0019 |
| 210 | 0.0197 | 0.0179 | 0.0018 |
| 211 | 0.0193 | 0.0175 | 0.0018 |
| 212 | 0.0189 | 0.0172 | 0.0018 |
| 213 | 0.0186 | 0.0169 | 0.0017 |
| 214 | 0.0182 | 0.0166 | 0.0017 |
| 215 | 0.0179 | 0.0163 | 0.0017 |
| 216 | 0.0176 | 0.0160 | 0.0016 |

| | | | |
|---|---|---|---|
| 217 | 0.0138 | 0.0126 | 0.0013 |
| 218 | 0.0136 | 0.0123 | 0.0013 |
| 219 | 0.0133 | 0.0121 | 0.0012 |
| 220 | 0.0131 | 0.0118 | 0.0012 |
| 221 | 0.0128 | 0.0116 | 0.0012 |
| 222 | 0.0126 | 0.0114 | 0.0012 |
| 223 | 0.0124 | 0.0112 | 0.0011 |
| 224 | 0.0122 | 0.0111 | 0.0011 |
| 225 | 0.0120 | 0.0109 | 0.0011 |
| 226 | 0.0118 | 0.0107 | 0.0011 |
| 227 | 0.0116 | 0.0106 | 0.0011 |
| 228 | 0.0115 | 0.0104 | 0.0011 |
| 229 | 0.0113 | 0.0103 | 0.0010 |
| 230 | 0.0112 | 0.0101 | 0.0010 |
| 231 | 0.0110 | 0.0100 | 0.0010 |
| 232 | 0.0109 | 0.0099 | 0.0010 |
| 233 | 0.0107 | 0.0097 | 0.0010 |
| 234 | 0.0106 | 0.0096 | 0.0010 |
| 235 | 0.0105 | 0.0095 | 0.0010 |
| 236 | 0.0104 | 0.0094 | 0.0010 |
| 237 | 0.0102 | 0.0093 | 0.0009 |
| 238 | 0.0101 | 0.0092 | 0.0009 |
| 239 | 0.0100 | 0.0091 | 0.0009 |
| 240 | 0.0099 | 0.0090 | 0.0009 |
| 241 | 0.0098 | 0.0089 | 0.0009 |
| 242 | 0.0097 | 0.0088 | 0.0009 |
| 243 | 0.0096 | 0.0087 | 0.0009 |
| 244 | 0.0095 | 0.0086 | 0.0009 |
| 245 | 0.0094 | 0.0086 | 0.0009 |
| 246 | 0.0093 | 0.0085 | 0.0009 |
| 247 | 0.0092 | 0.0084 | 0.0009 |
| 248 | 0.0092 | 0.0083 | 0.0008 |
| 249 | 0.0091 | 0.0082 | 0.0008 |
| 250 | 0.0090 | 0.0082 | 0.0008 |
| 251 | 0.0089 | 0.0081 | 0.0008 |
| 252 | 0.0088 | 0.0080 | 0.0008 |
| 253 | 0.0088 | 0.0080 | 0.0008 |
| 254 | 0.0087 | 0.0079 | 0.0008 |
| 255 | 0.0086 | 0.0078 | 0.0008 |
| 256 | 0.0086 | 0.0078 | 0.0008 |
| 257 | 0.0085 | 0.0077 | 0.0008 |
| 258 | 0.0084 | 0.0076 | 0.0008 |
| 259 | 0.0084 | 0.0076 | 0.0008 |
| 260 | 0.0083 | 0.0075 | 0.0008 |
| 261 | 0.0082 | 0.0075 | 0.0008 |
| 262 | 0.0082 | 0.0074 | 0.0008 |
| 263 | 0.0081 | 0.0074 | 0.0008 |
| 264 | 0.0081 | 0.0073 | 0.0007 |
| 265 | 0.0080 | 0.0073 | 0.0007 |
| 266 | 0.0080 | 0.0072 | 0.0007 |
| 267 | 0.0079 | 0.0072 | 0.0007 |
| 268 | 0.0078 | 0.0071 | 0.0007 |
| 269 | 0.0078 | 0.0071 | 0.0007 |
| 270 | 0.0077 | 0.0070 | 0.0007 |
| 271 | 0.0077 | 0.0070 | 0.0007 |
| 272 | 0.0076 | 0.0069 | 0.0007 |
| 273 | 0.0076 | 0.0069 | 0.0007 |
| 274 | 0.0076 | 0.0069 | 0.0007 |
| 275 | 0.0075 | 0.0068 | 0.0007 |
| 276 | 0.0075 | 0.0068 | 0.0007 |
| 277 | 0.0074 | 0.0067 | 0.0007 |
| 278 | 0.0074 | 0.0067 | 0.0007 |
| 279 | 0.0073 | 0.0067 | 0.0007 |
| 280 | 0.0073 | 0.0066 | 0.0007 |
| 281 | 0.0072 | 0.0066 | 0.0007 |
| 282 | 0.0072 | 0.0065 | 0.0007 |
| 283 | 0.0072 | 0.0065 | 0.0007 |
| 284 | 0.0071 | 0.0065 | 0.0007 |
| 285 | 0.0071 | 0.0064 | 0.0007 |
| 286 | 0.0070 | 0.0064 | 0.0007 |
| 287 | 0.0070 | 0.0064 | 0.0006 |

```
      288             0.0070          0.0063             0.0006
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.42(In)
      Total effective rainfall =      0.58(In)
      Peak flow rate in flood hydrograph =     20.53(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q          |          |          |          |
  0+10       0.0003      0.04  Q          |          |          |          |
  0+15       0.0009      0.09  Q          |          |          |          |
  0+20       0.0017      0.11  Q          |          |          |          |
  0+25       0.0025      0.12  Q          |          |          |          |
  0+30       0.0034      0.13  Q          |          |          |          |
  0+35       0.0044      0.14  Q          |          |          |          |
  0+40       0.0053      0.14  Q          |          |          |          |
  0+45       0.0063      0.14  Q          |          |          |          |
  0+50       0.0072      0.14  Q          |          |          |          |
  0+55       0.0082      0.14  Q          |          |          |          |
  1+ 0       0.0092      0.14  Q          |          |          |          |
  1+ 5       0.0102      0.14  Q          |          |          |          |
  1+10       0.0112      0.14  Q          |          |          |          |
  1+15       0.0122      0.14  Q          |          |          |          |
  1+20       0.0132      0.15  Q          |          |          |          |
  1+25       0.0142      0.15  Q          |          |          |          |
  1+30       0.0152      0.15  Q          |          |          |          |
  1+35       0.0162      0.15  Q          |          |          |          |
  1+40       0.0172      0.15  Q          |          |          |          |
  1+45       0.0182      0.15  Q          |          |          |          |
  1+50       0.0192      0.15  Q          |          |          |          |
  1+55       0.0203      0.15  Q          |          |          |          |
  2+ 0       0.0213      0.15  Q          |          |          |          |
  2+ 5       0.0223      0.15  QV         |          |          |          |
  2+10       0.0233      0.15  QV         |          |          |          |
  2+15       0.0244      0.15  QV         |          |          |          |
  2+20       0.0254      0.15  QV         |          |          |          |
  2+25       0.0264      0.15  QV         |          |          |          |
  2+30       0.0275      0.15  QV         |          |          |          |
  2+35       0.0285      0.15  QV         |          |          |          |
  2+40       0.0296      0.15  QV         |          |          |          |
  2+45       0.0306      0.15  QV         |          |          |          |
  2+50       0.0317      0.15  QV         |          |          |          |
  2+55       0.0327      0.15  QV         |          |          |          |
  3+ 0       0.0338      0.15  QV         |          |          |          |
  3+ 5       0.0348      0.15  QV         |          |          |          |
  3+10       0.0359      0.15  QV         |          |          |          |
  3+15       0.0370      0.16  QV         |          |          |          |
  3+20       0.0380      0.16  QV         |          |          |          |
  3+25       0.0391      0.16  QV         |          |          |          |
  3+30       0.0402      0.16  QV         |          |          |          |
  3+35       0.0413      0.16  QV         |          |          |          |
  3+40       0.0424      0.16  QV         |          |          |          |
  3+45       0.0435      0.16  QV         |          |          |          |
  3+50       0.0446      0.16  Q V        |          |          |          |
  3+55       0.0457      0.16  Q V        |          |          |          |
  4+ 0       0.0468      0.16  Q V        |          |          |          |
  4+ 5       0.0479      0.16  Q V        |          |          |          |
  4+10       0.0490      0.16  Q V        |          |          |          |
  4+15       0.0501      0.16  Q V        |          |          |          |
  4+20       0.0512      0.16  Q V        |          |          |          |
  4+25       0.0523      0.16  Q V        |          |          |          |
  4+30       0.0535      0.16  Q V        |          |          |          |
  4+35       0.0546      0.16  Q V        |          |          |          |
```

```
 4+40      0.0557      0.16  Q V       |         |         |         |
 4+45      0.0568      0.17  Q V       |         |         |         |
 4+50      0.0580      0.17  Q V       |         |         |         |
 4+55      0.0591      0.17  Q V       |         |         |         |
 5+ 0      0.0603      0.17  Q V       |         |         |         |
 5+ 5      0.0614      0.17  Q V       |         |         |         |
 5+10      0.0626      0.17  Q V       |         |         |         |
 5+15      0.0638      0.17  Q V       |         |         |         |
 5+20      0.0649      0.17  Q V       |         |         |         |
 5+25      0.0661      0.17  Q  V      |         |         |         |
 5+30      0.0673      0.17  Q  V      |         |         |         |
 5+35      0.0685      0.17  Q  V      |         |         |         |
 5+40      0.0696      0.17  Q  V      |         |         |         |
 5+45      0.0708      0.17  Q  V      |         |         |         |
 5+50      0.0720      0.17  Q  V      |         |         |         |
 5+55      0.0732      0.17  Q  V      |         |         |         |
 6+ 0      0.0744      0.17  Q  V      |         |         |         |
 6+ 5      0.0756      0.18  Q  V      |         |         |         |
 6+10      0.0769      0.18  Q  V      |         |         |         |
 6+15      0.0781      0.18  Q  V      |         |         |         |
 6+20      0.0793      0.18  Q  V      |         |         |         |
 6+25      0.0805      0.18  Q  V      |         |         |         |
 6+30      0.0818      0.18  Q  V      |         |         |         |
 6+35      0.0830      0.18  Q  V      |         |         |         |
 6+40      0.0842      0.18  Q  V      |         |         |         |
 6+45      0.0855      0.18  Q  V      |         |         |         |
 6+50      0.0868      0.18  Q  V      |         |         |         |
 6+55      0.0880      0.18  Q   V     |         |         |         |
 7+ 0      0.0893      0.18  Q   V     |         |         |         |
 7+ 5      0.0906      0.18  Q   V     |         |         |         |
 7+10      0.0918      0.19  Q   V     |         |         |         |
 7+15      0.0931      0.19  Q   V     |         |         |         |
 7+20      0.0944      0.19  Q   V     |         |         |         |
 7+25      0.0957      0.19  Q   V     |         |         |         |
 7+30      0.0970      0.19  Q   V     |         |         |         |
 7+35      0.0983      0.19  Q   V     |         |         |         |
 7+40      0.0996      0.19  Q   V     |         |         |         |
 7+45      0.1010      0.19  Q   V     |         |         |         |
 7+50      0.1023      0.19  Q   V     |         |         |         |
 7+55      0.1036      0.19  Q   V     |         |         |         |
 8+ 0      0.1050      0.19  Q   V     |         |         |         |
 8+ 5      0.1063      0.20  Q   V     |         |         |         |
 8+10      0.1077      0.20  Q   V     |         |         |         |
 8+15      0.1090      0.20  Q   V     |         |         |         |
 8+20      0.1104      0.20  Q    V    |         |         |         |
 8+25      0.1118      0.20  Q    V    |         |         |         |
 8+30      0.1132      0.20  Q    V    |         |         |         |
 8+35      0.1145      0.20  Q    V    |         |         |         |
 8+40      0.1159      0.20  Q    V    |         |         |         |
 8+45      0.1174      0.20  Q    V    |         |         |         |
 8+50      0.1188      0.21  Q    V    |         |         |         |
 8+55      0.1202      0.21  Q    V    |         |         |         |
 9+ 0      0.1216      0.21  Q    V    |         |         |         |
 9+ 5      0.1231      0.21  Q    V    |         |         |         |
 9+10      0.1245      0.21  Q    V    |         |         |         |
 9+15      0.1260      0.21  Q    V    |         |         |         |
 9+20      0.1274      0.21  Q    V    |         |         |         |
 9+25      0.1289      0.21  Q    V    |         |         |         |
 9+30      0.1304      0.22  Q    V    |         |         |         |
 9+35      0.1319      0.22  Q     V   |         |         |         |
 9+40      0.1334      0.22  Q     V   |         |         |         |
 9+45      0.1349      0.22  Q     V   |         |         |         |
 9+50      0.1364      0.22  Q     V   |         |         |         |
 9+55      0.1379      0.22  Q     V   |         |         |         |
10+ 0      0.1395      0.22  Q     V   |         |         |         |
10+ 5      0.1410      0.23  Q     V   |         |         |         |
10+10      0.1426      0.23  Q     V   |         |         |         |
10+15      0.1442      0.23  Q     V   |         |         |         |
10+20      0.1458      0.23  Q     V   |         |         |         |
10+25      0.1473      0.23  Q     V   |         |         |         |
10+30      0.1490      0.23  Q     V   |         |         |         |
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10+35       0.1506      0.23  Q     V   |          |          |          |
10+40       0.1522      0.24  Q     V   |          |          |          |
10+45       0.1538      0.24  Q      V  |          |          |          |
10+50       0.1555      0.24  Q      V  |          |          |          |
10+55       0.1572      0.24  Q      V  |          |          |          |
11+ 0       0.1588      0.24  Q      V  |          |          |          |
11+ 5       0.1605      0.25  Q      V  |          |          |          |
11+10       0.1622      0.25  Q      V  |          |          |          |
11+15       0.1640      0.25  Q      V  |          |          |          |
11+20       0.1657      0.25  Q      V  |          |          |          |
11+25       0.1675      0.25  Q      V  |          |          |          |
11+30       0.1692      0.26  Q      V  |          |          |          |
11+35       0.1710      0.26  Q      V  |          |          |          |
11+40       0.1728      0.26  Q      V  |          |          |          |
11+45       0.1746      0.26  Q      V  |          |          |          |
11+50       0.1764      0.27  Q       V |          |          |          |
11+55       0.1783      0.27  Q       V |          |          |          |
12+ 0       0.1802      0.27  Q       V |          |          |          |
12+ 5       0.1821      0.28  Q       V |          |          |          |
12+10       0.1841      0.30  Q       V |          |          |          |
12+15       0.1863      0.33  Q       V |          |          |          |
12+20       0.1887      0.34  Q       V |          |          |          |
12+25       0.1910      0.35  Q       V |          |          |          |
12+30       0.1935      0.35  Q       V |          |          |          |
12+35       0.1960      0.36  Q       V |          |          |          |
12+40       0.1985      0.36  Q        V|          |          |          |
12+45       0.2010      0.37  Q        V|          |          |          |
12+50       0.2035      0.37  Q        V|          |          |          |
12+55       0.2061      0.37  Q        V|          |          |          |
13+ 0       0.2087      0.38  Q        V|          |          |          |
13+ 5       0.2114      0.38  Q        V|          |          |          |
13+10       0.2140      0.39  Q        V|          |          |          |
13+15       0.2167      0.39  Q        V|          |          |          |
13+20       0.2194      0.39  Q         V          |          |          |
13+25       0.2222      0.40  Q         V          |          |          |
13+30       0.2249      0.40  Q         V          |          |          |
13+35       0.2277      0.41  Q         V          |          |          |
13+40       0.2306      0.41  Q         V          |          |          |
13+45       0.2334      0.42  Q         V          |          |          |
13+50       0.2363      0.42  Q         V          |          |          |
13+55       0.2393      0.43  Q         V          |          |          |
14+ 0       0.2423      0.43  Q          |V         |          |          |
14+ 5       0.2453      0.44  Q          |V         |          |          |
14+10       0.2484      0.45  Q          |V         |          |          |
14+15       0.2515      0.45  Q          |V         |          |          |
14+20       0.2547      0.46  Q          |V         |          |          |
14+25       0.2579      0.47  Q          |V         |          |          |
14+30       0.2612      0.48  Q          |V         |          |          |
14+35       0.2645      0.49  Q          | V        |          |          |
14+40       0.2679      0.49  Q          | V        |          |          |
14+45       0.2714      0.50  Q          | V        |          |          |
14+50       0.2749      0.51  Q          | V        |          |          |
14+55       0.2786      0.53  Q          | V        |          |          |
15+ 0       0.2823      0.54  Q          | V        |          |          |
15+ 5       0.2861      0.55  Q          |  V       |          |          |
15+10       0.2900      0.57  Q          |  V       |          |          |
15+15       0.2940      0.59  Q          |  V       |          |          |
15+20       0.2982      0.60  Q          |  V       |          |          |
15+25       0.3024      0.61  Q          |  V       |          |          |
15+30       0.3062      0.56  Q          |  V       |          |          |
15+35       0.3093      0.45  Q          |   V      |          |          |
15+40       0.3123      0.43  Q          |   V      |          |          |
15+45       0.3154      0.45  Q          |   V      |          |          |
15+50       0.3187      0.48  Q          |   V      |          |          |
15+55       0.3226      0.56  Q          |   V      |          |          |
16+ 0       0.3274      0.71  Q          |   V      |          |          |
16+ 5       0.3498      3.25  |   Q      |    V     |          |          |
16+10       0.4361     12.53  |          |     Q  V |          |          |
16+15       0.5775     20.53  |          |          |     VQ   |          |
16+20       0.6336      8.14  |          Q          |       V  |          |
16+25       0.6671      4.87  |     Q    |          |          V          |
```

```
16+30       0.6900      3.33  |   Q     |          |          |V         |
16+35       0.7066      2.41  |  Q      |          |          | V        |
16+40       0.7181      1.67  | Q       |          |          | V        |
16+45       0.7253      1.04  |Q        |          |          |  V       |
16+50       0.7311      0.84  |Q        |          |          |  V       |
16+55       0.7361      0.73  Q         |          |          |  V       |
17+ 0       0.7411      0.72  Q         |          |          |  V       |
17+ 5       0.7454      0.62  Q         |          |          |  V       |
17+10       0.7491      0.55  Q         |          |          |   V      |
17+15       0.7523      0.46  Q         |          |          |   V      |
17+20       0.7554      0.45  Q         |          |          |   V      |
17+25       0.7584      0.44  Q         |          |          |   V      |
17+30       0.7614      0.43  Q         |          |          |   V      |
17+35       0.7642      0.41  Q         |          |          |   V      |
17+40       0.7670      0.41  Q         |          |          |   V      |
17+45       0.7698      0.40  Q         |          |          |    V     |
17+50       0.7724      0.39  Q         |          |          |    V     |
17+55       0.7750      0.38  Q         |          |          |    V     |
18+ 0       0.7776      0.37  Q         |          |          |    V     |
18+ 5       0.7801      0.36  Q         |          |          |    V     |
18+10       0.7825      0.34  Q         |          |          |    V     |
18+15       0.7846      0.31  Q         |          |          |    V     |
18+20       0.7866      0.29  Q         |          |          |    V     |
18+25       0.7885      0.28  Q         |          |          |    V     |
18+30       0.7904      0.27  Q         |          |          |     V    |
18+35       0.7923      0.27  Q         |          |          |     V    |
18+40       0.7940      0.26  Q         |          |          |     V    |
18+45       0.7958      0.25  Q         |          |          |     V    |
18+50       0.7975      0.25  Q         |          |          |     V    |
18+55       0.7992      0.25  Q         |          |          |     V    |
19+ 0       0.8009      0.24  Q         |          |          |     V    |
19+ 5       0.8025      0.24  Q         |          |          |     V    |
19+10       0.8041      0.23  Q         |          |          |     V    |
19+15       0.8057      0.23  Q         |          |          |     V    |
19+20       0.8073      0.23  Q         |          |          |     V    |
19+25       0.8088      0.22  Q         |          |          |     V    |
19+30       0.8103      0.22  Q         |          |          |     V    |
19+35       0.8118      0.22  Q         |          |          |      V   |
19+40       0.8133      0.22  Q         |          |          |      V   |
19+45       0.8148      0.21  Q         |          |          |      V   |
19+50       0.8162      0.21  Q         |          |          |      V   |
19+55       0.8177      0.21  Q         |          |          |      V   |
20+ 0       0.8191      0.21  Q         |          |          |      V   |
20+ 5       0.8205      0.20  Q         |          |          |      V   |
20+10       0.8219      0.20  Q         |          |          |      V   |
20+15       0.8232      0.20  Q         |          |          |      V   |
20+20       0.8246      0.20  Q         |          |          |      V   |
20+25       0.8259      0.20  Q         |          |          |      V   |
20+30       0.8273      0.19  Q         |          |          |      V   |
20+35       0.8286      0.19  Q         |          |          |      V   |
20+40       0.8299      0.19  Q         |          |          |      V   |
20+45       0.8312      0.19  Q         |          |          |      V   |
20+50       0.8325      0.19  Q         |          |          |      V   |
20+55       0.8337      0.18  Q         |          |          |       V  |
21+ 0       0.8350      0.18  Q         |          |          |       V  |
21+ 5       0.8362      0.18  Q         |          |          |       V  |
21+10       0.8375      0.18  Q         |          |          |       V  |
21+15       0.8387      0.18  Q         |          |          |       V  |
21+20       0.8399      0.18  Q         |          |          |       V  |
21+25       0.8411      0.18  Q         |          |          |       V  |
21+30       0.8423      0.17  Q         |          |          |       V  |
21+35       0.8435      0.17  Q         |          |          |       V  |
21+40       0.8447      0.17  Q         |          |          |       V  |
21+45       0.8459      0.17  Q         |          |          |       V  |
21+50       0.8470      0.17  Q         |          |          |       V  |
21+55       0.8482      0.17  Q         |          |          |       V  |
22+ 0       0.8493      0.17  Q         |          |          |       V  |
22+ 5       0.8504      0.16  Q         |          |          |       V  |
22+10       0.8516      0.16  Q         |          |          |       V  |
22+15       0.8527      0.16  Q         |          |          |       V  |
22+20       0.8538      0.16  Q         |          |          |       V  |
```

```
   22+25       0.8549      0.16  Q          |          |          |       V |
   22+30       0.8560      0.16  Q          |          |          |        V|
   22+35       0.8571      0.16  Q          |          |          |        V|
   22+40       0.8582      0.16  Q          |          |          |        V|
   22+45       0.8592      0.16  Q          |          |          |        V|
   22+50       0.8603      0.15  Q          |          |          |        V|
   22+55       0.8614      0.15  Q          |          |          |        V|
   23+ 0       0.8624      0.15  Q          |          |          |        V|
   23+ 5       0.8635      0.15  Q          |          |          |        V|
   23+10       0.8645      0.15  Q          |          |          |        V|
   23+15       0.8655      0.15  Q          |          |          |        V|
   23+20       0.8666      0.15  Q          |          |          |        V|
   23+25       0.8676      0.15  Q          |          |          |        V|
   23+30       0.8686      0.15  Q          |          |          |        V|
   23+35       0.8696      0.15  Q          |          |          |        V|
   23+40       0.8706      0.15  Q          |          |          |        V|
   23+45       0.8716      0.15  Q          |          |          |        V|
   23+50       0.8726      0.14  Q          |          |          |        V|
   23+55       0.8736      0.14  Q          |          |          |        V|
   24+ 0       0.8746      0.14  Q          |          |          |        V|
   24+ 5       0.8755      0.14  Q          |          |          |        V|
   24+10       0.8762      0.10  Q          |          |          |        V|
   24+15       0.8766      0.05  Q          |          |          |        V|
   24+20       0.8768      0.03  Q          |          |          |        V|
   24+25       0.8769      0.02  Q          |          |          |        V|
   24+30       0.8770      0.01  Q          |          |          |        V|
   24+35       0.8771      0.01  Q          |          |          |        V|
   24+40       0.8771      0.00  Q          |          |          |        V|
   24+45       0.8771      0.00  Q          |          |          |        V|
   24+50       0.8771      0.00  Q          |          |          |        V|
   24+55       0.8771      0.00  Q          |          |          |        V|
   25+ 0       0.8771      0.00  Q          |          |          |        V|
   25+ 5       0.8771      0.00  Q          |          |          |        V|
-------------------------------------------------------------------------
```

Area 'A' – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

              Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
5 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

       Storm Event Year = 5

       Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
           18.06           1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
           18.06           6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
           18.06          24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
           18.06           1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
           18.06           6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
           18.06          24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 70.0      51.0         18.06      1.000     0.797    1.000    0.797

Area-averaged adjusted loss rate Fm (In/Hr) =  0.797

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 18.06 | 1.000 | 70.0 | 51.0 | 9.61 | 0.196 |

Area-averaged catchment yield fraction, Y = 0.196
Area-averaged low loss fraction, Yb = 0.804
User entry of time of concentration = 0.202 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 18.06(Ac.)
Catchment Lag time = 0.162 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.5677
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.797(In/Hr)
Average low loss rate fraction (Yb) = 0.804 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 18.06(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.403(In)
30-minute factor = 0.999 Adjusted rainfall = 0.689(In)
1-hour factor = 0.999 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 218.41 (CFS)) | |
| 1 | 4.472 | 9.767 |
| 2 | 26.592 | 48.314 |
| 3 | 64.398 | 82.572 |
| 4 | 78.587 | 30.990 |
| 5 | 86.751 | 17.831 |
| 6 | 92.030 | 11.532 |
| 7 | 95.442 | 7.452 |
| 8 | 97.482 | 4.455 |
| 9 | 98.356 | 1.909 |
| 10 | 98.889 | 1.165 |
| 11 | 99.255 | 0.797 |
| 12 | 99.630 | 0.821 |
| 13 | 99.870 | 0.524 |
| 14 | 100.000 | 0.283 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4027 | 0.4027 |
| 2 | 0.4958 | 0.0931 |
| 3 | 0.5600 | 0.0641 |
| 4 | 0.6105 | 0.0505 |
| 5 | 0.6527 | 0.0423 |
| 6 | 0.6894 | 0.0367 |
| 7 | 0.7220 | 0.0326 |
| 8 | 0.7516 | 0.0295 |
| 9 | 0.7786 | 0.0270 |
| 10 | 0.8036 | 0.0250 |
| 11 | 0.8269 | 0.0233 |
| 12 | 0.8488 | 0.0219 |

| | | |
|---|---|---|
| 13 | 0.8921 | 0.0433 |
| 14 | 0.9342 | 0.0421 |
| 15 | 0.9751 | 0.0410 |
| 16 | 1.0150 | 0.0399 |
| 17 | 1.0540 | 0.0390 |
| 18 | 1.0922 | 0.0381 |
| 19 | 1.1295 | 0.0373 |
| 20 | 1.1661 | 0.0366 |
| 21 | 1.2021 | 0.0359 |
| 22 | 1.2374 | 0.0353 |
| 23 | 1.2720 | 0.0347 |
| 24 | 1.3062 | 0.0341 |
| 25 | 1.3397 | 0.0336 |
| 26 | 1.3728 | 0.0331 |
| 27 | 1.4054 | 0.0326 |
| 28 | 1.4376 | 0.0321 |
| 29 | 1.4693 | 0.0317 |
| 30 | 1.5006 | 0.0313 |
| 31 | 1.5315 | 0.0309 |
| 32 | 1.5620 | 0.0305 |
| 33 | 1.5922 | 0.0302 |
| 34 | 1.6221 | 0.0298 |
| 35 | 1.6516 | 0.0295 |
| 36 | 1.6808 | 0.0292 |
| 37 | 1.7096 | 0.0289 |
| 38 | 1.7382 | 0.0286 |
| 39 | 1.7664 | 0.0283 |
| 40 | 1.7945 | 0.0280 |
| 41 | 1.8222 | 0.0277 |
| 42 | 1.8497 | 0.0275 |
| 43 | 1.8769 | 0.0272 |
| 44 | 1.9039 | 0.0270 |
| 45 | 1.9307 | 0.0268 |
| 46 | 1.9572 | 0.0265 |
| 47 | 1.9836 | 0.0263 |
| 48 | 2.0097 | 0.0261 |
| 49 | 2.0356 | 0.0259 |
| 50 | 2.0613 | 0.0257 |
| 51 | 2.0868 | 0.0255 |
| 52 | 2.1121 | 0.0253 |
| 53 | 2.1373 | 0.0251 |
| 54 | 2.1623 | 0.0250 |
| 55 | 2.1870 | 0.0248 |
| 56 | 2.2117 | 0.0246 |
| 57 | 2.2361 | 0.0245 |
| 58 | 2.2604 | 0.0243 |
| 59 | 2.2846 | 0.0241 |
| 60 | 2.3085 | 0.0240 |
| 61 | 2.3324 | 0.0238 |
| 62 | 2.3560 | 0.0237 |
| 63 | 2.3796 | 0.0235 |
| 64 | 2.4030 | 0.0234 |
| 65 | 2.4262 | 0.0233 |
| 66 | 2.4494 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4952 | 0.0229 |
| 69 | 2.5179 | 0.0227 |
| 70 | 2.5406 | 0.0226 |
| 71 | 2.5630 | 0.0225 |
| 72 | 2.5854 | 0.0224 |
| 73 | 2.6066 | 0.0212 |
| 74 | 2.6277 | 0.0211 |
| 75 | 2.6486 | 0.0210 |
| 76 | 2.6695 | 0.0208 |
| 77 | 2.6902 | 0.0207 |
| 78 | 2.7109 | 0.0206 |
| 79 | 2.7314 | 0.0205 |
| 80 | 2.7518 | 0.0204 |
| 81 | 2.7721 | 0.0203 |
| 82 | 2.7923 | 0.0202 |
| 83 | 2.8124 | 0.0201 |

| | | |
|---|---|---|
| 84 | 2.8324 | 0.0200 |
| 85 | 2.8523 | 0.0199 |
| 86 | 2.8722 | 0.0198 |
| 87 | 2.8919 | 0.0197 |
| 88 | 2.9115 | 0.0196 |
| 89 | 2.9310 | 0.0195 |
| 90 | 2.9505 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9891 | 0.0193 |
| 93 | 3.0083 | 0.0192 |
| 94 | 3.0274 | 0.0191 |
| 95 | 3.0464 | 0.0190 |
| 96 | 3.0654 | 0.0189 |
| 97 | 3.0842 | 0.0189 |
| 98 | 3.1030 | 0.0188 |
| 99 | 3.1217 | 0.0187 |
| 100 | 3.1404 | 0.0186 |
| 101 | 3.1589 | 0.0186 |
| 102 | 3.1774 | 0.0185 |
| 103 | 3.1958 | 0.0184 |
| 104 | 3.2141 | 0.0183 |
| 105 | 3.2324 | 0.0183 |
| 106 | 3.2506 | 0.0182 |
| 107 | 3.2687 | 0.0181 |
| 108 | 3.2867 | 0.0180 |
| 109 | 3.3047 | 0.0180 |
| 110 | 3.3226 | 0.0179 |
| 111 | 3.3405 | 0.0178 |
| 112 | 3.3583 | 0.0178 |
| 113 | 3.3760 | 0.0177 |
| 114 | 3.3936 | 0.0177 |
| 115 | 3.4112 | 0.0176 |
| 116 | 3.4287 | 0.0175 |
| 117 | 3.4462 | 0.0175 |
| 118 | 3.4636 | 0.0174 |
| 119 | 3.4810 | 0.0173 |
| 120 | 3.4982 | 0.0173 |
| 121 | 3.5155 | 0.0172 |
| 122 | 3.5326 | 0.0172 |
| 123 | 3.5497 | 0.0171 |
| 124 | 3.5668 | 0.0171 |
| 125 | 3.5838 | 0.0170 |
| 126 | 3.6007 | 0.0169 |
| 127 | 3.6176 | 0.0169 |
| 128 | 3.6345 | 0.0168 |
| 129 | 3.6512 | 0.0168 |
| 130 | 3.6680 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7013 | 0.0166 |
| 133 | 3.7178 | 0.0166 |
| 134 | 3.7344 | 0.0165 |
| 135 | 3.7508 | 0.0165 |
| 136 | 3.7673 | 0.0164 |
| 137 | 3.7836 | 0.0164 |
| 138 | 3.8000 | 0.0163 |
| 139 | 3.8162 | 0.0163 |
| 140 | 3.8325 | 0.0162 |
| 141 | 3.8486 | 0.0162 |
| 142 | 3.8648 | 0.0161 |
| 143 | 3.8809 | 0.0161 |
| 144 | 3.8969 | 0.0160 |
| 145 | 3.9129 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9448 | 0.0159 |
| 148 | 3.9606 | 0.0159 |
| 149 | 3.9764 | 0.0158 |
| 150 | 3.9922 | 0.0158 |
| 151 | 4.0079 | 0.0157 |
| 152 | 4.0236 | 0.0157 |
| 153 | 4.0393 | 0.0156 |
| 154 | 4.0549 | 0.0156 |

| | | |
|---|---|---|
| 155 | 4.0705 | 0.0156 |
| 156 | 4.0860 | 0.0155 |
| 157 | 4.1015 | 0.0155 |
| 158 | 4.1169 | 0.0154 |
| 159 | 4.1323 | 0.0154 |
| 160 | 4.1477 | 0.0154 |
| 161 | 4.1630 | 0.0153 |
| 162 | 4.1783 | 0.0153 |
| 163 | 4.1935 | 0.0152 |
| 164 | 4.2087 | 0.0152 |
| 165 | 4.2239 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2541 | 0.0151 |
| 168 | 4.2692 | 0.0151 |
| 169 | 4.2842 | 0.0150 |
| 170 | 4.2992 | 0.0150 |
| 171 | 4.3142 | 0.0150 |
| 172 | 4.3291 | 0.0149 |
| 173 | 4.3440 | 0.0149 |
| 174 | 4.3588 | 0.0148 |
| 175 | 4.3736 | 0.0148 |
| 176 | 4.3884 | 0.0148 |
| 177 | 4.4031 | 0.0147 |
| 178 | 4.4179 | 0.0147 |
| 179 | 4.4325 | 0.0147 |
| 180 | 4.4472 | 0.0146 |
| 181 | 4.4618 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4909 | 0.0145 |
| 184 | 4.5054 | 0.0145 |
| 185 | 4.5199 | 0.0145 |
| 186 | 4.5343 | 0.0144 |
| 187 | 4.5487 | 0.0144 |
| 188 | 4.5631 | 0.0144 |
| 189 | 4.5775 | 0.0144 |
| 190 | 4.5918 | 0.0143 |
| 191 | 4.6061 | 0.0143 |
| 192 | 4.6203 | 0.0143 |
| 193 | 4.6346 | 0.0142 |
| 194 | 4.6488 | 0.0142 |
| 195 | 4.6629 | 0.0142 |
| 196 | 4.6771 | 0.0141 |
| 197 | 4.6912 | 0.0141 |
| 198 | 4.7053 | 0.0141 |
| 199 | 4.7193 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7473 | 0.0140 |
| 202 | 4.7613 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7892 | 0.0139 |
| 205 | 4.8030 | 0.0139 |
| 206 | 4.8169 | 0.0139 |
| 207 | 4.8307 | 0.0138 |
| 208 | 4.8445 | 0.0138 |
| 209 | 4.8583 | 0.0138 |
| 210 | 4.8720 | 0.0137 |
| 211 | 4.8858 | 0.0137 |
| 212 | 4.8995 | 0.0137 |
| 213 | 4.9131 | 0.0137 |
| 214 | 4.9268 | 0.0136 |
| 215 | 4.9404 | 0.0136 |
| 216 | 4.9540 | 0.0136 |
| 217 | 4.9675 | 0.0136 |
| 218 | 4.9811 | 0.0135 |
| 219 | 4.9946 | 0.0135 |
| 220 | 5.0081 | 0.0135 |
| 221 | 5.0215 | 0.0135 |
| 222 | 5.0350 | 0.0134 |
| 223 | 5.0484 | 0.0134 |
| 224 | 5.0618 | 0.0134 |
| 225 | 5.0751 | 0.0134 |

| | | |
|---|---|---|
| 226 | 5.0885 | 0.0133 |
| 227 | 5.1018 | 0.0133 |
| 228 | 5.1151 | 0.0133 |
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1416 | 0.0132 |
| 231 | 5.1548 | 0.0132 |
| 232 | 5.1680 | 0.0132 |
| 233 | 5.1812 | 0.0132 |
| 234 | 5.1943 | 0.0132 |
| 235 | 5.2075 | 0.0131 |
| 236 | 5.2206 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2467 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2728 | 0.0130 |
| 241 | 5.2858 | 0.0130 |
| 242 | 5.2987 | 0.0130 |
| 243 | 5.3117 | 0.0129 |
| 244 | 5.3246 | 0.0129 |
| 245 | 5.3375 | 0.0129 |
| 246 | 5.3504 | 0.0129 |
| 247 | 5.3633 | 0.0129 |
| 248 | 5.3761 | 0.0128 |
| 249 | 5.3889 | 0.0128 |
| 250 | 5.4017 | 0.0128 |
| 251 | 5.4145 | 0.0128 |
| 252 | 5.4273 | 0.0128 |
| 253 | 5.4400 | 0.0127 |
| 254 | 5.4527 | 0.0127 |
| 255 | 5.4654 | 0.0127 |
| 256 | 5.4781 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5034 | 0.0126 |
| 259 | 5.5160 | 0.0126 |
| 260 | 5.5286 | 0.0126 |
| 261 | 5.5412 | 0.0126 |
| 262 | 5.5537 | 0.0126 |
| 263 | 5.5663 | 0.0125 |
| 264 | 5.5788 | 0.0125 |
| 265 | 5.5913 | 0.0125 |
| 266 | 5.6038 | 0.0125 |
| 267 | 5.6162 | 0.0125 |
| 268 | 5.6287 | 0.0124 |
| 269 | 5.6411 | 0.0124 |
| 270 | 5.6535 | 0.0124 |
| 271 | 5.6659 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6906 | 0.0123 |
| 274 | 5.7029 | 0.0123 |
| 275 | 5.7152 | 0.0123 |
| 276 | 5.7275 | 0.0123 |
| 277 | 5.7398 | 0.0123 |
| 278 | 5.7521 | 0.0123 |
| 279 | 5.7643 | 0.0122 |
| 280 | 5.7765 | 0.0122 |
| 281 | 5.7887 | 0.0122 |
| 282 | 5.8009 | 0.0122 |
| 283 | 5.8131 | 0.0122 |
| 284 | 5.8252 | 0.0122 |
| 285 | 5.8374 | 0.0121 |
| 286 | 5.8495 | 0.0121 |
| 287 | 5.8616 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0097 | 0.0024 |
| 2 | 0.0121 | 0.0097 | 0.0024 |
| 3 | 0.0121 | 0.0098 | 0.0024 |

| | | | |
|---|---|---|---|
| 4 | 0.0122 | 0.0098 | 0.0024 |
| 5 | 0.0122 | 0.0098 | 0.0024 |
| 6 | 0.0122 | 0.0098 | 0.0024 |
| 7 | 0.0122 | 0.0098 | 0.0024 |
| 8 | 0.0123 | 0.0099 | 0.0024 |
| 9 | 0.0123 | 0.0099 | 0.0024 |
| 10 | 0.0123 | 0.0099 | 0.0024 |
| 11 | 0.0123 | 0.0099 | 0.0024 |
| 12 | 0.0124 | 0.0099 | 0.0024 |
| 13 | 0.0124 | 0.0100 | 0.0024 |
| 14 | 0.0124 | 0.0100 | 0.0024 |
| 15 | 0.0125 | 0.0100 | 0.0024 |
| 16 | 0.0125 | 0.0100 | 0.0024 |
| 17 | 0.0125 | 0.0101 | 0.0025 |
| 18 | 0.0125 | 0.0101 | 0.0025 |
| 19 | 0.0126 | 0.0101 | 0.0025 |
| 20 | 0.0126 | 0.0101 | 0.0025 |
| 21 | 0.0126 | 0.0102 | 0.0025 |
| 22 | 0.0127 | 0.0102 | 0.0025 |
| 23 | 0.0127 | 0.0102 | 0.0025 |
| 24 | 0.0127 | 0.0102 | 0.0025 |
| 25 | 0.0128 | 0.0103 | 0.0025 |
| 26 | 0.0128 | 0.0103 | 0.0025 |
| 27 | 0.0128 | 0.0103 | 0.0025 |
| 28 | 0.0128 | 0.0103 | 0.0025 |
| 29 | 0.0129 | 0.0104 | 0.0025 |
| 30 | 0.0129 | 0.0104 | 0.0025 |
| 31 | 0.0129 | 0.0104 | 0.0025 |
| 32 | 0.0130 | 0.0104 | 0.0025 |
| 33 | 0.0130 | 0.0105 | 0.0026 |
| 34 | 0.0130 | 0.0105 | 0.0026 |
| 35 | 0.0131 | 0.0105 | 0.0026 |
| 36 | 0.0131 | 0.0105 | 0.0026 |
| 37 | 0.0132 | 0.0106 | 0.0026 |
| 38 | 0.0132 | 0.0106 | 0.0026 |
| 39 | 0.0132 | 0.0106 | 0.0026 |
| 40 | 0.0132 | 0.0106 | 0.0026 |
| 41 | 0.0133 | 0.0107 | 0.0026 |
| 42 | 0.0133 | 0.0107 | 0.0026 |
| 43 | 0.0134 | 0.0107 | 0.0026 |
| 44 | 0.0134 | 0.0108 | 0.0026 |
| 45 | 0.0134 | 0.0108 | 0.0026 |
| 46 | 0.0135 | 0.0108 | 0.0026 |
| 47 | 0.0135 | 0.0109 | 0.0026 |
| 48 | 0.0135 | 0.0109 | 0.0027 |
| 49 | 0.0136 | 0.0109 | 0.0027 |
| 50 | 0.0136 | 0.0109 | 0.0027 |
| 51 | 0.0137 | 0.0110 | 0.0027 |
| 52 | 0.0137 | 0.0110 | 0.0027 |
| 53 | 0.0137 | 0.0111 | 0.0027 |
| 54 | 0.0138 | 0.0111 | 0.0027 |
| 55 | 0.0138 | 0.0111 | 0.0027 |
| 56 | 0.0139 | 0.0111 | 0.0027 |
| 57 | 0.0139 | 0.0112 | 0.0027 |
| 58 | 0.0139 | 0.0112 | 0.0027 |
| 59 | 0.0140 | 0.0113 | 0.0027 |
| 60 | 0.0140 | 0.0113 | 0.0028 |
| 61 | 0.0141 | 0.0113 | 0.0028 |
| 62 | 0.0141 | 0.0113 | 0.0028 |
| 63 | 0.0142 | 0.0114 | 0.0028 |
| 64 | 0.0142 | 0.0114 | 0.0028 |
| 65 | 0.0143 | 0.0115 | 0.0028 |
| 66 | 0.0143 | 0.0115 | 0.0028 |
| 67 | 0.0144 | 0.0115 | 0.0028 |
| 68 | 0.0144 | 0.0116 | 0.0028 |
| 69 | 0.0144 | 0.0116 | 0.0028 |
| 70 | 0.0145 | 0.0116 | 0.0028 |
| 71 | 0.0145 | 0.0117 | 0.0029 |
| 72 | 0.0146 | 0.0117 | 0.0029 |
| 73 | 0.0146 | 0.0118 | 0.0029 |
| 74 | 0.0147 | 0.0118 | 0.0029 |

| | | | |
|---|---|---|---|
| 75 | 0.0147 | 0.0119 | 0.0029 |
| 76 | 0.0148 | 0.0119 | 0.0029 |
| 77 | 0.0148 | 0.0119 | 0.0029 |
| 78 | 0.0149 | 0.0120 | 0.0029 |
| 79 | 0.0150 | 0.0120 | 0.0029 |
| 80 | 0.0150 | 0.0120 | 0.0029 |
| 81 | 0.0151 | 0.0121 | 0.0030 |
| 82 | 0.0151 | 0.0121 | 0.0030 |
| 83 | 0.0152 | 0.0122 | 0.0030 |
| 84 | 0.0152 | 0.0122 | 0.0030 |
| 85 | 0.0153 | 0.0123 | 0.0030 |
| 86 | 0.0153 | 0.0123 | 0.0030 |
| 87 | 0.0154 | 0.0124 | 0.0030 |
| 88 | 0.0154 | 0.0124 | 0.0030 |
| 89 | 0.0155 | 0.0125 | 0.0030 |
| 90 | 0.0156 | 0.0125 | 0.0031 |
| 91 | 0.0156 | 0.0126 | 0.0031 |
| 92 | 0.0157 | 0.0126 | 0.0031 |
| 93 | 0.0158 | 0.0127 | 0.0031 |
| 94 | 0.0158 | 0.0127 | 0.0031 |
| 95 | 0.0159 | 0.0128 | 0.0031 |
| 96 | 0.0160 | 0.0128 | 0.0031 |
| 97 | 0.0160 | 0.0129 | 0.0031 |
| 98 | 0.0161 | 0.0129 | 0.0032 |
| 99 | 0.0162 | 0.0130 | 0.0032 |
| 100 | 0.0162 | 0.0130 | 0.0032 |
| 101 | 0.0163 | 0.0131 | 0.0032 |
| 102 | 0.0164 | 0.0132 | 0.0032 |
| 103 | 0.0165 | 0.0132 | 0.0032 |
| 104 | 0.0165 | 0.0133 | 0.0032 |
| 105 | 0.0166 | 0.0134 | 0.0033 |
| 106 | 0.0167 | 0.0134 | 0.0033 |
| 107 | 0.0168 | 0.0135 | 0.0033 |
| 108 | 0.0168 | 0.0135 | 0.0033 |
| 109 | 0.0169 | 0.0136 | 0.0033 |
| 110 | 0.0170 | 0.0137 | 0.0033 |
| 111 | 0.0171 | 0.0138 | 0.0034 |
| 112 | 0.0172 | 0.0138 | 0.0034 |
| 113 | 0.0173 | 0.0139 | 0.0034 |
| 114 | 0.0173 | 0.0139 | 0.0034 |
| 115 | 0.0175 | 0.0140 | 0.0034 |
| 116 | 0.0175 | 0.0141 | 0.0034 |
| 117 | 0.0177 | 0.0142 | 0.0035 |
| 118 | 0.0177 | 0.0142 | 0.0035 |
| 119 | 0.0178 | 0.0143 | 0.0035 |
| 120 | 0.0179 | 0.0144 | 0.0035 |
| 121 | 0.0180 | 0.0145 | 0.0035 |
| 122 | 0.0181 | 0.0146 | 0.0036 |
| 123 | 0.0183 | 0.0147 | 0.0036 |
| 124 | 0.0183 | 0.0147 | 0.0036 |
| 125 | 0.0185 | 0.0149 | 0.0036 |
| 126 | 0.0186 | 0.0149 | 0.0036 |
| 127 | 0.0187 | 0.0150 | 0.0037 |
| 128 | 0.0188 | 0.0151 | 0.0037 |
| 129 | 0.0189 | 0.0152 | 0.0037 |
| 130 | 0.0190 | 0.0153 | 0.0037 |
| 131 | 0.0192 | 0.0154 | 0.0038 |
| 132 | 0.0193 | 0.0155 | 0.0038 |
| 133 | 0.0194 | 0.0156 | 0.0038 |
| 134 | 0.0195 | 0.0157 | 0.0038 |
| 135 | 0.0197 | 0.0159 | 0.0039 |
| 136 | 0.0198 | 0.0159 | 0.0039 |
| 137 | 0.0200 | 0.0161 | 0.0039 |
| 138 | 0.0201 | 0.0162 | 0.0039 |
| 139 | 0.0203 | 0.0163 | 0.0040 |
| 140 | 0.0204 | 0.0164 | 0.0040 |
| 141 | 0.0206 | 0.0166 | 0.0040 |
| 142 | 0.0207 | 0.0167 | 0.0041 |
| 143 | 0.0210 | 0.0169 | 0.0041 |
| 144 | 0.0211 | 0.0169 | 0.0041 |
| 145 | 0.0224 | 0.0180 | 0.0044 |

| | | | |
|---|---|---|---|
| 146 | 0.0225 | 0.0181 | 0.0044 |
| 147 | 0.0227 | 0.0183 | 0.0045 |
| 148 | 0.0229 | 0.0184 | 0.0045 |
| 149 | 0.0231 | 0.0186 | 0.0045 |
| 150 | 0.0233 | 0.0187 | 0.0046 |
| 151 | 0.0235 | 0.0189 | 0.0046 |
| 152 | 0.0237 | 0.0190 | 0.0046 |
| 153 | 0.0240 | 0.0193 | 0.0047 |
| 154 | 0.0241 | 0.0194 | 0.0047 |
| 155 | 0.0245 | 0.0197 | 0.0048 |
| 156 | 0.0246 | 0.0198 | 0.0048 |
| 157 | 0.0250 | 0.0201 | 0.0049 |
| 158 | 0.0251 | 0.0202 | 0.0049 |
| 159 | 0.0255 | 0.0205 | 0.0050 |
| 160 | 0.0257 | 0.0207 | 0.0050 |
| 161 | 0.0261 | 0.0210 | 0.0051 |
| 162 | 0.0263 | 0.0212 | 0.0052 |
| 163 | 0.0268 | 0.0215 | 0.0052 |
| 164 | 0.0270 | 0.0217 | 0.0053 |
| 165 | 0.0275 | 0.0221 | 0.0054 |
| 166 | 0.0277 | 0.0223 | 0.0054 |
| 167 | 0.0283 | 0.0227 | 0.0055 |
| 168 | 0.0286 | 0.0230 | 0.0056 |
| 169 | 0.0292 | 0.0235 | 0.0057 |
| 170 | 0.0295 | 0.0237 | 0.0058 |
| 171 | 0.0302 | 0.0243 | 0.0059 |
| 172 | 0.0305 | 0.0245 | 0.0060 |
| 173 | 0.0313 | 0.0252 | 0.0061 |
| 174 | 0.0317 | 0.0255 | 0.0062 |
| 175 | 0.0326 | 0.0262 | 0.0064 |
| 176 | 0.0331 | 0.0266 | 0.0065 |
| 177 | 0.0341 | 0.0274 | 0.0067 |
| 178 | 0.0347 | 0.0279 | 0.0068 |
| 179 | 0.0359 | 0.0289 | 0.0070 |
| 180 | 0.0366 | 0.0294 | 0.0072 |
| 181 | 0.0381 | 0.0307 | 0.0075 |
| 182 | 0.0390 | 0.0314 | 0.0076 |
| 183 | 0.0410 | 0.0329 | 0.0080 |
| 184 | 0.0421 | 0.0338 | 0.0083 |
| 185 | 0.0219 | 0.0176 | 0.0043 |
| 186 | 0.0233 | 0.0187 | 0.0046 |
| 187 | 0.0270 | 0.0217 | 0.0053 |
| 188 | 0.0295 | 0.0237 | 0.0058 |
| 189 | 0.0367 | 0.0295 | 0.0072 |
| 190 | 0.0423 | 0.0340 | 0.0083 |
| 191 | 0.0641 | 0.0516 | 0.0126 |
| 192 | 0.0931 | 0.0665 | 0.0266 |
| 193 | 0.4027 | 0.0665 | 0.3363 |
| 194 | 0.0505 | 0.0406 | 0.0099 |
| 195 | 0.0326 | 0.0262 | 0.0064 |
| 196 | 0.0250 | 0.0201 | 0.0049 |
| 197 | 0.0433 | 0.0348 | 0.0085 |
| 198 | 0.0399 | 0.0321 | 0.0078 |
| 199 | 0.0373 | 0.0300 | 0.0073 |
| 200 | 0.0353 | 0.0284 | 0.0069 |
| 201 | 0.0336 | 0.0270 | 0.0066 |
| 202 | 0.0321 | 0.0258 | 0.0063 |
| 203 | 0.0309 | 0.0249 | 0.0061 |
| 204 | 0.0298 | 0.0240 | 0.0059 |
| 205 | 0.0289 | 0.0232 | 0.0057 |
| 206 | 0.0280 | 0.0225 | 0.0055 |
| 207 | 0.0272 | 0.0219 | 0.0053 |
| 208 | 0.0265 | 0.0213 | 0.0052 |
| 209 | 0.0259 | 0.0208 | 0.0051 |
| 210 | 0.0253 | 0.0204 | 0.0050 |
| 211 | 0.0248 | 0.0199 | 0.0049 |
| 212 | 0.0243 | 0.0195 | 0.0048 |
| 213 | 0.0238 | 0.0192 | 0.0047 |
| 214 | 0.0234 | 0.0188 | 0.0046 |
| 215 | 0.0230 | 0.0185 | 0.0045 |
| 216 | 0.0226 | 0.0182 | 0.0044 |

| | | | |
|---|---|---|---|
| 217 | 0.0212 | 0.0170 | 0.0042 |
| 218 | 0.0208 | 0.0168 | 0.0041 |
| 219 | 0.0205 | 0.0165 | 0.0040 |
| 220 | 0.0202 | 0.0162 | 0.0040 |
| 221 | 0.0199 | 0.0160 | 0.0039 |
| 222 | 0.0196 | 0.0158 | 0.0038 |
| 223 | 0.0194 | 0.0156 | 0.0038 |
| 224 | 0.0191 | 0.0154 | 0.0037 |
| 225 | 0.0189 | 0.0152 | 0.0037 |
| 226 | 0.0186 | 0.0150 | 0.0037 |
| 227 | 0.0184 | 0.0148 | 0.0036 |
| 228 | 0.0182 | 0.0146 | 0.0036 |
| 229 | 0.0180 | 0.0145 | 0.0035 |
| 230 | 0.0178 | 0.0143 | 0.0035 |
| 231 | 0.0176 | 0.0141 | 0.0034 |
| 232 | 0.0174 | 0.0140 | 0.0034 |
| 233 | 0.0172 | 0.0138 | 0.0034 |
| 234 | 0.0171 | 0.0137 | 0.0033 |
| 235 | 0.0169 | 0.0136 | 0.0033 |
| 236 | 0.0167 | 0.0134 | 0.0033 |
| 237 | 0.0166 | 0.0133 | 0.0032 |
| 238 | 0.0164 | 0.0132 | 0.0032 |
| 239 | 0.0163 | 0.0131 | 0.0032 |
| 240 | 0.0161 | 0.0130 | 0.0032 |
| 241 | 0.0160 | 0.0129 | 0.0031 |
| 242 | 0.0159 | 0.0128 | 0.0031 |
| 243 | 0.0157 | 0.0126 | 0.0031 |
| 244 | 0.0156 | 0.0125 | 0.0031 |
| 245 | 0.0155 | 0.0124 | 0.0030 |
| 246 | 0.0154 | 0.0124 | 0.0030 |
| 247 | 0.0152 | 0.0123 | 0.0030 |
| 248 | 0.0151 | 0.0122 | 0.0030 |
| 249 | 0.0150 | 0.0121 | 0.0029 |
| 250 | 0.0149 | 0.0120 | 0.0029 |
| 251 | 0.0148 | 0.0119 | 0.0029 |
| 252 | 0.0147 | 0.0118 | 0.0029 |
| 253 | 0.0146 | 0.0117 | 0.0029 |
| 254 | 0.0145 | 0.0117 | 0.0028 |
| 255 | 0.0144 | 0.0116 | 0.0028 |
| 256 | 0.0143 | 0.0115 | 0.0028 |
| 257 | 0.0142 | 0.0114 | 0.0028 |
| 258 | 0.0141 | 0.0114 | 0.0028 |
| 259 | 0.0141 | 0.0113 | 0.0028 |
| 260 | 0.0140 | 0.0112 | 0.0027 |
| 261 | 0.0139 | 0.0112 | 0.0027 |
| 262 | 0.0138 | 0.0111 | 0.0027 |
| 263 | 0.0137 | 0.0110 | 0.0027 |
| 264 | 0.0136 | 0.0110 | 0.0027 |
| 265 | 0.0136 | 0.0109 | 0.0027 |
| 266 | 0.0135 | 0.0108 | 0.0026 |
| 267 | 0.0134 | 0.0108 | 0.0026 |
| 268 | 0.0133 | 0.0107 | 0.0026 |
| 269 | 0.0133 | 0.0107 | 0.0026 |
| 270 | 0.0132 | 0.0106 | 0.0026 |
| 271 | 0.0131 | 0.0106 | 0.0026 |
| 272 | 0.0131 | 0.0105 | 0.0026 |
| 273 | 0.0130 | 0.0104 | 0.0025 |
| 274 | 0.0129 | 0.0104 | 0.0025 |
| 275 | 0.0129 | 0.0103 | 0.0025 |
| 276 | 0.0128 | 0.0103 | 0.0025 |
| 277 | 0.0127 | 0.0102 | 0.0025 |
| 278 | 0.0127 | 0.0102 | 0.0025 |
| 279 | 0.0126 | 0.0101 | 0.0025 |
| 280 | 0.0126 | 0.0101 | 0.0025 |
| 281 | 0.0125 | 0.0100 | 0.0025 |
| 282 | 0.0124 | 0.0100 | 0.0024 |
| 283 | 0.0124 | 0.0100 | 0.0024 |
| 284 | 0.0123 | 0.0099 | 0.0024 |
| 285 | 0.0123 | 0.0099 | 0.0024 |
| 286 | 0.0122 | 0.0098 | 0.0024 |
| 287 | 0.0122 | 0.0098 | 0.0024 |

```
      288             0.0121          0.0097             0.0024
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      4.46(In)
      Total effective rainfall =      1.42(In)
      Peak flow rate in flood hydrograph =     29.57(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0002      0.02  Q          |          |          |          |
  0+10       0.0011      0.14  Q          |          |          |          |
  0+15       0.0034      0.33  Q          |          |          |          |
  0+20       0.0062      0.41  Q          |          |          |          |
  0+25       0.0093      0.45  Q          |          |          |          |
  0+30       0.0126      0.48  Q          |          |          |          |
  0+35       0.0160      0.50  Q          |          |          |          |
  0+40       0.0195      0.51  Q          |          |          |          |
  0+45       0.0231      0.51  Q          |          |          |          |
  0+50       0.0267      0.52  Q          |          |          |          |
  0+55       0.0303      0.52  Q          |          |          |          |
  1+ 0       0.0339      0.52  Q          |          |          |          |
  1+ 5       0.0375      0.53  Q          |          |          |          |
  1+10       0.0412      0.53  Q          |          |          |          |
  1+15       0.0448      0.53  Q          |          |          |          |
  1+20       0.0485      0.53  Q          |          |          |          |
  1+25       0.0521      0.53  Q          |          |          |          |
  1+30       0.0558      0.53  QV         |          |          |          |
  1+35       0.0595      0.54  QV         |          |          |          |
  1+40       0.0632      0.54  QV         |          |          |          |
  1+45       0.0669      0.54  QV         |          |          |          |
  1+50       0.0706      0.54  QV         |          |          |          |
  1+55       0.0743      0.54  QV         |          |          |          |
  2+ 0       0.0781      0.54  QV         |          |          |          |
  2+ 5       0.0818      0.54  QV         |          |          |          |
  2+10       0.0856      0.54  QV         |          |          |          |
  2+15       0.0893      0.55  QV         |          |          |          |
  2+20       0.0931      0.55  QV         |          |          |          |
  2+25       0.0969      0.55  QV         |          |          |          |
  2+30       0.1006      0.55  QV         |          |          |          |
  2+35       0.1044      0.55  QV         |          |          |          |
  2+40       0.1082      0.55  Q V        |          |          |          |
  2+45       0.1120      0.55  Q V        |          |          |          |
  2+50       0.1159      0.56  Q V        |          |          |          |
  2+55       0.1197      0.56  Q V        |          |          |          |
  3+ 0       0.1235      0.56  Q V        |          |          |          |
  3+ 5       0.1274      0.56  Q V        |          |          |          |
  3+10       0.1313      0.56  Q V        |          |          |          |
  3+15       0.1351      0.56  Q V        |          |          |          |
  3+20       0.1390      0.56  Q V        |          |          |          |
  3+25       0.1429      0.57  Q V        |          |          |          |
  3+30       0.1468      0.57  Q V        |          |          |          |
  3+35       0.1507      0.57  Q V        |          |          |          |
  3+40       0.1546      0.57  Q V        |          |          |          |
  3+45       0.1586      0.57  Q V        |          |          |          |
  3+50       0.1625      0.57  Q  V       |          |          |          |
  3+55       0.1665      0.57  Q  V       |          |          |          |
  4+ 0       0.1704      0.58  Q  V       |          |          |          |
  4+ 5       0.1744      0.58  Q  V       |          |          |          |
  4+10       0.1784      0.58  Q  V       |          |          |          |
  4+15       0.1824      0.58  Q  V       |          |          |          |
  4+20       0.1864      0.58  Q  V       |          |          |          |
  4+25       0.1904      0.58  Q  V       |          |          |          |
  4+30       0.1945      0.59  Q  V       |          |          |          |
  4+35       0.1985      0.59  Q  V       |          |          |          |
```

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 4+40       0.2026      0.59  Q  V      |          |          |          |
 4+45       0.2067      0.59  Q  V      |          |          |          |
 4+50       0.2107      0.59  Q  V      |          |          |          |
 4+55       0.2148      0.59  Q   V     |          |          |          |
 5+ 0       0.2189      0.60  Q   V     |          |          |          |
 5+ 5       0.2231      0.60  Q   V     |          |          |          |
 5+10       0.2272      0.60  Q   V     |          |          |          |
 5+15       0.2313      0.60  Q   V     |          |          |          |
 5+20       0.2355      0.60  Q   V     |          |          |          |
 5+25       0.2397      0.61  Q   V     |          |          |          |
 5+30       0.2438      0.61  Q   V     |          |          |          |
 5+35       0.2480      0.61  Q   V     |          |          |          |
 5+40       0.2523      0.61  Q   V     |          |          |          |
 5+45       0.2565      0.61  Q   V     |          |          |          |
 5+50       0.2607      0.62  Q   V     |          |          |          |
 5+55       0.2650      0.62  Q   V     |          |          |          |
 6+ 0       0.2692      0.62  Q    V    |          |          |          |
 6+ 5       0.2735      0.62  Q    V    |          |          |          |
 6+10       0.2778      0.62  Q    V    |          |          |          |
 6+15       0.2821      0.63  Q    V    |          |          |          |
 6+20       0.2864      0.63  Q    V    |          |          |          |
 6+25       0.2908      0.63  Q    V    |          |          |          |
 6+30       0.2951      0.63  Q    V    |          |          |          |
 6+35       0.2995      0.63  Q    V    |          |          |          |
 6+40       0.3039      0.64  Q    V    |          |          |          |
 6+45       0.3083      0.64  Q    V    |          |          |          |
 6+50       0.3127      0.64  Q    V    |          |          |          |
 6+55       0.3171      0.64  Q    V    |          |          |          |
 7+ 0       0.3216      0.65  Q     V   |          |          |          |
 7+ 5       0.3260      0.65  Q     V   |          |          |          |
 7+10       0.3305      0.65  Q     V   |          |          |          |
 7+15       0.3350      0.65  Q     V   |          |          |          |
 7+20       0.3395      0.66  Q     V   |          |          |          |
 7+25       0.3441      0.66  Q     V   |          |          |          |
 7+30       0.3486      0.66  Q     V   |          |          |          |
 7+35       0.3532      0.66  Q     V   |          |          |          |
 7+40       0.3578      0.67  Q     V   |          |          |          |
 7+45       0.3624      0.67  Q     V   |          |          |          |
 7+50       0.3670      0.67  Q     V   |          |          |          |
 7+55       0.3716      0.67  Q     V   |          |          |          |
 8+ 0       0.3763      0.68  Q      V  |          |          |          |
 8+ 5       0.3810      0.68  Q      V  |          |          |          |
 8+10       0.3857      0.68  Q      V  |          |          |          |
 8+15       0.3904      0.69  Q      V  |          |          |          |
 8+20       0.3951      0.69  Q      V  |          |          |          |
 8+25       0.3999      0.69  Q      V  |          |          |          |
 8+30       0.4047      0.69  Q      V  |          |          |          |
 8+35       0.4095      0.70  Q      V  |          |          |          |
 8+40       0.4143      0.70  Q      V  |          |          |          |
 8+45       0.4191      0.70  Q      V  |          |          |          |
 8+50       0.4240      0.71  Q      V  |          |          |          |
 8+55       0.4289      0.71  Q       V |          |          |          |
 9+ 0       0.4338      0.71  Q       V |          |          |          |
 9+ 5       0.4387      0.72  Q       V |          |          |          |
 9+10       0.4437      0.72  Q       V |          |          |          |
 9+15       0.4487      0.72  Q       V |          |          |          |
 9+20       0.4537      0.73  Q       V |          |          |          |
 9+25       0.4587      0.73  Q       V |          |          |          |
 9+30       0.4637      0.73  Q       V |          |          |          |
 9+35       0.4688      0.74  Q       V |          |          |          |
 9+40       0.4739      0.74  Q       V |          |          |          |
 9+45       0.4791      0.75  Q       V |          |          |          |
 9+50       0.4842      0.75  Q        V|          |          |          |
 9+55       0.4894      0.75  |Q       V|          |          |          |
10+ 0       0.4946      0.76  |Q       V|          |          |          |
10+ 5       0.4999      0.76  |Q       V|          |          |          |
10+10       0.5051      0.77  |Q       V|          |          |          |
10+15       0.5104      0.77  |Q       V|          |          |          |
10+20       0.5158      0.77  |Q       V|          |          |          |
10+25       0.5211      0.78  |Q       V|          |          |          |
10+30       0.5265      0.78  |Q       V|          |          |          |
```

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10+35       0.5320      0.79  |Q       V|         |          |         |
10+40       0.5374      0.79  |Q        V         |          |         |
10+45       0.5429      0.80  |Q        V         |          |         |
10+50       0.5484      0.80  |Q        V         |          |         |
10+55       0.5540      0.81  |Q        V         |          |         |
11+ 0       0.5596      0.81  |Q        V         |          |         |
11+ 5       0.5652      0.82  |Q        V         |          |         |
11+10       0.5709      0.82  |Q        V         |          |         |
11+15       0.5766      0.83  |Q        V         |          |         |
11+20       0.5824      0.83  |Q        V         |          |         |
11+25       0.5882      0.84  |Q        |V         |          |         |
11+30       0.5940      0.85  |Q        |V         |          |         |
11+35       0.5999      0.85  |Q        |V         |          |         |
11+40       0.6058      0.86  |Q        |V         |          |         |
11+45       0.6117      0.87  |Q        |V         |          |         |
11+50       0.6177      0.87  |Q        |V         |          |         |
11+55       0.6238      0.88  |Q        |V         |          |         |
12+ 0       0.6299      0.89  |Q        |V         |          |         |
12+ 5       0.6361      0.89  |Q        |V         |          |         |
12+10       0.6423      0.91  |Q        | V        |          |         |
12+15       0.6488      0.94  |Q        | V        |          |         |
12+20       0.6553      0.95  |Q        | V        |          |         |
12+25       0.6620      0.96  |Q        | V        |          |         |
12+30       0.6687      0.97  |Q        | V        |          |         |
12+35       0.6754      0.98  |Q        | V        |          |         |
12+40       0.6823      0.99  |Q        | V        |          |         |
12+45       0.6891      1.00  |Q        | V        |          |         |
12+50       0.6961      1.01  |Q        |  V       |          |         |
12+55       0.7031      1.02  |Q        |  V       |          |         |
13+ 0       0.7102      1.03  |Q        |  V       |          |         |
13+ 5       0.7174      1.04  |Q        |  V       |          |         |
13+10       0.7246      1.05  |Q        |  V       |          |         |
13+15       0.7319      1.06  |Q        |  V       |          |         |
13+20       0.7393      1.07  |Q        |  V       |          |         |
13+25       0.7468      1.08  |Q        |   V      |          |         |
13+30       0.7544      1.10  |Q        |   V      |          |         |
13+35       0.7620      1.11  |Q        |   V      |          |         |
13+40       0.7697      1.12  |Q        |   V      |          |         |
13+45       0.7776      1.14  |Q        |   V      |          |         |
13+50       0.7855      1.15  |Q        |   V      |          |         |
13+55       0.7935      1.17  |Q        |   V      |          |         |
14+ 0       0.8017      1.18  |Q        |    V     |          |         |
14+ 5       0.8099      1.20  |Q        |    V     |          |         |
14+10       0.8183      1.22  |Q        |    V     |          |         |
14+15       0.8268      1.24  |Q        |    V     |          |         |
14+20       0.8355      1.26  |Q        |    V     |          |         |
14+25       0.8443      1.28  |Q        |    V     |          |         |
14+30       0.8533      1.30  |Q        |     V    |          |         |
14+35       0.8624      1.33  |Q        |     V    |          |         |
14+40       0.8717      1.35  |Q        |     V    |          |         |
14+45       0.8812      1.38  |Q        |     V    |          |         |
14+50       0.8909      1.41  |Q        |     V    |          |         |
14+55       0.9008      1.44  |Q        |     V    |          |         |
15+ 0       0.9109      1.47  |Q        |      V   |          |         |
15+ 5       0.9214      1.51  | Q       |      V   |          |         |
15+10       0.9321      1.56  | Q       |      V   |          |         |
15+15       0.9431      1.60  | Q       |      V   |          |         |
15+20       0.9546      1.66  | Q       |      V   |          |         |
15+25       0.9661      1.68  | Q       |       V  |          |         |
15+30       0.9766      1.53  | Q       |       V  |          |         |
15+35       0.9851      1.24  |Q        |       V  |          |         |
15+40       0.9933      1.19  |Q        |       V  |          |         |
15+45       1.0018      1.23  |Q        |       V  |          |         |
15+50       1.0111      1.34  |Q        |       V  |          |         |
15+55       1.0218      1.55  | Q       |        V |          |         |
16+ 0       1.0358      2.04  | Q       |        V |          |         |
16+ 5       1.0782      6.16  |       Q |         V          |         |
16+10       1.2109     19.26  |         |          | V  Q     |         |
16+15       1.4145     29.57  |         |          |     V    |        Q|
16+20       1.4995     12.34  |         |     Q    |       V  |         |
16+25       1.5520      7.62  |         Q          |        V|         |
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16+30       1.5894      5.44  |       Q  |          |         V|          |
16+35       1.6184      4.20  |     Q    |          |          V          |
16+40       1.6401      3.15  |    Q     |          |          V          |
16+45       1.6555      2.24  |  Q       |          |          |V         |
16+50       1.6688      1.93  |  Q       |          |          |V         |
16+55       1.6808      1.75  |  Q       |          |          |V         |
17+ 0       1.6925      1.70  |  Q       |          |          |V         |
17+ 5       1.7031      1.54  |  Q       |          |          |V         |
17+10       1.7128      1.41  |Q         |          |          | V        |
17+15       1.7215      1.27  |Q         |          |          | V        |
17+20       1.7300      1.23  |Q         |          |          | V        |
17+25       1.7382      1.19  |Q         |          |          | V        |
17+30       1.7462      1.16  |Q         |          |          | V        |
17+35       1.7540      1.13  |Q         |          |          | V        |
17+40       1.7616      1.10  |Q         |          |          |  V       |
17+45       1.7690      1.08  |Q         |          |          |  V       |
17+50       1.7763      1.06  |Q         |          |          |  V       |
17+55       1.7834      1.04  |Q         |          |          |  V       |
18+ 0       1.7904      1.02  |Q         |          |          |  V       |
18+ 5       1.7973      1.00  |Q         |          |          |  V       |
18+10       1.8039      0.97  |Q         |          |          |  V       |
18+15       1.8104      0.93  |Q         |          |          |  V       |
18+20       1.8167      0.91  |Q         |          |          |   V      |
18+25       1.8228      0.89  |Q         |          |          |   V      |
18+30       1.8289      0.88  |Q         |          |          |   V      |
18+35       1.8348      0.86  |Q         |          |          |   V      |
18+40       1.8407      0.85  |Q         |          |          |   V      |
18+45       1.8464      0.84  |Q         |          |          |   V      |
18+50       1.8521      0.83  |Q         |          |          |   V      |
18+55       1.8577      0.82  |Q         |          |          |   V      |
19+ 0       1.8633      0.80  |Q         |          |          |   V      |
19+ 5       1.8688      0.79  |Q         |          |          |    V     |
19+10       1.8742      0.79  |Q         |          |          |    V     |
19+15       1.8795      0.78  |Q         |          |          |    V     |
19+20       1.8848      0.77  |Q         |          |          |    V     |
19+25       1.8900      0.76  |Q         |          |          |    V     |
19+30       1.8952      0.75  |Q         |          |          |    V     |
19+35       1.9003      0.74  Q          |          |          |    V     |
19+40       1.9054      0.74  Q          |          |          |    V     |
19+45       1.9104      0.73  Q          |          |          |    V     |
19+50       1.9153      0.72  Q          |          |          |    V     |
19+55       1.9203      0.71  Q          |          |          |     V    |
20+ 0       1.9251      0.71  Q          |          |          |     V    |
20+ 5       1.9300      0.70  Q          |          |          |     V    |
20+10       1.9348      0.69  Q          |          |          |     V    |
20+15       1.9395      0.69  Q          |          |          |     V    |
20+20       1.9442      0.68  Q          |          |          |     V    |
20+25       1.9489      0.68  Q          |          |          |     V    |
20+30       1.9535      0.67  Q          |          |          |     V    |
20+35       1.9581      0.67  Q          |          |          |     V    |
20+40       1.9626      0.66  Q          |          |          |     V    |
20+45       1.9672      0.66  Q          |          |          |     V    |
20+50       1.9716      0.65  Q          |          |          |     V    |
20+55       1.9761      0.65  Q          |          |          |      V   |
21+ 0       1.9805      0.64  Q          |          |          |      V   |
21+ 5       1.9849      0.64  Q          |          |          |      V   |
21+10       1.9893      0.63  Q          |          |          |      V   |
21+15       1.9936      0.63  Q          |          |          |      V   |
21+20       1.9979      0.62  Q          |          |          |      V   |
21+25       2.0022      0.62  Q          |          |          |      V   |
21+30       2.0064      0.62  Q          |          |          |      V   |
21+35       2.0106      0.61  Q          |          |          |      V   |
21+40       2.0148      0.61  Q          |          |          |      V   |
21+45       2.0190      0.60  Q          |          |          |      V   |
21+50       2.0231      0.60  Q          |          |          |      V   |
21+55       2.0272      0.60  Q          |          |          |       V  |
22+ 0       2.0313      0.59  Q          |          |          |       V  |
22+ 5       2.0354      0.59  Q          |          |          |       V  |
22+10       2.0394      0.59  Q          |          |          |       V  |
22+15       2.0434      0.58  Q          |          |          |       V  |
22+20       2.0474      0.58  Q          |          |          |       V  |
```

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   22+25       2.0514      0.58  Q          |          |          |       V |
   22+30       2.0553      0.57  Q          |          |          |       V |
   22+35       2.0593      0.57  Q          |          |          |       V |
   22+40       2.0632      0.57  Q          |          |          |       V |
   22+45       2.0670      0.56  Q          |          |          |       V |
   22+50       2.0709      0.56  Q          |          |          |       V |
   22+55       2.0748      0.56  Q          |          |          |       V |
   23+ 0       2.0786      0.56  Q          |          |          |       V |
   23+ 5       2.0824      0.55  Q          |          |          |        V|
   23+10       2.0862      0.55  Q          |          |          |        V|
   23+15       2.0899      0.55  Q          |          |          |        V|
   23+20       2.0937      0.54  Q          |          |          |        V|
   23+25       2.0974      0.54  Q          |          |          |        V|
   23+30       2.1011      0.54  Q          |          |          |        V|
   23+35       2.1048      0.54  Q          |          |          |        V|
   23+40       2.1085      0.53  Q          |          |          |        V|
   23+45       2.1122      0.53  Q          |          |          |        V|
   23+50       2.1158      0.53  Q          |          |          |        V|
   23+55       2.1195      0.53  Q          |          |          |        V|
   24+ 0       2.1231      0.52  Q          |          |          |        V|
   24+ 5       2.1265      0.50  Q          |          |          |        V|
   24+10       2.1292      0.38  Q          |          |          |        V|
   24+15       2.1304      0.19  Q          |          |          |        V|
   24+20       2.1312      0.11  Q          |          |          |        V|
   24+25       2.1317      0.07  Q          |          |          |        V|
   24+30       2.1320      0.04  Q          |          |          |        V|
   24+35       2.1321      0.02  Q          |          |          |        V|
   24+40       2.1322      0.01  Q          |          |          |        V|
   24+45       2.1323      0.01  Q          |          |          |        V|
   24+50       2.1323      0.01  Q          |          |          |        V|
   24+55       2.1323      0.00  Q          |          |          |        V|
   25+ 0       2.1324      0.00  Q          |          |          |        V|
   25+ 5       2.1324      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area 'A' – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
10 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            18.06            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 70.0      70.0         18.06      1.000     0.532    1.000    0.532

Area-averaged adjusted loss rate Fm (In/Hr) =  0.532

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 18.06 | 1.000 | 70.0 | 70.0 | 4.29 | 0.530 |

Area-averaged catchment yield fraction, Y = 0.530
Area-averaged low loss fraction, Yb = 0.470
User entry of time of concentration = 0.202 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 18.06(Ac.)
Catchment Lag time = 0.162 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.5677
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.532(In/Hr)
Average low loss rate fraction (Yb) = 0.470 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 18.06(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.474(In)
30-minute factor = 0.999 Adjusted rainfall = 0.812(In)
1-hour factor = 0.999 Adjusted rainfall = 0.999(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 218.41 (CFS)) | |
| 1 | 4.472 | 9.767 |
| 2 | 26.592 | 48.314 |
| 3 | 64.398 | 82.572 |
| 4 | 78.587 | 30.990 |
| 5 | 86.751 | 17.831 |
| 6 | 92.030 | 11.532 |
| 7 | 95.442 | 7.452 |
| 8 | 97.482 | 4.455 |
| 9 | 98.356 | 1.909 |
| 10 | 98.889 | 1.165 |
| 11 | 99.255 | 0.797 |
| 12 | 99.630 | 0.821 |
| 13 | 99.870 | 0.524 |
| 14 | 100.000 | 0.283 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4741 | 0.4741 |
| 2 | 0.5837 | 0.1096 |
| 3 | 0.6592 | 0.0755 |
| 4 | 0.7186 | 0.0594 |
| 5 | 0.7684 | 0.0498 |
| 6 | 0.8116 | 0.0432 |
| 7 | 0.8500 | 0.0384 |
| 8 | 0.8847 | 0.0347 |
| 9 | 0.9165 | 0.0318 |
| 10 | 0.9460 | 0.0294 |
| 11 | 0.9734 | 0.0274 |
| 12 | 0.9992 | 0.0257 |

| | | |
|---|---|---|
| 13 | 1.0499 | 0.0508 |
| 14 | 1.0992 | 0.0493 |
| 15 | 1.1472 | 0.0480 |
| 16 | 1.1939 | 0.0468 |
| 17 | 1.2396 | 0.0457 |
| 18 | 1.2843 | 0.0447 |
| 19 | 1.3280 | 0.0437 |
| 20 | 1.3708 | 0.0428 |
| 21 | 1.4129 | 0.0420 |
| 22 | 1.4541 | 0.0413 |
| 23 | 1.4947 | 0.0406 |
| 24 | 1.5346 | 0.0399 |
| 25 | 1.5739 | 0.0393 |
| 26 | 1.6126 | 0.0387 |
| 27 | 1.6507 | 0.0381 |
| 28 | 1.6883 | 0.0376 |
| 29 | 1.7254 | 0.0371 |
| 30 | 1.7620 | 0.0366 |
| 31 | 1.7981 | 0.0361 |
| 32 | 1.8338 | 0.0357 |
| 33 | 1.8691 | 0.0353 |
| 34 | 1.9039 | 0.0349 |
| 35 | 1.9384 | 0.0345 |
| 36 | 1.9725 | 0.0341 |
| 37 | 2.0062 | 0.0337 |
| 38 | 2.0396 | 0.0334 |
| 39 | 2.0726 | 0.0330 |
| 40 | 2.1053 | 0.0327 |
| 41 | 2.1377 | 0.0324 |
| 42 | 2.1698 | 0.0321 |
| 43 | 2.2016 | 0.0318 |
| 44 | 2.2332 | 0.0315 |
| 45 | 2.2644 | 0.0313 |
| 46 | 2.2954 | 0.0310 |
| 47 | 2.3262 | 0.0307 |
| 48 | 2.3566 | 0.0305 |
| 49 | 2.3869 | 0.0302 |
| 50 | 2.4169 | 0.0300 |
| 51 | 2.4467 | 0.0298 |
| 52 | 2.4762 | 0.0296 |
| 53 | 2.5056 | 0.0293 |
| 54 | 2.5347 | 0.0291 |
| 55 | 2.5637 | 0.0289 |
| 56 | 2.5924 | 0.0287 |
| 57 | 2.6209 | 0.0285 |
| 58 | 2.6493 | 0.0283 |
| 59 | 2.6774 | 0.0282 |
| 60 | 2.7054 | 0.0280 |
| 61 | 2.7332 | 0.0278 |
| 62 | 2.7608 | 0.0276 |
| 63 | 2.7883 | 0.0275 |
| 64 | 2.8156 | 0.0273 |
| 65 | 2.8427 | 0.0271 |
| 66 | 2.8697 | 0.0270 |
| 67 | 2.8965 | 0.0268 |
| 68 | 2.9232 | 0.0267 |
| 69 | 2.9497 | 0.0265 |
| 70 | 2.9760 | 0.0264 |
| 71 | 3.0023 | 0.0262 |
| 72 | 3.0283 | 0.0261 |
| 73 | 3.0549 | 0.0266 |
| 74 | 3.0814 | 0.0265 |
| 75 | 3.1077 | 0.0263 |
| 76 | 3.1339 | 0.0262 |
| 77 | 3.1600 | 0.0261 |
| 78 | 3.1859 | 0.0259 |
| 79 | 3.2118 | 0.0258 |
| 80 | 3.2375 | 0.0257 |
| 81 | 3.2631 | 0.0256 |
| 82 | 3.2885 | 0.0255 |
| 83 | 3.3139 | 0.0254 |

| | | |
|---|---|---|
| 84 | 3.3392 | 0.0253 |
| 85 | 3.3643 | 0.0251 |
| 86 | 3.3893 | 0.0250 |
| 87 | 3.4143 | 0.0249 |
| 88 | 3.4391 | 0.0248 |
| 89 | 3.4638 | 0.0247 |
| 90 | 3.4884 | 0.0246 |
| 91 | 3.5129 | 0.0245 |
| 92 | 3.5373 | 0.0244 |
| 93 | 3.5617 | 0.0243 |
| 94 | 3.5859 | 0.0242 |
| 95 | 3.6100 | 0.0241 |
| 96 | 3.6341 | 0.0240 |
| 97 | 3.6580 | 0.0239 |
| 98 | 3.6819 | 0.0239 |
| 99 | 3.7056 | 0.0238 |
| 100 | 3.7293 | 0.0237 |
| 101 | 3.7529 | 0.0236 |
| 102 | 3.7764 | 0.0235 |
| 103 | 3.7998 | 0.0234 |
| 104 | 3.8232 | 0.0233 |
| 105 | 3.8464 | 0.0233 |
| 106 | 3.8696 | 0.0232 |
| 107 | 3.8927 | 0.0231 |
| 108 | 3.9157 | 0.0230 |
| 109 | 3.9387 | 0.0229 |
| 110 | 3.9615 | 0.0229 |
| 111 | 3.9843 | 0.0228 |
| 112 | 4.0070 | 0.0227 |
| 113 | 4.0297 | 0.0226 |
| 114 | 4.0522 | 0.0226 |
| 115 | 4.0747 | 0.0225 |
| 116 | 4.0972 | 0.0224 |
| 117 | 4.1195 | 0.0224 |
| 118 | 4.1418 | 0.0223 |
| 119 | 4.1640 | 0.0222 |
| 120 | 4.1861 | 0.0221 |
| 121 | 4.2082 | 0.0221 |
| 122 | 4.2302 | 0.0220 |
| 123 | 4.2522 | 0.0219 |
| 124 | 4.2741 | 0.0219 |
| 125 | 4.2959 | 0.0218 |
| 126 | 4.3176 | 0.0218 |
| 127 | 4.3393 | 0.0217 |
| 128 | 4.3609 | 0.0216 |
| 129 | 4.3825 | 0.0216 |
| 130 | 4.4040 | 0.0215 |
| 131 | 4.4254 | 0.0214 |
| 132 | 4.4468 | 0.0214 |
| 133 | 4.4681 | 0.0213 |
| 134 | 4.4894 | 0.0213 |
| 135 | 4.5106 | 0.0212 |
| 136 | 4.5318 | 0.0211 |
| 137 | 4.5528 | 0.0211 |
| 138 | 4.5739 | 0.0210 |
| 139 | 4.5949 | 0.0210 |
| 140 | 4.6158 | 0.0209 |
| 141 | 4.6367 | 0.0209 |
| 142 | 4.6575 | 0.0208 |
| 143 | 4.6782 | 0.0208 |
| 144 | 4.6989 | 0.0207 |
| 145 | 4.7196 | 0.0207 |
| 146 | 4.7402 | 0.0206 |
| 147 | 4.7607 | 0.0206 |
| 148 | 4.7812 | 0.0205 |
| 149 | 4.8017 | 0.0205 |
| 150 | 4.8221 | 0.0204 |
| 151 | 4.8424 | 0.0204 |
| 152 | 4.8627 | 0.0203 |
| 153 | 4.8830 | 0.0203 |
| 154 | 4.9032 | 0.0202 |

| | | |
|---|---|---|
| 155 | 4.9234 | 0.0202 |
| 156 | 4.9435 | 0.0201 |
| 157 | 4.9635 | 0.0201 |
| 158 | 4.9835 | 0.0200 |
| 159 | 5.0035 | 0.0200 |
| 160 | 5.0234 | 0.0199 |
| 161 | 5.0433 | 0.0199 |
| 162 | 5.0631 | 0.0198 |
| 163 | 5.0829 | 0.0198 |
| 164 | 5.1027 | 0.0197 |
| 165 | 5.1224 | 0.0197 |
| 166 | 5.1420 | 0.0197 |
| 167 | 5.1616 | 0.0196 |
| 168 | 5.1812 | 0.0196 |
| 169 | 5.2007 | 0.0195 |
| 170 | 5.2202 | 0.0195 |
| 171 | 5.2397 | 0.0194 |
| 172 | 5.2591 | 0.0194 |
| 173 | 5.2784 | 0.0194 |
| 174 | 5.2977 | 0.0193 |
| 175 | 5.3170 | 0.0193 |
| 176 | 5.3362 | 0.0192 |
| 177 | 5.3554 | 0.0192 |
| 178 | 5.3746 | 0.0192 |
| 179 | 5.3937 | 0.0191 |
| 180 | 5.4128 | 0.0191 |
| 181 | 5.4318 | 0.0190 |
| 182 | 5.4508 | 0.0190 |
| 183 | 5.4698 | 0.0190 |
| 184 | 5.4887 | 0.0189 |
| 185 | 5.5076 | 0.0189 |
| 186 | 5.5265 | 0.0189 |
| 187 | 5.5453 | 0.0188 |
| 188 | 5.5640 | 0.0188 |
| 189 | 5.5828 | 0.0187 |
| 190 | 5.6015 | 0.0187 |
| 191 | 5.6202 | 0.0187 |
| 192 | 5.6388 | 0.0186 |
| 193 | 5.6574 | 0.0186 |
| 194 | 5.6759 | 0.0186 |
| 195 | 5.6945 | 0.0185 |
| 196 | 5.7130 | 0.0185 |
| 197 | 5.7314 | 0.0185 |
| 198 | 5.7498 | 0.0184 |
| 199 | 5.7682 | 0.0184 |
| 200 | 5.7866 | 0.0184 |
| 201 | 5.8049 | 0.0183 |
| 202 | 5.8232 | 0.0183 |
| 203 | 5.8415 | 0.0183 |
| 204 | 5.8597 | 0.0182 |
| 205 | 5.8779 | 0.0182 |
| 206 | 5.8960 | 0.0182 |
| 207 | 5.9141 | 0.0181 |
| 208 | 5.9322 | 0.0181 |
| 209 | 5.9503 | 0.0181 |
| 210 | 5.9683 | 0.0180 |
| 211 | 5.9863 | 0.0180 |
| 212 | 6.0043 | 0.0180 |
| 213 | 6.0222 | 0.0179 |
| 214 | 6.0401 | 0.0179 |
| 215 | 6.0580 | 0.0179 |
| 216 | 6.0758 | 0.0178 |
| 217 | 6.0937 | 0.0178 |
| 218 | 6.1114 | 0.0178 |
| 219 | 6.1292 | 0.0178 |
| 220 | 6.1469 | 0.0177 |
| 221 | 6.1646 | 0.0177 |
| 222 | 6.1823 | 0.0177 |
| 223 | 6.1999 | 0.0176 |
| 224 | 6.2175 | 0.0176 |
| 225 | 6.2351 | 0.0176 |

| | | |
|---|---|---|
| 226 | 6.2526 | 0.0175 |
| 227 | 6.2702 | 0.0175 |
| 228 | 6.2877 | 0.0175 |
| 229 | 6.3051 | 0.0175 |
| 230 | 6.3226 | 0.0174 |
| 231 | 6.3400 | 0.0174 |
| 232 | 6.3574 | 0.0174 |
| 233 | 6.3747 | 0.0174 |
| 234 | 6.3920 | 0.0173 |
| 235 | 6.4093 | 0.0173 |
| 236 | 6.4266 | 0.0173 |
| 237 | 6.4438 | 0.0172 |
| 238 | 6.4611 | 0.0172 |
| 239 | 6.4783 | 0.0172 |
| 240 | 6.4954 | 0.0172 |
| 241 | 6.5126 | 0.0171 |
| 242 | 6.5297 | 0.0171 |
| 243 | 6.5468 | 0.0171 |
| 244 | 6.5638 | 0.0171 |
| 245 | 6.5809 | 0.0170 |
| 246 | 6.5979 | 0.0170 |
| 247 | 6.6149 | 0.0170 |
| 248 | 6.6318 | 0.0170 |
| 249 | 6.6488 | 0.0169 |
| 250 | 6.6657 | 0.0169 |
| 251 | 6.6826 | 0.0169 |
| 252 | 6.6994 | 0.0169 |
| 253 | 6.7163 | 0.0168 |
| 254 | 6.7331 | 0.0168 |
| 255 | 6.7499 | 0.0168 |
| 256 | 6.7666 | 0.0168 |
| 257 | 6.7834 | 0.0167 |
| 258 | 6.8001 | 0.0167 |
| 259 | 6.8168 | 0.0167 |
| 260 | 6.8335 | 0.0167 |
| 261 | 6.8501 | 0.0166 |
| 262 | 6.8667 | 0.0166 |
| 263 | 6.8833 | 0.0166 |
| 264 | 6.8999 | 0.0166 |
| 265 | 6.9165 | 0.0166 |
| 266 | 6.9330 | 0.0165 |
| 267 | 6.9495 | 0.0165 |
| 268 | 6.9660 | 0.0165 |
| 269 | 6.9824 | 0.0165 |
| 270 | 6.9989 | 0.0164 |
| 271 | 7.0153 | 0.0164 |
| 272 | 7.0317 | 0.0164 |
| 273 | 7.0481 | 0.0164 |
| 274 | 7.0644 | 0.0164 |
| 275 | 7.0807 | 0.0163 |
| 276 | 7.0971 | 0.0163 |
| 277 | 7.1133 | 0.0163 |
| 278 | 7.1296 | 0.0163 |
| 279 | 7.1459 | 0.0162 |
| 280 | 7.1621 | 0.0162 |
| 281 | 7.1783 | 0.0162 |
| 282 | 7.1945 | 0.0162 |
| 283 | 7.2106 | 0.0162 |
| 284 | 7.2268 | 0.0161 |
| 285 | 7.2429 | 0.0161 |
| 286 | 7.2590 | 0.0161 |
| 287 | 7.2750 | 0.0161 |
| 288 | 7.2911 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0076 | 0.0085 |
| 2 | 0.0161 | 0.0076 | 0.0085 |
| 3 | 0.0161 | 0.0076 | 0.0085 |

| | | | |
|---|---|---|---|
| 4 | 0.0161 | 0.0076 | 0.0085 |
| 5 | 0.0162 | 0.0076 | 0.0086 |
| 6 | 0.0162 | 0.0076 | 0.0086 |
| 7 | 0.0162 | 0.0076 | 0.0086 |
| 8 | 0.0163 | 0.0077 | 0.0086 |
| 9 | 0.0163 | 0.0077 | 0.0086 |
| 10 | 0.0163 | 0.0077 | 0.0086 |
| 11 | 0.0164 | 0.0077 | 0.0087 |
| 12 | 0.0164 | 0.0077 | 0.0087 |
| 13 | 0.0164 | 0.0077 | 0.0087 |
| 14 | 0.0165 | 0.0077 | 0.0087 |
| 15 | 0.0165 | 0.0078 | 0.0087 |
| 16 | 0.0165 | 0.0078 | 0.0088 |
| 17 | 0.0166 | 0.0078 | 0.0088 |
| 18 | 0.0166 | 0.0078 | 0.0088 |
| 19 | 0.0166 | 0.0078 | 0.0088 |
| 20 | 0.0167 | 0.0078 | 0.0088 |
| 21 | 0.0167 | 0.0079 | 0.0089 |
| 22 | 0.0167 | 0.0079 | 0.0089 |
| 23 | 0.0168 | 0.0079 | 0.0089 |
| 24 | 0.0168 | 0.0079 | 0.0089 |
| 25 | 0.0169 | 0.0079 | 0.0089 |
| 26 | 0.0169 | 0.0079 | 0.0089 |
| 27 | 0.0169 | 0.0080 | 0.0090 |
| 28 | 0.0170 | 0.0080 | 0.0090 |
| 29 | 0.0170 | 0.0080 | 0.0090 |
| 30 | 0.0170 | 0.0080 | 0.0090 |
| 31 | 0.0171 | 0.0080 | 0.0091 |
| 32 | 0.0171 | 0.0080 | 0.0091 |
| 33 | 0.0172 | 0.0081 | 0.0091 |
| 34 | 0.0172 | 0.0081 | 0.0091 |
| 35 | 0.0172 | 0.0081 | 0.0091 |
| 36 | 0.0173 | 0.0081 | 0.0091 |
| 37 | 0.0173 | 0.0081 | 0.0092 |
| 38 | 0.0174 | 0.0082 | 0.0092 |
| 39 | 0.0174 | 0.0082 | 0.0092 |
| 40 | 0.0174 | 0.0082 | 0.0092 |
| 41 | 0.0175 | 0.0082 | 0.0093 |
| 42 | 0.0175 | 0.0082 | 0.0093 |
| 43 | 0.0176 | 0.0083 | 0.0093 |
| 44 | 0.0176 | 0.0083 | 0.0093 |
| 45 | 0.0177 | 0.0083 | 0.0094 |
| 46 | 0.0177 | 0.0083 | 0.0094 |
| 47 | 0.0178 | 0.0084 | 0.0094 |
| 48 | 0.0178 | 0.0084 | 0.0094 |
| 49 | 0.0178 | 0.0084 | 0.0095 |
| 50 | 0.0179 | 0.0084 | 0.0095 |
| 51 | 0.0179 | 0.0084 | 0.0095 |
| 52 | 0.0180 | 0.0085 | 0.0095 |
| 53 | 0.0180 | 0.0085 | 0.0095 |
| 54 | 0.0181 | 0.0085 | 0.0096 |
| 55 | 0.0181 | 0.0085 | 0.0096 |
| 56 | 0.0182 | 0.0085 | 0.0096 |
| 57 | 0.0182 | 0.0086 | 0.0097 |
| 58 | 0.0183 | 0.0086 | 0.0097 |
| 59 | 0.0183 | 0.0086 | 0.0097 |
| 60 | 0.0184 | 0.0086 | 0.0097 |
| 61 | 0.0184 | 0.0087 | 0.0098 |
| 62 | 0.0185 | 0.0087 | 0.0098 |
| 63 | 0.0185 | 0.0087 | 0.0098 |
| 64 | 0.0186 | 0.0087 | 0.0098 |
| 65 | 0.0186 | 0.0088 | 0.0099 |
| 66 | 0.0187 | 0.0088 | 0.0099 |
| 67 | 0.0187 | 0.0088 | 0.0099 |
| 68 | 0.0188 | 0.0088 | 0.0099 |
| 69 | 0.0189 | 0.0089 | 0.0100 |
| 70 | 0.0189 | 0.0089 | 0.0100 |
| 71 | 0.0190 | 0.0089 | 0.0100 |
| 72 | 0.0190 | 0.0089 | 0.0101 |
| 73 | 0.0191 | 0.0090 | 0.0101 |
| 74 | 0.0191 | 0.0090 | 0.0101 |

| | | | |
|---|---|---|---|
| 75 | 0.0192 | 0.0090 | 0.0102 |
| 76 | 0.0192 | 0.0090 | 0.0102 |
| 77 | 0.0193 | 0.0091 | 0.0102 |
| 78 | 0.0194 | 0.0091 | 0.0103 |
| 79 | 0.0194 | 0.0091 | 0.0103 |
| 80 | 0.0195 | 0.0092 | 0.0103 |
| 81 | 0.0196 | 0.0092 | 0.0104 |
| 82 | 0.0196 | 0.0092 | 0.0104 |
| 83 | 0.0197 | 0.0093 | 0.0104 |
| 84 | 0.0197 | 0.0093 | 0.0105 |
| 85 | 0.0198 | 0.0093 | 0.0105 |
| 86 | 0.0199 | 0.0093 | 0.0105 |
| 87 | 0.0200 | 0.0094 | 0.0106 |
| 88 | 0.0200 | 0.0094 | 0.0106 |
| 89 | 0.0201 | 0.0095 | 0.0107 |
| 90 | 0.0202 | 0.0095 | 0.0107 |
| 91 | 0.0203 | 0.0095 | 0.0107 |
| 92 | 0.0203 | 0.0095 | 0.0108 |
| 93 | 0.0204 | 0.0096 | 0.0108 |
| 94 | 0.0205 | 0.0096 | 0.0108 |
| 95 | 0.0206 | 0.0097 | 0.0109 |
| 96 | 0.0206 | 0.0097 | 0.0109 |
| 97 | 0.0207 | 0.0097 | 0.0110 |
| 98 | 0.0208 | 0.0098 | 0.0110 |
| 99 | 0.0209 | 0.0098 | 0.0111 |
| 100 | 0.0209 | 0.0098 | 0.0111 |
| 101 | 0.0210 | 0.0099 | 0.0111 |
| 102 | 0.0211 | 0.0099 | 0.0112 |
| 103 | 0.0212 | 0.0100 | 0.0112 |
| 104 | 0.0213 | 0.0100 | 0.0113 |
| 105 | 0.0214 | 0.0101 | 0.0113 |
| 106 | 0.0214 | 0.0101 | 0.0114 |
| 107 | 0.0216 | 0.0101 | 0.0114 |
| 108 | 0.0216 | 0.0102 | 0.0115 |
| 109 | 0.0218 | 0.0102 | 0.0115 |
| 110 | 0.0218 | 0.0103 | 0.0116 |
| 111 | 0.0219 | 0.0103 | 0.0116 |
| 112 | 0.0220 | 0.0104 | 0.0117 |
| 113 | 0.0221 | 0.0104 | 0.0117 |
| 114 | 0.0222 | 0.0104 | 0.0118 |
| 115 | 0.0224 | 0.0105 | 0.0118 |
| 116 | 0.0224 | 0.0105 | 0.0119 |
| 117 | 0.0226 | 0.0106 | 0.0120 |
| 118 | 0.0226 | 0.0106 | 0.0120 |
| 119 | 0.0228 | 0.0107 | 0.0121 |
| 120 | 0.0229 | 0.0108 | 0.0121 |
| 121 | 0.0230 | 0.0108 | 0.0122 |
| 122 | 0.0231 | 0.0109 | 0.0122 |
| 123 | 0.0233 | 0.0109 | 0.0123 |
| 124 | 0.0233 | 0.0110 | 0.0124 |
| 125 | 0.0235 | 0.0111 | 0.0125 |
| 126 | 0.0236 | 0.0111 | 0.0125 |
| 127 | 0.0238 | 0.0112 | 0.0126 |
| 128 | 0.0239 | 0.0112 | 0.0126 |
| 129 | 0.0240 | 0.0113 | 0.0127 |
| 130 | 0.0241 | 0.0114 | 0.0128 |
| 131 | 0.0243 | 0.0114 | 0.0129 |
| 132 | 0.0244 | 0.0115 | 0.0129 |
| 133 | 0.0246 | 0.0116 | 0.0130 |
| 134 | 0.0247 | 0.0116 | 0.0131 |
| 135 | 0.0249 | 0.0117 | 0.0132 |
| 136 | 0.0250 | 0.0118 | 0.0133 |
| 137 | 0.0253 | 0.0119 | 0.0134 |
| 138 | 0.0254 | 0.0119 | 0.0134 |
| 139 | 0.0256 | 0.0120 | 0.0136 |
| 140 | 0.0257 | 0.0121 | 0.0136 |
| 141 | 0.0259 | 0.0122 | 0.0137 |
| 142 | 0.0261 | 0.0123 | 0.0138 |
| 143 | 0.0263 | 0.0124 | 0.0139 |
| 144 | 0.0265 | 0.0124 | 0.0140 |
| 145 | 0.0261 | 0.0123 | 0.0138 |

| | | | |
|---|---|---|---|
| 146 | 0.0262 | 0.0123 | 0.0139 |
| 147 | 0.0265 | 0.0125 | 0.0140 |
| 148 | 0.0267 | 0.0125 | 0.0141 |
| 149 | 0.0270 | 0.0127 | 0.0143 |
| 150 | 0.0271 | 0.0128 | 0.0144 |
| 151 | 0.0275 | 0.0129 | 0.0145 |
| 152 | 0.0276 | 0.0130 | 0.0146 |
| 153 | 0.0280 | 0.0132 | 0.0148 |
| 154 | 0.0282 | 0.0132 | 0.0149 |
| 155 | 0.0285 | 0.0134 | 0.0151 |
| 156 | 0.0287 | 0.0135 | 0.0152 |
| 157 | 0.0291 | 0.0137 | 0.0154 |
| 158 | 0.0293 | 0.0138 | 0.0155 |
| 159 | 0.0298 | 0.0140 | 0.0158 |
| 160 | 0.0300 | 0.0141 | 0.0159 |
| 161 | 0.0305 | 0.0143 | 0.0161 |
| 162 | 0.0307 | 0.0145 | 0.0163 |
| 163 | 0.0313 | 0.0147 | 0.0166 |
| 164 | 0.0315 | 0.0148 | 0.0167 |
| 165 | 0.0321 | 0.0151 | 0.0170 |
| 166 | 0.0324 | 0.0152 | 0.0172 |
| 167 | 0.0330 | 0.0155 | 0.0175 |
| 168 | 0.0334 | 0.0157 | 0.0177 |
| 169 | 0.0341 | 0.0160 | 0.0181 |
| 170 | 0.0345 | 0.0162 | 0.0183 |
| 171 | 0.0353 | 0.0166 | 0.0187 |
| 172 | 0.0357 | 0.0168 | 0.0189 |
| 173 | 0.0366 | 0.0172 | 0.0194 |
| 174 | 0.0371 | 0.0174 | 0.0196 |
| 175 | 0.0381 | 0.0179 | 0.0202 |
| 176 | 0.0387 | 0.0182 | 0.0205 |
| 177 | 0.0399 | 0.0188 | 0.0211 |
| 178 | 0.0406 | 0.0191 | 0.0215 |
| 179 | 0.0420 | 0.0198 | 0.0223 |
| 180 | 0.0428 | 0.0202 | 0.0227 |
| 181 | 0.0447 | 0.0210 | 0.0236 |
| 182 | 0.0457 | 0.0215 | 0.0242 |
| 183 | 0.0480 | 0.0226 | 0.0254 |
| 184 | 0.0493 | 0.0232 | 0.0261 |
| 185 | 0.0257 | 0.0121 | 0.0136 |
| 186 | 0.0274 | 0.0129 | 0.0145 |
| 187 | 0.0318 | 0.0150 | 0.0169 |
| 188 | 0.0347 | 0.0163 | 0.0184 |
| 189 | 0.0432 | 0.0203 | 0.0229 |
| 190 | 0.0498 | 0.0234 | 0.0264 |
| 191 | 0.0755 | 0.0355 | 0.0400 |
| 192 | 0.1096 | 0.0444 | 0.0652 |
| 193 | 0.4741 | 0.0444 | 0.4297 |
| 194 | 0.0594 | 0.0279 | 0.0315 |
| 195 | 0.0384 | 0.0181 | 0.0203 |
| 196 | 0.0294 | 0.0138 | 0.0156 |
| 197 | 0.0508 | 0.0239 | 0.0269 |
| 198 | 0.0468 | 0.0220 | 0.0248 |
| 199 | 0.0437 | 0.0206 | 0.0232 |
| 200 | 0.0413 | 0.0194 | 0.0219 |
| 201 | 0.0393 | 0.0185 | 0.0208 |
| 202 | 0.0376 | 0.0177 | 0.0199 |
| 203 | 0.0361 | 0.0170 | 0.0191 |
| 204 | 0.0349 | 0.0164 | 0.0185 |
| 205 | 0.0337 | 0.0159 | 0.0179 |
| 206 | 0.0327 | 0.0154 | 0.0173 |
| 207 | 0.0318 | 0.0150 | 0.0168 |
| 208 | 0.0310 | 0.0146 | 0.0164 |
| 209 | 0.0302 | 0.0142 | 0.0160 |
| 210 | 0.0296 | 0.0139 | 0.0157 |
| 211 | 0.0289 | 0.0136 | 0.0153 |
| 212 | 0.0283 | 0.0133 | 0.0150 |
| 213 | 0.0278 | 0.0131 | 0.0147 |
| 214 | 0.0273 | 0.0128 | 0.0145 |
| 215 | 0.0268 | 0.0126 | 0.0142 |
| 216 | 0.0264 | 0.0124 | 0.0140 |

| | | | |
|---|---|---|---|
| 217 | 0.0266 | 0.0125 | 0.0141 |
| 218 | 0.0262 | 0.0123 | 0.0139 |
| 219 | 0.0258 | 0.0121 | 0.0137 |
| 220 | 0.0255 | 0.0120 | 0.0135 |
| 221 | 0.0251 | 0.0118 | 0.0133 |
| 222 | 0.0248 | 0.0117 | 0.0131 |
| 223 | 0.0245 | 0.0115 | 0.0130 |
| 224 | 0.0242 | 0.0114 | 0.0128 |
| 225 | 0.0239 | 0.0113 | 0.0127 |
| 226 | 0.0237 | 0.0111 | 0.0125 |
| 227 | 0.0234 | 0.0110 | 0.0124 |
| 228 | 0.0232 | 0.0109 | 0.0123 |
| 229 | 0.0229 | 0.0108 | 0.0122 |
| 230 | 0.0227 | 0.0107 | 0.0120 |
| 231 | 0.0225 | 0.0106 | 0.0119 |
| 232 | 0.0223 | 0.0105 | 0.0118 |
| 233 | 0.0221 | 0.0104 | 0.0117 |
| 234 | 0.0219 | 0.0103 | 0.0116 |
| 235 | 0.0217 | 0.0102 | 0.0115 |
| 236 | 0.0215 | 0.0101 | 0.0114 |
| 237 | 0.0213 | 0.0100 | 0.0113 |
| 238 | 0.0211 | 0.0099 | 0.0112 |
| 239 | 0.0210 | 0.0099 | 0.0111 |
| 240 | 0.0208 | 0.0098 | 0.0110 |
| 241 | 0.0207 | 0.0097 | 0.0109 |
| 242 | 0.0205 | 0.0096 | 0.0109 |
| 243 | 0.0204 | 0.0096 | 0.0108 |
| 244 | 0.0202 | 0.0095 | 0.0107 |
| 245 | 0.0201 | 0.0094 | 0.0106 |
| 246 | 0.0199 | 0.0094 | 0.0106 |
| 247 | 0.0198 | 0.0093 | 0.0105 |
| 248 | 0.0197 | 0.0092 | 0.0104 |
| 249 | 0.0195 | 0.0092 | 0.0103 |
| 250 | 0.0194 | 0.0091 | 0.0103 |
| 251 | 0.0193 | 0.0091 | 0.0102 |
| 252 | 0.0192 | 0.0090 | 0.0101 |
| 253 | 0.0190 | 0.0090 | 0.0101 |
| 254 | 0.0189 | 0.0089 | 0.0100 |
| 255 | 0.0188 | 0.0088 | 0.0100 |
| 256 | 0.0187 | 0.0088 | 0.0099 |
| 257 | 0.0186 | 0.0087 | 0.0098 |
| 258 | 0.0185 | 0.0087 | 0.0098 |
| 259 | 0.0184 | 0.0086 | 0.0097 |
| 260 | 0.0183 | 0.0086 | 0.0097 |
| 261 | 0.0182 | 0.0086 | 0.0096 |
| 262 | 0.0181 | 0.0085 | 0.0096 |
| 263 | 0.0180 | 0.0085 | 0.0095 |
| 264 | 0.0179 | 0.0084 | 0.0095 |
| 265 | 0.0178 | 0.0084 | 0.0094 |
| 266 | 0.0177 | 0.0083 | 0.0094 |
| 267 | 0.0176 | 0.0083 | 0.0093 |
| 268 | 0.0175 | 0.0083 | 0.0093 |
| 269 | 0.0175 | 0.0082 | 0.0093 |
| 270 | 0.0174 | 0.0082 | 0.0092 |
| 271 | 0.0173 | 0.0081 | 0.0092 |
| 272 | 0.0172 | 0.0081 | 0.0091 |
| 273 | 0.0171 | 0.0081 | 0.0091 |
| 274 | 0.0171 | 0.0080 | 0.0090 |
| 275 | 0.0170 | 0.0080 | 0.0090 |
| 276 | 0.0169 | 0.0080 | 0.0090 |
| 277 | 0.0168 | 0.0079 | 0.0089 |
| 278 | 0.0168 | 0.0079 | 0.0089 |
| 279 | 0.0167 | 0.0079 | 0.0088 |
| 280 | 0.0166 | 0.0078 | 0.0088 |
| 281 | 0.0166 | 0.0078 | 0.0088 |
| 282 | 0.0165 | 0.0078 | 0.0087 |
| 283 | 0.0164 | 0.0077 | 0.0087 |
| 284 | 0.0164 | 0.0077 | 0.0087 |
| 285 | 0.0163 | 0.0077 | 0.0086 |
| 286 | 0.0162 | 0.0076 | 0.0086 |
| 287 | 0.0162 | 0.0076 | 0.0086 |

```
      288             0.0161          0.0076             0.0085
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.24(In)
      Total effective rainfall =      4.05(In)
      Peak flow rate in flood hydrograph =     40.60(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
----------------------------------------------------------------------------
  0+ 5       0.0006      0.08  Q          |         |         |         |
  0+10       0.0040      0.49  Q          |         |         |         |
  0+15       0.0122      1.20  Q          |         |         |         |
  0+20       0.0223      1.46  VQ         |         |         |         |
  0+25       0.0334      1.62  VQ         |         |         |         |
  0+30       0.0453      1.72  VQ         |         |         |         |
  0+35       0.0576      1.78  VQ         |         |         |         |
  0+40       0.0701      1.83  VQ         |         |         |         |
  0+45       0.0828      1.85  VQ         |         |         |         |
  0+50       0.0957      1.86  VQ         |         |         |         |
  0+55       0.1085      1.87  VQ         |         |         |         |
  1+ 0       0.1215      1.88  VQ         |         |         |         |
  1+ 5       0.1345      1.89  VQ         |         |         |         |
  1+10       0.1475      1.90  VQ         |         |         |         |
  1+15       0.1606      1.90  |Q         |         |         |         |
  1+20       0.1737      1.90  |Q         |         |         |         |
  1+25       0.1869      1.91  |Q         |         |         |         |
  1+30       0.2000      1.91  |Q         |         |         |         |
  1+35       0.2132      1.91  |Q         |         |         |         |
  1+40       0.2264      1.92  |Q         |         |         |         |
  1+45       0.2397      1.92  |Q         |         |         |         |
  1+50       0.2529      1.93  |Q         |         |         |         |
  1+55       0.2662      1.93  |Q         |         |         |         |
  2+ 0       0.2796      1.93  |Q         |         |         |         |
  2+ 5       0.2929      1.94  |Q         |         |         |         |
  2+10       0.3063      1.94  |QV        |         |         |         |
  2+15       0.3197      1.95  |QV        |         |         |         |
  2+20       0.3331      1.95  |QV        |         |         |         |
  2+25       0.3466      1.96  |QV        |         |         |         |
  2+30       0.3601      1.96  |QV        |         |         |         |
  2+35       0.3737      1.96  |QV        |         |         |         |
  2+40       0.3872      1.97  |QV        |         |         |         |
  2+45       0.4008      1.97  |QV        |         |         |         |
  2+50       0.4144      1.98  |QV        |         |         |         |
  2+55       0.4281      1.98  |QV        |         |         |         |
  3+ 0       0.4418      1.99  |QV        |         |         |         |
  3+ 5       0.4555      1.99  |QV        |         |         |         |
  3+10       0.4692      2.00  |Q V       |         |         |         |
  3+15       0.4830      2.00  |Q V       |         |         |         |
  3+20       0.4968      2.01  |Q V       |         |         |         |
  3+25       0.5107      2.01  |Q V       |         |         |         |
  3+30       0.5245      2.02  |Q V       |         |         |         |
  3+35       0.5385      2.02  |Q V       |         |         |         |
  3+40       0.5524      2.02  |Q V       |         |         |         |
  3+45       0.5664      2.03  |Q V       |         |         |         |
  3+50       0.5804      2.03  |Q V       |         |         |         |
  3+55       0.5944      2.04  |Q V       |         |         |         |
  4+ 0       0.6085      2.04  |Q V       |         |         |         |
  4+ 5       0.6226      2.05  |Q  V      |         |         |         |
  4+10       0.6368      2.06  |Q  V      |         |         |         |
  4+15       0.6510      2.06  |Q  V      |         |         |         |
  4+20       0.6652      2.07  |Q  V      |         |         |         |
  4+25       0.6795      2.07  |Q  V      |         |         |         |
  4+30       0.6938      2.08  |Q  V      |         |         |         |
  4+35       0.7081      2.08  |Q  V      |         |         |         |
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 4+40       0.7225      2.09  |Q  V     |          |          |          |
 4+45       0.7369      2.09  |Q  V     |          |          |          |
 4+50       0.7514      2.10  |Q  V     |          |          |          |
 4+55       0.7658      2.10  |Q   V    |          |          |          |
 5+ 0       0.7804      2.11  |Q   V    |          |          |          |
 5+ 5       0.7949      2.12  |Q   V    |          |          |          |
 5+10       0.8095      2.12  |Q   V    |          |          |          |
 5+15       0.8242      2.13  |Q   V    |          |          |          |
 5+20       0.8389      2.13  |Q   V    |          |          |          |
 5+25       0.8536      2.14  |Q   V    |          |          |          |
 5+30       0.8684      2.14  |Q   V    |          |          |          |
 5+35       0.8832      2.15  |Q   V    |          |          |          |
 5+40       0.8980      2.16  |Q   V    |          |          |          |
 5+45       0.9129      2.16  |Q   V    |          |          |          |
 5+50       0.9279      2.17  |Q    V   |          |          |          |
 5+55       0.9429      2.18  |Q    V   |          |          |          |
 6+ 0       0.9579      2.18  |Q    V   |          |          |          |
 6+ 5       0.9730      2.19  |Q    V   |          |          |          |
 6+10       0.9881      2.20  |Q    V   |          |          |          |
 6+15       1.0033      2.20  |Q    V   |          |          |          |
 6+20       1.0185      2.21  |Q    V   |          |          |          |
 6+25       1.0337      2.22  |Q    V   |          |          |          |
 6+30       1.0490      2.22  |Q    V   |          |          |          |
 6+35       1.0644      2.23  |Q    V   |          |          |          |
 6+40       1.0798      2.24  |Q     V  |          |          |          |
 6+45       1.0953      2.24  |Q     V  |          |          |          |
 6+50       1.1108      2.25  |Q     V  |          |          |          |
 6+55       1.1263      2.26  |Q     V  |          |          |          |
 7+ 0       1.1419      2.27  |Q     V  |          |          |          |
 7+ 5       1.1576      2.27  |Q     V  |          |          |          |
 7+10       1.1733      2.28  |Q     V  |          |          |          |
 7+15       1.1890      2.29  |Q     V  |          |          |          |
 7+20       1.2049      2.30  |Q     V  |          |          |          |
 7+25       1.2207      2.30  |Q      V |          |          |          |
 7+30       1.2366      2.31  |Q      V |          |          |          |
 7+35       1.2526      2.32  |Q      V |          |          |          |
 7+40       1.2687      2.33  |Q      V |          |          |          |
 7+45       1.2848      2.34  |Q      V |          |          |          |
 7+50       1.3009      2.34  |Q      V |          |          |          |
 7+55       1.3171      2.35  |Q      V |          |          |          |
 8+ 0       1.3334      2.36  |Q      V |          |          |          |
 8+ 5       1.3497      2.37  |Q      V |          |          |          |
 8+10       1.3661      2.38  |Q      V |          |          |          |
 8+15       1.3826      2.39  |Q       V|          |          |          |
 8+20       1.3991      2.40  |Q       V|          |          |          |
 8+25       1.4157      2.41  |Q       V|          |          |          |
 8+30       1.4323      2.42  |Q       V|          |          |          |
 8+35       1.4490      2.43  |Q       V|          |          |          |
 8+40       1.4658      2.44  |Q       V|          |          |          |
 8+45       1.4826      2.45  |Q       V|          |          |          |
 8+50       1.4995      2.46  |Q       V|          |          |          |
 8+55       1.5165      2.47  |Q       V|          |          |          |
 9+ 0       1.5336      2.48  |Q        V          |          |          |
 9+ 5       1.5507      2.49  |Q        V          |          |          |
 9+10       1.5679      2.50  |Q        V          |          |          |
 9+15       1.5852      2.51  | Q       V          |          |          |
 9+20       1.6025      2.52  | Q       V          |          |          |
 9+25       1.6200      2.53  | Q       V          |          |          |
 9+30       1.6375      2.54  | Q       V          |          |          |
 9+35       1.6551      2.55  | Q       V          |          |          |
 9+40       1.6727      2.56  | Q       V          |          |          |
 9+45       1.6905      2.58  | Q       |V         |          |          |
 9+50       1.7083      2.59  | Q       |V         |          |          |
 9+55       1.7262      2.60  | Q       |V         |          |          |
10+ 0       1.7442      2.61  | Q       |V         |          |          |
10+ 5       1.7623      2.63  | Q       |V         |          |          |
10+10       1.7805      2.64  | Q       |V         |          |          |
10+15       1.7988      2.65  | Q       |V         |          |          |
10+20       1.8171      2.67  | Q       |V         |          |          |
10+25       1.8356      2.68  | Q       | V        |          |          |
10+30       1.8541      2.69  | Q       | V        |          |          |
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10+35      1.8728     2.71  | Q       | V       |         |         |
10+40      1.8916     2.72  | Q       | V       |         |         |
10+45      1.9104     2.74  | Q       | V       |         |         |
10+50      1.9294     2.75  | Q       | V       |         |         |
10+55      1.9485     2.77  | Q       | V       |         |         |
11+ 0      1.9676     2.79  | Q       | V       |         |         |
11+ 5      1.9869     2.80  | Q       |  V      |         |         |
11+10      2.0063     2.82  | Q       |  V      |         |         |
11+15      2.0259     2.84  | Q       |  V      |         |         |
11+20      2.0455     2.85  | Q       |  V      |         |         |
11+25      2.0653     2.87  | Q       |  V      |         |         |
11+30      2.0852     2.89  | Q       |  V      |         |         |
11+35      2.1052     2.91  | Q       |  V      |         |         |
11+40      2.1254     2.93  | Q       |  V      |         |         |
11+45      2.1457     2.95  | Q       |   V     |         |         |
11+50      2.1661     2.97  | Q       |   V     |         |         |
11+55      2.1867     2.99  | Q       |   V     |         |         |
12+ 0      2.2074     3.01  | Q       |   V     |         |         |
12+ 5      2.2282     3.03  | Q       |   V     |         |         |
12+10      2.2491     3.03  | Q       |   V     |         |         |
12+15      2.2700     3.03  | Q       |   V     |         |         |
12+20      2.2909     3.04  | Q       |    V    |         |         |
12+25      2.3120     3.06  | Q       |    V    |         |         |
12+30      2.3332     3.08  | Q       |    V    |         |         |
12+35      2.3546     3.11  | Q       |    V    |         |         |
12+40      2.3761     3.13  | Q       |    V    |         |         |
12+45      2.3979     3.16  | Q       |    V    |         |         |
12+50      2.4198     3.19  | Q       |    V    |         |         |
12+55      2.4420     3.22  | Q       |     V   |         |         |
13+ 0      2.4643     3.25  | Q       |     V   |         |         |
13+ 5      2.4869     3.28  | Q       |     V   |         |         |
13+10      2.5097     3.31  | Q       |     V   |         |         |
13+15      2.5328     3.35  | Q       |     V   |         |         |
13+20      2.5560     3.38  | Q       |     V   |         |         |
13+25      2.5796     3.42  | Q       |     V   |         |         |
13+30      2.6034     3.46  | Q       |      V  |         |         |
13+35      2.6275     3.50  | Q       |      V  |         |         |
13+40      2.6519     3.54  | Q       |      V  |         |         |
13+45      2.6766     3.59  | Q       |      V  |         |         |
13+50      2.7016     3.63  | Q       |      V  |         |         |
13+55      2.7269     3.68  | Q       |      V  |         |         |
14+ 0      2.7526     3.73  | Q       |       V |         |         |
14+ 5      2.7787     3.79  |  Q      |       V |         |         |
14+10      2.8051     3.84  |  Q      |       V |         |         |
14+15      2.8320     3.90  |  Q      |       V |         |         |
14+20      2.8593     3.97  |  Q      |       V |         |         |
14+25      2.8871     4.04  |  Q      |       V |         |         |
14+30      2.9154     4.10  |  Q      |        V|         |         |
14+35      2.9442     4.18  |  Q      |        V|         |         |
14+40      2.9736     4.26  |  Q      |        V|         |         |
14+45      3.0035     4.35  |  Q      |        V|         |         |
14+50      3.0342     4.44  |  Q      |        V|         |         |
14+55      3.0655     4.55  |  Q      |         V         |         |
15+ 0      3.0976     4.66  |  Q      |         V         |         |
15+ 5      3.1306     4.79  |  Q      |         V         |         |
15+10      3.1644     4.92  |  Q      |         V         |         |
15+15      3.1994     5.07  |   Q     |         |V        |         |
15+20      3.2354     5.24  |   Q     |         |V        |         |
15+25      3.2719     5.30  |   Q     |         |V        |         |
15+30      3.3052     4.83  |  Q      |         |V        |         |
15+35      3.3322     3.93  |  Q      |         |V        |         |
15+40      3.3583     3.78  |  Q      |         | V       |         |
15+45      3.3853     3.92  |  Q      |         | V       |         |
15+50      3.4146     4.26  |  Q      |         | V       |         |
15+55      3.4486     4.94  |  Q      |         | V       |         |
16+ 0      3.4919     6.28  |    Q    |         | V       |         |
16+ 5      3.5772    12.39  |       Q |         |  V      |         |
16+10      3.7752    28.74  |         |         | Q V     |         |
16+15      4.0548    40.60  |         |         |     V   | Q       |
16+20      4.1861    19.07  |         |    Q    |      V  |         |
16+25      4.2730    12.61  |        Q|         |       V |         |
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16+30       4.3401      9.76  |       Q  |          |        V |          |
16+35       4.3987      8.50  |      Q   |          |        V |          |
16+40       4.4475      7.10  |     Q    |          |         V|          |
16+45       4.4879      5.86  |    Q     |          |         V|          |
16+50       4.5247      5.35  |    Q     |          |         V|          |
16+55       4.5592      5.01  |    Q     |          |         V|          |
17+ 0       4.5925      4.83  |   Q      |          |          V          |
17+ 5       4.6237      4.52  |   Q      |          |          V          |
17+10       4.6530      4.26  |   Q      |          |          V          |
17+15       4.6805      4.00  |   Q      |          |          V          |
17+20       4.7072      3.87  |   Q      |          |          V          |
17+25       4.7331      3.76  |   Q      |          |          |V         |
17+30       4.7583      3.66  | Q        |          |          |V         |
17+35       4.7829      3.57  | Q        |          |          |V         |
17+40       4.8069      3.48  | Q        |          |          |V         |
17+45       4.8303      3.40  | Q        |          |          |V         |
17+50       4.8532      3.33  | Q        |          |          |V         |
17+55       4.8757      3.26  | Q        |          |          | V        |
18+ 0       4.8977      3.20  | Q        |          |          | V        |
18+ 5       4.9194      3.14  | Q        |          |          | V        |
18+10       4.9408      3.11  | Q        |          |          | V        |
18+15       4.9620      3.08  | Q        |          |          | V        |
18+20       4.9830      3.05  | Q        |          |          | V        |
18+25       5.0037      3.01  | Q        |          |          | V        |
18+30       5.0242      2.97  | Q        |          |          |  V       |
18+35       5.0443      2.93  | Q        |          |          |  V       |
18+40       5.0643      2.89  | Q        |          |          |  V       |
18+45       5.0840      2.86  | Q        |          |          |  V       |
18+50       5.1034      2.82  | Q        |          |          |  V       |
18+55       5.1226      2.79  | Q        |          |          |  V       |
19+ 0       5.1416      2.76  | Q        |          |          |  V       |
19+ 5       5.1604      2.73  | Q        |          |          |  V       |
19+10       5.1790      2.70  | Q        |          |          |   V      |
19+15       5.1974      2.67  | Q        |          |          |   V      |
19+20       5.2156      2.64  | Q        |          |          |   V      |
19+25       5.2337      2.62  | Q        |          |          |   V      |
19+30       5.2515      2.59  | Q        |          |          |   V      |
19+35       5.2692      2.57  | Q        |          |          |   V      |
19+40       5.2868      2.55  | Q        |          |          |   V      |
19+45       5.3041      2.52  | Q        |          |          |   V      |
19+50       5.3214      2.50  | Q        |          |          |   V      |
19+55       5.3384      2.48  |Q         |          |          |    V     |
20+ 0       5.3554      2.46  |Q         |          |          |    V     |
20+ 5       5.3722      2.44  |Q         |          |          |    V     |
20+10       5.3889      2.42  |Q         |          |          |    V     |
20+15       5.4054      2.40  |Q         |          |          |    V     |
20+20       5.4218      2.38  |Q         |          |          |    V     |
20+25       5.4381      2.37  |Q         |          |          |    V     |
20+30       5.4543      2.35  |Q         |          |          |    V     |
20+35       5.4703      2.33  |Q         |          |          |    V     |
20+40       5.4863      2.31  |Q         |          |          |     V    |
20+45       5.5021      2.30  |Q         |          |          |     V    |
20+50       5.5178      2.28  |Q         |          |          |     V    |
20+55       5.5334      2.27  |Q         |          |          |     V    |
21+ 0       5.5489      2.25  |Q         |          |          |     V    |
21+ 5       5.5644      2.24  |Q         |          |          |     V    |
21+10       5.5797      2.22  |Q         |          |          |     V    |
21+15       5.5949      2.21  |Q         |          |          |     V    |
21+20       5.6101      2.20  |Q         |          |          |     V    |
21+25       5.6251      2.18  |Q         |          |          |     V    |
21+30       5.6401      2.17  |Q         |          |          |      V   |
21+35       5.6549      2.16  |Q         |          |          |      V   |
21+40       5.6697      2.15  |Q         |          |          |      V   |
21+45       5.6844      2.13  |Q         |          |          |      V   |
21+50       5.6990      2.12  |Q         |          |          |      V   |
21+55       5.7136      2.11  |Q         |          |          |      V   |
22+ 0       5.7280      2.10  |Q         |          |          |      V   |
22+ 5       5.7424      2.09  |Q         |          |          |      V   |
22+10       5.7567      2.08  |Q         |          |          |      V   |
22+15       5.7710      2.07  |Q         |          |          |      V   |
22+20       5.7851      2.06  |Q         |          |          |       V  |
```

```
   22+25       5.7992      2.05  |Q        |         |         |       V |
   22+30       5.8132      2.04  |Q        |         |         |       V |
   22+35       5.8272      2.03  |Q        |         |         |       V |
   22+40       5.8411      2.02  |Q        |         |         |       V |
   22+45       5.8549      2.01  |Q        |         |         |       V |
   22+50       5.8687      2.00  |Q        |         |         |       V |
   22+55       5.8824      1.99  |Q        |         |         |       V |
   23+ 0       5.8960      1.98  |Q        |         |         |       V |
   23+ 5       5.9096      1.97  |Q        |         |         |       V |
   23+10       5.9231      1.96  |Q        |         |         |       V |
   23+15       5.9365      1.95  |Q        |         |         |        V|
   23+20       5.9499      1.94  |Q        |         |         |        V|
   23+25       5.9632      1.94  |Q        |         |         |        V|
   23+30       5.9765      1.93  |Q        |         |         |        V|
   23+35       5.9897      1.92  |Q        |         |         |        V|
   23+40       6.0029      1.91  |Q        |         |         |        V|
   23+45       6.0160      1.90  |Q        |         |         |        V|
   23+50       6.0291      1.90  |Q        |         |         |        V|
   23+55       6.0421      1.89  |Q        |         |         |        V|
   24+ 0       6.0551      1.88  |Q        |         |         |        V|
   24+ 5       6.0674      1.79  |Q        |         |         |        V|
   24+10       6.0768      1.37  |Q        |         |         |        V|
   24+15       6.0814      0.67  Q         |         |         |        V|
   24+20       6.0842      0.40  Q         |         |         |        V|
   24+25       6.0859      0.25  Q         |         |         |        V|
   24+30       6.0869      0.15  Q         |         |         |        V|
   24+35       6.0875      0.09  Q         |         |         |        V|
   24+40       6.0879      0.05  Q         |         |         |        V|
   24+45       6.0881      0.03  Q         |         |         |        V|
   24+50       6.0882      0.02  Q         |         |         |        V|
   24+55       6.0883      0.01  Q         |         |         |        V|
   25+ 0       6.0883      0.01  Q         |         |         |        V|
   25+ 5       6.0884      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'A' – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
25 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            18.06            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            18.06            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            18.06           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            18.06            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            18.06            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            18.06           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 70.0      70.0         18.06      1.000     0.532    1.000    0.532

Area-averaged adjusted loss rate Fm (In/Hr) =  0.532

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 18.06 | 1.000 | 70.0 | 70.0 | 4.29 | 0.598 |

Area-averaged catchment yield fraction, Y = 0.598
Area-averaged low loss fraction, Yb = 0.402
User entry of time of concentration = 0.202 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 18.06(Ac.)
Catchment Lag time = 0.162 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.5677
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.532(In/Hr)
Average low loss rate fraction (Yb) = 0.402 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 18.06(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.568(In)
30-minute factor = 0.999 Adjusted rainfall = 0.973(In)
1-hour factor = 0.999 Adjusted rainfall = 1.198(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 218.41 (CFS)) | |
| 1 | 4.472 | 9.767 |
| 2 | 26.592 | 48.314 |
| 3 | 64.398 | 82.572 |
| 4 | 78.587 | 30.990 |
| 5 | 86.751 | 17.831 |
| 6 | 92.030 | 11.532 |
| 7 | 95.442 | 7.452 |
| 8 | 97.482 | 4.455 |
| 9 | 98.356 | 1.909 |
| 10 | 98.889 | 1.165 |
| 11 | 99.255 | 0.797 |
| 12 | 99.630 | 0.821 |
| 13 | 99.870 | 0.524 |
| 14 | 100.000 | 0.283 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5684 | 0.5684 |
| 2 | 0.6998 | 0.1314 |
| 3 | 0.7904 | 0.0905 |
| 4 | 0.8616 | 0.0712 |
| 5 | 0.9212 | 0.0597 |
| 6 | 0.9730 | 0.0518 |
| 7 | 1.0191 | 0.0461 |
| 8 | 1.0608 | 0.0417 |
| 9 | 1.0989 | 0.0382 |
| 10 | 1.1342 | 0.0353 |
| 11 | 1.1671 | 0.0329 |
| 12 | 1.1980 | 0.0309 |

| | | |
|---|---|---|
| 13 | 1.2586 | 0.0606 |
| 14 | 1.3174 | 0.0588 |
| 15 | 1.3746 | 0.0572 |
| 16 | 1.4304 | 0.0558 |
| 17 | 1.4849 | 0.0545 |
| 18 | 1.5381 | 0.0533 |
| 19 | 1.5903 | 0.0521 |
| 20 | 1.6414 | 0.0511 |
| 21 | 1.6915 | 0.0501 |
| 22 | 1.7407 | 0.0492 |
| 23 | 1.7891 | 0.0484 |
| 24 | 1.8366 | 0.0476 |
| 25 | 1.8834 | 0.0468 |
| 26 | 1.9295 | 0.0461 |
| 27 | 1.9749 | 0.0454 |
| 28 | 2.0197 | 0.0448 |
| 29 | 2.0639 | 0.0442 |
| 30 | 2.1075 | 0.0436 |
| 31 | 2.1505 | 0.0430 |
| 32 | 2.1930 | 0.0425 |
| 33 | 2.2350 | 0.0420 |
| 34 | 2.2765 | 0.0415 |
| 35 | 2.3176 | 0.0410 |
| 36 | 2.3582 | 0.0406 |
| 37 | 2.3983 | 0.0401 |
| 38 | 2.4380 | 0.0397 |
| 39 | 2.4773 | 0.0393 |
| 40 | 2.5163 | 0.0389 |
| 41 | 2.5548 | 0.0386 |
| 42 | 2.5930 | 0.0382 |
| 43 | 2.6309 | 0.0379 |
| 44 | 2.6684 | 0.0375 |
| 45 | 2.7056 | 0.0372 |
| 46 | 2.7425 | 0.0369 |
| 47 | 2.7790 | 0.0366 |
| 48 | 2.8153 | 0.0363 |
| 49 | 2.8513 | 0.0360 |
| 50 | 2.8870 | 0.0357 |
| 51 | 2.9224 | 0.0354 |
| 52 | 2.9575 | 0.0352 |
| 53 | 2.9924 | 0.0349 |
| 54 | 3.0271 | 0.0346 |
| 55 | 3.0615 | 0.0344 |
| 56 | 3.0957 | 0.0342 |
| 57 | 3.1296 | 0.0339 |
| 58 | 3.1633 | 0.0337 |
| 59 | 3.1968 | 0.0335 |
| 60 | 3.2300 | 0.0333 |
| 61 | 3.2631 | 0.0330 |
| 62 | 3.2959 | 0.0328 |
| 63 | 3.3286 | 0.0326 |
| 64 | 3.3610 | 0.0324 |
| 65 | 3.3933 | 0.0322 |
| 66 | 3.4253 | 0.0321 |
| 67 | 3.4572 | 0.0319 |
| 68 | 3.4889 | 0.0317 |
| 69 | 3.5204 | 0.0315 |
| 70 | 3.5517 | 0.0313 |
| 71 | 3.5829 | 0.0312 |
| 72 | 3.6139 | 0.0310 |
| 73 | 3.6475 | 0.0336 |
| 74 | 3.6810 | 0.0335 |
| 75 | 3.7143 | 0.0333 |
| 76 | 3.7474 | 0.0332 |
| 77 | 3.7805 | 0.0330 |
| 78 | 3.8134 | 0.0329 |
| 79 | 3.8461 | 0.0327 |
| 80 | 3.8787 | 0.0326 |
| 81 | 3.9112 | 0.0325 |
| 82 | 3.9436 | 0.0323 |
| 83 | 3.9758 | 0.0322 |

| | | |
|---|---|---|
| 84 | 4.0079 | 0.0321 |
| 85 | 4.0398 | 0.0320 |
| 86 | 4.0717 | 0.0318 |
| 87 | 4.1034 | 0.0317 |
| 88 | 4.1350 | 0.0316 |
| 89 | 4.1665 | 0.0315 |
| 90 | 4.1979 | 0.0314 |
| 91 | 4.2291 | 0.0313 |
| 92 | 4.2602 | 0.0311 |
| 93 | 4.2913 | 0.0310 |
| 94 | 4.3222 | 0.0309 |
| 95 | 4.3530 | 0.0308 |
| 96 | 4.3837 | 0.0307 |
| 97 | 4.4143 | 0.0306 |
| 98 | 4.4448 | 0.0305 |
| 99 | 4.4752 | 0.0304 |
| 100 | 4.5055 | 0.0303 |
| 101 | 4.5357 | 0.0302 |
| 102 | 4.5658 | 0.0301 |
| 103 | 4.5958 | 0.0300 |
| 104 | 4.6257 | 0.0299 |
| 105 | 4.6555 | 0.0298 |
| 106 | 4.6852 | 0.0297 |
| 107 | 4.7149 | 0.0296 |
| 108 | 4.7444 | 0.0295 |
| 109 | 4.7738 | 0.0294 |
| 110 | 4.8032 | 0.0294 |
| 111 | 4.8325 | 0.0293 |
| 112 | 4.8616 | 0.0292 |
| 113 | 4.8907 | 0.0291 |
| 114 | 4.9197 | 0.0290 |
| 115 | 4.9487 | 0.0289 |
| 116 | 4.9775 | 0.0288 |
| 117 | 5.0063 | 0.0288 |
| 118 | 5.0350 | 0.0287 |
| 119 | 5.0636 | 0.0286 |
| 120 | 5.0921 | 0.0285 |
| 121 | 5.1205 | 0.0284 |
| 122 | 5.1489 | 0.0284 |
| 123 | 5.1772 | 0.0283 |
| 124 | 5.2054 | 0.0282 |
| 125 | 5.2336 | 0.0281 |
| 126 | 5.2616 | 0.0281 |
| 127 | 5.2896 | 0.0280 |
| 128 | 5.3176 | 0.0279 |
| 129 | 5.3454 | 0.0279 |
| 130 | 5.3732 | 0.0278 |
| 131 | 5.4009 | 0.0277 |
| 132 | 5.4285 | 0.0276 |
| 133 | 5.4561 | 0.0276 |
| 134 | 5.4836 | 0.0275 |
| 135 | 5.5110 | 0.0274 |
| 136 | 5.5384 | 0.0274 |
| 137 | 5.5657 | 0.0273 |
| 138 | 5.5930 | 0.0272 |
| 139 | 5.6201 | 0.0272 |
| 140 | 5.6472 | 0.0271 |
| 141 | 5.6743 | 0.0270 |
| 142 | 5.7013 | 0.0270 |
| 143 | 5.7282 | 0.0269 |
| 144 | 5.7551 | 0.0269 |
| 145 | 5.7819 | 0.0268 |
| 146 | 5.8086 | 0.0267 |
| 147 | 5.8353 | 0.0267 |
| 148 | 5.8619 | 0.0266 |
| 149 | 5.8884 | 0.0266 |
| 150 | 5.9149 | 0.0265 |
| 151 | 5.9414 | 0.0264 |
| 152 | 5.9678 | 0.0264 |
| 153 | 5.9941 | 0.0263 |
| 154 | 6.0204 | 0.0263 |

| | | |
|---|---|---|
| 155 | 6.0466 | 0.0262 |
| 156 | 6.0727 | 0.0262 |
| 157 | 6.0988 | 0.0261 |
| 158 | 6.1249 | 0.0260 |
| 159 | 6.1509 | 0.0260 |
| 160 | 6.1768 | 0.0259 |
| 161 | 6.2027 | 0.0259 |
| 162 | 6.2286 | 0.0258 |
| 163 | 6.2543 | 0.0258 |
| 164 | 6.2801 | 0.0257 |
| 165 | 6.3057 | 0.0257 |
| 166 | 6.3314 | 0.0256 |
| 167 | 6.3570 | 0.0256 |
| 168 | 6.3825 | 0.0255 |
| 169 | 6.4080 | 0.0255 |
| 170 | 6.4334 | 0.0254 |
| 171 | 6.4588 | 0.0254 |
| 172 | 6.4841 | 0.0253 |
| 173 | 6.5094 | 0.0253 |
| 174 | 6.5346 | 0.0252 |
| 175 | 6.5598 | 0.0252 |
| 176 | 6.5849 | 0.0251 |
| 177 | 6.6100 | 0.0251 |
| 178 | 6.6351 | 0.0250 |
| 179 | 6.6601 | 0.0250 |
| 180 | 6.6850 | 0.0250 |
| 181 | 6.7099 | 0.0249 |
| 182 | 6.7348 | 0.0249 |
| 183 | 6.7596 | 0.0248 |
| 184 | 6.7844 | 0.0248 |
| 185 | 6.8091 | 0.0247 |
| 186 | 6.8338 | 0.0247 |
| 187 | 6.8584 | 0.0246 |
| 188 | 6.8830 | 0.0246 |
| 189 | 6.9076 | 0.0246 |
| 190 | 6.9321 | 0.0245 |
| 191 | 6.9566 | 0.0245 |
| 192 | 6.9810 | 0.0244 |
| 193 | 7.0054 | 0.0244 |
| 194 | 7.0297 | 0.0243 |
| 195 | 7.0541 | 0.0243 |
| 196 | 7.0783 | 0.0243 |
| 197 | 7.1025 | 0.0242 |
| 198 | 7.1267 | 0.0242 |
| 199 | 7.1509 | 0.0241 |
| 200 | 7.1750 | 0.0241 |
| 201 | 7.1990 | 0.0241 |
| 202 | 7.2230 | 0.0240 |
| 203 | 7.2470 | 0.0240 |
| 204 | 7.2710 | 0.0239 |
| 205 | 7.2949 | 0.0239 |
| 206 | 7.3188 | 0.0239 |
| 207 | 7.3426 | 0.0238 |
| 208 | 7.3664 | 0.0238 |
| 209 | 7.3901 | 0.0238 |
| 210 | 7.4138 | 0.0237 |
| 211 | 7.4375 | 0.0237 |
| 212 | 7.4612 | 0.0236 |
| 213 | 7.4848 | 0.0236 |
| 214 | 7.5083 | 0.0236 |
| 215 | 7.5319 | 0.0235 |
| 216 | 7.5554 | 0.0235 |
| 217 | 7.5788 | 0.0235 |
| 218 | 7.6023 | 0.0234 |
| 219 | 7.6257 | 0.0234 |
| 220 | 7.6490 | 0.0234 |
| 221 | 7.6723 | 0.0233 |
| 222 | 7.6956 | 0.0233 |
| 223 | 7.7189 | 0.0233 |
| 224 | 7.7421 | 0.0232 |
| 225 | 7.7653 | 0.0232 |

| | | |
|---|---|---|
| 226 | 7.7884 | 0.0232 |
| 227 | 7.8116 | 0.0231 |
| 228 | 7.8346 | 0.0231 |
| 229 | 7.8577 | 0.0231 |
| 230 | 7.8807 | 0.0230 |
| 231 | 7.9037 | 0.0230 |
| 232 | 7.9266 | 0.0230 |
| 233 | 7.9496 | 0.0229 |
| 234 | 7.9724 | 0.0229 |
| 235 | 7.9953 | 0.0229 |
| 236 | 8.0181 | 0.0228 |
| 237 | 8.0409 | 0.0228 |
| 238 | 8.0637 | 0.0228 |
| 239 | 8.0864 | 0.0227 |
| 240 | 8.1091 | 0.0227 |
| 241 | 8.1318 | 0.0227 |
| 242 | 8.1544 | 0.0226 |
| 243 | 8.1770 | 0.0226 |
| 244 | 8.1996 | 0.0226 |
| 245 | 8.2221 | 0.0225 |
| 246 | 8.2446 | 0.0225 |
| 247 | 8.2671 | 0.0225 |
| 248 | 8.2896 | 0.0225 |
| 249 | 8.3120 | 0.0224 |
| 250 | 8.3344 | 0.0224 |
| 251 | 8.3567 | 0.0224 |
| 252 | 8.3791 | 0.0223 |
| 253 | 8.4014 | 0.0223 |
| 254 | 8.4237 | 0.0223 |
| 255 | 8.4459 | 0.0222 |
| 256 | 8.4681 | 0.0222 |
| 257 | 8.4903 | 0.0222 |
| 258 | 8.5125 | 0.0222 |
| 259 | 8.5346 | 0.0221 |
| 260 | 8.5567 | 0.0221 |
| 261 | 8.5788 | 0.0221 |
| 262 | 8.6009 | 0.0221 |
| 263 | 8.6229 | 0.0220 |
| 264 | 8.6449 | 0.0220 |
| 265 | 8.6668 | 0.0220 |
| 266 | 8.6888 | 0.0219 |
| 267 | 8.7107 | 0.0219 |
| 268 | 8.7326 | 0.0219 |
| 269 | 8.7544 | 0.0219 |
| 270 | 8.7763 | 0.0218 |
| 271 | 8.7981 | 0.0218 |
| 272 | 8.8199 | 0.0218 |
| 273 | 8.8416 | 0.0218 |
| 274 | 8.8633 | 0.0217 |
| 275 | 8.8850 | 0.0217 |
| 276 | 8.9067 | 0.0217 |
| 277 | 8.9284 | 0.0216 |
| 278 | 8.9500 | 0.0216 |
| 279 | 8.9716 | 0.0216 |
| 280 | 8.9932 | 0.0216 |
| 281 | 9.0147 | 0.0215 |
| 282 | 9.0362 | 0.0215 |
| 283 | 9.0577 | 0.0215 |
| 284 | 9.0792 | 0.0215 |
| 285 | 9.1007 | 0.0214 |
| 286 | 9.1221 | 0.0214 |
| 287 | 9.1435 | 0.0214 |
| 288 | 9.1649 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0086 | 0.0128 |
| 2 | 0.0214 | 0.0086 | 0.0128 |
| 3 | 0.0214 | 0.0086 | 0.0128 |

| | | | |
|---|---|---|---|
| 4 | 0.0215 | 0.0086 | 0.0128 |
| 5 | 0.0215 | 0.0087 | 0.0129 |
| 6 | 0.0215 | 0.0087 | 0.0129 |
| 7 | 0.0216 | 0.0087 | 0.0129 |
| 8 | 0.0216 | 0.0087 | 0.0129 |
| 9 | 0.0217 | 0.0087 | 0.0130 |
| 10 | 0.0217 | 0.0087 | 0.0130 |
| 11 | 0.0218 | 0.0087 | 0.0130 |
| 12 | 0.0218 | 0.0088 | 0.0130 |
| 13 | 0.0218 | 0.0088 | 0.0131 |
| 14 | 0.0219 | 0.0088 | 0.0131 |
| 15 | 0.0219 | 0.0088 | 0.0131 |
| 16 | 0.0219 | 0.0088 | 0.0131 |
| 17 | 0.0220 | 0.0088 | 0.0132 |
| 18 | 0.0220 | 0.0089 | 0.0132 |
| 19 | 0.0221 | 0.0089 | 0.0132 |
| 20 | 0.0221 | 0.0089 | 0.0132 |
| 21 | 0.0222 | 0.0089 | 0.0133 |
| 22 | 0.0222 | 0.0089 | 0.0133 |
| 23 | 0.0222 | 0.0089 | 0.0133 |
| 24 | 0.0223 | 0.0090 | 0.0133 |
| 25 | 0.0223 | 0.0090 | 0.0134 |
| 26 | 0.0224 | 0.0090 | 0.0134 |
| 27 | 0.0224 | 0.0090 | 0.0134 |
| 28 | 0.0225 | 0.0090 | 0.0134 |
| 29 | 0.0225 | 0.0091 | 0.0135 |
| 30 | 0.0225 | 0.0091 | 0.0135 |
| 31 | 0.0226 | 0.0091 | 0.0135 |
| 32 | 0.0226 | 0.0091 | 0.0135 |
| 33 | 0.0227 | 0.0091 | 0.0136 |
| 34 | 0.0227 | 0.0091 | 0.0136 |
| 35 | 0.0228 | 0.0092 | 0.0136 |
| 36 | 0.0228 | 0.0092 | 0.0136 |
| 37 | 0.0229 | 0.0092 | 0.0137 |
| 38 | 0.0229 | 0.0092 | 0.0137 |
| 39 | 0.0230 | 0.0092 | 0.0137 |
| 40 | 0.0230 | 0.0093 | 0.0138 |
| 41 | 0.0231 | 0.0093 | 0.0138 |
| 42 | 0.0231 | 0.0093 | 0.0138 |
| 43 | 0.0232 | 0.0093 | 0.0139 |
| 44 | 0.0232 | 0.0093 | 0.0139 |
| 45 | 0.0233 | 0.0094 | 0.0139 |
| 46 | 0.0233 | 0.0094 | 0.0139 |
| 47 | 0.0234 | 0.0094 | 0.0140 |
| 48 | 0.0234 | 0.0094 | 0.0140 |
| 49 | 0.0235 | 0.0094 | 0.0141 |
| 50 | 0.0235 | 0.0095 | 0.0141 |
| 51 | 0.0236 | 0.0095 | 0.0141 |
| 52 | 0.0236 | 0.0095 | 0.0141 |
| 53 | 0.0237 | 0.0095 | 0.0142 |
| 54 | 0.0238 | 0.0095 | 0.0142 |
| 55 | 0.0238 | 0.0096 | 0.0143 |
| 56 | 0.0239 | 0.0096 | 0.0143 |
| 57 | 0.0239 | 0.0096 | 0.0143 |
| 58 | 0.0240 | 0.0096 | 0.0143 |
| 59 | 0.0241 | 0.0097 | 0.0144 |
| 60 | 0.0241 | 0.0097 | 0.0144 |
| 61 | 0.0242 | 0.0097 | 0.0145 |
| 62 | 0.0242 | 0.0097 | 0.0145 |
| 63 | 0.0243 | 0.0098 | 0.0145 |
| 64 | 0.0243 | 0.0098 | 0.0146 |
| 65 | 0.0244 | 0.0098 | 0.0146 |
| 66 | 0.0245 | 0.0098 | 0.0146 |
| 67 | 0.0246 | 0.0099 | 0.0147 |
| 68 | 0.0246 | 0.0099 | 0.0147 |
| 69 | 0.0247 | 0.0099 | 0.0148 |
| 70 | 0.0247 | 0.0099 | 0.0148 |
| 71 | 0.0248 | 0.0100 | 0.0148 |
| 72 | 0.0249 | 0.0100 | 0.0149 |
| 73 | 0.0250 | 0.0100 | 0.0149 |
| 74 | 0.0250 | 0.0100 | 0.0149 |

| | | | |
|---|---|---|---|
| 75 | 0.0251 | 0.0101 | 0.0150 |
| 76 | 0.0251 | 0.0101 | 0.0150 |
| 77 | 0.0252 | 0.0101 | 0.0151 |
| 78 | 0.0253 | 0.0102 | 0.0151 |
| 79 | 0.0254 | 0.0102 | 0.0152 |
| 80 | 0.0254 | 0.0102 | 0.0152 |
| 81 | 0.0255 | 0.0103 | 0.0153 |
| 82 | 0.0256 | 0.0103 | 0.0153 |
| 83 | 0.0257 | 0.0103 | 0.0154 |
| 84 | 0.0257 | 0.0103 | 0.0154 |
| 85 | 0.0258 | 0.0104 | 0.0154 |
| 86 | 0.0259 | 0.0104 | 0.0155 |
| 87 | 0.0260 | 0.0105 | 0.0155 |
| 88 | 0.0260 | 0.0105 | 0.0156 |
| 89 | 0.0262 | 0.0105 | 0.0156 |
| 90 | 0.0262 | 0.0105 | 0.0157 |
| 91 | 0.0263 | 0.0106 | 0.0157 |
| 92 | 0.0264 | 0.0106 | 0.0158 |
| 93 | 0.0265 | 0.0107 | 0.0158 |
| 94 | 0.0266 | 0.0107 | 0.0159 |
| 95 | 0.0267 | 0.0107 | 0.0160 |
| 96 | 0.0267 | 0.0107 | 0.0160 |
| 97 | 0.0269 | 0.0108 | 0.0161 |
| 98 | 0.0269 | 0.0108 | 0.0161 |
| 99 | 0.0270 | 0.0109 | 0.0162 |
| 100 | 0.0271 | 0.0109 | 0.0162 |
| 101 | 0.0272 | 0.0110 | 0.0163 |
| 102 | 0.0273 | 0.0110 | 0.0163 |
| 103 | 0.0274 | 0.0110 | 0.0164 |
| 104 | 0.0275 | 0.0111 | 0.0164 |
| 105 | 0.0276 | 0.0111 | 0.0165 |
| 106 | 0.0277 | 0.0111 | 0.0166 |
| 107 | 0.0279 | 0.0112 | 0.0167 |
| 108 | 0.0279 | 0.0112 | 0.0167 |
| 109 | 0.0281 | 0.0113 | 0.0168 |
| 110 | 0.0281 | 0.0113 | 0.0168 |
| 111 | 0.0283 | 0.0114 | 0.0169 |
| 112 | 0.0284 | 0.0114 | 0.0170 |
| 113 | 0.0285 | 0.0115 | 0.0171 |
| 114 | 0.0286 | 0.0115 | 0.0171 |
| 115 | 0.0288 | 0.0116 | 0.0172 |
| 116 | 0.0288 | 0.0116 | 0.0172 |
| 117 | 0.0290 | 0.0117 | 0.0173 |
| 118 | 0.0291 | 0.0117 | 0.0174 |
| 119 | 0.0293 | 0.0118 | 0.0175 |
| 120 | 0.0294 | 0.0118 | 0.0176 |
| 121 | 0.0295 | 0.0119 | 0.0177 |
| 122 | 0.0296 | 0.0119 | 0.0177 |
| 123 | 0.0298 | 0.0120 | 0.0178 |
| 124 | 0.0299 | 0.0120 | 0.0179 |
| 125 | 0.0301 | 0.0121 | 0.0180 |
| 126 | 0.0302 | 0.0121 | 0.0181 |
| 127 | 0.0304 | 0.0122 | 0.0182 |
| 128 | 0.0305 | 0.0123 | 0.0182 |
| 129 | 0.0307 | 0.0123 | 0.0184 |
| 130 | 0.0308 | 0.0124 | 0.0184 |
| 131 | 0.0310 | 0.0125 | 0.0186 |
| 132 | 0.0311 | 0.0125 | 0.0186 |
| 133 | 0.0314 | 0.0126 | 0.0188 |
| 134 | 0.0315 | 0.0127 | 0.0188 |
| 135 | 0.0317 | 0.0128 | 0.0190 |
| 136 | 0.0318 | 0.0128 | 0.0190 |
| 137 | 0.0321 | 0.0129 | 0.0192 |
| 138 | 0.0322 | 0.0130 | 0.0193 |
| 139 | 0.0325 | 0.0131 | 0.0194 |
| 140 | 0.0326 | 0.0131 | 0.0195 |
| 141 | 0.0329 | 0.0132 | 0.0197 |
| 142 | 0.0330 | 0.0133 | 0.0198 |
| 143 | 0.0333 | 0.0134 | 0.0199 |
| 144 | 0.0335 | 0.0135 | 0.0200 |
| 145 | 0.0310 | 0.0125 | 0.0185 |

| | | | |
|---|---|---|---|
| 146 | 0.0312 | 0.0125 | 0.0186 |
| 147 | 0.0315 | 0.0127 | 0.0188 |
| 148 | 0.0317 | 0.0127 | 0.0189 |
| 149 | 0.0321 | 0.0129 | 0.0192 |
| 150 | 0.0322 | 0.0130 | 0.0193 |
| 151 | 0.0326 | 0.0131 | 0.0195 |
| 152 | 0.0328 | 0.0132 | 0.0196 |
| 153 | 0.0333 | 0.0134 | 0.0199 |
| 154 | 0.0335 | 0.0135 | 0.0200 |
| 155 | 0.0339 | 0.0136 | 0.0203 |
| 156 | 0.0342 | 0.0137 | 0.0204 |
| 157 | 0.0346 | 0.0139 | 0.0207 |
| 158 | 0.0349 | 0.0140 | 0.0209 |
| 159 | 0.0354 | 0.0142 | 0.0212 |
| 160 | 0.0357 | 0.0144 | 0.0213 |
| 161 | 0.0363 | 0.0146 | 0.0217 |
| 162 | 0.0366 | 0.0147 | 0.0219 |
| 163 | 0.0372 | 0.0150 | 0.0222 |
| 164 | 0.0375 | 0.0151 | 0.0224 |
| 165 | 0.0382 | 0.0154 | 0.0228 |
| 166 | 0.0386 | 0.0155 | 0.0231 |
| 167 | 0.0393 | 0.0158 | 0.0235 |
| 168 | 0.0397 | 0.0160 | 0.0237 |
| 169 | 0.0406 | 0.0163 | 0.0243 |
| 170 | 0.0410 | 0.0165 | 0.0245 |
| 171 | 0.0420 | 0.0169 | 0.0251 |
| 172 | 0.0425 | 0.0171 | 0.0254 |
| 173 | 0.0436 | 0.0175 | 0.0261 |
| 174 | 0.0442 | 0.0178 | 0.0264 |
| 175 | 0.0454 | 0.0183 | 0.0272 |
| 176 | 0.0461 | 0.0185 | 0.0276 |
| 177 | 0.0476 | 0.0191 | 0.0284 |
| 178 | 0.0484 | 0.0194 | 0.0289 |
| 179 | 0.0501 | 0.0201 | 0.0300 |
| 180 | 0.0511 | 0.0205 | 0.0306 |
| 181 | 0.0533 | 0.0214 | 0.0318 |
| 182 | 0.0545 | 0.0219 | 0.0326 |
| 183 | 0.0572 | 0.0230 | 0.0342 |
| 184 | 0.0588 | 0.0237 | 0.0352 |
| 185 | 0.0309 | 0.0124 | 0.0185 |
| 186 | 0.0329 | 0.0132 | 0.0197 |
| 187 | 0.0382 | 0.0153 | 0.0228 |
| 188 | 0.0417 | 0.0167 | 0.0249 |
| 189 | 0.0518 | 0.0208 | 0.0310 |
| 190 | 0.0597 | 0.0240 | 0.0357 |
| 191 | 0.0905 | 0.0364 | 0.0541 |
| 192 | 0.1314 | 0.0444 | 0.0870 |
| 193 | 0.5684 | 0.0444 | 0.5241 |
| 194 | 0.0712 | 0.0286 | 0.0426 |
| 195 | 0.0461 | 0.0185 | 0.0275 |
| 196 | 0.0353 | 0.0142 | 0.0211 |
| 197 | 0.0606 | 0.0244 | 0.0362 |
| 198 | 0.0558 | 0.0224 | 0.0334 |
| 199 | 0.0521 | 0.0210 | 0.0312 |
| 200 | 0.0492 | 0.0198 | 0.0294 |
| 201 | 0.0468 | 0.0188 | 0.0280 |
| 202 | 0.0448 | 0.0180 | 0.0268 |
| 203 | 0.0430 | 0.0173 | 0.0257 |
| 204 | 0.0415 | 0.0167 | 0.0248 |
| 205 | 0.0401 | 0.0161 | 0.0240 |
| 206 | 0.0389 | 0.0157 | 0.0233 |
| 207 | 0.0379 | 0.0152 | 0.0226 |
| 208 | 0.0369 | 0.0148 | 0.0220 |
| 209 | 0.0360 | 0.0145 | 0.0215 |
| 210 | 0.0352 | 0.0141 | 0.0210 |
| 211 | 0.0344 | 0.0138 | 0.0206 |
| 212 | 0.0337 | 0.0135 | 0.0202 |
| 213 | 0.0330 | 0.0133 | 0.0198 |
| 214 | 0.0324 | 0.0130 | 0.0194 |
| 215 | 0.0319 | 0.0128 | 0.0191 |
| 216 | 0.0313 | 0.0126 | 0.0187 |

| | | | |
|---|---|---|---|
| 217 | 0.0336 | 0.0135 | 0.0201 |
| 218 | 0.0332 | 0.0133 | 0.0198 |
| 219 | 0.0327 | 0.0132 | 0.0196 |
| 220 | 0.0323 | 0.0130 | 0.0193 |
| 221 | 0.0320 | 0.0129 | 0.0191 |
| 222 | 0.0316 | 0.0127 | 0.0189 |
| 223 | 0.0313 | 0.0126 | 0.0187 |
| 224 | 0.0309 | 0.0124 | 0.0185 |
| 225 | 0.0306 | 0.0123 | 0.0183 |
| 226 | 0.0303 | 0.0122 | 0.0181 |
| 227 | 0.0300 | 0.0121 | 0.0179 |
| 228 | 0.0297 | 0.0119 | 0.0178 |
| 229 | 0.0294 | 0.0118 | 0.0176 |
| 230 | 0.0292 | 0.0117 | 0.0175 |
| 231 | 0.0289 | 0.0116 | 0.0173 |
| 232 | 0.0287 | 0.0115 | 0.0172 |
| 233 | 0.0284 | 0.0114 | 0.0170 |
| 234 | 0.0282 | 0.0113 | 0.0169 |
| 235 | 0.0280 | 0.0113 | 0.0167 |
| 236 | 0.0278 | 0.0112 | 0.0166 |
| 237 | 0.0276 | 0.0111 | 0.0165 |
| 238 | 0.0274 | 0.0110 | 0.0164 |
| 239 | 0.0272 | 0.0109 | 0.0162 |
| 240 | 0.0270 | 0.0108 | 0.0161 |
| 241 | 0.0268 | 0.0108 | 0.0160 |
| 242 | 0.0266 | 0.0107 | 0.0159 |
| 243 | 0.0264 | 0.0106 | 0.0158 |
| 244 | 0.0263 | 0.0106 | 0.0157 |
| 245 | 0.0261 | 0.0105 | 0.0156 |
| 246 | 0.0259 | 0.0104 | 0.0155 |
| 247 | 0.0258 | 0.0104 | 0.0154 |
| 248 | 0.0256 | 0.0103 | 0.0153 |
| 249 | 0.0255 | 0.0102 | 0.0152 |
| 250 | 0.0253 | 0.0102 | 0.0151 |
| 251 | 0.0252 | 0.0101 | 0.0151 |
| 252 | 0.0250 | 0.0101 | 0.0150 |
| 253 | 0.0249 | 0.0100 | 0.0149 |
| 254 | 0.0248 | 0.0100 | 0.0148 |
| 255 | 0.0246 | 0.0099 | 0.0147 |
| 256 | 0.0245 | 0.0099 | 0.0147 |
| 257 | 0.0244 | 0.0098 | 0.0146 |
| 258 | 0.0243 | 0.0098 | 0.0145 |
| 259 | 0.0241 | 0.0097 | 0.0144 |
| 260 | 0.0240 | 0.0097 | 0.0144 |
| 261 | 0.0239 | 0.0096 | 0.0143 |
| 262 | 0.0238 | 0.0096 | 0.0142 |
| 263 | 0.0237 | 0.0095 | 0.0142 |
| 264 | 0.0236 | 0.0095 | 0.0141 |
| 265 | 0.0235 | 0.0094 | 0.0140 |
| 266 | 0.0234 | 0.0094 | 0.0140 |
| 267 | 0.0233 | 0.0093 | 0.0139 |
| 268 | 0.0232 | 0.0093 | 0.0138 |
| 269 | 0.0231 | 0.0093 | 0.0138 |
| 270 | 0.0230 | 0.0092 | 0.0137 |
| 271 | 0.0229 | 0.0092 | 0.0137 |
| 272 | 0.0228 | 0.0091 | 0.0136 |
| 273 | 0.0227 | 0.0091 | 0.0136 |
| 274 | 0.0226 | 0.0091 | 0.0135 |
| 275 | 0.0225 | 0.0090 | 0.0134 |
| 276 | 0.0224 | 0.0090 | 0.0134 |
| 277 | 0.0223 | 0.0090 | 0.0133 |
| 278 | 0.0222 | 0.0089 | 0.0133 |
| 279 | 0.0221 | 0.0089 | 0.0132 |
| 280 | 0.0221 | 0.0089 | 0.0132 |
| 281 | 0.0220 | 0.0088 | 0.0131 |
| 282 | 0.0219 | 0.0088 | 0.0131 |
| 283 | 0.0218 | 0.0088 | 0.0130 |
| 284 | 0.0217 | 0.0087 | 0.0130 |
| 285 | 0.0216 | 0.0087 | 0.0129 |
| 286 | 0.0216 | 0.0087 | 0.0129 |
| 287 | 0.0215 | 0.0086 | 0.0129 |

```
      288             0.0214          0.0086             0.0128
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.49(In)
      Total effective rainfall =      5.67(In)
      Peak flow rate in flood hydrograph =     50.15(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
----------------------------------------------------------------------------
  0+ 5       0.0009      0.12  Q         |         |         |         |
  0+10       0.0060      0.74  Q         |         |         |         |
  0+15       0.0184      1.80  VQ        |         |         |         |
  0+20       0.0335      2.20  VQ        |         |         |         |
  0+25       0.0502      2.43  VQ        |         |         |         |
  0+30       0.0680      2.58  VQ        |         |         |         |
  0+35       0.0865      2.68  VQ        |         |         |         |
  0+40       0.1054      2.74  VQ        |         |         |         |
  0+45       0.1244      2.77  VQ        |         |         |         |
  0+50       0.1437      2.79  VQ        |         |         |         |
  0+55       0.1630      2.81  VQ        |         |         |         |
  1+ 0       0.1824      2.82  VQ        |         |         |         |
  1+ 5       0.2020      2.83  VQ        |         |         |         |
  1+10       0.2215      2.84  |Q        |         |         |         |
  1+15       0.2411      2.85  |Q        |         |         |         |
  1+20       0.2608      2.85  |Q        |         |         |         |
  1+25       0.2805      2.86  |Q        |         |         |         |
  1+30       0.3002      2.86  |Q        |         |         |         |
  1+35       0.3200      2.87  |Q        |         |         |         |
  1+40       0.3398      2.87  |Q        |         |         |         |
  1+45       0.3596      2.88  |Q        |         |         |         |
  1+50       0.3795      2.88  |Q        |         |         |         |
  1+55       0.3994      2.89  |Q        |         |         |         |
  2+ 0       0.4193      2.90  |Q        |         |         |         |
  2+ 5       0.4393      2.90  |QV       |         |         |         |
  2+10       0.4593      2.91  |QV       |         |         |         |
  2+15       0.4794      2.91  |QV       |         |         |         |
  2+20       0.4995      2.92  |QV       |         |         |         |
  2+25       0.5196      2.92  |QV       |         |         |         |
  2+30       0.5398      2.93  |QV       |         |         |         |
  2+35       0.5600      2.94  |QV       |         |         |         |
  2+40       0.5803      2.94  |QV       |         |         |         |
  2+45       0.6006      2.95  |QV       |         |         |         |
  2+50       0.6209      2.95  |QV       |         |         |         |
  2+55       0.6413      2.96  |Q V      |         |         |         |
  3+ 0       0.6617      2.97  |Q V      |         |         |         |
  3+ 5       0.6822      2.97  |Q V      |         |         |         |
  3+10       0.7027      2.98  |Q V      |         |         |         |
  3+15       0.7233      2.98  |Q V      |         |         |         |
  3+20       0.7439      2.99  |Q V      |         |         |         |
  3+25       0.7645      3.00  |Q V      |         |         |         |
  3+30       0.7852      3.00  | QV      |         |         |         |
  3+35       0.8059      3.01  | QV      |         |         |         |
  3+40       0.8267      3.02  | QV      |         |         |         |
  3+45       0.8475      3.02  | QV      |         |         |         |
  3+50       0.8684      3.03  | Q V     |         |         |         |
  3+55       0.8893      3.04  | Q V     |         |         |         |
  4+ 0       0.9103      3.04  | Q V     |         |         |         |
  4+ 5       0.9313      3.05  | Q V     |         |         |         |
  4+10       0.9523      3.06  | Q V     |         |         |         |
  4+15       0.9734      3.06  | Q V     |         |         |         |
  4+20       0.9946      3.07  | Q V     |         |         |         |
  4+25       1.0158      3.08  | Q V     |         |         |         |
  4+30       1.0370      3.09  | Q V     |         |         |         |
  4+35       1.0583      3.09  | Q V     |         |         |         |
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 4+40       1.0797      3.10  | Q  V    |          |          |          |
 4+45       1.1011      3.11  | Q  V    |          |          |          |
 4+50       1.1225      3.11  | Q  V    |          |          |          |
 4+55       1.1440      3.12  | Q  V    |          |          |          |
 5+ 0       1.1656      3.13  | Q  V    |          |          |          |
 5+ 5       1.1872      3.14  | Q  V    |          |          |          |
 5+10       1.2088      3.14  | Q  V    |          |          |          |
 5+15       1.2306      3.15  | Q  V    |          |          |          |
 5+20       1.2523      3.16  | Q  V    |          |          |          |
 5+25       1.2741      3.17  | Q  V    |          |          |          |
 5+30       1.2960      3.18  | Q   V   |          |          |          |
 5+35       1.3180      3.18  | Q   V   |          |          |          |
 5+40       1.3399      3.19  | Q   V   |          |          |          |
 5+45       1.3620      3.20  | Q   V   |          |          |          |
 5+50       1.3841      3.21  | Q   V   |          |          |          |
 5+55       1.4063      3.22  | Q   V   |          |          |          |
 6+ 0       1.4285      3.23  | Q   V   |          |          |          |
 6+ 5       1.4508      3.24  | Q   V   |          |          |          |
 6+10       1.4731      3.24  | Q   V   |          |          |          |
 6+15       1.4955      3.25  | Q    V  |          |          |          |
 6+20       1.5180      3.26  | Q    V  |          |          |          |
 6+25       1.5405      3.27  | Q    V  |          |          |          |
 6+30       1.5631      3.28  | Q    V  |          |          |          |
 6+35       1.5857      3.29  | Q    V  |          |          |          |
 6+40       1.6084      3.30  | Q    V  |          |          |          |
 6+45       1.6312      3.31  | Q    V  |          |          |          |
 6+50       1.6541      3.32  | Q    V  |          |          |          |
 6+55       1.6770      3.33  | Q    V  |          |          |          |
 7+ 0       1.7000      3.34  | Q    V  |          |          |          |
 7+ 5       1.7230      3.35  | Q     V |          |          |          |
 7+10       1.7461      3.36  | Q     V |          |          |          |
 7+15       1.7693      3.37  | Q     V |          |          |          |
 7+20       1.7926      3.38  | Q     V |          |          |          |
 7+25       1.8159      3.39  | Q     V |          |          |          |
 7+30       1.8393      3.40  | Q     V |          |          |          |
 7+35       1.8628      3.41  | Q     V |          |          |          |
 7+40       1.8863      3.42  | Q     V |          |          |          |
 7+45       1.9100      3.43  | Q     V |          |          |          |
 7+50       1.9337      3.44  | Q      V|          |          |          |
 7+55       1.9575      3.45  | Q      V|          |          |          |
 8+ 0       1.9813      3.46  | Q      V|          |          |          |
 8+ 5       2.0052      3.48  | Q      V|          |          |          |
 8+10       2.0293      3.49  | Q      V|          |          |          |
 8+15       2.0534      3.50  | Q      V|          |          |          |
 8+20       2.0776      3.51  | Q      V|          |          |          |
 8+25       2.1018      3.52  | Q      V|          |          |          |
 8+30       2.1262      3.54  | Q      V|          |          |          |
 8+35       2.1506      3.55  | Q       V          |          |          |
 8+40       2.1751      3.56  | Q       V          |          |          |
 8+45       2.1998      3.57  | Q       V          |          |          |
 8+50       2.2245      3.59  | Q       V          |          |          |
 8+55       2.2493      3.60  | Q       V          |          |          |
 9+ 0       2.2741      3.61  | Q       V          |          |          |
 9+ 5       2.2991      3.63  | Q       V          |          |          |
 9+10       2.3242      3.64  | Q       V          |          |          |
 9+15       2.3494      3.66  | Q       |V         |          |          |
 9+20       2.3747      3.67  | Q       |V         |          |          |
 9+25       2.4000      3.68  | Q       |V         |          |          |
 9+30       2.4255      3.70  | Q       |V         |          |          |
 9+35       2.4511      3.71  | Q       |V         |          |          |
 9+40       2.4768      3.73  | Q       |V         |          |          |
 9+45       2.5026      3.75  | Q       |V         |          |          |
 9+50       2.5285      3.76  | Q       |V         |          |          |
 9+55       2.5545      3.78  | Q       |V         |          |          |
10+ 0       2.5806      3.79  | Q       | V        |          |          |
10+ 5       2.6069      3.81  | Q       | V        |          |          |
10+10       2.6332      3.83  | Q       | V        |          |          |
10+15       2.6597      3.85  | Q       | V        |          |          |
10+20       2.6863      3.86  | Q       | V        |          |          |
10+25       2.7130      3.88  | Q       | V        |          |          |
10+30       2.7399      3.90  | Q       | V        |          |          |
```

```
10+35      2.7669     3.92  | Q       | V       |         |         |
10+40      2.7940     3.94  | Q       |  V      |         |         |
10+45      2.8212     3.96  | Q       |  V      |         |         |
10+50      2.8486     3.98  | Q       |  V      |         |         |
10+55      2.8761     4.00  | Q       |  V      |         |         |
11+ 0      2.9038     4.02  | Q       |  V      |         |         |
11+ 5      2.9316     4.04  | Q       |  V      |         |         |
11+10      2.9595     4.06  | Q       |  V      |         |         |
11+15      2.9877     4.08  | Q       |   V     |         |         |
11+20      3.0159     4.10  | Q       |   V     |         |         |
11+25      3.0443     4.13  | Q       |   V     |         |         |
11+30      3.0729     4.15  | Q       |   V     |         |         |
11+35      3.1017     4.17  | Q       |   V     |         |         |
11+40      3.1306     4.20  | Q       |   V     |         |         |
11+45      3.1597     4.22  | Q       |   V     |         |         |
11+50      3.1889     4.25  | Q       |   V     |         |         |
11+55      3.2184     4.28  | Q       |    V    |         |         |
12+ 0      3.2480     4.30  | Q       |    V    |         |         |
12+ 5      3.2778     4.32  | Q       |    V    |         |         |
12+10      3.3071     4.26  | Q       |    V    |         |         |
12+15      3.3357     4.16  | Q       |    V    |         |         |
12+20      3.3642     4.14  | Q       |    V    |         |         |
12+25      3.3928     4.14  | Q       |    V    |         |         |
12+30      3.4214     4.15  | Q       |     V   |         |         |
12+35      3.4501     4.18  | Q       |     V   |         |         |
12+40      3.4791     4.21  | Q       |     V   |         |         |
12+45      3.5083     4.24  | Q       |     V   |         |         |
12+50      3.5378     4.28  | Q       |     V   |         |         |
12+55      3.5676     4.32  | Q       |     V   |         |         |
13+ 0      3.5976     4.36  | Q       |     V   |         |         |
13+ 5      3.6279     4.40  | Q       |      V  |         |         |
13+10      3.6585     4.44  | Q       |      V  |         |         |
13+15      3.6894     4.49  | Q       |      V  |         |         |
13+20      3.7207     4.54  |  Q      |      V  |         |         |
13+25      3.7523     4.59  |  Q      |      V  |         |         |
13+30      3.7843     4.64  |  Q      |      V  |         |         |
13+35      3.8167     4.70  |  Q      |      V  |         |         |
13+40      3.8494     4.75  |  Q      |       V |         |         |
13+45      3.8826     4.82  |  Q      |       V |         |         |
13+50      3.9162     4.88  |  Q      |       V |         |         |
13+55      3.9502     4.94  |  Q      |       V |         |         |
14+ 0      3.9848     5.01  |  Q      |       V |         |         |
14+ 5      4.0198     5.09  |  Q      |       V |         |         |
14+10      4.0553     5.16  |  Q      |        V|         |         |
14+15      4.0915     5.25  |  Q      |        V|         |         |
14+20      4.1282     5.33  |  Q      |        V|         |         |
14+25      4.1655     5.42  |  Q      |        V|         |         |
14+30      4.2035     5.52  |  Q      |        V|         |         |
14+35      4.2423     5.63  |  Q      |        V|         |         |
14+40      4.2818     5.73  |  Q      |         V         |         |
14+45      4.3221     5.86  |  Q      |         V         |         |
14+50      4.3633     5.98  |  Q      |         V         |         |
14+55      4.4054     6.12  |   Q     |         V         |         |
15+ 0      4.4486     6.27  |   Q     |         V         |         |
15+ 5      4.4930     6.44  |   Q     |         |V        |         |
15+10      4.5386     6.62  |   Q     |         |V        |         |
15+15      4.5856     6.83  |   Q     |         |V        |         |
15+20      4.6342     7.05  |   Q     |         |V        |         |
15+25      4.6834     7.14  |   Q     |         |V        |         |
15+30      4.7282     6.51  |   Q     |         | V       |         |
15+35      4.7648     5.31  |  Q      |         | V       |         |
15+40      4.8000     5.11  |  Q      |         | V       |         |
15+45      4.8365     5.30  |  Q      |         | V       |         |
15+50      4.8761     5.76  |  Q      |         | V       |         |
15+55      4.9222     6.69  |   Q     |         |  V      |         |
16+ 0      4.9807     8.49  |    Q    |         |  V      |         |
16+ 5      5.0919    16.15  |         Q         |  V      |         |
16+10      5.3400    36.02  |         |         |   QV    |         |
16+15      5.6854    50.15  |         |         |     V   |  Q      |
16+20      5.8507    24.01  |         |     Q   |      V  |         |
16+25      5.9610    16.02  |         Q         |      V  |         |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 16+30 | 6.0473 | 12.52 | \| Q \| | \| | \| V \| | \| |
| 16+35 | 6.1234 | 11.05 | \| Q \| | \| | \| V \| | \| |
| 16+40 | 6.1876 | 9.32 | \| Q \| | \| | \| V\| | \| |
| 16+45 | 6.2412 | 7.79 | \| Q \| | \| | \| V\| | \| |
| 16+50 | 6.2903 | 7.14 | \| Q \| | \| | \| V\| | \| |
| 16+55 | 6.3365 | 6.70 | \| Q \| | \| | \| V\| | \| |
| 17+ 0 | 6.3810 | 6.46 | \| Q \| | \| | \| V\| | \| |
| 17+ 5 | 6.4227 | 6.06 | \| Q \| | \| | \| V \| | \| |
| 17+10 | 6.4620 | 5.71 | \| Q \| | \| | \| V \| | \| |
| 17+15 | 6.4990 | 5.38 | \| Q \| | \| | \| V \| | \| |
| 17+20 | 6.5349 | 5.21 | \| Q \| | \| | \| V \| | \| |
| 17+25 | 6.5697 | 5.06 | \| Q \| | \| | \| V \| | \| |
| 17+30 | 6.6036 | 4.92 | \| Q \| | \| | \| V \| | \| |
| 17+35 | 6.6366 | 4.79 | \| Q \| | \| | \| \|V \| | \| |
| 17+40 | 6.6687 | 4.67 | \| Q \| | \| | \| \|V \| | \| |
| 17+45 | 6.7002 | 4.57 | \| Q \| | \| | \| \|V \| | \| |
| 17+50 | 6.7310 | 4.47 | \| Q \| | \| | \| \|V \| | \| |
| 17+55 | 6.7611 | 4.38 | \| Q \| | \| | \| \|V \| | \| |
| 18+ 0 | 6.7907 | 4.29 | \| Q \| | \| | \| \|V \| | \| |
| 18+ 5 | 6.8199 | 4.23 | \| Q \| | \| | \| \|V \| | \| |
| 18+10 | 6.8491 | 4.24 | \| Q \| | \| | \| \| V \| | \| |
| 18+15 | 6.8787 | 4.31 | \| Q \| | \| | \| \| V \| | \| |
| 18+20 | 6.9083 | 4.30 | \| Q \| | \| | \| \| V \| | \| |
| 18+25 | 6.9377 | 4.27 | \| Q \| | \| | \| \| V \| | \| |
| 18+30 | 6.9669 | 4.23 | \| Q \| | \| | \| \| V \| | \| |
| 18+35 | 6.9957 | 4.19 | \| Q \| | \| | \| \| V \| | \| |
| 18+40 | 7.0243 | 4.15 | \| Q \| | \| | \| \| V \| | \| |
| 18+45 | 7.0526 | 4.11 | \| Q \| | \| | \| \| V \| | \| |
| 18+50 | 7.0806 | 4.06 | \| Q \| | \| | \| \| V \| | \| |
| 18+55 | 7.1083 | 4.02 | \| Q \| | \| | \| \| V \| | \| |
| 19+ 0 | 7.1357 | 3.98 | \| Q \| | \| | \| \| V \| | \| |
| 19+ 5 | 7.1629 | 3.94 | \| Q \| | \| | \| \| V \| | \| |
| 19+10 | 7.1898 | 3.91 | \| Q \| | \| | \| \| V \| | \| |
| 19+15 | 7.2164 | 3.87 | \| Q \| | \| | \| \| V \| | \| |
| 19+20 | 7.2428 | 3.83 | \| Q \| | \| | \| \| V \| | \| |
| 19+25 | 7.2690 | 3.80 | \| Q \| | \| | \| \| V \| | \| |
| 19+30 | 7.2949 | 3.77 | \| Q \| | \| | \| \| V \| | \| |
| 19+35 | 7.3207 | 3.74 | \| Q \| | \| | \| \| V \| | \| |
| 19+40 | 7.3462 | 3.70 | \| Q \| | \| | \| \| V \| | \| |
| 19+45 | 7.3715 | 3.68 | \| Q \| | \| | \| \| V \| | \| |
| 19+50 | 7.3966 | 3.65 | \| Q \| | \| | \| \| V \| | \| |
| 19+55 | 7.4215 | 3.62 | \| Q \| | \| | \| \| V \| | \| |
| 20+ 0 | 7.4463 | 3.59 | \| Q \| | \| | \| \| V \| | \| |
| 20+ 5 | 7.4708 | 3.57 | \| Q \| | \| | \| \| V \| | \| |
| 20+10 | 7.4952 | 3.54 | \| Q \| | \| | \| \| V \| | \| |
| 20+15 | 7.5194 | 3.52 | \| Q \| | \| | \| \| V \| | \| |
| 20+20 | 7.5434 | 3.49 | \| Q \| | \| | \| \| V \| | \| |
| 20+25 | 7.5673 | 3.47 | \| Q \| | \| | \| \| V \| | \| |
| 20+30 | 7.5911 | 3.45 | \| Q \| | \| | \| \| V \| | \| |
| 20+35 | 7.6146 | 3.42 | \| Q \| | \| | \| \| V \| | \| |
| 20+40 | 7.6381 | 3.40 | \| Q \| | \| | \| \| V \| | \| |
| 20+45 | 7.6613 | 3.38 | \| Q \| | \| | \| \| V \| | \| |
| 20+50 | 7.6845 | 3.36 | \| Q \| | \| | \| \| V \| | \| |
| 20+55 | 7.7075 | 3.34 | \| Q \| | \| | \| \| V \| | \| |
| 21+ 0 | 7.7304 | 3.32 | \| Q \| | \| | \| \| V \| | \| |
| 21+ 5 | 7.7531 | 3.30 | \| Q \| | \| | \| \| V \| | \| |
| 21+10 | 7.7757 | 3.28 | \| Q \| | \| | \| \| V \| | \| |
| 21+15 | 7.7982 | 3.26 | \| Q \| | \| | \| \| V \| | \| |
| 21+20 | 7.8205 | 3.25 | \| Q \| | \| | \| \| V \| | \| |
| 21+25 | 7.8428 | 3.23 | \| Q \| | \| | \| \| V \| | \| |
| 21+30 | 7.8649 | 3.21 | \| Q \| | \| | \| \| V \| | \| |
| 21+35 | 7.8869 | 3.20 | \| Q \| | \| | \| \| V \| | \| |
| 21+40 | 7.9088 | 3.18 | \| Q \| | \| | \| \| V \| | \| |
| 21+45 | 7.9306 | 3.16 | \| Q \| | \| | \| \| V \| | \| |
| 21+50 | 7.9523 | 3.15 | \| Q \| | \| | \| \| V \| | \| |
| 21+55 | 7.9738 | 3.13 | \| Q \| | \| | \| \| V \| | \| |
| 22+ 0 | 7.9953 | 3.12 | \| Q \| | \| | \| \| V \| | \| |
| 22+ 5 | 8.0167 | 3.10 | \| Q \| | \| | \| \| V \| | \| |
| 22+10 | 8.0379 | 3.09 | \| Q \| | \| | \| \| V \| | \| |
| 22+15 | 8.0591 | 3.07 | \| Q \| | \| | \| \| V \| | \| |
| 22+20 | 8.0802 | 3.06 | \| Q \| | \| | \| \| V \| | \| |

```
   22+25       8.1011      3.05  | Q       |         |         |      V  |
   22+30       8.1220      3.03  | Q       |         |         |       V |
   22+35       8.1428      3.02  | Q       |         |         |       V |
   22+40       8.1635      3.01  | Q       |         |         |       V |
   22+45       8.1841      2.99  |Q        |         |         |       V |
   22+50       8.2046      2.98  |Q        |         |         |       V |
   22+55       8.2251      2.97  |Q        |         |         |       V |
   23+ 0       8.2454      2.96  |Q        |         |         |       V |
   23+ 5       8.2657      2.94  |Q        |         |         |       V |
   23+10       8.2859      2.93  |Q        |         |         |       V |
   23+15       8.3060      2.92  |Q        |         |         |       V |
   23+20       8.3260      2.91  |Q        |         |         |        V|
   23+25       8.3460      2.90  |Q        |         |         |        V|
   23+30       8.3659      2.89  |Q        |         |         |        V|
   23+35       8.3857      2.88  |Q        |         |         |        V|
   23+40       8.4054      2.87  |Q        |         |         |        V|
   23+45       8.4251      2.85  |Q        |         |         |        V|
   23+50       8.4447      2.84  |Q        |         |         |        V|
   23+55       8.4642      2.83  |Q        |         |         |        V|
   24+ 0       8.4836      2.82  |Q        |         |         |        V|
   24+ 5       8.5021      2.69  |Q        |         |         |        V|
   24+10       8.5164      2.06  |Q        |         |         |        V|
   24+15       8.5233      1.00  Q         |         |         |        V|
   24+20       8.5274      0.60  Q         |         |         |        V|
   24+25       8.5300      0.37  Q         |         |         |        V|
   24+30       8.5315      0.22  Q         |         |         |        V|
   24+35       8.5324      0.13  Q         |         |         |        V|
   24+40       8.5329      0.07  Q         |         |         |        V|
   24+45       8.5332      0.05  Q         |         |         |        V|
   24+50       8.5334      0.03  Q         |         |         |        V|
   24+55       8.5336      0.02  Q         |         |         |        V|
   25+ 0       8.5336      0.01  Q         |         |         |        V|
   25+ 5       8.5337      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'A' – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
100 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            18.06            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            18.06           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            18.06           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 70.0      87.0         18.06      1.000     0.247    1.000    0.247

Area-averaged adjusted loss rate Fm (In/Hr) =  0.247

********* Area-Averaged low loss rate fraction, Yb **********
```

```
Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC3)           Yield Fr
    18.06   1.000         70.0      87.0       1.49     0.865

Area-averaged catchment yield fraction, Y =  0.865
Area-averaged low loss fraction, Yb =  0.135
User entry of time of concentration  =   0.202 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      18.06(Ac.)
Catchment Lag time =   0.162 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 51.5677
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.247(In/Hr)
Average low loss rate fraction (Yb) = 0.135 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall =  0.712(In)
Computed peak 30-minute rainfall =  1.218(In)
Specified peak 1-hour rainfall =  1.500(In)
Computed peak 3-hour rainfall =  2.942(In)
Specified peak 6-hour rainfall =  4.500(In)
Specified peak 24-hour rainfall = 12.000(In)


Rainfall depth area reduction factors:
Using a total area of      18.06(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.711(In)
30-minute factor = 0.999    Adjusted rainfall =  1.217(In)
1-hour factor = 0.999       Adjusted rainfall =  1.499(In)
3-hour factor = 1.000       Adjusted rainfall =  2.942(In)
6-hour factor = 1.000       Adjusted rainfall =  4.500(In)
24-hour factor = 1.000      Adjusted rainfall = 12.000(In)
--------------------------------------------------------------------------

                      U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
--------------------------------------------------------------------------
               (K =       218.41 (CFS))

  1                4.472                   9.767
  2               26.592                  48.314
  3               64.398                  82.572
  4               78.587                  30.990
  5               86.751                  17.831
  6               92.030                  11.532
  7               95.442                   7.452
  8               97.482                   4.455
  9               98.356                   1.909
 10               98.889                   1.165
 11               99.255                   0.797
 12               99.630                   0.821
 13               99.870                   0.524
 14              100.000                   0.283
--------------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.7112              0.7112
  2              0.8755              0.1644
  3              0.9888              0.1132
  4              1.0779              0.0891
  5              1.1526              0.0746
  6              1.2173              0.0648
  7              1.2750              0.0576
  8              1.3271              0.0521
  9              1.3748              0.0477
 10              1.4190              0.0441
 11              1.4601              0.0412
 12              1.4987              0.0386
```

| | | |
|---|---|---|
| 13 | 1.5742 | 0.0755 |
| 14 | 1.6475 | 0.0733 |
| 15 | 1.7187 | 0.0713 |
| 16 | 1.7882 | 0.0695 |
| 17 | 1.8560 | 0.0678 |
| 18 | 1.9223 | 0.0663 |
| 19 | 1.9871 | 0.0649 |
| 20 | 2.0507 | 0.0636 |
| 21 | 2.1130 | 0.0623 |
| 22 | 2.1742 | 0.0612 |
| 23 | 2.2344 | 0.0601 |
| 24 | 2.2935 | 0.0591 |
| 25 | 2.3517 | 0.0582 |
| 26 | 2.4090 | 0.0573 |
| 27 | 2.4655 | 0.0565 |
| 28 | 2.5211 | 0.0557 |
| 29 | 2.5760 | 0.0549 |
| 30 | 2.6302 | 0.0542 |
| 31 | 2.6837 | 0.0535 |
| 32 | 2.7365 | 0.0528 |
| 33 | 2.7887 | 0.0522 |
| 34 | 2.8402 | 0.0516 |
| 35 | 2.8912 | 0.0510 |
| 36 | 2.9416 | 0.0504 |
| 37 | 2.9915 | 0.0498 |
| 38 | 3.0408 | 0.0493 |
| 39 | 3.0896 | 0.0488 |
| 40 | 3.1380 | 0.0483 |
| 41 | 3.1859 | 0.0479 |
| 42 | 3.2333 | 0.0474 |
| 43 | 3.2803 | 0.0470 |
| 44 | 3.3268 | 0.0466 |
| 45 | 3.3730 | 0.0462 |
| 46 | 3.4188 | 0.0458 |
| 47 | 3.4642 | 0.0454 |
| 48 | 3.5092 | 0.0450 |
| 49 | 3.5538 | 0.0447 |
| 50 | 3.5981 | 0.0443 |
| 51 | 3.6421 | 0.0440 |
| 52 | 3.6857 | 0.0436 |
| 53 | 3.7290 | 0.0433 |
| 54 | 3.7720 | 0.0430 |
| 55 | 3.8147 | 0.0427 |
| 56 | 3.8571 | 0.0424 |
| 57 | 3.8992 | 0.0421 |
| 58 | 3.9410 | 0.0418 |
| 59 | 3.9825 | 0.0415 |
| 60 | 4.0238 | 0.0413 |
| 61 | 4.0648 | 0.0410 |
| 62 | 4.1055 | 0.0407 |
| 63 | 4.1460 | 0.0405 |
| 64 | 4.1862 | 0.0402 |
| 65 | 4.2262 | 0.0400 |
| 66 | 4.2659 | 0.0398 |
| 67 | 4.3055 | 0.0395 |
| 68 | 4.3448 | 0.0393 |
| 69 | 4.3838 | 0.0391 |
| 70 | 4.4227 | 0.0389 |
| 71 | 4.4613 | 0.0386 |
| 72 | 4.4997 | 0.0384 |
| 73 | 4.5439 | 0.0441 |
| 74 | 4.5878 | 0.0440 |
| 75 | 4.6316 | 0.0438 |
| 76 | 4.6752 | 0.0436 |
| 77 | 4.7187 | 0.0434 |
| 78 | 4.7619 | 0.0433 |
| 79 | 4.8051 | 0.0431 |
| 80 | 4.8480 | 0.0430 |
| 81 | 4.8908 | 0.0428 |
| 82 | 4.9335 | 0.0426 |
| 83 | 4.9759 | 0.0425 |

| | | |
|---|---|---|
| 84 | 5.0183 | 0.0423 |
| 85 | 5.0605 | 0.0422 |
| 86 | 5.1025 | 0.0421 |
| 87 | 5.1444 | 0.0419 |
| 88 | 5.1862 | 0.0418 |
| 89 | 5.2278 | 0.0416 |
| 90 | 5.2693 | 0.0415 |
| 91 | 5.3107 | 0.0414 |
| 92 | 5.3519 | 0.0412 |
| 93 | 5.3930 | 0.0411 |
| 94 | 5.4340 | 0.0410 |
| 95 | 5.4748 | 0.0408 |
| 96 | 5.5155 | 0.0407 |
| 97 | 5.5561 | 0.0406 |
| 98 | 5.5966 | 0.0405 |
| 99 | 5.6369 | 0.0403 |
| 100 | 5.6772 | 0.0402 |
| 101 | 5.7173 | 0.0401 |
| 102 | 5.7573 | 0.0400 |
| 103 | 5.7971 | 0.0399 |
| 104 | 5.8369 | 0.0398 |
| 105 | 5.8766 | 0.0397 |
| 106 | 5.9161 | 0.0395 |
| 107 | 5.9555 | 0.0394 |
| 108 | 5.9949 | 0.0393 |
| 109 | 6.0341 | 0.0392 |
| 110 | 6.0732 | 0.0391 |
| 111 | 6.1122 | 0.0390 |
| 112 | 6.1511 | 0.0389 |
| 113 | 6.1899 | 0.0388 |
| 114 | 6.2287 | 0.0387 |
| 115 | 6.2673 | 0.0386 |
| 116 | 6.3058 | 0.0385 |
| 117 | 6.3442 | 0.0384 |
| 118 | 6.3825 | 0.0383 |
| 119 | 6.4207 | 0.0382 |
| 120 | 6.4589 | 0.0381 |
| 121 | 6.4969 | 0.0380 |
| 122 | 6.5348 | 0.0379 |
| 123 | 6.5727 | 0.0379 |
| 124 | 6.6105 | 0.0378 |
| 125 | 6.6481 | 0.0377 |
| 126 | 6.6857 | 0.0376 |
| 127 | 6.7232 | 0.0375 |
| 128 | 6.7606 | 0.0374 |
| 129 | 6.7980 | 0.0373 |
| 130 | 6.8352 | 0.0372 |
| 131 | 6.8724 | 0.0372 |
| 132 | 6.9094 | 0.0371 |
| 133 | 6.9464 | 0.0370 |
| 134 | 6.9833 | 0.0369 |
| 135 | 7.0202 | 0.0368 |
| 136 | 7.0569 | 0.0368 |
| 137 | 7.0936 | 0.0367 |
| 138 | 7.1302 | 0.0366 |
| 139 | 7.1667 | 0.0365 |
| 140 | 7.2032 | 0.0364 |
| 141 | 7.2395 | 0.0364 |
| 142 | 7.2758 | 0.0363 |
| 143 | 7.3120 | 0.0362 |
| 144 | 7.3482 | 0.0361 |
| 145 | 7.3842 | 0.0361 |
| 146 | 7.4202 | 0.0360 |
| 147 | 7.4562 | 0.0359 |
| 148 | 7.4920 | 0.0359 |
| 149 | 7.5278 | 0.0358 |
| 150 | 7.5635 | 0.0357 |
| 151 | 7.5992 | 0.0356 |
| 152 | 7.6347 | 0.0356 |
| 153 | 7.6702 | 0.0355 |
| 154 | 7.7057 | 0.0354 |

| | | |
|---|---|---|
| 155 | 7.7410 | 0.0354 |
| 156 | 7.7763 | 0.0353 |
| 157 | 7.8116 | 0.0352 |
| 158 | 7.8468 | 0.0352 |
| 159 | 7.8819 | 0.0351 |
| 160 | 7.9169 | 0.0350 |
| 161 | 7.9519 | 0.0350 |
| 162 | 7.9868 | 0.0349 |
| 163 | 8.0216 | 0.0349 |
| 164 | 8.0564 | 0.0348 |
| 165 | 8.0912 | 0.0347 |
| 166 | 8.1258 | 0.0347 |
| 167 | 8.1604 | 0.0346 |
| 168 | 8.1950 | 0.0345 |
| 169 | 8.2295 | 0.0345 |
| 170 | 8.2639 | 0.0344 |
| 171 | 8.2982 | 0.0344 |
| 172 | 8.3326 | 0.0343 |
| 173 | 8.3668 | 0.0342 |
| 174 | 8.4010 | 0.0342 |
| 175 | 8.4351 | 0.0341 |
| 176 | 8.4692 | 0.0341 |
| 177 | 8.5032 | 0.0340 |
| 178 | 8.5372 | 0.0340 |
| 179 | 8.5711 | 0.0339 |
| 180 | 8.6049 | 0.0339 |
| 181 | 8.6387 | 0.0338 |
| 182 | 8.6725 | 0.0337 |
| 183 | 8.7062 | 0.0337 |
| 184 | 8.7398 | 0.0336 |
| 185 | 8.7734 | 0.0336 |
| 186 | 8.8069 | 0.0335 |
| 187 | 8.8404 | 0.0335 |
| 188 | 8.8738 | 0.0334 |
| 189 | 8.9072 | 0.0334 |
| 190 | 8.9405 | 0.0333 |
| 191 | 8.9738 | 0.0333 |
| 192 | 9.0070 | 0.0332 |
| 193 | 9.0401 | 0.0332 |
| 194 | 9.0733 | 0.0331 |
| 195 | 9.1063 | 0.0331 |
| 196 | 9.1393 | 0.0330 |
| 197 | 9.1723 | 0.0330 |
| 198 | 9.2052 | 0.0329 |
| 199 | 9.2381 | 0.0329 |
| 200 | 9.2709 | 0.0328 |
| 201 | 9.3037 | 0.0328 |
| 202 | 9.3364 | 0.0327 |
| 203 | 9.3691 | 0.0327 |
| 204 | 9.4017 | 0.0326 |
| 205 | 9.4343 | 0.0326 |
| 206 | 9.4669 | 0.0325 |
| 207 | 9.4994 | 0.0325 |
| 208 | 9.5318 | 0.0324 |
| 209 | 9.5642 | 0.0324 |
| 210 | 9.5966 | 0.0324 |
| 211 | 9.6289 | 0.0323 |
| 212 | 9.6611 | 0.0323 |
| 213 | 9.6934 | 0.0322 |
| 214 | 9.7255 | 0.0322 |
| 215 | 9.7577 | 0.0321 |
| 216 | 9.7898 | 0.0321 |
| 217 | 9.8218 | 0.0320 |
| 218 | 9.8538 | 0.0320 |
| 219 | 9.8858 | 0.0320 |
| 220 | 9.9177 | 0.0319 |
| 221 | 9.9496 | 0.0319 |
| 222 | 9.9814 | 0.0318 |
| 223 | 10.0132 | 0.0318 |
| 224 | 10.0449 | 0.0317 |
| 225 | 10.0766 | 0.0317 |

| | | |
|---|---|---|
| 226 | 10.1083 | 0.0317 |
| 227 | 10.1399 | 0.0316 |
| 228 | 10.1715 | 0.0316 |
| 229 | 10.2031 | 0.0315 |
| 230 | 10.2346 | 0.0315 |
| 231 | 10.2660 | 0.0315 |
| 232 | 10.2975 | 0.0314 |
| 233 | 10.3288 | 0.0314 |
| 234 | 10.3602 | 0.0313 |
| 235 | 10.3915 | 0.0313 |
| 236 | 10.4228 | 0.0313 |
| 237 | 10.4540 | 0.0312 |
| 238 | 10.4852 | 0.0312 |
| 239 | 10.5163 | 0.0312 |
| 240 | 10.5474 | 0.0311 |
| 241 | 10.5785 | 0.0311 |
| 242 | 10.6096 | 0.0310 |
| 243 | 10.6406 | 0.0310 |
| 244 | 10.6715 | 0.0310 |
| 245 | 10.7025 | 0.0309 |
| 246 | 10.7333 | 0.0309 |
| 247 | 10.7642 | 0.0309 |
| 248 | 10.7950 | 0.0308 |
| 249 | 10.8258 | 0.0308 |
| 250 | 10.8565 | 0.0307 |
| 251 | 10.8872 | 0.0307 |
| 252 | 10.9179 | 0.0307 |
| 253 | 10.9485 | 0.0306 |
| 254 | 10.9792 | 0.0306 |
| 255 | 11.0097 | 0.0306 |
| 256 | 11.0402 | 0.0305 |
| 257 | 11.0707 | 0.0305 |
| 258 | 11.1012 | 0.0305 |
| 259 | 11.1316 | 0.0304 |
| 260 | 11.1620 | 0.0304 |
| 261 | 11.1924 | 0.0304 |
| 262 | 11.2227 | 0.0303 |
| 263 | 11.2530 | 0.0303 |
| 264 | 11.2833 | 0.0303 |
| 265 | 11.3135 | 0.0302 |
| 266 | 11.3437 | 0.0302 |
| 267 | 11.3738 | 0.0302 |
| 268 | 11.4039 | 0.0301 |
| 269 | 11.4340 | 0.0301 |
| 270 | 11.4641 | 0.0301 |
| 271 | 11.4941 | 0.0300 |
| 272 | 11.5241 | 0.0300 |
| 273 | 11.5541 | 0.0300 |
| 274 | 11.5840 | 0.0299 |
| 275 | 11.6139 | 0.0299 |
| 276 | 11.6438 | 0.0299 |
| 277 | 11.6736 | 0.0298 |
| 278 | 11.7034 | 0.0298 |
| 279 | 11.7332 | 0.0298 |
| 280 | 11.7629 | 0.0297 |
| 281 | 11.7926 | 0.0297 |
| 282 | 11.8223 | 0.0297 |
| 283 | 11.8520 | 0.0296 |
| 284 | 11.8816 | 0.0296 |
| 285 | 11.9112 | 0.0296 |
| 286 | 11.9407 | 0.0296 |
| 287 | 11.9702 | 0.0295 |
| 288 | 11.9997 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0040 | 0.0255 |
| 2 | 0.0295 | 0.0040 | 0.0255 |
| 3 | 0.0296 | 0.0040 | 0.0256 |

| | | | |
|---|---|---|---|
| 4 | 0.0296 | 0.0040 | 0.0256 |
| 5 | 0.0297 | 0.0040 | 0.0257 |
| 6 | 0.0297 | 0.0040 | 0.0257 |
| 7 | 0.0298 | 0.0040 | 0.0257 |
| 8 | 0.0298 | 0.0040 | 0.0258 |
| 9 | 0.0299 | 0.0040 | 0.0258 |
| 10 | 0.0299 | 0.0040 | 0.0259 |
| 11 | 0.0300 | 0.0041 | 0.0259 |
| 12 | 0.0300 | 0.0041 | 0.0259 |
| 13 | 0.0301 | 0.0041 | 0.0260 |
| 14 | 0.0301 | 0.0041 | 0.0260 |
| 15 | 0.0302 | 0.0041 | 0.0261 |
| 16 | 0.0302 | 0.0041 | 0.0261 |
| 17 | 0.0303 | 0.0041 | 0.0262 |
| 18 | 0.0303 | 0.0041 | 0.0262 |
| 19 | 0.0304 | 0.0041 | 0.0263 |
| 20 | 0.0304 | 0.0041 | 0.0263 |
| 21 | 0.0305 | 0.0041 | 0.0263 |
| 22 | 0.0305 | 0.0041 | 0.0264 |
| 23 | 0.0306 | 0.0041 | 0.0264 |
| 24 | 0.0306 | 0.0041 | 0.0265 |
| 25 | 0.0307 | 0.0042 | 0.0265 |
| 26 | 0.0307 | 0.0042 | 0.0266 |
| 27 | 0.0308 | 0.0042 | 0.0266 |
| 28 | 0.0308 | 0.0042 | 0.0266 |
| 29 | 0.0309 | 0.0042 | 0.0267 |
| 30 | 0.0309 | 0.0042 | 0.0267 |
| 31 | 0.0310 | 0.0042 | 0.0268 |
| 32 | 0.0310 | 0.0042 | 0.0268 |
| 33 | 0.0311 | 0.0042 | 0.0269 |
| 34 | 0.0312 | 0.0042 | 0.0269 |
| 35 | 0.0312 | 0.0042 | 0.0270 |
| 36 | 0.0313 | 0.0042 | 0.0270 |
| 37 | 0.0313 | 0.0042 | 0.0271 |
| 38 | 0.0314 | 0.0042 | 0.0271 |
| 39 | 0.0315 | 0.0043 | 0.0272 |
| 40 | 0.0315 | 0.0043 | 0.0272 |
| 41 | 0.0316 | 0.0043 | 0.0273 |
| 42 | 0.0316 | 0.0043 | 0.0273 |
| 43 | 0.0317 | 0.0043 | 0.0274 |
| 44 | 0.0317 | 0.0043 | 0.0275 |
| 45 | 0.0318 | 0.0043 | 0.0275 |
| 46 | 0.0319 | 0.0043 | 0.0276 |
| 47 | 0.0320 | 0.0043 | 0.0276 |
| 48 | 0.0320 | 0.0043 | 0.0277 |
| 49 | 0.0321 | 0.0043 | 0.0277 |
| 50 | 0.0321 | 0.0043 | 0.0278 |
| 51 | 0.0322 | 0.0044 | 0.0279 |
| 52 | 0.0323 | 0.0044 | 0.0279 |
| 53 | 0.0324 | 0.0044 | 0.0280 |
| 54 | 0.0324 | 0.0044 | 0.0280 |
| 55 | 0.0325 | 0.0044 | 0.0281 |
| 56 | 0.0325 | 0.0044 | 0.0281 |
| 57 | 0.0326 | 0.0044 | 0.0282 |
| 58 | 0.0327 | 0.0044 | 0.0283 |
| 59 | 0.0328 | 0.0044 | 0.0283 |
| 60 | 0.0328 | 0.0044 | 0.0284 |
| 61 | 0.0329 | 0.0045 | 0.0285 |
| 62 | 0.0330 | 0.0045 | 0.0285 |
| 63 | 0.0331 | 0.0045 | 0.0286 |
| 64 | 0.0331 | 0.0045 | 0.0286 |
| 65 | 0.0332 | 0.0045 | 0.0287 |
| 66 | 0.0333 | 0.0045 | 0.0288 |
| 67 | 0.0334 | 0.0045 | 0.0289 |
| 68 | 0.0334 | 0.0045 | 0.0289 |
| 69 | 0.0335 | 0.0045 | 0.0290 |
| 70 | 0.0336 | 0.0045 | 0.0290 |
| 71 | 0.0337 | 0.0046 | 0.0291 |
| 72 | 0.0337 | 0.0046 | 0.0292 |
| 73 | 0.0339 | 0.0046 | 0.0293 |
| 74 | 0.0339 | 0.0046 | 0.0293 |

| | | | |
|---|---|---|---|
| 75 | 0.0340 | 0.0046 | 0.0294 |
| 76 | 0.0341 | 0.0046 | 0.0295 |
| 77 | 0.0342 | 0.0046 | 0.0296 |
| 78 | 0.0342 | 0.0046 | 0.0296 |
| 79 | 0.0344 | 0.0047 | 0.0297 |
| 80 | 0.0344 | 0.0047 | 0.0298 |
| 81 | 0.0345 | 0.0047 | 0.0299 |
| 82 | 0.0346 | 0.0047 | 0.0299 |
| 83 | 0.0347 | 0.0047 | 0.0300 |
| 84 | 0.0348 | 0.0047 | 0.0301 |
| 85 | 0.0349 | 0.0047 | 0.0302 |
| 86 | 0.0350 | 0.0047 | 0.0302 |
| 87 | 0.0351 | 0.0048 | 0.0304 |
| 88 | 0.0352 | 0.0048 | 0.0304 |
| 89 | 0.0353 | 0.0048 | 0.0305 |
| 90 | 0.0354 | 0.0048 | 0.0306 |
| 91 | 0.0355 | 0.0048 | 0.0307 |
| 92 | 0.0356 | 0.0048 | 0.0308 |
| 93 | 0.0357 | 0.0048 | 0.0309 |
| 94 | 0.0358 | 0.0048 | 0.0309 |
| 95 | 0.0359 | 0.0049 | 0.0311 |
| 96 | 0.0360 | 0.0049 | 0.0311 |
| 97 | 0.0361 | 0.0049 | 0.0313 |
| 98 | 0.0362 | 0.0049 | 0.0313 |
| 99 | 0.0364 | 0.0049 | 0.0314 |
| 100 | 0.0364 | 0.0049 | 0.0315 |
| 101 | 0.0366 | 0.0050 | 0.0316 |
| 102 | 0.0367 | 0.0050 | 0.0317 |
| 103 | 0.0368 | 0.0050 | 0.0318 |
| 104 | 0.0369 | 0.0050 | 0.0319 |
| 105 | 0.0371 | 0.0050 | 0.0321 |
| 106 | 0.0372 | 0.0050 | 0.0321 |
| 107 | 0.0373 | 0.0051 | 0.0323 |
| 108 | 0.0374 | 0.0051 | 0.0324 |
| 109 | 0.0376 | 0.0051 | 0.0325 |
| 110 | 0.0377 | 0.0051 | 0.0326 |
| 111 | 0.0379 | 0.0051 | 0.0327 |
| 112 | 0.0379 | 0.0051 | 0.0328 |
| 113 | 0.0381 | 0.0052 | 0.0330 |
| 114 | 0.0382 | 0.0052 | 0.0331 |
| 115 | 0.0384 | 0.0052 | 0.0332 |
| 116 | 0.0385 | 0.0052 | 0.0333 |
| 117 | 0.0387 | 0.0052 | 0.0335 |
| 118 | 0.0388 | 0.0053 | 0.0336 |
| 119 | 0.0390 | 0.0053 | 0.0337 |
| 120 | 0.0391 | 0.0053 | 0.0338 |
| 121 | 0.0393 | 0.0053 | 0.0340 |
| 122 | 0.0394 | 0.0053 | 0.0341 |
| 123 | 0.0397 | 0.0054 | 0.0343 |
| 124 | 0.0398 | 0.0054 | 0.0344 |
| 125 | 0.0400 | 0.0054 | 0.0346 |
| 126 | 0.0401 | 0.0054 | 0.0347 |
| 127 | 0.0403 | 0.0055 | 0.0349 |
| 128 | 0.0405 | 0.0055 | 0.0350 |
| 129 | 0.0407 | 0.0055 | 0.0352 |
| 130 | 0.0408 | 0.0055 | 0.0353 |
| 131 | 0.0411 | 0.0056 | 0.0355 |
| 132 | 0.0412 | 0.0056 | 0.0356 |
| 133 | 0.0415 | 0.0056 | 0.0359 |
| 134 | 0.0416 | 0.0056 | 0.0360 |
| 135 | 0.0419 | 0.0057 | 0.0362 |
| 136 | 0.0421 | 0.0057 | 0.0364 |
| 137 | 0.0423 | 0.0057 | 0.0366 |
| 138 | 0.0425 | 0.0058 | 0.0367 |
| 139 | 0.0428 | 0.0058 | 0.0370 |
| 140 | 0.0430 | 0.0058 | 0.0371 |
| 141 | 0.0433 | 0.0059 | 0.0374 |
| 142 | 0.0434 | 0.0059 | 0.0376 |
| 143 | 0.0438 | 0.0059 | 0.0379 |
| 144 | 0.0440 | 0.0059 | 0.0380 |
| 145 | 0.0384 | 0.0052 | 0.0332 |

| | | | |
|---|---|---|---|
| 146 | 0.0386 | 0.0052 | 0.0334 |
| 147 | 0.0391 | 0.0053 | 0.0338 |
| 148 | 0.0393 | 0.0053 | 0.0340 |
| 149 | 0.0398 | 0.0054 | 0.0344 |
| 150 | 0.0400 | 0.0054 | 0.0346 |
| 151 | 0.0405 | 0.0055 | 0.0350 |
| 152 | 0.0407 | 0.0055 | 0.0352 |
| 153 | 0.0413 | 0.0056 | 0.0357 |
| 154 | 0.0415 | 0.0056 | 0.0359 |
| 155 | 0.0421 | 0.0057 | 0.0364 |
| 156 | 0.0424 | 0.0057 | 0.0366 |
| 157 | 0.0430 | 0.0058 | 0.0372 |
| 158 | 0.0433 | 0.0059 | 0.0374 |
| 159 | 0.0440 | 0.0059 | 0.0380 |
| 160 | 0.0443 | 0.0060 | 0.0383 |
| 161 | 0.0450 | 0.0061 | 0.0389 |
| 162 | 0.0454 | 0.0061 | 0.0392 |
| 163 | 0.0462 | 0.0062 | 0.0399 |
| 164 | 0.0466 | 0.0063 | 0.0403 |
| 165 | 0.0474 | 0.0064 | 0.0410 |
| 166 | 0.0479 | 0.0065 | 0.0414 |
| 167 | 0.0488 | 0.0066 | 0.0422 |
| 168 | 0.0493 | 0.0067 | 0.0426 |
| 169 | 0.0504 | 0.0068 | 0.0436 |
| 170 | 0.0510 | 0.0069 | 0.0441 |
| 171 | 0.0522 | 0.0071 | 0.0451 |
| 172 | 0.0528 | 0.0071 | 0.0457 |
| 173 | 0.0542 | 0.0073 | 0.0468 |
| 174 | 0.0549 | 0.0074 | 0.0475 |
| 175 | 0.0565 | 0.0076 | 0.0488 |
| 176 | 0.0573 | 0.0078 | 0.0495 |
| 177 | 0.0591 | 0.0080 | 0.0511 |
| 178 | 0.0601 | 0.0081 | 0.0520 |
| 179 | 0.0623 | 0.0084 | 0.0539 |
| 180 | 0.0636 | 0.0086 | 0.0550 |
| 181 | 0.0663 | 0.0090 | 0.0573 |
| 182 | 0.0678 | 0.0092 | 0.0586 |
| 183 | 0.0713 | 0.0096 | 0.0616 |
| 184 | 0.0733 | 0.0099 | 0.0633 |
| 185 | 0.0386 | 0.0052 | 0.0334 |
| 186 | 0.0412 | 0.0056 | 0.0356 |
| 187 | 0.0477 | 0.0065 | 0.0413 |
| 188 | 0.0521 | 0.0071 | 0.0451 |
| 189 | 0.0648 | 0.0088 | 0.0560 |
| 190 | 0.0746 | 0.0101 | 0.0645 |
| 191 | 0.1132 | 0.0153 | 0.0979 |
| 192 | 0.1644 | 0.0206 | 0.1438 |
| 193 | 0.7112 | 0.0206 | 0.6906 |
| 194 | 0.0891 | 0.0121 | 0.0771 |
| 195 | 0.0576 | 0.0078 | 0.0498 |
| 196 | 0.0441 | 0.0060 | 0.0382 |
| 197 | 0.0755 | 0.0102 | 0.0653 |
| 198 | 0.0695 | 0.0094 | 0.0601 |
| 199 | 0.0649 | 0.0088 | 0.0561 |
| 200 | 0.0612 | 0.0083 | 0.0529 |
| 201 | 0.0582 | 0.0079 | 0.0503 |
| 202 | 0.0557 | 0.0075 | 0.0481 |
| 203 | 0.0535 | 0.0072 | 0.0462 |
| 204 | 0.0516 | 0.0070 | 0.0446 |
| 205 | 0.0498 | 0.0067 | 0.0431 |
| 206 | 0.0483 | 0.0065 | 0.0418 |
| 207 | 0.0470 | 0.0064 | 0.0406 |
| 208 | 0.0458 | 0.0062 | 0.0396 |
| 209 | 0.0447 | 0.0060 | 0.0386 |
| 210 | 0.0436 | 0.0059 | 0.0377 |
| 211 | 0.0427 | 0.0058 | 0.0369 |
| 212 | 0.0418 | 0.0057 | 0.0361 |
| 213 | 0.0410 | 0.0055 | 0.0354 |
| 214 | 0.0402 | 0.0054 | 0.0348 |
| 215 | 0.0395 | 0.0053 | 0.0342 |
| 216 | 0.0389 | 0.0053 | 0.0336 |

| | | | |
|---|---|---|---|
| 217 | 0.0441 | 0.0060 | 0.0382 |
| 218 | 0.0436 | 0.0059 | 0.0377 |
| 219 | 0.0431 | 0.0058 | 0.0373 |
| 220 | 0.0426 | 0.0058 | 0.0369 |
| 221 | 0.0422 | 0.0057 | 0.0365 |
| 222 | 0.0418 | 0.0057 | 0.0361 |
| 223 | 0.0414 | 0.0056 | 0.0358 |
| 224 | 0.0410 | 0.0055 | 0.0354 |
| 225 | 0.0406 | 0.0055 | 0.0351 |
| 226 | 0.0402 | 0.0054 | 0.0348 |
| 227 | 0.0399 | 0.0054 | 0.0345 |
| 228 | 0.0395 | 0.0054 | 0.0342 |
| 229 | 0.0392 | 0.0053 | 0.0339 |
| 230 | 0.0389 | 0.0053 | 0.0336 |
| 231 | 0.0386 | 0.0052 | 0.0334 |
| 232 | 0.0383 | 0.0052 | 0.0331 |
| 233 | 0.0380 | 0.0051 | 0.0329 |
| 234 | 0.0378 | 0.0051 | 0.0327 |
| 235 | 0.0375 | 0.0051 | 0.0324 |
| 236 | 0.0372 | 0.0050 | 0.0322 |
| 237 | 0.0370 | 0.0050 | 0.0320 |
| 238 | 0.0368 | 0.0050 | 0.0318 |
| 239 | 0.0365 | 0.0049 | 0.0316 |
| 240 | 0.0363 | 0.0049 | 0.0314 |
| 241 | 0.0361 | 0.0049 | 0.0312 |
| 242 | 0.0359 | 0.0049 | 0.0310 |
| 243 | 0.0356 | 0.0048 | 0.0308 |
| 244 | 0.0354 | 0.0048 | 0.0306 |
| 245 | 0.0352 | 0.0048 | 0.0305 |
| 246 | 0.0350 | 0.0047 | 0.0303 |
| 247 | 0.0349 | 0.0047 | 0.0301 |
| 248 | 0.0347 | 0.0047 | 0.0300 |
| 249 | 0.0345 | 0.0047 | 0.0298 |
| 250 | 0.0343 | 0.0046 | 0.0297 |
| 251 | 0.0341 | 0.0046 | 0.0295 |
| 252 | 0.0340 | 0.0046 | 0.0294 |
| 253 | 0.0338 | 0.0046 | 0.0292 |
| 254 | 0.0336 | 0.0046 | 0.0291 |
| 255 | 0.0335 | 0.0045 | 0.0289 |
| 256 | 0.0333 | 0.0045 | 0.0288 |
| 257 | 0.0332 | 0.0045 | 0.0287 |
| 258 | 0.0330 | 0.0045 | 0.0285 |
| 259 | 0.0329 | 0.0044 | 0.0284 |
| 260 | 0.0327 | 0.0044 | 0.0283 |
| 261 | 0.0326 | 0.0044 | 0.0282 |
| 262 | 0.0324 | 0.0044 | 0.0281 |
| 263 | 0.0323 | 0.0044 | 0.0279 |
| 264 | 0.0322 | 0.0044 | 0.0278 |
| 265 | 0.0320 | 0.0043 | 0.0277 |
| 266 | 0.0319 | 0.0043 | 0.0276 |
| 267 | 0.0318 | 0.0043 | 0.0275 |
| 268 | 0.0317 | 0.0043 | 0.0274 |
| 269 | 0.0315 | 0.0043 | 0.0273 |
| 270 | 0.0314 | 0.0043 | 0.0272 |
| 271 | 0.0313 | 0.0042 | 0.0271 |
| 272 | 0.0312 | 0.0042 | 0.0270 |
| 273 | 0.0311 | 0.0042 | 0.0269 |
| 274 | 0.0310 | 0.0042 | 0.0268 |
| 275 | 0.0309 | 0.0042 | 0.0267 |
| 276 | 0.0307 | 0.0042 | 0.0266 |
| 277 | 0.0306 | 0.0041 | 0.0265 |
| 278 | 0.0305 | 0.0041 | 0.0264 |
| 279 | 0.0304 | 0.0041 | 0.0263 |
| 280 | 0.0303 | 0.0041 | 0.0262 |
| 281 | 0.0302 | 0.0041 | 0.0261 |
| 282 | 0.0301 | 0.0041 | 0.0260 |
| 283 | 0.0300 | 0.0041 | 0.0260 |
| 284 | 0.0299 | 0.0041 | 0.0259 |
| 285 | 0.0298 | 0.0040 | 0.0258 |
| 286 | 0.0297 | 0.0040 | 0.0257 |
| 287 | 0.0296 | 0.0040 | 0.0256 |

```
      288             0.0296          0.0040             0.0256
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      1.55(In)
      Total effective rainfall =     10.45(In)
      Peak flow rate in flood hydrograph =     69.04(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
----------------------------------------------------------------------------
  0+ 5       0.0017      0.25  Q         |         |         |         |
  0+10       0.0119      1.48  Q         |         |         |         |
  0+15       0.0366      3.59  V Q       |         |         |         |
  0+20       0.0668      4.38  V Q       |         |         |         |
  0+25       0.1002      4.85  V Q       |         |         |         |
  0+30       0.1357      5.15  V Q       |         |         |         |
  0+35       0.1725      5.35  V  Q      |         |         |         |
  0+40       0.2101      5.47  V  Q      |         |         |         |
  0+45       0.2482      5.52  V  Q      |         |         |         |
  0+50       0.2865      5.56  V  Q      |         |         |         |
  0+55       0.3250      5.59  V  Q      |         |         |         |
  1+ 0       0.3637      5.62  V  Q      |         |         |         |
  1+ 5       0.4026      5.64  |V Q      |         |         |         |
  1+10       0.4416      5.66  |V Q      |         |         |         |
  1+15       0.4806      5.67  |V Q      |         |         |         |
  1+20       0.5197      5.68  |V Q      |         |         |         |
  1+25       0.5589      5.69  |V Q      |         |         |         |
  1+30       0.5982      5.70  |V Q      |         |         |         |
  1+35       0.6375      5.71  |V Q      |         |         |         |
  1+40       0.6768      5.72  |V Q      |         |         |         |
  1+45       0.7163      5.73  |V Q      |         |         |         |
  1+50       0.7558      5.74  |V Q      |         |         |         |
  1+55       0.7954      5.75  | VQ      |         |         |         |
  2+ 0       0.8350      5.76  | VQ      |         |         |         |
  2+ 5       0.8747      5.77  | VQ      |         |         |         |
  2+10       0.9145      5.78  | VQ      |         |         |         |
  2+15       0.9543      5.79  | VQ      |         |         |         |
  2+20       0.9942      5.80  | VQ      |         |         |         |
  2+25       1.0342      5.81  | VQ      |         |         |         |
  2+30       1.0743      5.82  | VQ      |         |         |         |
  2+35       1.1144      5.83  | VQ      |         |         |         |
  2+40       1.1546      5.84  | VQ      |         |         |         |
  2+45       1.1949      5.85  |  Q      |         |         |         |
  2+50       1.2352      5.86  |  Q      |         |         |         |
  2+55       1.2756      5.87  |  Q      |         |         |         |
  3+ 0       1.3161      5.88  |  Q      |         |         |         |
  3+ 5       1.3567      5.89  |  Q      |         |         |         |
  3+10       1.3973      5.90  |  Q      |         |         |         |
  3+15       1.4380      5.91  |  Q      |         |         |         |
  3+20       1.4788      5.92  |  Q      |         |         |         |
  3+25       1.5197      5.93  |  Q      |         |         |         |
  3+30       1.5606      5.95  |  Q      |         |         |         |
  3+35       1.6016      5.96  |  QV     |         |         |         |
  3+40       1.6427      5.97  |  QV     |         |         |         |
  3+45       1.6839      5.98  |  QV     |         |         |         |
  3+50       1.7252      5.99  |  QV     |         |         |         |
  3+55       1.7665      6.00  |  QV     |         |         |         |
  4+ 0       1.8080      6.01  |  QV     |         |         |         |
  4+ 5       1.8495      6.03  |  QV     |         |         |         |
  4+10       1.8911      6.04  |  QV     |         |         |         |
  4+15       1.9327      6.05  |  QV     |         |         |         |
  4+20       1.9745      6.06  |  Q V    |         |         |         |
  4+25       2.0163      6.08  |  Q V    |         |         |         |
  4+30       2.0583      6.09  |  Q V    |         |         |         |
  4+35       2.1003      6.10  |  Q V    |         |         |         |
```

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 4+40      2.1424      6.11  |  Q V    |         |         |         |
 4+45      2.1846      6.13  |  Q V    |         |         |         |
 4+50      2.2269      6.14  |  Q V    |         |         |         |
 4+55      2.2693      6.15  |  Q V    |         |         |         |
 5+ 0      2.3117      6.17  |  Q V    |         |         |         |
 5+ 5      2.3543      6.18  |  Q V    |         |         |         |
 5+10      2.3969      6.19  |  Q  V   |         |         |         |
 5+15      2.4397      6.21  |  Q  V   |         |         |         |
 5+20      2.4825      6.22  |  Q  V   |         |         |         |
 5+25      2.5255      6.23  |  Q  V   |         |         |         |
 5+30      2.5685      6.25  |  Q  V   |         |         |         |
 5+35      2.6116      6.26  |  Q  V   |         |         |         |
 5+40      2.6549      6.28  |  Q  V   |         |         |         |
 5+45      2.6982      6.29  |  Q  V   |         |         |         |
 5+50      2.7416      6.31  |  Q  V   |         |         |         |
 5+55      2.7852      6.32  |  Q   V  |         |         |         |
 6+ 0      2.8288      6.34  |  Q   V  |         |         |         |
 6+ 5      2.8725      6.35  |  Q   V  |         |         |         |
 6+10      2.9164      6.37  |  Q   V  |         |         |         |
 6+15      2.9603      6.38  |  Q   V  |         |         |         |
 6+20      3.0044      6.40  |  Q   V  |         |         |         |
 6+25      3.0486      6.41  |  Q   V  |         |         |         |
 6+30      3.0928      6.43  |  Q   V  |         |         |         |
 6+35      3.1372      6.45  |  Q   V  |         |         |         |
 6+40      3.1817      6.46  |  Q    V |         |         |         |
 6+45      3.2263      6.48  |  Q    V |         |         |         |
 6+50      3.2711      6.49  |  Q    V |         |         |         |
 6+55      3.3159      6.51  |  Q    V |         |         |         |
 7+ 0      3.3609      6.53  |  Q    V |         |         |         |
 7+ 5      3.4060      6.55  |  Q    V |         |         |         |
 7+10      3.4512      6.56  |  Q    V |         |         |         |
 7+15      3.4965      6.58  |  Q    V |         |         |         |
 7+20      3.5419      6.60  |  Q     V|         |         |         |
 7+25      3.5875      6.62  |  Q     V|         |         |         |
 7+30      3.6332      6.63  |  Q     V|         |         |         |
 7+35      3.6790      6.65  |  Q     V|         |         |         |
 7+40      3.7250      6.67  |  Q     V|         |         |         |
 7+45      3.7710      6.69  |  Q     V|         |         |         |
 7+50      3.8173      6.71  |  Q     V|         |         |         |
 7+55      3.8636      6.73  |  Q     V|         |         |         |
 8+ 0      3.9101      6.75  |  Q     V|         |         |         |
 8+ 5      3.9567      6.77  |  Q      V         |         |         |
 8+10      4.0035      6.79  |  Q      V         |         |         |
 8+15      4.0504      6.81  |  Q      V         |         |         |
 8+20      4.0974      6.83  |  Q      V         |         |         |
 8+25      4.1446      6.85  |  Q      V         |         |         |
 8+30      4.1920      6.87  |  Q      V         |         |         |
 8+35      4.2395      6.90  |  Q      V         |         |         |
 8+40      4.2871      6.92  |  Q      V         |         |         |
 8+45      4.3349      6.94  |  Q      |V        |         |         |
 8+50      4.3829      6.96  |  Q      |V        |         |         |
 8+55      4.4310      6.99  |  Q      |V        |         |         |
 9+ 0      4.4792      7.01  |   Q     |V        |         |         |
 9+ 5      4.5277      7.03  |   Q     |V        |         |         |
 9+10      4.5763      7.06  |   Q     |V        |         |         |
 9+15      4.6250      7.08  |   Q     |V        |         |         |
 9+20      4.6740      7.10  |   Q     |V        |         |         |
 9+25      4.7231      7.13  |   Q     | V       |         |         |
 9+30      4.7724      7.16  |   Q     | V       |         |         |
 9+35      4.8218      7.18  |   Q     | V       |         |         |
 9+40      4.8715      7.21  |   Q     | V       |         |         |
 9+45      4.9213      7.24  |   Q     | V       |         |         |
 9+50      4.9713      7.26  |   Q     | V       |         |         |
 9+55      5.0215      7.29  |   Q     | V       |         |         |
10+ 0      5.0719      7.32  |   Q     | V       |         |         |
10+ 5      5.1225      7.35  |   Q     |  V      |         |         |
10+10      5.1733      7.38  |   Q     |  V      |         |         |
10+15      5.2243      7.41  |   Q     |  V      |         |         |
10+20      5.2755      7.44  |   Q     |  V      |         |         |
10+25      5.3270      7.47  |   Q     |  V      |         |         |
10+30      5.3786      7.50  |   Q     |  V      |         |         |
```

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10+35      5.4304     7.53  |   Q     |  V      |         |         |
10+40      5.4825     7.56  |   Q     |  V      |         |         |
10+45      5.5348     7.60  |   Q     |   V     |         |         |
10+50      5.5874     7.63  |   Q     |   V     |         |         |
10+55      5.6402     7.66  |   Q     |   V     |         |         |
11+ 0      5.6932     7.70  |   Q     |   V     |         |         |
11+ 5      5.7465     7.74  |   Q     |   V     |         |         |
11+10      5.8000     7.77  |   Q     |   V     |         |         |
11+15      5.8538     7.81  |   Q     |   V     |         |         |
11+20      5.9078     7.85  |   Q     |    V    |         |         |
11+25      5.9621     7.89  |   Q     |    V    |         |         |
11+30      6.0167     7.93  |   Q     |    V    |         |         |
11+35      6.0716     7.97  |   Q     |    V    |         |         |
11+40      6.1267     8.01  |   Q     |    V    |         |         |
11+45      6.1822     8.05  |   Q     |    V    |         |         |
11+50      6.2380     8.10  |   Q     |    V    |         |         |
11+55      6.2940     8.14  |   Q     |     V   |         |         |
12+ 0      6.3504     8.19  |   Q     |     V   |         |         |
12+ 5      6.4068     8.19  |   Q     |     V   |         |         |
12+10      6.4618     7.99  |   Q     |     V   |         |         |
12+15      6.5143     7.62  |   Q     |     V   |         |         |
12+20      6.5660     7.52  |   Q     |     V   |         |         |
12+25      6.6176     7.49  |   Q     |     V   |         |         |
12+30      6.6691     7.49  |   Q     |     V   |         |         |
12+35      6.7209     7.51  |   Q     |      V  |         |         |
12+40      6.7729     7.56  |   Q     |      V  |         |         |
12+45      6.8254     7.62  |   Q     |      V  |         |         |
12+50      6.8783     7.68  |   Q     |      V  |         |         |
12+55      6.9316     7.75  |   Q     |      V  |         |         |
13+ 0      6.9855     7.82  |   Q     |      V  |         |         |
13+ 5      7.0399     7.90  |   Q     |      V  |         |         |
13+10      7.0948     7.97  |   Q     |       V |         |         |
13+15      7.1503     8.06  |   Q     |       V |         |         |
13+20      7.2064     8.15  |   Q     |       V |         |         |
13+25      7.2631     8.24  |   Q     |       V |         |         |
13+30      7.3205     8.33  |   Q     |       V |         |         |
13+35      7.3786     8.43  |   Q     |       V |         |         |
13+40      7.4374     8.53  |   Q     |       V |         |         |
13+45      7.4969     8.64  |   Q     |        V|         |         |
13+50      7.5572     8.75  |    Q    |        V|         |         |
13+55      7.6183     8.88  |    Q    |        V|         |         |
14+ 0      7.6803     9.00  |    Q    |        V|         |         |
14+ 5      7.7432     9.13  |    Q    |        V|         |         |
14+10      7.8070     9.27  |    Q    |        V|         |         |
14+15      7.8719     9.42  |    Q    |         V         |         |
14+20      7.9378     9.57  |    Q    |         V         |         |
14+25      8.0050     9.74  |    Q    |         V         |         |
14+30      8.0732     9.91  |    Q    |         V         |         |
14+35      8.1428    10.11  |    Q    |         V         |         |
14+40      8.2138    10.30  |    Q    |         V         |         |
14+45      8.2863    10.52  |     Q   |         |V        |         |
14+50      8.3603    10.75  |     Q   |         |V        |         |
14+55      8.4361    11.01  |     Q   |         |V        |         |
15+ 0      8.5137    11.27  |     Q   |         |V        |         |
15+ 5      8.5935    11.59  |     Q   |         |V        |         |
15+10      8.6755    11.91  |     Q   |         | V       |         |
15+15      8.7602    12.29  |      Q  |         | V       |         |
15+20      8.8476    12.69  |      Q  |         | V       |         |
15+25      8.9361    12.85  |      Q  |         | V       |         |
15+30      9.0169    11.73  |     Q   |         | V       |         |
15+35      9.0829     9.57  |    Q    |         |  V      |         |
15+40      9.1464     9.23  |    Q    |         |  V      |         |
15+45      9.2124     9.58  |    Q    |         |  V      |         |
15+50      9.2841    10.41  |    Q    |         |  V      |         |
15+55      9.3674    12.09  |     Q   |         |  V      |         |
16+ 0      9.4723    15.22  |       Q |         |   V     |         |
16+ 5      9.6516    26.04  |         |   Q     |   V     |         |
16+10     10.0070    51.60  |         |         |    V   Q|         |
16+15     10.4825    69.04  |         |         |     V   |        Q|
16+20     10.7250    35.21  |         |         Q      V  |         |
16+25     10.8918    24.23  |         |  Q      |      V  |         |
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16+30     11.0266     19.57  |          |Q         |        V |          |
16+35     11.1503     17.96  |          Q          |        V |          |
16+40     11.2580     15.64  |        Q |          |        V |          |
16+45     11.3511     13.52  |       Q  |          |        V |          |
16+50     11.4374     12.54  |       Q  |          |         V|          |
16+55     11.5190     11.84  |     Q    |          |         V|          |
17+ 0     11.5974     11.39  |     Q    |          |         V|          |
17+ 5     11.6715     10.75  |     Q    |          |         V|          |
17+10     11.7416     10.19  |    Q     |          |         V|          |
17+15     11.8081      9.66  |    Q     |          |          V          |
17+20     11.8725      9.35  |    Q     |          |          V          |
17+25     11.9351      9.08  |    Q     |          |          V          |
17+30     11.9959      8.83  |    Q     |          |          V          |
17+35     12.0551      8.60  |   Q      |          |          V          |
17+40     12.1129      8.39  |   Q      |          |          V          |
17+45     12.1693      8.20  |   Q      |          |          V          |
17+50     12.2245      8.02  |   Q      |          |          |V         |
17+55     12.2786      7.85  |   Q      |          |          |V         |
18+ 0     12.3316      7.70  |   Q      |          |          |V         |
18+ 5     12.3841      7.61  |   Q      |          |          |V         |
18+10     12.4372      7.72  |   Q      |          |          |V         |
18+15     12.4925      8.02  |   Q      |          |          |V         |
18+20     12.5481      8.07  |   Q      |          |          |V         |
18+25     12.6037      8.06  |   Q      |          |          | V        |
18+30     12.6589      8.03  |   Q      |          |          | V        |
18+35     12.7139      7.98  |   Q      |          |          | V        |
18+40     12.7684      7.92  |   Q      |          |          | V        |
18+45     12.8224      7.84  |   Q      |          |          | V        |
18+50     12.8760      7.77  |   Q      |          |          | V        |
18+55     12.9290      7.70  |   Q      |          |          | V        |
19+ 0     12.9816      7.64  |   Q      |          |          |  V       |
19+ 5     13.0338      7.57  |   Q      |          |          |  V       |
19+10     13.0855      7.51  |   Q      |          |          |  V       |
19+15     13.1368      7.45  |   Q      |          |          |  V       |
19+20     13.1877      7.39  |   Q      |          |          |  V       |
19+25     13.2381      7.33  |   Q      |          |          |  V       |
19+30     13.2882      7.27  |   Q      |          |          |  V       |
19+35     13.3379      7.22  |   Q      |          |          |  V       |
19+40     13.3873      7.16  |   Q      |          |          |   V      |
19+45     13.4362      7.11  |   Q      |          |          |   V      |
19+50     13.4849      7.06  |   Q      |          |          |   V      |
19+55     13.5332      7.02  |   Q      |          |          |   V      |
20+ 0     13.5812      6.97  |  Q       |          |          |   V      |
20+ 5     13.6289      6.92  |  Q       |          |          |   V      |
20+10     13.6763      6.88  |  Q       |          |          |   V      |
20+15     13.7234      6.84  |  Q       |          |          |   V      |
20+20     13.7702      6.80  |  Q       |          |          |    V     |
20+25     13.8167      6.76  |  Q       |          |          |    V     |
20+30     13.8630      6.72  |  Q       |          |          |    V     |
20+35     13.9090      6.68  |  Q       |          |          |    V     |
20+40     13.9547      6.64  |  Q       |          |          |    V     |
20+45     14.0002      6.60  |  Q       |          |          |    V     |
20+50     14.0455      6.57  |  Q       |          |          |    V     |
20+55     14.0905      6.53  |  Q       |          |          |    V     |
21+ 0     14.1352      6.50  |  Q       |          |          |    V     |
21+ 5     14.1798      6.47  |  Q       |          |          |     V    |
21+10     14.2241      6.43  |  Q       |          |          |     V    |
21+15     14.2682      6.40  |  Q       |          |          |     V    |
21+20     14.3120      6.37  |  Q       |          |          |     V    |
21+25     14.3557      6.34  |  Q       |          |          |     V    |
21+30     14.3992      6.31  |  Q       |          |          |     V    |
21+35     14.4424      6.28  |  Q       |          |          |     V    |
21+40     14.4855      6.25  |  Q       |          |          |     V    |
21+45     14.5284      6.22  |  Q       |          |          |     V    |
21+50     14.5710      6.20  |  Q       |          |          |      V   |
21+55     14.6135      6.17  |  Q       |          |          |      V   |
22+ 0     14.6559      6.14  |  Q       |          |          |      V   |
22+ 5     14.6980      6.12  |  Q       |          |          |      V   |
22+10     14.7400      6.09  |  Q       |          |          |      V   |
22+15     14.7817      6.07  |  Q       |          |          |      V   |
22+20     14.8234      6.04  |  Q       |          |          |      V   |
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   22+25      14.8648      6.02  |  Q      |         |         |      V  |
   22+30      14.9061      5.99  |  Q      |         |         |      V  |
   22+35      14.9472      5.97  |  Q      |         |         |       V |
   22+40      14.9882      5.95  |  Q      |         |         |       V |
   22+45      15.0290      5.93  |  Q      |         |         |       V |
   22+50      15.0697      5.90  |  Q      |         |         |       V |
   22+55      15.1102      5.88  |  Q      |         |         |       V |
   23+ 0      15.1505      5.86  |  Q      |         |         |       V |
   23+ 5      15.1907      5.84  |  Q      |         |         |       V |
   23+10      15.2308      5.82  |  Q      |         |         |       V |
   23+15      15.2708      5.80  |  Q      |         |         |       V |
   23+20      15.3105      5.78  |  Q      |         |         |       V |
   23+25      15.3502      5.76  |  Q      |         |         |        V|
   23+30      15.3897      5.74  |  Q      |         |         |        V|
   23+35      15.4291      5.72  |  Q      |         |         |        V|
   23+40      15.4684      5.70  |  Q      |         |         |        V|
   23+45      15.5075      5.68  |  Q      |         |         |        V|
   23+50      15.5465      5.66  |  Q      |         |         |        V|
   23+55      15.5854      5.65  |  Q      |         |         |        V|
   24+ 0      15.6241      5.63  |  Q      |         |         |        V|
   24+ 5      15.6611      5.36  |  Q      |         |         |        V|
   24+10      15.6894      4.11  | Q       |         |         |        V|
   24+15      15.7031      2.00  |Q        |         |         |        V|
   24+20      15.7114      1.20  Q         |         |         |        V|
   24+25      15.7165      0.74  Q         |         |         |        V|
   24+30      15.7196      0.45  Q         |         |         |        V|
   24+35      15.7214      0.26  Q         |         |         |        V|
   24+40      15.7223      0.14  Q         |         |         |        V|
   24+45      15.7230      0.09  Q         |         |         |        V|
   24+50      15.7234      0.06  Q         |         |         |        V|
   24+55      15.7237      0.04  Q         |         |         |        V|
   25+ 0      15.7238      0.02  Q         |         |         |        V|
   25+ 5      15.7239      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'B' – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             4.33            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6          4.33      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 4.33 | 1.000 | 78.0 | 60.6 | 6.50 | 0.198 |

Area-averaged catchment yield fraction, Y = 0.198
Area-averaged low loss fraction, Yb = 0.802
User entry of time of concentration = 0.182 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 4.33(Ac.)
Catchment Lag time = 0.146 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 57.2344
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.802 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 4.33(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.309(In)
30-minute factor = 1.000 Adjusted rainfall = 0.528(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)

U n i t H y d r o g r a p h

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 52.37 (CFS)) | |
| 1 | 5.210 | 2.728 |
| 2 | 33.842 | 14.993 |
| 3 | 69.240 | 18.537 |
| 4 | 82.158 | 6.765 |
| 5 | 89.615 | 3.905 |
| 6 | 94.272 | 2.439 |
| 7 | 97.009 | 1.433 |
| 8 | 98.250 | 0.650 |
| 9 | 98.857 | 0.318 |
| 10 | 99.271 | 0.217 |
| 11 | 99.677 | 0.213 |
| 12 | 99.909 | 0.121 |
| 13 | 100.000 | 0.048 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3086 | 0.3086 |
| 2 | 0.3799 | 0.0713 |
| 3 | 0.4291 | 0.0491 |
| 4 | 0.4678 | 0.0387 |
| 5 | 0.5002 | 0.0324 |
| 6 | 0.5283 | 0.0281 |
| 7 | 0.5533 | 0.0250 |
| 8 | 0.5759 | 0.0226 |
| 9 | 0.5966 | 0.0207 |
| 10 | 0.6158 | 0.0192 |
| 11 | 0.6336 | 0.0179 |
| 12 | 0.6504 | 0.0168 |
| 13 | 0.6839 | 0.0335 |

| | | |
|---|---|---|
| 14 | 0.7164 | 0.0325 |
| 15 | 0.7481 | 0.0317 |
| 16 | 0.7789 | 0.0309 |
| 17 | 0.8091 | 0.0302 |
| 18 | 0.8386 | 0.0295 |
| 19 | 0.8676 | 0.0289 |
| 20 | 0.8959 | 0.0284 |
| 21 | 0.9237 | 0.0278 |
| 22 | 0.9511 | 0.0273 |
| 23 | 0.9780 | 0.0269 |
| 24 | 1.0044 | 0.0264 |
| 25 | 1.0305 | 0.0260 |
| 26 | 1.0561 | 0.0257 |
| 27 | 1.0814 | 0.0253 |
| 28 | 1.1063 | 0.0249 |
| 29 | 1.1310 | 0.0246 |
| 30 | 1.1553 | 0.0243 |
| 31 | 1.1792 | 0.0240 |
| 32 | 1.2030 | 0.0237 |
| 33 | 1.2264 | 0.0234 |
| 34 | 1.2496 | 0.0232 |
| 35 | 1.2725 | 0.0229 |
| 36 | 1.2952 | 0.0227 |
| 37 | 1.3176 | 0.0224 |
| 38 | 1.3398 | 0.0222 |
| 39 | 1.3618 | 0.0220 |
| 40 | 1.3836 | 0.0218 |
| 41 | 1.4052 | 0.0216 |
| 42 | 1.4266 | 0.0214 |
| 43 | 1.4478 | 0.0212 |
| 44 | 1.4688 | 0.0210 |
| 45 | 1.4896 | 0.0208 |
| 46 | 1.5103 | 0.0207 |
| 47 | 1.5308 | 0.0205 |
| 48 | 1.5511 | 0.0203 |
| 49 | 1.5713 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6112 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6700 | 0.0195 |
| 55 | 1.6893 | 0.0193 |
| 56 | 1.7085 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7465 | 0.0189 |
| 59 | 1.7653 | 0.0188 |
| 60 | 1.7840 | 0.0187 |
| 61 | 1.8026 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8394 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8758 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9296 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9650 | 0.0176 |
| 71 | 1.9825 | 0.0175 |
| 72 | 2.0000 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0276 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0548 | 0.0136 |
| 77 | 2.0683 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1082 | 0.0132 |
| 81 | 2.1213 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |
| 84 | 2.1602 | 0.0129 |

| | | |
|---|---|---|
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1858 | 0.0127 |
| 87 | 2.1985 | 0.0127 |
| 88 | 2.2111 | 0.0126 |
| 89 | 2.2236 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2852 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3094 | 0.0121 |
| 97 | 2.3214 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3452 | 0.0119 |
| 100 | 2.3570 | 0.0118 |
| 101 | 2.3688 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3921 | 0.0116 |
| 104 | 2.4037 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4267 | 0.0115 |
| 107 | 2.4381 | 0.0114 |
| 108 | 2.4495 | 0.0114 |
| 109 | 2.4608 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4833 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5166 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5386 | 0.0110 |
| 117 | 2.5495 | 0.0109 |
| 118 | 2.5604 | 0.0109 |
| 119 | 2.5712 | 0.0108 |
| 120 | 2.5820 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6034 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6874 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7080 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7386 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7789 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7988 | 0.0099 |
| 142 | 2.8087 | 0.0099 |
| 143 | 2.8186 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8480 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8771 | 0.0097 |
| 150 | 2.8867 | 0.0096 |
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9250 | 0.0095 |
| 155 | 2.9344 | 0.0095 |

| | | |
|---|---|---|
| 156 | 2.9439 | 0.0095 |
| 157 | 2.9533 | 0.0094 |
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9721 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 3.0000 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0368 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0732 | 0.0091 |
| 171 | 3.0822 | 0.0090 |
| 172 | 3.0912 | 0.0090 |
| 173 | 3.1002 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1358 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1535 | 0.0088 |
| 180 | 3.1623 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1798 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2059 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2232 | 0.0086 |
| 188 | 3.2318 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2660 | 0.0085 |
| 193 | 3.2745 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2914 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3250 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3665 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4075 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4319 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4641 | 0.0080 |
| 217 | 3.4721 | 0.0080 |
| 218 | 3.4801 | 0.0080 |
| 219 | 3.4881 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5119 | 0.0079 |
| 223 | 3.5198 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |
| 226 | 3.5434 | 0.0078 |

| | | |
|---|---|---|
| 227 | 3.5512 | 0.0078 |
| 228 | 3.5590 | 0.0078 |
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5746 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5901 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6286 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6515 | 0.0076 |
| 241 | 3.6591 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6818 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7268 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7491 | 0.0074 |
| 254 | 3.7565 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7786 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8006 | 0.0073 |
| 261 | 3.8079 | 0.0073 |
| 262 | 3.8152 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8297 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8442 | 0.0072 |
| 267 | 3.8514 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8658 | 0.0072 |
| 270 | 3.8730 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8873 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9087 | 0.0071 |
| 276 | 3.9158 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9370 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9511 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9861 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 4.0000 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0056 | 0.0014 |
| 2 | 0.0070 | 0.0056 | 0.0014 |
| 3 | 0.0070 | 0.0056 | 0.0014 |
| 4 | 0.0070 | 0.0056 | 0.0014 |

| | | | |
|---|---|---|---|
| 5 | 0.0070 | 0.0056 | 0.0014 |
| 6 | 0.0070 | 0.0056 | 0.0014 |
| 7 | 0.0071 | 0.0057 | 0.0014 |
| 8 | 0.0071 | 0.0057 | 0.0014 |
| 9 | 0.0071 | 0.0057 | 0.0014 |
| 10 | 0.0071 | 0.0057 | 0.0014 |
| 11 | 0.0071 | 0.0057 | 0.0014 |
| 12 | 0.0072 | 0.0057 | 0.0014 |
| 13 | 0.0072 | 0.0058 | 0.0014 |
| 14 | 0.0072 | 0.0058 | 0.0014 |
| 15 | 0.0072 | 0.0058 | 0.0014 |
| 16 | 0.0072 | 0.0058 | 0.0014 |
| 17 | 0.0073 | 0.0058 | 0.0014 |
| 18 | 0.0073 | 0.0058 | 0.0014 |
| 19 | 0.0073 | 0.0059 | 0.0014 |
| 20 | 0.0073 | 0.0059 | 0.0014 |
| 21 | 0.0073 | 0.0059 | 0.0015 |
| 22 | 0.0074 | 0.0059 | 0.0015 |
| 23 | 0.0074 | 0.0059 | 0.0015 |
| 24 | 0.0074 | 0.0059 | 0.0015 |
| 25 | 0.0074 | 0.0060 | 0.0015 |
| 26 | 0.0074 | 0.0060 | 0.0015 |
| 27 | 0.0075 | 0.0060 | 0.0015 |
| 28 | 0.0075 | 0.0060 | 0.0015 |
| 29 | 0.0075 | 0.0060 | 0.0015 |
| 30 | 0.0075 | 0.0060 | 0.0015 |
| 31 | 0.0076 | 0.0061 | 0.0015 |
| 32 | 0.0076 | 0.0061 | 0.0015 |
| 33 | 0.0076 | 0.0061 | 0.0015 |
| 34 | 0.0076 | 0.0061 | 0.0015 |
| 35 | 0.0077 | 0.0061 | 0.0015 |
| 36 | 0.0077 | 0.0062 | 0.0015 |
| 37 | 0.0077 | 0.0062 | 0.0015 |
| 38 | 0.0077 | 0.0062 | 0.0015 |
| 39 | 0.0078 | 0.0062 | 0.0015 |
| 40 | 0.0078 | 0.0062 | 0.0015 |
| 41 | 0.0078 | 0.0063 | 0.0015 |
| 42 | 0.0078 | 0.0063 | 0.0016 |
| 43 | 0.0079 | 0.0063 | 0.0016 |
| 44 | 0.0079 | 0.0063 | 0.0016 |
| 45 | 0.0079 | 0.0064 | 0.0016 |
| 46 | 0.0079 | 0.0064 | 0.0016 |
| 47 | 0.0080 | 0.0064 | 0.0016 |
| 48 | 0.0080 | 0.0064 | 0.0016 |
| 49 | 0.0080 | 0.0064 | 0.0016 |
| 50 | 0.0080 | 0.0065 | 0.0016 |
| 51 | 0.0081 | 0.0065 | 0.0016 |
| 52 | 0.0081 | 0.0065 | 0.0016 |
| 53 | 0.0081 | 0.0065 | 0.0016 |
| 54 | 0.0082 | 0.0065 | 0.0016 |
| 55 | 0.0082 | 0.0066 | 0.0016 |
| 56 | 0.0082 | 0.0066 | 0.0016 |
| 57 | 0.0083 | 0.0066 | 0.0016 |
| 58 | 0.0083 | 0.0066 | 0.0016 |
| 59 | 0.0083 | 0.0067 | 0.0016 |
| 60 | 0.0083 | 0.0067 | 0.0017 |
| 61 | 0.0084 | 0.0067 | 0.0017 |
| 62 | 0.0084 | 0.0067 | 0.0017 |
| 63 | 0.0085 | 0.0068 | 0.0017 |
| 64 | 0.0085 | 0.0068 | 0.0017 |
| 65 | 0.0085 | 0.0068 | 0.0017 |
| 66 | 0.0085 | 0.0068 | 0.0017 |
| 67 | 0.0086 | 0.0069 | 0.0017 |
| 68 | 0.0086 | 0.0069 | 0.0017 |
| 69 | 0.0087 | 0.0069 | 0.0017 |
| 70 | 0.0087 | 0.0070 | 0.0017 |
| 71 | 0.0087 | 0.0070 | 0.0017 |
| 72 | 0.0087 | 0.0070 | 0.0017 |
| 73 | 0.0088 | 0.0071 | 0.0017 |
| 74 | 0.0088 | 0.0071 | 0.0017 |
| 75 | 0.0089 | 0.0071 | 0.0018 |

| | | | |
|---|---|---|---|
| 76 | 0.0089 | 0.0071 | 0.0018 |
| 77 | 0.0089 | 0.0072 | 0.0018 |
| 78 | 0.0090 | 0.0072 | 0.0018 |
| 79 | 0.0090 | 0.0072 | 0.0018 |
| 80 | 0.0091 | 0.0073 | 0.0018 |
| 81 | 0.0091 | 0.0073 | 0.0018 |
| 82 | 0.0091 | 0.0073 | 0.0018 |
| 83 | 0.0092 | 0.0074 | 0.0018 |
| 84 | 0.0092 | 0.0074 | 0.0018 |
| 85 | 0.0093 | 0.0074 | 0.0018 |
| 86 | 0.0093 | 0.0075 | 0.0018 |
| 87 | 0.0094 | 0.0075 | 0.0019 |
| 88 | 0.0094 | 0.0075 | 0.0019 |
| 89 | 0.0095 | 0.0076 | 0.0019 |
| 90 | 0.0095 | 0.0076 | 0.0019 |
| 91 | 0.0095 | 0.0077 | 0.0019 |
| 92 | 0.0096 | 0.0077 | 0.0019 |
| 93 | 0.0096 | 0.0077 | 0.0019 |
| 94 | 0.0097 | 0.0078 | 0.0019 |
| 95 | 0.0097 | 0.0078 | 0.0019 |
| 96 | 0.0098 | 0.0078 | 0.0019 |
| 97 | 0.0098 | 0.0079 | 0.0019 |
| 98 | 0.0099 | 0.0079 | 0.0020 |
| 99 | 0.0099 | 0.0080 | 0.0020 |
| 100 | 0.0100 | 0.0080 | 0.0020 |
| 101 | 0.0101 | 0.0081 | 0.0020 |
| 102 | 0.0101 | 0.0081 | 0.0020 |
| 103 | 0.0102 | 0.0081 | 0.0020 |
| 104 | 0.0102 | 0.0082 | 0.0020 |
| 105 | 0.0103 | 0.0082 | 0.0020 |
| 106 | 0.0103 | 0.0083 | 0.0020 |
| 107 | 0.0104 | 0.0083 | 0.0021 |
| 108 | 0.0104 | 0.0084 | 0.0021 |
| 109 | 0.0105 | 0.0084 | 0.0021 |
| 110 | 0.0106 | 0.0085 | 0.0021 |
| 111 | 0.0106 | 0.0085 | 0.0021 |
| 112 | 0.0107 | 0.0086 | 0.0021 |
| 113 | 0.0108 | 0.0086 | 0.0021 |
| 114 | 0.0108 | 0.0087 | 0.0021 |
| 115 | 0.0109 | 0.0088 | 0.0022 |
| 116 | 0.0110 | 0.0088 | 0.0022 |
| 117 | 0.0111 | 0.0089 | 0.0022 |
| 118 | 0.0111 | 0.0089 | 0.0022 |
| 119 | 0.0112 | 0.0090 | 0.0022 |
| 120 | 0.0113 | 0.0090 | 0.0022 |
| 121 | 0.0114 | 0.0091 | 0.0023 |
| 122 | 0.0114 | 0.0092 | 0.0023 |
| 123 | 0.0115 | 0.0092 | 0.0023 |
| 124 | 0.0116 | 0.0093 | 0.0023 |
| 125 | 0.0117 | 0.0094 | 0.0023 |
| 126 | 0.0118 | 0.0094 | 0.0023 |
| 127 | 0.0119 | 0.0095 | 0.0024 |
| 128 | 0.0119 | 0.0096 | 0.0024 |
| 129 | 0.0121 | 0.0097 | 0.0024 |
| 130 | 0.0121 | 0.0097 | 0.0024 |
| 131 | 0.0123 | 0.0098 | 0.0024 |
| 132 | 0.0123 | 0.0099 | 0.0024 |
| 133 | 0.0125 | 0.0100 | 0.0025 |
| 134 | 0.0125 | 0.0100 | 0.0025 |
| 135 | 0.0127 | 0.0102 | 0.0025 |
| 136 | 0.0127 | 0.0102 | 0.0025 |
| 137 | 0.0129 | 0.0103 | 0.0026 |
| 138 | 0.0130 | 0.0104 | 0.0026 |
| 139 | 0.0131 | 0.0105 | 0.0026 |
| 140 | 0.0132 | 0.0106 | 0.0026 |
| 141 | 0.0134 | 0.0107 | 0.0027 |
| 142 | 0.0135 | 0.0108 | 0.0027 |
| 143 | 0.0137 | 0.0110 | 0.0027 |
| 144 | 0.0137 | 0.0110 | 0.0027 |
| 145 | 0.0175 | 0.0140 | 0.0035 |
| 146 | 0.0175 | 0.0141 | 0.0035 |

| | | | |
|---|---|---|---|
| 147 | 0.0177 | 0.0142 | 0.0035 |
| 148 | 0.0178 | 0.0143 | 0.0035 |
| 149 | 0.0180 | 0.0145 | 0.0036 |
| 150 | 0.0181 | 0.0145 | 0.0036 |
| 151 | 0.0184 | 0.0147 | 0.0036 |
| 152 | 0.0185 | 0.0148 | 0.0037 |
| 153 | 0.0187 | 0.0150 | 0.0037 |
| 154 | 0.0188 | 0.0151 | 0.0037 |
| 155 | 0.0191 | 0.0153 | 0.0038 |
| 156 | 0.0192 | 0.0154 | 0.0038 |
| 157 | 0.0195 | 0.0156 | 0.0039 |
| 158 | 0.0196 | 0.0157 | 0.0039 |
| 159 | 0.0199 | 0.0159 | 0.0039 |
| 160 | 0.0200 | 0.0161 | 0.0040 |
| 161 | 0.0203 | 0.0163 | 0.0040 |
| 162 | 0.0205 | 0.0164 | 0.0041 |
| 163 | 0.0208 | 0.0167 | 0.0041 |
| 164 | 0.0210 | 0.0169 | 0.0042 |
| 165 | 0.0214 | 0.0172 | 0.0042 |
| 166 | 0.0216 | 0.0173 | 0.0043 |
| 167 | 0.0220 | 0.0176 | 0.0044 |
| 168 | 0.0222 | 0.0178 | 0.0044 |
| 169 | 0.0227 | 0.0182 | 0.0045 |
| 170 | 0.0229 | 0.0184 | 0.0045 |
| 171 | 0.0234 | 0.0188 | 0.0046 |
| 172 | 0.0237 | 0.0190 | 0.0047 |
| 173 | 0.0243 | 0.0195 | 0.0048 |
| 174 | 0.0246 | 0.0197 | 0.0049 |
| 175 | 0.0253 | 0.0203 | 0.0050 |
| 176 | 0.0257 | 0.0206 | 0.0051 |
| 177 | 0.0264 | 0.0212 | 0.0052 |
| 178 | 0.0269 | 0.0216 | 0.0053 |
| 179 | 0.0278 | 0.0223 | 0.0055 |
| 180 | 0.0284 | 0.0227 | 0.0056 |
| 181 | 0.0295 | 0.0237 | 0.0058 |
| 182 | 0.0302 | 0.0242 | 0.0060 |
| 183 | 0.0317 | 0.0254 | 0.0063 |
| 184 | 0.0325 | 0.0261 | 0.0064 |
| 185 | 0.0168 | 0.0134 | 0.0033 |
| 186 | 0.0179 | 0.0143 | 0.0035 |
| 187 | 0.0207 | 0.0166 | 0.0041 |
| 188 | 0.0226 | 0.0181 | 0.0045 |
| 189 | 0.0281 | 0.0226 | 0.0056 |
| 190 | 0.0324 | 0.0260 | 0.0064 |
| 191 | 0.0491 | 0.0394 | 0.0097 |
| 192 | 0.0713 | 0.0559 | 0.0154 |
| 193 | 0.3086 | 0.0559 | 0.2527 |
| 194 | 0.0387 | 0.0310 | 0.0077 |
| 195 | 0.0250 | 0.0201 | 0.0050 |
| 196 | 0.0192 | 0.0154 | 0.0038 |
| 197 | 0.0335 | 0.0268 | 0.0066 |
| 198 | 0.0309 | 0.0248 | 0.0061 |
| 199 | 0.0289 | 0.0232 | 0.0057 |
| 200 | 0.0273 | 0.0219 | 0.0054 |
| 201 | 0.0260 | 0.0209 | 0.0052 |
| 202 | 0.0249 | 0.0200 | 0.0049 |
| 203 | 0.0240 | 0.0192 | 0.0048 |
| 204 | 0.0232 | 0.0186 | 0.0046 |
| 205 | 0.0224 | 0.0180 | 0.0044 |
| 206 | 0.0218 | 0.0175 | 0.0043 |
| 207 | 0.0212 | 0.0170 | 0.0042 |
| 208 | 0.0207 | 0.0166 | 0.0041 |
| 209 | 0.0202 | 0.0162 | 0.0040 |
| 210 | 0.0197 | 0.0158 | 0.0039 |
| 211 | 0.0193 | 0.0155 | 0.0038 |
| 212 | 0.0189 | 0.0152 | 0.0037 |
| 213 | 0.0186 | 0.0149 | 0.0037 |
| 214 | 0.0182 | 0.0146 | 0.0036 |
| 215 | 0.0179 | 0.0144 | 0.0036 |
| 216 | 0.0176 | 0.0141 | 0.0035 |
| 217 | 0.0138 | 0.0111 | 0.0027 |

| | | | |
|---|---|---|---|
| 218 | 0.0136 | 0.0109 | 0.0027 |
| 219 | 0.0133 | 0.0107 | 0.0026 |
| 220 | 0.0131 | 0.0105 | 0.0026 |
| 221 | 0.0128 | 0.0103 | 0.0025 |
| 222 | 0.0126 | 0.0101 | 0.0025 |
| 223 | 0.0124 | 0.0099 | 0.0025 |
| 224 | 0.0122 | 0.0098 | 0.0024 |
| 225 | 0.0120 | 0.0096 | 0.0024 |
| 226 | 0.0118 | 0.0095 | 0.0023 |
| 227 | 0.0116 | 0.0093 | 0.0023 |
| 228 | 0.0115 | 0.0092 | 0.0023 |
| 229 | 0.0113 | 0.0091 | 0.0022 |
| 230 | 0.0112 | 0.0090 | 0.0022 |
| 231 | 0.0110 | 0.0088 | 0.0022 |
| 232 | 0.0109 | 0.0087 | 0.0022 |
| 233 | 0.0107 | 0.0086 | 0.0021 |
| 234 | 0.0106 | 0.0085 | 0.0021 |
| 235 | 0.0105 | 0.0084 | 0.0021 |
| 236 | 0.0104 | 0.0083 | 0.0021 |
| 237 | 0.0102 | 0.0082 | 0.0020 |
| 238 | 0.0101 | 0.0081 | 0.0020 |
| 239 | 0.0100 | 0.0080 | 0.0020 |
| 240 | 0.0099 | 0.0079 | 0.0020 |
| 241 | 0.0098 | 0.0079 | 0.0019 |
| 242 | 0.0097 | 0.0078 | 0.0019 |
| 243 | 0.0096 | 0.0077 | 0.0019 |
| 244 | 0.0095 | 0.0076 | 0.0019 |
| 245 | 0.0094 | 0.0076 | 0.0019 |
| 246 | 0.0093 | 0.0075 | 0.0018 |
| 247 | 0.0092 | 0.0074 | 0.0018 |
| 248 | 0.0092 | 0.0073 | 0.0018 |
| 249 | 0.0091 | 0.0073 | 0.0018 |
| 250 | 0.0090 | 0.0072 | 0.0018 |
| 251 | 0.0089 | 0.0072 | 0.0018 |
| 252 | 0.0088 | 0.0071 | 0.0018 |
| 253 | 0.0088 | 0.0070 | 0.0017 |
| 254 | 0.0087 | 0.0070 | 0.0017 |
| 255 | 0.0086 | 0.0069 | 0.0017 |
| 256 | 0.0086 | 0.0069 | 0.0017 |
| 257 | 0.0085 | 0.0068 | 0.0017 |
| 258 | 0.0084 | 0.0068 | 0.0017 |
| 259 | 0.0084 | 0.0067 | 0.0017 |
| 260 | 0.0083 | 0.0067 | 0.0016 |
| 261 | 0.0082 | 0.0066 | 0.0016 |
| 262 | 0.0082 | 0.0066 | 0.0016 |
| 263 | 0.0081 | 0.0065 | 0.0016 |
| 264 | 0.0081 | 0.0065 | 0.0016 |
| 265 | 0.0080 | 0.0064 | 0.0016 |
| 266 | 0.0080 | 0.0064 | 0.0016 |
| 267 | 0.0079 | 0.0063 | 0.0016 |
| 268 | 0.0078 | 0.0063 | 0.0016 |
| 269 | 0.0078 | 0.0063 | 0.0015 |
| 270 | 0.0077 | 0.0062 | 0.0015 |
| 271 | 0.0077 | 0.0062 | 0.0015 |
| 272 | 0.0076 | 0.0061 | 0.0015 |
| 273 | 0.0076 | 0.0061 | 0.0015 |
| 274 | 0.0076 | 0.0061 | 0.0015 |
| 275 | 0.0075 | 0.0060 | 0.0015 |
| 276 | 0.0075 | 0.0060 | 0.0015 |
| 277 | 0.0074 | 0.0059 | 0.0015 |
| 278 | 0.0074 | 0.0059 | 0.0015 |
| 279 | 0.0073 | 0.0059 | 0.0015 |
| 280 | 0.0073 | 0.0058 | 0.0014 |
| 281 | 0.0072 | 0.0058 | 0.0014 |
| 282 | 0.0072 | 0.0058 | 0.0014 |
| 283 | 0.0072 | 0.0057 | 0.0014 |
| 284 | 0.0071 | 0.0057 | 0.0014 |
| 285 | 0.0071 | 0.0057 | 0.0014 |
| 286 | 0.0070 | 0.0057 | 0.0014 |
| 287 | 0.0070 | 0.0056 | 0.0014 |
| 288 | 0.0070 | 0.0056 | 0.0014 |

```
      ----------------------------------------------------------------------
      ----------------------------------------------------------------------
      Total soil rain loss =      3.02(In)
      Total effective rainfall =      0.98(In)
      Peak flow rate in flood hydrograph =      4.98(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
----------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q          |         |         |         |
  0+10       0.0002      0.02  Q          |         |         |         |
  0+15       0.0005      0.05  Q          |         |         |         |
  0+20       0.0009      0.06  Q          |         |         |         |
  0+25       0.0014      0.06  Q          |         |         |         |
  0+30       0.0019      0.07  Q          |         |         |         |
  0+35       0.0024      0.07  Q          |         |         |         |
  0+40       0.0028      0.07  Q          |         |         |         |
  0+45       0.0033      0.07  Q          |         |         |         |
  0+50       0.0038      0.07  Q          |         |         |         |
  0+55       0.0043      0.07  Q          |         |         |         |
  1+ 0       0.0049      0.07  Q          |         |         |         |
  1+ 5       0.0054      0.07  Q          |         |         |         |
  1+10       0.0059      0.07  Q          |         |         |         |
  1+15       0.0064      0.07  Q          |         |         |         |
  1+20       0.0069      0.07  Q          |         |         |         |
  1+25       0.0074      0.07  Q          |         |         |         |
  1+30       0.0079      0.07  Q          |         |         |         |
  1+35       0.0085      0.08  Q          |         |         |         |
  1+40       0.0090      0.08  QV         |         |         |         |
  1+45       0.0095      0.08  QV         |         |         |         |
  1+50       0.0100      0.08  QV         |         |         |         |
  1+55       0.0105      0.08  QV         |         |         |         |
  2+ 0       0.0111      0.08  QV         |         |         |         |
  2+ 5       0.0116      0.08  QV         |         |         |         |
  2+10       0.0121      0.08  QV         |         |         |         |
  2+15       0.0126      0.08  QV         |         |         |         |
  2+20       0.0132      0.08  QV         |         |         |         |
  2+25       0.0137      0.08  QV         |         |         |         |
  2+30       0.0142      0.08  QV         |         |         |         |
  2+35       0.0148      0.08  QV         |         |         |         |
  2+40       0.0153      0.08  QV         |         |         |         |
  2+45       0.0159      0.08  QV         |         |         |         |
  2+50       0.0164      0.08  QV         |         |         |         |
  2+55       0.0169      0.08  QV         |         |         |         |
  3+ 0       0.0175      0.08  QV         |         |         |         |
  3+ 5       0.0180      0.08  Q V        |         |         |         |
  3+10       0.0186      0.08  Q V        |         |         |         |
  3+15       0.0191      0.08  Q V        |         |         |         |
  3+20       0.0197      0.08  Q V        |         |         |         |
  3+25       0.0202      0.08  Q V        |         |         |         |
  3+30       0.0208      0.08  Q V        |         |         |         |
  3+35       0.0214      0.08  Q V        |         |         |         |
  3+40       0.0219      0.08  Q V        |         |         |         |
  3+45       0.0225      0.08  Q V        |         |         |         |
  3+50       0.0230      0.08  Q V        |         |         |         |
  3+55       0.0236      0.08  Q V        |         |         |         |
  4+ 0       0.0242      0.08  Q V        |         |         |         |
  4+ 5       0.0247      0.08  Q V        |         |         |         |
  4+10       0.0253      0.08  Q V        |         |         |         |
  4+15       0.0259      0.08  Q V        |         |         |         |
  4+20       0.0265      0.08  Q V        |         |         |         |
  4+25       0.0270      0.08  Q  V       |         |         |         |
  4+30       0.0276      0.08  Q  V       |         |         |         |
  4+35       0.0282      0.08  Q  V       |         |         |         |
  4+40       0.0288      0.08  Q  V       |         |         |         |
```

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4+45 | 0.0294 | 0.08 | Q | V | | | | |
| 4+50 | 0.0299 | 0.09 | Q | V | | | | |
| 4+55 | 0.0305 | 0.09 | Q | V | | | | |
| 5+ 0 | 0.0311 | 0.09 | Q | V | | | | |
| 5+ 5 | 0.0317 | 0.09 | Q | V | | | | |
| 5+10 | 0.0323 | 0.09 | Q | V | | | | |
| 5+15 | 0.0329 | 0.09 | Q | V | | | | |
| 5+20 | 0.0335 | 0.09 | Q | V | | | | |
| 5+25 | 0.0341 | 0.09 | Q | V | | | | |
| 5+30 | 0.0347 | 0.09 | Q | V | | | | |
| 5+35 | 0.0353 | 0.09 | Q | V | | | | |
| 5+40 | 0.0359 | 0.09 | Q | V | | | | |
| 5+45 | 0.0365 | 0.09 | Q | V | | | | |
| 5+50 | 0.0372 | 0.09 | Q | V | | | | |
| 5+55 | 0.0378 | 0.09 | Q | V | | | | |
| 6+ 0 | 0.0384 | 0.09 | Q | V | | | | |
| 6+ 5 | 0.0390 | 0.09 | Q | V | | | | |
| 6+10 | 0.0396 | 0.09 | Q | V | | | | |
| 6+15 | 0.0403 | 0.09 | Q | V | | | | |
| 6+20 | 0.0409 | 0.09 | Q | V | | | | |
| 6+25 | 0.0415 | 0.09 | Q | V | | | | |
| 6+30 | 0.0422 | 0.09 | Q | V | | | | |
| 6+35 | 0.0428 | 0.09 | Q | V | | | | |
| 6+40 | 0.0434 | 0.09 | Q | V | | | | |
| 6+45 | 0.0441 | 0.09 | Q | V | | | | |
| 6+50 | 0.0447 | 0.09 | Q | V | | | | |
| 6+55 | 0.0454 | 0.09 | Q | V | | | | |
| 7+ 0 | 0.0460 | 0.09 | Q | V | | | | |
| 7+ 5 | 0.0467 | 0.10 | Q | V | | | | |
| 7+10 | 0.0473 | 0.10 | Q | V | | | | |
| 7+15 | 0.0480 | 0.10 | Q | V | | | | |
| 7+20 | 0.0487 | 0.10 | Q | V | | | | |
| 7+25 | 0.0493 | 0.10 | Q | V | | | | |
| 7+30 | 0.0500 | 0.10 | Q | V | | | | |
| 7+35 | 0.0507 | 0.10 | Q | V | | | | |
| 7+40 | 0.0514 | 0.10 | Q | V | | | | |
| 7+45 | 0.0520 | 0.10 | Q | V | | | | |
| 7+50 | 0.0527 | 0.10 | Q | V | | | | |
| 7+55 | 0.0534 | 0.10 | Q | V | | | | |
| 8+ 0 | 0.0541 | 0.10 | Q | V | | | | |
| 8+ 5 | 0.0548 | 0.10 | Q | V | | | | |
| 8+10 | 0.0555 | 0.10 | Q | V | | | | |
| 8+15 | 0.0562 | 0.10 | Q | V | | | | |
| 8+20 | 0.0569 | 0.10 | Q | V | | | | |
| 8+25 | 0.0576 | 0.10 | Q | V | | | | |
| 8+30 | 0.0583 | 0.10 | Q | V | | | | |
| 8+35 | 0.0590 | 0.10 | Q | V | | | | |
| 8+40 | 0.0597 | 0.10 | Q | V | | | | |
| 8+45 | 0.0605 | 0.11 | Q | V | | | | |
| 8+50 | 0.0612 | 0.11 | Q | V | | | | |
| 8+55 | 0.0619 | 0.11 | Q | V | | | | |
| 9+ 0 | 0.0627 | 0.11 | Q | V | | | | |
| 9+ 5 | 0.0634 | 0.11 | Q | V | | | | |
| 9+10 | 0.0642 | 0.11 | Q | V | | | | |
| 9+15 | 0.0649 | 0.11 | Q | V | | | | |
| 9+20 | 0.0657 | 0.11 | Q | V | | | | |
| 9+25 | 0.0664 | 0.11 | Q | V | | | | |
| 9+30 | 0.0672 | 0.11 | Q | V | | | | |
| 9+35 | 0.0679 | 0.11 | Q | V | | | | |
| 9+40 | 0.0687 | 0.11 | Q | V | | | | |
| 9+45 | 0.0695 | 0.11 | Q | V | | | | |
| 9+50 | 0.0703 | 0.11 | Q | V | | | | |
| 9+55 | 0.0711 | 0.11 | Q | V | | | | |
| 10+ 0 | 0.0719 | 0.12 | Q | V | | | | |
| 10+ 5 | 0.0727 | 0.12 | Q | V | | | | |
| 10+10 | 0.0735 | 0.12 | Q | V | | | | |
| 10+15 | 0.0743 | 0.12 | Q | V | | | | |
| 10+20 | 0.0751 | 0.12 | Q | V | | | | |
| 10+25 | 0.0759 | 0.12 | Q | V | | | | |
| 10+30 | 0.0767 | 0.12 | Q | V | | | | |
| 10+35 | 0.0776 | 0.12 | Q | V | | | | |

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10+40       0.0784      0.12  Q       V |          |          |          |
10+45       0.0792      0.12  Q       V |          |          |          |
10+50       0.0801      0.12  Q        V|          |          |          |
10+55       0.0810      0.12  Q        V|          |          |          |
11+ 0       0.0818      0.13  Q        V|          |          |          |
11+ 5       0.0827      0.13  Q        V|          |          |          |
11+10       0.0836      0.13  Q        V|          |          |          |
11+15       0.0845      0.13  Q        V|          |          |          |
11+20       0.0854      0.13  Q        V|          |          |          |
11+25       0.0863      0.13  Q        V|          |          |          |
11+30       0.0872      0.13  Q        V|          |          |          |
11+35       0.0881      0.13  Q        V|          |          |          |
11+40       0.0890      0.13  Q         V          |          |          |
11+45       0.0899      0.14  Q         V          |          |          |
11+50       0.0909      0.14  Q         V          |          |          |
11+55       0.0918      0.14  Q         V          |          |          |
12+ 0       0.0928      0.14  Q         V          |          |          |
12+ 5       0.0938      0.14  Q         V          |          |          |
12+10       0.0948      0.15  Q         V          |          |          |
12+15       0.0960      0.17  Q         V          |          |          |
12+20       0.0972      0.18  Q         V          |          |          |
12+25       0.0985      0.18  Q         |V         |          |          |
12+30       0.0997      0.18  Q         |V         |          |          |
12+35       0.1010      0.19  Q         |V         |          |          |
12+40       0.1023      0.19  Q         |V         |          |          |
12+45       0.1036      0.19  Q         |V         |          |          |
12+50       0.1049      0.19  Q         |V         |          |          |
12+55       0.1062      0.19  Q         |V         |          |          |
13+ 0       0.1076      0.19  Q         | V        |          |          |
13+ 5       0.1089      0.20  Q         | V        |          |          |
13+10       0.1103      0.20  Q         | V        |          |          |
13+15       0.1117      0.20  Q         | V        |          |          |
13+20       0.1131      0.20  Q         | V        |          |          |
13+25       0.1145      0.21  Q         | V        |          |          |
13+30       0.1159      0.21  Q         |  V       |          |          |
13+35       0.1174      0.21  Q         |  V       |          |          |
13+40       0.1188      0.21  Q         |  V       |          |          |
13+45       0.1203      0.21  Q         |  V       |          |          |
13+50       0.1218      0.22  Q         |  V       |          |          |
13+55       0.1233      0.22  Q         |  V       |          |          |
14+ 0       0.1249      0.22  Q         |   V      |          |          |
14+ 5       0.1264      0.23  Q         |   V      |          |          |
14+10       0.1280      0.23  Q         |   V      |          |          |
14+15       0.1296      0.23  Q         |   V      |          |          |
14+20       0.1312      0.24  Q         |   V      |          |          |
14+25       0.1329      0.24  Q         |   V      |          |          |
14+30       0.1346      0.25  Q         |    V     |          |          |
14+35       0.1363      0.25  |Q        |    V     |          |          |
14+40       0.1381      0.25  |Q        |    V     |          |          |
14+45       0.1399      0.26  |Q        |    V     |          |          |
14+50       0.1417      0.27  |Q        |    V     |          |          |
14+55       0.1436      0.27  |Q        |     V    |          |          |
15+ 0       0.1455      0.28  |Q        |     V    |          |          |
15+ 5       0.1475      0.29  |Q        |     V    |          |          |
15+10       0.1495      0.29  |Q        |     V    |          |          |
15+15       0.1516      0.30  |Q        |      V   |          |          |
15+20       0.1537      0.31  |Q        |      V   |          |          |
15+25       0.1559      0.31  |Q        |      V   |          |          |
15+30       0.1578      0.28  |Q        |      V   |          |          |
15+35       0.1593      0.23  Q         |      V   |          |          |
15+40       0.1608      0.22  Q         |       V  |          |          |
15+45       0.1624      0.23  Q         |       V  |          |          |
15+50       0.1642      0.25  |Q        |       V  |          |          |
15+55       0.1662      0.30  |Q        |       V  |          |          |
16+ 0       0.1688      0.38  |Q        |        V |          |          |
16+ 5       0.1770      1.19  |   Q     |        V |          |          |
16+10       0.2060      4.21  |         |     Q    |  V       |          |
16+15       0.2404      4.98  |         |        Q |      V   |          |
16+20       0.2544      2.04  |       Q |          |       V  |          |
16+25       0.2631      1.26  |    Q    |          |        V |          |
16+30       0.2693      0.90  |  Q      |          |         V|          |
```

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16+35       0.2739      0.67  | Q       |         |         V         |
16+40       0.2772      0.47  |Q        |         |         |V        |
16+45       0.2798      0.38  |Q        |         |         |V        |
16+50       0.2821      0.34  |Q        |         |         |V        |
16+55       0.2844      0.33  |Q        |         |         | V       |
17+ 0       0.2864      0.29  |Q        |         |         | V       |
17+ 5       0.2882      0.26  |Q        |         |         | V       |
17+10       0.2899      0.24  Q         |         |         | V       |
17+15       0.2915      0.24  Q         |         |         | V       |
17+20       0.2931      0.23  Q         |         |         |  V      |
17+25       0.2946      0.22  Q         |         |         |  V      |
17+30       0.2961      0.22  Q         |         |         |  V      |
17+35       0.2976      0.21  Q         |         |         |  V      |
17+40       0.2990      0.21  Q         |         |         |  V      |
17+45       0.3004      0.20  Q         |         |         |  V      |
17+50       0.3018      0.20  Q         |         |         |  V      |
17+55       0.3031      0.19  Q         |         |         |   V     |
18+ 0       0.3044      0.19  Q         |         |         |   V     |
18+ 5       0.3057      0.19  Q         |         |         |   V     |
18+10       0.3069      0.17  Q         |         |         |   V     |
18+15       0.3080      0.16  Q         |         |         |   V     |
18+20       0.3090      0.15  Q         |         |         |   V     |
18+25       0.3100      0.14  Q         |         |         |   V     |
18+30       0.3109      0.14  Q         |         |         |    V    |
18+35       0.3118      0.14  Q         |         |         |    V    |
18+40       0.3128      0.13  Q         |         |         |    V    |
18+45       0.3136      0.13  Q         |         |         |    V    |
18+50       0.3145      0.13  Q         |         |         |    V    |
18+55       0.3154      0.13  Q         |         |         |    V    |
19+ 0       0.3162      0.12  Q         |         |         |    V    |
19+ 5       0.3171      0.12  Q         |         |         |    V    |
19+10       0.3179      0.12  Q         |         |         |    V    |
19+15       0.3187      0.12  Q         |         |         |    V    |
19+20       0.3195      0.12  Q         |         |         |    V    |
19+25       0.3203      0.11  Q         |         |         |     V   |
19+30       0.3211      0.11  Q         |         |         |     V   |
19+35       0.3219      0.11  Q         |         |         |     V   |
19+40       0.3226      0.11  Q         |         |         |     V   |
19+45       0.3234      0.11  Q         |         |         |     V   |
19+50       0.3241      0.11  Q         |         |         |     V   |
19+55       0.3248      0.11  Q         |         |         |     V   |
20+ 0       0.3256      0.11  Q         |         |         |     V   |
20+ 5       0.3263      0.10  Q         |         |         |     V   |
20+10       0.3270      0.10  Q         |         |         |     V   |
20+15       0.3277      0.10  Q         |         |         |     V   |
20+20       0.3284      0.10  Q         |         |         |     V   |
20+25       0.3291      0.10  Q         |         |         |      V  |
20+30       0.3298      0.10  Q         |         |         |      V  |
20+35       0.3304      0.10  Q         |         |         |      V  |
20+40       0.3311      0.10  Q         |         |         |      V  |
20+45       0.3318      0.10  Q         |         |         |      V  |
20+50       0.3324      0.10  Q         |         |         |      V  |
20+55       0.3331      0.09  Q         |         |         |      V  |
21+ 0       0.3337      0.09  Q         |         |         |      V  |
21+ 5       0.3344      0.09  Q         |         |         |      V  |
21+10       0.3350      0.09  Q         |         |         |      V  |
21+15       0.3356      0.09  Q         |         |         |      V  |
21+20       0.3363      0.09  Q         |         |         |      V  |
21+25       0.3369      0.09  Q         |         |         |      V  |
21+30       0.3375      0.09  Q         |         |         |       V |
21+35       0.3381      0.09  Q         |         |         |       V |
21+40       0.3387      0.09  Q         |         |         |       V |
21+45       0.3393      0.09  Q         |         |         |       V |
21+50       0.3399      0.09  Q         |         |         |       V |
21+55       0.3405      0.09  Q         |         |         |       V |
22+ 0       0.3411      0.09  Q         |         |         |       V |
22+ 5       0.3416      0.08  Q         |         |         |       V |
22+10       0.3422      0.08  Q         |         |         |       V |
22+15       0.3428      0.08  Q         |         |         |       V |
22+20       0.3434      0.08  Q         |         |         |       V |
22+25       0.3439      0.08  Q         |         |         |       V |
```

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   22+30       0.3445      0.08  Q          |          |          |        V |
   22+35       0.3451      0.08  Q          |          |          |        V |
   22+40       0.3456      0.08  Q          |          |          |        V |
   22+45       0.3462      0.08  Q          |          |          |        V |
   22+50       0.3467      0.08  Q          |          |          |         V|
   22+55       0.3472      0.08  Q          |          |          |         V|
   23+ 0       0.3478      0.08  Q          |          |          |         V|
   23+ 5       0.3483      0.08  Q          |          |          |         V|
   23+10       0.3489      0.08  Q          |          |          |         V|
   23+15       0.3494      0.08  Q          |          |          |         V|
   23+20       0.3499      0.08  Q          |          |          |         V|
   23+25       0.3504      0.08  Q          |          |          |         V|
   23+30       0.3510      0.08  Q          |          |          |         V|
   23+35       0.3515      0.08  Q          |          |          |         V|
   23+40       0.3520      0.07  Q          |          |          |         V|
   23+45       0.3525      0.07  Q          |          |          |         V|
   23+50       0.3530      0.07  Q          |          |          |         V|
   23+55       0.3535      0.07  Q          |          |          |         V|
   24+ 0       0.3540      0.07  Q          |          |          |         V|
   24+ 5       0.3545      0.07  Q          |          |          |         V|
   24+10       0.3548      0.05  Q          |          |          |         V|
   24+15       0.3550      0.02  Q          |          |          |         V|
   24+20       0.3551      0.01  Q          |          |          |         V|
   24+25       0.3551      0.01  Q          |          |          |         V|
   24+30       0.3552      0.00  Q          |          |          |         V|
   24+35       0.3552      0.00  Q          |          |          |         V|
   24+40       0.3552      0.00  Q          |          |          |         V|
   24+45       0.3552      0.00  Q          |          |          |         V|
   24+50       0.3552      0.00  Q          |          |          |         V|
   24+55       0.3552      0.00  Q          |          |          |         V|
   25+ 0       0.3552      0.00  Q          |          |          |         V|
-------------------------------------------------------------------------
```

Area 'B' – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
5 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             4.33            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6          4.33      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 4.33 | 1.000 | 78.0 | 60.6 | 6.50 | 0.322 |

Area-averaged catchment yield fraction, Y = 0.322
Area-averaged low loss fraction, Yb = 0.678
User entry of time of concentration = 0.182 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 4.33(Ac.)
Catchment Lag time = 0.146 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 57.2344
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.678 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 4.33(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.690(In)
1-hour factor = 1.000 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.586(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 52.37 (CFS)) | |
| 1 | 5.210 | 2.728 |
| 2 | 33.842 | 14.993 |
| 3 | 69.240 | 18.537 |
| 4 | 82.158 | 6.765 |
| 5 | 89.615 | 3.905 |
| 6 | 94.272 | 2.439 |
| 7 | 97.009 | 1.433 |
| 8 | 98.250 | 0.650 |
| 9 | 98.857 | 0.318 |
| 10 | 99.271 | 0.217 |
| 11 | 99.677 | 0.213 |
| 12 | 99.909 | 0.121 |
| 13 | 100.000 | 0.048 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4030 | 0.4030 |
| 2 | 0.4962 | 0.0932 |
| 3 | 0.5603 | 0.0642 |
| 4 | 0.6108 | 0.0505 |
| 5 | 0.6531 | 0.0423 |
| 6 | 0.6899 | 0.0367 |
| 7 | 0.7225 | 0.0327 |
| 8 | 0.7520 | 0.0295 |
| 9 | 0.7791 | 0.0270 |
| 10 | 0.8041 | 0.0250 |
| 11 | 0.8274 | 0.0233 |
| 12 | 0.8493 | 0.0219 |
| 13 | 0.8926 | 0.0433 |

| | | |
|---|---|---|
| 14 | 0.9347 | 0.0421 |
| 15 | 0.9756 | 0.0409 |
| 16 | 1.0156 | 0.0399 |
| 17 | 1.0545 | 0.0390 |
| 18 | 1.0927 | 0.0381 |
| 19 | 1.1300 | 0.0373 |
| 20 | 1.1666 | 0.0366 |
| 21 | 1.2025 | 0.0359 |
| 22 | 1.2378 | 0.0353 |
| 23 | 1.2724 | 0.0347 |
| 24 | 1.3065 | 0.0341 |
| 25 | 1.3401 | 0.0336 |
| 26 | 1.3732 | 0.0331 |
| 27 | 1.4057 | 0.0326 |
| 28 | 1.4379 | 0.0321 |
| 29 | 1.4696 | 0.0317 |
| 30 | 1.5009 | 0.0313 |
| 31 | 1.5317 | 0.0309 |
| 32 | 1.5623 | 0.0305 |
| 33 | 1.5924 | 0.0302 |
| 34 | 1.6222 | 0.0298 |
| 35 | 1.6517 | 0.0295 |
| 36 | 1.6809 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7383 | 0.0286 |
| 39 | 1.7666 | 0.0283 |
| 40 | 1.7946 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8498 | 0.0275 |
| 43 | 1.8771 | 0.0272 |
| 44 | 1.9041 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9574 | 0.0265 |
| 47 | 1.9837 | 0.0263 |
| 48 | 2.0098 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1123 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1624 | 0.0250 |
| 55 | 2.1872 | 0.0248 |
| 56 | 2.2118 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2847 | 0.0241 |
| 60 | 2.3087 | 0.0240 |
| 61 | 2.3325 | 0.0238 |
| 62 | 2.3562 | 0.0237 |
| 63 | 2.3797 | 0.0235 |
| 64 | 2.4031 | 0.0234 |
| 65 | 2.4264 | 0.0233 |
| 66 | 2.4495 | 0.0231 |
| 67 | 2.4725 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5181 | 0.0227 |
| 70 | 2.5407 | 0.0226 |
| 71 | 2.5632 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6278 | 0.0211 |
| 75 | 2.6488 | 0.0210 |
| 76 | 2.6696 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7110 | 0.0206 |
| 79 | 2.7315 | 0.0205 |
| 80 | 2.7519 | 0.0204 |
| 81 | 2.7722 | 0.0203 |
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |
| 84 | 2.8325 | 0.0200 |

| | | |
|---|---|---|
| 85 | 2.8524 | 0.0199 |
| 86 | 2.8723 | 0.0198 |
| 87 | 2.8920 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9312 | 0.0195 |
| 90 | 2.9506 | 0.0194 |
| 91 | 2.9700 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0466 | 0.0190 |
| 96 | 3.0655 | 0.0189 |
| 97 | 3.0844 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1219 | 0.0187 |
| 100 | 3.1405 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1775 | 0.0185 |
| 103 | 3.1959 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2325 | 0.0183 |
| 106 | 3.2507 | 0.0182 |
| 107 | 3.2688 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3406 | 0.0178 |
| 112 | 3.3584 | 0.0178 |
| 113 | 3.3761 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4289 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4811 | 0.0173 |
| 120 | 3.4984 | 0.0173 |
| 121 | 3.5156 | 0.0172 |
| 122 | 3.5328 | 0.0172 |
| 123 | 3.5499 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6009 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6346 | 0.0168 |
| 129 | 3.6514 | 0.0168 |
| 130 | 3.6681 | 0.0167 |
| 131 | 3.6848 | 0.0167 |
| 132 | 3.7014 | 0.0166 |
| 133 | 3.7180 | 0.0166 |
| 134 | 3.7345 | 0.0165 |
| 135 | 3.7510 | 0.0165 |
| 136 | 3.7674 | 0.0164 |
| 137 | 3.7838 | 0.0164 |
| 138 | 3.8001 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8326 | 0.0162 |
| 141 | 3.8488 | 0.0162 |
| 142 | 3.8649 | 0.0161 |
| 143 | 3.8810 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9290 | 0.0160 |
| 147 | 3.9449 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9766 | 0.0158 |
| 150 | 3.9923 | 0.0158 |
| 151 | 4.0081 | 0.0157 |
| 152 | 4.0238 | 0.0157 |
| 153 | 4.0394 | 0.0156 |
| 154 | 4.0550 | 0.0156 |
| 155 | 4.0706 | 0.0156 |

| | | |
|---|---|---|
| 156 | 4.0861 | 0.0155 |
| 157 | 4.1016 | 0.0155 |
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1478 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1784 | 0.0153 |
| 163 | 4.1937 | 0.0152 |
| 164 | 4.2089 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2392 | 0.0151 |
| 167 | 4.2543 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2844 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3143 | 0.0150 |
| 172 | 4.3292 | 0.0149 |
| 173 | 4.3441 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4033 | 0.0147 |
| 178 | 4.4180 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4473 | 0.0146 |
| 181 | 4.4619 | 0.0146 |
| 182 | 4.4765 | 0.0146 |
| 183 | 4.4910 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5200 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5489 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5776 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6062 | 0.0143 |
| 192 | 4.6205 | 0.0143 |
| 193 | 4.6347 | 0.0142 |
| 194 | 4.6489 | 0.0142 |
| 195 | 4.6631 | 0.0142 |
| 196 | 4.6772 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7054 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7335 | 0.0140 |
| 201 | 4.7475 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7754 | 0.0139 |
| 204 | 4.7893 | 0.0139 |
| 205 | 4.8032 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8722 | 0.0137 |
| 211 | 4.8859 | 0.0137 |
| 212 | 4.8996 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9269 | 0.0136 |
| 215 | 4.9405 | 0.0136 |
| 216 | 4.9541 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9812 | 0.0135 |
| 219 | 4.9947 | 0.0135 |
| 220 | 5.0082 | 0.0135 |
| 221 | 5.0216 | 0.0135 |
| 222 | 5.0351 | 0.0134 |
| 223 | 5.0485 | 0.0134 |
| 224 | 5.0619 | 0.0134 |
| 225 | 5.0752 | 0.0134 |
| 226 | 5.0886 | 0.0133 |

| | | |
|---|---|---|
| 227 | 5.1019 | 0.0133 |
| 228 | 5.1152 | 0.0133 |
| 229 | 5.1285 | 0.0133 |
| 230 | 5.1417 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1813 | 0.0132 |
| 234 | 5.1945 | 0.0132 |
| 235 | 5.2076 | 0.0131 |
| 236 | 5.2207 | 0.0131 |
| 237 | 5.2338 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2599 | 0.0130 |
| 240 | 5.2729 | 0.0130 |
| 241 | 5.2859 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3118 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3634 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4274 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4909 | 0.0127 |
| 258 | 5.5035 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5413 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5664 | 0.0125 |
| 264 | 5.5789 | 0.0125 |
| 265 | 5.5914 | 0.0125 |
| 266 | 5.6039 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6288 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6660 | 0.0124 |
| 272 | 5.6784 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7522 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8132 | 0.0122 |
| 284 | 5.8253 | 0.0121 |
| 285 | 5.8375 | 0.0121 |
| 286 | 5.8496 | 0.0121 |
| 287 | 5.8617 | 0.0121 |
| 288 | 5.8738 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0082 | 0.0039 |
| 2 | 0.0121 | 0.0082 | 0.0039 |
| 3 | 0.0121 | 0.0082 | 0.0039 |
| 4 | 0.0121 | 0.0082 | 0.0039 |

| | | | |
|---|---|---|---|
| 5 | 0.0122 | 0.0083 | 0.0039 |
| 6 | 0.0122 | 0.0083 | 0.0039 |
| 7 | 0.0122 | 0.0083 | 0.0039 |
| 8 | 0.0123 | 0.0083 | 0.0039 |
| 9 | 0.0123 | 0.0083 | 0.0040 |
| 10 | 0.0123 | 0.0084 | 0.0040 |
| 11 | 0.0123 | 0.0084 | 0.0040 |
| 12 | 0.0124 | 0.0084 | 0.0040 |
| 13 | 0.0124 | 0.0084 | 0.0040 |
| 14 | 0.0124 | 0.0084 | 0.0040 |
| 15 | 0.0125 | 0.0085 | 0.0040 |
| 16 | 0.0125 | 0.0085 | 0.0040 |
| 17 | 0.0125 | 0.0085 | 0.0040 |
| 18 | 0.0125 | 0.0085 | 0.0040 |
| 19 | 0.0126 | 0.0085 | 0.0040 |
| 20 | 0.0126 | 0.0085 | 0.0041 |
| 21 | 0.0126 | 0.0086 | 0.0041 |
| 22 | 0.0127 | 0.0086 | 0.0041 |
| 23 | 0.0127 | 0.0086 | 0.0041 |
| 24 | 0.0127 | 0.0086 | 0.0041 |
| 25 | 0.0128 | 0.0087 | 0.0041 |
| 26 | 0.0128 | 0.0087 | 0.0041 |
| 27 | 0.0128 | 0.0087 | 0.0041 |
| 28 | 0.0128 | 0.0087 | 0.0041 |
| 29 | 0.0129 | 0.0087 | 0.0041 |
| 30 | 0.0129 | 0.0088 | 0.0041 |
| 31 | 0.0129 | 0.0088 | 0.0042 |
| 32 | 0.0130 | 0.0088 | 0.0042 |
| 33 | 0.0130 | 0.0088 | 0.0042 |
| 34 | 0.0130 | 0.0088 | 0.0042 |
| 35 | 0.0131 | 0.0089 | 0.0042 |
| 36 | 0.0131 | 0.0089 | 0.0042 |
| 37 | 0.0132 | 0.0089 | 0.0042 |
| 38 | 0.0132 | 0.0089 | 0.0042 |
| 39 | 0.0132 | 0.0090 | 0.0043 |
| 40 | 0.0132 | 0.0090 | 0.0043 |
| 41 | 0.0133 | 0.0090 | 0.0043 |
| 42 | 0.0133 | 0.0090 | 0.0043 |
| 43 | 0.0134 | 0.0091 | 0.0043 |
| 44 | 0.0134 | 0.0091 | 0.0043 |
| 45 | 0.0134 | 0.0091 | 0.0043 |
| 46 | 0.0135 | 0.0091 | 0.0043 |
| 47 | 0.0135 | 0.0092 | 0.0043 |
| 48 | 0.0135 | 0.0092 | 0.0044 |
| 49 | 0.0136 | 0.0092 | 0.0044 |
| 50 | 0.0136 | 0.0092 | 0.0044 |
| 51 | 0.0137 | 0.0093 | 0.0044 |
| 52 | 0.0137 | 0.0093 | 0.0044 |
| 53 | 0.0137 | 0.0093 | 0.0044 |
| 54 | 0.0138 | 0.0093 | 0.0044 |
| 55 | 0.0138 | 0.0094 | 0.0044 |
| 56 | 0.0139 | 0.0094 | 0.0045 |
| 57 | 0.0139 | 0.0094 | 0.0045 |
| 58 | 0.0139 | 0.0095 | 0.0045 |
| 59 | 0.0140 | 0.0095 | 0.0045 |
| 60 | 0.0140 | 0.0095 | 0.0045 |
| 61 | 0.0141 | 0.0096 | 0.0045 |
| 62 | 0.0141 | 0.0096 | 0.0045 |
| 63 | 0.0142 | 0.0096 | 0.0046 |
| 64 | 0.0142 | 0.0096 | 0.0046 |
| 65 | 0.0143 | 0.0097 | 0.0046 |
| 66 | 0.0143 | 0.0097 | 0.0046 |
| 67 | 0.0144 | 0.0097 | 0.0046 |
| 68 | 0.0144 | 0.0098 | 0.0046 |
| 69 | 0.0144 | 0.0098 | 0.0046 |
| 70 | 0.0145 | 0.0098 | 0.0047 |
| 71 | 0.0145 | 0.0099 | 0.0047 |
| 72 | 0.0146 | 0.0099 | 0.0047 |
| 73 | 0.0146 | 0.0099 | 0.0047 |
| 74 | 0.0147 | 0.0100 | 0.0047 |
| 75 | 0.0147 | 0.0100 | 0.0047 |

| | | | |
|---|---|---|---|
| 76 | 0.0148 | 0.0100 | 0.0048 |
| 77 | 0.0148 | 0.0101 | 0.0048 |
| 78 | 0.0149 | 0.0101 | 0.0048 |
| 79 | 0.0150 | 0.0101 | 0.0048 |
| 80 | 0.0150 | 0.0102 | 0.0048 |
| 81 | 0.0151 | 0.0102 | 0.0048 |
| 82 | 0.0151 | 0.0102 | 0.0049 |
| 83 | 0.0152 | 0.0103 | 0.0049 |
| 84 | 0.0152 | 0.0103 | 0.0049 |
| 85 | 0.0153 | 0.0104 | 0.0049 |
| 86 | 0.0153 | 0.0104 | 0.0049 |
| 87 | 0.0154 | 0.0105 | 0.0050 |
| 88 | 0.0154 | 0.0105 | 0.0050 |
| 89 | 0.0155 | 0.0105 | 0.0050 |
| 90 | 0.0156 | 0.0106 | 0.0050 |
| 91 | 0.0156 | 0.0106 | 0.0050 |
| 92 | 0.0157 | 0.0106 | 0.0050 |
| 93 | 0.0158 | 0.0107 | 0.0051 |
| 94 | 0.0158 | 0.0107 | 0.0051 |
| 95 | 0.0159 | 0.0108 | 0.0051 |
| 96 | 0.0160 | 0.0108 | 0.0051 |
| 97 | 0.0160 | 0.0109 | 0.0052 |
| 98 | 0.0161 | 0.0109 | 0.0052 |
| 99 | 0.0162 | 0.0110 | 0.0052 |
| 100 | 0.0162 | 0.0110 | 0.0052 |
| 101 | 0.0163 | 0.0111 | 0.0052 |
| 102 | 0.0164 | 0.0111 | 0.0053 |
| 103 | 0.0165 | 0.0112 | 0.0053 |
| 104 | 0.0165 | 0.0112 | 0.0053 |
| 105 | 0.0166 | 0.0113 | 0.0053 |
| 106 | 0.0167 | 0.0113 | 0.0054 |
| 107 | 0.0168 | 0.0114 | 0.0054 |
| 108 | 0.0168 | 0.0114 | 0.0054 |
| 109 | 0.0169 | 0.0115 | 0.0054 |
| 110 | 0.0170 | 0.0115 | 0.0055 |
| 111 | 0.0171 | 0.0116 | 0.0055 |
| 112 | 0.0172 | 0.0116 | 0.0055 |
| 113 | 0.0173 | 0.0117 | 0.0056 |
| 114 | 0.0173 | 0.0118 | 0.0056 |
| 115 | 0.0175 | 0.0118 | 0.0056 |
| 116 | 0.0175 | 0.0119 | 0.0056 |
| 117 | 0.0177 | 0.0120 | 0.0057 |
| 118 | 0.0177 | 0.0120 | 0.0057 |
| 119 | 0.0178 | 0.0121 | 0.0057 |
| 120 | 0.0179 | 0.0122 | 0.0058 |
| 121 | 0.0180 | 0.0122 | 0.0058 |
| 122 | 0.0181 | 0.0123 | 0.0058 |
| 123 | 0.0183 | 0.0124 | 0.0059 |
| 124 | 0.0183 | 0.0124 | 0.0059 |
| 125 | 0.0185 | 0.0125 | 0.0059 |
| 126 | 0.0186 | 0.0126 | 0.0060 |
| 127 | 0.0187 | 0.0127 | 0.0060 |
| 128 | 0.0188 | 0.0127 | 0.0060 |
| 129 | 0.0189 | 0.0129 | 0.0061 |
| 130 | 0.0190 | 0.0129 | 0.0061 |
| 131 | 0.0192 | 0.0130 | 0.0062 |
| 132 | 0.0193 | 0.0131 | 0.0062 |
| 133 | 0.0194 | 0.0132 | 0.0063 |
| 134 | 0.0195 | 0.0133 | 0.0063 |
| 135 | 0.0197 | 0.0134 | 0.0063 |
| 136 | 0.0198 | 0.0134 | 0.0064 |
| 137 | 0.0200 | 0.0136 | 0.0064 |
| 138 | 0.0201 | 0.0136 | 0.0065 |
| 139 | 0.0203 | 0.0138 | 0.0065 |
| 140 | 0.0204 | 0.0138 | 0.0066 |
| 141 | 0.0206 | 0.0140 | 0.0066 |
| 142 | 0.0207 | 0.0141 | 0.0067 |
| 143 | 0.0210 | 0.0142 | 0.0067 |
| 144 | 0.0211 | 0.0143 | 0.0068 |
| 145 | 0.0224 | 0.0152 | 0.0072 |
| 146 | 0.0225 | 0.0153 | 0.0072 |

| | | | |
|---|---|---|---|
| 147 | 0.0227 | 0.0154 | 0.0073 |
| 148 | 0.0229 | 0.0155 | 0.0074 |
| 149 | 0.0231 | 0.0157 | 0.0074 |
| 150 | 0.0233 | 0.0158 | 0.0075 |
| 151 | 0.0235 | 0.0160 | 0.0076 |
| 152 | 0.0237 | 0.0161 | 0.0076 |
| 153 | 0.0240 | 0.0163 | 0.0077 |
| 154 | 0.0241 | 0.0164 | 0.0078 |
| 155 | 0.0245 | 0.0166 | 0.0079 |
| 156 | 0.0246 | 0.0167 | 0.0079 |
| 157 | 0.0250 | 0.0169 | 0.0080 |
| 158 | 0.0251 | 0.0171 | 0.0081 |
| 159 | 0.0255 | 0.0173 | 0.0082 |
| 160 | 0.0257 | 0.0174 | 0.0083 |
| 161 | 0.0261 | 0.0177 | 0.0084 |
| 162 | 0.0263 | 0.0179 | 0.0085 |
| 163 | 0.0268 | 0.0182 | 0.0086 |
| 164 | 0.0270 | 0.0183 | 0.0087 |
| 165 | 0.0275 | 0.0186 | 0.0088 |
| 166 | 0.0277 | 0.0188 | 0.0089 |
| 167 | 0.0283 | 0.0192 | 0.0091 |
| 168 | 0.0286 | 0.0194 | 0.0092 |
| 169 | 0.0292 | 0.0198 | 0.0094 |
| 170 | 0.0295 | 0.0200 | 0.0095 |
| 171 | 0.0302 | 0.0205 | 0.0097 |
| 172 | 0.0305 | 0.0207 | 0.0098 |
| 173 | 0.0313 | 0.0212 | 0.0101 |
| 174 | 0.0317 | 0.0215 | 0.0102 |
| 175 | 0.0326 | 0.0221 | 0.0105 |
| 176 | 0.0331 | 0.0224 | 0.0106 |
| 177 | 0.0341 | 0.0231 | 0.0110 |
| 178 | 0.0347 | 0.0235 | 0.0111 |
| 179 | 0.0359 | 0.0244 | 0.0115 |
| 180 | 0.0366 | 0.0248 | 0.0118 |
| 181 | 0.0381 | 0.0259 | 0.0123 |
| 182 | 0.0390 | 0.0265 | 0.0125 |
| 183 | 0.0409 | 0.0278 | 0.0132 |
| 184 | 0.0421 | 0.0285 | 0.0135 |
| 185 | 0.0219 | 0.0148 | 0.0070 |
| 186 | 0.0233 | 0.0158 | 0.0075 |
| 187 | 0.0270 | 0.0184 | 0.0087 |
| 188 | 0.0295 | 0.0200 | 0.0095 |
| 189 | 0.0367 | 0.0249 | 0.0118 |
| 190 | 0.0423 | 0.0287 | 0.0136 |
| 191 | 0.0642 | 0.0435 | 0.0206 |
| 192 | 0.0932 | 0.0559 | 0.0372 |
| 193 | 0.4030 | 0.0559 | 0.3471 |
| 194 | 0.0505 | 0.0343 | 0.0162 |
| 195 | 0.0327 | 0.0222 | 0.0105 |
| 196 | 0.0250 | 0.0170 | 0.0080 |
| 197 | 0.0433 | 0.0294 | 0.0139 |
| 198 | 0.0399 | 0.0271 | 0.0128 |
| 199 | 0.0373 | 0.0253 | 0.0120 |
| 200 | 0.0353 | 0.0239 | 0.0113 |
| 201 | 0.0336 | 0.0228 | 0.0108 |
| 202 | 0.0321 | 0.0218 | 0.0103 |
| 203 | 0.0309 | 0.0210 | 0.0099 |
| 204 | 0.0298 | 0.0202 | 0.0096 |
| 205 | 0.0289 | 0.0196 | 0.0093 |
| 206 | 0.0280 | 0.0190 | 0.0090 |
| 207 | 0.0272 | 0.0185 | 0.0088 |
| 208 | 0.0265 | 0.0180 | 0.0085 |
| 209 | 0.0259 | 0.0176 | 0.0083 |
| 210 | 0.0253 | 0.0172 | 0.0081 |
| 211 | 0.0248 | 0.0168 | 0.0080 |
| 212 | 0.0243 | 0.0165 | 0.0078 |
| 213 | 0.0238 | 0.0162 | 0.0077 |
| 214 | 0.0234 | 0.0159 | 0.0075 |
| 215 | 0.0230 | 0.0156 | 0.0074 |
| 216 | 0.0226 | 0.0153 | 0.0073 |
| 217 | 0.0212 | 0.0144 | 0.0068 |

| | | | |
|---|---|---|---|
| 218 | 0.0208 | 0.0141 | 0.0067 |
| 219 | 0.0205 | 0.0139 | 0.0066 |
| 220 | 0.0202 | 0.0137 | 0.0065 |
| 221 | 0.0199 | 0.0135 | 0.0064 |
| 222 | 0.0196 | 0.0133 | 0.0063 |
| 223 | 0.0194 | 0.0131 | 0.0062 |
| 224 | 0.0191 | 0.0130 | 0.0061 |
| 225 | 0.0189 | 0.0128 | 0.0061 |
| 226 | 0.0186 | 0.0126 | 0.0060 |
| 227 | 0.0184 | 0.0125 | 0.0059 |
| 228 | 0.0182 | 0.0123 | 0.0058 |
| 229 | 0.0180 | 0.0122 | 0.0058 |
| 230 | 0.0178 | 0.0121 | 0.0057 |
| 231 | 0.0176 | 0.0119 | 0.0057 |
| 232 | 0.0174 | 0.0118 | 0.0056 |
| 233 | 0.0172 | 0.0117 | 0.0055 |
| 234 | 0.0171 | 0.0116 | 0.0055 |
| 235 | 0.0169 | 0.0115 | 0.0054 |
| 236 | 0.0167 | 0.0113 | 0.0054 |
| 237 | 0.0166 | 0.0112 | 0.0053 |
| 238 | 0.0164 | 0.0111 | 0.0053 |
| 239 | 0.0163 | 0.0110 | 0.0052 |
| 240 | 0.0161 | 0.0109 | 0.0052 |
| 241 | 0.0160 | 0.0109 | 0.0051 |
| 242 | 0.0159 | 0.0108 | 0.0051 |
| 243 | 0.0157 | 0.0107 | 0.0051 |
| 244 | 0.0156 | 0.0106 | 0.0050 |
| 245 | 0.0155 | 0.0105 | 0.0050 |
| 246 | 0.0154 | 0.0104 | 0.0049 |
| 247 | 0.0152 | 0.0103 | 0.0049 |
| 248 | 0.0151 | 0.0103 | 0.0049 |
| 249 | 0.0150 | 0.0102 | 0.0048 |
| 250 | 0.0149 | 0.0101 | 0.0048 |
| 251 | 0.0148 | 0.0100 | 0.0048 |
| 252 | 0.0147 | 0.0100 | 0.0047 |
| 253 | 0.0146 | 0.0099 | 0.0047 |
| 254 | 0.0145 | 0.0098 | 0.0047 |
| 255 | 0.0144 | 0.0098 | 0.0046 |
| 256 | 0.0143 | 0.0097 | 0.0046 |
| 257 | 0.0142 | 0.0097 | 0.0046 |
| 258 | 0.0141 | 0.0096 | 0.0045 |
| 259 | 0.0141 | 0.0095 | 0.0045 |
| 260 | 0.0140 | 0.0095 | 0.0045 |
| 261 | 0.0139 | 0.0094 | 0.0045 |
| 262 | 0.0138 | 0.0094 | 0.0044 |
| 263 | 0.0137 | 0.0093 | 0.0044 |
| 264 | 0.0136 | 0.0093 | 0.0044 |
| 265 | 0.0136 | 0.0092 | 0.0044 |
| 266 | 0.0135 | 0.0092 | 0.0043 |
| 267 | 0.0134 | 0.0091 | 0.0043 |
| 268 | 0.0133 | 0.0091 | 0.0043 |
| 269 | 0.0133 | 0.0090 | 0.0043 |
| 270 | 0.0132 | 0.0090 | 0.0042 |
| 271 | 0.0131 | 0.0089 | 0.0042 |
| 272 | 0.0131 | 0.0089 | 0.0042 |
| 273 | 0.0130 | 0.0088 | 0.0042 |
| 274 | 0.0129 | 0.0088 | 0.0042 |
| 275 | 0.0129 | 0.0087 | 0.0041 |
| 276 | 0.0128 | 0.0087 | 0.0041 |
| 277 | 0.0127 | 0.0086 | 0.0041 |
| 278 | 0.0127 | 0.0086 | 0.0041 |
| 279 | 0.0126 | 0.0086 | 0.0041 |
| 280 | 0.0126 | 0.0085 | 0.0040 |
| 281 | 0.0125 | 0.0085 | 0.0040 |
| 282 | 0.0124 | 0.0084 | 0.0040 |
| 283 | 0.0124 | 0.0084 | 0.0040 |
| 284 | 0.0123 | 0.0084 | 0.0040 |
| 285 | 0.0123 | 0.0083 | 0.0039 |
| 286 | 0.0122 | 0.0083 | 0.0039 |
| 287 | 0.0122 | 0.0083 | 0.0039 |
| 288 | 0.0121 | 0.0082 | 0.0039 |

```
      ------------------------------------------------------------------
      ------------------------------------------------------------------
      Total soil rain loss =      3.76(In)
      Total effective rainfall =      2.11(In)
      Peak flow rate in flood hydrograph =      7.10(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |         |         |         |
  0+10       0.0005      0.07  Q          |         |         |         |
  0+15       0.0015      0.14  Q          |         |         |         |
  0+20       0.0027      0.17  Q          |         |         |         |
  0+25       0.0039      0.18  Q          |         |         |         |
  0+30       0.0053      0.19  Q          |         |         |         |
  0+35       0.0066      0.20  Q          |         |         |         |
  0+40       0.0080      0.20  Q          |         |         |         |
  0+45       0.0094      0.20  Q          |         |         |         |
  0+50       0.0108      0.20  Q          |         |         |         |
  0+55       0.0123      0.21  Q          |         |         |         |
  1+ 0       0.0137      0.21  Q          |         |         |         |
  1+ 5       0.0151      0.21  Q          |         |         |         |
  1+10       0.0165      0.21  Q          |         |         |         |
  1+15       0.0180      0.21  Q          |         |         |         |
  1+20       0.0194      0.21  QV         |         |         |         |
  1+25       0.0209      0.21  QV         |         |         |         |
  1+30       0.0223      0.21  QV         |         |         |         |
  1+35       0.0238      0.21  QV         |         |         |         |
  1+40       0.0252      0.21  QV         |         |         |         |
  1+45       0.0267      0.21  QV         |         |         |         |
  1+50       0.0281      0.21  QV         |         |         |         |
  1+55       0.0296      0.21  QV         |         |         |         |
  2+ 0       0.0311      0.21  QV         |         |         |         |
  2+ 5       0.0325      0.21  QV         |         |         |         |
  2+10       0.0340      0.21  QV         |         |         |         |
  2+15       0.0355      0.21  QV         |         |         |         |
  2+20       0.0370      0.22  QV         |         |         |         |
  2+25       0.0384      0.22  Q V        |         |         |         |
  2+30       0.0399      0.22  Q V        |         |         |         |
  2+35       0.0414      0.22  Q V        |         |         |         |
  2+40       0.0429      0.22  Q V        |         |         |         |
  2+45       0.0444      0.22  Q V        |         |         |         |
  2+50       0.0459      0.22  Q V        |         |         |         |
  2+55       0.0474      0.22  Q V        |         |         |         |
  3+ 0       0.0489      0.22  Q V        |         |         |         |
  3+ 5       0.0505      0.22  Q V        |         |         |         |
  3+10       0.0520      0.22  Q V        |         |         |         |
  3+15       0.0535      0.22  Q V        |         |         |         |
  3+20       0.0550      0.22  Q V        |         |         |         |
  3+25       0.0566      0.22  Q V        |         |         |         |
  3+30       0.0581      0.22  Q  V       |         |         |         |
  3+35       0.0596      0.22  Q  V       |         |         |         |
  3+40       0.0612      0.22  Q  V       |         |         |         |
  3+45       0.0627      0.22  Q  V       |         |         |         |
  3+50       0.0643      0.23  Q  V       |         |         |         |
  3+55       0.0658      0.23  Q  V       |         |         |         |
  4+ 0       0.0674      0.23  Q  V       |         |         |         |
  4+ 5       0.0690      0.23  Q  V       |         |         |         |
  4+10       0.0705      0.23  Q  V       |         |         |         |
  4+15       0.0721      0.23  Q  V       |         |         |         |
  4+20       0.0737      0.23  Q  V       |         |         |         |
  4+25       0.0753      0.23  Q  V       |         |         |         |
  4+30       0.0769      0.23  Q   V      |         |         |         |
  4+35       0.0784      0.23  Q   V      |         |         |         |
  4+40       0.0800      0.23  Q   V      |         |         |         |
```

```
 4+45      0.0816      0.23  Q   V     |          |          |          |
 4+50      0.0832      0.23  Q   V     |          |          |          |
 4+55      0.0849      0.23  Q   V     |          |          |          |
 5+ 0      0.0865      0.23  Q   V     |          |          |          |
 5+ 5      0.0881      0.24  Q   V     |          |          |          |
 5+10      0.0897      0.24  Q   V     |          |          |          |
 5+15      0.0914      0.24  Q   V     |          |          |          |
 5+20      0.0930      0.24  Q   V     |          |          |          |
 5+25      0.0946      0.24  Q   V     |          |          |          |
 5+30      0.0963      0.24  Q    V    |          |          |          |
 5+35      0.0979      0.24  Q    V    |          |          |          |
 5+40      0.0996      0.24  Q    V    |          |          |          |
 5+45      0.1012      0.24  Q    V    |          |          |          |
 5+50      0.1029      0.24  Q    V    |          |          |          |
 5+55      0.1046      0.24  Q    V    |          |          |          |
 6+ 0      0.1063      0.24  Q    V    |          |          |          |
 6+ 5      0.1079      0.24  Q    V    |          |          |          |
 6+10      0.1096      0.25  Q    V    |          |          |          |
 6+15      0.1113      0.25  Q    V    |          |          |          |
 6+20      0.1130      0.25  Q    V    |          |          |          |
 6+25      0.1147      0.25  Q     V   |          |          |          |
 6+30      0.1164      0.25  Q     V   |          |          |          |
 6+35      0.1182      0.25  Q     V   |          |          |          |
 6+40      0.1199      0.25  |Q    V   |          |          |          |
 6+45      0.1216      0.25  |Q    V   |          |          |          |
 6+50      0.1234      0.25  |Q    V   |          |          |          |
 6+55      0.1251      0.25  |Q    V   |          |          |          |
 7+ 0      0.1269      0.25  |Q    V   |          |          |          |
 7+ 5      0.1286      0.26  |Q    V   |          |          |          |
 7+10      0.1304      0.26  |Q    V   |          |          |          |
 7+15      0.1321      0.26  |Q    V   |          |          |          |
 7+20      0.1339      0.26  |Q     V  |          |          |          |
 7+25      0.1357      0.26  |Q     V  |          |          |          |
 7+30      0.1375      0.26  |Q     V  |          |          |          |
 7+35      0.1393      0.26  |Q     V  |          |          |          |
 7+40      0.1411      0.26  |Q     V  |          |          |          |
 7+45      0.1429      0.26  |Q     V  |          |          |          |
 7+50      0.1447      0.26  |Q     V  |          |          |          |
 7+55      0.1465      0.27  |Q     V  |          |          |          |
 8+ 0      0.1484      0.27  |Q     V  |          |          |          |
 8+ 5      0.1502      0.27  |Q     V  |          |          |          |
 8+10      0.1521      0.27  |Q     V  |          |          |          |
 8+15      0.1539      0.27  |Q      V |          |          |          |
 8+20      0.1558      0.27  |Q      V |          |          |          |
 8+25      0.1577      0.27  |Q      V |          |          |          |
 8+30      0.1595      0.27  |Q      V |          |          |          |
 8+35      0.1614      0.27  |Q      V |          |          |          |
 8+40      0.1633      0.28  |Q      V |          |          |          |
 8+45      0.1652      0.28  |Q      V |          |          |          |
 8+50      0.1671      0.28  |Q      V |          |          |          |
 8+55      0.1691      0.28  |Q      V |          |          |          |
 9+ 0      0.1710      0.28  |Q      V |          |          |          |
 9+ 5      0.1729      0.28  |Q       V|          |          |          |
 9+10      0.1749      0.28  |Q       V|          |          |          |
 9+15      0.1769      0.28  |Q       V|          |          |          |
 9+20      0.1788      0.29  |Q       V|          |          |          |
 9+25      0.1808      0.29  |Q       V|          |          |          |
 9+30      0.1828      0.29  |Q       V|          |          |          |
 9+35      0.1848      0.29  |Q       V|          |          |          |
 9+40      0.1868      0.29  |Q       V|          |          |          |
 9+45      0.1888      0.29  |Q       V|          |          |          |
 9+50      0.1909      0.29  |Q        V          |          |          |
 9+55      0.1929      0.30  |Q        V          |          |          |
10+ 0      0.1950      0.30  |Q        V          |          |          |
10+ 5      0.1970      0.30  |Q        V          |          |          |
10+10      0.1991      0.30  |Q        V          |          |          |
10+15      0.2012      0.30  |Q        V          |          |          |
10+20      0.2033      0.30  |Q        V          |          |          |
10+25      0.2054      0.31  |Q        V          |          |          |
10+30      0.2075      0.31  |Q        V          |          |          |
10+35      0.2097      0.31  |Q        |V         |          |          |
```

```
10+40       0.2118      0.31  |Q        |V        |         |         |
10+45       0.2140      0.31  |Q        |V        |         |         |
10+50       0.2161      0.32  |Q        |V        |         |         |
10+55       0.2183      0.32  |Q        |V        |         |         |
11+ 0       0.2205      0.32  |Q        |V        |         |         |
11+ 5       0.2228      0.32  |Q        |V        |         |         |
11+10       0.2250      0.32  |Q        |V        |         |         |
11+15       0.2272      0.33  |Q        |V        |         |         |
11+20       0.2295      0.33  |Q        | V       |         |         |
11+25       0.2318      0.33  |Q        | V       |         |         |
11+30       0.2341      0.33  |Q        | V       |         |         |
11+35       0.2364      0.34  |Q        | V       |         |         |
11+40       0.2387      0.34  |Q        | V       |         |         |
11+45       0.2411      0.34  |Q        | V       |         |         |
11+50       0.2434      0.34  |Q        | V       |         |         |
11+55       0.2458      0.35  |Q        | V       |         |         |
12+ 0       0.2482      0.35  |Q        |  V      |         |         |
12+ 5       0.2506      0.35  |Q        |  V      |         |         |
12+10       0.2531      0.36  |Q        |  V      |         |         |
12+15       0.2557      0.37  |Q        |  V      |         |         |
12+20       0.2583      0.38  |Q        |  V      |         |         |
12+25       0.2609      0.38  |Q        |  V      |         |         |
12+30       0.2635      0.38  |Q        |  V      |         |         |
12+35       0.2662      0.39  |Q        |  V      |         |         |
12+40       0.2689      0.39  |Q        |   V     |         |         |
12+45       0.2716      0.39  |Q        |   V     |         |         |
12+50       0.2743      0.40  |Q        |   V     |         |         |
12+55       0.2771      0.40  |Q        |   V     |         |         |
13+ 0       0.2799      0.41  |Q        |   V     |         |         |
13+ 5       0.2827      0.41  |Q        |   V     |         |         |
13+10       0.2856      0.41  |Q        |   V     |         |         |
13+15       0.2884      0.42  |Q        |    V    |         |         |
13+20       0.2914      0.42  |Q        |    V    |         |         |
13+25       0.2943      0.43  |Q        |    V    |         |         |
13+30       0.2973      0.43  |Q        |    V    |         |         |
13+35       0.3003      0.44  |Q        |    V    |         |         |
13+40       0.3033      0.44  |Q        |    V    |         |         |
13+45       0.3064      0.45  |Q        |     V   |         |         |
13+50       0.3096      0.45  |Q        |     V   |         |         |
13+55       0.3127      0.46  |Q        |     V   |         |         |
14+ 0       0.3159      0.47  |Q        |     V   |         |         |
14+ 5       0.3192      0.47  |Q        |     V   |         |         |
14+10       0.3225      0.48  |Q        |     V   |         |         |
14+15       0.3259      0.49  |Q        |      V  |         |         |
14+20       0.3293      0.50  |Q        |      V  |         |         |
14+25       0.3328      0.50  | Q       |      V  |         |         |
14+30       0.3363      0.51  | Q       |      V  |         |         |
14+35       0.3399      0.52  | Q       |      V  |         |         |
14+40       0.3436      0.53  | Q       |       V |         |         |
14+45       0.3473      0.54  | Q       |       V |         |         |
14+50       0.3511      0.56  | Q       |       V |         |         |
14+55       0.3551      0.57  | Q       |       V |         |         |
15+ 0       0.3591      0.58  | Q       |       V |         |         |
15+ 5       0.3632      0.60  | Q       |        V|         |         |
15+10       0.3674      0.62  | Q       |        V|         |         |
15+15       0.3718      0.63  | Q       |        V|         |         |
15+20       0.3763      0.66  | Q       |        V|         |         |
15+25       0.3809      0.66  | Q       |        V|         |         |
15+30       0.3849      0.58  | Q       |         V         |         |
15+35       0.3881      0.48  |Q        |         V         |         |
15+40       0.3913      0.46  |Q        |         V         |         |
15+45       0.3947      0.48  |Q        |         V         |         |
15+50       0.3984      0.53  | Q       |         V         |         |
15+55       0.4027      0.63  | Q       |         |V        |         |
16+ 0       0.4084      0.83  |  Q      |         |V        |         |
16+ 5       0.4227      2.08  |       Q |         | V       |         |
16+10       0.4653      6.19  |         |         |   Q     |         |
16+15       0.5142      7.10  |         |         |     V Q |         |
16+20       0.5353      3.06  |         | Q       |       V |         |
16+25       0.5487      1.96  |      Q  |         |       V |         |
16+30       0.5587      1.45  |    Q    |         |        V|         |
```

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16+35       0.5667      1.15  |   Q     |          |         V|          |
16+40       0.5727      0.87  |  Q      |          |          V          |
16+45       0.5777      0.73  | Q       |          |          V          |
16+50       0.5824      0.68  | Q       |          |          V          |
16+55       0.5868      0.65  | Q       |          |          V          |
17+ 0       0.5909      0.59  | Q       |          |          |V         |
17+ 5       0.5947      0.55  | Q       |          |          |V         |
17+10       0.5982      0.51  | Q       |          |          |V         |
17+15       0.6016      0.49  |Q        |          |          |V         |
17+20       0.6049      0.48  |Q        |          |          |V         |
17+25       0.6081      0.47  |Q        |          |          |V         |
17+30       0.6112      0.45  |Q        |          |          | V        |
17+35       0.6142      0.44  |Q        |          |          | V        |
17+40       0.6172      0.43  |Q        |          |          | V        |
17+45       0.6201      0.42  |Q        |          |          | V        |
17+50       0.6229      0.41  |Q        |          |          | V        |
17+55       0.6257      0.40  |Q        |          |          | V        |
18+ 0       0.6285      0.40  |Q        |          |          | V        |
18+ 5       0.6311      0.39  |Q        |          |          |  V       |
18+10       0.6337      0.38  |Q        |          |          |  V       |
18+15       0.6363      0.36  |Q        |          |          |  V       |
18+20       0.6387      0.36  |Q        |          |          |  V       |
18+25       0.6411      0.35  |Q        |          |          |  V       |
18+30       0.6435      0.34  |Q        |          |          |  V       |
18+35       0.6458      0.34  |Q        |          |          |  V       |
18+40       0.6481      0.33  |Q        |          |          |   V      |
18+45       0.6504      0.33  |Q        |          |          |   V      |
18+50       0.6526      0.32  |Q        |          |          |   V      |
18+55       0.6548      0.32  |Q        |          |          |   V      |
19+ 0       0.6570      0.32  |Q        |          |          |   V      |
19+ 5       0.6591      0.31  |Q        |          |          |   V      |
19+10       0.6612      0.31  |Q        |          |          |   V      |
19+15       0.6633      0.30  |Q        |          |          |   V      |
19+20       0.6654      0.30  |Q        |          |          |   V      |
19+25       0.6674      0.30  |Q        |          |          |    V     |
19+30       0.6695      0.29  |Q        |          |          |    V     |
19+35       0.6715      0.29  |Q        |          |          |    V     |
19+40       0.6735      0.29  |Q        |          |          |    V     |
19+45       0.6754      0.29  |Q        |          |          |    V     |
19+50       0.6774      0.28  |Q        |          |          |    V     |
19+55       0.6793      0.28  |Q        |          |          |    V     |
20+ 0       0.6812      0.28  |Q        |          |          |    V     |
20+ 5       0.6831      0.27  |Q        |          |          |    V     |
20+10       0.6850      0.27  |Q        |          |          |    V     |
20+15       0.6868      0.27  |Q        |          |          |     V    |
20+20       0.6887      0.27  |Q        |          |          |     V    |
20+25       0.6905      0.27  |Q        |          |          |     V    |
20+30       0.6923      0.26  |Q        |          |          |     V    |
20+35       0.6941      0.26  |Q        |          |          |     V    |
20+40       0.6959      0.26  |Q        |          |          |     V    |
20+45       0.6977      0.26  |Q        |          |          |     V    |
20+50       0.6994      0.26  |Q        |          |          |     V    |
20+55       0.7012      0.25  |Q        |          |          |     V    |
21+ 0       0.7029      0.25  |Q        |          |          |     V    |
21+ 5       0.7046      0.25  |Q        |          |          |     V    |
21+10       0.7064      0.25  Q         |          |          |      V   |
21+15       0.7081      0.25  Q         |          |          |      V   |
21+20       0.7097      0.24  Q         |          |          |      V   |
21+25       0.7114      0.24  Q         |          |          |      V   |
21+30       0.7131      0.24  Q         |          |          |      V   |
21+35       0.7147      0.24  Q         |          |          |      V   |
21+40       0.7164      0.24  Q         |          |          |      V   |
21+45       0.7180      0.24  Q         |          |          |      V   |
21+50       0.7196      0.24  Q         |          |          |      V   |
21+55       0.7212      0.23  Q         |          |          |      V   |
22+ 0       0.7229      0.23  Q         |          |          |      V   |
22+ 5       0.7244      0.23  Q         |          |          |       V  |
22+10       0.7260      0.23  Q         |          |          |       V  |
22+15       0.7276      0.23  Q         |          |          |       V  |
22+20       0.7292      0.23  Q         |          |          |       V  |
22+25       0.7307      0.23  Q         |          |          |       V  |
```

```
   22+30       0.7323      0.23  Q          |          |          |       V |
   22+35       0.7338      0.22  Q          |          |          |       V |
   22+40       0.7354      0.22  Q          |          |          |       V |
   22+45       0.7369      0.22  Q          |          |          |       V |
   22+50       0.7384      0.22  Q          |          |          |       V |
   22+55       0.7399      0.22  Q          |          |          |       V |
   23+ 0       0.7414      0.22  Q          |          |          |       V |
   23+ 5       0.7429      0.22  Q          |          |          |       V |
   23+10       0.7444      0.22  Q          |          |          |        V|
   23+15       0.7459      0.21  Q          |          |          |        V|
   23+20       0.7473      0.21  Q          |          |          |        V|
   23+25       0.7488      0.21  Q          |          |          |        V|
   23+30       0.7503      0.21  Q          |          |          |        V|
   23+35       0.7517      0.21  Q          |          |          |        V|
   23+40       0.7532      0.21  Q          |          |          |        V|
   23+45       0.7546      0.21  Q          |          |          |        V|
   23+50       0.7560      0.21  Q          |          |          |        V|
   23+55       0.7575      0.21  Q          |          |          |        V|
   24+ 0       0.7589      0.21  Q          |          |          |        V|
   24+ 5       0.7602      0.19  Q          |          |          |        V|
   24+10       0.7612      0.14  Q          |          |          |        V|
   24+15       0.7616      0.06  Q          |          |          |        V|
   24+20       0.7618      0.04  Q          |          |          |        V|
   24+25       0.7620      0.02  Q          |          |          |        V|
   24+30       0.7621      0.01  Q          |          |          |        V|
   24+35       0.7621      0.01  Q          |          |          |        V|
   24+40       0.7621      0.00  Q          |          |          |        V|
   24+45       0.7622      0.00  Q          |          |          |        V|
   24+50       0.7622      0.00  Q          |          |          |        V|
   24+55       0.7622      0.00  Q          |          |          |        V|
   25+ 0       0.7622      0.00  Q          |          |          |        V|
-------------------------------------------------------------------------
```

Area 'B' – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
10 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             4.33            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0          4.33      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 4.33 | 1.000 | 78.0 | 78.0 | 2.82 | 0.650 |

Area-averaged catchment yield fraction, Y = 0.650
Area-averaged low loss fraction, Yb = 0.350
User entry of time of concentration = 0.182 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 4.33(Ac.)
Catchment Lag time = 0.146 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 57.2344
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.350 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 4.33(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.474(In)
30-minute factor = 1.000 Adjusted rainfall = 0.812(In)
1-hour factor = 1.000 Adjusted rainfall = 1.000(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 52.37 (CFS)) | |
| 1 | 5.210 | 2.728 |
| 2 | 33.842 | 14.993 |
| 3 | 69.240 | 18.537 |
| 4 | 82.158 | 6.765 |
| 5 | 89.615 | 3.905 |
| 6 | 94.272 | 2.439 |
| 7 | 97.009 | 1.433 |
| 8 | 98.250 | 0.650 |
| 9 | 98.857 | 0.318 |
| 10 | 99.271 | 0.217 |
| 11 | 99.677 | 0.213 |
| 12 | 99.909 | 0.121 |
| 13 | 100.000 | 0.048 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4744 | 0.4744 |
| 2 | 0.5841 | 0.1097 |
| 3 | 0.6596 | 0.0755 |
| 4 | 0.7191 | 0.0595 |
| 5 | 0.7689 | 0.0498 |
| 6 | 0.8121 | 0.0432 |
| 7 | 0.8505 | 0.0384 |
| 8 | 0.8853 | 0.0348 |
| 9 | 0.9171 | 0.0318 |
| 10 | 0.9466 | 0.0295 |
| 11 | 0.9740 | 0.0275 |
| 12 | 0.9998 | 0.0258 |
| 13 | 1.0505 | 0.0507 |

| | | |
|---|---|---|
| 14 | 1.0998 | 0.0493 |
| 15 | 1.1478 | 0.0480 |
| 16 | 1.1945 | 0.0467 |
| 17 | 1.2402 | 0.0456 |
| 18 | 1.2848 | 0.0446 |
| 19 | 1.3285 | 0.0437 |
| 20 | 1.3713 | 0.0428 |
| 21 | 1.4134 | 0.0420 |
| 22 | 1.4546 | 0.0413 |
| 23 | 1.4952 | 0.0406 |
| 24 | 1.5351 | 0.0399 |
| 25 | 1.5743 | 0.0393 |
| 26 | 1.6130 | 0.0387 |
| 27 | 1.6511 | 0.0381 |
| 28 | 1.6886 | 0.0376 |
| 29 | 1.7257 | 0.0371 |
| 30 | 1.7623 | 0.0366 |
| 31 | 1.7984 | 0.0361 |
| 32 | 1.8341 | 0.0357 |
| 33 | 1.8693 | 0.0352 |
| 34 | 1.9041 | 0.0348 |
| 35 | 1.9386 | 0.0345 |
| 36 | 1.9727 | 0.0341 |
| 37 | 2.0064 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0728 | 0.0330 |
| 40 | 2.1055 | 0.0327 |
| 41 | 2.1379 | 0.0324 |
| 42 | 2.1700 | 0.0321 |
| 43 | 2.2018 | 0.0318 |
| 44 | 2.2333 | 0.0315 |
| 45 | 2.2646 | 0.0313 |
| 46 | 2.2956 | 0.0310 |
| 47 | 2.3263 | 0.0307 |
| 48 | 2.3568 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4171 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4764 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5349 | 0.0291 |
| 55 | 2.5638 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6211 | 0.0285 |
| 58 | 2.6494 | 0.0283 |
| 59 | 2.6776 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7610 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8157 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8698 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9233 | 0.0267 |
| 69 | 2.9498 | 0.0265 |
| 70 | 2.9762 | 0.0264 |
| 71 | 3.0024 | 0.0262 |
| 72 | 3.0285 | 0.0261 |
| 73 | 3.0551 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1079 | 0.0263 |
| 76 | 3.1341 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1861 | 0.0259 |
| 79 | 3.2119 | 0.0258 |
| 80 | 3.2376 | 0.0257 |
| 81 | 3.2632 | 0.0256 |
| 82 | 3.2887 | 0.0255 |
| 83 | 3.3140 | 0.0254 |
| 84 | 3.3393 | 0.0253 |

| | | |
|---|---|---|
| 85 | 3.3644 | 0.0251 |
| 86 | 3.3895 | 0.0250 |
| 87 | 3.4144 | 0.0249 |
| 88 | 3.4392 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5131 | 0.0245 |
| 92 | 3.5375 | 0.0244 |
| 93 | 3.5618 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6102 | 0.0241 |
| 96 | 3.6342 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6820 | 0.0239 |
| 99 | 3.7058 | 0.0238 |
| 100 | 3.7295 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7766 | 0.0235 |
| 103 | 3.8000 | 0.0234 |
| 104 | 3.8233 | 0.0233 |
| 105 | 3.8466 | 0.0233 |
| 106 | 3.8698 | 0.0232 |
| 107 | 3.8929 | 0.0231 |
| 108 | 3.9159 | 0.0230 |
| 109 | 3.9388 | 0.0229 |
| 110 | 3.9617 | 0.0229 |
| 111 | 3.9845 | 0.0228 |
| 112 | 4.0072 | 0.0227 |
| 113 | 4.0298 | 0.0226 |
| 114 | 4.0524 | 0.0226 |
| 115 | 4.0749 | 0.0225 |
| 116 | 4.0973 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1863 | 0.0221 |
| 121 | 4.2084 | 0.0221 |
| 122 | 4.2304 | 0.0220 |
| 123 | 4.2523 | 0.0219 |
| 124 | 4.2742 | 0.0219 |
| 125 | 4.2960 | 0.0218 |
| 126 | 4.3178 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3611 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4256 | 0.0214 |
| 132 | 4.4470 | 0.0214 |
| 133 | 4.4683 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5319 | 0.0211 |
| 137 | 4.5530 | 0.0211 |
| 138 | 4.5740 | 0.0210 |
| 139 | 4.5950 | 0.0210 |
| 140 | 4.6159 | 0.0209 |
| 141 | 4.6368 | 0.0209 |
| 142 | 4.6576 | 0.0208 |
| 143 | 4.6784 | 0.0208 |
| 144 | 4.6991 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7609 | 0.0206 |
| 148 | 4.7814 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |
| 151 | 4.8426 | 0.0204 |
| 152 | 4.8629 | 0.0203 |
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |
| 155 | 4.9235 | 0.0202 |

| | | |
|---|---|---|
| 156 | 4.9436 | 0.0201 |
| 157 | 4.9637 | 0.0201 |
| 158 | 4.9837 | 0.0200 |
| 159 | 5.0037 | 0.0200 |
| 160 | 5.0236 | 0.0199 |
| 161 | 5.0435 | 0.0199 |
| 162 | 5.0633 | 0.0198 |
| 163 | 5.0831 | 0.0198 |
| 164 | 5.1028 | 0.0197 |
| 165 | 5.1225 | 0.0197 |
| 166 | 5.1422 | 0.0197 |
| 167 | 5.1618 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2009 | 0.0195 |
| 170 | 5.2204 | 0.0195 |
| 171 | 5.2398 | 0.0194 |
| 172 | 5.2592 | 0.0194 |
| 173 | 5.2786 | 0.0194 |
| 174 | 5.2979 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3364 | 0.0192 |
| 177 | 5.3556 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3939 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4320 | 0.0190 |
| 182 | 5.4510 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4889 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5266 | 0.0189 |
| 187 | 5.5454 | 0.0188 |
| 188 | 5.5642 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6203 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6761 | 0.0186 |
| 195 | 5.6946 | 0.0185 |
| 196 | 5.7131 | 0.0185 |
| 197 | 5.7316 | 0.0185 |
| 198 | 5.7500 | 0.0184 |
| 199 | 5.7684 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8416 | 0.0183 |
| 204 | 5.8598 | 0.0182 |
| 205 | 5.8780 | 0.0182 |
| 206 | 5.8962 | 0.0182 |
| 207 | 5.9143 | 0.0181 |
| 208 | 5.9324 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9685 | 0.0180 |
| 211 | 5.9865 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0224 | 0.0179 |
| 214 | 6.0403 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0760 | 0.0178 |
| 217 | 6.0938 | 0.0178 |
| 218 | 6.1116 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1471 | 0.0177 |
| 221 | 6.1647 | 0.0177 |
| 222 | 6.1824 | 0.0177 |
| 223 | 6.2000 | 0.0176 |
| 224 | 6.2177 | 0.0176 |
| 225 | 6.2352 | 0.0176 |
| 226 | 6.2528 | 0.0175 |

| | | |
|---|---|---|
| 227 | 6.2703 | 0.0175 |
| 228 | 6.2878 | 0.0175 |
| 229 | 6.3053 | 0.0175 |
| 230 | 6.3227 | 0.0174 |
| 231 | 6.3401 | 0.0174 |
| 232 | 6.3575 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3922 | 0.0173 |
| 235 | 6.4095 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4440 | 0.0172 |
| 238 | 6.4612 | 0.0172 |
| 239 | 6.4784 | 0.0172 |
| 240 | 6.4956 | 0.0172 |
| 241 | 6.5127 | 0.0171 |
| 242 | 6.5298 | 0.0171 |
| 243 | 6.5469 | 0.0171 |
| 244 | 6.5640 | 0.0171 |
| 245 | 6.5810 | 0.0170 |
| 246 | 6.5980 | 0.0170 |
| 247 | 6.6150 | 0.0170 |
| 248 | 6.6320 | 0.0170 |
| 249 | 6.6489 | 0.0169 |
| 250 | 6.6658 | 0.0169 |
| 251 | 6.6827 | 0.0169 |
| 252 | 6.6996 | 0.0169 |
| 253 | 6.7164 | 0.0168 |
| 254 | 6.7332 | 0.0168 |
| 255 | 6.7500 | 0.0168 |
| 256 | 6.7668 | 0.0168 |
| 257 | 6.7835 | 0.0167 |
| 258 | 6.8002 | 0.0167 |
| 259 | 6.8169 | 0.0167 |
| 260 | 6.8336 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8669 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9166 | 0.0166 |
| 266 | 6.9331 | 0.0165 |
| 267 | 6.9496 | 0.0165 |
| 268 | 6.9661 | 0.0165 |
| 269 | 6.9826 | 0.0165 |
| 270 | 6.9990 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0482 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0809 | 0.0163 |
| 276 | 7.0972 | 0.0163 |
| 277 | 7.1135 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1460 | 0.0162 |
| 280 | 7.1622 | 0.0162 |
| 281 | 7.1784 | 0.0162 |
| 282 | 7.1946 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2269 | 0.0161 |
| 285 | 7.2430 | 0.0161 |
| 286 | 7.2591 | 0.0161 |
| 287 | 7.2752 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0056 | 0.0104 |
| 2 | 0.0161 | 0.0056 | 0.0105 |
| 3 | 0.0161 | 0.0056 | 0.0105 |
| 4 | 0.0161 | 0.0056 | 0.0105 |

| | | | |
|---|---|---|---|
| 5 | 0.0162 | 0.0057 | 0.0105 |
| 6 | 0.0162 | 0.0057 | 0.0105 |
| 7 | 0.0162 | 0.0057 | 0.0106 |
| 8 | 0.0163 | 0.0057 | 0.0106 |
| 9 | 0.0163 | 0.0057 | 0.0106 |
| 10 | 0.0163 | 0.0057 | 0.0106 |
| 11 | 0.0164 | 0.0057 | 0.0106 |
| 12 | 0.0164 | 0.0057 | 0.0107 |
| 13 | 0.0164 | 0.0058 | 0.0107 |
| 14 | 0.0165 | 0.0058 | 0.0107 |
| 15 | 0.0165 | 0.0058 | 0.0107 |
| 16 | 0.0165 | 0.0058 | 0.0107 |
| 17 | 0.0166 | 0.0058 | 0.0108 |
| 18 | 0.0166 | 0.0058 | 0.0108 |
| 19 | 0.0166 | 0.0058 | 0.0108 |
| 20 | 0.0167 | 0.0058 | 0.0108 |
| 21 | 0.0167 | 0.0058 | 0.0109 |
| 22 | 0.0167 | 0.0059 | 0.0109 |
| 23 | 0.0168 | 0.0059 | 0.0109 |
| 24 | 0.0168 | 0.0059 | 0.0109 |
| 25 | 0.0169 | 0.0059 | 0.0110 |
| 26 | 0.0169 | 0.0059 | 0.0110 |
| 27 | 0.0169 | 0.0059 | 0.0110 |
| 28 | 0.0170 | 0.0059 | 0.0110 |
| 29 | 0.0170 | 0.0060 | 0.0111 |
| 30 | 0.0170 | 0.0060 | 0.0111 |
| 31 | 0.0171 | 0.0060 | 0.0111 |
| 32 | 0.0171 | 0.0060 | 0.0111 |
| 33 | 0.0172 | 0.0060 | 0.0112 |
| 34 | 0.0172 | 0.0060 | 0.0112 |
| 35 | 0.0172 | 0.0060 | 0.0112 |
| 36 | 0.0173 | 0.0060 | 0.0112 |
| 37 | 0.0173 | 0.0061 | 0.0113 |
| 38 | 0.0174 | 0.0061 | 0.0113 |
| 39 | 0.0174 | 0.0061 | 0.0113 |
| 40 | 0.0174 | 0.0061 | 0.0113 |
| 41 | 0.0175 | 0.0061 | 0.0114 |
| 42 | 0.0175 | 0.0061 | 0.0114 |
| 43 | 0.0176 | 0.0062 | 0.0114 |
| 44 | 0.0176 | 0.0062 | 0.0114 |
| 45 | 0.0177 | 0.0062 | 0.0115 |
| 46 | 0.0177 | 0.0062 | 0.0115 |
| 47 | 0.0178 | 0.0062 | 0.0115 |
| 48 | 0.0178 | 0.0062 | 0.0116 |
| 49 | 0.0178 | 0.0062 | 0.0116 |
| 50 | 0.0179 | 0.0063 | 0.0116 |
| 51 | 0.0179 | 0.0063 | 0.0117 |
| 52 | 0.0180 | 0.0063 | 0.0117 |
| 53 | 0.0180 | 0.0063 | 0.0117 |
| 54 | 0.0181 | 0.0063 | 0.0117 |
| 55 | 0.0181 | 0.0063 | 0.0118 |
| 56 | 0.0182 | 0.0064 | 0.0118 |
| 57 | 0.0182 | 0.0064 | 0.0118 |
| 58 | 0.0183 | 0.0064 | 0.0119 |
| 59 | 0.0183 | 0.0064 | 0.0119 |
| 60 | 0.0184 | 0.0064 | 0.0119 |
| 61 | 0.0184 | 0.0064 | 0.0120 |
| 62 | 0.0185 | 0.0065 | 0.0120 |
| 63 | 0.0185 | 0.0065 | 0.0120 |
| 64 | 0.0186 | 0.0065 | 0.0121 |
| 65 | 0.0186 | 0.0065 | 0.0121 |
| 66 | 0.0187 | 0.0065 | 0.0121 |
| 67 | 0.0187 | 0.0066 | 0.0122 |
| 68 | 0.0188 | 0.0066 | 0.0122 |
| 69 | 0.0189 | 0.0066 | 0.0123 |
| 70 | 0.0189 | 0.0066 | 0.0123 |
| 71 | 0.0190 | 0.0066 | 0.0123 |
| 72 | 0.0190 | 0.0066 | 0.0124 |
| 73 | 0.0191 | 0.0067 | 0.0124 |
| 74 | 0.0191 | 0.0067 | 0.0124 |
| 75 | 0.0192 | 0.0067 | 0.0125 |

| | | | |
|---|---|---|---|
| 76 | 0.0192 | 0.0067 | 0.0125 |
| 77 | 0.0193 | 0.0068 | 0.0126 |
| 78 | 0.0194 | 0.0068 | 0.0126 |
| 79 | 0.0194 | 0.0068 | 0.0126 |
| 80 | 0.0195 | 0.0068 | 0.0127 |
| 81 | 0.0196 | 0.0068 | 0.0127 |
| 82 | 0.0196 | 0.0069 | 0.0127 |
| 83 | 0.0197 | 0.0069 | 0.0128 |
| 84 | 0.0197 | 0.0069 | 0.0128 |
| 85 | 0.0198 | 0.0069 | 0.0129 |
| 86 | 0.0199 | 0.0070 | 0.0129 |
| 87 | 0.0200 | 0.0070 | 0.0130 |
| 88 | 0.0200 | 0.0070 | 0.0130 |
| 89 | 0.0201 | 0.0070 | 0.0131 |
| 90 | 0.0202 | 0.0071 | 0.0131 |
| 91 | 0.0203 | 0.0071 | 0.0132 |
| 92 | 0.0203 | 0.0071 | 0.0132 |
| 93 | 0.0204 | 0.0071 | 0.0133 |
| 94 | 0.0205 | 0.0072 | 0.0133 |
| 95 | 0.0206 | 0.0072 | 0.0134 |
| 96 | 0.0206 | 0.0072 | 0.0134 |
| 97 | 0.0207 | 0.0072 | 0.0135 |
| 98 | 0.0208 | 0.0073 | 0.0135 |
| 99 | 0.0209 | 0.0073 | 0.0136 |
| 100 | 0.0209 | 0.0073 | 0.0136 |
| 101 | 0.0210 | 0.0074 | 0.0137 |
| 102 | 0.0211 | 0.0074 | 0.0137 |
| 103 | 0.0212 | 0.0074 | 0.0138 |
| 104 | 0.0213 | 0.0074 | 0.0138 |
| 105 | 0.0214 | 0.0075 | 0.0139 |
| 106 | 0.0214 | 0.0075 | 0.0139 |
| 107 | 0.0216 | 0.0075 | 0.0140 |
| 108 | 0.0216 | 0.0076 | 0.0141 |
| 109 | 0.0218 | 0.0076 | 0.0141 |
| 110 | 0.0218 | 0.0076 | 0.0142 |
| 111 | 0.0219 | 0.0077 | 0.0143 |
| 112 | 0.0220 | 0.0077 | 0.0143 |
| 113 | 0.0221 | 0.0077 | 0.0144 |
| 114 | 0.0222 | 0.0078 | 0.0144 |
| 115 | 0.0224 | 0.0078 | 0.0145 |
| 116 | 0.0224 | 0.0078 | 0.0146 |
| 117 | 0.0226 | 0.0079 | 0.0147 |
| 118 | 0.0226 | 0.0079 | 0.0147 |
| 119 | 0.0228 | 0.0080 | 0.0148 |
| 120 | 0.0229 | 0.0080 | 0.0149 |
| 121 | 0.0230 | 0.0081 | 0.0150 |
| 122 | 0.0231 | 0.0081 | 0.0150 |
| 123 | 0.0233 | 0.0081 | 0.0151 |
| 124 | 0.0233 | 0.0082 | 0.0152 |
| 125 | 0.0235 | 0.0082 | 0.0153 |
| 126 | 0.0236 | 0.0083 | 0.0153 |
| 127 | 0.0238 | 0.0083 | 0.0155 |
| 128 | 0.0239 | 0.0083 | 0.0155 |
| 129 | 0.0240 | 0.0084 | 0.0156 |
| 130 | 0.0241 | 0.0084 | 0.0157 |
| 131 | 0.0243 | 0.0085 | 0.0158 |
| 132 | 0.0244 | 0.0085 | 0.0159 |
| 133 | 0.0246 | 0.0086 | 0.0160 |
| 134 | 0.0247 | 0.0086 | 0.0161 |
| 135 | 0.0249 | 0.0087 | 0.0162 |
| 136 | 0.0250 | 0.0088 | 0.0163 |
| 137 | 0.0253 | 0.0088 | 0.0164 |
| 138 | 0.0254 | 0.0089 | 0.0165 |
| 139 | 0.0256 | 0.0090 | 0.0166 |
| 140 | 0.0257 | 0.0090 | 0.0167 |
| 141 | 0.0259 | 0.0091 | 0.0169 |
| 142 | 0.0261 | 0.0091 | 0.0169 |
| 143 | 0.0263 | 0.0092 | 0.0171 |
| 144 | 0.0265 | 0.0093 | 0.0172 |
| 145 | 0.0261 | 0.0091 | 0.0170 |
| 146 | 0.0262 | 0.0092 | 0.0170 |

| | | | |
|---|---|---|---|
| 147 | 0.0265 | 0.0093 | 0.0172 |
| 148 | 0.0267 | 0.0093 | 0.0173 |
| 149 | 0.0270 | 0.0094 | 0.0175 |
| 150 | 0.0271 | 0.0095 | 0.0176 |
| 151 | 0.0275 | 0.0096 | 0.0178 |
| 152 | 0.0276 | 0.0097 | 0.0180 |
| 153 | 0.0280 | 0.0098 | 0.0182 |
| 154 | 0.0282 | 0.0099 | 0.0183 |
| 155 | 0.0285 | 0.0100 | 0.0185 |
| 156 | 0.0287 | 0.0101 | 0.0187 |
| 157 | 0.0291 | 0.0102 | 0.0189 |
| 158 | 0.0293 | 0.0103 | 0.0191 |
| 159 | 0.0298 | 0.0104 | 0.0194 |
| 160 | 0.0300 | 0.0105 | 0.0195 |
| 161 | 0.0305 | 0.0107 | 0.0198 |
| 162 | 0.0307 | 0.0108 | 0.0200 |
| 163 | 0.0313 | 0.0109 | 0.0203 |
| 164 | 0.0315 | 0.0110 | 0.0205 |
| 165 | 0.0321 | 0.0112 | 0.0209 |
| 166 | 0.0324 | 0.0113 | 0.0211 |
| 167 | 0.0330 | 0.0116 | 0.0215 |
| 168 | 0.0334 | 0.0117 | 0.0217 |
| 169 | 0.0341 | 0.0119 | 0.0222 |
| 170 | 0.0345 | 0.0121 | 0.0224 |
| 171 | 0.0352 | 0.0123 | 0.0229 |
| 172 | 0.0357 | 0.0125 | 0.0232 |
| 173 | 0.0366 | 0.0128 | 0.0238 |
| 174 | 0.0371 | 0.0130 | 0.0241 |
| 175 | 0.0381 | 0.0133 | 0.0248 |
| 176 | 0.0387 | 0.0135 | 0.0251 |
| 177 | 0.0399 | 0.0140 | 0.0259 |
| 178 | 0.0406 | 0.0142 | 0.0264 |
| 179 | 0.0420 | 0.0147 | 0.0273 |
| 180 | 0.0428 | 0.0150 | 0.0278 |
| 181 | 0.0446 | 0.0156 | 0.0290 |
| 182 | 0.0456 | 0.0160 | 0.0297 |
| 183 | 0.0480 | 0.0168 | 0.0312 |
| 184 | 0.0493 | 0.0172 | 0.0320 |
| 185 | 0.0258 | 0.0090 | 0.0167 |
| 186 | 0.0275 | 0.0096 | 0.0178 |
| 187 | 0.0318 | 0.0111 | 0.0207 |
| 188 | 0.0348 | 0.0122 | 0.0226 |
| 189 | 0.0432 | 0.0151 | 0.0281 |
| 190 | 0.0498 | 0.0174 | 0.0324 |
| 191 | 0.0755 | 0.0264 | 0.0491 |
| 192 | 0.1097 | 0.0336 | 0.0760 |
| 193 | 0.4744 | 0.0336 | 0.4408 |
| 194 | 0.0595 | 0.0208 | 0.0387 |
| 195 | 0.0384 | 0.0135 | 0.0250 |
| 196 | 0.0295 | 0.0103 | 0.0191 |
| 197 | 0.0507 | 0.0178 | 0.0330 |
| 198 | 0.0467 | 0.0164 | 0.0304 |
| 199 | 0.0437 | 0.0153 | 0.0284 |
| 200 | 0.0413 | 0.0144 | 0.0268 |
| 201 | 0.0393 | 0.0137 | 0.0255 |
| 202 | 0.0376 | 0.0131 | 0.0244 |
| 203 | 0.0361 | 0.0126 | 0.0235 |
| 204 | 0.0348 | 0.0122 | 0.0226 |
| 205 | 0.0337 | 0.0118 | 0.0219 |
| 206 | 0.0327 | 0.0114 | 0.0213 |
| 207 | 0.0318 | 0.0111 | 0.0207 |
| 208 | 0.0310 | 0.0108 | 0.0201 |
| 209 | 0.0302 | 0.0106 | 0.0197 |
| 210 | 0.0296 | 0.0103 | 0.0192 |
| 211 | 0.0289 | 0.0101 | 0.0188 |
| 212 | 0.0283 | 0.0099 | 0.0184 |
| 213 | 0.0278 | 0.0097 | 0.0181 |
| 214 | 0.0273 | 0.0095 | 0.0177 |
| 215 | 0.0268 | 0.0094 | 0.0174 |
| 216 | 0.0264 | 0.0092 | 0.0171 |
| 217 | 0.0266 | 0.0093 | 0.0173 |

| | | | |
|---|---|---|---|
| 218 | 0.0262 | 0.0092 | 0.0170 |
| 219 | 0.0258 | 0.0090 | 0.0168 |
| 220 | 0.0255 | 0.0089 | 0.0166 |
| 221 | 0.0251 | 0.0088 | 0.0163 |
| 222 | 0.0248 | 0.0087 | 0.0161 |
| 223 | 0.0245 | 0.0086 | 0.0159 |
| 224 | 0.0242 | 0.0085 | 0.0157 |
| 225 | 0.0239 | 0.0084 | 0.0156 |
| 226 | 0.0237 | 0.0083 | 0.0154 |
| 227 | 0.0234 | 0.0082 | 0.0152 |
| 228 | 0.0232 | 0.0081 | 0.0151 |
| 229 | 0.0229 | 0.0080 | 0.0149 |
| 230 | 0.0227 | 0.0079 | 0.0148 |
| 231 | 0.0225 | 0.0079 | 0.0146 |
| 232 | 0.0223 | 0.0078 | 0.0145 |
| 233 | 0.0221 | 0.0077 | 0.0144 |
| 234 | 0.0219 | 0.0077 | 0.0142 |
| 235 | 0.0217 | 0.0076 | 0.0141 |
| 236 | 0.0215 | 0.0075 | 0.0140 |
| 237 | 0.0213 | 0.0075 | 0.0139 |
| 238 | 0.0211 | 0.0074 | 0.0137 |
| 239 | 0.0210 | 0.0073 | 0.0136 |
| 240 | 0.0208 | 0.0073 | 0.0135 |
| 241 | 0.0207 | 0.0072 | 0.0134 |
| 242 | 0.0205 | 0.0072 | 0.0133 |
| 243 | 0.0204 | 0.0071 | 0.0132 |
| 244 | 0.0202 | 0.0071 | 0.0131 |
| 245 | 0.0201 | 0.0070 | 0.0130 |
| 246 | 0.0199 | 0.0070 | 0.0130 |
| 247 | 0.0198 | 0.0069 | 0.0129 |
| 248 | 0.0197 | 0.0069 | 0.0128 |
| 249 | 0.0195 | 0.0068 | 0.0127 |
| 250 | 0.0194 | 0.0068 | 0.0126 |
| 251 | 0.0193 | 0.0067 | 0.0125 |
| 252 | 0.0192 | 0.0067 | 0.0125 |
| 253 | 0.0190 | 0.0067 | 0.0124 |
| 254 | 0.0189 | 0.0066 | 0.0123 |
| 255 | 0.0188 | 0.0066 | 0.0122 |
| 256 | 0.0187 | 0.0065 | 0.0122 |
| 257 | 0.0186 | 0.0065 | 0.0121 |
| 258 | 0.0185 | 0.0065 | 0.0120 |
| 259 | 0.0184 | 0.0064 | 0.0120 |
| 260 | 0.0183 | 0.0064 | 0.0119 |
| 261 | 0.0182 | 0.0064 | 0.0118 |
| 262 | 0.0181 | 0.0063 | 0.0118 |
| 263 | 0.0180 | 0.0063 | 0.0117 |
| 264 | 0.0179 | 0.0063 | 0.0116 |
| 265 | 0.0178 | 0.0062 | 0.0116 |
| 266 | 0.0177 | 0.0062 | 0.0115 |
| 267 | 0.0176 | 0.0062 | 0.0115 |
| 268 | 0.0175 | 0.0061 | 0.0114 |
| 269 | 0.0175 | 0.0061 | 0.0114 |
| 270 | 0.0174 | 0.0061 | 0.0113 |
| 271 | 0.0173 | 0.0061 | 0.0112 |
| 272 | 0.0172 | 0.0060 | 0.0112 |
| 273 | 0.0171 | 0.0060 | 0.0111 |
| 274 | 0.0171 | 0.0060 | 0.0111 |
| 275 | 0.0170 | 0.0059 | 0.0110 |
| 276 | 0.0169 | 0.0059 | 0.0110 |
| 277 | 0.0168 | 0.0059 | 0.0109 |
| 278 | 0.0168 | 0.0059 | 0.0109 |
| 279 | 0.0167 | 0.0058 | 0.0109 |
| 280 | 0.0166 | 0.0058 | 0.0108 |
| 281 | 0.0166 | 0.0058 | 0.0108 |
| 282 | 0.0165 | 0.0058 | 0.0107 |
| 283 | 0.0164 | 0.0057 | 0.0107 |
| 284 | 0.0164 | 0.0057 | 0.0106 |
| 285 | 0.0163 | 0.0057 | 0.0106 |
| 286 | 0.0162 | 0.0057 | 0.0105 |
| 287 | 0.0162 | 0.0057 | 0.0105 |
| 288 | 0.0161 | 0.0056 | 0.0105 |

```
      ----------------------------------------------------------------------
      ----------------------------------------------------------------------
      Total soil rain loss =      2.41(In)
      Total effective rainfall =      4.88(In)
      Peak flow rate in flood hydrograph =      9.68(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
----------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q          |         |         |         |
  0+10       0.0015      0.19  Q          |         |         |         |
  0+15       0.0041      0.38  VQ         |         |         |         |
  0+20       0.0072      0.45  VQ         |         |         |         |
  0+25       0.0106      0.49  VQ         |         |         |         |
  0+30       0.0141      0.52  V Q        |         |         |         |
  0+35       0.0178      0.53  V Q        |         |         |         |
  0+40       0.0215      0.54  V Q        |         |         |         |
  0+45       0.0253      0.55  V Q        |         |         |         |
  0+50       0.0291      0.55  V Q        |         |         |         |
  0+55       0.0329      0.55  V Q        |         |         |         |
  1+ 0       0.0367      0.56  V Q        |         |         |         |
  1+ 5       0.0406      0.56  V Q        |         |         |         |
  1+10       0.0444      0.56  |VQ        |         |         |         |
  1+15       0.0482      0.56  |VQ        |         |         |         |
  1+20       0.0521      0.56  |VQ        |         |         |         |
  1+25       0.0560      0.56  |VQ        |         |         |         |
  1+30       0.0598      0.56  |VQ        |         |         |         |
  1+35       0.0637      0.56  |VQ        |         |         |         |
  1+40       0.0676      0.56  |VQ        |         |         |         |
  1+45       0.0715      0.57  |VQ        |         |         |         |
  1+50       0.0754      0.57  |VQ        |         |         |         |
  1+55       0.0793      0.57  |VQ        |         |         |         |
  2+ 0       0.0833      0.57  |VQ        |         |         |         |
  2+ 5       0.0872      0.57  |VQ        |         |         |         |
  2+10       0.0911      0.57  | Q        |         |         |         |
  2+15       0.0951      0.57  | Q        |         |         |         |
  2+20       0.0990      0.57  | Q        |         |         |         |
  2+25       0.1030      0.58  | Q        |         |         |         |
  2+30       0.1070      0.58  | Q        |         |         |         |
  2+35       0.1110      0.58  | Q        |         |         |         |
  2+40       0.1150      0.58  | Q        |         |         |         |
  2+45       0.1190      0.58  | Q        |         |         |         |
  2+50       0.1230      0.58  | Q        |         |         |         |
  2+55       0.1270      0.58  | Q        |         |         |         |
  3+ 0       0.1310      0.59  | Q        |         |         |         |
  3+ 5       0.1351      0.59  | QV       |         |         |         |
  3+10       0.1391      0.59  | QV       |         |         |         |
  3+15       0.1432      0.59  | QV       |         |         |         |
  3+20       0.1472      0.59  | QV       |         |         |         |
  3+25       0.1513      0.59  | QV       |         |         |         |
  3+30       0.1554      0.59  | QV       |         |         |         |
  3+35       0.1595      0.59  | QV       |         |         |         |
  3+40       0.1636      0.60  | QV       |         |         |         |
  3+45       0.1677      0.60  | QV       |         |         |         |
  3+50       0.1718      0.60  | QV       |         |         |         |
  3+55       0.1760      0.60  | Q V      |         |         |         |
  4+ 0       0.1801      0.60  | Q V      |         |         |         |
  4+ 5       0.1843      0.60  | Q V      |         |         |         |
  4+10       0.1885      0.61  | Q V      |         |         |         |
  4+15       0.1926      0.61  | Q V      |         |         |         |
  4+20       0.1968      0.61  | Q V      |         |         |         |
  4+25       0.2010      0.61  | Q V      |         |         |         |
  4+30       0.2052      0.61  | Q V      |         |         |         |
  4+35       0.2095      0.61  | Q V      |         |         |         |
  4+40       0.2137      0.61  | Q V      |         |         |         |
```

```
 4+45      0.2179      0.62  | Q V     |         |         |         |
 4+50      0.2222      0.62  | Q  V    |         |         |         |
 4+55      0.2264      0.62  | Q  V    |         |         |         |
 5+ 0      0.2307      0.62  | Q  V    |         |         |         |
 5+ 5      0.2350      0.62  | Q  V    |         |         |         |
 5+10      0.2393      0.62  | Q  V    |         |         |         |
 5+15      0.2436      0.63  | Q  V    |         |         |         |
 5+20      0.2480      0.63  | Q  V    |         |         |         |
 5+25      0.2523      0.63  | Q  V    |         |         |         |
 5+30      0.2566      0.63  | Q  V    |         |         |         |
 5+35      0.2610      0.63  | Q  V    |         |         |         |
 5+40      0.2654      0.64  | Q   V   |         |         |         |
 5+45      0.2698      0.64  | Q   V   |         |         |         |
 5+50      0.2742      0.64  | Q   V   |         |         |         |
 5+55      0.2786      0.64  | Q   V   |         |         |         |
 6+ 0      0.2830      0.64  | Q   V   |         |         |         |
 6+ 5      0.2874      0.64  | Q   V   |         |         |         |
 6+10      0.2919      0.65  | Q   V   |         |         |         |
 6+15      0.2964      0.65  | Q   V   |         |         |         |
 6+20      0.3008      0.65  | Q   V   |         |         |         |
 6+25      0.3053      0.65  | Q   V   |         |         |         |
 6+30      0.3098      0.65  | Q    V  |         |         |         |
 6+35      0.3144      0.66  | Q    V  |         |         |         |
 6+40      0.3189      0.66  | Q    V  |         |         |         |
 6+45      0.3235      0.66  | Q    V  |         |         |         |
 6+50      0.3280      0.66  | Q    V  |         |         |         |
 6+55      0.3326      0.67  | Q    V  |         |         |         |
 7+ 0      0.3372      0.67  | Q    V  |         |         |         |
 7+ 5      0.3418      0.67  | Q    V  |         |         |         |
 7+10      0.3464      0.67  | Q    V  |         |         |         |
 7+15      0.3511      0.67  | Q    V  |         |         |         |
 7+20      0.3557      0.68  | Q     V |         |         |         |
 7+25      0.3604      0.68  | Q     V |         |         |         |
 7+30      0.3651      0.68  | Q     V |         |         |         |
 7+35      0.3698      0.68  | Q     V |         |         |         |
 7+40      0.3745      0.69  | Q     V |         |         |         |
 7+45      0.3793      0.69  | Q     V |         |         |         |
 7+50      0.3840      0.69  | Q     V |         |         |         |
 7+55      0.3888      0.69  | Q     V |         |         |         |
 8+ 0      0.3936      0.70  | Q     V |         |         |         |
 8+ 5      0.3984      0.70  | Q      V|         |         |         |
 8+10      0.4032      0.70  | Q      V|         |         |         |
 8+15      0.4081      0.70  | Q      V|         |         |         |
 8+20      0.4129      0.71  | Q      V|         |         |         |
 8+25      0.4178      0.71  | Q      V|         |         |         |
 8+30      0.4227      0.71  | Q      V|         |         |         |
 8+35      0.4277      0.71  | Q      V|         |         |         |
 8+40      0.4326      0.72  | Q      V|         |         |         |
 8+45      0.4376      0.72  | Q      V|         |         |         |
 8+50      0.4425      0.72  | Q       V         |         |         |
 8+55      0.4475      0.73  | Q       V         |         |         |
 9+ 0      0.4526      0.73  | Q       V         |         |         |
 9+ 5      0.4576      0.73  | Q       V         |         |         |
 9+10      0.4627      0.74  | Q       V         |         |         |
 9+15      0.4678      0.74  | Q       V         |         |         |
 9+20      0.4729      0.74  | Q       V         |         |         |
 9+25      0.4780      0.75  | Q       V         |         |         |
 9+30      0.4832      0.75  | Q       V         |         |         |
 9+35      0.4883      0.75  |  Q      |V        |         |         |
 9+40      0.4936      0.76  |  Q      |V        |         |         |
 9+45      0.4988      0.76  |  Q      |V        |         |         |
 9+50      0.5040      0.76  |  Q      |V        |         |         |
 9+55      0.5093      0.77  |  Q      |V        |         |         |
10+ 0      0.5146      0.77  |  Q      |V        |         |         |
10+ 5      0.5199      0.77  |  Q      |V        |         |         |
10+10      0.5253      0.78  |  Q      |V        |         |         |
10+15      0.5307      0.78  |  Q      | V       |         |         |
10+20      0.5361      0.79  |  Q      | V       |         |         |
10+25      0.5415      0.79  |  Q      | V       |         |         |
10+30      0.5470      0.79  |  Q      | V       |         |         |
10+35      0.5525      0.80  |  Q      | V       |         |         |
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10+40       0.5580      0.80  |  Q       | V        |          |          |
10+45       0.5636      0.81  |  Q       | V        |          |          |
10+50       0.5692      0.81  |  Q       | V        |          |          |
10+55       0.5748      0.82  |  Q       |  V       |          |          |
11+ 0       0.5805      0.82  |  Q       |  V       |          |          |
11+ 5       0.5861      0.83  |  Q       |  V       |          |          |
11+10       0.5919      0.83  |  Q       |  V       |          |          |
11+15       0.5976      0.84  |  Q       |  V       |          |          |
11+20       0.6034      0.84  |  Q       |  V       |          |          |
11+25       0.6092      0.85  |  Q       |  V       |          |          |
11+30       0.6151      0.85  |  Q       |  V       |          |          |
11+35       0.6210      0.86  |  Q       |   V      |          |          |
11+40       0.6269      0.86  |  Q       |   V      |          |          |
11+45       0.6329      0.87  |  Q       |   V      |          |          |
11+50       0.6389      0.87  |  Q       |   V      |          |          |
11+55       0.6450      0.88  |  Q       |   V      |          |          |
12+ 0       0.6511      0.89  |  Q       |   V      |          |          |
12+ 5       0.6573      0.89  |  Q       |   V      |          |          |
12+10       0.6634      0.89  |  Q       |    V     |          |          |
12+15       0.6695      0.89  |  Q       |    V     |          |          |
12+20       0.6757      0.90  |  Q       |    V     |          |          |
12+25       0.6819      0.90  |  Q       |    V     |          |          |
12+30       0.6882      0.91  |  Q       |    V     |          |          |
12+35       0.6945      0.92  |  Q       |    V     |          |          |
12+40       0.7008      0.92  |  Q       |    V     |          |          |
12+45       0.7072      0.93  |  Q       |     V    |          |          |
12+50       0.7137      0.94  |  Q       |     V    |          |          |
12+55       0.7203      0.95  |  Q       |     V    |          |          |
13+ 0       0.7268      0.96  |  Q       |     V    |          |          |
13+ 5       0.7335      0.97  |  Q       |     V    |          |          |
13+10       0.7402      0.98  |  Q       |     V    |          |          |
13+15       0.7470      0.99  |  Q       |     V    |          |          |
13+20       0.7539      1.00  |  Q       |      V   |          |          |
13+25       0.7609      1.01  |   Q      |      V   |          |          |
13+30       0.7679      1.02  |   Q      |      V   |          |          |
13+35       0.7750      1.03  |   Q      |      V   |          |          |
13+40       0.7822      1.04  |   Q      |      V   |          |          |
13+45       0.7895      1.06  |   Q      |      V   |          |          |
13+50       0.7969      1.07  |   Q      |       V  |          |          |
13+55       0.8043      1.09  |   Q      |       V  |          |          |
14+ 0       0.8119      1.10  |   Q      |       V  |          |          |
14+ 5       0.8196      1.12  |   Q      |       V  |          |          |
14+10       0.8274      1.13  |   Q      |       V  |          |          |
14+15       0.8354      1.15  |   Q      |       V  |          |          |
14+20       0.8434      1.17  |   Q      |        V |          |          |
14+25       0.8516      1.19  |   Q      |        V |          |          |
14+30       0.8600      1.21  |   Q      |        V |          |          |
14+35       0.8685      1.24  |   Q      |        V |          |          |
14+40       0.8772      1.26  |    Q     |        V |          |          |
14+45       0.8860      1.29  |    Q     |         V|          |          |
14+50       0.8951      1.31  |    Q     |         V|          |          |
14+55       0.9044      1.35  |    Q     |         V|          |          |
15+ 0       0.9139      1.38  |    Q     |         V|          |          |
15+ 5       0.9236      1.42  |    Q     |          |V         |          |
15+10       0.9336      1.46  |    Q     |          |V         |          |
15+15       0.9440      1.50  |     Q    |          |V         |          |
15+20       0.9547      1.55  |     Q    |          |V         |          |
15+25       0.9655      1.57  |     Q    |          |V         |          |
15+30       0.9749      1.37  |    Q     |          | V        |          |
15+35       0.9827      1.13  |   Q      |          | V        |          |
15+40       0.9903      1.10  |   Q      |          | V        |          |
15+45       0.9982      1.15  |   Q      |          | V        |          |
15+50       1.0070      1.27  |    Q     |          | V        |          |
15+55       1.0172      1.49  |    Q     |          |  V       |          |
16+ 0       1.0306      1.94  |      Q   |          |  V       |          |
16+ 5       1.0561      3.70  |          |   Q      |   V      |          |
16+10       1.1161      8.72  |          |          |    V     |   Q      |
16+15       1.1828      9.68  |          |          |     V    |       Q  |
16+20       1.2146      4.63  |          |        Q |      V   |          |
16+25       1.2361      3.12  |          | Q        |       V  |          |
16+30       1.2533      2.49  |        Q |          |       V  |          |
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16+35      1.2683      2.18  |       Q |         |       V |         |
16+40      1.2808      1.81  |      Q  |         |        V|         |
16+45      1.2919      1.61  |     Q   |         |        V|         |
16+50      1.3023      1.51  |     Q   |         |        V|         |
16+55      1.3123      1.45  |    Q    |         |        V|         |
17+ 0      1.3216      1.35  |    Q    |         |         V         |
17+ 5      1.3304      1.27  |    Q    |         |         V         |
17+10      1.3387      1.21  |   Q     |         |         V         |
17+15      1.3467      1.17  |   Q     |         |         V         |
17+20      1.3545      1.13  |   Q     |         |         V         |
17+25      1.3621      1.10  |   Q     |         |         V         |
17+30      1.3694      1.07  |   Q     |         |         |V        |
17+35      1.3766      1.04  |   Q     |         |         |V        |
17+40      1.3836      1.02  |   Q     |         |         |V        |
17+45      1.3904      0.99  |  Q      |         |         |V        |
17+50      1.3972      0.97  |  Q      |         |         |V        |
17+55      1.4037      0.95  |  Q      |         |         |V        |
18+ 0      1.4102      0.94  |  Q      |         |         | V       |
18+ 5      1.4165      0.92  |  Q      |         |         | V       |
18+10      1.4228      0.91  |  Q      |         |         | V       |
18+15      1.4290      0.90  |  Q      |         |         | V       |
18+20      1.4352      0.89  |  Q      |         |         | V       |
18+25      1.4413      0.88  |  Q      |         |         | V       |
18+30      1.4473      0.87  |  Q      |         |         | V       |
18+35      1.4532      0.86  |  Q      |         |         |  V      |
18+40      1.4590      0.85  |  Q      |         |         |  V      |
18+45      1.4648      0.84  |  Q      |         |         |  V      |
18+50      1.4705      0.83  |  Q      |         |         |  V      |
18+55      1.4761      0.82  |  Q      |         |         |  V      |
19+ 0      1.4817      0.81  |  Q      |         |         |  V      |
19+ 5      1.4872      0.80  |  Q      |         |         |  V      |
19+10      1.4927      0.79  |  Q      |         |         |  V      |
19+15      1.4981      0.78  |  Q      |         |         |   V     |
19+20      1.5034      0.78  |  Q      |         |         |   V     |
19+25      1.5087      0.77  |  Q      |         |         |   V     |
19+30      1.5140      0.76  |  Q      |         |         |   V     |
19+35      1.5192      0.75  |  Q      |         |         |   V     |
19+40      1.5243      0.75  | Q       |         |         |   V     |
19+45      1.5294      0.74  | Q       |         |         |   V     |
19+50      1.5345      0.73  | Q       |         |         |   V     |
19+55      1.5395      0.73  | Q       |         |         |    V    |
20+ 0      1.5445      0.72  | Q       |         |         |    V    |
20+ 5      1.5494      0.72  | Q       |         |         |    V    |
20+10      1.5543      0.71  | Q       |         |         |    V    |
20+15      1.5591      0.71  | Q       |         |         |    V    |
20+20      1.5640      0.70  | Q       |         |         |    V    |
20+25      1.5687      0.69  | Q       |         |         |    V    |
20+30      1.5735      0.69  | Q       |         |         |    V    |
20+35      1.5782      0.68  | Q       |         |         |    V    |
20+40      1.5829      0.68  | Q       |         |         |    V    |
20+45      1.5875      0.68  | Q       |         |         |     V   |
20+50      1.5922      0.67  | Q       |         |         |     V   |
20+55      1.5967      0.67  | Q       |         |         |     V   |
21+ 0      1.6013      0.66  | Q       |         |         |     V   |
21+ 5      1.6058      0.66  | Q       |         |         |     V   |
21+10      1.6103      0.65  | Q       |         |         |     V   |
21+15      1.6148      0.65  | Q       |         |         |     V   |
21+20      1.6193      0.65  | Q       |         |         |     V   |
21+25      1.6237      0.64  | Q       |         |         |     V   |
21+30      1.6281      0.64  | Q       |         |         |      V  |
21+35      1.6324      0.63  | Q       |         |         |      V  |
21+40      1.6368      0.63  | Q       |         |         |      V  |
21+45      1.6411      0.63  | Q       |         |         |      V  |
21+50      1.6454      0.62  | Q       |         |         |      V  |
21+55      1.6497      0.62  | Q       |         |         |      V  |
22+ 0      1.6539      0.62  | Q       |         |         |      V  |
22+ 5      1.6581      0.61  | Q       |         |         |      V  |
22+10      1.6624      0.61  | Q       |         |         |      V  |
22+15      1.6665      0.61  | Q       |         |         |      V  |
22+20      1.6707      0.60  | Q       |         |         |      V  |
22+25      1.6748      0.60  | Q       |         |         |       V |
```

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   22+30       1.6790      0.60  | Q       |         |         |       V |
   22+35       1.6831      0.60  | Q       |         |         |       V |
   22+40       1.6871      0.59  | Q       |         |         |       V |
   22+45       1.6912      0.59  | Q       |         |         |       V |
   22+50       1.6953      0.59  | Q       |         |         |       V |
   22+55       1.6993      0.58  | Q       |         |         |       V |
   23+ 0       1.7033      0.58  | Q       |         |         |       V |
   23+ 5       1.7073      0.58  | Q       |         |         |       V |
   23+10       1.7112      0.58  | Q       |         |         |       V |
   23+15       1.7152      0.57  | Q       |         |         |        V|
   23+20       1.7191      0.57  | Q       |         |         |        V|
   23+25       1.7231      0.57  | Q       |         |         |        V|
   23+30       1.7270      0.57  | Q       |         |         |        V|
   23+35       1.7308      0.56  | Q       |         |         |        V|
   23+40       1.7347      0.56  | Q       |         |         |        V|
   23+45       1.7386      0.56  | Q       |         |         |        V|
   23+50       1.7424      0.56  | Q       |         |         |        V|
   23+55       1.7462      0.56  | Q       |         |         |        V|
   24+ 0       1.7500      0.55  | Q       |         |         |        V|
   24+ 5       1.7536      0.52  | Q       |         |         |        V|
   24+10       1.7561      0.36  |Q        |         |         |        V|
   24+15       1.7573      0.17  Q         |         |         |        V|
   24+20       1.7580      0.10  Q         |         |         |        V|
   24+25       1.7584      0.06  Q         |         |         |        V|
   24+30       1.7586      0.03  Q         |         |         |        V|
   24+35       1.7587      0.02  Q         |         |         |        V|
   24+40       1.7588      0.01  Q         |         |         |        V|
   24+45       1.7588      0.01  Q         |         |         |        V|
   24+50       1.7588      0.00  Q         |         |         |        V|
   24+55       1.7589      0.00  Q         |         |         |        V|
   25+ 0       1.7589      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'B' – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/11/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
25 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             4.33            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             4.33           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             4.33           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0          4.33      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 4.33 | 1.000 | 78.0 | 78.0 | 2.82 | 0.707 |

Area-averaged catchment yield fraction, Y = 0.707
Area-averaged low loss fraction, Yb = 0.293
User entry of time of concentration = 0.182 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 4.33(Ac.)
Catchment Lag time = 0.146 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 57.2344
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.293 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 4.33(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.569(In)
30-minute factor = 1.000 Adjusted rainfall = 0.974(In)
1-hour factor = 1.000 Adjusted rainfall = 1.199(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 52.37 (CFS)) | |
| 1 | 5.210 | 2.728 |
| 2 | 33.842 | 14.993 |
| 3 | 69.240 | 18.537 |
| 4 | 82.158 | 6.765 |
| 5 | 89.615 | 3.905 |
| 6 | 94.272 | 2.439 |
| 7 | 97.009 | 1.433 |
| 8 | 98.250 | 0.650 |
| 9 | 98.857 | 0.318 |
| 10 | 99.271 | 0.217 |
| 11 | 99.677 | 0.213 |
| 12 | 99.909 | 0.121 |
| 13 | 100.000 | 0.048 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5688 | 0.5688 |
| 2 | 0.7003 | 0.1315 |
| 3 | 0.7909 | 0.0906 |
| 4 | 0.8622 | 0.0713 |
| 5 | 0.9218 | 0.0597 |
| 6 | 0.9737 | 0.0518 |
| 7 | 1.0198 | 0.0461 |
| 8 | 1.0614 | 0.0417 |
| 9 | 1.0996 | 0.0382 |
| 10 | 1.1349 | 0.0353 |
| 11 | 1.1678 | 0.0329 |
| 12 | 1.1987 | 0.0309 |
| 13 | 1.2593 | 0.0606 |

| | | |
|---|---|---|
| 14 | 1.3181 | 0.0588 |
| 15 | 1.3754 | 0.0572 |
| 16 | 1.4311 | 0.0558 |
| 17 | 1.4856 | 0.0545 |
| 18 | 1.5388 | 0.0532 |
| 19 | 1.5909 | 0.0521 |
| 20 | 1.6420 | 0.0511 |
| 21 | 1.6921 | 0.0501 |
| 22 | 1.7413 | 0.0492 |
| 23 | 1.7896 | 0.0483 |
| 24 | 1.8371 | 0.0475 |
| 25 | 1.8839 | 0.0468 |
| 26 | 1.9300 | 0.0461 |
| 27 | 1.9754 | 0.0454 |
| 28 | 2.0201 | 0.0448 |
| 29 | 2.0643 | 0.0441 |
| 30 | 2.1078 | 0.0436 |
| 31 | 2.1508 | 0.0430 |
| 32 | 2.1933 | 0.0425 |
| 33 | 2.2353 | 0.0420 |
| 34 | 2.2768 | 0.0415 |
| 35 | 2.3178 | 0.0410 |
| 36 | 2.3584 | 0.0406 |
| 37 | 2.3985 | 0.0401 |
| 38 | 2.4382 | 0.0397 |
| 39 | 2.4775 | 0.0393 |
| 40 | 2.5165 | 0.0389 |
| 41 | 2.5550 | 0.0386 |
| 42 | 2.5932 | 0.0382 |
| 43 | 2.6311 | 0.0379 |
| 44 | 2.6686 | 0.0375 |
| 45 | 2.7058 | 0.0372 |
| 46 | 2.7426 | 0.0369 |
| 47 | 2.7792 | 0.0366 |
| 48 | 2.8155 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8871 | 0.0357 |
| 51 | 2.9226 | 0.0354 |
| 52 | 2.9577 | 0.0352 |
| 53 | 2.9926 | 0.0349 |
| 54 | 3.0273 | 0.0346 |
| 55 | 3.0617 | 0.0344 |
| 56 | 3.0958 | 0.0342 |
| 57 | 3.1298 | 0.0339 |
| 58 | 3.1635 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2302 | 0.0333 |
| 61 | 3.2633 | 0.0330 |
| 62 | 3.2961 | 0.0328 |
| 63 | 3.3287 | 0.0326 |
| 64 | 3.3612 | 0.0324 |
| 65 | 3.3934 | 0.0322 |
| 66 | 3.4255 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4890 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5519 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6140 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6811 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7476 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8135 | 0.0329 |
| 79 | 3.8463 | 0.0328 |
| 80 | 3.8789 | 0.0326 |
| 81 | 3.9114 | 0.0325 |
| 82 | 3.9437 | 0.0323 |
| 83 | 3.9759 | 0.0322 |
| 84 | 4.0080 | 0.0321 |

| | | |
|---|---|---|
| 85 | 4.0400 | 0.0320 |
| 86 | 4.0718 | 0.0318 |
| 87 | 4.1036 | 0.0317 |
| 88 | 4.1352 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1980 | 0.0314 |
| 91 | 4.2293 | 0.0313 |
| 92 | 4.2604 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3224 | 0.0309 |
| 95 | 4.3532 | 0.0308 |
| 96 | 4.3839 | 0.0307 |
| 97 | 4.4145 | 0.0306 |
| 98 | 4.4450 | 0.0305 |
| 99 | 4.4754 | 0.0304 |
| 100 | 4.5057 | 0.0303 |
| 101 | 4.5359 | 0.0302 |
| 102 | 4.5660 | 0.0301 |
| 103 | 4.5960 | 0.0300 |
| 104 | 4.6259 | 0.0299 |
| 105 | 4.6557 | 0.0298 |
| 106 | 4.6854 | 0.0297 |
| 107 | 4.7150 | 0.0296 |
| 108 | 4.7446 | 0.0295 |
| 109 | 4.7740 | 0.0294 |
| 110 | 4.8034 | 0.0294 |
| 111 | 4.8326 | 0.0293 |
| 112 | 4.8618 | 0.0292 |
| 113 | 4.8909 | 0.0291 |
| 114 | 4.9199 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9777 | 0.0288 |
| 117 | 5.0065 | 0.0288 |
| 118 | 5.0351 | 0.0287 |
| 119 | 5.0637 | 0.0286 |
| 120 | 5.0923 | 0.0285 |
| 121 | 5.1207 | 0.0284 |
| 122 | 5.1491 | 0.0284 |
| 123 | 5.1774 | 0.0283 |
| 124 | 5.2056 | 0.0282 |
| 125 | 5.2337 | 0.0281 |
| 126 | 5.2618 | 0.0281 |
| 127 | 5.2898 | 0.0280 |
| 128 | 5.3177 | 0.0279 |
| 129 | 5.3456 | 0.0279 |
| 130 | 5.3734 | 0.0278 |
| 131 | 5.4011 | 0.0277 |
| 132 | 5.4287 | 0.0276 |
| 133 | 5.4563 | 0.0276 |
| 134 | 5.4838 | 0.0275 |
| 135 | 5.5112 | 0.0274 |
| 136 | 5.5386 | 0.0274 |
| 137 | 5.5659 | 0.0273 |
| 138 | 5.5931 | 0.0272 |
| 139 | 5.6203 | 0.0272 |
| 140 | 5.6474 | 0.0271 |
| 141 | 5.6745 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7284 | 0.0269 |
| 144 | 5.7552 | 0.0269 |
| 145 | 5.7820 | 0.0268 |
| 146 | 5.8088 | 0.0267 |
| 147 | 5.8354 | 0.0267 |
| 148 | 5.8621 | 0.0266 |
| 149 | 5.8886 | 0.0266 |
| 150 | 5.9151 | 0.0265 |
| 151 | 5.9416 | 0.0264 |
| 152 | 5.9679 | 0.0264 |
| 153 | 5.9943 | 0.0263 |
| 154 | 6.0205 | 0.0263 |
| 155 | 6.0468 | 0.0262 |

| | | |
|---|---|---|
| 156 | 6.0729 | 0.0262 |
| 157 | 6.0990 | 0.0261 |
| 158 | 6.1251 | 0.0260 |
| 159 | 6.1511 | 0.0260 |
| 160 | 6.1770 | 0.0259 |
| 161 | 6.2029 | 0.0259 |
| 162 | 6.2287 | 0.0258 |
| 163 | 6.2545 | 0.0258 |
| 164 | 6.2802 | 0.0257 |
| 165 | 6.3059 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3571 | 0.0256 |
| 168 | 6.3827 | 0.0255 |
| 169 | 6.4081 | 0.0255 |
| 170 | 6.4336 | 0.0254 |
| 171 | 6.4589 | 0.0254 |
| 172 | 6.4843 | 0.0253 |
| 173 | 6.5096 | 0.0253 |
| 174 | 6.5348 | 0.0252 |
| 175 | 6.5600 | 0.0252 |
| 176 | 6.5851 | 0.0251 |
| 177 | 6.6102 | 0.0251 |
| 178 | 6.6353 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6852 | 0.0250 |
| 181 | 6.7101 | 0.0249 |
| 182 | 6.7350 | 0.0249 |
| 183 | 6.7598 | 0.0248 |
| 184 | 6.7846 | 0.0248 |
| 185 | 6.8093 | 0.0247 |
| 186 | 6.8340 | 0.0247 |
| 187 | 6.8586 | 0.0246 |
| 188 | 6.8832 | 0.0246 |
| 189 | 6.9078 | 0.0246 |
| 190 | 6.9323 | 0.0245 |
| 191 | 6.9568 | 0.0245 |
| 192 | 6.9812 | 0.0244 |
| 193 | 7.0056 | 0.0244 |
| 194 | 7.0299 | 0.0243 |
| 195 | 7.0542 | 0.0243 |
| 196 | 7.0785 | 0.0243 |
| 197 | 7.1027 | 0.0242 |
| 198 | 7.1269 | 0.0242 |
| 199 | 7.1510 | 0.0241 |
| 200 | 7.1751 | 0.0241 |
| 201 | 7.1992 | 0.0241 |
| 202 | 7.2232 | 0.0240 |
| 203 | 7.2472 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2951 | 0.0239 |
| 206 | 7.3189 | 0.0239 |
| 207 | 7.3428 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3903 | 0.0238 |
| 210 | 7.4140 | 0.0237 |
| 211 | 7.4377 | 0.0237 |
| 212 | 7.4613 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5085 | 0.0236 |
| 215 | 7.5321 | 0.0235 |
| 216 | 7.5556 | 0.0235 |
| 217 | 7.5790 | 0.0235 |
| 218 | 7.6024 | 0.0234 |
| 219 | 7.6258 | 0.0234 |
| 220 | 7.6492 | 0.0234 |
| 221 | 7.6725 | 0.0233 |
| 222 | 7.6958 | 0.0233 |
| 223 | 7.7190 | 0.0233 |
| 224 | 7.7423 | 0.0232 |
| 225 | 7.7655 | 0.0232 |
| 226 | 7.7886 | 0.0232 |

| | | |
|---|---|---|
| 227 | 7.8117 | 0.0231 |
| 228 | 7.8348 | 0.0231 |
| 229 | 7.8579 | 0.0231 |
| 230 | 7.8809 | 0.0230 |
| 231 | 7.9039 | 0.0230 |
| 232 | 7.9268 | 0.0230 |
| 233 | 7.9497 | 0.0229 |
| 234 | 7.9726 | 0.0229 |
| 235 | 7.9955 | 0.0229 |
| 236 | 8.0183 | 0.0228 |
| 237 | 8.0411 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0866 | 0.0227 |
| 240 | 8.1093 | 0.0227 |
| 241 | 8.1319 | 0.0227 |
| 242 | 8.1546 | 0.0226 |
| 243 | 8.1772 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2223 | 0.0225 |
| 246 | 8.2448 | 0.0225 |
| 247 | 8.2673 | 0.0225 |
| 248 | 8.2897 | 0.0225 |
| 249 | 8.3122 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3569 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4016 | 0.0223 |
| 254 | 8.4238 | 0.0223 |
| 255 | 8.4461 | 0.0222 |
| 256 | 8.4683 | 0.0222 |
| 257 | 8.4905 | 0.0222 |
| 258 | 8.5127 | 0.0222 |
| 259 | 8.5348 | 0.0221 |
| 260 | 8.5569 | 0.0221 |
| 261 | 8.5790 | 0.0221 |
| 262 | 8.6010 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6670 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7109 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7546 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8200 | 0.0218 |
| 273 | 8.8418 | 0.0218 |
| 274 | 8.8635 | 0.0217 |
| 275 | 8.8852 | 0.0217 |
| 276 | 8.9069 | 0.0217 |
| 277 | 8.9285 | 0.0216 |
| 278 | 8.9502 | 0.0216 |
| 279 | 8.9718 | 0.0216 |
| 280 | 8.9933 | 0.0216 |
| 281 | 9.0149 | 0.0215 |
| 282 | 9.0364 | 0.0215 |
| 283 | 9.0579 | 0.0215 |
| 284 | 9.0794 | 0.0215 |
| 285 | 9.1008 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1650 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0063 | 0.0151 |
| 2 | 0.0214 | 0.0063 | 0.0151 |
| 3 | 0.0214 | 0.0063 | 0.0152 |
| 4 | 0.0215 | 0.0063 | 0.0152 |

| | | | |
|---|---|---|---|
| 5 | 0.0215 | 0.0063 | 0.0152 |
| 6 | 0.0215 | 0.0063 | 0.0152 |
| 7 | 0.0216 | 0.0063 | 0.0153 |
| 8 | 0.0216 | 0.0063 | 0.0153 |
| 9 | 0.0217 | 0.0064 | 0.0153 |
| 10 | 0.0217 | 0.0064 | 0.0153 |
| 11 | 0.0218 | 0.0064 | 0.0154 |
| 12 | 0.0218 | 0.0064 | 0.0154 |
| 13 | 0.0218 | 0.0064 | 0.0154 |
| 14 | 0.0219 | 0.0064 | 0.0154 |
| 15 | 0.0219 | 0.0064 | 0.0155 |
| 16 | 0.0219 | 0.0064 | 0.0155 |
| 17 | 0.0220 | 0.0065 | 0.0155 |
| 18 | 0.0220 | 0.0065 | 0.0156 |
| 19 | 0.0221 | 0.0065 | 0.0156 |
| 20 | 0.0221 | 0.0065 | 0.0156 |
| 21 | 0.0222 | 0.0065 | 0.0157 |
| 22 | 0.0222 | 0.0065 | 0.0157 |
| 23 | 0.0222 | 0.0065 | 0.0157 |
| 24 | 0.0223 | 0.0065 | 0.0157 |
| 25 | 0.0223 | 0.0066 | 0.0158 |
| 26 | 0.0224 | 0.0066 | 0.0158 |
| 27 | 0.0224 | 0.0066 | 0.0158 |
| 28 | 0.0225 | 0.0066 | 0.0159 |
| 29 | 0.0225 | 0.0066 | 0.0159 |
| 30 | 0.0225 | 0.0066 | 0.0159 |
| 31 | 0.0226 | 0.0066 | 0.0160 |
| 32 | 0.0226 | 0.0066 | 0.0160 |
| 33 | 0.0227 | 0.0067 | 0.0160 |
| 34 | 0.0227 | 0.0067 | 0.0161 |
| 35 | 0.0228 | 0.0067 | 0.0161 |
| 36 | 0.0228 | 0.0067 | 0.0161 |
| 37 | 0.0229 | 0.0067 | 0.0162 |
| 38 | 0.0229 | 0.0067 | 0.0162 |
| 39 | 0.0230 | 0.0067 | 0.0162 |
| 40 | 0.0230 | 0.0068 | 0.0163 |
| 41 | 0.0231 | 0.0068 | 0.0163 |
| 42 | 0.0231 | 0.0068 | 0.0163 |
| 43 | 0.0232 | 0.0068 | 0.0164 |
| 44 | 0.0232 | 0.0068 | 0.0164 |
| 45 | 0.0233 | 0.0068 | 0.0165 |
| 46 | 0.0233 | 0.0068 | 0.0165 |
| 47 | 0.0234 | 0.0069 | 0.0165 |
| 48 | 0.0234 | 0.0069 | 0.0166 |
| 49 | 0.0235 | 0.0069 | 0.0166 |
| 50 | 0.0235 | 0.0069 | 0.0166 |
| 51 | 0.0236 | 0.0069 | 0.0167 |
| 52 | 0.0236 | 0.0069 | 0.0167 |
| 53 | 0.0237 | 0.0070 | 0.0168 |
| 54 | 0.0238 | 0.0070 | 0.0168 |
| 55 | 0.0238 | 0.0070 | 0.0168 |
| 56 | 0.0239 | 0.0070 | 0.0169 |
| 57 | 0.0239 | 0.0070 | 0.0169 |
| 58 | 0.0240 | 0.0070 | 0.0169 |
| 59 | 0.0241 | 0.0071 | 0.0170 |
| 60 | 0.0241 | 0.0071 | 0.0170 |
| 61 | 0.0242 | 0.0071 | 0.0171 |
| 62 | 0.0242 | 0.0071 | 0.0171 |
| 63 | 0.0243 | 0.0071 | 0.0172 |
| 64 | 0.0243 | 0.0071 | 0.0172 |
| 65 | 0.0244 | 0.0072 | 0.0173 |
| 66 | 0.0245 | 0.0072 | 0.0173 |
| 67 | 0.0246 | 0.0072 | 0.0174 |
| 68 | 0.0246 | 0.0072 | 0.0174 |
| 69 | 0.0247 | 0.0072 | 0.0174 |
| 70 | 0.0247 | 0.0073 | 0.0175 |
| 71 | 0.0248 | 0.0073 | 0.0175 |
| 72 | 0.0249 | 0.0073 | 0.0176 |
| 73 | 0.0250 | 0.0073 | 0.0176 |
| 74 | 0.0250 | 0.0073 | 0.0177 |
| 75 | 0.0251 | 0.0074 | 0.0177 |

| | | | |
|---|---|---|---|
| 76 | 0.0251 | 0.0074 | 0.0178 |
| 77 | 0.0252 | 0.0074 | 0.0178 |
| 78 | 0.0253 | 0.0074 | 0.0179 |
| 79 | 0.0254 | 0.0074 | 0.0179 |
| 80 | 0.0254 | 0.0075 | 0.0180 |
| 81 | 0.0255 | 0.0075 | 0.0180 |
| 82 | 0.0256 | 0.0075 | 0.0181 |
| 83 | 0.0257 | 0.0075 | 0.0181 |
| 84 | 0.0257 | 0.0075 | 0.0182 |
| 85 | 0.0258 | 0.0076 | 0.0183 |
| 86 | 0.0259 | 0.0076 | 0.0183 |
| 87 | 0.0260 | 0.0076 | 0.0184 |
| 88 | 0.0260 | 0.0076 | 0.0184 |
| 89 | 0.0262 | 0.0077 | 0.0185 |
| 90 | 0.0262 | 0.0077 | 0.0185 |
| 91 | 0.0263 | 0.0077 | 0.0186 |
| 92 | 0.0264 | 0.0077 | 0.0186 |
| 93 | 0.0265 | 0.0078 | 0.0187 |
| 94 | 0.0266 | 0.0078 | 0.0188 |
| 95 | 0.0267 | 0.0078 | 0.0189 |
| 96 | 0.0267 | 0.0078 | 0.0189 |
| 97 | 0.0269 | 0.0079 | 0.0190 |
| 98 | 0.0269 | 0.0079 | 0.0190 |
| 99 | 0.0270 | 0.0079 | 0.0191 |
| 100 | 0.0271 | 0.0080 | 0.0192 |
| 101 | 0.0272 | 0.0080 | 0.0192 |
| 102 | 0.0273 | 0.0080 | 0.0193 |
| 103 | 0.0274 | 0.0080 | 0.0194 |
| 104 | 0.0275 | 0.0081 | 0.0194 |
| 105 | 0.0276 | 0.0081 | 0.0195 |
| 106 | 0.0277 | 0.0081 | 0.0196 |
| 107 | 0.0279 | 0.0082 | 0.0197 |
| 108 | 0.0279 | 0.0082 | 0.0197 |
| 109 | 0.0281 | 0.0082 | 0.0198 |
| 110 | 0.0281 | 0.0083 | 0.0199 |
| 111 | 0.0283 | 0.0083 | 0.0200 |
| 112 | 0.0284 | 0.0083 | 0.0200 |
| 113 | 0.0285 | 0.0084 | 0.0202 |
| 114 | 0.0286 | 0.0084 | 0.0202 |
| 115 | 0.0288 | 0.0084 | 0.0203 |
| 116 | 0.0288 | 0.0085 | 0.0204 |
| 117 | 0.0290 | 0.0085 | 0.0205 |
| 118 | 0.0291 | 0.0085 | 0.0206 |
| 119 | 0.0293 | 0.0086 | 0.0207 |
| 120 | 0.0294 | 0.0086 | 0.0207 |
| 121 | 0.0295 | 0.0087 | 0.0209 |
| 122 | 0.0296 | 0.0087 | 0.0209 |
| 123 | 0.0298 | 0.0087 | 0.0211 |
| 124 | 0.0299 | 0.0088 | 0.0211 |
| 125 | 0.0301 | 0.0088 | 0.0213 |
| 126 | 0.0302 | 0.0089 | 0.0213 |
| 127 | 0.0304 | 0.0089 | 0.0215 |
| 128 | 0.0305 | 0.0089 | 0.0216 |
| 129 | 0.0307 | 0.0090 | 0.0217 |
| 130 | 0.0308 | 0.0090 | 0.0218 |
| 131 | 0.0310 | 0.0091 | 0.0219 |
| 132 | 0.0311 | 0.0091 | 0.0220 |
| 133 | 0.0314 | 0.0092 | 0.0222 |
| 134 | 0.0315 | 0.0092 | 0.0223 |
| 135 | 0.0317 | 0.0093 | 0.0224 |
| 136 | 0.0318 | 0.0093 | 0.0225 |
| 137 | 0.0321 | 0.0094 | 0.0227 |
| 138 | 0.0322 | 0.0094 | 0.0228 |
| 139 | 0.0325 | 0.0095 | 0.0230 |
| 140 | 0.0326 | 0.0096 | 0.0230 |
| 141 | 0.0329 | 0.0096 | 0.0232 |
| 142 | 0.0330 | 0.0097 | 0.0233 |
| 143 | 0.0333 | 0.0098 | 0.0235 |
| 144 | 0.0335 | 0.0098 | 0.0237 |
| 145 | 0.0310 | 0.0091 | 0.0219 |
| 146 | 0.0312 | 0.0091 | 0.0220 |

| | | | |
|---|---|---|---|
| 147 | 0.0315 | 0.0092 | 0.0223 |
| 148 | 0.0317 | 0.0093 | 0.0224 |
| 149 | 0.0321 | 0.0094 | 0.0227 |
| 150 | 0.0322 | 0.0095 | 0.0228 |
| 151 | 0.0326 | 0.0096 | 0.0231 |
| 152 | 0.0328 | 0.0096 | 0.0232 |
| 153 | 0.0333 | 0.0098 | 0.0235 |
| 154 | 0.0335 | 0.0098 | 0.0237 |
| 155 | 0.0339 | 0.0100 | 0.0240 |
| 156 | 0.0342 | 0.0100 | 0.0241 |
| 157 | 0.0346 | 0.0102 | 0.0245 |
| 158 | 0.0349 | 0.0102 | 0.0247 |
| 159 | 0.0354 | 0.0104 | 0.0250 |
| 160 | 0.0357 | 0.0105 | 0.0252 |
| 161 | 0.0363 | 0.0106 | 0.0256 |
| 162 | 0.0366 | 0.0107 | 0.0258 |
| 163 | 0.0372 | 0.0109 | 0.0263 |
| 164 | 0.0375 | 0.0110 | 0.0265 |
| 165 | 0.0382 | 0.0112 | 0.0270 |
| 166 | 0.0386 | 0.0113 | 0.0272 |
| 167 | 0.0393 | 0.0115 | 0.0278 |
| 168 | 0.0397 | 0.0116 | 0.0281 |
| 169 | 0.0406 | 0.0119 | 0.0287 |
| 170 | 0.0410 | 0.0120 | 0.0290 |
| 171 | 0.0420 | 0.0123 | 0.0297 |
| 172 | 0.0425 | 0.0125 | 0.0300 |
| 173 | 0.0436 | 0.0128 | 0.0308 |
| 174 | 0.0441 | 0.0129 | 0.0312 |
| 175 | 0.0454 | 0.0133 | 0.0321 |
| 176 | 0.0461 | 0.0135 | 0.0326 |
| 177 | 0.0475 | 0.0139 | 0.0336 |
| 178 | 0.0483 | 0.0142 | 0.0342 |
| 179 | 0.0501 | 0.0147 | 0.0354 |
| 180 | 0.0511 | 0.0150 | 0.0361 |
| 181 | 0.0532 | 0.0156 | 0.0376 |
| 182 | 0.0545 | 0.0160 | 0.0385 |
| 183 | 0.0572 | 0.0168 | 0.0404 |
| 184 | 0.0588 | 0.0173 | 0.0416 |
| 185 | 0.0309 | 0.0091 | 0.0218 |
| 186 | 0.0329 | 0.0097 | 0.0233 |
| 187 | 0.0382 | 0.0112 | 0.0270 |
| 188 | 0.0417 | 0.0122 | 0.0295 |
| 189 | 0.0518 | 0.0152 | 0.0366 |
| 190 | 0.0597 | 0.0175 | 0.0422 |
| 191 | 0.0906 | 0.0266 | 0.0640 |
| 192 | 0.1315 | 0.0336 | 0.0979 |
| 193 | 0.5688 | 0.0336 | 0.5352 |
| 194 | 0.0713 | 0.0209 | 0.0504 |
| 195 | 0.0461 | 0.0135 | 0.0326 |
| 196 | 0.0353 | 0.0104 | 0.0250 |
| 197 | 0.0606 | 0.0178 | 0.0428 |
| 198 | 0.0558 | 0.0164 | 0.0394 |
| 199 | 0.0521 | 0.0153 | 0.0368 |
| 200 | 0.0492 | 0.0144 | 0.0348 |
| 201 | 0.0468 | 0.0137 | 0.0331 |
| 202 | 0.0448 | 0.0131 | 0.0316 |
| 203 | 0.0430 | 0.0126 | 0.0304 |
| 204 | 0.0415 | 0.0122 | 0.0293 |
| 205 | 0.0401 | 0.0118 | 0.0284 |
| 206 | 0.0389 | 0.0114 | 0.0275 |
| 207 | 0.0379 | 0.0111 | 0.0267 |
| 208 | 0.0369 | 0.0108 | 0.0261 |
| 209 | 0.0360 | 0.0106 | 0.0254 |
| 210 | 0.0352 | 0.0103 | 0.0248 |
| 211 | 0.0344 | 0.0101 | 0.0243 |
| 212 | 0.0337 | 0.0099 | 0.0238 |
| 213 | 0.0330 | 0.0097 | 0.0234 |
| 214 | 0.0324 | 0.0095 | 0.0229 |
| 215 | 0.0319 | 0.0093 | 0.0225 |
| 216 | 0.0313 | 0.0092 | 0.0221 |
| 217 | 0.0336 | 0.0099 | 0.0238 |

| | | | |
|---|---|---|---|
| 218 | 0.0332 | 0.0097 | 0.0234 |
| 219 | 0.0328 | 0.0096 | 0.0231 |
| 220 | 0.0323 | 0.0095 | 0.0229 |
| 221 | 0.0320 | 0.0094 | 0.0226 |
| 222 | 0.0316 | 0.0093 | 0.0223 |
| 223 | 0.0313 | 0.0092 | 0.0221 |
| 224 | 0.0309 | 0.0091 | 0.0219 |
| 225 | 0.0306 | 0.0090 | 0.0216 |
| 226 | 0.0303 | 0.0089 | 0.0214 |
| 227 | 0.0300 | 0.0088 | 0.0212 |
| 228 | 0.0297 | 0.0087 | 0.0210 |
| 229 | 0.0294 | 0.0086 | 0.0208 |
| 230 | 0.0292 | 0.0086 | 0.0206 |
| 231 | 0.0289 | 0.0085 | 0.0204 |
| 232 | 0.0287 | 0.0084 | 0.0203 |
| 233 | 0.0284 | 0.0083 | 0.0201 |
| 234 | 0.0282 | 0.0083 | 0.0199 |
| 235 | 0.0280 | 0.0082 | 0.0198 |
| 236 | 0.0278 | 0.0081 | 0.0196 |
| 237 | 0.0276 | 0.0081 | 0.0195 |
| 238 | 0.0274 | 0.0080 | 0.0193 |
| 239 | 0.0272 | 0.0080 | 0.0192 |
| 240 | 0.0270 | 0.0079 | 0.0191 |
| 241 | 0.0268 | 0.0079 | 0.0189 |
| 242 | 0.0266 | 0.0078 | 0.0188 |
| 243 | 0.0264 | 0.0078 | 0.0187 |
| 244 | 0.0263 | 0.0077 | 0.0186 |
| 245 | 0.0261 | 0.0077 | 0.0184 |
| 246 | 0.0259 | 0.0076 | 0.0183 |
| 247 | 0.0258 | 0.0076 | 0.0182 |
| 248 | 0.0256 | 0.0075 | 0.0181 |
| 249 | 0.0255 | 0.0075 | 0.0180 |
| 250 | 0.0253 | 0.0074 | 0.0179 |
| 251 | 0.0252 | 0.0074 | 0.0178 |
| 252 | 0.0250 | 0.0073 | 0.0177 |
| 253 | 0.0249 | 0.0073 | 0.0176 |
| 254 | 0.0248 | 0.0073 | 0.0175 |
| 255 | 0.0246 | 0.0072 | 0.0174 |
| 256 | 0.0245 | 0.0072 | 0.0173 |
| 257 | 0.0244 | 0.0072 | 0.0172 |
| 258 | 0.0243 | 0.0071 | 0.0171 |
| 259 | 0.0241 | 0.0071 | 0.0171 |
| 260 | 0.0240 | 0.0070 | 0.0170 |
| 261 | 0.0239 | 0.0070 | 0.0169 |
| 262 | 0.0238 | 0.0070 | 0.0168 |
| 263 | 0.0237 | 0.0069 | 0.0167 |
| 264 | 0.0236 | 0.0069 | 0.0167 |
| 265 | 0.0235 | 0.0069 | 0.0166 |
| 266 | 0.0234 | 0.0069 | 0.0165 |
| 267 | 0.0233 | 0.0068 | 0.0164 |
| 268 | 0.0232 | 0.0068 | 0.0164 |
| 269 | 0.0231 | 0.0068 | 0.0163 |
| 270 | 0.0230 | 0.0067 | 0.0162 |
| 271 | 0.0229 | 0.0067 | 0.0162 |
| 272 | 0.0228 | 0.0067 | 0.0161 |
| 273 | 0.0227 | 0.0066 | 0.0160 |
| 274 | 0.0226 | 0.0066 | 0.0160 |
| 275 | 0.0225 | 0.0066 | 0.0159 |
| 276 | 0.0224 | 0.0066 | 0.0158 |
| 277 | 0.0223 | 0.0065 | 0.0158 |
| 278 | 0.0222 | 0.0065 | 0.0157 |
| 279 | 0.0221 | 0.0065 | 0.0156 |
| 280 | 0.0221 | 0.0065 | 0.0156 |
| 281 | 0.0220 | 0.0064 | 0.0155 |
| 282 | 0.0219 | 0.0064 | 0.0155 |
| 283 | 0.0218 | 0.0064 | 0.0154 |
| 284 | 0.0217 | 0.0064 | 0.0154 |
| 285 | 0.0216 | 0.0063 | 0.0153 |
| 286 | 0.0216 | 0.0063 | 0.0152 |
| 287 | 0.0215 | 0.0063 | 0.0152 |
| 288 | 0.0214 | 0.0063 | 0.0151 |

```
      ----------------------------------------------------------------------
      ----------------------------------------------------------------------
      Total soil rain loss =      2.55(In)
      Total effective rainfall =      6.62(In)
      Peak flow rate in flood hydrograph =     11.88(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
----------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q          |          |          |          |
  0+10       0.0021      0.27  Q          |          |          |          |
  0+15       0.0059      0.55  VQ         |          |          |          |
  0+20       0.0104      0.65  VQ         |          |          |          |
  0+25       0.0153      0.71  VQ         |          |          |          |
  0+30       0.0204      0.75  VQ         |          |          |          |
  0+35       0.0258      0.77  VQ         |          |          |          |
  0+40       0.0312      0.78  VQ         |          |          |          |
  0+45       0.0366      0.79  VQ         |          |          |          |
  0+50       0.0421      0.79  VQ         |          |          |          |
  0+55       0.0476      0.80  VQ         |          |          |          |
  1+ 0       0.0531      0.80  VQ         |          |          |          |
  1+ 5       0.0586      0.80  VQ         |          |          |          |
  1+10       0.0642      0.81  |Q         |          |          |          |
  1+15       0.0697      0.81  |Q         |          |          |          |
  1+20       0.0753      0.81  |Q         |          |          |          |
  1+25       0.0809      0.81  |Q         |          |          |          |
  1+30       0.0865      0.81  |Q         |          |          |          |
  1+35       0.0921      0.81  |Q         |          |          |          |
  1+40       0.0977      0.81  |Q         |          |          |          |
  1+45       0.1033      0.82  |Q         |          |          |          |
  1+50       0.1090      0.82  |Q         |          |          |          |
  1+55       0.1146      0.82  |Q         |          |          |          |
  2+ 0       0.1202      0.82  |QV        |          |          |          |
  2+ 5       0.1259      0.82  |QV        |          |          |          |
  2+10       0.1316      0.82  |QV        |          |          |          |
  2+15       0.1373      0.83  |QV        |          |          |          |
  2+20       0.1430      0.83  |QV        |          |          |          |
  2+25       0.1487      0.83  |QV        |          |          |          |
  2+30       0.1544      0.83  |QV        |          |          |          |
  2+35       0.1601      0.83  |QV        |          |          |          |
  2+40       0.1659      0.83  |QV        |          |          |          |
  2+45       0.1716      0.84  |QV        |          |          |          |
  2+50       0.1774      0.84  |QV        |          |          |          |
  2+55       0.1832      0.84  |Q V       |          |          |          |
  3+ 0       0.1890      0.84  |Q V       |          |          |          |
  3+ 5       0.1948      0.84  |Q V       |          |          |          |
  3+10       0.2006      0.84  |Q V       |          |          |          |
  3+15       0.2064      0.85  |Q V       |          |          |          |
  3+20       0.2123      0.85  |Q V       |          |          |          |
  3+25       0.2181      0.85  |Q V       |          |          |          |
  3+30       0.2240      0.85  |Q V       |          |          |          |
  3+35       0.2299      0.85  |Q V       |          |          |          |
  3+40       0.2357      0.86  |Q V       |          |          |          |
  3+45       0.2416      0.86  |Q  V      |          |          |          |
  3+50       0.2476      0.86  |Q  V      |          |          |          |
  3+55       0.2535      0.86  |Q  V      |          |          |          |
  4+ 0       0.2594      0.86  |Q  V      |          |          |          |
  4+ 5       0.2654      0.86  |Q  V      |          |          |          |
  4+10       0.2714      0.87  |Q  V      |          |          |          |
  4+15       0.2773      0.87  |Q  V      |          |          |          |
  4+20       0.2833      0.87  |Q  V      |          |          |          |
  4+25       0.2893      0.87  |Q  V      |          |          |          |
  4+30       0.2954      0.87  |Q  V      |          |          |          |
  4+35       0.3014      0.88  |Q   V     |          |          |          |
  4+40       0.3075      0.88  |Q   V     |          |          |          |
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 4+45      0.3135      0.88  |Q   V    |          |          |          |
 4+50      0.3196      0.88  |Q   V    |          |          |          |
 4+55      0.3257      0.89  |Q   V    |          |          |          |
 5+ 0      0.3318      0.89  |Q   V    |          |          |          |
 5+ 5      0.3379      0.89  |Q   V    |          |          |          |
 5+10      0.3441      0.89  |Q   V    |          |          |          |
 5+15      0.3502      0.89  |Q   V    |          |          |          |
 5+20      0.3564      0.90  |Q   V    |          |          |          |
 5+25      0.3626      0.90  |Q    V   |          |          |          |
 5+30      0.3688      0.90  |Q    V   |          |          |          |
 5+35      0.3750      0.90  |Q    V   |          |          |          |
 5+40      0.3812      0.91  |Q    V   |          |          |          |
 5+45      0.3875      0.91  |Q    V   |          |          |          |
 5+50      0.3938      0.91  |Q    V   |          |          |          |
 5+55      0.4000      0.91  |Q    V   |          |          |          |
 6+ 0      0.4063      0.91  |Q    V   |          |          |          |
 6+ 5      0.4127      0.92  |Q    V   |          |          |          |
 6+10      0.4190      0.92  |Q     V  |          |          |          |
 6+15      0.4254      0.92  |Q     V  |          |          |          |
 6+20      0.4317      0.92  |Q     V  |          |          |          |
 6+25      0.4381      0.93  |Q     V  |          |          |          |
 6+30      0.4445      0.93  |Q     V  |          |          |          |
 6+35      0.4509      0.93  |Q     V  |          |          |          |
 6+40      0.4574      0.94  |Q     V  |          |          |          |
 6+45      0.4638      0.94  |Q     V  |          |          |          |
 6+50      0.4703      0.94  |Q     V  |          |          |          |
 6+55      0.4768      0.94  |Q     V  |          |          |          |
 7+ 0      0.4833      0.95  |Q      V |          |          |          |
 7+ 5      0.4899      0.95  |Q      V |          |          |          |
 7+10      0.4964      0.95  |Q      V |          |          |          |
 7+15      0.5030      0.95  |Q      V |          |          |          |
 7+20      0.5096      0.96  |Q      V |          |          |          |
 7+25      0.5162      0.96  |Q      V |          |          |          |
 7+30      0.5228      0.96  |Q      V |          |          |          |
 7+35      0.5295      0.97  |Q      V |          |          |          |
 7+40      0.5362      0.97  |Q      V |          |          |          |
 7+45      0.5429      0.97  |Q       V|          |          |          |
 7+50      0.5496      0.98  |Q       V|          |          |          |
 7+55      0.5563      0.98  |Q       V|          |          |          |
 8+ 0      0.5631      0.98  |Q       V|          |          |          |
 8+ 5      0.5699      0.99  |Q       V|          |          |          |
 8+10      0.5767      0.99  |Q       V|          |          |          |
 8+15      0.5835      0.99  |Q       V|          |          |          |
 8+20      0.5904      1.00  |Q       V|          |          |          |
 8+25      0.5973      1.00  |Q        V          |          |          |
 8+30      0.6042      1.00  | Q       V          |          |          |
 8+35      0.6111      1.01  | Q       V          |          |          |
 8+40      0.6181      1.01  | Q       V          |          |          |
 8+45      0.6251      1.01  | Q       V          |          |          |
 8+50      0.6321      1.02  | Q       V          |          |          |
 8+55      0.6391      1.02  | Q       V          |          |          |
 9+ 0      0.6462      1.02  | Q       V          |          |          |
 9+ 5      0.6532      1.03  | Q       V          |          |          |
 9+10      0.6604      1.03  | Q       |V         |          |          |
 9+15      0.6675      1.04  | Q       |V         |          |          |
 9+20      0.6747      1.04  | Q       |V         |          |          |
 9+25      0.6819      1.05  | Q       |V         |          |          |
 9+30      0.6891      1.05  | Q       |V         |          |          |
 9+35      0.6963      1.05  | Q       |V         |          |          |
 9+40      0.7036      1.06  | Q       |V         |          |          |
 9+45      0.7109      1.06  | Q       |V         |          |          |
 9+50      0.7183      1.07  | Q       | V        |          |          |
 9+55      0.7257      1.07  | Q       | V        |          |          |
10+ 0      0.7331      1.08  | Q       | V        |          |          |
10+ 5      0.7405      1.08  | Q       | V        |          |          |
10+10      0.7480      1.09  | Q       | V        |          |          |
10+15      0.7555      1.09  | Q       | V        |          |          |
10+20      0.7631      1.10  | Q       | V        |          |          |
10+25      0.7706      1.10  | Q       | V        |          |          |
10+30      0.7783      1.11  | Q       |  V       |          |          |
10+35      0.7859      1.11  | Q       |  V       |          |          |
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10+40       0.7936      1.12  | Q       |  V      |         |         |
10+45       0.8013      1.12  | Q       |  V      |         |         |
10+50       0.8091      1.13  | Q       |  V      |         |         |
10+55       0.8169      1.13  | Q       |  V      |         |         |
11+ 0       0.8248      1.14  | Q       |  V      |         |         |
11+ 5       0.8326      1.15  | Q       |  V      |         |         |
11+10       0.8406      1.15  | Q       |   V     |         |         |
11+15       0.8486      1.16  | Q       |   V     |         |         |
11+20       0.8566      1.16  | Q       |   V     |         |         |
11+25       0.8646      1.17  | Q       |   V     |         |         |
11+30       0.8727      1.18  | Q       |   V     |         |         |
11+35       0.8809      1.18  | Q       |   V     |         |         |
11+40       0.8891      1.19  | Q       |   V     |         |         |
11+45       0.8974      1.20  | Q       |    V    |         |         |
11+50       0.9057      1.21  | Q       |    V    |         |         |
11+55       0.9140      1.21  | Q       |    V    |         |         |
12+ 0       0.9224      1.22  | Q       |    V    |         |         |
12+ 5       0.9309      1.22  | Q       |    V    |         |         |
12+10       0.9391      1.20  | Q       |    V    |         |         |
12+15       0.9472      1.17  | Q       |    V    |         |         |
12+20       0.9553      1.17  | Q       |     V   |         |         |
12+25       0.9634      1.17  | Q       |     V   |         |         |
12+30       0.9715      1.18  | Q       |     V   |         |         |
12+35       0.9796      1.18  | Q       |     V   |         |         |
12+40       0.9879      1.19  | Q       |     V   |         |         |
12+45       0.9962      1.20  | Q       |     V   |         |         |
12+50       1.0045      1.21  | Q       |     V   |         |         |
12+55       1.0130      1.23  | Q       |     V   |         |         |
13+ 0       1.0215      1.24  | Q       |      V  |         |         |
13+ 5       1.0301      1.25  | Q       |      V  |         |         |
13+10       1.0388      1.26  | Q       |      V  |         |         |
13+15       1.0476      1.28  | Q       |      V  |         |         |
13+20       1.0565      1.29  | Q       |      V  |         |         |
13+25       1.0655      1.30  | Q       |      V  |         |         |
13+30       1.0745      1.32  | Q       |       V |         |         |
13+35       1.0837      1.34  | Q       |       V |         |         |
13+40       1.0930      1.35  | Q       |       V |         |         |
13+45       1.1025      1.37  | Q       |       V |         |         |
13+50       1.1120      1.39  | Q       |       V |         |         |
13+55       1.1217      1.41  | Q       |       V |         |         |
14+ 0       1.1315      1.43  | Q       |       V |         |         |
14+ 5       1.1415      1.45  | Q       |        V|         |         |
14+10       1.1516      1.47  | Q       |        V|         |         |
14+15       1.1619      1.49  | Q       |        V|         |         |
14+20       1.1723      1.52  |  Q      |        V|         |         |
14+25       1.1829      1.54  |  Q      |        V|         |         |
14+30       1.1937      1.57  |  Q      |         V         |         |
14+35       1.2047      1.60  |  Q      |         V         |         |
14+40       1.2160      1.63  |  Q      |         V         |         |
14+45       1.2275      1.67  |  Q      |         V         |         |
14+50       1.2392      1.70  |  Q      |         V         |         |
14+55       1.2512      1.74  |  Q      |         V         |         |
15+ 0       1.2635      1.79  |  Q      |         |V        |         |
15+ 5       1.2761      1.84  |  Q      |         |V        |         |
15+10       1.2891      1.89  |  Q      |         |V        |         |
15+15       1.3026      1.95  |  Q      |         |V        |         |
15+20       1.3164      2.01  |   Q     |         | V       |         |
15+25       1.3304      2.03  |   Q     |         | V       |         |
15+30       1.3427      1.78  |  Q      |         | V       |         |
15+35       1.3528      1.47  | Q       |         | V       |         |
15+40       1.3627      1.44  | Q       |         | V       |         |
15+45       1.3730      1.50  |  Q      |         |  V      |         |
15+50       1.3844      1.66  |  Q      |         |  V      |         |
15+55       1.3978      1.94  |  Q      |         |  V      |         |
16+ 0       1.4152      2.52  |    Q    |         |  V      |         |
16+ 5       1.4475      4.70  |       Q |         |   V     |         |
16+10       1.5216     10.75  |         |         |Q   V    |         |
16+15       1.6034     11.88  |         |         |  Q  V   |         |
16+20       1.6430      5.76  |         |Q        |      V  |         |
16+25       1.6699      3.91  |      Q  |         |      V  |         |
16+30       1.6916      3.15  |     Q   |         |       V |         |
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16+35       1.7108      2.78  |    Q    |         |       V |         |
16+40       1.7268      2.32  |   Q     |         |       V |         |
16+45       1.7411      2.08  |   Q     |         |        V|         |
16+50       1.7545      1.95  |  Q      |         |        V|         |
16+55       1.7674      1.87  |  Q      |         |        V|         |
17+ 0       1.7795      1.75  |  Q      |         |        V|         |
17+ 5       1.7908      1.64  |  Q      |         |         V         |
17+10       1.8016      1.56  |  Q      |         |         V         |
17+15       1.8120      1.51  |  Q      |         |         V         |
17+20       1.8220      1.46  | Q       |         |         V         |
17+25       1.8318      1.42  | Q       |         |         V         |
17+30       1.8413      1.38  | Q       |         |         V         |
17+35       1.8506      1.35  | Q       |         |         |V        |
17+40       1.8597      1.32  | Q       |         |         |V        |
17+45       1.8685      1.29  | Q       |         |         |V        |
17+50       1.8772      1.26  | Q       |         |         |V        |
17+55       1.8857      1.23  | Q       |         |         |V        |
18+ 0       1.8940      1.21  | Q       |         |         |V        |
18+ 5       1.9023      1.19  | Q       |         |         |V        |
18+10       1.9105      1.20  | Q       |         |         | V       |
18+15       1.9189      1.22  | Q       |         |         | V       |
18+20       1.9273      1.22  | Q       |         |         | V       |
18+25       1.9356      1.21  | Q       |         |         | V       |
18+30       1.9439      1.20  | Q       |         |         | V       |
18+35       1.9521      1.19  | Q       |         |         | V       |
18+40       1.9601      1.17  | Q       |         |         | V       |
18+45       1.9681      1.16  | Q       |         |         | V       |
18+50       1.9760      1.15  | Q       |         |         |  V      |
18+55       1.9839      1.14  | Q       |         |         |  V      |
19+ 0       1.9916      1.13  | Q       |         |         |  V      |
19+ 5       1.9993      1.11  | Q       |         |         |  V      |
19+10       2.0069      1.10  | Q       |         |         |  V      |
19+15       2.0144      1.09  | Q       |         |         |  V      |
19+20       2.0219      1.08  | Q       |         |         |  V      |
19+25       2.0293      1.07  | Q       |         |         |   V     |
19+30       2.0366      1.06  | Q       |         |         |   V     |
19+35       2.0439      1.06  | Q       |         |         |   V     |
19+40       2.0511      1.05  | Q       |         |         |   V     |
19+45       2.0583      1.04  | Q       |         |         |   V     |
19+50       2.0654      1.03  | Q       |         |         |   V     |
19+55       2.0724      1.02  | Q       |         |         |   V     |
20+ 0       2.0794      1.02  | Q       |         |         |   V     |
20+ 5       2.0863      1.01  | Q       |         |         |   V     |
20+10       2.0932      1.00  | Q       |         |         |    V    |
20+15       2.1001      0.99  |Q        |         |         |    V    |
20+20       2.1069      0.99  |Q        |         |         |    V    |
20+25       2.1136      0.98  |Q        |         |         |    V    |
20+30       2.1204      0.97  |Q        |         |         |    V    |
20+35       2.1270      0.97  |Q        |         |         |    V    |
20+40       2.1337      0.96  |Q        |         |         |    V    |
20+45       2.1402      0.96  |Q        |         |         |    V    |
20+50       2.1468      0.95  |Q        |         |         |    V    |
20+55       2.1533      0.94  |Q        |         |         |     V   |
21+ 0       2.1598      0.94  |Q        |         |         |     V   |
21+ 5       2.1662      0.93  |Q        |         |         |     V   |
21+10       2.1726      0.93  |Q        |         |         |     V   |
21+15       2.1789      0.92  |Q        |         |         |     V   |
21+20       2.1853      0.92  |Q        |         |         |     V   |
21+25       2.1916      0.91  |Q        |         |         |     V   |
21+30       2.1978      0.91  |Q        |         |         |     V   |
21+35       2.2041      0.90  |Q        |         |         |     V   |
21+40       2.2102      0.90  |Q        |         |         |      V  |
21+45       2.2164      0.90  |Q        |         |         |      V  |
21+50       2.2225      0.89  |Q        |         |         |      V  |
21+55       2.2287      0.89  |Q        |         |         |      V  |
22+ 0       2.2347      0.88  |Q        |         |         |      V  |
22+ 5       2.2408      0.88  |Q        |         |         |      V  |
22+10       2.2468      0.87  |Q        |         |         |      V  |
22+15       2.2528      0.87  |Q        |         |         |      V  |
22+20       2.2587      0.87  |Q        |         |         |      V  |
22+25       2.2647      0.86  |Q        |         |         |      V  |
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   22+30       2.2706      0.86  |Q        |         |         |       V |
   22+35       2.2765      0.85  |Q        |         |         |       V |
   22+40       2.2823      0.85  |Q        |         |         |       V |
   22+45       2.2882      0.85  |Q        |         |         |       V |
   22+50       2.2940      0.84  |Q        |         |         |       V |
   22+55       2.2998      0.84  |Q        |         |         |       V |
   23+ 0       2.3055      0.84  |Q        |         |         |       V |
   23+ 5       2.3113      0.83  |Q        |         |         |       V |
   23+10       2.3170      0.83  |Q        |         |         |       V |
   23+15       2.3227      0.83  |Q        |         |         |       V |
   23+20       2.3283      0.82  |Q        |         |         |        V|
   23+25       2.3340      0.82  |Q        |         |         |        V|
   23+30       2.3396      0.82  |Q        |         |         |        V|
   23+35       2.3452      0.81  |Q        |         |         |        V|
   23+40       2.3508      0.81  |Q        |         |         |        V|
   23+45       2.3564      0.81  |Q        |         |         |        V|
   23+50       2.3619      0.81  |Q        |         |         |        V|
   23+55       2.3674      0.80  |Q        |         |         |        V|
   24+ 0       2.3729      0.80  |Q        |         |         |        V|
   24+ 5       2.3781      0.76  |Q        |         |         |        V|
   24+10       2.3818      0.53  |Q        |         |         |        V|
   24+15       2.3835      0.25  Q         |         |         |        V|
   24+20       2.3844      0.14  Q         |         |         |        V|
   24+25       2.3850      0.08  Q         |         |         |        V|
   24+30       2.3853      0.05  Q         |         |         |        V|
   24+35       2.3855      0.02  Q         |         |         |        V|
   24+40       2.3856      0.01  Q         |         |         |        V|
   24+45       2.3856      0.01  Q         |         |         |        V|
   24+50       2.3857      0.01  Q         |         |         |        V|
   24+55       2.3857      0.00  Q         |         |         |        V|
   25+ 0       2.3857      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area 'B' – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
100 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             4.33            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             4.33            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             4.33           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             4.33            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             4.33            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             4.33           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      92.8          4.33      1.000     0.140    1.000    0.140

Area-averaged adjusted loss rate Fm (In/Hr) =  0.140

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 4.33 | 1.000 | 78.0 | 92.8 | 0.78 | 0.926 |

Area-averaged catchment yield fraction, Y = 0.926
Area-averaged low loss fraction, Yb = 0.074
User entry of time of concentration = 0.182 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 4.33(Ac.)
Catchment Lag time = 0.146 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 57.2344
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.140(In/Hr)
Average low loss rate fraction (Yb) = 0.074 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 4.33(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.712(In)
30-minute factor = 1.000 Adjusted rainfall = 1.218(In)
1-hour factor = 1.000 Adjusted rainfall = 1.500(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 52.37 (CFS)) | |
| 1 | 5.210 | 2.728 |
| 2 | 33.842 | 14.993 |
| 3 | 69.240 | 18.537 |
| 4 | 82.158 | 6.765 |
| 5 | 89.615 | 3.905 |
| 6 | 94.272 | 2.439 |
| 7 | 97.009 | 1.433 |
| 8 | 98.250 | 0.650 |
| 9 | 98.857 | 0.318 |
| 10 | 99.271 | 0.217 |
| 11 | 99.677 | 0.213 |
| 12 | 99.909 | 0.121 |
| 13 | 100.000 | 0.048 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7116 | 0.7116 |
| 2 | 0.8761 | 0.1645 |
| 3 | 0.9894 | 0.1133 |
| 4 | 1.0786 | 0.0892 |
| 5 | 1.1533 | 0.0747 |
| 6 | 1.2181 | 0.0648 |
| 7 | 1.2758 | 0.0577 |
| 8 | 1.3279 | 0.0521 |
| 9 | 1.3757 | 0.0478 |
| 10 | 1.4199 | 0.0442 |
| 11 | 1.4611 | 0.0412 |
| 12 | 1.4997 | 0.0386 |
| 13 | 1.5752 | 0.0755 |

| | | |
|---|---|---|
| 14 | 1.6484 | 0.0732 |
| 15 | 1.7196 | 0.0712 |
| 16 | 1.7891 | 0.0694 |
| 17 | 1.8569 | 0.0678 |
| 18 | 1.9231 | 0.0662 |
| 19 | 1.9879 | 0.0648 |
| 20 | 2.0515 | 0.0635 |
| 21 | 2.1138 | 0.0623 |
| 22 | 2.1750 | 0.0612 |
| 23 | 2.2351 | 0.0601 |
| 24 | 2.2942 | 0.0591 |
| 25 | 2.3523 | 0.0582 |
| 26 | 2.4096 | 0.0573 |
| 27 | 2.4660 | 0.0564 |
| 28 | 2.5217 | 0.0556 |
| 29 | 2.5765 | 0.0549 |
| 30 | 2.6307 | 0.0541 |
| 31 | 2.6841 | 0.0534 |
| 32 | 2.7369 | 0.0528 |
| 33 | 2.7890 | 0.0521 |
| 34 | 2.8405 | 0.0515 |
| 35 | 2.8915 | 0.0510 |
| 36 | 2.9419 | 0.0504 |
| 37 | 2.9917 | 0.0498 |
| 38 | 3.0410 | 0.0493 |
| 39 | 3.0899 | 0.0488 |
| 40 | 3.1382 | 0.0483 |
| 41 | 3.1861 | 0.0479 |
| 42 | 3.2335 | 0.0474 |
| 43 | 3.2805 | 0.0470 |
| 44 | 3.3271 | 0.0466 |
| 45 | 3.3732 | 0.0462 |
| 46 | 3.4190 | 0.0458 |
| 47 | 3.4644 | 0.0454 |
| 48 | 3.5094 | 0.0450 |
| 49 | 3.5541 | 0.0447 |
| 50 | 3.5984 | 0.0443 |
| 51 | 3.6423 | 0.0440 |
| 52 | 3.6859 | 0.0436 |
| 53 | 3.7292 | 0.0433 |
| 54 | 3.7722 | 0.0430 |
| 55 | 3.8149 | 0.0427 |
| 56 | 3.8573 | 0.0424 |
| 57 | 3.8994 | 0.0421 |
| 58 | 3.9412 | 0.0418 |
| 59 | 3.9827 | 0.0415 |
| 60 | 4.0240 | 0.0413 |
| 61 | 4.0650 | 0.0410 |
| 62 | 4.1057 | 0.0407 |
| 63 | 4.1462 | 0.0405 |
| 64 | 4.1864 | 0.0402 |
| 65 | 4.2264 | 0.0400 |
| 66 | 4.2661 | 0.0398 |
| 67 | 4.3057 | 0.0395 |
| 68 | 4.3450 | 0.0393 |
| 69 | 4.3840 | 0.0391 |
| 70 | 4.4229 | 0.0388 |
| 71 | 4.4615 | 0.0386 |
| 72 | 4.4999 | 0.0384 |
| 73 | 4.5441 | 0.0441 |
| 74 | 4.5880 | 0.0440 |
| 75 | 4.6318 | 0.0438 |
| 76 | 4.6754 | 0.0436 |
| 77 | 4.7189 | 0.0434 |
| 78 | 4.7621 | 0.0433 |
| 79 | 4.8053 | 0.0431 |
| 80 | 4.8482 | 0.0430 |
| 81 | 4.8910 | 0.0428 |
| 82 | 4.9337 | 0.0426 |
| 83 | 4.9761 | 0.0425 |
| 84 | 5.0185 | 0.0423 |

| | | |
|---|---|---|
| 85 | 5.0607 | 0.0422 |
| 86 | 5.1027 | 0.0421 |
| 87 | 5.1446 | 0.0419 |
| 88 | 5.1864 | 0.0418 |
| 89 | 5.2280 | 0.0416 |
| 90 | 5.2695 | 0.0415 |
| 91 | 5.3109 | 0.0414 |
| 92 | 5.3521 | 0.0412 |
| 93 | 5.3932 | 0.0411 |
| 94 | 5.4342 | 0.0410 |
| 95 | 5.4750 | 0.0408 |
| 96 | 5.5157 | 0.0407 |
| 97 | 5.5563 | 0.0406 |
| 98 | 5.5968 | 0.0405 |
| 99 | 5.6371 | 0.0403 |
| 100 | 5.6774 | 0.0402 |
| 101 | 5.7175 | 0.0401 |
| 102 | 5.7575 | 0.0400 |
| 103 | 5.7974 | 0.0399 |
| 104 | 5.8371 | 0.0398 |
| 105 | 5.8768 | 0.0397 |
| 106 | 5.9163 | 0.0395 |
| 107 | 5.9558 | 0.0394 |
| 108 | 5.9951 | 0.0393 |
| 109 | 6.0343 | 0.0392 |
| 110 | 6.0734 | 0.0391 |
| 111 | 6.1124 | 0.0390 |
| 112 | 6.1513 | 0.0389 |
| 113 | 6.1902 | 0.0388 |
| 114 | 6.2289 | 0.0387 |
| 115 | 6.2675 | 0.0386 |
| 116 | 6.3060 | 0.0385 |
| 117 | 6.3444 | 0.0384 |
| 118 | 6.3827 | 0.0383 |
| 119 | 6.4209 | 0.0382 |
| 120 | 6.4591 | 0.0381 |
| 121 | 6.4971 | 0.0380 |
| 122 | 6.5351 | 0.0379 |
| 123 | 6.5729 | 0.0379 |
| 124 | 6.6107 | 0.0378 |
| 125 | 6.6483 | 0.0377 |
| 126 | 6.6859 | 0.0376 |
| 127 | 6.7234 | 0.0375 |
| 128 | 6.7608 | 0.0374 |
| 129 | 6.7982 | 0.0373 |
| 130 | 6.8354 | 0.0372 |
| 131 | 6.8726 | 0.0372 |
| 132 | 6.9097 | 0.0371 |
| 133 | 6.9467 | 0.0370 |
| 134 | 6.9836 | 0.0369 |
| 135 | 7.0204 | 0.0368 |
| 136 | 7.0572 | 0.0368 |
| 137 | 7.0938 | 0.0367 |
| 138 | 7.1304 | 0.0366 |
| 139 | 7.1669 | 0.0365 |
| 140 | 7.2034 | 0.0364 |
| 141 | 7.2398 | 0.0364 |
| 142 | 7.2760 | 0.0363 |
| 143 | 7.3123 | 0.0362 |
| 144 | 7.3484 | 0.0361 |
| 145 | 7.3845 | 0.0361 |
| 146 | 7.4205 | 0.0360 |
| 147 | 7.4564 | 0.0359 |
| 148 | 7.4922 | 0.0359 |
| 149 | 7.5280 | 0.0358 |
| 150 | 7.5637 | 0.0357 |
| 151 | 7.5994 | 0.0356 |
| 152 | 7.6350 | 0.0356 |
| 153 | 7.6705 | 0.0355 |
| 154 | 7.7059 | 0.0354 |
| 155 | 7.7413 | 0.0354 |

| | | |
|---|---|---|
| 156 | 7.7766 | 0.0353 |
| 157 | 7.8118 | 0.0352 |
| 158 | 7.8470 | 0.0352 |
| 159 | 7.8821 | 0.0351 |
| 160 | 7.9171 | 0.0350 |
| 161 | 7.9521 | 0.0350 |
| 162 | 7.9870 | 0.0349 |
| 163 | 8.0219 | 0.0349 |
| 164 | 8.0567 | 0.0348 |
| 165 | 8.0914 | 0.0347 |
| 166 | 8.1260 | 0.0347 |
| 167 | 8.1607 | 0.0346 |
| 168 | 8.1952 | 0.0345 |
| 169 | 8.2297 | 0.0345 |
| 170 | 8.2641 | 0.0344 |
| 171 | 8.2985 | 0.0344 |
| 172 | 8.3328 | 0.0343 |
| 173 | 8.3670 | 0.0342 |
| 174 | 8.4012 | 0.0342 |
| 175 | 8.4353 | 0.0341 |
| 176 | 8.4694 | 0.0341 |
| 177 | 8.5034 | 0.0340 |
| 178 | 8.5374 | 0.0340 |
| 179 | 8.5713 | 0.0339 |
| 180 | 8.6052 | 0.0339 |
| 181 | 8.6390 | 0.0338 |
| 182 | 8.6727 | 0.0337 |
| 183 | 8.7064 | 0.0337 |
| 184 | 8.7400 | 0.0336 |
| 185 | 8.7736 | 0.0336 |
| 186 | 8.8071 | 0.0335 |
| 187 | 8.8406 | 0.0335 |
| 188 | 8.8740 | 0.0334 |
| 189 | 8.9074 | 0.0334 |
| 190 | 8.9407 | 0.0333 |
| 191 | 8.9740 | 0.0333 |
| 192 | 9.0072 | 0.0332 |
| 193 | 9.0404 | 0.0332 |
| 194 | 9.0735 | 0.0331 |
| 195 | 9.1066 | 0.0331 |
| 196 | 9.1396 | 0.0330 |
| 197 | 9.1725 | 0.0330 |
| 198 | 9.2055 | 0.0329 |
| 199 | 9.2383 | 0.0329 |
| 200 | 9.2711 | 0.0328 |
| 201 | 9.3039 | 0.0328 |
| 202 | 9.3366 | 0.0327 |
| 203 | 9.3693 | 0.0327 |
| 204 | 9.4020 | 0.0326 |
| 205 | 9.4345 | 0.0326 |
| 206 | 9.4671 | 0.0325 |
| 207 | 9.4996 | 0.0325 |
| 208 | 9.5320 | 0.0324 |
| 209 | 9.5644 | 0.0324 |
| 210 | 9.5968 | 0.0324 |
| 211 | 9.6291 | 0.0323 |
| 212 | 9.6614 | 0.0323 |
| 213 | 9.6936 | 0.0322 |
| 214 | 9.7258 | 0.0322 |
| 215 | 9.7579 | 0.0321 |
| 216 | 9.7900 | 0.0321 |
| 217 | 9.8220 | 0.0320 |
| 218 | 9.8540 | 0.0320 |
| 219 | 9.8860 | 0.0320 |
| 220 | 9.9179 | 0.0319 |
| 221 | 9.9498 | 0.0319 |
| 222 | 9.9816 | 0.0318 |
| 223 | 10.0134 | 0.0318 |
| 224 | 10.0452 | 0.0317 |
| 225 | 10.0769 | 0.0317 |
| 226 | 10.1085 | 0.0317 |

| | | |
|---|---|---|
| 227 | 10.1402 | 0.0316 |
| 228 | 10.1717 | 0.0316 |
| 229 | 10.2033 | 0.0315 |
| 230 | 10.2348 | 0.0315 |
| 231 | 10.2662 | 0.0315 |
| 232 | 10.2977 | 0.0314 |
| 233 | 10.3291 | 0.0314 |
| 234 | 10.3604 | 0.0313 |
| 235 | 10.3917 | 0.0313 |
| 236 | 10.4230 | 0.0313 |
| 237 | 10.4542 | 0.0312 |
| 238 | 10.4854 | 0.0312 |
| 239 | 10.5165 | 0.0312 |
| 240 | 10.5477 | 0.0311 |
| 241 | 10.5787 | 0.0311 |
| 242 | 10.6098 | 0.0310 |
| 243 | 10.6408 | 0.0310 |
| 244 | 10.6717 | 0.0310 |
| 245 | 10.7027 | 0.0309 |
| 246 | 10.7336 | 0.0309 |
| 247 | 10.7644 | 0.0309 |
| 248 | 10.7952 | 0.0308 |
| 249 | 10.8260 | 0.0308 |
| 250 | 10.8567 | 0.0307 |
| 251 | 10.8875 | 0.0307 |
| 252 | 10.9181 | 0.0307 |
| 253 | 10.9488 | 0.0306 |
| 254 | 10.9794 | 0.0306 |
| 255 | 11.0099 | 0.0306 |
| 256 | 11.0405 | 0.0305 |
| 257 | 11.0710 | 0.0305 |
| 258 | 11.1014 | 0.0305 |
| 259 | 11.1318 | 0.0304 |
| 260 | 11.1622 | 0.0304 |
| 261 | 11.1926 | 0.0304 |
| 262 | 11.2229 | 0.0303 |
| 263 | 11.2532 | 0.0303 |
| 264 | 11.2835 | 0.0303 |
| 265 | 11.3137 | 0.0302 |
| 266 | 11.3439 | 0.0302 |
| 267 | 11.3740 | 0.0302 |
| 268 | 11.4042 | 0.0301 |
| 269 | 11.4343 | 0.0301 |
| 270 | 11.4643 | 0.0301 |
| 271 | 11.4943 | 0.0300 |
| 272 | 11.5243 | 0.0300 |
| 273 | 11.5543 | 0.0300 |
| 274 | 11.5842 | 0.0299 |
| 275 | 11.6141 | 0.0299 |
| 276 | 11.6440 | 0.0299 |
| 277 | 11.6738 | 0.0298 |
| 278 | 11.7036 | 0.0298 |
| 279 | 11.7334 | 0.0298 |
| 280 | 11.7631 | 0.0297 |
| 281 | 11.7928 | 0.0297 |
| 282 | 11.8225 | 0.0297 |
| 283 | 11.8522 | 0.0296 |
| 284 | 11.8818 | 0.0296 |
| 285 | 11.9114 | 0.0296 |
| 286 | 11.9409 | 0.0296 |
| 287 | 11.9704 | 0.0295 |
| 288 | 11.9999 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0022 | 0.0273 |
| 2 | 0.0295 | 0.0022 | 0.0274 |
| 3 | 0.0296 | 0.0022 | 0.0274 |
| 4 | 0.0296 | 0.0022 | 0.0274 |

| | | | |
|---|---|---|---|
| 5 | 0.0297 | 0.0022 | 0.0275 |
| 6 | 0.0297 | 0.0022 | 0.0275 |
| 7 | 0.0298 | 0.0022 | 0.0276 |
| 8 | 0.0298 | 0.0022 | 0.0276 |
| 9 | 0.0299 | 0.0022 | 0.0277 |
| 10 | 0.0299 | 0.0022 | 0.0277 |
| 11 | 0.0300 | 0.0022 | 0.0278 |
| 12 | 0.0300 | 0.0022 | 0.0278 |
| 13 | 0.0301 | 0.0022 | 0.0278 |
| 14 | 0.0301 | 0.0022 | 0.0279 |
| 15 | 0.0302 | 0.0022 | 0.0279 |
| 16 | 0.0302 | 0.0022 | 0.0280 |
| 17 | 0.0303 | 0.0022 | 0.0280 |
| 18 | 0.0303 | 0.0022 | 0.0281 |
| 19 | 0.0304 | 0.0022 | 0.0281 |
| 20 | 0.0304 | 0.0022 | 0.0282 |
| 21 | 0.0305 | 0.0022 | 0.0282 |
| 22 | 0.0305 | 0.0022 | 0.0283 |
| 23 | 0.0306 | 0.0022 | 0.0283 |
| 24 | 0.0306 | 0.0023 | 0.0283 |
| 25 | 0.0307 | 0.0023 | 0.0284 |
| 26 | 0.0307 | 0.0023 | 0.0284 |
| 27 | 0.0308 | 0.0023 | 0.0285 |
| 28 | 0.0308 | 0.0023 | 0.0285 |
| 29 | 0.0309 | 0.0023 | 0.0286 |
| 30 | 0.0309 | 0.0023 | 0.0286 |
| 31 | 0.0310 | 0.0023 | 0.0287 |
| 32 | 0.0310 | 0.0023 | 0.0288 |
| 33 | 0.0311 | 0.0023 | 0.0288 |
| 34 | 0.0312 | 0.0023 | 0.0289 |
| 35 | 0.0312 | 0.0023 | 0.0289 |
| 36 | 0.0313 | 0.0023 | 0.0290 |
| 37 | 0.0313 | 0.0023 | 0.0290 |
| 38 | 0.0314 | 0.0023 | 0.0291 |
| 39 | 0.0315 | 0.0023 | 0.0291 |
| 40 | 0.0315 | 0.0023 | 0.0292 |
| 41 | 0.0316 | 0.0023 | 0.0293 |
| 42 | 0.0316 | 0.0023 | 0.0293 |
| 43 | 0.0317 | 0.0023 | 0.0294 |
| 44 | 0.0317 | 0.0023 | 0.0294 |
| 45 | 0.0318 | 0.0023 | 0.0295 |
| 46 | 0.0319 | 0.0023 | 0.0295 |
| 47 | 0.0320 | 0.0024 | 0.0296 |
| 48 | 0.0320 | 0.0024 | 0.0296 |
| 49 | 0.0321 | 0.0024 | 0.0297 |
| 50 | 0.0321 | 0.0024 | 0.0298 |
| 51 | 0.0322 | 0.0024 | 0.0298 |
| 52 | 0.0323 | 0.0024 | 0.0299 |
| 53 | 0.0324 | 0.0024 | 0.0300 |
| 54 | 0.0324 | 0.0024 | 0.0300 |
| 55 | 0.0325 | 0.0024 | 0.0301 |
| 56 | 0.0325 | 0.0024 | 0.0301 |
| 57 | 0.0326 | 0.0024 | 0.0302 |
| 58 | 0.0327 | 0.0024 | 0.0303 |
| 59 | 0.0328 | 0.0024 | 0.0304 |
| 60 | 0.0328 | 0.0024 | 0.0304 |
| 61 | 0.0329 | 0.0024 | 0.0305 |
| 62 | 0.0330 | 0.0024 | 0.0305 |
| 63 | 0.0331 | 0.0024 | 0.0306 |
| 64 | 0.0331 | 0.0024 | 0.0307 |
| 65 | 0.0332 | 0.0024 | 0.0308 |
| 66 | 0.0333 | 0.0024 | 0.0308 |
| 67 | 0.0334 | 0.0025 | 0.0309 |
| 68 | 0.0334 | 0.0025 | 0.0310 |
| 69 | 0.0335 | 0.0025 | 0.0311 |
| 70 | 0.0336 | 0.0025 | 0.0311 |
| 71 | 0.0337 | 0.0025 | 0.0312 |
| 72 | 0.0337 | 0.0025 | 0.0313 |
| 73 | 0.0339 | 0.0025 | 0.0314 |
| 74 | 0.0339 | 0.0025 | 0.0314 |
| 75 | 0.0340 | 0.0025 | 0.0315 |

| | | | |
|---|---|---|---|
| 76 | 0.0341 | 0.0025 | 0.0316 |
| 77 | 0.0342 | 0.0025 | 0.0317 |
| 78 | 0.0342 | 0.0025 | 0.0317 |
| 79 | 0.0344 | 0.0025 | 0.0318 |
| 80 | 0.0344 | 0.0025 | 0.0319 |
| 81 | 0.0345 | 0.0025 | 0.0320 |
| 82 | 0.0346 | 0.0025 | 0.0321 |
| 83 | 0.0347 | 0.0026 | 0.0322 |
| 84 | 0.0348 | 0.0026 | 0.0322 |
| 85 | 0.0349 | 0.0026 | 0.0323 |
| 86 | 0.0350 | 0.0026 | 0.0324 |
| 87 | 0.0351 | 0.0026 | 0.0325 |
| 88 | 0.0352 | 0.0026 | 0.0326 |
| 89 | 0.0353 | 0.0026 | 0.0327 |
| 90 | 0.0354 | 0.0026 | 0.0328 |
| 91 | 0.0355 | 0.0026 | 0.0329 |
| 92 | 0.0356 | 0.0026 | 0.0330 |
| 93 | 0.0357 | 0.0026 | 0.0331 |
| 94 | 0.0358 | 0.0026 | 0.0331 |
| 95 | 0.0359 | 0.0026 | 0.0333 |
| 96 | 0.0360 | 0.0026 | 0.0333 |
| 97 | 0.0361 | 0.0027 | 0.0335 |
| 98 | 0.0362 | 0.0027 | 0.0336 |
| 99 | 0.0364 | 0.0027 | 0.0337 |
| 100 | 0.0364 | 0.0027 | 0.0338 |
| 101 | 0.0366 | 0.0027 | 0.0339 |
| 102 | 0.0367 | 0.0027 | 0.0340 |
| 103 | 0.0368 | 0.0027 | 0.0341 |
| 104 | 0.0369 | 0.0027 | 0.0342 |
| 105 | 0.0371 | 0.0027 | 0.0343 |
| 106 | 0.0372 | 0.0027 | 0.0344 |
| 107 | 0.0373 | 0.0027 | 0.0346 |
| 108 | 0.0374 | 0.0028 | 0.0347 |
| 109 | 0.0376 | 0.0028 | 0.0348 |
| 110 | 0.0377 | 0.0028 | 0.0349 |
| 111 | 0.0379 | 0.0028 | 0.0351 |
| 112 | 0.0379 | 0.0028 | 0.0352 |
| 113 | 0.0381 | 0.0028 | 0.0353 |
| 114 | 0.0382 | 0.0028 | 0.0354 |
| 115 | 0.0384 | 0.0028 | 0.0356 |
| 116 | 0.0385 | 0.0028 | 0.0357 |
| 117 | 0.0387 | 0.0028 | 0.0359 |
| 118 | 0.0388 | 0.0029 | 0.0360 |
| 119 | 0.0390 | 0.0029 | 0.0361 |
| 120 | 0.0391 | 0.0029 | 0.0362 |
| 121 | 0.0393 | 0.0029 | 0.0364 |
| 122 | 0.0394 | 0.0029 | 0.0365 |
| 123 | 0.0397 | 0.0029 | 0.0367 |
| 124 | 0.0398 | 0.0029 | 0.0368 |
| 125 | 0.0400 | 0.0029 | 0.0371 |
| 126 | 0.0401 | 0.0030 | 0.0372 |
| 127 | 0.0403 | 0.0030 | 0.0374 |
| 128 | 0.0405 | 0.0030 | 0.0375 |
| 129 | 0.0407 | 0.0030 | 0.0377 |
| 130 | 0.0408 | 0.0030 | 0.0378 |
| 131 | 0.0411 | 0.0030 | 0.0381 |
| 132 | 0.0412 | 0.0030 | 0.0382 |
| 133 | 0.0415 | 0.0031 | 0.0384 |
| 134 | 0.0416 | 0.0031 | 0.0386 |
| 135 | 0.0419 | 0.0031 | 0.0388 |
| 136 | 0.0421 | 0.0031 | 0.0390 |
| 137 | 0.0423 | 0.0031 | 0.0392 |
| 138 | 0.0425 | 0.0031 | 0.0394 |
| 139 | 0.0428 | 0.0032 | 0.0396 |
| 140 | 0.0430 | 0.0032 | 0.0398 |
| 141 | 0.0433 | 0.0032 | 0.0401 |
| 142 | 0.0434 | 0.0032 | 0.0402 |
| 143 | 0.0438 | 0.0032 | 0.0406 |
| 144 | 0.0440 | 0.0032 | 0.0407 |
| 145 | 0.0384 | 0.0028 | 0.0356 |
| 146 | 0.0386 | 0.0028 | 0.0358 |

| | | | |
|---|---|---|---|
| 147 | 0.0391 | 0.0029 | 0.0362 |
| 148 | 0.0393 | 0.0029 | 0.0364 |
| 149 | 0.0398 | 0.0029 | 0.0368 |
| 150 | 0.0400 | 0.0029 | 0.0370 |
| 151 | 0.0405 | 0.0030 | 0.0375 |
| 152 | 0.0407 | 0.0030 | 0.0377 |
| 153 | 0.0413 | 0.0030 | 0.0382 |
| 154 | 0.0415 | 0.0031 | 0.0385 |
| 155 | 0.0421 | 0.0031 | 0.0390 |
| 156 | 0.0424 | 0.0031 | 0.0393 |
| 157 | 0.0430 | 0.0032 | 0.0398 |
| 158 | 0.0433 | 0.0032 | 0.0401 |
| 159 | 0.0440 | 0.0032 | 0.0407 |
| 160 | 0.0443 | 0.0033 | 0.0410 |
| 161 | 0.0450 | 0.0033 | 0.0417 |
| 162 | 0.0454 | 0.0033 | 0.0420 |
| 163 | 0.0462 | 0.0034 | 0.0428 |
| 164 | 0.0466 | 0.0034 | 0.0431 |
| 165 | 0.0474 | 0.0035 | 0.0439 |
| 166 | 0.0479 | 0.0035 | 0.0444 |
| 167 | 0.0488 | 0.0036 | 0.0452 |
| 168 | 0.0493 | 0.0036 | 0.0457 |
| 169 | 0.0504 | 0.0037 | 0.0467 |
| 170 | 0.0510 | 0.0038 | 0.0472 |
| 171 | 0.0521 | 0.0038 | 0.0483 |
| 172 | 0.0528 | 0.0039 | 0.0489 |
| 173 | 0.0541 | 0.0040 | 0.0501 |
| 174 | 0.0549 | 0.0040 | 0.0508 |
| 175 | 0.0564 | 0.0042 | 0.0523 |
| 176 | 0.0573 | 0.0042 | 0.0531 |
| 177 | 0.0591 | 0.0044 | 0.0548 |
| 178 | 0.0601 | 0.0044 | 0.0557 |
| 179 | 0.0623 | 0.0046 | 0.0577 |
| 180 | 0.0635 | 0.0047 | 0.0589 |
| 181 | 0.0662 | 0.0049 | 0.0614 |
| 182 | 0.0678 | 0.0050 | 0.0628 |
| 183 | 0.0712 | 0.0052 | 0.0660 |
| 184 | 0.0732 | 0.0054 | 0.0679 |
| 185 | 0.0386 | 0.0028 | 0.0358 |
| 186 | 0.0412 | 0.0030 | 0.0382 |
| 187 | 0.0478 | 0.0035 | 0.0442 |
| 188 | 0.0521 | 0.0038 | 0.0483 |
| 189 | 0.0648 | 0.0048 | 0.0601 |
| 190 | 0.0747 | 0.0055 | 0.0692 |
| 191 | 0.1133 | 0.0083 | 0.1050 |
| 192 | 0.1645 | 0.0117 | 0.1528 |
| 193 | 0.7116 | 0.0117 | 0.7000 |
| 194 | 0.0892 | 0.0066 | 0.0826 |
| 195 | 0.0577 | 0.0042 | 0.0534 |
| 196 | 0.0442 | 0.0033 | 0.0409 |
| 197 | 0.0755 | 0.0056 | 0.0699 |
| 198 | 0.0694 | 0.0051 | 0.0643 |
| 199 | 0.0648 | 0.0048 | 0.0601 |
| 200 | 0.0612 | 0.0045 | 0.0567 |
| 201 | 0.0582 | 0.0043 | 0.0539 |
| 202 | 0.0556 | 0.0041 | 0.0515 |
| 203 | 0.0534 | 0.0039 | 0.0495 |
| 204 | 0.0515 | 0.0038 | 0.0477 |
| 205 | 0.0498 | 0.0037 | 0.0462 |
| 206 | 0.0483 | 0.0036 | 0.0448 |
| 207 | 0.0470 | 0.0035 | 0.0435 |
| 208 | 0.0458 | 0.0034 | 0.0424 |
| 209 | 0.0447 | 0.0033 | 0.0414 |
| 210 | 0.0436 | 0.0032 | 0.0404 |
| 211 | 0.0427 | 0.0031 | 0.0395 |
| 212 | 0.0418 | 0.0031 | 0.0387 |
| 213 | 0.0410 | 0.0030 | 0.0380 |
| 214 | 0.0402 | 0.0030 | 0.0373 |
| 215 | 0.0395 | 0.0029 | 0.0366 |
| 216 | 0.0388 | 0.0029 | 0.0360 |
| 217 | 0.0441 | 0.0032 | 0.0409 |

| | | | |
|---|---|---|---|
| 218 | 0.0436 | 0.0032 | 0.0404 |
| 219 | 0.0431 | 0.0032 | 0.0399 |
| 220 | 0.0426 | 0.0031 | 0.0395 |
| 221 | 0.0422 | 0.0031 | 0.0391 |
| 222 | 0.0418 | 0.0031 | 0.0387 |
| 223 | 0.0414 | 0.0030 | 0.0383 |
| 224 | 0.0410 | 0.0030 | 0.0380 |
| 225 | 0.0406 | 0.0030 | 0.0376 |
| 226 | 0.0402 | 0.0030 | 0.0373 |
| 227 | 0.0399 | 0.0029 | 0.0369 |
| 228 | 0.0395 | 0.0029 | 0.0366 |
| 229 | 0.0392 | 0.0029 | 0.0363 |
| 230 | 0.0389 | 0.0029 | 0.0360 |
| 231 | 0.0386 | 0.0028 | 0.0358 |
| 232 | 0.0383 | 0.0028 | 0.0355 |
| 233 | 0.0380 | 0.0028 | 0.0352 |
| 234 | 0.0378 | 0.0028 | 0.0350 |
| 235 | 0.0375 | 0.0028 | 0.0347 |
| 236 | 0.0372 | 0.0027 | 0.0345 |
| 237 | 0.0370 | 0.0027 | 0.0343 |
| 238 | 0.0368 | 0.0027 | 0.0340 |
| 239 | 0.0365 | 0.0027 | 0.0338 |
| 240 | 0.0363 | 0.0027 | 0.0336 |
| 241 | 0.0361 | 0.0027 | 0.0334 |
| 242 | 0.0359 | 0.0026 | 0.0332 |
| 243 | 0.0356 | 0.0026 | 0.0330 |
| 244 | 0.0354 | 0.0026 | 0.0328 |
| 245 | 0.0352 | 0.0026 | 0.0326 |
| 246 | 0.0350 | 0.0026 | 0.0325 |
| 247 | 0.0349 | 0.0026 | 0.0323 |
| 248 | 0.0347 | 0.0026 | 0.0321 |
| 249 | 0.0345 | 0.0025 | 0.0319 |
| 250 | 0.0343 | 0.0025 | 0.0318 |
| 251 | 0.0341 | 0.0025 | 0.0316 |
| 252 | 0.0340 | 0.0025 | 0.0315 |
| 253 | 0.0338 | 0.0025 | 0.0313 |
| 254 | 0.0336 | 0.0025 | 0.0312 |
| 255 | 0.0335 | 0.0025 | 0.0310 |
| 256 | 0.0333 | 0.0025 | 0.0309 |
| 257 | 0.0332 | 0.0024 | 0.0307 |
| 258 | 0.0330 | 0.0024 | 0.0306 |
| 259 | 0.0329 | 0.0024 | 0.0305 |
| 260 | 0.0327 | 0.0024 | 0.0303 |
| 261 | 0.0326 | 0.0024 | 0.0302 |
| 262 | 0.0324 | 0.0024 | 0.0301 |
| 263 | 0.0323 | 0.0024 | 0.0299 |
| 264 | 0.0322 | 0.0024 | 0.0298 |
| 265 | 0.0320 | 0.0024 | 0.0297 |
| 266 | 0.0319 | 0.0023 | 0.0296 |
| 267 | 0.0318 | 0.0023 | 0.0295 |
| 268 | 0.0317 | 0.0023 | 0.0293 |
| 269 | 0.0315 | 0.0023 | 0.0292 |
| 270 | 0.0314 | 0.0023 | 0.0291 |
| 271 | 0.0313 | 0.0023 | 0.0290 |
| 272 | 0.0312 | 0.0023 | 0.0289 |
| 273 | 0.0311 | 0.0023 | 0.0288 |
| 274 | 0.0310 | 0.0023 | 0.0287 |
| 275 | 0.0309 | 0.0023 | 0.0286 |
| 276 | 0.0307 | 0.0023 | 0.0285 |
| 277 | 0.0306 | 0.0023 | 0.0284 |
| 278 | 0.0305 | 0.0022 | 0.0283 |
| 279 | 0.0304 | 0.0022 | 0.0282 |
| 280 | 0.0303 | 0.0022 | 0.0281 |
| 281 | 0.0302 | 0.0022 | 0.0280 |
| 282 | 0.0301 | 0.0022 | 0.0279 |
| 283 | 0.0300 | 0.0022 | 0.0278 |
| 284 | 0.0299 | 0.0022 | 0.0277 |
| 285 | 0.0298 | 0.0022 | 0.0276 |
| 286 | 0.0297 | 0.0022 | 0.0276 |
| 287 | 0.0296 | 0.0022 | 0.0275 |
| 288 | 0.0296 | 0.0022 | 0.0274 |

```
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      0.84(In)
      Total effective rainfall =     11.16(In)
      Peak flow rate in flood hydrograph =     16.13(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0005      0.07  Q         |         |         |         |
  0+10       0.0038      0.48  Q         |         |         |         |
  0+15       0.0107      0.99  VQ        |         |         |         |
  0+20       0.0188      1.18  V Q       |         |         |         |
  0+25       0.0276      1.29  V Q       |         |         |         |
  0+30       0.0370      1.35  V Q       |         |         |         |
  0+35       0.0466      1.40  V Q       |         |         |         |
  0+40       0.0563      1.42  V Q       |         |         |         |
  0+45       0.0662      1.43  V Q       |         |         |         |
  0+50       0.0760      1.43  V Q       |         |         |         |
  0+55       0.0860      1.44  V Q       |         |         |         |
  1+ 0       0.0960      1.45  V Q       |         |         |         |
  1+ 5       0.1060      1.45  |VQ       |         |         |         |
  1+10       0.1160      1.45  |VQ       |         |         |         |
  1+15       0.1260      1.46  |VQ       |         |         |         |
  1+20       0.1361      1.46  |VQ       |         |         |         |
  1+25       0.1461      1.46  |VQ       |         |         |         |
  1+30       0.1562      1.46  |VQ       |         |         |         |
  1+35       0.1663      1.47  |VQ       |         |         |         |
  1+40       0.1764      1.47  |VQ       |         |         |         |
  1+45       0.1866      1.47  |VQ       |         |         |         |
  1+50       0.1967      1.47  |VQ       |         |         |         |
  1+55       0.2069      1.48  | Q       |         |         |         |
  2+ 0       0.2171      1.48  | Q       |         |         |         |
  2+ 5       0.2273      1.48  | Q       |         |         |         |
  2+10       0.2375      1.48  | Q       |         |         |         |
  2+15       0.2477      1.49  | Q       |         |         |         |
  2+20       0.2580      1.49  | Q       |         |         |         |
  2+25       0.2683      1.49  | Q       |         |         |         |
  2+30       0.2786      1.49  | Q       |         |         |         |
  2+35       0.2889      1.50  | Q       |         |         |         |
  2+40       0.2992      1.50  | Q       |         |         |         |
  2+45       0.3096      1.50  |  Q      |         |         |         |
  2+50       0.3199      1.51  |  Q      |         |         |         |
  2+55       0.3303      1.51  |  Q      |         |         |         |
  3+ 0       0.3407      1.51  |  Q      |         |         |         |
  3+ 5       0.3511      1.51  |  Q      |         |         |         |
  3+10       0.3616      1.52  |  Q      |         |         |         |
  3+15       0.3720      1.52  |  Q      |         |         |         |
  3+20       0.3825      1.52  |  Q      |         |         |         |
  3+25       0.3930      1.52  |  Q      |         |         |         |
  3+30       0.4036      1.53  |  QV     |         |         |         |
  3+35       0.4141      1.53  |  QV     |         |         |         |
  3+40       0.4247      1.53  |  QV     |         |         |         |
  3+45       0.4352      1.54  |  QV     |         |         |         |
  3+50       0.4458      1.54  |  QV     |         |         |         |
  3+55       0.4565      1.54  |  QV     |         |         |         |
  4+ 0       0.4671      1.55  |  QV     |         |         |         |
  4+ 5       0.4778      1.55  |  QV     |         |         |         |
  4+10       0.4885      1.55  |  QV     |         |         |         |
  4+15       0.4992      1.56  |  QV     |         |         |         |
  4+20       0.5099      1.56  |  Q V    |         |         |         |
  4+25       0.5207      1.56  |  Q V    |         |         |         |
  4+30       0.5315      1.56  |  Q V    |         |         |         |
  4+35       0.5422      1.57  |  Q V    |         |         |         |
  4+40       0.5531      1.57  |  Q V    |         |         |         |
```

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 4+45      0.5639      1.57  |  Q V    |         |         |         |
 4+50      0.5748      1.58  |  Q V    |         |         |         |
 4+55      0.5857      1.58  |  Q V    |         |         |         |
 5+ 0      0.5966      1.58  |  Q V    |         |         |         |
 5+ 5      0.6075      1.59  |  Q  V   |         |         |         |
 5+10      0.6185      1.59  |  Q  V   |         |         |         |
 5+15      0.6295      1.60  |  Q  V   |         |         |         |
 5+20      0.6405      1.60  |  Q  V   |         |         |         |
 5+25      0.6515      1.60  |  Q  V   |         |         |         |
 5+30      0.6626      1.61  |  Q  V   |         |         |         |
 5+35      0.6737      1.61  |  Q  V   |         |         |         |
 5+40      0.6848      1.61  |  Q  V   |         |         |         |
 5+45      0.6959      1.62  |  Q  V   |         |         |         |
 5+50      0.7071      1.62  |  Q   V  |         |         |         |
 5+55      0.7183      1.62  |  Q   V  |         |         |         |
 6+ 0      0.7295      1.63  |  Q   V  |         |         |         |
 6+ 5      0.7407      1.63  |  Q   V  |         |         |         |
 6+10      0.7520      1.64  |  Q   V  |         |         |         |
 6+15      0.7633      1.64  |  Q   V  |         |         |         |
 6+20      0.7746      1.64  |  Q   V  |         |         |         |
 6+25      0.7860      1.65  |  Q   V  |         |         |         |
 6+30      0.7973      1.65  |  Q   V  |         |         |         |
 6+35      0.8088      1.66  |  Q    V |         |         |         |
 6+40      0.8202      1.66  |  Q    V |         |         |         |
 6+45      0.8317      1.67  |  Q    V |         |         |         |
 6+50      0.8432      1.67  |  Q    V |         |         |         |
 6+55      0.8547      1.67  |  Q    V |         |         |         |
 7+ 0      0.8662      1.68  |  Q    V |         |         |         |
 7+ 5      0.8778      1.68  |  Q    V |         |         |         |
 7+10      0.8895      1.69  |  Q    V |         |         |         |
 7+15      0.9011      1.69  |  Q    V |         |         |         |
 7+20      0.9128      1.70  |  Q     V|         |         |         |
 7+25      0.9245      1.70  |  Q     V|         |         |         |
 7+30      0.9362      1.71  |  Q     V|         |         |         |
 7+35      0.9480      1.71  |  Q     V|         |         |         |
 7+40      0.9598      1.72  |  Q     V|         |         |         |
 7+45      0.9717      1.72  |  Q     V|         |         |         |
 7+50      0.9836      1.72  |  Q     V|         |         |         |
 7+55      0.9955      1.73  |  Q     V|         |         |         |
 8+ 0      1.0074      1.74  |  Q      V         |         |         |
 8+ 5      1.0194      1.74  |  Q      V         |         |         |
 8+10      1.0314      1.75  |  Q      V         |         |         |
 8+15      1.0435      1.75  |  Q      V         |         |         |
 8+20      1.0556      1.76  |  Q      V         |         |         |
 8+25      1.0677      1.76  |  Q      V         |         |         |
 8+30      1.0799      1.77  |  Q      V         |         |         |
 8+35      1.0921      1.77  |  Q      V         |         |         |
 8+40      1.1043      1.78  |  Q      V         |         |         |
 8+45      1.1166      1.78  |  Q      |V        |         |         |
 8+50      1.1290      1.79  |  Q      |V        |         |         |
 8+55      1.1413      1.80  |  Q      |V        |         |         |
 9+ 0      1.1537      1.80  |  Q      |V        |         |         |
 9+ 5      1.1662      1.81  |  Q      |V        |         |         |
 9+10      1.1787      1.81  |  Q      |V        |         |         |
 9+15      1.1912      1.82  |  Q      |V        |         |         |
 9+20      1.2038      1.83  |  Q      |V        |         |         |
 9+25      1.2164      1.83  |  Q      | V       |         |         |
 9+30      1.2291      1.84  |  Q      | V       |         |         |
 9+35      1.2418      1.85  |  Q      | V       |         |         |
 9+40      1.2546      1.85  |  Q      | V       |         |         |
 9+45      1.2674      1.86  |  Q      | V       |         |         |
 9+50      1.2802      1.87  |  Q      | V       |         |         |
 9+55      1.2932      1.87  |  Q      | V       |         |         |
10+ 0      1.3061      1.88  |  Q      | V       |         |         |
10+ 5      1.3191      1.89  |  Q      |  V      |         |         |
10+10      1.3322      1.90  |  Q      |  V      |         |         |
10+15      1.3453      1.90  |  Q      |  V      |         |         |
10+20      1.3585      1.91  |  Q      |  V      |         |         |
10+25      1.3717      1.92  |  Q      |  V      |         |         |
10+30      1.3850      1.93  |  Q      |  V      |         |         |
10+35      1.3983      1.94  |  Q      |  V      |         |         |
```

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10+40       1.4117      1.94  |  Q      |   V     |         |         |
10+45       1.4251      1.95  |  Q      |   V     |         |         |
10+50       1.4387      1.96  |  Q      |   V     |         |         |
10+55       1.4522      1.97  |  Q      |   V     |         |         |
11+ 0       1.4659      1.98  |  Q      |   V     |         |         |
11+ 5       1.4796      1.99  |  Q      |   V     |         |         |
11+10       1.4933      2.00  |  Q      |   V     |         |         |
11+15       1.5072      2.01  |   Q     |   V     |         |         |
11+20       1.5211      2.02  |   Q     |    V    |         |         |
11+25       1.5350      2.03  |   Q     |    V    |         |         |
11+30       1.5491      2.04  |   Q     |    V    |         |         |
11+35       1.5632      2.05  |   Q     |    V    |         |         |
11+40       1.5774      2.06  |   Q     |    V    |         |         |
11+45       1.5916      2.07  |   Q     |    V    |         |         |
11+50       1.6060      2.08  |   Q     |    V    |         |         |
11+55       1.6204      2.09  |   Q     |     V   |         |         |
12+ 0       1.6349      2.11  |   Q     |     V   |         |         |
12+ 5       1.6494      2.10  |   Q     |     V   |         |         |
12+10       1.6634      2.03  |   Q     |     V   |         |         |
12+15       1.6768      1.95  |  Q      |     V   |         |         |
12+20       1.6901      1.92  |  Q      |     V   |         |         |
12+25       1.7033      1.92  |  Q      |     V   |         |         |
12+30       1.7165      1.92  |  Q      |      V  |         |         |
12+35       1.7298      1.93  |  Q      |      V  |         |         |
12+40       1.7432      1.94  |  Q      |      V  |         |         |
12+45       1.7567      1.96  |  Q      |      V  |         |         |
12+50       1.7703      1.98  |  Q      |      V  |         |         |
12+55       1.7840      1.99  |  Q      |      V  |         |         |
13+ 0       1.7979      2.01  |   Q     |      V  |         |         |
13+ 5       1.8119      2.03  |   Q     |       V |         |         |
13+10       1.8260      2.05  |   Q     |       V |         |         |
13+15       1.8403      2.08  |   Q     |       V |         |         |
13+20       1.8547      2.10  |   Q     |       V |         |         |
13+25       1.8694      2.12  |   Q     |       V |         |         |
13+30       1.8841      2.15  |   Q     |       V |         |         |
13+35       1.8991      2.17  |   Q     |       V |         |         |
13+40       1.9142      2.20  |   Q     |        V|         |         |
13+45       1.9296      2.23  |   Q     |        V|         |         |
13+50       1.9451      2.26  |   Q     |        V|         |         |
13+55       1.9609      2.29  |   Q     |        V|         |         |
14+ 0       1.9769      2.32  |   Q     |        V|         |         |
14+ 5       1.9931      2.35  |   Q     |        V|         |         |
14+10       2.0095      2.39  |   Q     |        V|         |         |
14+15       2.0262      2.43  |   Q     |         V         |         |
14+20       2.0432      2.47  |   Q     |         V         |         |
14+25       2.0605      2.51  |    Q    |         V         |         |
14+30       2.0781      2.56  |    Q    |         V         |         |
14+35       2.0961      2.61  |    Q    |         V         |         |
14+40       2.1144      2.66  |    Q    |         |V        |         |
14+45       2.1331      2.71  |    Q    |         |V        |         |
14+50       2.1522      2.77  |    Q    |         |V        |         |
14+55       2.1718      2.84  |    Q    |         |V        |         |
15+ 0       2.1918      2.91  |    Q    |         |V        |         |
15+ 5       2.2124      2.99  |    Q    |         |V        |         |
15+10       2.2336      3.08  |     Q   |         | V       |         |
15+15       2.2555      3.18  |     Q   |         | V       |         |
15+20       2.2782      3.29  |     Q   |         | V       |         |
15+25       2.3010      3.31  |     Q   |         | V       |         |
15+30       2.3210      2.91  |    Q    |         |  V      |         |
15+35       2.3376      2.40  |   Q     |         |  V      |         |
15+40       2.3538      2.35  |   Q     |         |  V      |         |
15+45       2.3707      2.46  |   Q     |         |  V      |         |
15+50       2.3894      2.72  |    Q    |         |  V      |         |
15+55       2.4114      3.18  |     Q   |         |  V      |         |
16+ 0       2.4397      4.11  |       Q |         |   V     |         |
16+ 5       2.4886      7.11  |         |   Q     |   V     |         |
16+10       2.5907     14.82  |         |         |    V   Q|         |
16+15       2.7018     16.13  |         |         |     V   | Q       |
16+20       2.7584      8.21  |         |     Q   |      V  |         |
16+25       2.7976      5.70  |         |Q        |      V  |         |
16+30       2.8301      4.71  |        Q|         |       V |         |
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16+35      2.8596     4.28  |       Q |         |       V |         |
16+40      2.8849     3.68  |      Q  |         |       V |         |
16+45      2.9079     3.34  |     Q   |         |       V |         |
16+50      2.9296     3.15  |     Q   |         |        V|         |
16+55      2.9503     3.02  |     Q   |         |        V|         |
17+ 0      2.9698     2.83  |    Q    |         |        V|         |
17+ 5      2.9882     2.67  |    Q    |         |        V|         |
17+10      3.0057     2.54  |    Q    |         |        V|         |
17+15      3.0227     2.46  |   Q     |         |         V         |
17+20      3.0391     2.38  |   Q     |         |         V         |
17+25      3.0550     2.31  |   Q     |         |         V         |
17+30      3.0705     2.25  |   Q     |         |         V         |
17+35      3.0856     2.19  |   Q     |         |         V         |
17+40      3.1003     2.14  |   Q     |         |         V         |
17+45      3.1147     2.09  |   Q     |         |         V         |
17+50      3.1288     2.05  |   Q     |         |         |V        |
17+55      3.1426     2.01  |   Q     |         |         |V        |
18+ 0      3.1562     1.97  |  Q      |         |         |V        |
18+ 5      3.1696     1.95  |  Q      |         |         |V        |
18+10      3.1833     2.00  |  Q      |         |         |V        |
18+15      3.1976     2.07  |   Q     |         |         |V        |
18+20      3.2119     2.08  |   Q     |         |         |V        |
18+25      3.2261     2.07  |   Q     |         |         | V       |
18+30      3.2403     2.06  |   Q     |         |         | V       |
18+35      3.2544     2.05  |   Q     |         |         | V       |
18+40      3.2684     2.03  |   Q     |         |         | V       |
18+45      3.2823     2.01  |   Q     |         |         | V       |
18+50      3.2960     1.99  |  Q      |         |         | V       |
18+55      3.3096     1.98  |  Q      |         |         | V       |
19+ 0      3.3231     1.96  |  Q      |         |         |  V      |
19+ 5      3.3365     1.94  |  Q      |         |         |  V      |
19+10      3.3497     1.92  |  Q      |         |         |  V      |
19+15      3.3629     1.91  |  Q      |         |         |  V      |
19+20      3.3759     1.89  |  Q      |         |         |  V      |
19+25      3.3888     1.88  |  Q      |         |         |  V      |
19+30      3.4017     1.86  |  Q      |         |         |  V      |
19+35      3.4144     1.85  |  Q      |         |         |  V      |
19+40      3.4271     1.84  |  Q      |         |         |   V     |
19+45      3.4396     1.82  |  Q      |         |         |   V     |
19+50      3.4521     1.81  |  Q      |         |         |   V     |
19+55      3.4645     1.80  |  Q      |         |         |   V     |
20+ 0      3.4768     1.79  |  Q      |         |         |   V     |
20+ 5      3.4890     1.78  |  Q      |         |         |   V     |
20+10      3.5012     1.76  |  Q      |         |         |   V     |
20+15      3.5133     1.75  |  Q      |         |         |   V     |
20+20      3.5253     1.74  |  Q      |         |         |    V    |
20+25      3.5372     1.73  |  Q      |         |         |    V    |
20+30      3.5491     1.72  |  Q      |         |         |    V    |
20+35      3.5609     1.71  |  Q      |         |         |    V    |
20+40      3.5726     1.70  |  Q      |         |         |    V    |
20+45      3.5843     1.69  |  Q      |         |         |    V    |
20+50      3.5959     1.68  |  Q      |         |         |    V    |
20+55      3.6074     1.68  |  Q      |         |         |    V    |
21+ 0      3.6189     1.67  |  Q      |         |         |    V    |
21+ 5      3.6303     1.66  |  Q      |         |         |     V   |
21+10      3.6417     1.65  |  Q      |         |         |     V   |
21+15      3.6530     1.64  |  Q      |         |         |     V   |
21+20      3.6642     1.63  |  Q      |         |         |     V   |
21+25      3.6754     1.63  |  Q      |         |         |     V   |
21+30      3.6866     1.62  |  Q      |         |         |     V   |
21+35      3.6977     1.61  |  Q      |         |         |     V   |
21+40      3.7087     1.60  |  Q      |         |         |     V   |
21+45      3.7197     1.60  |  Q      |         |         |     V   |
21+50      3.7307     1.59  |  Q      |         |         |      V  |
21+55      3.7416     1.58  |  Q      |         |         |      V  |
22+ 0      3.7525     1.58  |  Q      |         |         |      V  |
22+ 5      3.7633     1.57  |  Q      |         |         |      V  |
22+10      3.7740     1.56  |  Q      |         |         |      V  |
22+15      3.7848     1.56  |  Q      |         |         |      V  |
22+20      3.7954     1.55  |  Q      |         |         |      V  |
22+25      3.8061     1.54  |  Q      |         |         |      V  |
```

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   22+30       3.8167      1.54  |  Q      |         |         |      V  |
   22+35       3.8272      1.53  |  Q      |         |         |       V |
   22+40       3.8377      1.53  |  Q      |         |         |       V |
   22+45       3.8482      1.52  |  Q      |         |         |       V |
   22+50       3.8586      1.52  |  Q      |         |         |       V |
   22+55       3.8690      1.51  |  Q      |         |         |       V |
   23+ 0       3.8794      1.50  |  Q      |         |         |       V |
   23+ 5       3.8897      1.50  | Q       |         |         |       V |
   23+10       3.9000      1.49  | Q       |         |         |       V |
   23+15       3.9102      1.49  | Q       |         |         |       V |
   23+20       3.9205      1.48  | Q       |         |         |       V |
   23+25       3.9306      1.48  | Q       |         |         |        V|
   23+30       3.9408      1.47  | Q       |         |         |        V|
   23+35       3.9509      1.47  | Q       |         |         |        V|
   23+40       3.9610      1.46  | Q       |         |         |        V|
   23+45       3.9710      1.46  | Q       |         |         |        V|
   23+50       3.9810      1.45  | Q       |         |         |        V|
   23+55       3.9910      1.45  | Q       |         |         |        V|
   24+ 0       4.0009      1.44  | Q       |         |         |        V|
   24+ 5       4.0103      1.37  | Q       |         |         |        V|
   24+10       4.0169      0.95  |Q        |         |         |        V|
   24+15       4.0199      0.44  Q         |         |         |        V|
   24+20       4.0217      0.26  Q         |         |         |        V|
   24+25       4.0227      0.15  Q         |         |         |        V|
   24+30       4.0233      0.08  Q         |         |         |        V|
   24+35       4.0236      0.04  Q         |         |         |        V|
   24+40       4.0238      0.03  Q         |         |         |        V|
   24+45       4.0239      0.02  Q         |         |         |        V|
   24+50       4.0240      0.01  Q         |         |         |        V|
   24+55       4.0240      0.00  Q         |         |         |        V|
   25+ 0       4.0240      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'C' – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  12/17/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.53            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.53            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.53           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             6.53            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.53            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.53           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      47.4          6.53      1.000     0.840    1.000    0.840

Area-averaged adjusted loss rate Fm (In/Hr) =  0.840

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.53 | 1.000 | 67.0 | 47.4 | 11.10 | 0.062 |

Area-averaged catchment yield fraction, Y = 0.062
Area-averaged low loss fraction, Yb = 0.938
User entry of time of concentration = 0.225 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.53(Ac.)
Catchment Lag time = 0.180 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 46.2963
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.840(In/Hr)
Average low loss rate fraction (Yb) = 0.938 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.53(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.309(In)
30-minute factor = 1.000 Adjusted rainfall = 0.528(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 78.97 (CFS)) | |
| 1 | 3.841 | 3.033 |
| 2 | 20.125 | 12.860 |
| 3 | 58.137 | 30.019 |
| 4 | 74.610 | 13.009 |
| 5 | 83.494 | 7.016 |
| 6 | 89.354 | 4.628 |
| 7 | 93.374 | 3.174 |
| 8 | 96.031 | 2.098 |
| 9 | 97.668 | 1.293 |
| 10 | 98.374 | 0.558 |
| 11 | 98.857 | 0.382 |
| 12 | 99.195 | 0.267 |
| 13 | 99.529 | 0.264 |
| 14 | 99.800 | 0.214 |
| 15 | 99.943 | 0.113 |
| 16 | 100.000 | 0.045 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3086 | 0.3086 |
| 2 | 0.3799 | 0.0713 |
| 3 | 0.4290 | 0.0491 |
| 4 | 0.4677 | 0.0387 |
| 5 | 0.5001 | 0.0324 |
| 6 | 0.5282 | 0.0281 |
| 7 | 0.5532 | 0.0250 |
| 8 | 0.5758 | 0.0226 |
| 9 | 0.5965 | 0.0207 |
| 10 | 0.6157 | 0.0192 |

| | | |
|---|---|---|
| 11 | 0.6336 | 0.0179 |
| 12 | 0.6503 | 0.0168 |
| 13 | 0.6838 | 0.0335 |
| 14 | 0.7163 | 0.0325 |
| 15 | 0.7480 | 0.0317 |
| 16 | 0.7789 | 0.0309 |
| 17 | 0.8091 | 0.0302 |
| 18 | 0.8386 | 0.0295 |
| 19 | 0.8675 | 0.0289 |
| 20 | 0.8959 | 0.0284 |
| 21 | 0.9237 | 0.0278 |
| 22 | 0.9510 | 0.0273 |
| 23 | 0.9779 | 0.0269 |
| 24 | 1.0044 | 0.0265 |
| 25 | 1.0304 | 0.0260 |
| 26 | 1.0561 | 0.0257 |
| 27 | 1.0814 | 0.0253 |
| 28 | 1.1063 | 0.0249 |
| 29 | 1.1309 | 0.0246 |
| 30 | 1.1552 | 0.0243 |
| 31 | 1.1792 | 0.0240 |
| 32 | 1.2029 | 0.0237 |
| 33 | 1.2264 | 0.0234 |
| 34 | 1.2495 | 0.0232 |
| 35 | 1.2725 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3176 | 0.0224 |
| 38 | 1.3398 | 0.0222 |
| 39 | 1.3618 | 0.0220 |
| 40 | 1.3836 | 0.0218 |
| 41 | 1.4052 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4477 | 0.0212 |
| 44 | 1.4688 | 0.0210 |
| 45 | 1.4896 | 0.0208 |
| 46 | 1.5103 | 0.0207 |
| 47 | 1.5308 | 0.0205 |
| 48 | 1.5511 | 0.0203 |
| 49 | 1.5713 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6112 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6893 | 0.0193 |
| 56 | 1.7085 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7653 | 0.0188 |
| 60 | 1.7840 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8394 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8758 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9296 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9650 | 0.0176 |
| 71 | 1.9825 | 0.0175 |
| 72 | 2.0000 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0548 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1213 | 0.0131 |

| | | |
|---|---|---|
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |
| 84 | 2.1602 | 0.0129 |
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1858 | 0.0127 |
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2236 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2852 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3094 | 0.0121 |
| 97 | 2.3214 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3452 | 0.0119 |
| 100 | 2.3570 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3921 | 0.0116 |
| 104 | 2.4037 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4267 | 0.0115 |
| 107 | 2.4381 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4608 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5166 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5495 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5712 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6034 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6874 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7080 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7386 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7988 | 0.0099 |
| 142 | 2.8087 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8480 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8771 | 0.0097 |
| 150 | 2.8867 | 0.0096 |
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |

| | | |
|---|---|---|
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9439 | 0.0095 |
| 157 | 2.9533 | 0.0094 |
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9721 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 3.0000 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0368 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0822 | 0.0090 |
| 172 | 3.0912 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1358 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1798 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2059 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2914 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3250 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3665 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4075 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4641 | 0.0080 |
| 217 | 3.4721 | 0.0080 |
| 218 | 3.4801 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |

| | | |
|---|---|---|
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5512 | 0.0078 |
| 228 | 3.5590 | 0.0078 |
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5746 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5901 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6286 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6818 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7786 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8006 | 0.0073 |
| 261 | 3.8079 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8297 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8442 | 0.0072 |
| 267 | 3.8514 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8658 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8873 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9370 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9511 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9861 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 4.0000 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0065 | 0.0004 |

| | | | |
|---|---|---|---|
| 2 | 0.0070 | 0.0065 | 0.0004 |
| 3 | 0.0070 | 0.0066 | 0.0004 |
| 4 | 0.0070 | 0.0066 | 0.0004 |
| 5 | 0.0070 | 0.0066 | 0.0004 |
| 6 | 0.0070 | 0.0066 | 0.0004 |
| 7 | 0.0071 | 0.0066 | 0.0004 |
| 8 | 0.0071 | 0.0066 | 0.0004 |
| 9 | 0.0071 | 0.0067 | 0.0004 |
| 10 | 0.0071 | 0.0067 | 0.0004 |
| 11 | 0.0071 | 0.0067 | 0.0004 |
| 12 | 0.0072 | 0.0067 | 0.0004 |
| 13 | 0.0072 | 0.0067 | 0.0004 |
| 14 | 0.0072 | 0.0067 | 0.0004 |
| 15 | 0.0072 | 0.0068 | 0.0004 |
| 16 | 0.0072 | 0.0068 | 0.0004 |
| 17 | 0.0073 | 0.0068 | 0.0004 |
| 18 | 0.0073 | 0.0068 | 0.0004 |
| 19 | 0.0073 | 0.0069 | 0.0004 |
| 20 | 0.0073 | 0.0069 | 0.0005 |
| 21 | 0.0073 | 0.0069 | 0.0005 |
| 22 | 0.0074 | 0.0069 | 0.0005 |
| 23 | 0.0074 | 0.0069 | 0.0005 |
| 24 | 0.0074 | 0.0069 | 0.0005 |
| 25 | 0.0074 | 0.0070 | 0.0005 |
| 26 | 0.0074 | 0.0070 | 0.0005 |
| 27 | 0.0075 | 0.0070 | 0.0005 |
| 28 | 0.0075 | 0.0070 | 0.0005 |
| 29 | 0.0075 | 0.0071 | 0.0005 |
| 30 | 0.0075 | 0.0071 | 0.0005 |
| 31 | 0.0076 | 0.0071 | 0.0005 |
| 32 | 0.0076 | 0.0071 | 0.0005 |
| 33 | 0.0076 | 0.0071 | 0.0005 |
| 34 | 0.0076 | 0.0072 | 0.0005 |
| 35 | 0.0077 | 0.0072 | 0.0005 |
| 36 | 0.0077 | 0.0072 | 0.0005 |
| 37 | 0.0077 | 0.0072 | 0.0005 |
| 38 | 0.0077 | 0.0073 | 0.0005 |
| 39 | 0.0078 | 0.0073 | 0.0005 |
| 40 | 0.0078 | 0.0073 | 0.0005 |
| 41 | 0.0078 | 0.0073 | 0.0005 |
| 42 | 0.0078 | 0.0073 | 0.0005 |
| 43 | 0.0079 | 0.0074 | 0.0005 |
| 44 | 0.0079 | 0.0074 | 0.0005 |
| 45 | 0.0079 | 0.0074 | 0.0005 |
| 46 | 0.0079 | 0.0074 | 0.0005 |
| 47 | 0.0080 | 0.0075 | 0.0005 |
| 48 | 0.0080 | 0.0075 | 0.0005 |
| 49 | 0.0080 | 0.0075 | 0.0005 |
| 50 | 0.0080 | 0.0076 | 0.0005 |
| 51 | 0.0081 | 0.0076 | 0.0005 |
| 52 | 0.0081 | 0.0076 | 0.0005 |
| 53 | 0.0081 | 0.0076 | 0.0005 |
| 54 | 0.0082 | 0.0077 | 0.0005 |
| 55 | 0.0082 | 0.0077 | 0.0005 |
| 56 | 0.0082 | 0.0077 | 0.0005 |
| 57 | 0.0083 | 0.0078 | 0.0005 |
| 58 | 0.0083 | 0.0078 | 0.0005 |
| 59 | 0.0083 | 0.0078 | 0.0005 |
| 60 | 0.0083 | 0.0078 | 0.0005 |
| 61 | 0.0084 | 0.0079 | 0.0005 |
| 62 | 0.0084 | 0.0079 | 0.0005 |
| 63 | 0.0085 | 0.0079 | 0.0005 |
| 64 | 0.0085 | 0.0080 | 0.0005 |
| 65 | 0.0085 | 0.0080 | 0.0005 |
| 66 | 0.0085 | 0.0080 | 0.0005 |
| 67 | 0.0086 | 0.0081 | 0.0005 |
| 68 | 0.0086 | 0.0081 | 0.0005 |
| 69 | 0.0087 | 0.0081 | 0.0005 |
| 70 | 0.0087 | 0.0081 | 0.0005 |
| 71 | 0.0087 | 0.0082 | 0.0005 |
| 72 | 0.0087 | 0.0082 | 0.0005 |

| | | | |
|---|---|---|---|
| 73 | 0.0088 | 0.0083 | 0.0005 |
| 74 | 0.0088 | 0.0083 | 0.0005 |
| 75 | 0.0089 | 0.0083 | 0.0005 |
| 76 | 0.0089 | 0.0083 | 0.0005 |
| 77 | 0.0089 | 0.0084 | 0.0006 |
| 78 | 0.0090 | 0.0084 | 0.0006 |
| 79 | 0.0090 | 0.0085 | 0.0006 |
| 80 | 0.0091 | 0.0085 | 0.0006 |
| 81 | 0.0091 | 0.0085 | 0.0006 |
| 82 | 0.0091 | 0.0086 | 0.0006 |
| 83 | 0.0092 | 0.0086 | 0.0006 |
| 84 | 0.0092 | 0.0086 | 0.0006 |
| 85 | 0.0093 | 0.0087 | 0.0006 |
| 86 | 0.0093 | 0.0087 | 0.0006 |
| 87 | 0.0094 | 0.0088 | 0.0006 |
| 88 | 0.0094 | 0.0088 | 0.0006 |
| 89 | 0.0095 | 0.0089 | 0.0006 |
| 90 | 0.0095 | 0.0089 | 0.0006 |
| 91 | 0.0095 | 0.0090 | 0.0006 |
| 92 | 0.0096 | 0.0090 | 0.0006 |
| 93 | 0.0096 | 0.0090 | 0.0006 |
| 94 | 0.0097 | 0.0091 | 0.0006 |
| 95 | 0.0097 | 0.0091 | 0.0006 |
| 96 | 0.0098 | 0.0092 | 0.0006 |
| 97 | 0.0098 | 0.0092 | 0.0006 |
| 98 | 0.0099 | 0.0093 | 0.0006 |
| 99 | 0.0099 | 0.0093 | 0.0006 |
| 100 | 0.0100 | 0.0094 | 0.0006 |
| 101 | 0.0101 | 0.0094 | 0.0006 |
| 102 | 0.0101 | 0.0095 | 0.0006 |
| 103 | 0.0102 | 0.0095 | 0.0006 |
| 104 | 0.0102 | 0.0096 | 0.0006 |
| 105 | 0.0103 | 0.0096 | 0.0006 |
| 106 | 0.0103 | 0.0097 | 0.0006 |
| 107 | 0.0104 | 0.0098 | 0.0006 |
| 108 | 0.0104 | 0.0098 | 0.0006 |
| 109 | 0.0105 | 0.0099 | 0.0006 |
| 110 | 0.0106 | 0.0099 | 0.0007 |
| 111 | 0.0106 | 0.0100 | 0.0007 |
| 112 | 0.0107 | 0.0100 | 0.0007 |
| 113 | 0.0108 | 0.0101 | 0.0007 |
| 114 | 0.0108 | 0.0102 | 0.0007 |
| 115 | 0.0109 | 0.0102 | 0.0007 |
| 116 | 0.0110 | 0.0103 | 0.0007 |
| 117 | 0.0111 | 0.0104 | 0.0007 |
| 118 | 0.0111 | 0.0104 | 0.0007 |
| 119 | 0.0112 | 0.0105 | 0.0007 |
| 120 | 0.0113 | 0.0106 | 0.0007 |
| 121 | 0.0114 | 0.0107 | 0.0007 |
| 122 | 0.0114 | 0.0107 | 0.0007 |
| 123 | 0.0115 | 0.0108 | 0.0007 |
| 124 | 0.0116 | 0.0109 | 0.0007 |
| 125 | 0.0117 | 0.0110 | 0.0007 |
| 126 | 0.0118 | 0.0110 | 0.0007 |
| 127 | 0.0119 | 0.0111 | 0.0007 |
| 128 | 0.0119 | 0.0112 | 0.0007 |
| 129 | 0.0121 | 0.0113 | 0.0007 |
| 130 | 0.0121 | 0.0114 | 0.0007 |
| 131 | 0.0123 | 0.0115 | 0.0008 |
| 132 | 0.0123 | 0.0116 | 0.0008 |
| 133 | 0.0125 | 0.0117 | 0.0008 |
| 134 | 0.0125 | 0.0118 | 0.0008 |
| 135 | 0.0127 | 0.0119 | 0.0008 |
| 136 | 0.0127 | 0.0120 | 0.0008 |
| 137 | 0.0129 | 0.0121 | 0.0008 |
| 138 | 0.0130 | 0.0122 | 0.0008 |
| 139 | 0.0131 | 0.0123 | 0.0008 |
| 140 | 0.0132 | 0.0124 | 0.0008 |
| 141 | 0.0134 | 0.0126 | 0.0008 |
| 142 | 0.0135 | 0.0126 | 0.0008 |
| 143 | 0.0137 | 0.0128 | 0.0008 |

| | | | |
|---|---|---|---|
| 144 | 0.0137 | 0.0129 | 0.0008 |
| 145 | 0.0175 | 0.0164 | 0.0011 |
| 146 | 0.0175 | 0.0165 | 0.0011 |
| 147 | 0.0177 | 0.0166 | 0.0011 |
| 148 | 0.0178 | 0.0167 | 0.0011 |
| 149 | 0.0180 | 0.0169 | 0.0011 |
| 150 | 0.0181 | 0.0170 | 0.0011 |
| 151 | 0.0184 | 0.0172 | 0.0011 |
| 152 | 0.0185 | 0.0173 | 0.0011 |
| 153 | 0.0187 | 0.0175 | 0.0012 |
| 154 | 0.0188 | 0.0177 | 0.0012 |
| 155 | 0.0191 | 0.0179 | 0.0012 |
| 156 | 0.0192 | 0.0180 | 0.0012 |
| 157 | 0.0195 | 0.0183 | 0.0012 |
| 158 | 0.0196 | 0.0184 | 0.0012 |
| 159 | 0.0199 | 0.0187 | 0.0012 |
| 160 | 0.0200 | 0.0188 | 0.0012 |
| 161 | 0.0203 | 0.0191 | 0.0013 |
| 162 | 0.0205 | 0.0192 | 0.0013 |
| 163 | 0.0208 | 0.0196 | 0.0013 |
| 164 | 0.0210 | 0.0197 | 0.0013 |
| 165 | 0.0214 | 0.0201 | 0.0013 |
| 166 | 0.0216 | 0.0203 | 0.0013 |
| 167 | 0.0220 | 0.0206 | 0.0014 |
| 168 | 0.0222 | 0.0208 | 0.0014 |
| 169 | 0.0227 | 0.0213 | 0.0014 |
| 170 | 0.0229 | 0.0215 | 0.0014 |
| 171 | 0.0234 | 0.0220 | 0.0014 |
| 172 | 0.0237 | 0.0223 | 0.0015 |
| 173 | 0.0243 | 0.0228 | 0.0015 |
| 174 | 0.0246 | 0.0231 | 0.0015 |
| 175 | 0.0253 | 0.0237 | 0.0016 |
| 176 | 0.0257 | 0.0241 | 0.0016 |
| 177 | 0.0265 | 0.0248 | 0.0016 |
| 178 | 0.0269 | 0.0252 | 0.0017 |
| 179 | 0.0278 | 0.0261 | 0.0017 |
| 180 | 0.0284 | 0.0266 | 0.0017 |
| 181 | 0.0295 | 0.0277 | 0.0018 |
| 182 | 0.0302 | 0.0283 | 0.0019 |
| 183 | 0.0317 | 0.0297 | 0.0019 |
| 184 | 0.0325 | 0.0305 | 0.0020 |
| 185 | 0.0168 | 0.0157 | 0.0010 |
| 186 | 0.0179 | 0.0168 | 0.0011 |
| 187 | 0.0207 | 0.0194 | 0.0013 |
| 188 | 0.0226 | 0.0212 | 0.0014 |
| 189 | 0.0281 | 0.0264 | 0.0017 |
| 190 | 0.0324 | 0.0304 | 0.0020 |
| 191 | 0.0491 | 0.0461 | 0.0030 |
| 192 | 0.0713 | 0.0669 | 0.0044 |
| 193 | 0.3086 | 0.0700 | 0.2386 |
| 194 | 0.0387 | 0.0363 | 0.0024 |
| 195 | 0.0250 | 0.0235 | 0.0015 |
| 196 | 0.0192 | 0.0180 | 0.0012 |
| 197 | 0.0335 | 0.0314 | 0.0021 |
| 198 | 0.0309 | 0.0290 | 0.0019 |
| 199 | 0.0289 | 0.0271 | 0.0018 |
| 200 | 0.0273 | 0.0257 | 0.0017 |
| 201 | 0.0260 | 0.0244 | 0.0016 |
| 202 | 0.0249 | 0.0234 | 0.0015 |
| 203 | 0.0240 | 0.0225 | 0.0015 |
| 204 | 0.0232 | 0.0217 | 0.0014 |
| 205 | 0.0224 | 0.0211 | 0.0014 |
| 206 | 0.0218 | 0.0204 | 0.0013 |
| 207 | 0.0212 | 0.0199 | 0.0013 |
| 208 | 0.0207 | 0.0194 | 0.0013 |
| 209 | 0.0202 | 0.0189 | 0.0012 |
| 210 | 0.0197 | 0.0185 | 0.0012 |
| 211 | 0.0193 | 0.0181 | 0.0012 |
| 212 | 0.0189 | 0.0178 | 0.0012 |
| 213 | 0.0186 | 0.0174 | 0.0011 |
| 214 | 0.0182 | 0.0171 | 0.0011 |

| | | | |
|---|---|---|---|
| 215 | 0.0179 | 0.0168 | 0.0011 |
| 216 | 0.0176 | 0.0166 | 0.0011 |
| 217 | 0.0138 | 0.0130 | 0.0009 |
| 218 | 0.0136 | 0.0127 | 0.0008 |
| 219 | 0.0133 | 0.0125 | 0.0008 |
| 220 | 0.0131 | 0.0123 | 0.0008 |
| 221 | 0.0128 | 0.0120 | 0.0008 |
| 222 | 0.0126 | 0.0118 | 0.0008 |
| 223 | 0.0124 | 0.0116 | 0.0008 |
| 224 | 0.0122 | 0.0114 | 0.0008 |
| 225 | 0.0120 | 0.0113 | 0.0007 |
| 226 | 0.0118 | 0.0111 | 0.0007 |
| 227 | 0.0116 | 0.0109 | 0.0007 |
| 228 | 0.0115 | 0.0108 | 0.0007 |
| 229 | 0.0113 | 0.0106 | 0.0007 |
| 230 | 0.0112 | 0.0105 | 0.0007 |
| 231 | 0.0110 | 0.0103 | 0.0007 |
| 232 | 0.0109 | 0.0102 | 0.0007 |
| 233 | 0.0107 | 0.0101 | 0.0007 |
| 234 | 0.0106 | 0.0100 | 0.0007 |
| 235 | 0.0105 | 0.0098 | 0.0006 |
| 236 | 0.0104 | 0.0097 | 0.0006 |
| 237 | 0.0102 | 0.0096 | 0.0006 |
| 238 | 0.0101 | 0.0095 | 0.0006 |
| 239 | 0.0100 | 0.0094 | 0.0006 |
| 240 | 0.0099 | 0.0093 | 0.0006 |
| 241 | 0.0098 | 0.0092 | 0.0006 |
| 242 | 0.0097 | 0.0091 | 0.0006 |
| 243 | 0.0096 | 0.0090 | 0.0006 |
| 244 | 0.0095 | 0.0089 | 0.0006 |
| 245 | 0.0094 | 0.0088 | 0.0006 |
| 246 | 0.0093 | 0.0088 | 0.0006 |
| 247 | 0.0092 | 0.0087 | 0.0006 |
| 248 | 0.0092 | 0.0086 | 0.0006 |
| 249 | 0.0091 | 0.0085 | 0.0006 |
| 250 | 0.0090 | 0.0084 | 0.0006 |
| 251 | 0.0089 | 0.0084 | 0.0005 |
| 252 | 0.0088 | 0.0083 | 0.0005 |
| 253 | 0.0088 | 0.0082 | 0.0005 |
| 254 | 0.0087 | 0.0082 | 0.0005 |
| 255 | 0.0086 | 0.0081 | 0.0005 |
| 256 | 0.0086 | 0.0080 | 0.0005 |
| 257 | 0.0085 | 0.0080 | 0.0005 |
| 258 | 0.0084 | 0.0079 | 0.0005 |
| 259 | 0.0084 | 0.0078 | 0.0005 |
| 260 | 0.0083 | 0.0078 | 0.0005 |
| 261 | 0.0082 | 0.0077 | 0.0005 |
| 262 | 0.0082 | 0.0077 | 0.0005 |
| 263 | 0.0081 | 0.0076 | 0.0005 |
| 264 | 0.0081 | 0.0076 | 0.0005 |
| 265 | 0.0080 | 0.0075 | 0.0005 |
| 266 | 0.0080 | 0.0075 | 0.0005 |
| 267 | 0.0079 | 0.0074 | 0.0005 |
| 268 | 0.0078 | 0.0074 | 0.0005 |
| 269 | 0.0078 | 0.0073 | 0.0005 |
| 270 | 0.0077 | 0.0073 | 0.0005 |
| 271 | 0.0077 | 0.0072 | 0.0005 |
| 272 | 0.0076 | 0.0072 | 0.0005 |
| 273 | 0.0076 | 0.0071 | 0.0005 |
| 274 | 0.0076 | 0.0071 | 0.0005 |
| 275 | 0.0075 | 0.0070 | 0.0005 |
| 276 | 0.0075 | 0.0070 | 0.0005 |
| 277 | 0.0074 | 0.0070 | 0.0005 |
| 278 | 0.0074 | 0.0069 | 0.0005 |
| 279 | 0.0073 | 0.0069 | 0.0005 |
| 280 | 0.0073 | 0.0068 | 0.0004 |
| 281 | 0.0072 | 0.0068 | 0.0004 |
| 282 | 0.0072 | 0.0068 | 0.0004 |
| 283 | 0.0072 | 0.0067 | 0.0004 |
| 284 | 0.0071 | 0.0067 | 0.0004 |
| 285 | 0.0071 | 0.0067 | 0.0004 |

```
      286              0.0070           0.0066              0.0004
      287              0.0070           0.0066              0.0004
      288              0.0070           0.0065              0.0004
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.53(In)
      Total effective rainfall =      0.47(In)
      Peak flow rate in flood hydrograph =      7.30(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
---------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |         |         |         |
  0+10       0.0001      0.01  Q         |         |         |         |
  0+15       0.0002      0.02  Q         |         |         |         |
  0+20       0.0004      0.03  Q         |         |         |         |
  0+25       0.0006      0.03  Q         |         |         |         |
  0+30       0.0008      0.03  Q         |         |         |         |
  0+35       0.0010      0.03  Q         |         |         |         |
  0+40       0.0012      0.03  Q         |         |         |         |
  0+45       0.0014      0.03  Q         |         |         |         |
  0+50       0.0017      0.03  Q         |         |         |         |
  0+55       0.0019      0.03  Q         |         |         |         |
  1+ 0       0.0021      0.03  Q         |         |         |         |
  1+ 5       0.0024      0.03  Q         |         |         |         |
  1+10       0.0026      0.03  Q         |         |         |         |
  1+15       0.0029      0.03  Q         |         |         |         |
  1+20       0.0031      0.03  Q         |         |         |         |
  1+25       0.0033      0.03  Q         |         |         |         |
  1+30       0.0036      0.04  Q         |         |         |         |
  1+35       0.0038      0.04  Q         |         |         |         |
  1+40       0.0041      0.04  Q         |         |         |         |
  1+45       0.0043      0.04  Q         |         |         |         |
  1+50       0.0046      0.04  Q         |         |         |         |
  1+55       0.0048      0.04  Q         |         |         |         |
  2+ 0       0.0051      0.04  Q         |         |         |         |
  2+ 5       0.0053      0.04  Q         |         |         |         |
  2+10       0.0055      0.04  Q         |         |         |         |
  2+15       0.0058      0.04  Q         |         |         |         |
  2+20       0.0060      0.04  Q         |         |         |         |
  2+25       0.0063      0.04  Q         |         |         |         |
  2+30       0.0065      0.04  QV        |         |         |         |
  2+35       0.0068      0.04  QV        |         |         |         |
  2+40       0.0070      0.04  QV        |         |         |         |
  2+45       0.0073      0.04  QV        |         |         |         |
  2+50       0.0075      0.04  QV        |         |         |         |
  2+55       0.0078      0.04  QV        |         |         |         |
  3+ 0       0.0081      0.04  QV        |         |         |         |
  3+ 5       0.0083      0.04  QV        |         |         |         |
  3+10       0.0086      0.04  QV        |         |         |         |
  3+15       0.0088      0.04  QV        |         |         |         |
  3+20       0.0091      0.04  QV        |         |         |         |
  3+25       0.0093      0.04  QV        |         |         |         |
  3+30       0.0096      0.04  QV        |         |         |         |
  3+35       0.0099      0.04  QV        |         |         |         |
  3+40       0.0101      0.04  QV        |         |         |         |
  3+45       0.0104      0.04  QV        |         |         |         |
  3+50       0.0107      0.04  QV        |         |         |         |
  3+55       0.0109      0.04  QV        |         |         |         |
  4+ 0       0.0112      0.04  QV        |         |         |         |
  4+ 5       0.0114      0.04  QV        |         |         |         |
  4+10       0.0117      0.04  QV        |         |         |         |
  4+15       0.0120      0.04  QV        |         |         |         |
  4+20       0.0123      0.04  QV        |         |         |         |
  4+25       0.0125      0.04  QV        |         |         |         |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4+30 | 0.0128 | 0.04 | Q | V | | | |
| 4+35 | 0.0131 | 0.04 | Q | V | | | |
| 4+40 | 0.0133 | 0.04 | Q | V | | | |
| 4+45 | 0.0136 | 0.04 | Q | V | | | |
| 4+50 | 0.0139 | 0.04 | Q | V | | | |
| 4+55 | 0.0142 | 0.04 | Q | V | | | |
| 5+ 0 | 0.0144 | 0.04 | Q | V | | | |
| 5+ 5 | 0.0147 | 0.04 | Q | V | | | |
| 5+10 | 0.0150 | 0.04 | Q | V | | | |
| 5+15 | 0.0153 | 0.04 | Q | V | | | |
| 5+20 | 0.0156 | 0.04 | Q | V | | | |
| 5+25 | 0.0158 | 0.04 | Q | V | | | |
| 5+30 | 0.0161 | 0.04 | Q | V | | | |
| 5+35 | 0.0164 | 0.04 | Q | V | | | |
| 5+40 | 0.0167 | 0.04 | Q | V | | | |
| 5+45 | 0.0170 | 0.04 | Q | V | | | |
| 5+50 | 0.0173 | 0.04 | Q | V | | | |
| 5+55 | 0.0175 | 0.04 | Q | V | | | |
| 6+ 0 | 0.0178 | 0.04 | Q | V | | | |
| 6+ 5 | 0.0181 | 0.04 | Q | V | | | |
| 6+10 | 0.0184 | 0.04 | Q | V | | | |
| 6+15 | 0.0187 | 0.04 | Q | V | | | |
| 6+20 | 0.0190 | 0.04 | Q | V | | | |
| 6+25 | 0.0193 | 0.04 | Q | V | | | |
| 6+30 | 0.0196 | 0.04 | Q | V | | | |
| 6+35 | 0.0199 | 0.04 | Q | V | | | |
| 6+40 | 0.0202 | 0.04 | Q | V | | | |
| 6+45 | 0.0205 | 0.04 | Q | V | | | |
| 6+50 | 0.0208 | 0.04 | Q | V | | | |
| 6+55 | 0.0211 | 0.04 | Q | V | | | |
| 7+ 0 | 0.0214 | 0.04 | Q | V | | | |
| 7+ 5 | 0.0217 | 0.04 | Q | V | | | |
| 7+10 | 0.0220 | 0.04 | Q | V | | | |
| 7+15 | 0.0223 | 0.04 | Q | V | | | |
| 7+20 | 0.0226 | 0.05 | Q | V | | | |
| 7+25 | 0.0230 | 0.05 | Q | V | | | |
| 7+30 | 0.0233 | 0.05 | Q | V | | | |
| 7+35 | 0.0236 | 0.05 | Q | V | | | |
| 7+40 | 0.0239 | 0.05 | Q | V | | | |
| 7+45 | 0.0242 | 0.05 | Q | V | | | |
| 7+50 | 0.0245 | 0.05 | Q | V | | | |
| 7+55 | 0.0249 | 0.05 | Q | V | | | |
| 8+ 0 | 0.0252 | 0.05 | Q | V | | | |
| 8+ 5 | 0.0255 | 0.05 | Q | V | | | |
| 8+10 | 0.0258 | 0.05 | Q | V | | | |
| 8+15 | 0.0262 | 0.05 | Q | V | | | |
| 8+20 | 0.0265 | 0.05 | Q | V | | | |
| 8+25 | 0.0268 | 0.05 | Q | V | | | |
| 8+30 | 0.0272 | 0.05 | Q | V | | | |
| 8+35 | 0.0275 | 0.05 | Q | V | | | |
| 8+40 | 0.0278 | 0.05 | Q | V | | | |
| 8+45 | 0.0282 | 0.05 | Q | V | | | |
| 8+50 | 0.0285 | 0.05 | Q | V | | | |
| 8+55 | 0.0288 | 0.05 | Q | V | | | |
| 9+ 0 | 0.0292 | 0.05 | Q | V | | | |
| 9+ 5 | 0.0295 | 0.05 | Q | V | | | |
| 9+10 | 0.0299 | 0.05 | Q | V | | | |
| 9+15 | 0.0302 | 0.05 | Q | V | | | |
| 9+20 | 0.0306 | 0.05 | Q | V | | | |
| 9+25 | 0.0309 | 0.05 | Q | V | | | |
| 9+30 | 0.0313 | 0.05 | Q | V | | | |
| 9+35 | 0.0317 | 0.05 | Q | V | | | |
| 9+40 | 0.0320 | 0.05 | Q | V | | | |
| 9+45 | 0.0324 | 0.05 | Q | V | | | |
| 9+50 | 0.0327 | 0.05 | Q | V | | | |
| 9+55 | 0.0331 | 0.05 | Q | V | | | |
| 10+ 0 | 0.0335 | 0.05 | Q | V | | | |
| 10+ 5 | 0.0339 | 0.05 | Q | V | | | |
| 10+10 | 0.0342 | 0.05 | Q | V | | | |
| 10+15 | 0.0346 | 0.05 | Q | V | | | |
| 10+20 | 0.0350 | 0.06 | Q | V | | | |

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10+25       0.0354      0.06  Q    V    |          |          |          |
10+30       0.0358      0.06  Q    V    |          |          |          |
10+35       0.0361      0.06  Q    V    |          |          |          |
10+40       0.0365      0.06  Q    V    |          |          |          |
10+45       0.0369      0.06  Q    V    |          |          |          |
10+50       0.0373      0.06  Q    V    |          |          |          |
10+55       0.0377      0.06  Q    V    |          |          |          |
11+ 0       0.0381      0.06  Q     V   |          |          |          |
11+ 5       0.0385      0.06  Q     V   |          |          |          |
11+10       0.0390      0.06  Q     V   |          |          |          |
11+15       0.0394      0.06  Q     V   |          |          |          |
11+20       0.0398      0.06  Q     V   |          |          |          |
11+25       0.0402      0.06  Q     V   |          |          |          |
11+30       0.0406      0.06  Q     V   |          |          |          |
11+35       0.0411      0.06  Q     V   |          |          |          |
11+40       0.0415      0.06  Q     V   |          |          |          |
11+45       0.0419      0.06  Q     V   |          |          |          |
11+50       0.0424      0.06  Q     V   |          |          |          |
11+55       0.0428      0.06  Q     V   |          |          |          |
12+ 0       0.0433      0.07  Q     V   |          |          |          |
12+ 5       0.0437      0.07  Q     V   |          |          |          |
12+10       0.0442      0.07  Q     V   |          |          |          |
12+15       0.0447      0.08  Q      V  |          |          |          |
12+20       0.0453      0.08  Q      V  |          |          |          |
12+25       0.0458      0.08  Q      V  |          |          |          |
12+30       0.0464      0.08  Q      V  |          |          |          |
12+35       0.0470      0.09  Q      V  |          |          |          |
12+40       0.0476      0.09  Q      V  |          |          |          |
12+45       0.0482      0.09  Q      V  |          |          |          |
12+50       0.0488      0.09  Q      V  |          |          |          |
12+55       0.0495      0.09  Q      V  |          |          |          |
13+ 0       0.0501      0.09  Q      V  |          |          |          |
13+ 5       0.0507      0.09  Q       V |          |          |          |
13+10       0.0514      0.09  Q       V |          |          |          |
13+15       0.0520      0.09  Q       V |          |          |          |
13+20       0.0526      0.09  Q       V |          |          |          |
13+25       0.0533      0.10  Q       V |          |          |          |
13+30       0.0540      0.10  Q       V |          |          |          |
13+35       0.0546      0.10  Q       V |          |          |          |
13+40       0.0553      0.10  Q       V |          |          |          |
13+45       0.0560      0.10  Q       V |          |          |          |
13+50       0.0567      0.10  Q       V |          |          |          |
13+55       0.0574      0.10  Q        V|          |          |          |
14+ 0       0.0581      0.10  Q        V|          |          |          |
14+ 5       0.0589      0.11  Q        V|          |          |          |
14+10       0.0596      0.11  Q        V|          |          |          |
14+15       0.0603      0.11  Q        V|          |          |          |
14+20       0.0611      0.11  Q        V|          |          |          |
14+25       0.0619      0.11  Q        V|          |          |          |
14+30       0.0627      0.11  Q        V|          |          |          |
14+35       0.0635      0.12  Q         V          |          |          |
14+40       0.0643      0.12  Q         V          |          |          |
14+45       0.0651      0.12  Q         V          |          |          |
14+50       0.0660      0.12  Q         V          |          |          |
14+55       0.0668      0.13  Q         V          |          |          |
15+ 0       0.0677      0.13  Q         V          |          |          |
15+ 5       0.0686      0.13  Q         V          |          |          |
15+10       0.0696      0.14  Q         V          |          |          |
15+15       0.0705      0.14  Q         |V         |          |          |
15+20       0.0715      0.14  Q         |V         |          |          |
15+25       0.0725      0.15  Q         |V         |          |          |
15+30       0.0735      0.14  Q         |V         |          |          |
15+35       0.0742      0.11  Q         |V         |          |          |
15+40       0.0750      0.11  Q         |V         |          |          |
15+45       0.0757      0.11  Q         |V         |          |          |
15+50       0.0765      0.12  Q         | V        |          |          |
15+55       0.0774      0.13  Q         | V        |          |          |
16+ 0       0.0785      0.16  Q         | V        |          |          |
16+ 5       0.0849      0.93  |  Q      |  V       |          |          |
16+10       0.1075      3.28  |         |  Q  V    |          |          |
16+15       0.1578      7.30  |         |          |   V    Q |          |
```

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16+20       0.1802      3.26  |          |  Q       |        V |          |
16+25       0.1927      1.81  |       Q  |          |          V          |
16+30       0.2012      1.23  |    Q     |          |          |V         |
16+35       0.2074      0.90  |   Q      |          |          | V        |
16+40       0.2118      0.64  |  Q       |          |          |  V       |
16+45       0.2149      0.45  | Q        |          |          |  V       |
16+50       0.2168      0.27  |Q         |          |          |   V      |
16+55       0.2183      0.22  Q          |          |          |   V      |
17+ 0       0.2196      0.19  Q          |          |          |   V      |
17+ 5       0.2209      0.18  Q          |          |          |   V      |
17+10       0.2220      0.17  Q          |          |          |    V     |
17+15       0.2230      0.14  Q          |          |          |    V     |
17+20       0.2238      0.12  Q          |          |          |    V     |
17+25       0.2245      0.11  Q          |          |          |    V     |
17+30       0.2253      0.10  Q          |          |          |    V     |
17+35       0.2259      0.10  Q          |          |          |    V     |
17+40       0.2266      0.10  Q          |          |          |    V     |
17+45       0.2273      0.10  Q          |          |          |    V     |
17+50       0.2279      0.09  Q          |          |          |    V     |
17+55       0.2286      0.09  Q          |          |          |     V    |
18+ 0       0.2292      0.09  Q          |          |          |     V    |
18+ 5       0.2298      0.09  Q          |          |          |     V    |
18+10       0.2304      0.08  Q          |          |          |     V    |
18+15       0.2309      0.08  Q          |          |          |     V    |
18+20       0.2314      0.07  Q          |          |          |     V    |
18+25       0.2319      0.07  Q          |          |          |     V    |
18+30       0.2323      0.07  Q          |          |          |     V    |
18+35       0.2328      0.06  Q          |          |          |     V    |
18+40       0.2332      0.06  Q          |          |          |     V    |
18+45       0.2336      0.06  Q          |          |          |     V    |
18+50       0.2340      0.06  Q          |          |          |     V    |
18+55       0.2345      0.06  Q          |          |          |      V   |
19+ 0       0.2349      0.06  Q          |          |          |      V   |
19+ 5       0.2353      0.06  Q          |          |          |      V   |
19+10       0.2356      0.06  Q          |          |          |      V   |
19+15       0.2360      0.06  Q          |          |          |      V   |
19+20       0.2364      0.05  Q          |          |          |      V   |
19+25       0.2368      0.05  Q          |          |          |      V   |
19+30       0.2371      0.05  Q          |          |          |      V   |
19+35       0.2375      0.05  Q          |          |          |      V   |
19+40       0.2379      0.05  Q          |          |          |      V   |
19+45       0.2382      0.05  Q          |          |          |      V   |
19+50       0.2386      0.05  Q          |          |          |      V   |
19+55       0.2389      0.05  Q          |          |          |      V   |
20+ 0       0.2393      0.05  Q          |          |          |      V   |
20+ 5       0.2396      0.05  Q          |          |          |      V   |
20+10       0.2399      0.05  Q          |          |          |      V   |
20+15       0.2403      0.05  Q          |          |          |      V   |
20+20       0.2406      0.05  Q          |          |          |      V   |
20+25       0.2409      0.05  Q          |          |          |       V  |
20+30       0.2412      0.05  Q          |          |          |       V  |
20+35       0.2416      0.05  Q          |          |          |       V  |
20+40       0.2419      0.05  Q          |          |          |       V  |
20+45       0.2422      0.05  Q          |          |          |       V  |
20+50       0.2425      0.04  Q          |          |          |       V  |
20+55       0.2428      0.04  Q          |          |          |       V  |
21+ 0       0.2431      0.04  Q          |          |          |       V  |
21+ 5       0.2434      0.04  Q          |          |          |       V  |
21+10       0.2437      0.04  Q          |          |          |       V  |
21+15       0.2440      0.04  Q          |          |          |       V  |
21+20       0.2443      0.04  Q          |          |          |       V  |
21+25       0.2446      0.04  Q          |          |          |       V  |
21+30       0.2449      0.04  Q          |          |          |       V  |
21+35       0.2452      0.04  Q          |          |          |       V  |
21+40       0.2454      0.04  Q          |          |          |       V  |
21+45       0.2457      0.04  Q          |          |          |       V  |
21+50       0.2460      0.04  Q          |          |          |       V  |
21+55       0.2463      0.04  Q          |          |          |       V  |
22+ 0       0.2466      0.04  Q          |          |          |       V  |
22+ 5       0.2468      0.04  Q          |          |          |       V  |
22+10       0.2471      0.04  Q          |          |          |        V |
```

```
  22+15      0.2474      0.04  Q         |         |         |         V|
  22+20      0.2476      0.04  Q         |         |         |         V|
  22+25      0.2479      0.04  Q         |         |         |         V|
  22+30      0.2482      0.04  Q         |         |         |         V|
  22+35      0.2484      0.04  Q         |         |         |         V|
  22+40      0.2487      0.04  Q         |         |         |         V|
  22+45      0.2490      0.04  Q         |         |         |         V|
  22+50      0.2492      0.04  Q         |         |         |         V|
  22+55      0.2495      0.04  Q         |         |         |         V|
  23+ 0      0.2497      0.04  Q         |         |         |         V|
  23+ 5      0.2500      0.04  Q         |         |         |         V|
  23+10      0.2502      0.04  Q         |         |         |         V|
  23+15      0.2505      0.04  Q         |         |         |         V|
  23+20      0.2507      0.04  Q         |         |         |         V|
  23+25      0.2510      0.04  Q         |         |         |         V|
  23+30      0.2512      0.04  Q         |         |         |         V|
  23+35      0.2515      0.04  Q         |         |         |         V|
  23+40      0.2517      0.04  Q         |         |         |         V|
  23+45      0.2519      0.04  Q         |         |         |         V|
  23+50      0.2522      0.03  Q         |         |         |         V|
  23+55      0.2524      0.03  Q         |         |         |         V|
  24+ 0      0.2527      0.03  Q         |         |         |         V|
  24+ 5      0.2529      0.03  Q         |         |         |         V|
  24+10      0.2531      0.03  Q         |         |         |         V|
  24+15      0.2532      0.01  Q         |         |         |         V|
  24+20      0.2532      0.01  Q         |         |         |         V|
  24+25      0.2533      0.01  Q         |         |         |         V|
  24+30      0.2533      0.00  Q         |         |         |         V|
  24+35      0.2533      0.00  Q         |         |         |         V|
  24+40      0.2533      0.00  Q         |         |         |         V|
  24+45      0.2533      0.00  Q         |         |         |         V|
  24+50      0.2533      0.00  Q         |         |         |         V|
  24+55      0.2533      0.00  Q         |         |         |         V|
  25+ 0      0.2533      0.00  Q         |         |         |         V|
  25+ 5      0.2533      0.00  Q         |         |         |         V|
  25+10      0.2533      0.00  Q         |         |         |         V|
  25+15      0.2533      0.00  Q         |         |         |          V
-------------------------------------------------------------------------
```

Area ‘C’ – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
5 YEAR 24 HOUR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.53            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.53            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.53           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             6.53            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.53            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.53           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      47.4          6.53      1.000     0.840    1.000    0.840

Area-averaged adjusted loss rate Fm (In/Hr) =  0.840

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.53 | 1.000 | 67.0 | 47.4 | 11.10 | 0.154 |

Area-averaged catchment yield fraction, Y = 0.154
Area-averaged low loss fraction, Yb = 0.846
User entry of time of concentration = 0.225 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.53(Ac.)
Catchment Lag time = 0.180 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 46.2963
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.840(In/Hr)
Average low loss rate fraction (Yb) = 0.846 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 6.53(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.690(In)
1-hour factor = 1.000 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.586(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 78.97 (CFS)) | |
| 1 | 3.841 | 3.033 |
| 2 | 20.125 | 12.860 |
| 3 | 58.137 | 30.019 |
| 4 | 74.610 | 13.009 |
| 5 | 83.494 | 7.016 |
| 6 | 89.354 | 4.628 |
| 7 | 93.374 | 3.174 |
| 8 | 96.031 | 2.098 |
| 9 | 97.668 | 1.293 |
| 10 | 98.374 | 0.558 |
| 11 | 98.857 | 0.382 |
| 12 | 99.195 | 0.267 |
| 13 | 99.529 | 0.264 |
| 14 | 99.800 | 0.214 |
| 15 | 99.943 | 0.113 |
| 16 | 100.000 | 0.045 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4030 | 0.4030 |
| 2 | 0.4961 | 0.0931 |
| 3 | 0.5603 | 0.0642 |
| 4 | 0.6108 | 0.0505 |
| 5 | 0.6531 | 0.0423 |
| 6 | 0.6898 | 0.0367 |
| 7 | 0.7224 | 0.0326 |
| 8 | 0.7520 | 0.0295 |
| 9 | 0.7790 | 0.0270 |
| 10 | 0.8040 | 0.0250 |

| | | |
|---|---|---|
| 11 | 0.8273 | 0.0233 |
| 12 | 0.8492 | 0.0219 |
| 13 | 0.8925 | 0.0433 |
| 14 | 0.9346 | 0.0421 |
| 15 | 0.9755 | 0.0409 |
| 16 | 1.0155 | 0.0399 |
| 17 | 1.0545 | 0.0390 |
| 18 | 1.0926 | 0.0381 |
| 19 | 1.1299 | 0.0373 |
| 20 | 1.1665 | 0.0366 |
| 21 | 1.2024 | 0.0359 |
| 22 | 1.2377 | 0.0353 |
| 23 | 1.2724 | 0.0347 |
| 24 | 1.3065 | 0.0341 |
| 25 | 1.3400 | 0.0336 |
| 26 | 1.3731 | 0.0331 |
| 27 | 1.4057 | 0.0326 |
| 28 | 1.4378 | 0.0321 |
| 29 | 1.4695 | 0.0317 |
| 30 | 1.5008 | 0.0313 |
| 31 | 1.5317 | 0.0309 |
| 32 | 1.5622 | 0.0305 |
| 33 | 1.5924 | 0.0302 |
| 34 | 1.6222 | 0.0298 |
| 35 | 1.6517 | 0.0295 |
| 36 | 1.6809 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7383 | 0.0286 |
| 39 | 1.7666 | 0.0283 |
| 40 | 1.7946 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8498 | 0.0275 |
| 43 | 1.8770 | 0.0272 |
| 44 | 1.9040 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9573 | 0.0265 |
| 47 | 1.9837 | 0.0263 |
| 48 | 2.0098 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1123 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1624 | 0.0250 |
| 55 | 2.1872 | 0.0248 |
| 56 | 2.2118 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2847 | 0.0241 |
| 60 | 2.3086 | 0.0240 |
| 61 | 2.3325 | 0.0238 |
| 62 | 2.3561 | 0.0237 |
| 63 | 2.3797 | 0.0235 |
| 64 | 2.4031 | 0.0234 |
| 65 | 2.4263 | 0.0233 |
| 66 | 2.4495 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5180 | 0.0227 |
| 70 | 2.5407 | 0.0226 |
| 71 | 2.5631 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6278 | 0.0211 |
| 75 | 2.6487 | 0.0210 |
| 76 | 2.6696 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7110 | 0.0206 |
| 79 | 2.7315 | 0.0205 |
| 80 | 2.7519 | 0.0204 |
| 81 | 2.7722 | 0.0203 |

| | | |
|---|---|---|
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |
| 84 | 2.8325 | 0.0200 |
| 85 | 2.8524 | 0.0199 |
| 86 | 2.8722 | 0.0198 |
| 87 | 2.8920 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9311 | 0.0195 |
| 90 | 2.9506 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0465 | 0.0190 |
| 96 | 3.0655 | 0.0189 |
| 97 | 3.0843 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1218 | 0.0187 |
| 100 | 3.1405 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1775 | 0.0185 |
| 103 | 3.1959 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2325 | 0.0183 |
| 106 | 3.2507 | 0.0182 |
| 107 | 3.2688 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3406 | 0.0178 |
| 112 | 3.3584 | 0.0178 |
| 113 | 3.3761 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4288 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4811 | 0.0173 |
| 120 | 3.4983 | 0.0173 |
| 121 | 3.5156 | 0.0172 |
| 122 | 3.5327 | 0.0172 |
| 123 | 3.5498 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6008 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6346 | 0.0168 |
| 129 | 3.6513 | 0.0168 |
| 130 | 3.6681 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7014 | 0.0166 |
| 133 | 3.7179 | 0.0166 |
| 134 | 3.7345 | 0.0165 |
| 135 | 3.7509 | 0.0165 |
| 136 | 3.7674 | 0.0164 |
| 137 | 3.7837 | 0.0164 |
| 138 | 3.8001 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8326 | 0.0162 |
| 141 | 3.8487 | 0.0162 |
| 142 | 3.8649 | 0.0161 |
| 143 | 3.8810 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9449 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9765 | 0.0158 |
| 150 | 3.9923 | 0.0158 |
| 151 | 4.0080 | 0.0157 |
| 152 | 4.0237 | 0.0157 |

| | | |
|---|---|---|
| 153 | 4.0394 | 0.0156 |
| 154 | 4.0550 | 0.0156 |
| 155 | 4.0706 | 0.0156 |
| 156 | 4.0861 | 0.0155 |
| 157 | 4.1016 | 0.0155 |
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1478 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1784 | 0.0153 |
| 163 | 4.1936 | 0.0152 |
| 164 | 4.2088 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2542 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2843 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3143 | 0.0150 |
| 172 | 4.3292 | 0.0149 |
| 173 | 4.3441 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4032 | 0.0147 |
| 178 | 4.4180 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4473 | 0.0146 |
| 181 | 4.4619 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4910 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5200 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5488 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5776 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6062 | 0.0143 |
| 192 | 4.6204 | 0.0143 |
| 193 | 4.6347 | 0.0142 |
| 194 | 4.6489 | 0.0142 |
| 195 | 4.6630 | 0.0142 |
| 196 | 4.6772 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7054 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7474 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7893 | 0.0139 |
| 205 | 4.8031 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8721 | 0.0137 |
| 211 | 4.8859 | 0.0137 |
| 212 | 4.8996 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9269 | 0.0136 |
| 215 | 4.9405 | 0.0136 |
| 216 | 4.9541 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9812 | 0.0135 |
| 219 | 4.9947 | 0.0135 |
| 220 | 5.0082 | 0.0135 |
| 221 | 5.0216 | 0.0135 |
| 222 | 5.0351 | 0.0134 |
| 223 | 5.0485 | 0.0134 |

| | | |
|---|---|---|
| 224 | 5.0619 | 0.0134 |
| 225 | 5.0752 | 0.0134 |
| 226 | 5.0886 | 0.0133 |
| 227 | 5.1019 | 0.0133 |
| 228 | 5.1152 | 0.0133 |
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1417 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1813 | 0.0132 |
| 234 | 5.1944 | 0.0132 |
| 235 | 5.2076 | 0.0131 |
| 236 | 5.2207 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2729 | 0.0130 |
| 241 | 5.2859 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3118 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3634 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4274 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5035 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5413 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5664 | 0.0125 |
| 264 | 5.5789 | 0.0125 |
| 265 | 5.5914 | 0.0125 |
| 266 | 5.6039 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6288 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6660 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7522 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8132 | 0.0122 |
| 284 | 5.8253 | 0.0121 |
| 285 | 5.8375 | 0.0121 |
| 286 | 5.8496 | 0.0121 |
| 287 | 5.8617 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0102 | 0.0019 |

| | | | |
|---|---|---|---|
| 2 | 0.0121 | 0.0102 | 0.0019 |
| 3 | 0.0121 | 0.0103 | 0.0019 |
| 4 | 0.0121 | 0.0103 | 0.0019 |
| 5 | 0.0122 | 0.0103 | 0.0019 |
| 6 | 0.0122 | 0.0103 | 0.0019 |
| 7 | 0.0122 | 0.0104 | 0.0019 |
| 8 | 0.0123 | 0.0104 | 0.0019 |
| 9 | 0.0123 | 0.0104 | 0.0019 |
| 10 | 0.0123 | 0.0104 | 0.0019 |
| 11 | 0.0123 | 0.0104 | 0.0019 |
| 12 | 0.0124 | 0.0105 | 0.0019 |
| 13 | 0.0124 | 0.0105 | 0.0019 |
| 14 | 0.0124 | 0.0105 | 0.0019 |
| 15 | 0.0125 | 0.0105 | 0.0019 |
| 16 | 0.0125 | 0.0106 | 0.0019 |
| 17 | 0.0125 | 0.0106 | 0.0019 |
| 18 | 0.0125 | 0.0106 | 0.0019 |
| 19 | 0.0126 | 0.0106 | 0.0019 |
| 20 | 0.0126 | 0.0107 | 0.0019 |
| 21 | 0.0126 | 0.0107 | 0.0019 |
| 22 | 0.0127 | 0.0107 | 0.0020 |
| 23 | 0.0127 | 0.0107 | 0.0020 |
| 24 | 0.0127 | 0.0108 | 0.0020 |
| 25 | 0.0128 | 0.0108 | 0.0020 |
| 26 | 0.0128 | 0.0108 | 0.0020 |
| 27 | 0.0128 | 0.0108 | 0.0020 |
| 28 | 0.0128 | 0.0109 | 0.0020 |
| 29 | 0.0129 | 0.0109 | 0.0020 |
| 30 | 0.0129 | 0.0109 | 0.0020 |
| 31 | 0.0129 | 0.0110 | 0.0020 |
| 32 | 0.0130 | 0.0110 | 0.0020 |
| 33 | 0.0130 | 0.0110 | 0.0020 |
| 34 | 0.0130 | 0.0110 | 0.0020 |
| 35 | 0.0131 | 0.0111 | 0.0020 |
| 36 | 0.0131 | 0.0111 | 0.0020 |
| 37 | 0.0132 | 0.0111 | 0.0020 |
| 38 | 0.0132 | 0.0111 | 0.0020 |
| 39 | 0.0132 | 0.0112 | 0.0020 |
| 40 | 0.0132 | 0.0112 | 0.0020 |
| 41 | 0.0133 | 0.0112 | 0.0020 |
| 42 | 0.0133 | 0.0113 | 0.0021 |
| 43 | 0.0134 | 0.0113 | 0.0021 |
| 44 | 0.0134 | 0.0113 | 0.0021 |
| 45 | 0.0134 | 0.0114 | 0.0021 |
| 46 | 0.0135 | 0.0114 | 0.0021 |
| 47 | 0.0135 | 0.0114 | 0.0021 |
| 48 | 0.0135 | 0.0115 | 0.0021 |
| 49 | 0.0136 | 0.0115 | 0.0021 |
| 50 | 0.0136 | 0.0115 | 0.0021 |
| 51 | 0.0137 | 0.0116 | 0.0021 |
| 52 | 0.0137 | 0.0116 | 0.0021 |
| 53 | 0.0137 | 0.0116 | 0.0021 |
| 54 | 0.0138 | 0.0117 | 0.0021 |
| 55 | 0.0138 | 0.0117 | 0.0021 |
| 56 | 0.0139 | 0.0117 | 0.0021 |
| 57 | 0.0139 | 0.0118 | 0.0021 |
| 58 | 0.0139 | 0.0118 | 0.0021 |
| 59 | 0.0140 | 0.0118 | 0.0022 |
| 60 | 0.0140 | 0.0119 | 0.0022 |
| 61 | 0.0141 | 0.0119 | 0.0022 |
| 62 | 0.0141 | 0.0119 | 0.0022 |
| 63 | 0.0142 | 0.0120 | 0.0022 |
| 64 | 0.0142 | 0.0120 | 0.0022 |
| 65 | 0.0143 | 0.0121 | 0.0022 |
| 66 | 0.0143 | 0.0121 | 0.0022 |
| 67 | 0.0144 | 0.0121 | 0.0022 |
| 68 | 0.0144 | 0.0122 | 0.0022 |
| 69 | 0.0144 | 0.0122 | 0.0022 |
| 70 | 0.0145 | 0.0122 | 0.0022 |
| 71 | 0.0145 | 0.0123 | 0.0022 |
| 72 | 0.0146 | 0.0123 | 0.0022 |

| | | | |
|---|---|---|---|
| 73 | 0.0146 | 0.0124 | 0.0023 |
| 74 | 0.0147 | 0.0124 | 0.0023 |
| 75 | 0.0147 | 0.0125 | 0.0023 |
| 76 | 0.0148 | 0.0125 | 0.0023 |
| 77 | 0.0148 | 0.0126 | 0.0023 |
| 78 | 0.0149 | 0.0126 | 0.0023 |
| 79 | 0.0150 | 0.0126 | 0.0023 |
| 80 | 0.0150 | 0.0127 | 0.0023 |
| 81 | 0.0151 | 0.0127 | 0.0023 |
| 82 | 0.0151 | 0.0128 | 0.0023 |
| 83 | 0.0152 | 0.0128 | 0.0023 |
| 84 | 0.0152 | 0.0129 | 0.0023 |
| 85 | 0.0153 | 0.0129 | 0.0024 |
| 86 | 0.0153 | 0.0130 | 0.0024 |
| 87 | 0.0154 | 0.0130 | 0.0024 |
| 88 | 0.0154 | 0.0131 | 0.0024 |
| 89 | 0.0155 | 0.0131 | 0.0024 |
| 90 | 0.0156 | 0.0132 | 0.0024 |
| 91 | 0.0156 | 0.0132 | 0.0024 |
| 92 | 0.0157 | 0.0133 | 0.0024 |
| 93 | 0.0158 | 0.0133 | 0.0024 |
| 94 | 0.0158 | 0.0134 | 0.0024 |
| 95 | 0.0159 | 0.0135 | 0.0025 |
| 96 | 0.0160 | 0.0135 | 0.0025 |
| 97 | 0.0160 | 0.0136 | 0.0025 |
| 98 | 0.0161 | 0.0136 | 0.0025 |
| 99 | 0.0162 | 0.0137 | 0.0025 |
| 100 | 0.0162 | 0.0137 | 0.0025 |
| 101 | 0.0163 | 0.0138 | 0.0025 |
| 102 | 0.0164 | 0.0138 | 0.0025 |
| 103 | 0.0165 | 0.0139 | 0.0025 |
| 104 | 0.0165 | 0.0140 | 0.0025 |
| 105 | 0.0166 | 0.0141 | 0.0026 |
| 106 | 0.0167 | 0.0141 | 0.0026 |
| 107 | 0.0168 | 0.0142 | 0.0026 |
| 108 | 0.0168 | 0.0142 | 0.0026 |
| 109 | 0.0169 | 0.0143 | 0.0026 |
| 110 | 0.0170 | 0.0144 | 0.0026 |
| 111 | 0.0171 | 0.0145 | 0.0026 |
| 112 | 0.0172 | 0.0145 | 0.0026 |
| 113 | 0.0173 | 0.0146 | 0.0027 |
| 114 | 0.0173 | 0.0147 | 0.0027 |
| 115 | 0.0175 | 0.0148 | 0.0027 |
| 116 | 0.0175 | 0.0148 | 0.0027 |
| 117 | 0.0177 | 0.0149 | 0.0027 |
| 118 | 0.0177 | 0.0150 | 0.0027 |
| 119 | 0.0178 | 0.0151 | 0.0028 |
| 120 | 0.0179 | 0.0152 | 0.0028 |
| 121 | 0.0180 | 0.0153 | 0.0028 |
| 122 | 0.0181 | 0.0153 | 0.0028 |
| 123 | 0.0183 | 0.0154 | 0.0028 |
| 124 | 0.0183 | 0.0155 | 0.0028 |
| 125 | 0.0185 | 0.0156 | 0.0028 |
| 126 | 0.0186 | 0.0157 | 0.0029 |
| 127 | 0.0187 | 0.0158 | 0.0029 |
| 128 | 0.0188 | 0.0159 | 0.0029 |
| 129 | 0.0189 | 0.0160 | 0.0029 |
| 130 | 0.0190 | 0.0161 | 0.0029 |
| 131 | 0.0192 | 0.0162 | 0.0030 |
| 132 | 0.0193 | 0.0163 | 0.0030 |
| 133 | 0.0194 | 0.0165 | 0.0030 |
| 134 | 0.0195 | 0.0165 | 0.0030 |
| 135 | 0.0197 | 0.0167 | 0.0030 |
| 136 | 0.0198 | 0.0168 | 0.0031 |
| 137 | 0.0200 | 0.0169 | 0.0031 |
| 138 | 0.0201 | 0.0170 | 0.0031 |
| 139 | 0.0203 | 0.0172 | 0.0031 |
| 140 | 0.0204 | 0.0173 | 0.0031 |
| 141 | 0.0206 | 0.0174 | 0.0032 |
| 142 | 0.0207 | 0.0175 | 0.0032 |
| 143 | 0.0210 | 0.0177 | 0.0032 |

| | | | |
|---|---|---|---|
| 144 | 0.0211 | 0.0178 | 0.0032 |
| 145 | 0.0224 | 0.0189 | 0.0034 |
| 146 | 0.0225 | 0.0190 | 0.0035 |
| 147 | 0.0227 | 0.0192 | 0.0035 |
| 148 | 0.0229 | 0.0193 | 0.0035 |
| 149 | 0.0231 | 0.0196 | 0.0036 |
| 150 | 0.0233 | 0.0197 | 0.0036 |
| 151 | 0.0235 | 0.0199 | 0.0036 |
| 152 | 0.0237 | 0.0200 | 0.0036 |
| 153 | 0.0240 | 0.0203 | 0.0037 |
| 154 | 0.0241 | 0.0204 | 0.0037 |
| 155 | 0.0245 | 0.0207 | 0.0038 |
| 156 | 0.0246 | 0.0208 | 0.0038 |
| 157 | 0.0250 | 0.0211 | 0.0038 |
| 158 | 0.0251 | 0.0213 | 0.0039 |
| 159 | 0.0255 | 0.0216 | 0.0039 |
| 160 | 0.0257 | 0.0217 | 0.0040 |
| 161 | 0.0261 | 0.0221 | 0.0040 |
| 162 | 0.0263 | 0.0223 | 0.0041 |
| 163 | 0.0268 | 0.0226 | 0.0041 |
| 164 | 0.0270 | 0.0228 | 0.0042 |
| 165 | 0.0275 | 0.0232 | 0.0042 |
| 166 | 0.0277 | 0.0235 | 0.0043 |
| 167 | 0.0283 | 0.0239 | 0.0044 |
| 168 | 0.0286 | 0.0242 | 0.0044 |
| 169 | 0.0292 | 0.0247 | 0.0045 |
| 170 | 0.0295 | 0.0249 | 0.0045 |
| 171 | 0.0302 | 0.0255 | 0.0046 |
| 172 | 0.0305 | 0.0258 | 0.0047 |
| 173 | 0.0313 | 0.0265 | 0.0048 |
| 174 | 0.0317 | 0.0268 | 0.0049 |
| 175 | 0.0326 | 0.0276 | 0.0050 |
| 176 | 0.0331 | 0.0280 | 0.0051 |
| 177 | 0.0341 | 0.0288 | 0.0053 |
| 178 | 0.0347 | 0.0293 | 0.0053 |
| 179 | 0.0359 | 0.0304 | 0.0055 |
| 180 | 0.0366 | 0.0310 | 0.0056 |
| 181 | 0.0381 | 0.0323 | 0.0059 |
| 182 | 0.0390 | 0.0330 | 0.0060 |
| 183 | 0.0409 | 0.0346 | 0.0063 |
| 184 | 0.0421 | 0.0356 | 0.0065 |
| 185 | 0.0219 | 0.0185 | 0.0034 |
| 186 | 0.0233 | 0.0197 | 0.0036 |
| 187 | 0.0270 | 0.0229 | 0.0042 |
| 188 | 0.0295 | 0.0250 | 0.0046 |
| 189 | 0.0367 | 0.0311 | 0.0057 |
| 190 | 0.0423 | 0.0358 | 0.0065 |
| 191 | 0.0642 | 0.0543 | 0.0099 |
| 192 | 0.0931 | 0.0700 | 0.0232 |
| 193 | 0.4030 | 0.0700 | 0.3330 |
| 194 | 0.0505 | 0.0427 | 0.0078 |
| 195 | 0.0326 | 0.0276 | 0.0050 |
| 196 | 0.0250 | 0.0212 | 0.0039 |
| 197 | 0.0433 | 0.0366 | 0.0067 |
| 198 | 0.0399 | 0.0338 | 0.0062 |
| 199 | 0.0373 | 0.0316 | 0.0058 |
| 200 | 0.0353 | 0.0298 | 0.0054 |
| 201 | 0.0336 | 0.0284 | 0.0052 |
| 202 | 0.0321 | 0.0272 | 0.0050 |
| 203 | 0.0309 | 0.0261 | 0.0048 |
| 204 | 0.0298 | 0.0252 | 0.0046 |
| 205 | 0.0289 | 0.0244 | 0.0044 |
| 206 | 0.0280 | 0.0237 | 0.0043 |
| 207 | 0.0272 | 0.0230 | 0.0042 |
| 208 | 0.0265 | 0.0225 | 0.0041 |
| 209 | 0.0259 | 0.0219 | 0.0040 |
| 210 | 0.0253 | 0.0214 | 0.0039 |
| 211 | 0.0248 | 0.0210 | 0.0038 |
| 212 | 0.0243 | 0.0205 | 0.0037 |
| 213 | 0.0238 | 0.0202 | 0.0037 |
| 214 | 0.0234 | 0.0198 | 0.0036 |

| | | | |
|---|---|---|---|
| 215 | 0.0230 | 0.0194 | 0.0035 |
| 216 | 0.0226 | 0.0191 | 0.0035 |
| 217 | 0.0212 | 0.0179 | 0.0033 |
| 218 | 0.0208 | 0.0176 | 0.0032 |
| 219 | 0.0205 | 0.0174 | 0.0032 |
| 220 | 0.0202 | 0.0171 | 0.0031 |
| 221 | 0.0199 | 0.0168 | 0.0031 |
| 222 | 0.0196 | 0.0166 | 0.0030 |
| 223 | 0.0194 | 0.0164 | 0.0030 |
| 224 | 0.0191 | 0.0162 | 0.0029 |
| 225 | 0.0189 | 0.0160 | 0.0029 |
| 226 | 0.0186 | 0.0158 | 0.0029 |
| 227 | 0.0184 | 0.0156 | 0.0028 |
| 228 | 0.0182 | 0.0154 | 0.0028 |
| 229 | 0.0180 | 0.0152 | 0.0028 |
| 230 | 0.0178 | 0.0150 | 0.0027 |
| 231 | 0.0176 | 0.0149 | 0.0027 |
| 232 | 0.0174 | 0.0147 | 0.0027 |
| 233 | 0.0172 | 0.0146 | 0.0027 |
| 234 | 0.0171 | 0.0144 | 0.0026 |
| 235 | 0.0169 | 0.0143 | 0.0026 |
| 236 | 0.0167 | 0.0141 | 0.0026 |
| 237 | 0.0166 | 0.0140 | 0.0026 |
| 238 | 0.0164 | 0.0139 | 0.0025 |
| 239 | 0.0163 | 0.0138 | 0.0025 |
| 240 | 0.0161 | 0.0136 | 0.0025 |
| 241 | 0.0160 | 0.0135 | 0.0025 |
| 242 | 0.0159 | 0.0134 | 0.0024 |
| 243 | 0.0157 | 0.0133 | 0.0024 |
| 244 | 0.0156 | 0.0132 | 0.0024 |
| 245 | 0.0155 | 0.0131 | 0.0024 |
| 246 | 0.0154 | 0.0130 | 0.0024 |
| 247 | 0.0152 | 0.0129 | 0.0024 |
| 248 | 0.0151 | 0.0128 | 0.0023 |
| 249 | 0.0150 | 0.0127 | 0.0023 |
| 250 | 0.0149 | 0.0126 | 0.0023 |
| 251 | 0.0148 | 0.0125 | 0.0023 |
| 252 | 0.0147 | 0.0124 | 0.0023 |
| 253 | 0.0146 | 0.0124 | 0.0023 |
| 254 | 0.0145 | 0.0123 | 0.0022 |
| 255 | 0.0144 | 0.0122 | 0.0022 |
| 256 | 0.0143 | 0.0121 | 0.0022 |
| 257 | 0.0142 | 0.0120 | 0.0022 |
| 258 | 0.0141 | 0.0120 | 0.0022 |
| 259 | 0.0141 | 0.0119 | 0.0022 |
| 260 | 0.0140 | 0.0118 | 0.0022 |
| 261 | 0.0139 | 0.0117 | 0.0021 |
| 262 | 0.0138 | 0.0117 | 0.0021 |
| 263 | 0.0137 | 0.0116 | 0.0021 |
| 264 | 0.0136 | 0.0115 | 0.0021 |
| 265 | 0.0136 | 0.0115 | 0.0021 |
| 266 | 0.0135 | 0.0114 | 0.0021 |
| 267 | 0.0134 | 0.0113 | 0.0021 |
| 268 | 0.0133 | 0.0113 | 0.0021 |
| 269 | 0.0133 | 0.0112 | 0.0020 |
| 270 | 0.0132 | 0.0112 | 0.0020 |
| 271 | 0.0131 | 0.0111 | 0.0020 |
| 272 | 0.0131 | 0.0110 | 0.0020 |
| 273 | 0.0130 | 0.0110 | 0.0020 |
| 274 | 0.0129 | 0.0109 | 0.0020 |
| 275 | 0.0129 | 0.0109 | 0.0020 |
| 276 | 0.0128 | 0.0108 | 0.0020 |
| 277 | 0.0127 | 0.0108 | 0.0020 |
| 278 | 0.0127 | 0.0107 | 0.0020 |
| 279 | 0.0126 | 0.0107 | 0.0019 |
| 280 | 0.0126 | 0.0106 | 0.0019 |
| 281 | 0.0125 | 0.0106 | 0.0019 |
| 282 | 0.0124 | 0.0105 | 0.0019 |
| 283 | 0.0124 | 0.0105 | 0.0019 |
| 284 | 0.0123 | 0.0104 | 0.0019 |
| 285 | 0.0123 | 0.0104 | 0.0019 |

```
      286              0.0122           0.0103              0.0019
      287              0.0122           0.0103              0.0019
      288              0.0121           0.0102              0.0019
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      4.69(In)
      Total effective rainfall =      1.18(In)
      Peak flow rate in flood hydrograph =     10.55(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
----------------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q          |          |          |          |
  0+10       0.0002      0.03  Q          |          |          |          |
  0+15       0.0008      0.09  Q          |          |          |          |
  0+20       0.0016      0.11  Q          |          |          |          |
  0+25       0.0024      0.12  Q          |          |          |          |
  0+30       0.0033      0.13  Q          |          |          |          |
  0+35       0.0043      0.14  Q          |          |          |          |
  0+40       0.0053      0.14  Q          |          |          |          |
  0+45       0.0063      0.15  Q          |          |          |          |
  0+50       0.0073      0.15  Q          |          |          |          |
  0+55       0.0083      0.15  Q          |          |          |          |
  1+ 0       0.0093      0.15  Q          |          |          |          |
  1+ 5       0.0104      0.15  Q          |          |          |          |
  1+10       0.0114      0.15  Q          |          |          |          |
  1+15       0.0124      0.15  Q          |          |          |          |
  1+20       0.0135      0.15  Q          |          |          |          |
  1+25       0.0145      0.15  Q          |          |          |          |
  1+30       0.0156      0.15  Q          |          |          |          |
  1+35       0.0166      0.15  QV         |          |          |          |
  1+40       0.0176      0.15  QV         |          |          |          |
  1+45       0.0187      0.15  QV         |          |          |          |
  1+50       0.0198      0.15  QV         |          |          |          |
  1+55       0.0208      0.15  QV         |          |          |          |
  2+ 0       0.0219      0.15  QV         |          |          |          |
  2+ 5       0.0229      0.15  QV         |          |          |          |
  2+10       0.0240      0.15  QV         |          |          |          |
  2+15       0.0251      0.15  QV         |          |          |          |
  2+20       0.0261      0.16  QV         |          |          |          |
  2+25       0.0272      0.16  QV         |          |          |          |
  2+30       0.0283      0.16  QV         |          |          |          |
  2+35       0.0294      0.16  QV         |          |          |          |
  2+40       0.0304      0.16  QV         |          |          |          |
  2+45       0.0315      0.16  QV         |          |          |          |
  2+50       0.0326      0.16  Q V        |          |          |          |
  2+55       0.0337      0.16  Q V        |          |          |          |
  3+ 0       0.0348      0.16  Q V        |          |          |          |
  3+ 5       0.0359      0.16  Q V        |          |          |          |
  3+10       0.0370      0.16  Q V        |          |          |          |
  3+15       0.0381      0.16  Q V        |          |          |          |
  3+20       0.0392      0.16  Q V        |          |          |          |
  3+25       0.0403      0.16  Q V        |          |          |          |
  3+30       0.0414      0.16  Q V        |          |          |          |
  3+35       0.0425      0.16  Q V        |          |          |          |
  3+40       0.0436      0.16  Q V        |          |          |          |
  3+45       0.0447      0.16  Q V        |          |          |          |
  3+50       0.0459      0.16  Q V        |          |          |          |
  3+55       0.0470      0.16  Q V        |          |          |          |
  4+ 0       0.0481      0.16  Q V        |          |          |          |
  4+ 5       0.0492      0.16  Q  V       |          |          |          |
  4+10       0.0504      0.16  Q  V       |          |          |          |
  4+15       0.0515      0.16  Q  V       |          |          |          |
  4+20       0.0526      0.17  Q  V       |          |          |          |
  4+25       0.0538      0.17  Q  V       |          |          |          |
```

```
 4+30      0.0549      0.17  Q  V      |          |          |          |
 4+35      0.0561      0.17  Q  V      |          |          |          |
 4+40      0.0572      0.17  Q  V      |          |          |          |
 4+45      0.0584      0.17  Q  V      |          |          |          |
 4+50      0.0595      0.17  Q  V      |          |          |          |
 4+55      0.0607      0.17  Q  V      |          |          |          |
 5+ 0      0.0619      0.17  Q  V      |          |          |          |
 5+ 5      0.0630      0.17  Q  V      |          |          |          |
 5+10      0.0642      0.17  Q  V      |          |          |          |
 5+15      0.0654      0.17  Q   V     |          |          |          |
 5+20      0.0666      0.17  Q   V     |          |          |          |
 5+25      0.0678      0.17  Q   V     |          |          |          |
 5+30      0.0689      0.17  Q   V     |          |          |          |
 5+35      0.0701      0.17  Q   V     |          |          |          |
 5+40      0.0713      0.17  Q   V     |          |          |          |
 5+45      0.0725      0.17  Q   V     |          |          |          |
 5+50      0.0737      0.17  Q   V     |          |          |          |
 5+55      0.0749      0.18  Q   V     |          |          |          |
 6+ 0      0.0762      0.18  Q   V     |          |          |          |
 6+ 5      0.0774      0.18  Q   V     |          |          |          |
 6+10      0.0786      0.18  Q   V     |          |          |          |
 6+15      0.0798      0.18  Q   V     |          |          |          |
 6+20      0.0810      0.18  Q    V    |          |          |          |
 6+25      0.0823      0.18  Q    V    |          |          |          |
 6+30      0.0835      0.18  Q    V    |          |          |          |
 6+35      0.0847      0.18  Q    V    |          |          |          |
 6+40      0.0860      0.18  Q    V    |          |          |          |
 6+45      0.0872      0.18  Q    V    |          |          |          |
 6+50      0.0885      0.18  Q    V    |          |          |          |
 6+55      0.0897      0.18  Q    V    |          |          |          |
 7+ 0      0.0910      0.18  Q    V    |          |          |          |
 7+ 5      0.0923      0.18  Q    V    |          |          |          |
 7+10      0.0935      0.18  Q    V    |          |          |          |
 7+15      0.0948      0.19  Q    V    |          |          |          |
 7+20      0.0961      0.19  Q    V    |          |          |          |
 7+25      0.0974      0.19  Q     V   |          |          |          |
 7+30      0.0987      0.19  Q     V   |          |          |          |
 7+35      0.1000      0.19  Q     V   |          |          |          |
 7+40      0.1013      0.19  Q     V   |          |          |          |
 7+45      0.1026      0.19  Q     V   |          |          |          |
 7+50      0.1039      0.19  Q     V   |          |          |          |
 7+55      0.1052      0.19  Q     V   |          |          |          |
 8+ 0      0.1065      0.19  Q     V   |          |          |          |
 8+ 5      0.1079      0.19  Q     V   |          |          |          |
 8+10      0.1092      0.19  Q     V   |          |          |          |
 8+15      0.1105      0.19  Q     V   |          |          |          |
 8+20      0.1119      0.20  Q     V   |          |          |          |
 8+25      0.1132      0.20  Q      V  |          |          |          |
 8+30      0.1146      0.20  Q      V  |          |          |          |
 8+35      0.1160      0.20  Q      V  |          |          |          |
 8+40      0.1173      0.20  Q      V  |          |          |          |
 8+45      0.1187      0.20  Q      V  |          |          |          |
 8+50      0.1201      0.20  Q      V  |          |          |          |
 8+55      0.1215      0.20  Q      V  |          |          |          |
 9+ 0      0.1229      0.20  Q      V  |          |          |          |
 9+ 5      0.1243      0.20  Q      V  |          |          |          |
 9+10      0.1257      0.20  Q      V  |          |          |          |
 9+15      0.1271      0.21  Q      V  |          |          |          |
 9+20      0.1285      0.21  Q      V  |          |          |          |
 9+25      0.1299      0.21  Q       V |          |          |          |
 9+30      0.1314      0.21  Q       V |          |          |          |
 9+35      0.1328      0.21  Q       V |          |          |          |
 9+40      0.1342      0.21  Q       V |          |          |          |
 9+45      0.1357      0.21  Q       V |          |          |          |
 9+50      0.1372      0.21  Q       V |          |          |          |
 9+55      0.1386      0.21  Q       V |          |          |          |
10+ 0      0.1401      0.21  Q       V |          |          |          |
10+ 5      0.1416      0.22  Q       V |          |          |          |
10+10      0.1431      0.22  Q       V |          |          |          |
10+15      0.1446      0.22  Q       V |          |          |          |
10+20      0.1461      0.22  Q        V|          |          |          |
```

```
10+25      0.1476      0.22  Q       V|         |          |         |
10+30      0.1492      0.22  Q       V|         |          |         |
10+35      0.1507      0.22  Q       V|         |          |         |
10+40      0.1523      0.22  Q       V|         |          |         |
10+45      0.1538      0.23  Q       V|         |          |         |
10+50      0.1554      0.23  Q       V|         |          |         |
10+55      0.1570      0.23  Q       V|         |          |         |
11+ 0      0.1586      0.23  Q       V|         |          |         |
11+ 5      0.1602      0.23  Q       V|         |          |         |
11+10      0.1618      0.23  Q        V         |          |         |
11+15      0.1634      0.24  Q        V         |          |         |
11+20      0.1650      0.24  Q        V         |          |         |
11+25      0.1667      0.24  Q        V         |          |         |
11+30      0.1683      0.24  Q        V         |          |         |
11+35      0.1700      0.24  Q        V         |          |         |
11+40      0.1716      0.24  Q        V         |          |         |
11+45      0.1733      0.25  Q        V         |          |         |
11+50      0.1750      0.25  Q        V         |          |         |
11+55      0.1768      0.25  Q        V         |          |         |
12+ 0      0.1785      0.25  Q        |V        |          |         |
12+ 5      0.1802      0.25  Q        |V        |          |         |
12+10      0.1820      0.26  Q        |V        |          |         |
12+15      0.1838      0.26  Q        |V        |          |         |
12+20      0.1857      0.27  Q        |V        |          |         |
12+25      0.1876      0.27  Q        |V        |          |         |
12+30      0.1895      0.28  Q        |V        |          |         |
12+35      0.1914      0.28  Q        |V        |          |         |
12+40      0.1933      0.28  Q        |V        |          |         |
12+45      0.1953      0.28  Q        | V       |          |         |
12+50      0.1972      0.29  Q        | V       |          |         |
12+55      0.1992      0.29  Q        | V       |          |         |
13+ 0      0.2012      0.29  Q        | V       |          |         |
13+ 5      0.2033      0.29  Q        | V       |          |         |
13+10      0.2053      0.30  Q        | V       |          |         |
13+15      0.2074      0.30  Q        | V       |          |         |
13+20      0.2095      0.30  Q        |  V      |          |         |
13+25      0.2116      0.31  Q        |  V      |          |         |
13+30      0.2137      0.31  Q        |  V      |          |         |
13+35      0.2159      0.31  Q        |  V      |          |         |
13+40      0.2181      0.32  Q        |  V      |          |         |
13+45      0.2203      0.32  Q        |  V      |          |         |
13+50      0.2226      0.33  Q        |  V      |          |         |
13+55      0.2248      0.33  Q        |  V      |          |         |
14+ 0      0.2271      0.33  Q        |   V     |          |         |
14+ 5      0.2295      0.34  Q        |   V     |          |         |
14+10      0.2318      0.34  Q        |   V     |          |         |
14+15      0.2343      0.35  Q        |   V     |          |         |
14+20      0.2367      0.36  Q        |   V     |          |         |
14+25      0.2392      0.36  Q        |   V     |          |         |
14+30      0.2417      0.37  Q        |    V    |          |         |
14+35      0.2443      0.37  Q        |    V    |          |         |
14+40      0.2469      0.38  Q        |    V    |          |         |
14+45      0.2496      0.39  Q        |    V    |          |         |
14+50      0.2523      0.40  Q        |    V    |          |         |
14+55      0.2551      0.41  Q        |    V    |          |         |
15+ 0      0.2580      0.42  Q        |     V   |          |         |
15+ 5      0.2610      0.43  Q        |     V   |          |         |
15+10      0.2640      0.44  Q        |     V   |          |         |
15+15      0.2671      0.45  Q        |     V   |          |         |
15+20      0.2703      0.47  Q        |     V   |          |         |
15+25      0.2736      0.47  Q        |     V   |          |         |
15+30      0.2766      0.45  Q        |      V  |          |         |
15+35      0.2791      0.36  Q        |      V  |          |         |
15+40      0.2815      0.34  Q        |      V  |          |         |
15+45      0.2839      0.35  Q        |      V  |          |         |
15+50      0.2865      0.38  Q        |      V  |          |         |
15+55      0.2895      0.43  Q        |      V  |          |         |
16+ 0      0.2933      0.56  |Q       |       V |          |         |
16+ 5      0.3056      1.79  |  Q     |       V |          |         |
16+10      0.3417      5.24  |        Q         |V         |         |
16+15      0.4144     10.55  |        |         |Q   V     |         |
```

```
16+20       0.4481      4.90  |         Q|          |       V  |          |
16+25       0.4676      2.83  |     Q    |          |          V|          |
16+30       0.4813      1.99  |   Q      |          |          V|          |
16+35       0.4919      1.55  |   Q      |          |           V          |
16+40       0.5000      1.18  |  Q       |          |           |V         |
16+45       0.5062      0.89  |Q         |          |           |V         |
16+50       0.5105      0.63  |Q         |          |           |V         |
16+55       0.5143      0.55  |Q         |          |           |V         |
17+ 0       0.5177      0.50  Q          |          |           | V        |
17+ 5       0.5210      0.48  Q          |          |           | V        |
17+10       0.5241      0.45  Q          |          |           | V        |
17+15       0.5269      0.40  Q          |          |           | V        |
17+20       0.5294      0.37  Q          |          |           | V        |
17+25       0.5318      0.34  Q          |          |           |  V       |
17+30       0.5341      0.33  Q          |          |           |  V       |
17+35       0.5363      0.32  Q          |          |           |  V       |
17+40       0.5385      0.32  Q          |          |           |  V       |
17+45       0.5406      0.31  Q          |          |           |  V       |
17+50       0.5427      0.30  Q          |          |           |  V       |
17+55       0.5447      0.30  Q          |          |           |  V       |
18+ 0       0.5467      0.29  Q          |          |           |  V       |
18+ 5       0.5487      0.28  Q          |          |           |   V      |
18+10       0.5506      0.28  Q          |          |           |   V      |
18+15       0.5524      0.27  Q          |          |           |   V      |
18+20       0.5542      0.26  Q          |          |           |   V      |
18+25       0.5560      0.26  Q          |          |           |   V      |
18+30       0.5577      0.25  Q          |          |           |   V      |
18+35       0.5594      0.25  Q          |          |           |   V      |
18+40       0.5611      0.24  Q          |          |           |   V      |
18+45       0.5627      0.24  Q          |          |           |   V      |
18+50       0.5644      0.24  Q          |          |           |    V     |
18+55       0.5660      0.23  Q          |          |           |    V     |
19+ 0       0.5676      0.23  Q          |          |           |    V     |
19+ 5       0.5691      0.23  Q          |          |           |    V     |
19+10       0.5707      0.22  Q          |          |           |    V     |
19+15       0.5722      0.22  Q          |          |           |    V     |
19+20       0.5737      0.22  Q          |          |           |    V     |
19+25       0.5752      0.22  Q          |          |           |    V     |
19+30       0.5767      0.21  Q          |          |           |    V     |
19+35       0.5781      0.21  Q          |          |           |    V     |
19+40       0.5796      0.21  Q          |          |           |    V     |
19+45       0.5810      0.21  Q          |          |           |     V    |
19+50       0.5824      0.21  Q          |          |           |     V    |
19+55       0.5838      0.20  Q          |          |           |     V    |
20+ 0       0.5852      0.20  Q          |          |           |     V    |
20+ 5       0.5866      0.20  Q          |          |           |     V    |
20+10       0.5879      0.20  Q          |          |           |     V    |
20+15       0.5893      0.20  Q          |          |           |     V    |
20+20       0.5906      0.19  Q          |          |           |     V    |
20+25       0.5919      0.19  Q          |          |           |     V    |
20+30       0.5933      0.19  Q          |          |           |     V    |
20+35       0.5946      0.19  Q          |          |           |     V    |
20+40       0.5959      0.19  Q          |          |           |     V    |
20+45       0.5972      0.19  Q          |          |           |      V   |
20+50       0.5984      0.19  Q          |          |           |      V   |
20+55       0.5997      0.18  Q          |          |           |      V   |
21+ 0       0.6010      0.18  Q          |          |           |      V   |
21+ 5       0.6022      0.18  Q          |          |           |      V   |
21+10       0.6035      0.18  Q          |          |           |      V   |
21+15       0.6047      0.18  Q          |          |           |      V   |
21+20       0.6059      0.18  Q          |          |           |      V   |
21+25       0.6071      0.18  Q          |          |           |      V   |
21+30       0.6083      0.18  Q          |          |           |      V   |
21+35       0.6095      0.17  Q          |          |           |      V   |
21+40       0.6107      0.17  Q          |          |           |      V   |
21+45       0.6119      0.17  Q          |          |           |      V   |
21+50       0.6131      0.17  Q          |          |           |       V  |
21+55       0.6143      0.17  Q          |          |           |       V  |
22+ 0       0.6154      0.17  Q          |          |           |       V  |
22+ 5       0.6166      0.17  Q          |          |           |       V  |
22+10       0.6177      0.17  Q          |          |           |       V  |
```

```
  22+15       0.6189      0.17  Q          |          |          |       V |
  22+20       0.6200      0.17  Q          |          |          |       V |
  22+25       0.6211      0.16  Q          |          |          |       V |
  22+30       0.6223      0.16  Q          |          |          |       V |
  22+35       0.6234      0.16  Q          |          |          |       V |
  22+40       0.6245      0.16  Q          |          |          |       V |
  22+45       0.6256      0.16  Q          |          |          |       V |
  22+50       0.6267      0.16  Q          |          |          |       V |
  22+55       0.6278      0.16  Q          |          |          |       V |
  23+ 0       0.6289      0.16  Q          |          |          |        V|
  23+ 5       0.6300      0.16  Q          |          |          |        V|
  23+10       0.6310      0.16  Q          |          |          |        V|
  23+15       0.6321      0.16  Q          |          |          |        V|
  23+20       0.6332      0.15  Q          |          |          |        V|
  23+25       0.6342      0.15  Q          |          |          |        V|
  23+30       0.6353      0.15  Q          |          |          |        V|
  23+35       0.6364      0.15  Q          |          |          |        V|
  23+40       0.6374      0.15  Q          |          |          |        V|
  23+45       0.6384      0.15  Q          |          |          |        V|
  23+50       0.6395      0.15  Q          |          |          |        V|
  23+55       0.6405      0.15  Q          |          |          |        V|
  24+ 0       0.6415      0.15  Q          |          |          |        V|
  24+ 5       0.6425      0.14  Q          |          |          |        V|
  24+10       0.6433      0.12  Q          |          |          |        V|
  24+15       0.6438      0.06  Q          |          |          |        V|
  24+20       0.6440      0.04  Q          |          |          |        V|
  24+25       0.6442      0.02  Q          |          |          |        V|
  24+30       0.6443      0.02  Q          |          |          |        V|
  24+35       0.6444      0.01  Q          |          |          |        V|
  24+40       0.6444      0.01  Q          |          |          |        V|
  24+45       0.6444      0.00  Q          |          |          |        V|
  24+50       0.6445      0.00  Q          |          |          |        V|
  24+55       0.6445      0.00  Q          |          |          |        V|
  25+ 0       0.6445      0.00  Q          |          |          |        V|
  25+ 5       0.6445      0.00  Q          |          |          |        V|
  25+10       0.6445      0.00  Q          |          |          |        V|
  25+15       0.6445      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area ‘C’ – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
----------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
10 YEAR 24 HOUR STORM
DECEMBER 17, 2024
----------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.53            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      67.0          6.53      1.000     0.578    1.000    0.578

Area-averaged adjusted loss rate Fm (In/Hr) =  0.578

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.53 | 1.000 | 67.0 | 67.0 | 4.93 | 0.486 |

Area-averaged catchment yield fraction, Y = 0.486
Area-averaged low loss fraction, Yb = 0.514
User entry of time of concentration = 0.225 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.53(Ac.)
Catchment Lag time = 0.180 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 46.2963
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.578(In/Hr)
Average low loss rate fraction (Yb) = 0.514 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 6.53(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.474(In)
30-minute factor = 1.000 Adjusted rainfall = 0.812(In)
1-hour factor = 1.000 Adjusted rainfall = 1.000(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 78.97 (CFS)) | |
| 1 | 3.841 | 3.033 |
| 2 | 20.125 | 12.860 |
| 3 | 58.137 | 30.019 |
| 4 | 74.610 | 13.009 |
| 5 | 83.494 | 7.016 |
| 6 | 89.354 | 4.628 |
| 7 | 93.374 | 3.174 |
| 8 | 96.031 | 2.098 |
| 9 | 97.668 | 1.293 |
| 10 | 98.374 | 0.558 |
| 11 | 98.857 | 0.382 |
| 12 | 99.195 | 0.267 |
| 13 | 99.529 | 0.264 |
| 14 | 99.800 | 0.214 |
| 15 | 99.943 | 0.113 |
| 16 | 100.000 | 0.045 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4744 | 0.4744 |
| 2 | 0.5840 | 0.1096 |
| 3 | 0.6596 | 0.0755 |
| 4 | 0.7190 | 0.0595 |
| 5 | 0.7688 | 0.0498 |
| 6 | 0.8120 | 0.0432 |
| 7 | 0.8504 | 0.0384 |
| 8 | 0.8852 | 0.0348 |
| 9 | 0.9170 | 0.0318 |
| 10 | 0.9465 | 0.0294 |

| | | |
|---|---|---|
| 11 | 0.9739 | 0.0275 |
| 12 | 0.9997 | 0.0258 |
| 13 | 1.0504 | 0.0508 |
| 14 | 1.0997 | 0.0493 |
| 15 | 1.1477 | 0.0480 |
| 16 | 1.1944 | 0.0468 |
| 17 | 1.2401 | 0.0457 |
| 18 | 1.2847 | 0.0446 |
| 19 | 1.3284 | 0.0437 |
| 20 | 1.3713 | 0.0428 |
| 21 | 1.4133 | 0.0420 |
| 22 | 1.4545 | 0.0413 |
| 23 | 1.4951 | 0.0406 |
| 24 | 1.5350 | 0.0399 |
| 25 | 1.5743 | 0.0393 |
| 26 | 1.6129 | 0.0387 |
| 27 | 1.6510 | 0.0381 |
| 28 | 1.6886 | 0.0376 |
| 29 | 1.7256 | 0.0371 |
| 30 | 1.7622 | 0.0366 |
| 31 | 1.7983 | 0.0361 |
| 32 | 1.8340 | 0.0357 |
| 33 | 1.8693 | 0.0352 |
| 34 | 1.9041 | 0.0348 |
| 35 | 1.9386 | 0.0345 |
| 36 | 1.9726 | 0.0341 |
| 37 | 2.0064 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0728 | 0.0330 |
| 40 | 2.1055 | 0.0327 |
| 41 | 2.1379 | 0.0324 |
| 42 | 2.1700 | 0.0321 |
| 43 | 2.2018 | 0.0318 |
| 44 | 2.2333 | 0.0315 |
| 45 | 2.2646 | 0.0313 |
| 46 | 2.2955 | 0.0310 |
| 47 | 2.3263 | 0.0307 |
| 48 | 2.3568 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4170 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4764 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5349 | 0.0291 |
| 55 | 2.5638 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6210 | 0.0285 |
| 58 | 2.6494 | 0.0283 |
| 59 | 2.6775 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7610 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8157 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8698 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9233 | 0.0267 |
| 69 | 2.9498 | 0.0265 |
| 70 | 2.9762 | 0.0264 |
| 71 | 3.0024 | 0.0262 |
| 72 | 3.0285 | 0.0261 |
| 73 | 3.0550 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1078 | 0.0263 |
| 76 | 3.1340 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1861 | 0.0259 |
| 79 | 3.2119 | 0.0258 |
| 80 | 3.2376 | 0.0257 |
| 81 | 3.2632 | 0.0256 |

| | | |
|---|---|---|
| 82 | 3.2887 | 0.0255 |
| 83 | 3.3140 | 0.0254 |
| 84 | 3.3393 | 0.0253 |
| 85 | 3.3644 | 0.0251 |
| 86 | 3.3894 | 0.0250 |
| 87 | 3.4144 | 0.0249 |
| 88 | 3.4392 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5130 | 0.0245 |
| 92 | 3.5375 | 0.0244 |
| 93 | 3.5618 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6101 | 0.0241 |
| 96 | 3.6342 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6820 | 0.0239 |
| 99 | 3.7057 | 0.0238 |
| 100 | 3.7294 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7765 | 0.0235 |
| 103 | 3.8000 | 0.0234 |
| 104 | 3.8233 | 0.0233 |
| 105 | 3.8466 | 0.0233 |
| 106 | 3.8697 | 0.0232 |
| 107 | 3.8928 | 0.0231 |
| 108 | 3.9158 | 0.0230 |
| 109 | 3.9388 | 0.0229 |
| 110 | 3.9617 | 0.0229 |
| 111 | 3.9844 | 0.0228 |
| 112 | 4.0072 | 0.0227 |
| 113 | 4.0298 | 0.0226 |
| 114 | 4.0524 | 0.0226 |
| 115 | 4.0749 | 0.0225 |
| 116 | 4.0973 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1863 | 0.0221 |
| 121 | 4.2083 | 0.0221 |
| 122 | 4.2303 | 0.0220 |
| 123 | 4.2523 | 0.0219 |
| 124 | 4.2742 | 0.0219 |
| 125 | 4.2960 | 0.0218 |
| 126 | 4.3177 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3610 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4256 | 0.0214 |
| 132 | 4.4469 | 0.0214 |
| 133 | 4.4683 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5319 | 0.0211 |
| 137 | 4.5530 | 0.0211 |
| 138 | 4.5740 | 0.0210 |
| 139 | 4.5950 | 0.0210 |
| 140 | 4.6159 | 0.0209 |
| 141 | 4.6368 | 0.0209 |
| 142 | 4.6576 | 0.0208 |
| 143 | 4.6783 | 0.0208 |
| 144 | 4.6991 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7609 | 0.0206 |
| 148 | 4.7814 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |
| 151 | 4.8426 | 0.0204 |
| 152 | 4.8629 | 0.0203 |

| | | |
|---|---|---|
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |
| 155 | 4.9235 | 0.0202 |
| 156 | 4.9436 | 0.0201 |
| 157 | 4.9636 | 0.0201 |
| 158 | 4.9837 | 0.0200 |
| 159 | 5.0036 | 0.0200 |
| 160 | 5.0236 | 0.0199 |
| 161 | 5.0434 | 0.0199 |
| 162 | 5.0633 | 0.0198 |
| 163 | 5.0830 | 0.0198 |
| 164 | 5.1028 | 0.0197 |
| 165 | 5.1225 | 0.0197 |
| 166 | 5.1421 | 0.0197 |
| 167 | 5.1618 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2008 | 0.0195 |
| 170 | 5.2203 | 0.0195 |
| 171 | 5.2398 | 0.0194 |
| 172 | 5.2592 | 0.0194 |
| 173 | 5.2785 | 0.0194 |
| 174 | 5.2978 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3364 | 0.0192 |
| 177 | 5.3556 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3938 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4319 | 0.0190 |
| 182 | 5.4510 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4888 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5266 | 0.0189 |
| 187 | 5.5454 | 0.0188 |
| 188 | 5.5642 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6203 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6761 | 0.0186 |
| 195 | 5.6946 | 0.0185 |
| 196 | 5.7131 | 0.0185 |
| 197 | 5.7315 | 0.0185 |
| 198 | 5.7500 | 0.0184 |
| 199 | 5.7683 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8416 | 0.0183 |
| 204 | 5.8598 | 0.0182 |
| 205 | 5.8780 | 0.0182 |
| 206 | 5.8961 | 0.0182 |
| 207 | 5.9143 | 0.0181 |
| 208 | 5.9323 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9684 | 0.0180 |
| 211 | 5.9864 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0223 | 0.0179 |
| 214 | 6.0402 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0760 | 0.0178 |
| 217 | 6.0938 | 0.0178 |
| 218 | 6.1116 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1470 | 0.0177 |
| 221 | 6.1647 | 0.0177 |
| 222 | 6.1824 | 0.0177 |
| 223 | 6.2000 | 0.0176 |

| | | |
|---|---|---|
| 224 | 6.2176 | 0.0176 |
| 225 | 6.2352 | 0.0176 |
| 226 | 6.2528 | 0.0175 |
| 227 | 6.2703 | 0.0175 |
| 228 | 6.2878 | 0.0175 |
| 229 | 6.3052 | 0.0175 |
| 230 | 6.3227 | 0.0174 |
| 231 | 6.3401 | 0.0174 |
| 232 | 6.3575 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3921 | 0.0173 |
| 235 | 6.4094 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4440 | 0.0172 |
| 238 | 6.4612 | 0.0172 |
| 239 | 6.4784 | 0.0172 |
| 240 | 6.4955 | 0.0172 |
| 241 | 6.5127 | 0.0171 |
| 242 | 6.5298 | 0.0171 |
| 243 | 6.5469 | 0.0171 |
| 244 | 6.5639 | 0.0171 |
| 245 | 6.5810 | 0.0170 |
| 246 | 6.5980 | 0.0170 |
| 247 | 6.6150 | 0.0170 |
| 248 | 6.6319 | 0.0170 |
| 249 | 6.6489 | 0.0169 |
| 250 | 6.6658 | 0.0169 |
| 251 | 6.6827 | 0.0169 |
| 252 | 6.6995 | 0.0169 |
| 253 | 6.7164 | 0.0168 |
| 254 | 6.7332 | 0.0168 |
| 255 | 6.7500 | 0.0168 |
| 256 | 6.7667 | 0.0168 |
| 257 | 6.7835 | 0.0167 |
| 258 | 6.8002 | 0.0167 |
| 259 | 6.8169 | 0.0167 |
| 260 | 6.8336 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8668 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9166 | 0.0166 |
| 266 | 6.9331 | 0.0165 |
| 267 | 6.9496 | 0.0165 |
| 268 | 6.9661 | 0.0165 |
| 269 | 6.9825 | 0.0165 |
| 270 | 6.9990 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0482 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0809 | 0.0163 |
| 276 | 7.0972 | 0.0163 |
| 277 | 7.1134 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1460 | 0.0162 |
| 280 | 7.1622 | 0.0162 |
| 281 | 7.1784 | 0.0162 |
| 282 | 7.1946 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2269 | 0.0161 |
| 285 | 7.2430 | 0.0161 |
| 286 | 7.2591 | 0.0161 |
| 287 | 7.2751 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0083 | 0.0078 |

| | | | |
|---|---|---|---|
| 2 | 0.0161 | 0.0083 | 0.0078 |
| 3 | 0.0161 | 0.0083 | 0.0078 |
| 4 | 0.0161 | 0.0083 | 0.0078 |
| 5 | 0.0162 | 0.0083 | 0.0079 |
| 6 | 0.0162 | 0.0083 | 0.0079 |
| 7 | 0.0162 | 0.0084 | 0.0079 |
| 8 | 0.0163 | 0.0084 | 0.0079 |
| 9 | 0.0163 | 0.0084 | 0.0079 |
| 10 | 0.0163 | 0.0084 | 0.0079 |
| 11 | 0.0164 | 0.0084 | 0.0080 |
| 12 | 0.0164 | 0.0084 | 0.0080 |
| 13 | 0.0164 | 0.0085 | 0.0080 |
| 14 | 0.0165 | 0.0085 | 0.0080 |
| 15 | 0.0165 | 0.0085 | 0.0080 |
| 16 | 0.0165 | 0.0085 | 0.0080 |
| 17 | 0.0166 | 0.0085 | 0.0080 |
| 18 | 0.0166 | 0.0085 | 0.0081 |
| 19 | 0.0166 | 0.0086 | 0.0081 |
| 20 | 0.0167 | 0.0086 | 0.0081 |
| 21 | 0.0167 | 0.0086 | 0.0081 |
| 22 | 0.0167 | 0.0086 | 0.0081 |
| 23 | 0.0168 | 0.0086 | 0.0082 |
| 24 | 0.0168 | 0.0086 | 0.0082 |
| 25 | 0.0169 | 0.0087 | 0.0082 |
| 26 | 0.0169 | 0.0087 | 0.0082 |
| 27 | 0.0169 | 0.0087 | 0.0082 |
| 28 | 0.0170 | 0.0087 | 0.0082 |
| 29 | 0.0170 | 0.0088 | 0.0083 |
| 30 | 0.0170 | 0.0088 | 0.0083 |
| 31 | 0.0171 | 0.0088 | 0.0083 |
| 32 | 0.0171 | 0.0088 | 0.0083 |
| 33 | 0.0172 | 0.0088 | 0.0083 |
| 34 | 0.0172 | 0.0088 | 0.0083 |
| 35 | 0.0172 | 0.0089 | 0.0084 |
| 36 | 0.0173 | 0.0089 | 0.0084 |
| 37 | 0.0173 | 0.0089 | 0.0084 |
| 38 | 0.0174 | 0.0089 | 0.0084 |
| 39 | 0.0174 | 0.0090 | 0.0085 |
| 40 | 0.0174 | 0.0090 | 0.0085 |
| 41 | 0.0175 | 0.0090 | 0.0085 |
| 42 | 0.0175 | 0.0090 | 0.0085 |
| 43 | 0.0176 | 0.0090 | 0.0085 |
| 44 | 0.0176 | 0.0091 | 0.0086 |
| 45 | 0.0177 | 0.0091 | 0.0086 |
| 46 | 0.0177 | 0.0091 | 0.0086 |
| 47 | 0.0178 | 0.0091 | 0.0086 |
| 48 | 0.0178 | 0.0091 | 0.0086 |
| 49 | 0.0178 | 0.0092 | 0.0087 |
| 50 | 0.0179 | 0.0092 | 0.0087 |
| 51 | 0.0179 | 0.0092 | 0.0087 |
| 52 | 0.0180 | 0.0092 | 0.0087 |
| 53 | 0.0180 | 0.0093 | 0.0088 |
| 54 | 0.0181 | 0.0093 | 0.0088 |
| 55 | 0.0181 | 0.0093 | 0.0088 |
| 56 | 0.0182 | 0.0093 | 0.0088 |
| 57 | 0.0182 | 0.0094 | 0.0088 |
| 58 | 0.0183 | 0.0094 | 0.0089 |
| 59 | 0.0183 | 0.0094 | 0.0089 |
| 60 | 0.0184 | 0.0094 | 0.0089 |
| 61 | 0.0184 | 0.0095 | 0.0089 |
| 62 | 0.0185 | 0.0095 | 0.0090 |
| 63 | 0.0185 | 0.0095 | 0.0090 |
| 64 | 0.0186 | 0.0095 | 0.0090 |
| 65 | 0.0186 | 0.0096 | 0.0090 |
| 66 | 0.0187 | 0.0096 | 0.0091 |
| 67 | 0.0187 | 0.0096 | 0.0091 |
| 68 | 0.0188 | 0.0097 | 0.0091 |
| 69 | 0.0189 | 0.0097 | 0.0092 |
| 70 | 0.0189 | 0.0097 | 0.0092 |
| 71 | 0.0190 | 0.0098 | 0.0092 |
| 72 | 0.0190 | 0.0098 | 0.0092 |

| | | | |
|---|---|---|---|
| 73 | 0.0191 | 0.0098 | 0.0093 |
| 74 | 0.0191 | 0.0098 | 0.0093 |
| 75 | 0.0192 | 0.0099 | 0.0093 |
| 76 | 0.0192 | 0.0099 | 0.0093 |
| 77 | 0.0193 | 0.0099 | 0.0094 |
| 78 | 0.0194 | 0.0100 | 0.0094 |
| 79 | 0.0194 | 0.0100 | 0.0094 |
| 80 | 0.0195 | 0.0100 | 0.0095 |
| 81 | 0.0196 | 0.0101 | 0.0095 |
| 82 | 0.0196 | 0.0101 | 0.0095 |
| 83 | 0.0197 | 0.0101 | 0.0096 |
| 84 | 0.0197 | 0.0102 | 0.0096 |
| 85 | 0.0198 | 0.0102 | 0.0096 |
| 86 | 0.0199 | 0.0102 | 0.0097 |
| 87 | 0.0200 | 0.0103 | 0.0097 |
| 88 | 0.0200 | 0.0103 | 0.0097 |
| 89 | 0.0201 | 0.0103 | 0.0098 |
| 90 | 0.0202 | 0.0104 | 0.0098 |
| 91 | 0.0203 | 0.0104 | 0.0098 |
| 92 | 0.0203 | 0.0104 | 0.0099 |
| 93 | 0.0204 | 0.0105 | 0.0099 |
| 94 | 0.0205 | 0.0105 | 0.0099 |
| 95 | 0.0206 | 0.0106 | 0.0100 |
| 96 | 0.0206 | 0.0106 | 0.0100 |
| 97 | 0.0207 | 0.0107 | 0.0101 |
| 98 | 0.0208 | 0.0107 | 0.0101 |
| 99 | 0.0209 | 0.0107 | 0.0101 |
| 100 | 0.0209 | 0.0108 | 0.0102 |
| 101 | 0.0210 | 0.0108 | 0.0102 |
| 102 | 0.0211 | 0.0108 | 0.0102 |
| 103 | 0.0212 | 0.0109 | 0.0103 |
| 104 | 0.0213 | 0.0109 | 0.0103 |
| 105 | 0.0214 | 0.0110 | 0.0104 |
| 106 | 0.0214 | 0.0110 | 0.0104 |
| 107 | 0.0216 | 0.0111 | 0.0105 |
| 108 | 0.0216 | 0.0111 | 0.0105 |
| 109 | 0.0218 | 0.0112 | 0.0106 |
| 110 | 0.0218 | 0.0112 | 0.0106 |
| 111 | 0.0219 | 0.0113 | 0.0107 |
| 112 | 0.0220 | 0.0113 | 0.0107 |
| 113 | 0.0221 | 0.0114 | 0.0108 |
| 114 | 0.0222 | 0.0114 | 0.0108 |
| 115 | 0.0224 | 0.0115 | 0.0109 |
| 116 | 0.0224 | 0.0115 | 0.0109 |
| 117 | 0.0226 | 0.0116 | 0.0110 |
| 118 | 0.0226 | 0.0116 | 0.0110 |
| 119 | 0.0228 | 0.0117 | 0.0111 |
| 120 | 0.0229 | 0.0118 | 0.0111 |
| 121 | 0.0230 | 0.0118 | 0.0112 |
| 122 | 0.0231 | 0.0119 | 0.0112 |
| 123 | 0.0233 | 0.0120 | 0.0113 |
| 124 | 0.0233 | 0.0120 | 0.0113 |
| 125 | 0.0235 | 0.0121 | 0.0114 |
| 126 | 0.0236 | 0.0121 | 0.0115 |
| 127 | 0.0238 | 0.0122 | 0.0115 |
| 128 | 0.0239 | 0.0123 | 0.0116 |
| 129 | 0.0240 | 0.0124 | 0.0117 |
| 130 | 0.0241 | 0.0124 | 0.0117 |
| 131 | 0.0243 | 0.0125 | 0.0118 |
| 132 | 0.0244 | 0.0126 | 0.0119 |
| 133 | 0.0246 | 0.0127 | 0.0120 |
| 134 | 0.0247 | 0.0127 | 0.0120 |
| 135 | 0.0249 | 0.0128 | 0.0121 |
| 136 | 0.0250 | 0.0129 | 0.0122 |
| 137 | 0.0253 | 0.0130 | 0.0123 |
| 138 | 0.0254 | 0.0130 | 0.0123 |
| 139 | 0.0256 | 0.0132 | 0.0124 |
| 140 | 0.0257 | 0.0132 | 0.0125 |
| 141 | 0.0259 | 0.0133 | 0.0126 |
| 142 | 0.0261 | 0.0134 | 0.0127 |
| 143 | 0.0263 | 0.0135 | 0.0128 |

| | | | |
|---|---|---|---|
| 144 | 0.0265 | 0.0136 | 0.0128 |
| 145 | 0.0261 | 0.0134 | 0.0127 |
| 146 | 0.0262 | 0.0135 | 0.0127 |
| 147 | 0.0265 | 0.0136 | 0.0129 |
| 148 | 0.0267 | 0.0137 | 0.0129 |
| 149 | 0.0270 | 0.0139 | 0.0131 |
| 150 | 0.0271 | 0.0140 | 0.0132 |
| 151 | 0.0275 | 0.0141 | 0.0133 |
| 152 | 0.0276 | 0.0142 | 0.0134 |
| 153 | 0.0280 | 0.0144 | 0.0136 |
| 154 | 0.0282 | 0.0145 | 0.0137 |
| 155 | 0.0285 | 0.0147 | 0.0139 |
| 156 | 0.0287 | 0.0148 | 0.0140 |
| 157 | 0.0291 | 0.0150 | 0.0141 |
| 158 | 0.0293 | 0.0151 | 0.0143 |
| 159 | 0.0298 | 0.0153 | 0.0145 |
| 160 | 0.0300 | 0.0154 | 0.0146 |
| 161 | 0.0305 | 0.0157 | 0.0148 |
| 162 | 0.0307 | 0.0158 | 0.0149 |
| 163 | 0.0313 | 0.0161 | 0.0152 |
| 164 | 0.0315 | 0.0162 | 0.0153 |
| 165 | 0.0321 | 0.0165 | 0.0156 |
| 166 | 0.0324 | 0.0167 | 0.0157 |
| 167 | 0.0330 | 0.0170 | 0.0160 |
| 168 | 0.0334 | 0.0172 | 0.0162 |
| 169 | 0.0341 | 0.0175 | 0.0166 |
| 170 | 0.0345 | 0.0177 | 0.0167 |
| 171 | 0.0352 | 0.0181 | 0.0171 |
| 172 | 0.0357 | 0.0183 | 0.0173 |
| 173 | 0.0366 | 0.0188 | 0.0178 |
| 174 | 0.0371 | 0.0191 | 0.0180 |
| 175 | 0.0381 | 0.0196 | 0.0185 |
| 176 | 0.0387 | 0.0199 | 0.0188 |
| 177 | 0.0399 | 0.0205 | 0.0194 |
| 178 | 0.0406 | 0.0209 | 0.0197 |
| 179 | 0.0420 | 0.0216 | 0.0204 |
| 180 | 0.0428 | 0.0220 | 0.0208 |
| 181 | 0.0446 | 0.0230 | 0.0217 |
| 182 | 0.0457 | 0.0235 | 0.0222 |
| 183 | 0.0480 | 0.0247 | 0.0233 |
| 184 | 0.0493 | 0.0254 | 0.0239 |
| 185 | 0.0258 | 0.0132 | 0.0125 |
| 186 | 0.0275 | 0.0141 | 0.0133 |
| 187 | 0.0318 | 0.0164 | 0.0155 |
| 188 | 0.0348 | 0.0179 | 0.0169 |
| 189 | 0.0432 | 0.0222 | 0.0210 |
| 190 | 0.0498 | 0.0256 | 0.0242 |
| 191 | 0.0755 | 0.0389 | 0.0367 |
| 192 | 0.1096 | 0.0482 | 0.0615 |
| 193 | 0.4744 | 0.0482 | 0.4262 |
| 194 | 0.0595 | 0.0306 | 0.0289 |
| 195 | 0.0384 | 0.0198 | 0.0187 |
| 196 | 0.0294 | 0.0151 | 0.0143 |
| 197 | 0.0508 | 0.0261 | 0.0246 |
| 198 | 0.0468 | 0.0240 | 0.0227 |
| 199 | 0.0437 | 0.0225 | 0.0212 |
| 200 | 0.0413 | 0.0212 | 0.0200 |
| 201 | 0.0393 | 0.0202 | 0.0191 |
| 202 | 0.0376 | 0.0193 | 0.0182 |
| 203 | 0.0361 | 0.0186 | 0.0175 |
| 204 | 0.0348 | 0.0179 | 0.0169 |
| 205 | 0.0337 | 0.0173 | 0.0164 |
| 206 | 0.0327 | 0.0168 | 0.0159 |
| 207 | 0.0318 | 0.0164 | 0.0154 |
| 208 | 0.0310 | 0.0159 | 0.0151 |
| 209 | 0.0302 | 0.0156 | 0.0147 |
| 210 | 0.0296 | 0.0152 | 0.0144 |
| 211 | 0.0289 | 0.0149 | 0.0140 |
| 212 | 0.0283 | 0.0146 | 0.0138 |
| 213 | 0.0278 | 0.0143 | 0.0135 |
| 214 | 0.0273 | 0.0140 | 0.0133 |

| | | | |
|---|---|---|---|
| 215 | 0.0268 | 0.0138 | 0.0130 |
| 216 | 0.0264 | 0.0136 | 0.0128 |
| 217 | 0.0266 | 0.0137 | 0.0129 |
| 218 | 0.0262 | 0.0135 | 0.0127 |
| 219 | 0.0258 | 0.0133 | 0.0125 |
| 220 | 0.0255 | 0.0131 | 0.0124 |
| 221 | 0.0251 | 0.0129 | 0.0122 |
| 222 | 0.0248 | 0.0128 | 0.0121 |
| 223 | 0.0245 | 0.0126 | 0.0119 |
| 224 | 0.0242 | 0.0125 | 0.0118 |
| 225 | 0.0239 | 0.0123 | 0.0116 |
| 226 | 0.0237 | 0.0122 | 0.0115 |
| 227 | 0.0234 | 0.0120 | 0.0114 |
| 228 | 0.0232 | 0.0119 | 0.0113 |
| 229 | 0.0229 | 0.0118 | 0.0111 |
| 230 | 0.0227 | 0.0117 | 0.0110 |
| 231 | 0.0225 | 0.0116 | 0.0109 |
| 232 | 0.0223 | 0.0115 | 0.0108 |
| 233 | 0.0221 | 0.0114 | 0.0107 |
| 234 | 0.0219 | 0.0113 | 0.0106 |
| 235 | 0.0217 | 0.0112 | 0.0105 |
| 236 | 0.0215 | 0.0111 | 0.0104 |
| 237 | 0.0213 | 0.0110 | 0.0104 |
| 238 | 0.0211 | 0.0109 | 0.0103 |
| 239 | 0.0210 | 0.0108 | 0.0102 |
| 240 | 0.0208 | 0.0107 | 0.0101 |
| 241 | 0.0207 | 0.0106 | 0.0100 |
| 242 | 0.0205 | 0.0105 | 0.0100 |
| 243 | 0.0204 | 0.0105 | 0.0099 |
| 244 | 0.0202 | 0.0104 | 0.0098 |
| 245 | 0.0201 | 0.0103 | 0.0097 |
| 246 | 0.0199 | 0.0102 | 0.0097 |
| 247 | 0.0198 | 0.0102 | 0.0096 |
| 248 | 0.0197 | 0.0101 | 0.0095 |
| 249 | 0.0195 | 0.0100 | 0.0095 |
| 250 | 0.0194 | 0.0100 | 0.0094 |
| 251 | 0.0193 | 0.0099 | 0.0094 |
| 252 | 0.0192 | 0.0099 | 0.0093 |
| 253 | 0.0190 | 0.0098 | 0.0092 |
| 254 | 0.0189 | 0.0097 | 0.0092 |
| 255 | 0.0188 | 0.0097 | 0.0091 |
| 256 | 0.0187 | 0.0096 | 0.0091 |
| 257 | 0.0186 | 0.0096 | 0.0090 |
| 258 | 0.0185 | 0.0095 | 0.0090 |
| 259 | 0.0184 | 0.0095 | 0.0089 |
| 260 | 0.0183 | 0.0094 | 0.0089 |
| 261 | 0.0182 | 0.0094 | 0.0088 |
| 262 | 0.0181 | 0.0093 | 0.0088 |
| 263 | 0.0180 | 0.0093 | 0.0087 |
| 264 | 0.0179 | 0.0092 | 0.0087 |
| 265 | 0.0178 | 0.0092 | 0.0087 |
| 266 | 0.0177 | 0.0091 | 0.0086 |
| 267 | 0.0176 | 0.0091 | 0.0086 |
| 268 | 0.0175 | 0.0090 | 0.0085 |
| 269 | 0.0175 | 0.0090 | 0.0085 |
| 270 | 0.0174 | 0.0089 | 0.0084 |
| 271 | 0.0173 | 0.0089 | 0.0084 |
| 272 | 0.0172 | 0.0089 | 0.0084 |
| 273 | 0.0171 | 0.0088 | 0.0083 |
| 274 | 0.0171 | 0.0088 | 0.0083 |
| 275 | 0.0170 | 0.0087 | 0.0082 |
| 276 | 0.0169 | 0.0087 | 0.0082 |
| 277 | 0.0168 | 0.0087 | 0.0082 |
| 278 | 0.0168 | 0.0086 | 0.0081 |
| 279 | 0.0167 | 0.0086 | 0.0081 |
| 280 | 0.0166 | 0.0086 | 0.0081 |
| 281 | 0.0166 | 0.0085 | 0.0080 |
| 282 | 0.0165 | 0.0085 | 0.0080 |
| 283 | 0.0164 | 0.0084 | 0.0080 |
| 284 | 0.0164 | 0.0084 | 0.0079 |
| 285 | 0.0163 | 0.0084 | 0.0079 |

```
      286              0.0162           0.0083              0.0079
      287              0.0162           0.0083              0.0078
      288              0.0161           0.0083              0.0078
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.55(In)
      Total effective rainfall =      3.74(In)
      Peak flow rate in flood hydrograph =     14.54(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
----------------------------------------------------------------------------
  0+ 5       0.0002      0.02  Q          |          |          |          |
  0+10       0.0010      0.12  Q          |          |          |          |
  0+15       0.0035      0.36  Q          |          |          |          |
  0+20       0.0067      0.46  Q          |          |          |          |
  0+25       0.0102      0.52  VQ         |          |          |          |
  0+30       0.0140      0.55  VQ         |          |          |          |
  0+35       0.0180      0.58  VQ         |          |          |          |
  0+40       0.0221      0.60  VQ         |          |          |          |
  0+45       0.0263      0.61  VQ         |          |          |          |
  0+50       0.0305      0.61  VQ         |          |          |          |
  0+55       0.0348      0.62  VQ         |          |          |          |
  1+ 0       0.0390      0.62  VQ         |          |          |          |
  1+ 5       0.0433      0.62  VQ         |          |          |          |
  1+10       0.0476      0.63  VQ         |          |          |          |
  1+15       0.0520      0.63  |Q         |          |          |          |
  1+20       0.0563      0.63  |Q         |          |          |          |
  1+25       0.0607      0.63  |Q         |          |          |          |
  1+30       0.0650      0.63  |Q         |          |          |          |
  1+35       0.0694      0.63  |Q         |          |          |          |
  1+40       0.0738      0.64  |Q         |          |          |          |
  1+45       0.0782      0.64  |Q         |          |          |          |
  1+50       0.0826      0.64  |Q         |          |          |          |
  1+55       0.0870      0.64  |Q         |          |          |          |
  2+ 0       0.0914      0.64  |Q         |          |          |          |
  2+ 5       0.0958      0.64  |Q         |          |          |          |
  2+10       0.1002      0.64  |Q         |          |          |          |
  2+15       0.1047      0.65  |QV        |          |          |          |
  2+20       0.1091      0.65  |QV        |          |          |          |
  2+25       0.1136      0.65  |QV        |          |          |          |
  2+30       0.1181      0.65  |QV        |          |          |          |
  2+35       0.1226      0.65  |QV        |          |          |          |
  2+40       0.1270      0.65  |QV        |          |          |          |
  2+45       0.1315      0.65  |QV        |          |          |          |
  2+50       0.1361      0.66  |QV        |          |          |          |
  2+55       0.1406      0.66  |QV        |          |          |          |
  3+ 0       0.1451      0.66  |QV        |          |          |          |
  3+ 5       0.1497      0.66  |QV        |          |          |          |
  3+10       0.1542      0.66  |Q V       |          |          |          |
  3+15       0.1588      0.66  |Q V       |          |          |          |
  3+20       0.1634      0.66  |Q V       |          |          |          |
  3+25       0.1679      0.67  |Q V       |          |          |          |
  3+30       0.1725      0.67  |Q V       |          |          |          |
  3+35       0.1772      0.67  |Q V       |          |          |          |
  3+40       0.1818      0.67  |Q V       |          |          |          |
  3+45       0.1864      0.67  |Q V       |          |          |          |
  3+50       0.1910      0.67  |Q V       |          |          |          |
  3+55       0.1957      0.68  |Q V       |          |          |          |
  4+ 0       0.2004      0.68  |Q V       |          |          |          |
  4+ 5       0.2050      0.68  |Q  V      |          |          |          |
  4+10       0.2097      0.68  |Q  V      |          |          |          |
  4+15       0.2144      0.68  |Q  V      |          |          |          |
  4+20       0.2191      0.68  |Q  V      |          |          |          |
  4+25       0.2239      0.69  |Q  V      |          |          |          |
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 4+30      0.2286      0.69  |Q  V     |          |          |          |
 4+35      0.2334      0.69  |Q  V     |          |          |          |
 4+40      0.2381      0.69  |Q  V     |          |          |          |
 4+45      0.2429      0.69  |Q  V     |          |          |          |
 4+50      0.2477      0.69  |Q  V     |          |          |          |
 4+55      0.2525      0.70  |Q  V     |          |          |          |
 5+ 0      0.2573      0.70  |Q   V    |          |          |          |
 5+ 5      0.2621      0.70  |Q   V    |          |          |          |
 5+10      0.2669      0.70  |Q   V    |          |          |          |
 5+15      0.2718      0.70  |Q   V    |          |          |          |
 5+20      0.2767      0.71  |Q   V    |          |          |          |
 5+25      0.2815      0.71  |Q   V    |          |          |          |
 5+30      0.2864      0.71  |Q   V    |          |          |          |
 5+35      0.2913      0.71  |Q   V    |          |          |          |
 5+40      0.2963      0.71  |Q   V    |          |          |          |
 5+45      0.3012      0.72  |Q   V    |          |          |          |
 5+50      0.3062      0.72  |Q    V   |          |          |          |
 5+55      0.3111      0.72  |Q    V   |          |          |          |
 6+ 0      0.3161      0.72  |Q    V   |          |          |          |
 6+ 5      0.3211      0.73  |Q    V   |          |          |          |
 6+10      0.3261      0.73  |Q    V   |          |          |          |
 6+15      0.3311      0.73  |Q    V   |          |          |          |
 6+20      0.3362      0.73  |Q    V   |          |          |          |
 6+25      0.3412      0.73  |Q    V   |          |          |          |
 6+30      0.3463      0.74  |Q    V   |          |          |          |
 6+35      0.3514      0.74  |Q    V   |          |          |          |
 6+40      0.3565      0.74  |Q     V  |          |          |          |
 6+45      0.3616      0.74  |Q     V  |          |          |          |
 6+50      0.3667      0.75  |Q     V  |          |          |          |
 6+55      0.3719      0.75  |Q     V  |          |          |          |
 7+ 0      0.3770      0.75  |Q     V  |          |          |          |
 7+ 5      0.3822      0.75  |Q     V  |          |          |          |
 7+10      0.3874      0.76  |Q     V  |          |          |          |
 7+15      0.3926      0.76  |Q     V  |          |          |          |
 7+20      0.3979      0.76  |Q     V  |          |          |          |
 7+25      0.4031      0.76  |Q     V  |          |          |          |
 7+30      0.4084      0.77  |Q      V |          |          |          |
 7+35      0.4137      0.77  |Q      V |          |          |          |
 7+40      0.4190      0.77  |Q      V |          |          |          |
 7+45      0.4243      0.77  |Q      V |          |          |          |
 7+50      0.4297      0.78  |Q      V |          |          |          |
 7+55      0.4351      0.78  |Q      V |          |          |          |
 8+ 0      0.4404      0.78  |Q      V |          |          |          |
 8+ 5      0.4459      0.79  |Q      V |          |          |          |
 8+10      0.4513      0.79  |Q      V |          |          |          |
 8+15      0.4567      0.79  |Q      V |          |          |          |
 8+20      0.4622      0.79  |Q       V|          |          |          |
 8+25      0.4677      0.80  |Q       V|          |          |          |
 8+30      0.4732      0.80  |Q       V|          |          |          |
 8+35      0.4787      0.80  |Q       V|          |          |          |
 8+40      0.4843      0.81  |Q       V|          |          |          |
 8+45      0.4899      0.81  |Q       V|          |          |          |
 8+50      0.4955      0.81  |Q       V|          |          |          |
 8+55      0.5011      0.82  |Q       V|          |          |          |
 9+ 0      0.5067      0.82  |Q       V|          |          |          |
 9+ 5      0.5124      0.82  |Q        V          |          |          |
 9+10      0.5181      0.83  |Q        V          |          |          |
 9+15      0.5238      0.83  |Q        V          |          |          |
 9+20      0.5296      0.83  |Q        V          |          |          |
 9+25      0.5353      0.84  |Q        V          |          |          |
 9+30      0.5411      0.84  |Q        V          |          |          |
 9+35      0.5470      0.85  |Q        V          |          |          |
 9+40      0.5528      0.85  |Q        V          |          |          |
 9+45      0.5587      0.85  |Q        V          |          |          |
 9+50      0.5646      0.86  |Q         |V         |          |          |
 9+55      0.5705      0.86  |Q         |V         |          |          |
10+ 0      0.5765      0.87  |Q         |V         |          |          |
10+ 5      0.5825      0.87  |Q         |V         |          |          |
10+10      0.5885      0.87  |Q         |V         |          |          |
10+15      0.5945      0.88  |Q         |V         |          |          |
10+20      0.6006      0.88  |Q         |V         |          |          |
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10+25       0.6067      0.89  |Q        |V        |         |         |
10+30       0.6129      0.89  |Q        | V       |         |         |
10+35       0.6190      0.90  |Q        | V       |         |         |
10+40       0.6253      0.90  |Q        | V       |         |         |
10+45       0.6315      0.91  |Q        | V       |         |         |
10+50       0.6378      0.91  |Q        | V       |         |         |
10+55       0.6441      0.92  |Q        | V       |         |         |
11+ 0       0.6504      0.92  |Q        | V       |         |         |
11+ 5       0.6568      0.93  |Q        | V       |         |         |
11+10       0.6632      0.93  |Q        |  V      |         |         |
11+15       0.6697      0.94  |Q        |  V      |         |         |
11+20       0.6762      0.94  |Q        |  V      |         |         |
11+25       0.6828      0.95  |Q        |  V      |         |         |
11+30       0.6893      0.96  |Q        |  V      |         |         |
11+35       0.6960      0.96  |Q        |  V      |         |         |
11+40       0.7026      0.97  |Q        |  V      |         |         |
11+45       0.7093      0.98  |Q        |  V      |         |         |
11+50       0.7161      0.98  |Q        |   V     |         |         |
11+55       0.7229      0.99  |Q        |   V     |         |         |
12+ 0       0.7298      1.00  |Q        |   V     |         |         |
12+ 5       0.7367      1.00  | Q       |   V     |         |         |
12+10       0.7436      1.00  | Q       |   V     |         |         |
12+15       0.7505      1.00  | Q       |   V     |         |         |
12+20       0.7574      1.01  | Q       |   V     |         |         |
12+25       0.7644      1.01  | Q       |    V    |         |         |
12+30       0.7714      1.02  | Q       |    V    |         |         |
12+35       0.7785      1.03  | Q       |    V    |         |         |
12+40       0.7856      1.04  | Q       |    V    |         |         |
12+45       0.7928      1.04  | Q       |    V    |         |         |
12+50       0.8001      1.05  | Q       |    V    |         |         |
12+55       0.8074      1.06  | Q       |    V    |         |         |
13+ 0       0.8148      1.07  | Q       |     V   |         |         |
13+ 5       0.8223      1.08  | Q       |     V   |         |         |
13+10       0.8298      1.09  | Q       |     V   |         |         |
13+15       0.8374      1.11  | Q       |     V   |         |         |
13+20       0.8451      1.12  | Q       |     V   |         |         |
13+25       0.8529      1.13  | Q       |     V   |         |         |
13+30       0.8608      1.14  | Q       |     V   |         |         |
13+35       0.8687      1.16  | Q       |      V  |         |         |
13+40       0.8768      1.17  | Q       |      V  |         |         |
13+45       0.8849      1.18  | Q       |      V  |         |         |
13+50       0.8932      1.20  | Q       |      V  |         |         |
13+55       0.9016      1.22  | Q       |      V  |         |         |
14+ 0       0.9100      1.23  | Q       |      V  |         |         |
14+ 5       0.9187      1.25  | Q       |       V |         |         |
14+10       0.9274      1.27  | Q       |       V |         |         |
14+15       0.9363      1.29  | Q       |       V |         |         |
14+20       0.9453      1.31  | Q       |       V |         |         |
14+25       0.9544      1.33  | Q       |       V |         |         |
14+30       0.9638      1.35  | Q       |       V |         |         |
14+35       0.9733      1.38  | Q       |        V|         |         |
14+40       0.9829      1.40  | Q       |        V|         |         |
14+45       0.9928      1.43  | Q       |        V|         |         |
14+50       1.0029      1.46  | Q       |        V|         |         |
14+55       1.0132      1.50  | Q       |        V|         |         |
15+ 0       1.0238      1.53  |  Q      |         V         |         |
15+ 5       1.0346      1.58  |  Q      |         V         |         |
15+10       1.0458      1.62  |  Q      |         V         |         |
15+15       1.0572      1.67  |  Q      |         V         |         |
15+20       1.0691      1.72  |  Q      |         V         |         |
15+25       1.0811      1.75  |  Q      |         |V        |         |
15+30       1.0925      1.65  |  Q      |         |V        |         |
15+35       1.1017      1.34  | Q       |         |V        |         |
15+40       1.1104      1.27  | Q       |         |V        |         |
15+45       1.1194      1.30  | Q       |         |V        |         |
15+50       1.1290      1.39  | Q       |         | V       |         |
15+55       1.1400      1.60  |  Q      |         | V       |         |
16+ 0       1.1537      1.99  |  Q      |         | V       |         |
16+ 5       1.1803      3.86  |      Q  |         |  V      |         |
16+10       1.2374      8.30  |         |     Q   |   V     |         |
16+15       1.3376     14.54  |         |         |     V  Q|         |
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16+20       1.3890      7.47  |          |   Q      |      V  |          |
16+25       1.4214      4.69  |          Q|          |      V  |          |
16+30       1.4459      3.57  |       Q  |          |       V |          |
16+35       1.4674      3.11  |      Q   |          |       V |          |
16+40       1.4855      2.63  |    Q     |          |        V|          |
16+45       1.5008      2.22  |   Q      |          |        V|          |
16+50       1.5136      1.86  |  Q       |          |        V|          |
16+55       1.5255      1.72  |  Q       |          |        V|          |
17+ 0       1.5366      1.62  |  Q       |          |         V          |
17+ 5       1.5473      1.56  |  Q       |          |         V          |
17+10       1.5575      1.48  | Q        |          |         V          |
17+15       1.5671      1.39  | Q        |          |         V          |
17+20       1.5761      1.32  | Q        |          |         V          |
17+25       1.5848      1.26  | Q        |          |         |V         |
17+30       1.5932      1.22  | Q        |          |         |V         |
17+35       1.6015      1.19  | Q        |          |         |V         |
17+40       1.6095      1.16  | Q        |          |         |V         |
17+45       1.6173      1.14  | Q        |          |         |V         |
17+50       1.6249      1.11  | Q        |          |         |V         |
17+55       1.6324      1.09  | Q        |          |         | V        |
18+ 0       1.6398      1.07  | Q        |          |         | V        |
18+ 5       1.6470      1.05  | Q        |          |         | V        |
18+10       1.6541      1.03  | Q        |          |         | V        |
18+15       1.6612      1.03  | Q        |          |         | V        |
18+20       1.6682      1.01  | Q        |          |         | V        |
18+25       1.6751      1.00  | Q        |          |         | V        |
18+30       1.6819      0.99  |Q         |          |         |  V       |
18+35       1.6886      0.98  |Q         |          |         |  V       |
18+40       1.6952      0.96  |Q         |          |         |  V       |
18+45       1.7018      0.95  |Q         |          |         |  V       |
18+50       1.7083      0.94  |Q         |          |         |  V       |
18+55       1.7147      0.93  |Q         |          |         |  V       |
19+ 0       1.7210      0.92  |Q         |          |         |  V       |
19+ 5       1.7272      0.91  |Q         |          |         |  V       |
19+10       1.7334      0.90  |Q         |          |         |   V      |
19+15       1.7395      0.89  |Q         |          |         |   V      |
19+20       1.7456      0.88  |Q         |          |         |   V      |
19+25       1.7516      0.87  |Q         |          |         |   V      |
19+30       1.7575      0.86  |Q         |          |         |   V      |
19+35       1.7634      0.85  |Q         |          |         |   V      |
19+40       1.7692      0.85  |Q         |          |         |   V      |
19+45       1.7750      0.84  |Q         |          |         |   V      |
19+50       1.7807      0.83  |Q         |          |         |   V      |
19+55       1.7864      0.82  |Q         |          |         |    V     |
20+ 0       1.7920      0.82  |Q         |          |         |    V     |
20+ 5       1.7976      0.81  |Q         |          |         |    V     |
20+10       1.8032      0.80  |Q         |          |         |    V     |
20+15       1.8087      0.80  |Q         |          |         |    V     |
20+20       1.8141      0.79  |Q         |          |         |    V     |
20+25       1.8195      0.79  |Q         |          |         |    V     |
20+30       1.8249      0.78  |Q         |          |         |    V     |
20+35       1.8302      0.77  |Q         |          |         |    V     |
20+40       1.8355      0.77  |Q         |          |         |     V    |
20+45       1.8408      0.76  |Q         |          |         |     V    |
20+50       1.8460      0.76  |Q         |          |         |     V    |
20+55       1.8512      0.75  |Q         |          |         |     V    |
21+ 0       1.8564      0.75  |Q         |          |         |     V    |
21+ 5       1.8615      0.74  |Q         |          |         |     V    |
21+10       1.8666      0.74  |Q         |          |         |     V    |
21+15       1.8716      0.73  |Q         |          |         |     V    |
21+20       1.8767      0.73  |Q         |          |         |     V    |
21+25       1.8816      0.73  |Q         |          |         |     V    |
21+30       1.8866      0.72  |Q         |          |         |      V   |
21+35       1.8916      0.72  |Q         |          |         |      V   |
21+40       1.8965      0.71  |Q         |          |         |      V   |
21+45       1.9013      0.71  |Q         |          |         |      V   |
21+50       1.9062      0.70  |Q         |          |         |      V   |
21+55       1.9110      0.70  |Q         |          |         |      V   |
22+ 0       1.9158      0.70  |Q         |          |         |      V   |
22+ 5       1.9206      0.69  |Q         |          |         |      V   |
22+10       1.9254      0.69  |Q         |          |         |      V   |
```

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  22+15       1.9301      0.69  |Q        |         |         |      V  |
  22+20       1.9348      0.68  |Q        |         |         |      V  |
  22+25       1.9395      0.68  |Q        |         |         |       V |
  22+30       1.9441      0.68  |Q        |         |         |       V |
  22+35       1.9488      0.67  |Q        |         |         |       V |
  22+40       1.9534      0.67  |Q        |         |         |       V |
  22+45       1.9580      0.67  |Q        |         |         |       V |
  22+50       1.9625      0.66  |Q        |         |         |       V |
  22+55       1.9671      0.66  |Q        |         |         |       V |
  23+ 0       1.9716      0.66  |Q        |         |         |       V |
  23+ 5       1.9761      0.65  |Q        |         |         |       V |
  23+10       1.9806      0.65  |Q        |         |         |       V |
  23+15       1.9850      0.65  |Q        |         |         |       V |
  23+20       1.9895      0.65  |Q        |         |         |        V|
  23+25       1.9939      0.64  |Q        |         |         |        V|
  23+30       1.9983      0.64  |Q        |         |         |        V|
  23+35       2.0027      0.64  |Q        |         |         |        V|
  23+40       2.0071      0.63  |Q        |         |         |        V|
  23+45       2.0114      0.63  |Q        |         |         |        V|
  23+50       2.0158      0.63  |Q        |         |         |        V|
  23+55       2.0201      0.63  |Q        |         |         |        V|
  24+ 0       2.0244      0.62  |Q        |         |         |        V|
  24+ 5       2.0285      0.60  |Q        |         |         |        V|
  24+10       2.0319      0.50  Q         |         |         |        V|
  24+15       2.0337      0.26  Q         |         |         |        V|
  24+20       2.0348      0.16  Q         |         |         |        V|
  24+25       2.0355      0.10  Q         |         |         |        V|
  24+30       2.0360      0.07  Q         |         |         |        V|
  24+35       2.0363      0.04  Q         |         |         |        V|
  24+40       2.0364      0.02  Q         |         |         |        V|
  24+45       2.0365      0.01  Q         |         |         |        V|
  24+50       2.0366      0.01  Q         |         |         |        V|
  24+55       2.0366      0.01  Q         |         |         |        V|
  25+ 0       2.0367      0.00  Q         |         |         |        V|
  25+ 5       2.0367      0.00  Q         |         |         |        V|
  25+10       2.0367      0.00  Q         |         |         |        V|
  25+15       2.0367      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'C' – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
25 YEAR 24 HOUR STORM
DECEMBER 17, 2024
----------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.53            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      67.0          6.53      1.000     0.578    1.000    0.578

Area-averaged adjusted loss rate Fm (In/Hr) =  0.578

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.53 | 1.000 | 67.0 | 67.0 | 4.93 | 0.557 |

Area-averaged catchment yield fraction, Y = 0.557
Area-averaged low loss fraction, Yb = 0.443
User entry of time of concentration = 0.225 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.53(Ac.)
Catchment Lag time = 0.180 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 46.2963
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.578(In/Hr)
Average low loss rate fraction (Yb) = 0.443 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 6.53(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.569(In)
30-minute factor = 1.000 Adjusted rainfall = 0.974(In)
1-hour factor = 1.000 Adjusted rainfall = 1.199(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 78.97 (CFS)) | |
| 1 | 3.841 | 3.033 |
| 2 | 20.125 | 12.860 |
| 3 | 58.137 | 30.019 |
| 4 | 74.610 | 13.009 |
| 5 | 83.494 | 7.016 |
| 6 | 89.354 | 4.628 |
| 7 | 93.374 | 3.174 |
| 8 | 96.031 | 2.098 |
| 9 | 97.668 | 1.293 |
| 10 | 98.374 | 0.558 |
| 11 | 98.857 | 0.382 |
| 12 | 99.195 | 0.267 |
| 13 | 99.529 | 0.264 |
| 14 | 99.800 | 0.214 |
| 15 | 99.943 | 0.113 |
| 16 | 100.000 | 0.045 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5687 | 0.5687 |
| 2 | 0.7002 | 0.1315 |
| 3 | 0.7908 | 0.0906 |
| 4 | 0.8621 | 0.0713 |
| 5 | 0.9217 | 0.0597 |
| 6 | 0.9736 | 0.0518 |
| 7 | 1.0196 | 0.0461 |
| 8 | 1.0613 | 0.0417 |
| 9 | 1.0995 | 0.0382 |
| 10 | 1.1348 | 0.0353 |

| | | |
|---|---|---|
| 11 | 1.1677 | 0.0329 |
| 12 | 1.1986 | 0.0309 |
| 13 | 1.2592 | 0.0606 |
| 14 | 1.3180 | 0.0588 |
| 15 | 1.3752 | 0.0572 |
| 16 | 1.4310 | 0.0558 |
| 17 | 1.4855 | 0.0545 |
| 18 | 1.5387 | 0.0532 |
| 19 | 1.5908 | 0.0521 |
| 20 | 1.6419 | 0.0511 |
| 21 | 1.6920 | 0.0501 |
| 22 | 1.7412 | 0.0492 |
| 23 | 1.7895 | 0.0483 |
| 24 | 1.8371 | 0.0475 |
| 25 | 1.8838 | 0.0468 |
| 26 | 1.9299 | 0.0461 |
| 27 | 1.9753 | 0.0454 |
| 28 | 2.0201 | 0.0448 |
| 29 | 2.0642 | 0.0441 |
| 30 | 2.1078 | 0.0436 |
| 31 | 2.1508 | 0.0430 |
| 32 | 2.1933 | 0.0425 |
| 33 | 2.2352 | 0.0420 |
| 34 | 2.2767 | 0.0415 |
| 35 | 2.3178 | 0.0410 |
| 36 | 2.3583 | 0.0406 |
| 37 | 2.3985 | 0.0401 |
| 38 | 2.4382 | 0.0397 |
| 39 | 2.4775 | 0.0393 |
| 40 | 2.5164 | 0.0389 |
| 41 | 2.5550 | 0.0386 |
| 42 | 2.5932 | 0.0382 |
| 43 | 2.6310 | 0.0379 |
| 44 | 2.6685 | 0.0375 |
| 45 | 2.7057 | 0.0372 |
| 46 | 2.7426 | 0.0369 |
| 47 | 2.7792 | 0.0366 |
| 48 | 2.8154 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8871 | 0.0357 |
| 51 | 2.9225 | 0.0354 |
| 52 | 2.9577 | 0.0352 |
| 53 | 2.9926 | 0.0349 |
| 54 | 3.0272 | 0.0346 |
| 55 | 3.0616 | 0.0344 |
| 56 | 3.0958 | 0.0342 |
| 57 | 3.1297 | 0.0339 |
| 58 | 3.1634 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2302 | 0.0333 |
| 61 | 3.2632 | 0.0330 |
| 62 | 3.2961 | 0.0328 |
| 63 | 3.3287 | 0.0326 |
| 64 | 3.3611 | 0.0324 |
| 65 | 3.3934 | 0.0322 |
| 66 | 3.4254 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4890 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5519 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6140 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6811 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7476 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8135 | 0.0329 |
| 79 | 3.8462 | 0.0328 |
| 80 | 3.8789 | 0.0326 |
| 81 | 3.9113 | 0.0325 |

| | | |
|---|---|---|
| 82 | 3.9437 | 0.0323 |
| 83 | 3.9759 | 0.0322 |
| 84 | 4.0080 | 0.0321 |
| 85 | 4.0400 | 0.0320 |
| 86 | 4.0718 | 0.0318 |
| 87 | 4.1035 | 0.0317 |
| 88 | 4.1351 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1980 | 0.0314 |
| 91 | 4.2292 | 0.0313 |
| 92 | 4.2604 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3223 | 0.0309 |
| 95 | 4.3531 | 0.0308 |
| 96 | 4.3839 | 0.0307 |
| 97 | 4.4145 | 0.0306 |
| 98 | 4.4450 | 0.0305 |
| 99 | 4.4753 | 0.0304 |
| 100 | 4.5056 | 0.0303 |
| 101 | 4.5358 | 0.0302 |
| 102 | 4.5659 | 0.0301 |
| 103 | 4.5959 | 0.0300 |
| 104 | 4.6258 | 0.0299 |
| 105 | 4.6557 | 0.0298 |
| 106 | 4.6854 | 0.0297 |
| 107 | 4.7150 | 0.0296 |
| 108 | 4.7445 | 0.0295 |
| 109 | 4.7740 | 0.0294 |
| 110 | 4.8033 | 0.0294 |
| 111 | 4.8326 | 0.0293 |
| 112 | 4.8618 | 0.0292 |
| 113 | 4.8909 | 0.0291 |
| 114 | 4.9199 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9777 | 0.0288 |
| 117 | 5.0064 | 0.0288 |
| 118 | 5.0351 | 0.0287 |
| 119 | 5.0637 | 0.0286 |
| 120 | 5.0922 | 0.0285 |
| 121 | 5.1207 | 0.0284 |
| 122 | 5.1491 | 0.0284 |
| 123 | 5.1773 | 0.0283 |
| 124 | 5.2056 | 0.0282 |
| 125 | 5.2337 | 0.0281 |
| 126 | 5.2618 | 0.0281 |
| 127 | 5.2898 | 0.0280 |
| 128 | 5.3177 | 0.0279 |
| 129 | 5.3455 | 0.0279 |
| 130 | 5.3733 | 0.0278 |
| 131 | 5.4010 | 0.0277 |
| 132 | 5.4287 | 0.0276 |
| 133 | 5.4563 | 0.0276 |
| 134 | 5.4838 | 0.0275 |
| 135 | 5.5112 | 0.0274 |
| 136 | 5.5386 | 0.0274 |
| 137 | 5.5659 | 0.0273 |
| 138 | 5.5931 | 0.0272 |
| 139 | 5.6203 | 0.0272 |
| 140 | 5.6474 | 0.0271 |
| 141 | 5.6744 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7283 | 0.0269 |
| 144 | 5.7552 | 0.0269 |
| 145 | 5.7820 | 0.0268 |
| 146 | 5.8087 | 0.0267 |
| 147 | 5.8354 | 0.0267 |
| 148 | 5.8620 | 0.0266 |
| 149 | 5.8886 | 0.0266 |
| 150 | 5.9151 | 0.0265 |
| 151 | 5.9415 | 0.0264 |
| 152 | 5.9679 | 0.0264 |

| | | |
|---|---|---|
| 153 | 5.9942 | 0.0263 |
| 154 | 6.0205 | 0.0263 |
| 155 | 6.0467 | 0.0262 |
| 156 | 6.0729 | 0.0262 |
| 157 | 6.0990 | 0.0261 |
| 158 | 6.1250 | 0.0260 |
| 159 | 6.1510 | 0.0260 |
| 160 | 6.1770 | 0.0259 |
| 161 | 6.2029 | 0.0259 |
| 162 | 6.2287 | 0.0258 |
| 163 | 6.2545 | 0.0258 |
| 164 | 6.2802 | 0.0257 |
| 165 | 6.3059 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3571 | 0.0256 |
| 168 | 6.3826 | 0.0255 |
| 169 | 6.4081 | 0.0255 |
| 170 | 6.4335 | 0.0254 |
| 171 | 6.4589 | 0.0254 |
| 172 | 6.4842 | 0.0253 |
| 173 | 6.5095 | 0.0253 |
| 174 | 6.5348 | 0.0252 |
| 175 | 6.5599 | 0.0252 |
| 176 | 6.5851 | 0.0251 |
| 177 | 6.6102 | 0.0251 |
| 178 | 6.6352 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6852 | 0.0250 |
| 181 | 6.7101 | 0.0249 |
| 182 | 6.7349 | 0.0249 |
| 183 | 6.7598 | 0.0248 |
| 184 | 6.7845 | 0.0248 |
| 185 | 6.8093 | 0.0247 |
| 186 | 6.8340 | 0.0247 |
| 187 | 6.8586 | 0.0246 |
| 188 | 6.8832 | 0.0246 |
| 189 | 6.9077 | 0.0246 |
| 190 | 6.9323 | 0.0245 |
| 191 | 6.9567 | 0.0245 |
| 192 | 6.9812 | 0.0244 |
| 193 | 7.0055 | 0.0244 |
| 194 | 7.0299 | 0.0243 |
| 195 | 7.0542 | 0.0243 |
| 196 | 7.0785 | 0.0243 |
| 197 | 7.1027 | 0.0242 |
| 198 | 7.1269 | 0.0242 |
| 199 | 7.1510 | 0.0241 |
| 200 | 7.1751 | 0.0241 |
| 201 | 7.1992 | 0.0241 |
| 202 | 7.2232 | 0.0240 |
| 203 | 7.2472 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2950 | 0.0239 |
| 206 | 7.3189 | 0.0239 |
| 207 | 7.3427 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3903 | 0.0238 |
| 210 | 7.4140 | 0.0237 |
| 211 | 7.4377 | 0.0237 |
| 212 | 7.4613 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5085 | 0.0236 |
| 215 | 7.5320 | 0.0235 |
| 216 | 7.5555 | 0.0235 |
| 217 | 7.5790 | 0.0235 |
| 218 | 7.6024 | 0.0234 |
| 219 | 7.6258 | 0.0234 |
| 220 | 7.6492 | 0.0234 |
| 221 | 7.6725 | 0.0233 |
| 222 | 7.6958 | 0.0233 |
| 223 | 7.7190 | 0.0233 |

| | | |
|---|---|---|
| 224 | 7.7422 | 0.0232 |
| 225 | 7.7654 | 0.0232 |
| 226 | 7.7886 | 0.0232 |
| 227 | 7.8117 | 0.0231 |
| 228 | 7.8348 | 0.0231 |
| 229 | 7.8578 | 0.0231 |
| 230 | 7.8808 | 0.0230 |
| 231 | 7.9038 | 0.0230 |
| 232 | 7.9268 | 0.0230 |
| 233 | 7.9497 | 0.0229 |
| 234 | 7.9726 | 0.0229 |
| 235 | 7.9954 | 0.0229 |
| 236 | 8.0183 | 0.0228 |
| 237 | 8.0411 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0865 | 0.0227 |
| 240 | 8.1092 | 0.0227 |
| 241 | 8.1319 | 0.0227 |
| 242 | 8.1545 | 0.0226 |
| 243 | 8.1771 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2223 | 0.0225 |
| 246 | 8.2448 | 0.0225 |
| 247 | 8.2673 | 0.0225 |
| 248 | 8.2897 | 0.0225 |
| 249 | 8.3121 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3569 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4015 | 0.0223 |
| 254 | 8.4238 | 0.0223 |
| 255 | 8.4461 | 0.0222 |
| 256 | 8.4683 | 0.0222 |
| 257 | 8.4905 | 0.0222 |
| 258 | 8.5126 | 0.0222 |
| 259 | 8.5348 | 0.0221 |
| 260 | 8.5569 | 0.0221 |
| 261 | 8.5789 | 0.0221 |
| 262 | 8.6010 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6670 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7108 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7546 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8200 | 0.0218 |
| 273 | 8.8418 | 0.0218 |
| 274 | 8.8635 | 0.0217 |
| 275 | 8.8852 | 0.0217 |
| 276 | 8.9069 | 0.0217 |
| 277 | 8.9285 | 0.0216 |
| 278 | 8.9501 | 0.0216 |
| 279 | 8.9717 | 0.0216 |
| 280 | 8.9933 | 0.0216 |
| 281 | 9.0148 | 0.0215 |
| 282 | 9.0364 | 0.0215 |
| 283 | 9.0579 | 0.0215 |
| 284 | 9.0793 | 0.0215 |
| 285 | 9.1008 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1650 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0095 | 0.0119 |

| | | | |
|---|---|---|---|
| 2 | 0.0214 | 0.0095 | 0.0119 |
| 3 | 0.0214 | 0.0095 | 0.0119 |
| 4 | 0.0215 | 0.0095 | 0.0120 |
| 5 | 0.0215 | 0.0095 | 0.0120 |
| 6 | 0.0215 | 0.0095 | 0.0120 |
| 7 | 0.0216 | 0.0096 | 0.0120 |
| 8 | 0.0216 | 0.0096 | 0.0120 |
| 9 | 0.0217 | 0.0096 | 0.0121 |
| 10 | 0.0217 | 0.0096 | 0.0121 |
| 11 | 0.0218 | 0.0096 | 0.0121 |
| 12 | 0.0218 | 0.0096 | 0.0121 |
| 13 | 0.0218 | 0.0097 | 0.0122 |
| 14 | 0.0219 | 0.0097 | 0.0122 |
| 15 | 0.0219 | 0.0097 | 0.0122 |
| 16 | 0.0219 | 0.0097 | 0.0122 |
| 17 | 0.0220 | 0.0097 | 0.0123 |
| 18 | 0.0220 | 0.0098 | 0.0123 |
| 19 | 0.0221 | 0.0098 | 0.0123 |
| 20 | 0.0221 | 0.0098 | 0.0123 |
| 21 | 0.0222 | 0.0098 | 0.0123 |
| 22 | 0.0222 | 0.0098 | 0.0124 |
| 23 | 0.0222 | 0.0099 | 0.0124 |
| 24 | 0.0223 | 0.0099 | 0.0124 |
| 25 | 0.0223 | 0.0099 | 0.0124 |
| 26 | 0.0224 | 0.0099 | 0.0125 |
| 27 | 0.0224 | 0.0099 | 0.0125 |
| 28 | 0.0225 | 0.0099 | 0.0125 |
| 29 | 0.0225 | 0.0100 | 0.0125 |
| 30 | 0.0225 | 0.0100 | 0.0126 |
| 31 | 0.0226 | 0.0100 | 0.0126 |
| 32 | 0.0226 | 0.0100 | 0.0126 |
| 33 | 0.0227 | 0.0101 | 0.0126 |
| 34 | 0.0227 | 0.0101 | 0.0127 |
| 35 | 0.0228 | 0.0101 | 0.0127 |
| 36 | 0.0228 | 0.0101 | 0.0127 |
| 37 | 0.0229 | 0.0101 | 0.0127 |
| 38 | 0.0229 | 0.0102 | 0.0128 |
| 39 | 0.0230 | 0.0102 | 0.0128 |
| 40 | 0.0230 | 0.0102 | 0.0128 |
| 41 | 0.0231 | 0.0102 | 0.0129 |
| 42 | 0.0231 | 0.0102 | 0.0129 |
| 43 | 0.0232 | 0.0103 | 0.0129 |
| 44 | 0.0232 | 0.0103 | 0.0129 |
| 45 | 0.0233 | 0.0103 | 0.0130 |
| 46 | 0.0233 | 0.0103 | 0.0130 |
| 47 | 0.0234 | 0.0104 | 0.0130 |
| 48 | 0.0234 | 0.0104 | 0.0131 |
| 49 | 0.0235 | 0.0104 | 0.0131 |
| 50 | 0.0235 | 0.0104 | 0.0131 |
| 51 | 0.0236 | 0.0105 | 0.0132 |
| 52 | 0.0236 | 0.0105 | 0.0132 |
| 53 | 0.0237 | 0.0105 | 0.0132 |
| 54 | 0.0238 | 0.0105 | 0.0132 |
| 55 | 0.0238 | 0.0106 | 0.0133 |
| 56 | 0.0239 | 0.0106 | 0.0133 |
| 57 | 0.0239 | 0.0106 | 0.0133 |
| 58 | 0.0240 | 0.0106 | 0.0134 |
| 59 | 0.0241 | 0.0107 | 0.0134 |
| 60 | 0.0241 | 0.0107 | 0.0134 |
| 61 | 0.0242 | 0.0107 | 0.0135 |
| 62 | 0.0242 | 0.0107 | 0.0135 |
| 63 | 0.0243 | 0.0108 | 0.0135 |
| 64 | 0.0243 | 0.0108 | 0.0136 |
| 65 | 0.0244 | 0.0108 | 0.0136 |
| 66 | 0.0245 | 0.0108 | 0.0136 |
| 67 | 0.0246 | 0.0109 | 0.0137 |
| 68 | 0.0246 | 0.0109 | 0.0137 |
| 69 | 0.0247 | 0.0109 | 0.0138 |
| 70 | 0.0247 | 0.0110 | 0.0138 |
| 71 | 0.0248 | 0.0110 | 0.0138 |
| 72 | 0.0249 | 0.0110 | 0.0139 |

| | | | |
|---|---|---|---|
| 73 | 0.0250 | 0.0111 | 0.0139 |
| 74 | 0.0250 | 0.0111 | 0.0139 |
| 75 | 0.0251 | 0.0111 | 0.0140 |
| 76 | 0.0251 | 0.0111 | 0.0140 |
| 77 | 0.0252 | 0.0112 | 0.0141 |
| 78 | 0.0253 | 0.0112 | 0.0141 |
| 79 | 0.0254 | 0.0112 | 0.0141 |
| 80 | 0.0254 | 0.0113 | 0.0142 |
| 81 | 0.0255 | 0.0113 | 0.0142 |
| 82 | 0.0256 | 0.0113 | 0.0142 |
| 83 | 0.0257 | 0.0114 | 0.0143 |
| 84 | 0.0257 | 0.0114 | 0.0143 |
| 85 | 0.0258 | 0.0114 | 0.0144 |
| 86 | 0.0259 | 0.0115 | 0.0144 |
| 87 | 0.0260 | 0.0115 | 0.0145 |
| 88 | 0.0260 | 0.0115 | 0.0145 |
| 89 | 0.0262 | 0.0116 | 0.0146 |
| 90 | 0.0262 | 0.0116 | 0.0146 |
| 91 | 0.0263 | 0.0117 | 0.0147 |
| 92 | 0.0264 | 0.0117 | 0.0147 |
| 93 | 0.0265 | 0.0117 | 0.0148 |
| 94 | 0.0266 | 0.0118 | 0.0148 |
| 95 | 0.0267 | 0.0118 | 0.0149 |
| 96 | 0.0267 | 0.0118 | 0.0149 |
| 97 | 0.0269 | 0.0119 | 0.0150 |
| 98 | 0.0269 | 0.0119 | 0.0150 |
| 99 | 0.0270 | 0.0120 | 0.0151 |
| 100 | 0.0271 | 0.0120 | 0.0151 |
| 101 | 0.0272 | 0.0121 | 0.0152 |
| 102 | 0.0273 | 0.0121 | 0.0152 |
| 103 | 0.0274 | 0.0122 | 0.0153 |
| 104 | 0.0275 | 0.0122 | 0.0153 |
| 105 | 0.0276 | 0.0122 | 0.0154 |
| 106 | 0.0277 | 0.0123 | 0.0154 |
| 107 | 0.0279 | 0.0123 | 0.0155 |
| 108 | 0.0279 | 0.0124 | 0.0156 |
| 109 | 0.0281 | 0.0124 | 0.0156 |
| 110 | 0.0281 | 0.0125 | 0.0157 |
| 111 | 0.0283 | 0.0125 | 0.0158 |
| 112 | 0.0284 | 0.0126 | 0.0158 |
| 113 | 0.0285 | 0.0126 | 0.0159 |
| 114 | 0.0286 | 0.0127 | 0.0159 |
| 115 | 0.0288 | 0.0127 | 0.0160 |
| 116 | 0.0288 | 0.0128 | 0.0161 |
| 117 | 0.0290 | 0.0128 | 0.0162 |
| 118 | 0.0291 | 0.0129 | 0.0162 |
| 119 | 0.0293 | 0.0130 | 0.0163 |
| 120 | 0.0294 | 0.0130 | 0.0164 |
| 121 | 0.0295 | 0.0131 | 0.0165 |
| 122 | 0.0296 | 0.0131 | 0.0165 |
| 123 | 0.0298 | 0.0132 | 0.0166 |
| 124 | 0.0299 | 0.0132 | 0.0167 |
| 125 | 0.0301 | 0.0133 | 0.0168 |
| 126 | 0.0302 | 0.0134 | 0.0168 |
| 127 | 0.0304 | 0.0135 | 0.0169 |
| 128 | 0.0305 | 0.0135 | 0.0170 |
| 129 | 0.0307 | 0.0136 | 0.0171 |
| 130 | 0.0308 | 0.0136 | 0.0172 |
| 131 | 0.0310 | 0.0137 | 0.0173 |
| 132 | 0.0311 | 0.0138 | 0.0173 |
| 133 | 0.0314 | 0.0139 | 0.0175 |
| 134 | 0.0315 | 0.0139 | 0.0175 |
| 135 | 0.0317 | 0.0141 | 0.0177 |
| 136 | 0.0318 | 0.0141 | 0.0177 |
| 137 | 0.0321 | 0.0142 | 0.0179 |
| 138 | 0.0322 | 0.0143 | 0.0179 |
| 139 | 0.0325 | 0.0144 | 0.0181 |
| 140 | 0.0326 | 0.0144 | 0.0182 |
| 141 | 0.0329 | 0.0146 | 0.0183 |
| 142 | 0.0330 | 0.0146 | 0.0184 |
| 143 | 0.0333 | 0.0148 | 0.0186 |

| | | | |
|---|---|---|---|
| 144 | 0.0335 | 0.0148 | 0.0186 |
| 145 | 0.0310 | 0.0137 | 0.0173 |
| 146 | 0.0312 | 0.0138 | 0.0174 |
| 147 | 0.0315 | 0.0140 | 0.0176 |
| 148 | 0.0317 | 0.0140 | 0.0177 |
| 149 | 0.0321 | 0.0142 | 0.0179 |
| 150 | 0.0322 | 0.0143 | 0.0180 |
| 151 | 0.0326 | 0.0145 | 0.0182 |
| 152 | 0.0328 | 0.0145 | 0.0183 |
| 153 | 0.0333 | 0.0147 | 0.0185 |
| 154 | 0.0335 | 0.0148 | 0.0187 |
| 155 | 0.0339 | 0.0150 | 0.0189 |
| 156 | 0.0342 | 0.0151 | 0.0190 |
| 157 | 0.0346 | 0.0153 | 0.0193 |
| 158 | 0.0349 | 0.0155 | 0.0194 |
| 159 | 0.0354 | 0.0157 | 0.0197 |
| 160 | 0.0357 | 0.0158 | 0.0199 |
| 161 | 0.0363 | 0.0161 | 0.0202 |
| 162 | 0.0366 | 0.0162 | 0.0204 |
| 163 | 0.0372 | 0.0165 | 0.0207 |
| 164 | 0.0375 | 0.0166 | 0.0209 |
| 165 | 0.0382 | 0.0169 | 0.0213 |
| 166 | 0.0386 | 0.0171 | 0.0215 |
| 167 | 0.0393 | 0.0174 | 0.0219 |
| 168 | 0.0397 | 0.0176 | 0.0221 |
| 169 | 0.0406 | 0.0180 | 0.0226 |
| 170 | 0.0410 | 0.0182 | 0.0229 |
| 171 | 0.0420 | 0.0186 | 0.0234 |
| 172 | 0.0425 | 0.0188 | 0.0237 |
| 173 | 0.0436 | 0.0193 | 0.0243 |
| 174 | 0.0441 | 0.0196 | 0.0246 |
| 175 | 0.0454 | 0.0201 | 0.0253 |
| 176 | 0.0461 | 0.0204 | 0.0257 |
| 177 | 0.0475 | 0.0211 | 0.0265 |
| 178 | 0.0483 | 0.0214 | 0.0269 |
| 179 | 0.0501 | 0.0222 | 0.0279 |
| 180 | 0.0511 | 0.0226 | 0.0285 |
| 181 | 0.0532 | 0.0236 | 0.0297 |
| 182 | 0.0545 | 0.0241 | 0.0303 |
| 183 | 0.0572 | 0.0253 | 0.0319 |
| 184 | 0.0588 | 0.0261 | 0.0328 |
| 185 | 0.0309 | 0.0137 | 0.0172 |
| 186 | 0.0329 | 0.0146 | 0.0183 |
| 187 | 0.0382 | 0.0169 | 0.0213 |
| 188 | 0.0417 | 0.0185 | 0.0232 |
| 189 | 0.0518 | 0.0230 | 0.0289 |
| 190 | 0.0597 | 0.0264 | 0.0332 |
| 191 | 0.0906 | 0.0401 | 0.0505 |
| 192 | 0.1315 | 0.0482 | 0.0833 |
| 193 | 0.5687 | 0.0482 | 0.5206 |
| 194 | 0.0713 | 0.0316 | 0.0397 |
| 195 | 0.0461 | 0.0204 | 0.0257 |
| 196 | 0.0353 | 0.0156 | 0.0197 |
| 197 | 0.0606 | 0.0268 | 0.0338 |
| 198 | 0.0558 | 0.0247 | 0.0311 |
| 199 | 0.0521 | 0.0231 | 0.0290 |
| 200 | 0.0492 | 0.0218 | 0.0274 |
| 201 | 0.0468 | 0.0207 | 0.0261 |
| 202 | 0.0448 | 0.0198 | 0.0249 |
| 203 | 0.0430 | 0.0190 | 0.0240 |
| 204 | 0.0415 | 0.0184 | 0.0231 |
| 205 | 0.0401 | 0.0178 | 0.0224 |
| 206 | 0.0389 | 0.0172 | 0.0217 |
| 207 | 0.0379 | 0.0168 | 0.0211 |
| 208 | 0.0369 | 0.0163 | 0.0205 |
| 209 | 0.0360 | 0.0159 | 0.0200 |
| 210 | 0.0352 | 0.0156 | 0.0196 |
| 211 | 0.0344 | 0.0152 | 0.0192 |
| 212 | 0.0337 | 0.0149 | 0.0188 |
| 213 | 0.0330 | 0.0146 | 0.0184 |
| 214 | 0.0324 | 0.0144 | 0.0181 |

| | | | |
|---|---|---|---|
| 215 | 0.0319 | 0.0141 | 0.0178 |
| 216 | 0.0313 | 0.0139 | 0.0175 |
| 217 | 0.0336 | 0.0149 | 0.0187 |
| 218 | 0.0332 | 0.0147 | 0.0185 |
| 219 | 0.0328 | 0.0145 | 0.0182 |
| 220 | 0.0323 | 0.0143 | 0.0180 |
| 221 | 0.0320 | 0.0142 | 0.0178 |
| 222 | 0.0316 | 0.0140 | 0.0176 |
| 223 | 0.0313 | 0.0138 | 0.0174 |
| 224 | 0.0309 | 0.0137 | 0.0172 |
| 225 | 0.0306 | 0.0136 | 0.0170 |
| 226 | 0.0303 | 0.0134 | 0.0169 |
| 227 | 0.0300 | 0.0133 | 0.0167 |
| 228 | 0.0297 | 0.0132 | 0.0166 |
| 229 | 0.0294 | 0.0130 | 0.0164 |
| 230 | 0.0292 | 0.0129 | 0.0163 |
| 231 | 0.0289 | 0.0128 | 0.0161 |
| 232 | 0.0287 | 0.0127 | 0.0160 |
| 233 | 0.0284 | 0.0126 | 0.0158 |
| 234 | 0.0282 | 0.0125 | 0.0157 |
| 235 | 0.0280 | 0.0124 | 0.0156 |
| 236 | 0.0278 | 0.0123 | 0.0155 |
| 237 | 0.0276 | 0.0122 | 0.0154 |
| 238 | 0.0274 | 0.0121 | 0.0152 |
| 239 | 0.0272 | 0.0120 | 0.0151 |
| 240 | 0.0270 | 0.0120 | 0.0150 |
| 241 | 0.0268 | 0.0119 | 0.0149 |
| 242 | 0.0266 | 0.0118 | 0.0148 |
| 243 | 0.0264 | 0.0117 | 0.0147 |
| 244 | 0.0263 | 0.0116 | 0.0146 |
| 245 | 0.0261 | 0.0116 | 0.0145 |
| 246 | 0.0259 | 0.0115 | 0.0145 |
| 247 | 0.0258 | 0.0114 | 0.0144 |
| 248 | 0.0256 | 0.0114 | 0.0143 |
| 249 | 0.0255 | 0.0113 | 0.0142 |
| 250 | 0.0253 | 0.0112 | 0.0141 |
| 251 | 0.0252 | 0.0112 | 0.0140 |
| 252 | 0.0250 | 0.0111 | 0.0140 |
| 253 | 0.0249 | 0.0110 | 0.0139 |
| 254 | 0.0248 | 0.0110 | 0.0138 |
| 255 | 0.0246 | 0.0109 | 0.0137 |
| 256 | 0.0245 | 0.0109 | 0.0137 |
| 257 | 0.0244 | 0.0108 | 0.0136 |
| 258 | 0.0243 | 0.0107 | 0.0135 |
| 259 | 0.0241 | 0.0107 | 0.0134 |
| 260 | 0.0240 | 0.0106 | 0.0134 |
| 261 | 0.0239 | 0.0106 | 0.0133 |
| 262 | 0.0238 | 0.0105 | 0.0133 |
| 263 | 0.0237 | 0.0105 | 0.0132 |
| 264 | 0.0236 | 0.0104 | 0.0131 |
| 265 | 0.0235 | 0.0104 | 0.0131 |
| 266 | 0.0234 | 0.0103 | 0.0130 |
| 267 | 0.0233 | 0.0103 | 0.0130 |
| 268 | 0.0232 | 0.0103 | 0.0129 |
| 269 | 0.0231 | 0.0102 | 0.0128 |
| 270 | 0.0230 | 0.0102 | 0.0128 |
| 271 | 0.0229 | 0.0101 | 0.0127 |
| 272 | 0.0228 | 0.0101 | 0.0127 |
| 273 | 0.0227 | 0.0100 | 0.0126 |
| 274 | 0.0226 | 0.0100 | 0.0126 |
| 275 | 0.0225 | 0.0100 | 0.0125 |
| 276 | 0.0224 | 0.0099 | 0.0125 |
| 277 | 0.0223 | 0.0099 | 0.0124 |
| 278 | 0.0222 | 0.0098 | 0.0124 |
| 279 | 0.0221 | 0.0098 | 0.0123 |
| 280 | 0.0221 | 0.0098 | 0.0123 |
| 281 | 0.0220 | 0.0097 | 0.0122 |
| 282 | 0.0219 | 0.0097 | 0.0122 |
| 283 | 0.0218 | 0.0097 | 0.0121 |
| 284 | 0.0217 | 0.0096 | 0.0121 |
| 285 | 0.0216 | 0.0096 | 0.0121 |

```
      286              0.0216           0.0096              0.0120
      287              0.0215           0.0095              0.0120
      288              0.0214           0.0095              0.0119
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.85(In)
      Total effective rainfall =      5.32(In)
      Peak flow rate in flood hydrograph =     18.02(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.04  Q         |          |          |          |
  0+10       0.0016      0.19  Q         |          |          |          |
  0+15       0.0053      0.55  VQ        |          |          |          |
  0+20       0.0102      0.70  VQ        |          |          |          |
  0+25       0.0156      0.79  VQ        |          |          |          |
  0+30       0.0214      0.84  VQ        |          |          |          |
  0+35       0.0275      0.88  VQ        |          |          |          |
  0+40       0.0337      0.91  VQ        |          |          |          |
  0+45       0.0401      0.93  VQ        |          |          |          |
  0+50       0.0466      0.93  VQ        |          |          |          |
  0+55       0.0530      0.94  VQ        |          |          |          |
  1+ 0       0.0596      0.95  VQ        |          |          |          |
  1+ 5       0.0661      0.95  VQ        |          |          |          |
  1+10       0.0727      0.96  |Q        |          |          |          |
  1+15       0.0793      0.96  |Q        |          |          |          |
  1+20       0.0859      0.96  |Q        |          |          |          |
  1+25       0.0925      0.96  |Q        |          |          |          |
  1+30       0.0992      0.96  |Q        |          |          |          |
  1+35       0.1058      0.97  |Q        |          |          |          |
  1+40       0.1125      0.97  |Q        |          |          |          |
  1+45       0.1192      0.97  |Q        |          |          |          |
  1+50       0.1258      0.97  |Q        |          |          |          |
  1+55       0.1325      0.97  |Q        |          |          |          |
  2+ 0       0.1393      0.97  |Q        |          |          |          |
  2+ 5       0.1460      0.98  |QV       |          |          |          |
  2+10       0.1527      0.98  |QV       |          |          |          |
  2+15       0.1595      0.98  |QV       |          |          |          |
  2+20       0.1663      0.98  |QV       |          |          |          |
  2+25       0.1730      0.98  |QV       |          |          |          |
  2+30       0.1798      0.99  |QV       |          |          |          |
  2+35       0.1866      0.99  |QV       |          |          |          |
  2+40       0.1935      0.99  |QV       |          |          |          |
  2+45       0.2003      0.99  |QV       |          |          |          |
  2+50       0.2071      0.99  |QV       |          |          |          |
  2+55       0.2140      1.00  |QV       |          |          |          |
  3+ 0       0.2209      1.00  |Q V      |          |          |          |
  3+ 5       0.2278      1.00  | QV      |          |          |          |
  3+10       0.2347      1.00  | QV      |          |          |          |
  3+15       0.2416      1.00  | QV      |          |          |          |
  3+20       0.2485      1.01  | QV      |          |          |          |
  3+25       0.2555      1.01  | QV      |          |          |          |
  3+30       0.2624      1.01  | QV      |          |          |          |
  3+35       0.2694      1.01  | QV      |          |          |          |
  3+40       0.2764      1.02  | QV      |          |          |          |
  3+45       0.2834      1.02  | QV      |          |          |          |
  3+50       0.2904      1.02  | Q V     |          |          |          |
  3+55       0.2975      1.02  | Q V     |          |          |          |
  4+ 0       0.3045      1.02  | Q V     |          |          |          |
  4+ 5       0.3116      1.03  | Q V     |          |          |          |
  4+10       0.3187      1.03  | Q V     |          |          |          |
  4+15       0.3258      1.03  | Q V     |          |          |          |
  4+20       0.3329      1.03  | Q V     |          |          |          |
  4+25       0.3401      1.04  | Q V     |          |          |          |
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 4+30      0.3472      1.04  | Q V     |         |         |         |
 4+35      0.3544      1.04  | Q V     |         |         |         |
 4+40      0.3616      1.04  | Q V     |         |         |         |
 4+45      0.3688      1.05  | Q  V    |         |         |         |
 4+50      0.3760      1.05  | Q  V    |         |         |         |
 4+55      0.3832      1.05  | Q  V    |         |         |         |
 5+ 0      0.3905      1.05  | Q  V    |         |         |         |
 5+ 5      0.3977      1.06  | Q  V    |         |         |         |
 5+10      0.4050      1.06  | Q  V    |         |         |         |
 5+15      0.4123      1.06  | Q  V    |         |         |         |
 5+20      0.4197      1.06  | Q  V    |         |         |         |
 5+25      0.4270      1.07  | Q  V    |         |         |         |
 5+30      0.4344      1.07  | Q   V   |         |         |         |
 5+35      0.4418      1.07  | Q   V   |         |         |         |
 5+40      0.4492      1.07  | Q   V   |         |         |         |
 5+45      0.4566      1.08  | Q   V   |         |         |         |
 5+50      0.4640      1.08  | Q   V   |         |         |         |
 5+55      0.4715      1.08  | Q   V   |         |         |         |
 6+ 0      0.4790      1.09  | Q   V   |         |         |         |
 6+ 5      0.4865      1.09  | Q   V   |         |         |         |
 6+10      0.4940      1.09  | Q   V   |         |         |         |
 6+15      0.5015      1.09  | Q   V   |         |         |         |
 6+20      0.5091      1.10  | Q    V  |         |         |         |
 6+25      0.5167      1.10  | Q    V  |         |         |         |
 6+30      0.5243      1.10  | Q    V  |         |         |         |
 6+35      0.5319      1.11  | Q    V  |         |         |         |
 6+40      0.5395      1.11  | Q    V  |         |         |         |
 6+45      0.5472      1.11  | Q    V  |         |         |         |
 6+50      0.5549      1.12  | Q    V  |         |         |         |
 6+55      0.5626      1.12  | Q    V  |         |         |         |
 7+ 0      0.5703      1.12  | Q    V  |         |         |         |
 7+ 5      0.5781      1.13  | Q    V  |         |         |         |
 7+10      0.5859      1.13  | Q     V |         |         |         |
 7+15      0.5937      1.13  | Q     V |         |         |         |
 7+20      0.6015      1.14  | Q     V |         |         |         |
 7+25      0.6094      1.14  | Q     V |         |         |         |
 7+30      0.6172      1.14  | Q     V |         |         |         |
 7+35      0.6251      1.15  | Q     V |         |         |         |
 7+40      0.6331      1.15  | Q     V |         |         |         |
 7+45      0.6410      1.15  | Q     V |         |         |         |
 7+50      0.6490      1.16  | Q     V |         |         |         |
 7+55      0.6570      1.16  | Q      V|         |         |         |
 8+ 0      0.6650      1.17  | Q      V|         |         |         |
 8+ 5      0.6731      1.17  | Q      V|         |         |         |
 8+10      0.6812      1.17  | Q      V|         |         |         |
 8+15      0.6893      1.18  | Q      V|         |         |         |
 8+20      0.6974      1.18  | Q      V|         |         |         |
 8+25      0.7056      1.19  | Q      V|         |         |         |
 8+30      0.7138      1.19  | Q      V|         |         |         |
 8+35      0.7220      1.19  | Q      V|         |         |         |
 8+40      0.7302      1.20  | Q       V         |         |         |
 8+45      0.7385      1.20  | Q       V         |         |         |
 8+50      0.7468      1.21  | Q       V         |         |         |
 8+55      0.7552      1.21  | Q       V         |         |         |
 9+ 0      0.7636      1.22  | Q       V         |         |         |
 9+ 5      0.7720      1.22  | Q       V         |         |         |
 9+10      0.7804      1.23  | Q       V         |         |         |
 9+15      0.7889      1.23  | Q       V         |         |         |
 9+20      0.7974      1.23  | Q       |V        |         |         |
 9+25      0.8059      1.24  | Q       |V        |         |         |
 9+30      0.8145      1.24  | Q       |V        |         |         |
 9+35      0.8231      1.25  | Q       |V        |         |         |
 9+40      0.8317      1.25  | Q       |V        |         |         |
 9+45      0.8404      1.26  | Q       |V        |         |         |
 9+50      0.8491      1.27  | Q       |V        |         |         |
 9+55      0.8579      1.27  | Q       |V        |         |         |
10+ 0      0.8667      1.28  | Q       |V        |         |         |
10+ 5      0.8755      1.28  | Q       | V       |         |         |
10+10      0.8844      1.29  | Q       | V       |         |         |
10+15      0.8933      1.29  | Q       | V       |         |         |
10+20      0.9022      1.30  | Q       | V       |         |         |
```

```
10+25       0.9112      1.31  | Q       | V       |         |         |
10+30       0.9202      1.31  | Q       | V       |         |         |
10+35       0.9293      1.32  | Q       | V       |         |         |
10+40       0.9384      1.32  | Q       | V       |         |         |
10+45       0.9476      1.33  | Q       |  V      |         |         |
10+50       0.9568      1.34  | Q       |  V      |         |         |
10+55       0.9661      1.34  | Q       |  V      |         |         |
11+ 0       0.9754      1.35  | Q       |  V      |         |         |
11+ 5       0.9847      1.36  | Q       |  V      |         |         |
11+10       0.9941      1.36  | Q       |  V      |         |         |
11+15       1.0036      1.37  | Q       |  V      |         |         |
11+20       1.0131      1.38  | Q       |   V     |         |         |
11+25       1.0226      1.39  | Q       |   V     |         |         |
11+30       1.0322      1.40  | Q       |   V     |         |         |
11+35       1.0419      1.40  | Q       |   V     |         |         |
11+40       1.0516      1.41  | Q       |   V     |         |         |
11+45       1.0614      1.42  | Q       |   V     |         |         |
11+50       1.0713      1.43  | Q       |   V     |         |         |
11+55       1.0812      1.44  | Q       |   V     |         |         |
12+ 0       1.0911      1.45  | Q       |    V    |         |         |
12+ 5       1.1011      1.45  | Q       |    V    |         |         |
12+10       1.1111      1.44  | Q       |    V    |         |         |
12+15       1.1207      1.41  | Q       |    V    |         |         |
12+20       1.1303      1.40  | Q       |    V    |         |         |
12+25       1.1400      1.40  | Q       |    V    |         |         |
12+30       1.1496      1.40  | Q       |    V    |         |         |
12+35       1.1593      1.41  | Q       |     V   |         |         |
12+40       1.1690      1.42  | Q       |     V   |         |         |
12+45       1.1788      1.43  | Q       |     V   |         |         |
12+50       1.1888      1.44  | Q       |     V   |         |         |
12+55       1.1987      1.45  | Q       |     V   |         |         |
13+ 0       1.2088      1.46  | Q       |     V   |         |         |
13+ 5       1.2190      1.48  | Q       |     V   |         |         |
13+10       1.2293      1.49  | Q       |     V   |         |         |
13+15       1.2397      1.51  |  Q      |      V  |         |         |
13+20       1.2502      1.52  |  Q      |      V  |         |         |
13+25       1.2608      1.54  |  Q      |      V  |         |         |
13+30       1.2716      1.56  |  Q      |      V  |         |         |
13+35       1.2824      1.58  |  Q      |      V  |         |         |
13+40       1.2934      1.60  |  Q      |      V  |         |         |
13+45       1.3045      1.62  |  Q      |       V |         |         |
13+50       1.3158      1.64  |  Q      |       V |         |         |
13+55       1.3272      1.66  |  Q      |       V |         |         |
14+ 0       1.3388      1.68  |  Q      |       V |         |         |
14+ 5       1.3506      1.71  |  Q      |       V |         |         |
14+10       1.3625      1.73  |  Q      |       V |         |         |
14+15       1.3746      1.76  |  Q      |        V|         |         |
14+20       1.3869      1.79  |  Q      |        V|         |         |
14+25       1.3994      1.82  |  Q      |        V|         |         |
14+30       1.4122      1.85  |  Q      |        V|         |         |
14+35       1.4251      1.88  |  Q      |        V|         |         |
14+40       1.4384      1.92  |  Q      |        V|         |         |
14+45       1.4519      1.96  |  Q      |         V         |         |
14+50       1.4656      2.00  |   Q     |         V         |         |
14+55       1.4798      2.05  |   Q     |         V         |         |
15+ 0       1.4942      2.10  |   Q     |         V         |         |
15+ 5       1.5090      2.15  |   Q     |         V         |         |
15+10       1.5243      2.21  |   Q     |         |V        |         |
15+15       1.5400      2.28  |   Q     |         |V        |         |
15+20       1.5562      2.35  |   Q     |         |V        |         |
15+25       1.5726      2.39  |   Q     |         |V        |         |
15+30       1.5882      2.26  |   Q     |         |V        |         |
15+35       1.6009      1.84  |  Q      |         | V       |         |
15+40       1.6129      1.74  |  Q      |         | V       |         |
15+45       1.6252      1.79  |  Q      |         | V       |         |
15+50       1.6384      1.92  |  Q      |         | V       |         |
15+55       1.6535      2.20  |   Q     |         | V       |         |
16+ 0       1.6723      2.73  |    Q    |         |  V      |         |
16+ 5       1.7074      5.09  |         Q         |  V      |         |
16+10       1.7799     10.53  |         |         |Q  V     |         |
16+15       1.9040     18.02  |         |         |     V   |     Q   |
```

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16+20       1.9688      9.41  |          |        Q |       V  |          |
16+25       2.0101      5.99  |          |Q         |       V  |          |
16+30       2.0417      4.60  |         Q|          |        V |          |
16+35       2.0697      4.06  |        Q |          |        V |          |
16+40       2.0936      3.47  |     Q    |          |        V |          |
16+45       2.1140      2.96  |    Q     |          |         V|          |
16+50       2.1313      2.51  |    Q     |          |         V|          |
16+55       2.1474      2.33  |   Q      |          |         V|          |
17+ 0       2.1625      2.19  |   Q      |          |         V|          |
17+ 5       2.1770      2.11  |   Q      |          |          V          |
17+10       2.1908      2.01  |   Q      |          |          V          |
17+15       2.2039      1.89  |  Q       |          |          V          |
17+20       2.2162      1.79  |  Q       |          |          V          |
17+25       2.2280      1.72  |  Q       |          |          V          |
17+30       2.2396      1.67  |  Q       |          |          V          |
17+35       2.2508      1.63  |  Q       |          |          |V         |
17+40       2.2617      1.59  |  Q       |          |          |V         |
17+45       2.2724      1.55  |  Q       |          |          |V         |
17+50       2.2828      1.52  |  Q       |          |          |V         |
17+55       2.2930      1.48  | Q        |          |          |V         |
18+ 0       2.3031      1.46  | Q        |          |          |V         |
18+ 5       2.3129      1.43  | Q        |          |          |V         |
18+10       2.3228      1.43  | Q        |          |          | V        |
18+15       2.3328      1.45  | Q        |          |          | V        |
18+20       2.3427      1.45  | Q        |          |          | V        |
18+25       2.3527      1.44  | Q        |          |          | V        |
18+30       2.3625      1.43  | Q        |          |          | V        |
18+35       2.3723      1.42  | Q        |          |          | V        |
18+40       2.3819      1.40  | Q        |          |          | V        |
18+45       2.3915      1.39  | Q        |          |          |  V       |
18+50       2.4009      1.37  | Q        |          |          |  V       |
18+55       2.4103      1.36  | Q        |          |          |  V       |
19+ 0       2.4195      1.35  | Q        |          |          |  V       |
19+ 5       2.4287      1.33  | Q        |          |          |  V       |
19+10       2.4378      1.32  | Q        |          |          |  V       |
19+15       2.4468      1.31  | Q        |          |          |  V       |
19+20       2.4557      1.29  | Q        |          |          |  V       |
19+25       2.4646      1.28  | Q        |          |          |   V      |
19+30       2.4733      1.27  | Q        |          |          |   V      |
19+35       2.4820      1.26  | Q        |          |          |   V      |
19+40       2.4906      1.25  | Q        |          |          |   V      |
19+45       2.4992      1.24  | Q        |          |          |   V      |
19+50       2.5076      1.23  | Q        |          |          |   V      |
19+55       2.5161      1.22  | Q        |          |          |   V      |
20+ 0       2.5244      1.21  | Q        |          |          |   V      |
20+ 5       2.5327      1.20  | Q        |          |          |    V     |
20+10       2.5409      1.20  | Q        |          |          |    V     |
20+15       2.5491      1.19  | Q        |          |          |    V     |
20+20       2.5572      1.18  | Q        |          |          |    V     |
20+25       2.5653      1.17  | Q        |          |          |    V     |
20+30       2.5733      1.16  | Q        |          |          |    V     |
20+35       2.5812      1.16  | Q        |          |          |    V     |
20+40       2.5891      1.15  | Q        |          |          |    V     |
20+45       2.5970      1.14  | Q        |          |          |    V     |
20+50       2.6048      1.13  | Q        |          |          |     V    |
20+55       2.6126      1.13  | Q        |          |          |     V    |
21+ 0       2.6203      1.12  | Q        |          |          |     V    |
21+ 5       2.6280      1.11  | Q        |          |          |     V    |
21+10       2.6356      1.11  | Q        |          |          |     V    |
21+15       2.6432      1.10  | Q        |          |          |     V    |
21+20       2.6507      1.10  | Q        |          |          |     V    |
21+25       2.6582      1.09  | Q        |          |          |     V    |
21+30       2.6657      1.08  | Q        |          |          |     V    |
21+35       2.6731      1.08  | Q        |          |          |     V    |
21+40       2.6805      1.07  | Q        |          |          |      V   |
21+45       2.6878      1.07  | Q        |          |          |      V   |
21+50       2.6952      1.06  | Q        |          |          |      V   |
21+55       2.7024      1.06  | Q        |          |          |      V   |
22+ 0       2.7097      1.05  | Q        |          |          |      V   |
22+ 5       2.7169      1.05  | Q        |          |          |      V   |
22+10       2.7241      1.04  | Q        |          |          |      V   |
```

```
  22+15       2.7312      1.04  | Q       |         |         |      V  |
  22+20       2.7383      1.03  | Q       |         |         |      V  |
  22+25       2.7454      1.03  | Q       |         |         |      V  |
  22+30       2.7524      1.02  | Q       |         |         |       V |
  22+35       2.7594      1.02  | Q       |         |         |       V |
  22+40       2.7664      1.01  | Q       |         |         |       V |
  22+45       2.7734      1.01  | Q       |         |         |       V |
  22+50       2.7803      1.01  | Q       |         |         |       V |
  22+55       2.7872      1.00  | Q       |         |         |       V |
  23+ 0       2.7940      1.00  |Q        |         |         |       V |
  23+ 5       2.8009      0.99  |Q        |         |         |       V |
  23+10       2.8077      0.99  |Q        |         |         |       V |
  23+15       2.8145      0.98  |Q        |         |         |       V |
  23+20       2.8212      0.98  |Q        |         |         |        V|
  23+25       2.8280      0.98  |Q        |         |         |        V|
  23+30       2.8347      0.97  |Q        |         |         |        V|
  23+35       2.8413      0.97  |Q        |         |         |        V|
  23+40       2.8480      0.97  |Q        |         |         |        V|
  23+45       2.8546      0.96  |Q        |         |         |        V|
  23+50       2.8612      0.96  |Q        |         |         |        V|
  23+55       2.8678      0.96  |Q        |         |         |        V|
  24+ 0       2.8744      0.95  |Q        |         |         |        V|
  24+ 5       2.8807      0.91  |Q        |         |         |        V|
  24+10       2.8859      0.76  |Q        |         |         |        V|
  24+15       2.8886      0.40  Q         |         |         |        V|
  24+20       2.8903      0.24  Q         |         |         |        V|
  24+25       2.8913      0.16  Q         |         |         |        V|
  24+30       2.8920      0.10  Q         |         |         |        V|
  24+35       2.8925      0.06  Q         |         |         |        V|
  24+40       2.8927      0.04  Q         |         |         |        V|
  24+45       2.8929      0.02  Q         |         |         |        V|
  24+50       2.8930      0.02  Q         |         |         |        V|
  24+55       2.8931      0.01  Q         |         |         |        V|
  25+ 0       2.8931      0.01  Q         |         |         |        V|
  25+ 5       2.8931      0.00  Q         |         |         |        V|
  25+10       2.8931      0.00  Q         |         |         |        V|
  25+15       2.8932      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'C' – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
100 YEAR 24 HOUR STORM
DECEMBER 17, 2024
----------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.53            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.53           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.53           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      84.6          6.53      1.000     0.290    1.000    0.290

Area-averaged adjusted loss rate Fm (In/Hr) =  0.290

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.53 | 1.000 | 67.0 | 84.6 | 1.82 | 0.838 |

Area-averaged catchment yield fraction, Y = 0.838
Area-averaged low loss fraction, Yb = 0.162
User entry of time of concentration = 0.225 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.53(Ac.)
Catchment Lag time = 0.180 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 46.2963
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.290(In/Hr)
Average low loss rate fraction (Yb) = 0.162 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.53(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.712(In)
30-minute factor = 1.000 Adjusted rainfall = 1.218(In)
1-hour factor = 1.000 Adjusted rainfall = 1.500(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 78.97 (CFS)) | |
| 1 | 3.841 | 3.033 |
| 2 | 20.125 | 12.860 |
| 3 | 58.137 | 30.019 |
| 4 | 74.610 | 13.009 |
| 5 | 83.494 | 7.016 |
| 6 | 89.354 | 4.628 |
| 7 | 93.374 | 3.174 |
| 8 | 96.031 | 2.098 |
| 9 | 97.668 | 1.293 |
| 10 | 98.374 | 0.558 |
| 11 | 98.857 | 0.382 |
| 12 | 99.195 | 0.267 |
| 13 | 99.529 | 0.264 |
| 14 | 99.800 | 0.214 |
| 15 | 99.943 | 0.113 |
| 16 | 100.000 | 0.045 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7115 | 0.7115 |
| 2 | 0.8760 | 0.1645 |
| 3 | 0.9893 | 0.1133 |
| 4 | 1.0785 | 0.0892 |
| 5 | 1.1532 | 0.0747 |
| 6 | 1.2180 | 0.0648 |
| 7 | 1.2757 | 0.0576 |
| 8 | 1.3278 | 0.0521 |
| 9 | 1.3756 | 0.0478 |
| 10 | 1.4197 | 0.0442 |

| | | |
|---|---|---|
| 11 | 1.4609 | 0.0412 |
| 12 | 1.4995 | 0.0386 |
| 13 | 1.5750 | 0.0755 |
| 14 | 1.6482 | 0.0732 |
| 15 | 1.7195 | 0.0713 |
| 16 | 1.7889 | 0.0694 |
| 17 | 1.8567 | 0.0678 |
| 18 | 1.9230 | 0.0663 |
| 19 | 1.9878 | 0.0648 |
| 20 | 2.0513 | 0.0635 |
| 21 | 2.1137 | 0.0623 |
| 22 | 2.1748 | 0.0612 |
| 23 | 2.2350 | 0.0601 |
| 24 | 2.2941 | 0.0591 |
| 25 | 2.3522 | 0.0582 |
| 26 | 2.4095 | 0.0573 |
| 27 | 2.4659 | 0.0564 |
| 28 | 2.5216 | 0.0556 |
| 29 | 2.5764 | 0.0549 |
| 30 | 2.6306 | 0.0541 |
| 31 | 2.6840 | 0.0534 |
| 32 | 2.7368 | 0.0528 |
| 33 | 2.7890 | 0.0521 |
| 34 | 2.8405 | 0.0515 |
| 35 | 2.8914 | 0.0510 |
| 36 | 2.9418 | 0.0504 |
| 37 | 2.9917 | 0.0498 |
| 38 | 3.0410 | 0.0493 |
| 39 | 3.0898 | 0.0488 |
| 40 | 3.1382 | 0.0483 |
| 41 | 3.1861 | 0.0479 |
| 42 | 3.2335 | 0.0474 |
| 43 | 3.2805 | 0.0470 |
| 44 | 3.3270 | 0.0466 |
| 45 | 3.3732 | 0.0462 |
| 46 | 3.4190 | 0.0458 |
| 47 | 3.4644 | 0.0454 |
| 48 | 3.5094 | 0.0450 |
| 49 | 3.5540 | 0.0447 |
| 50 | 3.5983 | 0.0443 |
| 51 | 3.6423 | 0.0440 |
| 52 | 3.6859 | 0.0436 |
| 53 | 3.7292 | 0.0433 |
| 54 | 3.7722 | 0.0430 |
| 55 | 3.8149 | 0.0427 |
| 56 | 3.8573 | 0.0424 |
| 57 | 3.8994 | 0.0421 |
| 58 | 3.9412 | 0.0418 |
| 59 | 3.9827 | 0.0415 |
| 60 | 4.0239 | 0.0413 |
| 61 | 4.0649 | 0.0410 |
| 62 | 4.1057 | 0.0407 |
| 63 | 4.1461 | 0.0405 |
| 64 | 4.1864 | 0.0402 |
| 65 | 4.2264 | 0.0400 |
| 66 | 4.2661 | 0.0398 |
| 67 | 4.3056 | 0.0395 |
| 68 | 4.3449 | 0.0393 |
| 69 | 4.3840 | 0.0391 |
| 70 | 4.4228 | 0.0389 |
| 71 | 4.4615 | 0.0386 |
| 72 | 4.4999 | 0.0384 |
| 73 | 4.5440 | 0.0441 |
| 74 | 4.5880 | 0.0440 |
| 75 | 4.6318 | 0.0438 |
| 76 | 4.6754 | 0.0436 |
| 77 | 4.7188 | 0.0434 |
| 78 | 4.7621 | 0.0433 |
| 79 | 4.8052 | 0.0431 |
| 80 | 4.8482 | 0.0430 |
| 81 | 4.8910 | 0.0428 |

| | | |
|---|---|---|
| 82 | 4.9336 | 0.0426 |
| 83 | 4.9761 | 0.0425 |
| 84 | 5.0185 | 0.0423 |
| 85 | 5.0607 | 0.0422 |
| 86 | 5.1027 | 0.0421 |
| 87 | 5.1446 | 0.0419 |
| 88 | 5.1864 | 0.0418 |
| 89 | 5.2280 | 0.0416 |
| 90 | 5.2695 | 0.0415 |
| 91 | 5.3109 | 0.0414 |
| 92 | 5.3521 | 0.0412 |
| 93 | 5.3932 | 0.0411 |
| 94 | 5.4342 | 0.0410 |
| 95 | 5.4750 | 0.0408 |
| 96 | 5.5157 | 0.0407 |
| 97 | 5.5563 | 0.0406 |
| 98 | 5.5968 | 0.0405 |
| 99 | 5.6371 | 0.0403 |
| 100 | 5.6773 | 0.0402 |
| 101 | 5.7174 | 0.0401 |
| 102 | 5.7574 | 0.0400 |
| 103 | 5.7973 | 0.0399 |
| 104 | 5.8371 | 0.0398 |
| 105 | 5.8767 | 0.0397 |
| 106 | 5.9163 | 0.0395 |
| 107 | 5.9557 | 0.0394 |
| 108 | 5.9951 | 0.0393 |
| 109 | 6.0343 | 0.0392 |
| 110 | 6.0734 | 0.0391 |
| 111 | 6.1124 | 0.0390 |
| 112 | 6.1513 | 0.0389 |
| 113 | 6.1901 | 0.0388 |
| 114 | 6.2288 | 0.0387 |
| 115 | 6.2674 | 0.0386 |
| 116 | 6.3060 | 0.0385 |
| 117 | 6.3444 | 0.0384 |
| 118 | 6.3827 | 0.0383 |
| 119 | 6.4209 | 0.0382 |
| 120 | 6.4590 | 0.0381 |
| 121 | 6.4971 | 0.0380 |
| 122 | 6.5350 | 0.0379 |
| 123 | 6.5729 | 0.0379 |
| 124 | 6.6106 | 0.0378 |
| 125 | 6.6483 | 0.0377 |
| 126 | 6.6859 | 0.0376 |
| 127 | 6.7234 | 0.0375 |
| 128 | 6.7608 | 0.0374 |
| 129 | 6.7981 | 0.0373 |
| 130 | 6.8354 | 0.0372 |
| 131 | 6.8725 | 0.0372 |
| 132 | 6.9096 | 0.0371 |
| 133 | 6.9466 | 0.0370 |
| 134 | 6.9835 | 0.0369 |
| 135 | 7.0204 | 0.0368 |
| 136 | 7.0571 | 0.0368 |
| 137 | 7.0938 | 0.0367 |
| 138 | 7.1304 | 0.0366 |
| 139 | 7.1669 | 0.0365 |
| 140 | 7.2033 | 0.0364 |
| 141 | 7.2397 | 0.0364 |
| 142 | 7.2760 | 0.0363 |
| 143 | 7.3122 | 0.0362 |
| 144 | 7.3484 | 0.0361 |
| 145 | 7.3844 | 0.0361 |
| 146 | 7.4204 | 0.0360 |
| 147 | 7.4564 | 0.0359 |
| 148 | 7.4922 | 0.0359 |
| 149 | 7.5280 | 0.0358 |
| 150 | 7.5637 | 0.0357 |
| 151 | 7.5993 | 0.0356 |
| 152 | 7.6349 | 0.0356 |

| | | |
|---|---|---|
| 153 | 7.6704 | 0.0355 |
| 154 | 7.7059 | 0.0354 |
| 155 | 7.7412 | 0.0354 |
| 156 | 7.7765 | 0.0353 |
| 157 | 7.8118 | 0.0352 |
| 158 | 7.8469 | 0.0352 |
| 159 | 7.8820 | 0.0351 |
| 160 | 7.9171 | 0.0350 |
| 161 | 7.9521 | 0.0350 |
| 162 | 7.9870 | 0.0349 |
| 163 | 8.0218 | 0.0349 |
| 164 | 8.0566 | 0.0348 |
| 165 | 8.0913 | 0.0347 |
| 166 | 8.1260 | 0.0347 |
| 167 | 8.1606 | 0.0346 |
| 168 | 8.1952 | 0.0345 |
| 169 | 8.2296 | 0.0345 |
| 170 | 8.2641 | 0.0344 |
| 171 | 8.2984 | 0.0344 |
| 172 | 8.3327 | 0.0343 |
| 173 | 8.3670 | 0.0342 |
| 174 | 8.4012 | 0.0342 |
| 175 | 8.4353 | 0.0341 |
| 176 | 8.4694 | 0.0341 |
| 177 | 8.5034 | 0.0340 |
| 178 | 8.5374 | 0.0340 |
| 179 | 8.5713 | 0.0339 |
| 180 | 8.6051 | 0.0339 |
| 181 | 8.6389 | 0.0338 |
| 182 | 8.6727 | 0.0337 |
| 183 | 8.7064 | 0.0337 |
| 184 | 8.7400 | 0.0336 |
| 185 | 8.7736 | 0.0336 |
| 186 | 8.8071 | 0.0335 |
| 187 | 8.8406 | 0.0335 |
| 188 | 8.8740 | 0.0334 |
| 189 | 8.9074 | 0.0334 |
| 190 | 8.9407 | 0.0333 |
| 191 | 8.9740 | 0.0333 |
| 192 | 9.0072 | 0.0332 |
| 193 | 9.0403 | 0.0332 |
| 194 | 9.0735 | 0.0331 |
| 195 | 9.1065 | 0.0331 |
| 196 | 9.1395 | 0.0330 |
| 197 | 9.1725 | 0.0330 |
| 198 | 9.2054 | 0.0329 |
| 199 | 9.2383 | 0.0329 |
| 200 | 9.2711 | 0.0328 |
| 201 | 9.3039 | 0.0328 |
| 202 | 9.3366 | 0.0327 |
| 203 | 9.3693 | 0.0327 |
| 204 | 9.4019 | 0.0326 |
| 205 | 9.4345 | 0.0326 |
| 206 | 9.4670 | 0.0325 |
| 207 | 9.4995 | 0.0325 |
| 208 | 9.5320 | 0.0324 |
| 209 | 9.5644 | 0.0324 |
| 210 | 9.5967 | 0.0324 |
| 211 | 9.6291 | 0.0323 |
| 212 | 9.6613 | 0.0323 |
| 213 | 9.6935 | 0.0322 |
| 214 | 9.7257 | 0.0322 |
| 215 | 9.7579 | 0.0321 |
| 216 | 9.7899 | 0.0321 |
| 217 | 9.8220 | 0.0320 |
| 218 | 9.8540 | 0.0320 |
| 219 | 9.8860 | 0.0320 |
| 220 | 9.9179 | 0.0319 |
| 221 | 9.9497 | 0.0319 |
| 222 | 9.9816 | 0.0318 |
| 223 | 10.0134 | 0.0318 |

| | | |
|---|---|---|
| 224 | 10.0451 | 0.0317 |
| 225 | 10.0768 | 0.0317 |
| 226 | 10.1085 | 0.0317 |
| 227 | 10.1401 | 0.0316 |
| 228 | 10.1717 | 0.0316 |
| 229 | 10.2032 | 0.0315 |
| 230 | 10.2348 | 0.0315 |
| 231 | 10.2662 | 0.0315 |
| 232 | 10.2976 | 0.0314 |
| 233 | 10.3290 | 0.0314 |
| 234 | 10.3604 | 0.0313 |
| 235 | 10.3917 | 0.0313 |
| 236 | 10.4229 | 0.0313 |
| 237 | 10.4542 | 0.0312 |
| 238 | 10.4854 | 0.0312 |
| 239 | 10.5165 | 0.0312 |
| 240 | 10.5476 | 0.0311 |
| 241 | 10.5787 | 0.0311 |
| 242 | 10.6097 | 0.0310 |
| 243 | 10.6407 | 0.0310 |
| 244 | 10.6717 | 0.0310 |
| 245 | 10.7026 | 0.0309 |
| 246 | 10.7335 | 0.0309 |
| 247 | 10.7644 | 0.0309 |
| 248 | 10.7952 | 0.0308 |
| 249 | 10.8260 | 0.0308 |
| 250 | 10.8567 | 0.0307 |
| 251 | 10.8874 | 0.0307 |
| 252 | 10.9181 | 0.0307 |
| 253 | 10.9487 | 0.0306 |
| 254 | 10.9793 | 0.0306 |
| 255 | 11.0099 | 0.0306 |
| 256 | 11.0404 | 0.0305 |
| 257 | 11.0709 | 0.0305 |
| 258 | 11.1014 | 0.0305 |
| 259 | 11.1318 | 0.0304 |
| 260 | 11.1622 | 0.0304 |
| 261 | 11.1926 | 0.0304 |
| 262 | 11.2229 | 0.0303 |
| 263 | 11.2532 | 0.0303 |
| 264 | 11.2834 | 0.0303 |
| 265 | 11.3137 | 0.0302 |
| 266 | 11.3438 | 0.0302 |
| 267 | 11.3740 | 0.0302 |
| 268 | 11.4041 | 0.0301 |
| 269 | 11.4342 | 0.0301 |
| 270 | 11.4643 | 0.0301 |
| 271 | 11.4943 | 0.0300 |
| 272 | 11.5243 | 0.0300 |
| 273 | 11.5543 | 0.0300 |
| 274 | 11.5842 | 0.0299 |
| 275 | 11.6141 | 0.0299 |
| 276 | 11.6439 | 0.0299 |
| 277 | 11.6738 | 0.0298 |
| 278 | 11.7036 | 0.0298 |
| 279 | 11.7334 | 0.0298 |
| 280 | 11.7631 | 0.0297 |
| 281 | 11.7928 | 0.0297 |
| 282 | 11.8225 | 0.0297 |
| 283 | 11.8521 | 0.0296 |
| 284 | 11.8817 | 0.0296 |
| 285 | 11.9113 | 0.0296 |
| 286 | 11.9409 | 0.0296 |
| 287 | 11.9704 | 0.0295 |
| 288 | 11.9999 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0048 | 0.0247 |

| | | | |
|---|---|---|---|
| 2 | 0.0295 | 0.0048 | 0.0248 |
| 3 | 0.0296 | 0.0048 | 0.0248 |
| 4 | 0.0296 | 0.0048 | 0.0248 |
| 5 | 0.0297 | 0.0048 | 0.0249 |
| 6 | 0.0297 | 0.0048 | 0.0249 |
| 7 | 0.0298 | 0.0048 | 0.0250 |
| 8 | 0.0298 | 0.0048 | 0.0250 |
| 9 | 0.0299 | 0.0048 | 0.0250 |
| 10 | 0.0299 | 0.0048 | 0.0251 |
| 11 | 0.0300 | 0.0048 | 0.0251 |
| 12 | 0.0300 | 0.0048 | 0.0251 |
| 13 | 0.0301 | 0.0049 | 0.0252 |
| 14 | 0.0301 | 0.0049 | 0.0252 |
| 15 | 0.0302 | 0.0049 | 0.0253 |
| 16 | 0.0302 | 0.0049 | 0.0253 |
| 17 | 0.0303 | 0.0049 | 0.0254 |
| 18 | 0.0303 | 0.0049 | 0.0254 |
| 19 | 0.0304 | 0.0049 | 0.0255 |
| 20 | 0.0304 | 0.0049 | 0.0255 |
| 21 | 0.0305 | 0.0049 | 0.0255 |
| 22 | 0.0305 | 0.0049 | 0.0256 |
| 23 | 0.0306 | 0.0049 | 0.0256 |
| 24 | 0.0306 | 0.0049 | 0.0257 |
| 25 | 0.0307 | 0.0050 | 0.0257 |
| 26 | 0.0307 | 0.0050 | 0.0257 |
| 27 | 0.0308 | 0.0050 | 0.0258 |
| 28 | 0.0308 | 0.0050 | 0.0258 |
| 29 | 0.0309 | 0.0050 | 0.0259 |
| 30 | 0.0309 | 0.0050 | 0.0259 |
| 31 | 0.0310 | 0.0050 | 0.0260 |
| 32 | 0.0310 | 0.0050 | 0.0260 |
| 33 | 0.0311 | 0.0050 | 0.0261 |
| 34 | 0.0312 | 0.0050 | 0.0261 |
| 35 | 0.0312 | 0.0050 | 0.0262 |
| 36 | 0.0313 | 0.0051 | 0.0262 |
| 37 | 0.0313 | 0.0051 | 0.0263 |
| 38 | 0.0314 | 0.0051 | 0.0263 |
| 39 | 0.0315 | 0.0051 | 0.0264 |
| 40 | 0.0315 | 0.0051 | 0.0264 |
| 41 | 0.0316 | 0.0051 | 0.0265 |
| 42 | 0.0316 | 0.0051 | 0.0265 |
| 43 | 0.0317 | 0.0051 | 0.0266 |
| 44 | 0.0317 | 0.0051 | 0.0266 |
| 45 | 0.0318 | 0.0051 | 0.0267 |
| 46 | 0.0319 | 0.0051 | 0.0267 |
| 47 | 0.0320 | 0.0052 | 0.0268 |
| 48 | 0.0320 | 0.0052 | 0.0268 |
| 49 | 0.0321 | 0.0052 | 0.0269 |
| 50 | 0.0321 | 0.0052 | 0.0269 |
| 51 | 0.0322 | 0.0052 | 0.0270 |
| 52 | 0.0323 | 0.0052 | 0.0271 |
| 53 | 0.0324 | 0.0052 | 0.0271 |
| 54 | 0.0324 | 0.0052 | 0.0272 |
| 55 | 0.0325 | 0.0052 | 0.0272 |
| 56 | 0.0325 | 0.0053 | 0.0273 |
| 57 | 0.0326 | 0.0053 | 0.0274 |
| 58 | 0.0327 | 0.0053 | 0.0274 |
| 59 | 0.0328 | 0.0053 | 0.0275 |
| 60 | 0.0328 | 0.0053 | 0.0275 |
| 61 | 0.0329 | 0.0053 | 0.0276 |
| 62 | 0.0330 | 0.0053 | 0.0276 |
| 63 | 0.0331 | 0.0053 | 0.0277 |
| 64 | 0.0331 | 0.0053 | 0.0278 |
| 65 | 0.0332 | 0.0054 | 0.0279 |
| 66 | 0.0333 | 0.0054 | 0.0279 |
| 67 | 0.0334 | 0.0054 | 0.0280 |
| 68 | 0.0334 | 0.0054 | 0.0280 |
| 69 | 0.0335 | 0.0054 | 0.0281 |
| 70 | 0.0336 | 0.0054 | 0.0282 |
| 71 | 0.0337 | 0.0054 | 0.0282 |
| 72 | 0.0337 | 0.0054 | 0.0283 |

| | | | |
|---|---|---|---|
| 73 | 0.0339 | 0.0055 | 0.0284 |
| 74 | 0.0339 | 0.0055 | 0.0284 |
| 75 | 0.0340 | 0.0055 | 0.0285 |
| 76 | 0.0341 | 0.0055 | 0.0286 |
| 77 | 0.0342 | 0.0055 | 0.0287 |
| 78 | 0.0342 | 0.0055 | 0.0287 |
| 79 | 0.0344 | 0.0056 | 0.0288 |
| 80 | 0.0344 | 0.0056 | 0.0289 |
| 81 | 0.0345 | 0.0056 | 0.0290 |
| 82 | 0.0346 | 0.0056 | 0.0290 |
| 83 | 0.0347 | 0.0056 | 0.0291 |
| 84 | 0.0348 | 0.0056 | 0.0292 |
| 85 | 0.0349 | 0.0056 | 0.0293 |
| 86 | 0.0350 | 0.0056 | 0.0293 |
| 87 | 0.0351 | 0.0057 | 0.0294 |
| 88 | 0.0352 | 0.0057 | 0.0295 |
| 89 | 0.0353 | 0.0057 | 0.0296 |
| 90 | 0.0354 | 0.0057 | 0.0297 |
| 91 | 0.0355 | 0.0057 | 0.0298 |
| 92 | 0.0356 | 0.0057 | 0.0298 |
| 93 | 0.0357 | 0.0058 | 0.0299 |
| 94 | 0.0358 | 0.0058 | 0.0300 |
| 95 | 0.0359 | 0.0058 | 0.0301 |
| 96 | 0.0360 | 0.0058 | 0.0302 |
| 97 | 0.0361 | 0.0058 | 0.0303 |
| 98 | 0.0362 | 0.0058 | 0.0304 |
| 99 | 0.0364 | 0.0059 | 0.0305 |
| 100 | 0.0364 | 0.0059 | 0.0306 |
| 101 | 0.0366 | 0.0059 | 0.0307 |
| 102 | 0.0367 | 0.0059 | 0.0308 |
| 103 | 0.0368 | 0.0059 | 0.0309 |
| 104 | 0.0369 | 0.0060 | 0.0310 |
| 105 | 0.0371 | 0.0060 | 0.0311 |
| 106 | 0.0372 | 0.0060 | 0.0312 |
| 107 | 0.0373 | 0.0060 | 0.0313 |
| 108 | 0.0374 | 0.0060 | 0.0314 |
| 109 | 0.0376 | 0.0061 | 0.0315 |
| 110 | 0.0377 | 0.0061 | 0.0316 |
| 111 | 0.0379 | 0.0061 | 0.0317 |
| 112 | 0.0379 | 0.0061 | 0.0318 |
| 113 | 0.0381 | 0.0062 | 0.0320 |
| 114 | 0.0382 | 0.0062 | 0.0320 |
| 115 | 0.0384 | 0.0062 | 0.0322 |
| 116 | 0.0385 | 0.0062 | 0.0323 |
| 117 | 0.0387 | 0.0063 | 0.0325 |
| 118 | 0.0388 | 0.0063 | 0.0325 |
| 119 | 0.0390 | 0.0063 | 0.0327 |
| 120 | 0.0391 | 0.0063 | 0.0328 |
| 121 | 0.0393 | 0.0064 | 0.0330 |
| 122 | 0.0394 | 0.0064 | 0.0331 |
| 123 | 0.0397 | 0.0064 | 0.0333 |
| 124 | 0.0398 | 0.0064 | 0.0333 |
| 125 | 0.0400 | 0.0065 | 0.0335 |
| 126 | 0.0401 | 0.0065 | 0.0336 |
| 127 | 0.0403 | 0.0065 | 0.0338 |
| 128 | 0.0405 | 0.0065 | 0.0339 |
| 129 | 0.0407 | 0.0066 | 0.0341 |
| 130 | 0.0408 | 0.0066 | 0.0342 |
| 131 | 0.0411 | 0.0066 | 0.0345 |
| 132 | 0.0412 | 0.0067 | 0.0346 |
| 133 | 0.0415 | 0.0067 | 0.0348 |
| 134 | 0.0416 | 0.0067 | 0.0349 |
| 135 | 0.0419 | 0.0068 | 0.0351 |
| 136 | 0.0421 | 0.0068 | 0.0353 |
| 137 | 0.0423 | 0.0068 | 0.0355 |
| 138 | 0.0425 | 0.0069 | 0.0356 |
| 139 | 0.0428 | 0.0069 | 0.0359 |
| 140 | 0.0430 | 0.0069 | 0.0360 |
| 141 | 0.0433 | 0.0070 | 0.0363 |
| 142 | 0.0434 | 0.0070 | 0.0364 |
| 143 | 0.0438 | 0.0071 | 0.0367 |

| | | | |
|---|---|---|---|
| 144 | 0.0440 | 0.0071 | 0.0369 |
| 145 | 0.0384 | 0.0062 | 0.0322 |
| 146 | 0.0386 | 0.0062 | 0.0324 |
| 147 | 0.0391 | 0.0063 | 0.0328 |
| 148 | 0.0393 | 0.0063 | 0.0329 |
| 149 | 0.0398 | 0.0064 | 0.0333 |
| 150 | 0.0400 | 0.0065 | 0.0335 |
| 151 | 0.0405 | 0.0065 | 0.0339 |
| 152 | 0.0407 | 0.0066 | 0.0342 |
| 153 | 0.0413 | 0.0067 | 0.0346 |
| 154 | 0.0415 | 0.0067 | 0.0348 |
| 155 | 0.0421 | 0.0068 | 0.0353 |
| 156 | 0.0424 | 0.0068 | 0.0355 |
| 157 | 0.0430 | 0.0069 | 0.0360 |
| 158 | 0.0433 | 0.0070 | 0.0363 |
| 159 | 0.0440 | 0.0071 | 0.0369 |
| 160 | 0.0443 | 0.0072 | 0.0371 |
| 161 | 0.0450 | 0.0073 | 0.0377 |
| 162 | 0.0454 | 0.0073 | 0.0381 |
| 163 | 0.0462 | 0.0075 | 0.0387 |
| 164 | 0.0466 | 0.0075 | 0.0390 |
| 165 | 0.0474 | 0.0077 | 0.0398 |
| 166 | 0.0479 | 0.0077 | 0.0401 |
| 167 | 0.0488 | 0.0079 | 0.0409 |
| 168 | 0.0493 | 0.0080 | 0.0414 |
| 169 | 0.0504 | 0.0081 | 0.0423 |
| 170 | 0.0510 | 0.0082 | 0.0427 |
| 171 | 0.0521 | 0.0084 | 0.0437 |
| 172 | 0.0528 | 0.0085 | 0.0443 |
| 173 | 0.0541 | 0.0087 | 0.0454 |
| 174 | 0.0549 | 0.0089 | 0.0460 |
| 175 | 0.0564 | 0.0091 | 0.0473 |
| 176 | 0.0573 | 0.0093 | 0.0480 |
| 177 | 0.0591 | 0.0095 | 0.0496 |
| 178 | 0.0601 | 0.0097 | 0.0504 |
| 179 | 0.0623 | 0.0101 | 0.0523 |
| 180 | 0.0635 | 0.0103 | 0.0533 |
| 181 | 0.0663 | 0.0107 | 0.0556 |
| 182 | 0.0678 | 0.0109 | 0.0568 |
| 183 | 0.0713 | 0.0115 | 0.0597 |
| 184 | 0.0732 | 0.0118 | 0.0614 |
| 185 | 0.0386 | 0.0062 | 0.0324 |
| 186 | 0.0412 | 0.0067 | 0.0345 |
| 187 | 0.0478 | 0.0077 | 0.0400 |
| 188 | 0.0521 | 0.0084 | 0.0437 |
| 189 | 0.0648 | 0.0105 | 0.0544 |
| 190 | 0.0747 | 0.0121 | 0.0626 |
| 191 | 0.1133 | 0.0183 | 0.0950 |
| 192 | 0.1645 | 0.0242 | 0.1403 |
| 193 | 0.7115 | 0.0242 | 0.6874 |
| 194 | 0.0892 | 0.0144 | 0.0748 |
| 195 | 0.0576 | 0.0093 | 0.0483 |
| 196 | 0.0442 | 0.0071 | 0.0370 |
| 197 | 0.0755 | 0.0122 | 0.0633 |
| 198 | 0.0694 | 0.0112 | 0.0582 |
| 199 | 0.0648 | 0.0105 | 0.0544 |
| 200 | 0.0612 | 0.0099 | 0.0513 |
| 201 | 0.0582 | 0.0094 | 0.0488 |
| 202 | 0.0556 | 0.0090 | 0.0466 |
| 203 | 0.0534 | 0.0086 | 0.0448 |
| 204 | 0.0515 | 0.0083 | 0.0432 |
| 205 | 0.0498 | 0.0081 | 0.0418 |
| 206 | 0.0483 | 0.0078 | 0.0405 |
| 207 | 0.0470 | 0.0076 | 0.0394 |
| 208 | 0.0458 | 0.0074 | 0.0384 |
| 209 | 0.0447 | 0.0072 | 0.0374 |
| 210 | 0.0436 | 0.0070 | 0.0366 |
| 211 | 0.0427 | 0.0069 | 0.0358 |
| 212 | 0.0418 | 0.0068 | 0.0351 |
| 213 | 0.0410 | 0.0066 | 0.0344 |
| 214 | 0.0402 | 0.0065 | 0.0337 |

| | | | |
|---|---|---|---|
| 215 | 0.0395 | 0.0064 | 0.0331 |
| 216 | 0.0389 | 0.0063 | 0.0326 |
| 217 | 0.0441 | 0.0071 | 0.0370 |
| 218 | 0.0436 | 0.0070 | 0.0366 |
| 219 | 0.0431 | 0.0070 | 0.0362 |
| 220 | 0.0426 | 0.0069 | 0.0358 |
| 221 | 0.0422 | 0.0068 | 0.0354 |
| 222 | 0.0418 | 0.0067 | 0.0350 |
| 223 | 0.0414 | 0.0067 | 0.0347 |
| 224 | 0.0410 | 0.0066 | 0.0343 |
| 225 | 0.0406 | 0.0066 | 0.0340 |
| 226 | 0.0402 | 0.0065 | 0.0337 |
| 227 | 0.0399 | 0.0064 | 0.0334 |
| 228 | 0.0395 | 0.0064 | 0.0332 |
| 229 | 0.0392 | 0.0063 | 0.0329 |
| 230 | 0.0389 | 0.0063 | 0.0326 |
| 231 | 0.0386 | 0.0062 | 0.0324 |
| 232 | 0.0383 | 0.0062 | 0.0321 |
| 233 | 0.0380 | 0.0061 | 0.0319 |
| 234 | 0.0378 | 0.0061 | 0.0317 |
| 235 | 0.0375 | 0.0061 | 0.0314 |
| 236 | 0.0372 | 0.0060 | 0.0312 |
| 237 | 0.0370 | 0.0060 | 0.0310 |
| 238 | 0.0368 | 0.0059 | 0.0308 |
| 239 | 0.0365 | 0.0059 | 0.0306 |
| 240 | 0.0363 | 0.0059 | 0.0304 |
| 241 | 0.0361 | 0.0058 | 0.0302 |
| 242 | 0.0359 | 0.0058 | 0.0301 |
| 243 | 0.0356 | 0.0058 | 0.0299 |
| 244 | 0.0354 | 0.0057 | 0.0297 |
| 245 | 0.0352 | 0.0057 | 0.0295 |
| 246 | 0.0350 | 0.0057 | 0.0294 |
| 247 | 0.0349 | 0.0056 | 0.0292 |
| 248 | 0.0347 | 0.0056 | 0.0291 |
| 249 | 0.0345 | 0.0056 | 0.0289 |
| 250 | 0.0343 | 0.0055 | 0.0288 |
| 251 | 0.0341 | 0.0055 | 0.0286 |
| 252 | 0.0340 | 0.0055 | 0.0285 |
| 253 | 0.0338 | 0.0055 | 0.0283 |
| 254 | 0.0336 | 0.0054 | 0.0282 |
| 255 | 0.0335 | 0.0054 | 0.0281 |
| 256 | 0.0333 | 0.0054 | 0.0279 |
| 257 | 0.0332 | 0.0054 | 0.0278 |
| 258 | 0.0330 | 0.0053 | 0.0277 |
| 259 | 0.0329 | 0.0053 | 0.0276 |
| 260 | 0.0327 | 0.0053 | 0.0274 |
| 261 | 0.0326 | 0.0053 | 0.0273 |
| 262 | 0.0324 | 0.0052 | 0.0272 |
| 263 | 0.0323 | 0.0052 | 0.0271 |
| 264 | 0.0322 | 0.0052 | 0.0270 |
| 265 | 0.0320 | 0.0052 | 0.0269 |
| 266 | 0.0319 | 0.0052 | 0.0268 |
| 267 | 0.0318 | 0.0051 | 0.0267 |
| 268 | 0.0317 | 0.0051 | 0.0266 |
| 269 | 0.0315 | 0.0051 | 0.0264 |
| 270 | 0.0314 | 0.0051 | 0.0263 |
| 271 | 0.0313 | 0.0051 | 0.0262 |
| 272 | 0.0312 | 0.0050 | 0.0262 |
| 273 | 0.0311 | 0.0050 | 0.0261 |
| 274 | 0.0310 | 0.0050 | 0.0260 |
| 275 | 0.0309 | 0.0050 | 0.0259 |
| 276 | 0.0307 | 0.0050 | 0.0258 |
| 277 | 0.0306 | 0.0049 | 0.0257 |
| 278 | 0.0305 | 0.0049 | 0.0256 |
| 279 | 0.0304 | 0.0049 | 0.0255 |
| 280 | 0.0303 | 0.0049 | 0.0254 |
| 281 | 0.0302 | 0.0049 | 0.0253 |
| 282 | 0.0301 | 0.0049 | 0.0253 |
| 283 | 0.0300 | 0.0048 | 0.0252 |
| 284 | 0.0299 | 0.0048 | 0.0251 |
| 285 | 0.0298 | 0.0048 | 0.0250 |

```
      286              0.0297           0.0048              0.0249
      287              0.0296           0.0048              0.0249
      288              0.0296           0.0048              0.0248
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      1.84(In)
      Total effective rainfall =     10.15(In)
      Peak flow rate in flood hydrograph =     24.92(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0005      0.08  Q          |          |          |          |
  0+10       0.0032      0.39  Q          |          |          |          |
  0+15       0.0110      1.14  VQ         |          |          |          |
  0+20       0.0211      1.46  VQ         |          |          |          |
  0+25       0.0324      1.64  V Q        |          |          |          |
  0+30       0.0444      1.75  V Q        |          |          |          |
  0+35       0.0570      1.83  V Q        |          |          |          |
  0+40       0.0701      1.89  V Q        |          |          |          |
  0+45       0.0833      1.92  V Q        |          |          |          |
  0+50       0.0967      1.94  V Q        |          |          |          |
  0+55       0.1101      1.95  V Q        |          |          |          |
  1+ 0       0.1236      1.96  V Q        |          |          |          |
  1+ 5       0.1372      1.97  V Q        |          |          |          |
  1+10       0.1508      1.98  |VQ        |          |          |          |
  1+15       0.1645      1.99  |VQ        |          |          |          |
  1+20       0.1782      1.99  |VQ        |          |          |          |
  1+25       0.1919      1.99  |VQ        |          |          |          |
  1+30       0.2057      2.00  |VQ        |          |          |          |
  1+35       0.2195      2.00  |VQ        |          |          |          |
  1+40       0.2333      2.00  |VQ        |          |          |          |
  1+45       0.2471      2.01  |VQ        |          |          |          |
  1+50       0.2609      2.01  |VQ        |          |          |          |
  1+55       0.2748      2.01  |VQ        |          |          |          |
  2+ 0       0.2887      2.02  | Q        |          |          |          |
  2+ 5       0.3026      2.02  | Q        |          |          |          |
  2+10       0.3165      2.02  | Q        |          |          |          |
  2+15       0.3305      2.03  | Q        |          |          |          |
  2+20       0.3445      2.03  | Q        |          |          |          |
  2+25       0.3585      2.03  | Q        |          |          |          |
  2+30       0.3725      2.04  | Q        |          |          |          |
  2+35       0.3866      2.04  | Q        |          |          |          |
  2+40       0.4007      2.05  | Q        |          |          |          |
  2+45       0.4148      2.05  | QV       |          |          |          |
  2+50       0.4289      2.05  | QV       |          |          |          |
  2+55       0.4431      2.06  | QV       |          |          |          |
  3+ 0       0.4573      2.06  | QV       |          |          |          |
  3+ 5       0.4715      2.06  | QV       |          |          |          |
  3+10       0.4857      2.07  | QV       |          |          |          |
  3+15       0.5000      2.07  | QV       |          |          |          |
  3+20       0.5143      2.08  | QV       |          |          |          |
  3+25       0.5286      2.08  | QV       |          |          |          |
  3+30       0.5430      2.08  | QV       |          |          |          |
  3+35       0.5573      2.09  | Q V      |          |          |          |
  3+40       0.5717      2.09  | Q V      |          |          |          |
  3+45       0.5862      2.10  | Q V      |          |          |          |
  3+50       0.6006      2.10  | Q V      |          |          |          |
  3+55       0.6151      2.10  | Q V      |          |          |          |
  4+ 0       0.6296      2.11  | Q V      |          |          |          |
  4+ 5       0.6442      2.11  | Q V      |          |          |          |
  4+10       0.6588      2.12  | Q V      |          |          |          |
  4+15       0.6734      2.12  | Q V      |          |          |          |
  4+20       0.6880      2.12  | Q V      |          |          |          |
  4+25       0.7027      2.13  | Q  V     |          |          |          |
```

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 4+30      0.7174      2.13  | Q  V    |         |         |         |
 4+35      0.7321      2.14  | Q  V    |         |         |         |
 4+40      0.7468      2.14  | Q  V    |         |         |         |
 4+45      0.7616      2.15  | Q  V    |         |         |         |
 4+50      0.7764      2.15  | Q  V    |         |         |         |
 4+55      0.7913      2.16  | Q  V    |         |         |         |
 5+ 0      0.8062      2.16  | Q  V    |         |         |         |
 5+ 5      0.8211      2.17  | Q  V    |         |         |         |
 5+10      0.8360      2.17  | Q   V   |         |         |         |
 5+15      0.8510      2.17  | Q   V   |         |         |         |
 5+20      0.8660      2.18  | Q   V   |         |         |         |
 5+25      0.8811      2.18  | Q   V   |         |         |         |
 5+30      0.8961      2.19  | Q   V   |         |         |         |
 5+35      0.9113      2.19  | Q   V   |         |         |         |
 5+40      0.9264      2.20  | Q   V   |         |         |         |
 5+45      0.9416      2.20  | Q   V   |         |         |         |
 5+50      0.9568      2.21  | Q   V   |         |         |         |
 5+55      0.9721      2.21  | Q    V  |         |         |         |
 6+ 0      0.9873      2.22  | Q    V  |         |         |         |
 6+ 5      1.0027      2.23  | Q    V  |         |         |         |
 6+10      1.0180      2.23  | Q    V  |         |         |         |
 6+15      1.0334      2.24  | Q    V  |         |         |         |
 6+20      1.0489      2.24  | Q    V  |         |         |         |
 6+25      1.0643      2.25  | Q    V  |         |         |         |
 6+30      1.0799      2.25  |  Q   V  |         |         |         |
 6+35      1.0954      2.26  |  Q   V  |         |         |         |
 6+40      1.1110      2.26  |  Q    V |         |         |         |
 6+45      1.1266      2.27  |  Q    V |         |         |         |
 6+50      1.1423      2.28  |  Q    V |         |         |         |
 6+55      1.1580      2.28  |  Q    V |         |         |         |
 7+ 0      1.1738      2.29  |  Q    V |         |         |         |
 7+ 5      1.1896      2.29  |  Q    V |         |         |         |
 7+10      1.2054      2.30  |  Q    V |         |         |         |
 7+15      1.2213      2.31  |  Q    V |         |         |         |
 7+20      1.2372      2.31  |  Q    V |         |         |         |
 7+25      1.2532      2.32  |  Q     V|         |         |         |
 7+30      1.2692      2.32  |  Q     V|         |         |         |
 7+35      1.2852      2.33  |  Q     V|         |         |         |
 7+40      1.3013      2.34  |  Q     V|         |         |         |
 7+45      1.3175      2.34  |  Q     V|         |         |         |
 7+50      1.3337      2.35  |  Q     V|         |         |         |
 7+55      1.3499      2.36  |  Q     V|         |         |         |
 8+ 0      1.3662      2.36  |  Q     V|         |         |         |
 8+ 5      1.3825      2.37  |  Q      V         |         |         |
 8+10      1.3989      2.38  |  Q      V         |         |         |
 8+15      1.4153      2.39  |  Q      V         |         |         |
 8+20      1.4318      2.39  |  Q      V         |         |         |
 8+25      1.4483      2.40  |  Q      V         |         |         |
 8+30      1.4649      2.41  |  Q      V         |         |         |
 8+35      1.4816      2.42  |  Q      V         |         |         |
 8+40      1.4983      2.42  |  Q      V         |         |         |
 8+45      1.5150      2.43  |  Q      V         |         |         |
 8+50      1.5318      2.44  |  Q       |V       |         |         |
 8+55      1.5486      2.45  |  Q       |V       |         |         |
 9+ 0      1.5655      2.45  |  Q       |V       |         |         |
 9+ 5      1.5825      2.46  |  Q       |V       |         |         |
 9+10      1.5995      2.47  |  Q       |V       |         |         |
 9+15      1.6166      2.48  |  Q       |V       |         |         |
 9+20      1.6338      2.49  |  Q       |V       |         |         |
 9+25      1.6510      2.50  |  Q       |V       |         |         |
 9+30      1.6682      2.51  |  Q       | V      |         |         |
 9+35      1.6855      2.52  |  Q       | V      |         |         |
 9+40      1.7029      2.52  |  Q       | V      |         |         |
 9+45      1.7204      2.53  |  Q       | V      |         |         |
 9+50      1.7379      2.54  |  Q       | V      |         |         |
 9+55      1.7555      2.55  |  Q       | V      |         |         |
10+ 0      1.7731      2.56  |  Q       | V      |         |         |
10+ 5      1.7909      2.57  |  Q       | V      |         |         |
10+10      1.8087      2.58  |  Q       |  V     |         |         |
10+15      1.8265      2.59  |  Q       |  V     |         |         |
10+20      1.8445      2.60  |  Q       |  V     |         |         |
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10+25       1.8625      2.62  |  Q       |  V       |          |          |
10+30       1.8805      2.63  |  Q       |  V       |          |          |
10+35       1.8987      2.64  |  Q       |  V       |          |          |
10+40       1.9169      2.65  |  Q       |  V       |          |          |
10+45       1.9353      2.66  |  Q       |   V      |          |          |
10+50       1.9537      2.67  |  Q       |   V      |          |          |
10+55       1.9721      2.68  |  Q       |   V      |          |          |
11+ 0       1.9907      2.70  |  Q       |   V      |          |          |
11+ 5       2.0094      2.71  |  Q       |   V      |          |          |
11+10       2.0281      2.72  |  Q       |   V      |          |          |
11+15       2.0469      2.73  |  Q       |   V      |          |          |
11+20       2.0659      2.75  |  Q       |   V      |          |          |
11+25       2.0849      2.76  |  Q       |    V     |          |          |
11+30       2.1040      2.77  |  Q       |    V     |          |          |
11+35       2.1232      2.79  |  Q       |    V     |          |          |
11+40       2.1425      2.80  |  Q       |    V     |          |          |
11+45       2.1619      2.82  |  Q       |    V     |          |          |
11+50       2.1814      2.83  |  Q       |    V     |          |          |
11+55       2.2011      2.85  |  Q       |    V     |          |          |
12+ 0       2.2208      2.87  |  Q       |     V    |          |          |
12+ 5       2.2406      2.87  |  Q       |     V    |          |          |
12+10       2.2600      2.82  |  Q       |     V    |          |          |
12+15       2.2785      2.69  |  Q       |     V    |          |          |
12+20       2.2967      2.65  |  Q       |     V    |          |          |
12+25       2.3149      2.63  |  Q       |     V    |          |          |
12+30       2.3330      2.63  |  Q       |     V    |          |          |
12+35       2.3511      2.64  |  Q       |      V   |          |          |
12+40       2.3694      2.65  |  Q       |      V   |          |          |
12+45       2.3877      2.67  |  Q       |      V   |          |          |
12+50       2.4062      2.69  |  Q       |      V   |          |          |
12+55       2.4249      2.71  |  Q       |      V   |          |          |
13+ 0       2.4437      2.74  |  Q       |      V   |          |          |
13+ 5       2.4628      2.76  |  Q       |      V   |          |          |
13+10       2.4820      2.79  |  Q       |      V   |          |          |
13+15       2.5014      2.82  |  Q       |       V  |          |          |
13+20       2.5210      2.85  |  Q       |       V  |          |          |
13+25       2.5408      2.88  |  Q       |       V  |          |          |
13+30       2.5609      2.91  |  Q       |       V  |          |          |
13+35       2.5812      2.95  |  Q       |       V  |          |          |
13+40       2.6017      2.98  |  Q       |       V  |          |          |
13+45       2.6225      3.02  |   Q      |       V  |          |          |
13+50       2.6436      3.06  |   Q      |        V |          |          |
13+55       2.6649      3.10  |   Q      |        V |          |          |
14+ 0       2.6866      3.14  |   Q      |        V |          |          |
14+ 5       2.7085      3.19  |   Q      |        V |          |          |
14+10       2.7308      3.24  |   Q      |        V |          |          |
14+15       2.7535      3.29  |   Q      |        V |          |          |
14+20       2.7764      3.34  |   Q      |         V|          |          |
14+25       2.7999      3.40  |   Q      |         V|          |          |
14+30       2.8237      3.46  |   Q      |         V|          |          |
14+35       2.8479      3.52  |   Q      |         V|          |          |
14+40       2.8727      3.59  |   Q      |         V|          |          |
14+45       2.8979      3.67  |   Q      |         V|          |          |
14+50       2.9237      3.74  |   Q      |          |V         |          |
14+55       2.9501      3.83  |    Q     |          |V         |          |
15+ 0       2.9771      3.92  |    Q     |          |V         |          |
15+ 5       3.0049      4.03  |    Q     |          |V         |          |
15+10       3.0334      4.14  |    Q     |          |V         |          |
15+15       3.0629      4.27  |    Q     |          | V        |          |
15+20       3.0932      4.41  |    Q     |          | V        |          |
15+25       3.1241      4.48  |    Q     |          | V        |          |
15+30       3.1532      4.23  |    Q     |          | V        |          |
15+35       3.1770      3.46  |   Q      |          |  V       |          |
15+40       3.1996      3.27  |   Q      |          |  V       |          |
15+45       3.2227      3.36  |   Q      |          |  V       |          |
15+50       3.2476      3.60  |   Q      |          |  V       |          |
15+55       3.2761      4.14  |    Q     |          |  V       |          |
16+ 0       3.3111      5.09  |     Q    |          |  V       |          |
16+ 5       3.3696      8.49  |          |Q         |   V      |          |
16+10       3.4768     15.57  |          |          Q    V     |          |
16+15       3.6484     24.92  |          |          |     V    |  Q       |
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16+20       3.7434     13.80  |          |        Q |       V  |          |
16+25       3.8064      9.15  |          |  Q       |       V  |          |
16+30       3.8563      7.25  |          Q|          |       V  |          |
16+35       3.9023      6.67  |        Q  |          |        V |          |
16+40       3.9428      5.89  |      Q    |          |        V |          |
16+45       3.9785      5.17  |     Q     |          |        V |          |
16+50       4.0097      4.53  |     Q     |          |         V|          |
16+55       4.0389      4.25  |    Q      |          |         V|          |
17+ 0       4.0666      4.02  |    Q      |          |         V|          |
17+ 5       4.0933      3.87  |    Q      |          |         V|          |
17+10       4.1188      3.69  |   Q       |          |         V|          |
17+15       4.1429      3.50  |   Q       |          |          V          |
17+20       4.1659      3.34  |   Q       |          |          V          |
17+25       4.1880      3.21  |   Q       |          |          V          |
17+30       4.2095      3.12  |   Q       |          |          V          |
17+35       4.2304      3.04  |   Q       |          |          V          |
17+40       4.2509      2.97  |  Q        |          |          V          |
17+45       4.2708      2.90  |  Q        |          |          V          |
17+50       4.2903      2.83  |  Q        |          |          |V         |
17+55       4.3094      2.77  |  Q        |          |          |V         |
18+ 0       4.3281      2.72  |  Q        |          |          |V         |
18+ 5       4.3466      2.68  |  Q        |          |          |V         |
18+10       4.3652      2.70  |  Q        |          |          |V         |
18+15       4.3845      2.80  |  Q        |          |          |V         |
18+20       4.4039      2.83  |  Q        |          |          |V         |
18+25       4.4234      2.83  |  Q        |          |          | V        |
18+30       4.4428      2.82  |  Q        |          |          | V        |
18+35       4.4621      2.80  |  Q        |          |          | V        |
18+40       4.4812      2.78  |  Q        |          |          | V        |
18+45       4.5002      2.76  |  Q        |          |          | V        |
18+50       4.5190      2.73  |  Q        |          |          | V        |
18+55       4.5377      2.71  |  Q        |          |          | V        |
19+ 0       4.5561      2.68  |  Q        |          |          | V        |
19+ 5       4.5745      2.66  |  Q        |          |          |  V       |
19+10       4.5927      2.64  |  Q        |          |          |  V       |
19+15       4.6107      2.62  |  Q        |          |          |  V       |
19+20       4.6286      2.60  |  Q        |          |          |  V       |
19+25       4.6463      2.58  |  Q        |          |          |  V       |
19+30       4.6639      2.56  |  Q        |          |          |  V       |
19+35       4.6814      2.54  |  Q        |          |          |  V       |
19+40       4.6987      2.52  |  Q        |          |          |   V      |
19+45       4.7159      2.50  |  Q        |          |          |   V      |
19+50       4.7330      2.48  |  Q        |          |          |   V      |
19+55       4.7500      2.47  |  Q        |          |          |   V      |
20+ 0       4.7669      2.45  |  Q        |          |          |   V      |
20+ 5       4.7836      2.43  |  Q        |          |          |   V      |
20+10       4.8003      2.42  |  Q        |          |          |   V      |
20+15       4.8168      2.40  |  Q        |          |          |   V      |
20+20       4.8333      2.39  |  Q        |          |          |    V     |
20+25       4.8496      2.37  |  Q        |          |          |    V     |
20+30       4.8659      2.36  |  Q        |          |          |    V     |
20+35       4.8820      2.35  |  Q        |          |          |    V     |
20+40       4.8981      2.33  |  Q        |          |          |    V     |
20+45       4.9140      2.32  |  Q        |          |          |    V     |
20+50       4.9299      2.31  |  Q        |          |          |    V     |
20+55       4.9457      2.29  |  Q        |          |          |    V     |
21+ 0       4.9615      2.28  |  Q        |          |          |    V     |
21+ 5       4.9771      2.27  |  Q        |          |          |     V    |
21+10       4.9927      2.26  |  Q        |          |          |     V    |
21+15       5.0081      2.25  | Q         |          |          |     V    |
21+20       5.0235      2.24  | Q         |          |          |     V    |
21+25       5.0389      2.23  | Q         |          |          |     V    |
21+30       5.0541      2.22  | Q         |          |          |     V    |
21+35       5.0693      2.21  | Q         |          |          |     V    |
21+40       5.0844      2.20  | Q         |          |          |     V    |
21+45       5.0995      2.19  | Q         |          |          |     V    |
21+50       5.1145      2.18  | Q         |          |          |      V   |
21+55       5.1294      2.17  | Q         |          |          |      V   |
22+ 0       5.1443      2.16  | Q         |          |          |      V   |
22+ 5       5.1591      2.15  | Q         |          |          |      V   |
22+10       5.1738      2.14  | Q         |          |          |      V   |
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  22+15       5.1885      2.13  | Q       |         |         |      V  |
  22+20       5.2031      2.12  | Q       |         |         |      V  |
  22+25       5.2176      2.11  | Q       |         |         |      V  |
  22+30       5.2321      2.10  | Q       |         |         |      V  |
  22+35       5.2465      2.10  | Q       |         |         |      V  |
  22+40       5.2609      2.09  | Q       |         |         |       V |
  22+45       5.2752      2.08  | Q       |         |         |       V |
  22+50       5.2895      2.07  | Q       |         |         |       V |
  22+55       5.3037      2.06  | Q       |         |         |       V |
  23+ 0       5.3179      2.06  | Q       |         |         |       V |
  23+ 5       5.3320      2.05  | Q       |         |         |       V |
  23+10       5.3461      2.04  | Q       |         |         |       V |
  23+15       5.3601      2.04  | Q       |         |         |       V |
  23+20       5.3741      2.03  | Q       |         |         |       V |
  23+25       5.3880      2.02  | Q       |         |         |        V|
  23+30       5.4019      2.01  | Q       |         |         |        V|
  23+35       5.4157      2.01  | Q       |         |         |        V|
  23+40       5.4295      2.00  | Q       |         |         |        V|
  23+45       5.4432      1.99  | Q       |         |         |        V|
  23+50       5.4569      1.99  | Q       |         |         |        V|
  23+55       5.4705      1.98  | Q       |         |         |        V|
  24+ 0       5.4841      1.97  | Q       |         |         |        V|
  24+ 5       5.4972      1.89  | Q       |         |         |        V|
  24+10       5.5080      1.57  | Q       |         |         |        V|
  24+15       5.5137      0.82  |Q        |         |         |        V|
  24+20       5.5171      0.50  Q         |         |         |        V|
  24+25       5.5193      0.32  Q         |         |         |        V|
  24+30       5.5208      0.21  Q         |         |         |        V|
  24+35       5.5217      0.13  Q         |         |         |        V|
  24+40       5.5222      0.08  Q         |         |         |        V|
  24+45       5.5225      0.05  Q         |         |         |        V|
  24+50       5.5228      0.03  Q         |         |         |        V|
  24+55       5.5229      0.02  Q         |         |         |        V|
  25+ 0       5.5230      0.02  Q         |         |         |        V|
  25+ 5       5.5231      0.01  Q         |         |         |        V|
  25+10       5.5231      0.00  Q         |         |         |        V|
  25+15       5.5231      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area 'D' – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  11/11/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'D'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             9.52            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             9.52            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             9.52           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             9.52            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             9.52            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             9.52           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 68.7      49.4          9.52      1.000     0.816    1.000    0.816

Area-averaged adjusted loss rate Fm (In/Hr) =  0.816

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 9.52 | 1.000 | 68.7 | 49.4 | 10.23 | 0.078 |

Area-averaged catchment yield fraction, Y = 0.078
Area-averaged low loss fraction, Yb = 0.922
User entry of time of concentration = 0.262 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 9.52(Ac.)
Catchment Lag time = 0.210 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 39.7583
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.816(In/Hr)
Average low loss rate fraction (Yb) = 0.922 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 9.52(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.309(In)
30-minute factor = 1.000 Adjusted rainfall = 0.528(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 115.13 (CFS)) | |
| 1 | 3.107 | 3.578 |
| 2 | 14.718 | 13.368 |
| 3 | 45.653 | 35.616 |
| 4 | 68.346 | 26.128 |
| 5 | 78.353 | 11.521 |
| 6 | 85.032 | 7.690 |
| 7 | 89.767 | 5.452 |
| 8 | 93.189 | 3.940 |
| 9 | 95.606 | 2.782 |
| 10 | 97.231 | 1.872 |
| 11 | 98.108 | 1.010 |
| 12 | 98.568 | 0.529 |
| 13 | 98.955 | 0.446 |
| 14 | 99.222 | 0.306 |
| 15 | 99.512 | 0.334 |
| 16 | 99.764 | 0.291 |
| 17 | 99.907 | 0.164 |
| 18 | 100.000 | 0.107 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3085 | 0.3085 |
| 2 | 0.3799 | 0.0713 |
| 3 | 0.4290 | 0.0491 |
| 4 | 0.4677 | 0.0387 |
| 5 | 0.5000 | 0.0324 |
| 6 | 0.5281 | 0.0281 |
| 7 | 0.5531 | 0.0250 |
| 8 | 0.5758 | 0.0226 |

| | | |
|---|---|---|
| 9 | 0.5965 | 0.0207 |
| 10 | 0.6156 | 0.0192 |
| 11 | 0.6335 | 0.0179 |
| 12 | 0.6502 | 0.0168 |
| 13 | 0.6837 | 0.0335 |
| 14 | 0.7162 | 0.0325 |
| 15 | 0.7479 | 0.0317 |
| 16 | 0.7788 | 0.0309 |
| 17 | 0.8090 | 0.0302 |
| 18 | 0.8385 | 0.0295 |
| 19 | 0.8674 | 0.0289 |
| 20 | 0.8958 | 0.0284 |
| 21 | 0.9236 | 0.0278 |
| 22 | 0.9510 | 0.0273 |
| 23 | 0.9779 | 0.0269 |
| 24 | 1.0043 | 0.0265 |
| 25 | 1.0304 | 0.0260 |
| 26 | 1.0560 | 0.0257 |
| 27 | 1.0813 | 0.0253 |
| 28 | 1.1063 | 0.0249 |
| 29 | 1.1309 | 0.0246 |
| 30 | 1.1552 | 0.0243 |
| 31 | 1.1792 | 0.0240 |
| 32 | 1.2029 | 0.0237 |
| 33 | 1.2263 | 0.0234 |
| 34 | 1.2495 | 0.0232 |
| 35 | 1.2724 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3176 | 0.0224 |
| 38 | 1.3398 | 0.0222 |
| 39 | 1.3618 | 0.0220 |
| 40 | 1.3835 | 0.0218 |
| 41 | 1.4051 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4477 | 0.0212 |
| 44 | 1.4687 | 0.0210 |
| 45 | 1.4896 | 0.0208 |
| 46 | 1.5102 | 0.0207 |
| 47 | 1.5307 | 0.0205 |
| 48 | 1.5511 | 0.0203 |
| 49 | 1.5712 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6111 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6892 | 0.0193 |
| 56 | 1.7084 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7652 | 0.0188 |
| 60 | 1.7839 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8393 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8757 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9295 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9649 | 0.0176 |
| 71 | 1.9825 | 0.0176 |
| 72 | 1.9999 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0547 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |

| | | |
|---|---|---|
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1213 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |
| 84 | 2.1602 | 0.0129 |
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1858 | 0.0127 |
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2236 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2852 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3093 | 0.0121 |
| 97 | 2.3213 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3451 | 0.0119 |
| 100 | 2.3570 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3921 | 0.0116 |
| 104 | 2.4036 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4266 | 0.0115 |
| 107 | 2.4381 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4607 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5166 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5494 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5711 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6034 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6874 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7080 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7386 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7988 | 0.0099 |
| 142 | 2.8087 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8479 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8771 | 0.0097 |
| 150 | 2.8867 | 0.0096 |

| | | |
|---|---|---|
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9439 | 0.0095 |
| 157 | 2.9533 | 0.0094 |
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9720 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 2.9999 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0368 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0821 | 0.0090 |
| 172 | 3.0911 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1358 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1797 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2058 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2913 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3249 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3664 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4075 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4640 | 0.0080 |
| 217 | 3.4721 | 0.0080 |
| 218 | 3.4800 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |

| | | |
|---|---|---|
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5512 | 0.0078 |
| 228 | 3.5590 | 0.0078 |
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5745 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5901 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6285 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6817 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7785 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8005 | 0.0073 |
| 261 | 3.8078 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8297 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8441 | 0.0072 |
| 267 | 3.8514 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8658 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8873 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9370 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9510 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9860 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 4.0000 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 0.0070 | 0.0064 | 0.0005 |
| 2 | 0.0070 | 0.0064 | 0.0005 |
| 3 | 0.0070 | 0.0064 | 0.0005 |
| 4 | 0.0070 | 0.0065 | 0.0005 |
| 5 | 0.0070 | 0.0065 | 0.0006 |
| 6 | 0.0070 | 0.0065 | 0.0006 |
| 7 | 0.0071 | 0.0065 | 0.0006 |
| 8 | 0.0071 | 0.0065 | 0.0006 |
| 9 | 0.0071 | 0.0065 | 0.0006 |
| 10 | 0.0071 | 0.0066 | 0.0006 |
| 11 | 0.0071 | 0.0066 | 0.0006 |
| 12 | 0.0072 | 0.0066 | 0.0006 |
| 13 | 0.0072 | 0.0066 | 0.0006 |
| 14 | 0.0072 | 0.0066 | 0.0006 |
| 15 | 0.0072 | 0.0067 | 0.0006 |
| 16 | 0.0072 | 0.0067 | 0.0006 |
| 17 | 0.0073 | 0.0067 | 0.0006 |
| 18 | 0.0073 | 0.0067 | 0.0006 |
| 19 | 0.0073 | 0.0067 | 0.0006 |
| 20 | 0.0073 | 0.0067 | 0.0006 |
| 21 | 0.0073 | 0.0068 | 0.0006 |
| 22 | 0.0074 | 0.0068 | 0.0006 |
| 23 | 0.0074 | 0.0068 | 0.0006 |
| 24 | 0.0074 | 0.0068 | 0.0006 |
| 25 | 0.0074 | 0.0068 | 0.0006 |
| 26 | 0.0074 | 0.0069 | 0.0006 |
| 27 | 0.0075 | 0.0069 | 0.0006 |
| 28 | 0.0075 | 0.0069 | 0.0006 |
| 29 | 0.0075 | 0.0069 | 0.0006 |
| 30 | 0.0075 | 0.0069 | 0.0006 |
| 31 | 0.0076 | 0.0070 | 0.0006 |
| 32 | 0.0076 | 0.0070 | 0.0006 |
| 33 | 0.0076 | 0.0070 | 0.0006 |
| 34 | 0.0076 | 0.0070 | 0.0006 |
| 35 | 0.0077 | 0.0071 | 0.0006 |
| 36 | 0.0077 | 0.0071 | 0.0006 |
| 37 | 0.0077 | 0.0071 | 0.0006 |
| 38 | 0.0077 | 0.0071 | 0.0006 |
| 39 | 0.0078 | 0.0072 | 0.0006 |
| 40 | 0.0078 | 0.0072 | 0.0006 |
| 41 | 0.0078 | 0.0072 | 0.0006 |
| 42 | 0.0078 | 0.0072 | 0.0006 |
| 43 | 0.0079 | 0.0072 | 0.0006 |
| 44 | 0.0079 | 0.0073 | 0.0006 |
| 45 | 0.0079 | 0.0073 | 0.0006 |
| 46 | 0.0079 | 0.0073 | 0.0006 |
| 47 | 0.0080 | 0.0073 | 0.0006 |
| 48 | 0.0080 | 0.0074 | 0.0006 |
| 49 | 0.0080 | 0.0074 | 0.0006 |
| 50 | 0.0080 | 0.0074 | 0.0006 |
| 51 | 0.0081 | 0.0075 | 0.0006 |
| 52 | 0.0081 | 0.0075 | 0.0006 |
| 53 | 0.0081 | 0.0075 | 0.0006 |
| 54 | 0.0082 | 0.0075 | 0.0006 |
| 55 | 0.0082 | 0.0076 | 0.0006 |
| 56 | 0.0082 | 0.0076 | 0.0006 |
| 57 | 0.0083 | 0.0076 | 0.0006 |
| 58 | 0.0083 | 0.0076 | 0.0006 |
| 59 | 0.0083 | 0.0077 | 0.0007 |
| 60 | 0.0083 | 0.0077 | 0.0007 |
| 61 | 0.0084 | 0.0077 | 0.0007 |
| 62 | 0.0084 | 0.0077 | 0.0007 |
| 63 | 0.0085 | 0.0078 | 0.0007 |
| 64 | 0.0085 | 0.0078 | 0.0007 |
| 65 | 0.0085 | 0.0078 | 0.0007 |
| 66 | 0.0085 | 0.0079 | 0.0007 |
| 67 | 0.0086 | 0.0079 | 0.0007 |
| 68 | 0.0086 | 0.0079 | 0.0007 |
| 69 | 0.0087 | 0.0080 | 0.0007 |
| 70 | 0.0087 | 0.0080 | 0.0007 |

| | | | |
|---|---|---|---|
| 71 | 0.0087 | 0.0080 | 0.0007 |
| 72 | 0.0087 | 0.0081 | 0.0007 |
| 73 | 0.0088 | 0.0081 | 0.0007 |
| 74 | 0.0088 | 0.0081 | 0.0007 |
| 75 | 0.0089 | 0.0082 | 0.0007 |
| 76 | 0.0089 | 0.0082 | 0.0007 |
| 77 | 0.0089 | 0.0082 | 0.0007 |
| 78 | 0.0090 | 0.0083 | 0.0007 |
| 79 | 0.0090 | 0.0083 | 0.0007 |
| 80 | 0.0091 | 0.0083 | 0.0007 |
| 81 | 0.0091 | 0.0084 | 0.0007 |
| 82 | 0.0091 | 0.0084 | 0.0007 |
| 83 | 0.0092 | 0.0085 | 0.0007 |
| 84 | 0.0092 | 0.0085 | 0.0007 |
| 85 | 0.0093 | 0.0085 | 0.0007 |
| 86 | 0.0093 | 0.0086 | 0.0007 |
| 87 | 0.0094 | 0.0086 | 0.0007 |
| 88 | 0.0094 | 0.0087 | 0.0007 |
| 89 | 0.0095 | 0.0087 | 0.0007 |
| 90 | 0.0095 | 0.0087 | 0.0007 |
| 91 | 0.0095 | 0.0088 | 0.0007 |
| 92 | 0.0096 | 0.0088 | 0.0008 |
| 93 | 0.0096 | 0.0089 | 0.0008 |
| 94 | 0.0097 | 0.0089 | 0.0008 |
| 95 | 0.0097 | 0.0090 | 0.0008 |
| 96 | 0.0098 | 0.0090 | 0.0008 |
| 97 | 0.0098 | 0.0091 | 0.0008 |
| 98 | 0.0099 | 0.0091 | 0.0008 |
| 99 | 0.0099 | 0.0092 | 0.0008 |
| 100 | 0.0100 | 0.0092 | 0.0008 |
| 101 | 0.0101 | 0.0093 | 0.0008 |
| 102 | 0.0101 | 0.0093 | 0.0008 |
| 103 | 0.0102 | 0.0094 | 0.0008 |
| 104 | 0.0102 | 0.0094 | 0.0008 |
| 105 | 0.0103 | 0.0095 | 0.0008 |
| 106 | 0.0103 | 0.0095 | 0.0008 |
| 107 | 0.0104 | 0.0096 | 0.0008 |
| 108 | 0.0104 | 0.0096 | 0.0008 |
| 109 | 0.0105 | 0.0097 | 0.0008 |
| 110 | 0.0106 | 0.0097 | 0.0008 |
| 111 | 0.0106 | 0.0098 | 0.0008 |
| 112 | 0.0107 | 0.0099 | 0.0008 |
| 113 | 0.0108 | 0.0099 | 0.0008 |
| 114 | 0.0108 | 0.0100 | 0.0008 |
| 115 | 0.0109 | 0.0101 | 0.0009 |
| 116 | 0.0110 | 0.0101 | 0.0009 |
| 117 | 0.0111 | 0.0102 | 0.0009 |
| 118 | 0.0111 | 0.0102 | 0.0009 |
| 119 | 0.0112 | 0.0103 | 0.0009 |
| 120 | 0.0113 | 0.0104 | 0.0009 |
| 121 | 0.0114 | 0.0105 | 0.0009 |
| 122 | 0.0114 | 0.0105 | 0.0009 |
| 123 | 0.0115 | 0.0106 | 0.0009 |
| 124 | 0.0116 | 0.0107 | 0.0009 |
| 125 | 0.0117 | 0.0108 | 0.0009 |
| 126 | 0.0118 | 0.0108 | 0.0009 |
| 127 | 0.0119 | 0.0109 | 0.0009 |
| 128 | 0.0119 | 0.0110 | 0.0009 |
| 129 | 0.0121 | 0.0111 | 0.0009 |
| 130 | 0.0121 | 0.0112 | 0.0010 |
| 131 | 0.0123 | 0.0113 | 0.0010 |
| 132 | 0.0123 | 0.0114 | 0.0010 |
| 133 | 0.0125 | 0.0115 | 0.0010 |
| 134 | 0.0125 | 0.0115 | 0.0010 |
| 135 | 0.0127 | 0.0117 | 0.0010 |
| 136 | 0.0127 | 0.0117 | 0.0010 |
| 137 | 0.0129 | 0.0119 | 0.0010 |
| 138 | 0.0130 | 0.0120 | 0.0010 |
| 139 | 0.0131 | 0.0121 | 0.0010 |
| 140 | 0.0132 | 0.0122 | 0.0010 |
| 141 | 0.0134 | 0.0123 | 0.0010 |

| | | | |
|---|---|---|---|
| 142 | 0.0135 | 0.0124 | 0.0011 |
| 143 | 0.0137 | 0.0126 | 0.0011 |
| 144 | 0.0137 | 0.0127 | 0.0011 |
| 145 | 0.0175 | 0.0161 | 0.0014 |
| 146 | 0.0176 | 0.0162 | 0.0014 |
| 147 | 0.0177 | 0.0163 | 0.0014 |
| 148 | 0.0178 | 0.0164 | 0.0014 |
| 149 | 0.0180 | 0.0166 | 0.0014 |
| 150 | 0.0181 | 0.0167 | 0.0014 |
| 151 | 0.0184 | 0.0169 | 0.0014 |
| 152 | 0.0185 | 0.0170 | 0.0014 |
| 153 | 0.0187 | 0.0172 | 0.0015 |
| 154 | 0.0188 | 0.0173 | 0.0015 |
| 155 | 0.0191 | 0.0176 | 0.0015 |
| 156 | 0.0192 | 0.0177 | 0.0015 |
| 157 | 0.0195 | 0.0179 | 0.0015 |
| 158 | 0.0196 | 0.0181 | 0.0015 |
| 159 | 0.0199 | 0.0183 | 0.0016 |
| 160 | 0.0200 | 0.0185 | 0.0016 |
| 161 | 0.0203 | 0.0187 | 0.0016 |
| 162 | 0.0205 | 0.0189 | 0.0016 |
| 163 | 0.0208 | 0.0192 | 0.0016 |
| 164 | 0.0210 | 0.0194 | 0.0016 |
| 165 | 0.0214 | 0.0197 | 0.0017 |
| 166 | 0.0216 | 0.0199 | 0.0017 |
| 167 | 0.0220 | 0.0203 | 0.0017 |
| 168 | 0.0222 | 0.0205 | 0.0017 |
| 169 | 0.0227 | 0.0209 | 0.0018 |
| 170 | 0.0229 | 0.0211 | 0.0018 |
| 171 | 0.0234 | 0.0216 | 0.0018 |
| 172 | 0.0237 | 0.0219 | 0.0019 |
| 173 | 0.0243 | 0.0224 | 0.0019 |
| 174 | 0.0246 | 0.0227 | 0.0019 |
| 175 | 0.0253 | 0.0233 | 0.0020 |
| 176 | 0.0257 | 0.0236 | 0.0020 |
| 177 | 0.0265 | 0.0244 | 0.0021 |
| 178 | 0.0269 | 0.0248 | 0.0021 |
| 179 | 0.0278 | 0.0257 | 0.0022 |
| 180 | 0.0284 | 0.0261 | 0.0022 |
| 181 | 0.0295 | 0.0272 | 0.0023 |
| 182 | 0.0302 | 0.0278 | 0.0024 |
| 183 | 0.0317 | 0.0292 | 0.0025 |
| 184 | 0.0325 | 0.0300 | 0.0026 |
| 185 | 0.0168 | 0.0154 | 0.0013 |
| 186 | 0.0179 | 0.0165 | 0.0014 |
| 187 | 0.0207 | 0.0191 | 0.0016 |
| 188 | 0.0226 | 0.0208 | 0.0018 |
| 189 | 0.0281 | 0.0259 | 0.0022 |
| 190 | 0.0324 | 0.0298 | 0.0025 |
| 191 | 0.0491 | 0.0453 | 0.0039 |
| 192 | 0.0713 | 0.0657 | 0.0056 |
| 193 | 0.3085 | 0.0680 | 0.2405 |
| 194 | 0.0387 | 0.0356 | 0.0030 |
| 195 | 0.0250 | 0.0230 | 0.0020 |
| 196 | 0.0192 | 0.0177 | 0.0015 |
| 197 | 0.0335 | 0.0309 | 0.0026 |
| 198 | 0.0309 | 0.0285 | 0.0024 |
| 199 | 0.0289 | 0.0267 | 0.0023 |
| 200 | 0.0273 | 0.0252 | 0.0021 |
| 201 | 0.0260 | 0.0240 | 0.0020 |
| 202 | 0.0249 | 0.0230 | 0.0020 |
| 203 | 0.0240 | 0.0221 | 0.0019 |
| 204 | 0.0232 | 0.0214 | 0.0018 |
| 205 | 0.0224 | 0.0207 | 0.0018 |
| 206 | 0.0218 | 0.0201 | 0.0017 |
| 207 | 0.0212 | 0.0195 | 0.0017 |
| 208 | 0.0207 | 0.0190 | 0.0016 |
| 209 | 0.0202 | 0.0186 | 0.0016 |
| 210 | 0.0197 | 0.0182 | 0.0015 |
| 211 | 0.0193 | 0.0178 | 0.0015 |
| 212 | 0.0189 | 0.0175 | 0.0015 |

| | | | |
|---|---|---|---|
| 213 | 0.0186 | 0.0171 | 0.0015 |
| 214 | 0.0182 | 0.0168 | 0.0014 |
| 215 | 0.0179 | 0.0165 | 0.0014 |
| 216 | 0.0176 | 0.0163 | 0.0014 |
| 217 | 0.0138 | 0.0128 | 0.0011 |
| 218 | 0.0136 | 0.0125 | 0.0011 |
| 219 | 0.0133 | 0.0123 | 0.0010 |
| 220 | 0.0131 | 0.0120 | 0.0010 |
| 221 | 0.0128 | 0.0118 | 0.0010 |
| 222 | 0.0126 | 0.0116 | 0.0010 |
| 223 | 0.0124 | 0.0114 | 0.0010 |
| 224 | 0.0122 | 0.0112 | 0.0010 |
| 225 | 0.0120 | 0.0111 | 0.0009 |
| 226 | 0.0118 | 0.0109 | 0.0009 |
| 227 | 0.0116 | 0.0107 | 0.0009 |
| 228 | 0.0115 | 0.0106 | 0.0009 |
| 229 | 0.0113 | 0.0104 | 0.0009 |
| 230 | 0.0112 | 0.0103 | 0.0009 |
| 231 | 0.0110 | 0.0102 | 0.0009 |
| 232 | 0.0109 | 0.0100 | 0.0009 |
| 233 | 0.0107 | 0.0099 | 0.0008 |
| 234 | 0.0106 | 0.0098 | 0.0008 |
| 235 | 0.0105 | 0.0097 | 0.0008 |
| 236 | 0.0104 | 0.0095 | 0.0008 |
| 237 | 0.0102 | 0.0094 | 0.0008 |
| 238 | 0.0101 | 0.0093 | 0.0008 |
| 239 | 0.0100 | 0.0092 | 0.0008 |
| 240 | 0.0099 | 0.0091 | 0.0008 |
| 241 | 0.0098 | 0.0090 | 0.0008 |
| 242 | 0.0097 | 0.0089 | 0.0008 |
| 243 | 0.0096 | 0.0089 | 0.0008 |
| 244 | 0.0095 | 0.0088 | 0.0007 |
| 245 | 0.0094 | 0.0087 | 0.0007 |
| 246 | 0.0093 | 0.0086 | 0.0007 |
| 247 | 0.0092 | 0.0085 | 0.0007 |
| 248 | 0.0092 | 0.0084 | 0.0007 |
| 249 | 0.0091 | 0.0084 | 0.0007 |
| 250 | 0.0090 | 0.0083 | 0.0007 |
| 251 | 0.0089 | 0.0082 | 0.0007 |
| 252 | 0.0088 | 0.0082 | 0.0007 |
| 253 | 0.0088 | 0.0081 | 0.0007 |
| 254 | 0.0087 | 0.0080 | 0.0007 |
| 255 | 0.0086 | 0.0080 | 0.0007 |
| 256 | 0.0086 | 0.0079 | 0.0007 |
| 257 | 0.0085 | 0.0078 | 0.0007 |
| 258 | 0.0084 | 0.0078 | 0.0007 |
| 259 | 0.0084 | 0.0077 | 0.0007 |
| 260 | 0.0083 | 0.0077 | 0.0007 |
| 261 | 0.0082 | 0.0076 | 0.0006 |
| 262 | 0.0082 | 0.0075 | 0.0006 |
| 263 | 0.0081 | 0.0075 | 0.0006 |
| 264 | 0.0081 | 0.0074 | 0.0006 |
| 265 | 0.0080 | 0.0074 | 0.0006 |
| 266 | 0.0080 | 0.0073 | 0.0006 |
| 267 | 0.0079 | 0.0073 | 0.0006 |
| 268 | 0.0078 | 0.0072 | 0.0006 |
| 269 | 0.0078 | 0.0072 | 0.0006 |
| 270 | 0.0077 | 0.0071 | 0.0006 |
| 271 | 0.0077 | 0.0071 | 0.0006 |
| 272 | 0.0076 | 0.0070 | 0.0006 |
| 273 | 0.0076 | 0.0070 | 0.0006 |
| 274 | 0.0076 | 0.0070 | 0.0006 |
| 275 | 0.0075 | 0.0069 | 0.0006 |
| 276 | 0.0075 | 0.0069 | 0.0006 |
| 277 | 0.0074 | 0.0068 | 0.0006 |
| 278 | 0.0074 | 0.0068 | 0.0006 |
| 279 | 0.0073 | 0.0068 | 0.0006 |
| 280 | 0.0073 | 0.0067 | 0.0006 |
| 281 | 0.0072 | 0.0067 | 0.0006 |
| 282 | 0.0072 | 0.0066 | 0.0006 |
| 283 | 0.0072 | 0.0066 | 0.0006 |

```
      284              0.0071           0.0066              0.0006
      285              0.0071           0.0065              0.0006
      286              0.0070           0.0065              0.0006
      287              0.0070           0.0065              0.0005
      288              0.0070           0.0064              0.0005
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.47(In)
      Total effective rainfall =      0.53(In)
      Peak flow rate in flood hydrograph =      8.86(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
 ----------------------------------------------------------------------
   0+ 5       0.0000      0.00  Q         |         |         |         |
   0+10       0.0001      0.01  Q         |         |         |         |
   0+15       0.0003      0.03  Q         |         |         |         |
   0+20       0.0006      0.04  Q         |         |         |         |
   0+25       0.0009      0.05  Q         |         |         |         |
   0+30       0.0013      0.05  Q         |         |         |         |
   0+35       0.0017      0.06  Q         |         |         |         |
   0+40       0.0021      0.06  Q         |         |         |         |
   0+45       0.0025      0.06  Q         |         |         |         |
   0+50       0.0029      0.06  Q         |         |         |         |
   0+55       0.0034      0.06  Q         |         |         |         |
   1+ 0       0.0038      0.06  Q         |         |         |         |
   1+ 5       0.0042      0.06  Q         |         |         |         |
   1+10       0.0047      0.06  Q         |         |         |         |
   1+15       0.0051      0.06  Q         |         |         |         |
   1+20       0.0056      0.06  Q         |         |         |         |
   1+25       0.0060      0.06  Q         |         |         |         |
   1+30       0.0064      0.07  Q         |         |         |         |
   1+35       0.0069      0.07  Q         |         |         |         |
   1+40       0.0073      0.07  Q         |         |         |         |
   1+45       0.0078      0.07  Q         |         |         |         |
   1+50       0.0083      0.07  Q         |         |         |         |
   1+55       0.0087      0.07  Q         |         |         |         |
   2+ 0       0.0092      0.07  Q         |         |         |         |
   2+ 5       0.0096      0.07  Q         |         |         |         |
   2+10       0.0101      0.07  Q         |         |         |         |
   2+15       0.0105      0.07  QV        |         |         |         |
   2+20       0.0110      0.07  QV        |         |         |         |
   2+25       0.0115      0.07  QV        |         |         |         |
   2+30       0.0119      0.07  QV        |         |         |         |
   2+35       0.0124      0.07  QV        |         |         |         |
   2+40       0.0129      0.07  QV        |         |         |         |
   2+45       0.0133      0.07  QV        |         |         |         |
   2+50       0.0138      0.07  QV        |         |         |         |
   2+55       0.0143      0.07  QV        |         |         |         |
   3+ 0       0.0147      0.07  QV        |         |         |         |
   3+ 5       0.0152      0.07  QV        |         |         |         |
   3+10       0.0157      0.07  QV        |         |         |         |
   3+15       0.0162      0.07  QV        |         |         |         |
   3+20       0.0167      0.07  QV        |         |         |         |
   3+25       0.0171      0.07  QV        |         |         |         |
   3+30       0.0176      0.07  QV        |         |         |         |
   3+35       0.0181      0.07  QV        |         |         |         |
   3+40       0.0186      0.07  QV        |         |         |         |
   3+45       0.0191      0.07  QV        |         |         |         |
   3+50       0.0196      0.07  QV        |         |         |         |
   3+55       0.0200      0.07  QV        |         |         |         |
   4+ 0       0.0205      0.07  QV        |         |         |         |
   4+ 5       0.0210      0.07  Q V       |         |         |         |
   4+10       0.0215      0.07  Q V       |         |         |         |
   4+15       0.0220      0.07  Q V       |         |         |         |
```

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 4+20      0.0225      0.07  Q V       |          |          |          |
 4+25      0.0230      0.07  Q V       |          |          |          |
 4+30      0.0235      0.07  Q V       |          |          |          |
 4+35      0.0240      0.07  Q V       |          |          |          |
 4+40      0.0245      0.07  Q V       |          |          |          |
 4+45      0.0250      0.07  Q V       |          |          |          |
 4+50      0.0255      0.07  Q V       |          |          |          |
 4+55      0.0261      0.07  Q V       |          |          |          |
 5+ 0      0.0266      0.07  Q V       |          |          |          |
 5+ 5      0.0271      0.07  Q V       |          |          |          |
 5+10      0.0276      0.08  Q V       |          |          |          |
 5+15      0.0281      0.08  Q V       |          |          |          |
 5+20      0.0286      0.08  Q V       |          |          |          |
 5+25      0.0292      0.08  Q V       |          |          |          |
 5+30      0.0297      0.08  Q V       |          |          |          |
 5+35      0.0302      0.08  Q V       |          |          |          |
 5+40      0.0307      0.08  Q V       |          |          |          |
 5+45      0.0313      0.08  Q V       |          |          |          |
 5+50      0.0318      0.08  Q  V      |          |          |          |
 5+55      0.0323      0.08  Q  V      |          |          |          |
 6+ 0      0.0329      0.08  Q  V      |          |          |          |
 6+ 5      0.0334      0.08  Q  V      |          |          |          |
 6+10      0.0340      0.08  Q  V      |          |          |          |
 6+15      0.0345      0.08  Q  V      |          |          |          |
 6+20      0.0350      0.08  Q  V      |          |          |          |
 6+25      0.0356      0.08  Q  V      |          |          |          |
 6+30      0.0361      0.08  Q  V      |          |          |          |
 6+35      0.0367      0.08  Q  V      |          |          |          |
 6+40      0.0373      0.08  Q  V      |          |          |          |
 6+45      0.0378      0.08  Q  V      |          |          |          |
 6+50      0.0384      0.08  Q  V      |          |          |          |
 6+55      0.0389      0.08  Q  V      |          |          |          |
 7+ 0      0.0395      0.08  Q  V      |          |          |          |
 7+ 5      0.0401      0.08  Q  V      |          |          |          |
 7+10      0.0406      0.08  Q  V      |          |          |          |
 7+15      0.0412      0.08  Q  V      |          |          |          |
 7+20      0.0418      0.08  Q  V      |          |          |          |
 7+25      0.0424      0.08  Q   V     |          |          |          |
 7+30      0.0429      0.08  Q   V     |          |          |          |
 7+35      0.0435      0.08  Q   V     |          |          |          |
 7+40      0.0441      0.09  Q   V     |          |          |          |
 7+45      0.0447      0.09  Q   V     |          |          |          |
 7+50      0.0453      0.09  Q   V     |          |          |          |
 7+55      0.0459      0.09  Q   V     |          |          |          |
 8+ 0      0.0465      0.09  Q   V     |          |          |          |
 8+ 5      0.0471      0.09  Q   V     |          |          |          |
 8+10      0.0477      0.09  Q   V     |          |          |          |
 8+15      0.0483      0.09  Q   V     |          |          |          |
 8+20      0.0489      0.09  Q   V     |          |          |          |
 8+25      0.0495      0.09  Q   V     |          |          |          |
 8+30      0.0501      0.09  Q   V     |          |          |          |
 8+35      0.0508      0.09  Q   V     |          |          |          |
 8+40      0.0514      0.09  Q   V     |          |          |          |
 8+45      0.0520      0.09  Q   V     |          |          |          |
 8+50      0.0526      0.09  Q    V    |          |          |          |
 8+55      0.0533      0.09  Q    V    |          |          |          |
 9+ 0      0.0539      0.09  Q    V    |          |          |          |
 9+ 5      0.0546      0.09  Q    V    |          |          |          |
 9+10      0.0552      0.09  Q    V    |          |          |          |
 9+15      0.0558      0.09  Q    V    |          |          |          |
 9+20      0.0565      0.09  Q    V    |          |          |          |
 9+25      0.0572      0.10  Q    V    |          |          |          |
 9+30      0.0578      0.10  Q    V    |          |          |          |
 9+35      0.0585      0.10  Q    V    |          |          |          |
 9+40      0.0591      0.10  Q    V    |          |          |          |
 9+45      0.0598      0.10  Q    V    |          |          |          |
 9+50      0.0605      0.10  Q    V    |          |          |          |
 9+55      0.0612      0.10  Q    V    |          |          |          |
10+ 0      0.0619      0.10  Q    V    |          |          |          |
10+ 5      0.0626      0.10  Q    V    |          |          |          |
10+10      0.0632      0.10  Q     V   |          |          |          |
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10+15       0.0639      0.10  Q     V   |          |          |          |
10+20       0.0647      0.10  Q     V   |          |          |          |
10+25       0.0654      0.10  Q     V   |          |          |          |
10+30       0.0661      0.10  Q     V   |          |          |          |
10+35       0.0668      0.10  Q     V   |          |          |          |
10+40       0.0675      0.11  Q     V   |          |          |          |
10+45       0.0683      0.11  Q     V   |          |          |          |
10+50       0.0690      0.11  Q     V   |          |          |          |
10+55       0.0697      0.11  Q     V   |          |          |          |
11+ 0       0.0705      0.11  Q     V   |          |          |          |
11+ 5       0.0712      0.11  Q     V   |          |          |          |
11+10       0.0720      0.11  Q     V   |          |          |          |
11+15       0.0728      0.11  Q     V   |          |          |          |
11+20       0.0735      0.11  Q     V   |          |          |          |
11+25       0.0743      0.11  Q      V  |          |          |          |
11+30       0.0751      0.11  Q      V  |          |          |          |
11+35       0.0759      0.11  Q      V  |          |          |          |
11+40       0.0767      0.12  Q      V  |          |          |          |
11+45       0.0775      0.12  Q      V  |          |          |          |
11+50       0.0783      0.12  Q      V  |          |          |          |
11+55       0.0791      0.12  Q      V  |          |          |          |
12+ 0       0.0799      0.12  Q      V  |          |          |          |
12+ 5       0.0808      0.12  Q      V  |          |          |          |
12+10       0.0817      0.13  Q      V  |          |          |          |
12+15       0.0826      0.14  Q      V  |          |          |          |
12+20       0.0836      0.15  Q      V  |          |          |          |
12+25       0.0847      0.15  Q       V |          |          |          |
12+30       0.0857      0.15  Q       V |          |          |          |
12+35       0.0868      0.16  Q       V |          |          |          |
12+40       0.0879      0.16  Q       V |          |          |          |
12+45       0.0891      0.16  Q       V |          |          |          |
12+50       0.0902      0.16  Q       V |          |          |          |
12+55       0.0913      0.17  Q       V |          |          |          |
13+ 0       0.0925      0.17  Q       V |          |          |          |
13+ 5       0.0936      0.17  Q       V |          |          |          |
13+10       0.0948      0.17  Q        V|          |          |          |
13+15       0.0960      0.17  Q        V|          |          |          |
13+20       0.0972      0.17  Q        V|          |          |          |
13+25       0.0984      0.18  Q        V|          |          |          |
13+30       0.0997      0.18  Q        V|          |          |          |
13+35       0.1009      0.18  Q        V|          |          |          |
13+40       0.1022      0.18  Q        V|          |          |          |
13+45       0.1034      0.18  Q        V|          |          |          |
13+50       0.1047      0.19  Q        V|          |          |          |
13+55       0.1060      0.19  Q         V          |          |          |
14+ 0       0.1074      0.19  Q         V          |          |          |
14+ 5       0.1087      0.19  Q         V          |          |          |
14+10       0.1101      0.20  Q         V          |          |          |
14+15       0.1114      0.20  Q         V          |          |          |
14+20       0.1128      0.20  Q         V          |          |          |
14+25       0.1143      0.21  Q         V          |          |          |
14+30       0.1157      0.21  Q         |V         |          |          |
14+35       0.1172      0.21  Q         |V         |          |          |
14+40       0.1187      0.22  Q         |V         |          |          |
14+45       0.1202      0.22  Q         |V         |          |          |
14+50       0.1218      0.23  Q         |V         |          |          |
14+55       0.1234      0.23  Q         |V         |          |          |
15+ 0       0.1250      0.24  Q         |V         |          |          |
15+ 5       0.1267      0.24  Q         | V        |          |          |
15+10       0.1284      0.25  Q         | V        |          |          |
15+15       0.1302      0.26  |Q        | V        |          |          |
15+20       0.1320      0.26  |Q        | V        |          |          |
15+25       0.1338      0.27  |Q        | V        |          |          |
15+30       0.1356      0.26  |Q        | V        |          |          |
15+35       0.1372      0.22  Q         |  V       |          |          |
15+40       0.1385      0.20  Q         |  V       |          |          |
15+45       0.1399      0.20  Q         |  V       |          |          |
15+50       0.1414      0.21  Q         |  V       |          |          |
15+55       0.1430      0.24  Q         |  V       |          |          |
16+ 0       0.1450      0.28  |Q        |  V       |          |          |
16+ 5       0.1533      1.21  |   Q     |   V      |          |          |
```

```
16+10       0.1781      3.60  |          |   Q V  |          |          |
16+15       0.2391      8.86  |          |        | V        |    Q     |
16+20       0.2842      6.55  |          |        |     QV   |          |
16+25       0.3052      3.04  |          | Q      |        V |          |
16+30       0.3196      2.10  |        Q |        |          V          |
16+35       0.3304      1.57  |      Q   |        |          |V         |
16+40       0.3388      1.22  |    Q     |        |          | V        |
16+45       0.3453      0.93  |  Q       |        |          | V        |
16+50       0.3501      0.70  | Q        |        |          |  V       |
16+55       0.3535      0.49  |Q         |        |          |  V       |
17+ 0       0.3560      0.36  |Q         |        |          |  V       |
17+ 5       0.3583      0.34  |Q         |        |          |   V      |
17+10       0.3603      0.30  |Q         |        |          |   V      |
17+15       0.3623      0.29  |Q         |        |          |   V      |
17+20       0.3642      0.28  |Q         |        |          |   V      |
17+25       0.3659      0.24  Q          |        |          |   V      |
17+30       0.3674      0.22  Q          |        |          |   V      |
17+35       0.3687      0.19  Q          |        |          |    V     |
17+40       0.3700      0.19  Q          |        |          |    V     |
17+45       0.3712      0.18  Q          |        |          |    V     |
17+50       0.3725      0.18  Q          |        |          |    V     |
17+55       0.3737      0.17  Q          |        |          |    V     |
18+ 0       0.3748      0.17  Q          |        |          |    V     |
18+ 5       0.3760      0.17  Q          |        |          |    V     |
18+10       0.3771      0.16  Q          |        |          |    V     |
18+15       0.3781      0.15  Q          |        |          |    V     |
18+20       0.3790      0.14  Q          |        |          |     V    |
18+25       0.3799      0.13  Q          |        |          |     V    |
18+30       0.3808      0.13  Q          |        |          |     V    |
18+35       0.3816      0.12  Q          |        |          |     V    |
18+40       0.3824      0.12  Q          |        |          |     V    |
18+45       0.3832      0.12  Q          |        |          |     V    |
18+50       0.3840      0.11  Q          |        |          |     V    |
18+55       0.3848      0.11  Q          |        |          |     V    |
19+ 0       0.3855      0.11  Q          |        |          |     V    |
19+ 5       0.3863      0.11  Q          |        |          |     V    |
19+10       0.3870      0.11  Q          |        |          |     V    |
19+15       0.3877      0.10  Q          |        |          |     V    |
19+20       0.3884      0.10  Q          |        |          |     V    |
19+25       0.3891      0.10  Q          |        |          |      V   |
19+30       0.3898      0.10  Q          |        |          |      V   |
19+35       0.3905      0.10  Q          |        |          |      V   |
19+40       0.3912      0.10  Q          |        |          |      V   |
19+45       0.3918      0.10  Q          |        |          |      V   |
19+50       0.3925      0.10  Q          |        |          |      V   |
19+55       0.3931      0.09  Q          |        |          |      V   |
20+ 0       0.3938      0.09  Q          |        |          |      V   |
20+ 5       0.3944      0.09  Q          |        |          |      V   |
20+10       0.3950      0.09  Q          |        |          |      V   |
20+15       0.3957      0.09  Q          |        |          |      V   |
20+20       0.3963      0.09  Q          |        |          |      V   |
20+25       0.3969      0.09  Q          |        |          |      V   |
20+30       0.3975      0.09  Q          |        |          |      V   |
20+35       0.3981      0.09  Q          |        |          |      V   |
20+40       0.3987      0.09  Q          |        |          |      V   |
20+45       0.3992      0.08  Q          |        |          |       V  |
20+50       0.3998      0.08  Q          |        |          |       V  |
20+55       0.4004      0.08  Q          |        |          |       V  |
21+ 0       0.4010      0.08  Q          |        |          |       V  |
21+ 5       0.4015      0.08  Q          |        |          |       V  |
21+10       0.4021      0.08  Q          |        |          |       V  |
21+15       0.4026      0.08  Q          |        |          |       V  |
21+20       0.4032      0.08  Q          |        |          |       V  |
21+25       0.4037      0.08  Q          |        |          |       V  |
21+30       0.4043      0.08  Q          |        |          |       V  |
21+35       0.4048      0.08  Q          |        |          |       V  |
21+40       0.4053      0.08  Q          |        |          |       V  |
21+45       0.4059      0.08  Q          |        |          |       V  |
21+50       0.4064      0.08  Q          |        |          |       V  |
21+55       0.4069      0.08  Q          |        |          |       V  |
22+ 0       0.4074      0.07  Q          |        |          |       V  |
```

```
  22+ 5       0.4079      0.07  Q          |          |          |       V |
  22+10       0.4084      0.07  Q          |          |          |       V |
  22+15       0.4089      0.07  Q          |          |          |       V |
  22+20       0.4094      0.07  Q          |          |          |       V |
  22+25       0.4099      0.07  Q          |          |          |        V|
  22+30       0.4104      0.07  Q          |          |          |        V|
  22+35       0.4109      0.07  Q          |          |          |        V|
  22+40       0.4114      0.07  Q          |          |          |        V|
  22+45       0.4119      0.07  Q          |          |          |        V|
  22+50       0.4124      0.07  Q          |          |          |        V|
  22+55       0.4128      0.07  Q          |          |          |        V|
  23+ 0       0.4133      0.07  Q          |          |          |        V|
  23+ 5       0.4138      0.07  Q          |          |          |        V|
  23+10       0.4142      0.07  Q          |          |          |        V|
  23+15       0.4147      0.07  Q          |          |          |        V|
  23+20       0.4152      0.07  Q          |          |          |        V|
  23+25       0.4156      0.07  Q          |          |          |        V|
  23+30       0.4161      0.07  Q          |          |          |        V|
  23+35       0.4165      0.07  Q          |          |          |        V|
  23+40       0.4170      0.07  Q          |          |          |        V|
  23+45       0.4174      0.07  Q          |          |          |        V|
  23+50       0.4179      0.06  Q          |          |          |        V|
  23+55       0.4183      0.06  Q          |          |          |        V|
  24+ 0       0.4188      0.06  Q          |          |          |        V|
  24+ 5       0.4192      0.06  Q          |          |          |        V|
  24+10       0.4196      0.05  Q          |          |          |        V|
  24+15       0.4198      0.03  Q          |          |          |        V|
  24+20       0.4199      0.02  Q          |          |          |        V|
  24+25       0.4200      0.01  Q          |          |          |        V|
  24+30       0.4201      0.01  Q          |          |          |        V|
  24+35       0.4202      0.01  Q          |          |          |        V|
  24+40       0.4202      0.00  Q          |          |          |        V|
  24+45       0.4202      0.00  Q          |          |          |        V|
  24+50       0.4202      0.00  Q          |          |          |        V|
  24+55       0.4202      0.00  Q          |          |          |        V|
  25+ 0       0.4202      0.00  Q          |          |          |        V|
  25+ 5       0.4202      0.00  Q          |          |          |        V|
  25+10       0.4202      0.00  Q          |          |          |        V|
  25+15       0.4202      0.00  Q          |          |          |        V|
  25+20       0.4202      0.00  Q          |          |          |        V|
  25+25       0.4202      0.00  Q          |          |          |         V
--------------------------------------------------------------------------
```

Area 'D' – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'D'
5 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             9.52            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             9.52            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             9.52           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             9.52            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             9.52            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             9.52           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 68.7      49.4          9.52      1.000     0.816    1.000    0.816

Area-averaged adjusted loss rate Fm (In/Hr) =  0.816

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 9.52 | 1.000 | 68.7 | 49.4 | 10.23 | 0.178 |

Area-averaged catchment yield fraction, Y = 0.178
Area-averaged low loss fraction, Yb = 0.822
User entry of time of concentration = 0.262 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 9.52(Ac.)
Catchment Lag time = 0.210 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 39.7583
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.816(In/Hr)
Average low loss rate fraction (Yb) = 0.822 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 9.52(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.690(In)
1-hour factor = 1.000 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 115.13 (CFS)) | |
| 1 | 3.107 | 3.578 |
| 2 | 14.718 | 13.368 |
| 3 | 45.653 | 35.616 |
| 4 | 68.346 | 26.128 |
| 5 | 78.353 | 11.521 |
| 6 | 85.032 | 7.690 |
| 7 | 89.767 | 5.452 |
| 8 | 93.189 | 3.940 |
| 9 | 95.606 | 2.782 |
| 10 | 97.231 | 1.872 |
| 11 | 98.108 | 1.010 |
| 12 | 98.568 | 0.529 |
| 13 | 98.955 | 0.446 |
| 14 | 99.222 | 0.306 |
| 15 | 99.512 | 0.334 |
| 16 | 99.764 | 0.291 |
| 17 | 99.907 | 0.164 |
| 18 | 100.000 | 0.107 |

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| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4029 | 0.4029 |
| 2 | 0.4960 | 0.0931 |
| 3 | 0.5602 | 0.0642 |
| 4 | 0.6107 | 0.0505 |
| 5 | 0.6530 | 0.0423 |
| 6 | 0.6897 | 0.0367 |
| 7 | 0.7223 | 0.0326 |
| 8 | 0.7519 | 0.0295 |

| | | |
|---|---|---|
| 9 | 0.7789 | 0.0270 |
| 10 | 0.8039 | 0.0250 |
| 11 | 0.8272 | 0.0233 |
| 12 | 0.8491 | 0.0219 |
| 13 | 0.8924 | 0.0433 |
| 14 | 0.9345 | 0.0421 |
| 15 | 0.9754 | 0.0409 |
| 16 | 1.0154 | 0.0399 |
| 17 | 1.0544 | 0.0390 |
| 18 | 1.0925 | 0.0381 |
| 19 | 1.1298 | 0.0373 |
| 20 | 1.1664 | 0.0366 |
| 21 | 1.2023 | 0.0359 |
| 22 | 1.2376 | 0.0353 |
| 23 | 1.2723 | 0.0347 |
| 24 | 1.3064 | 0.0341 |
| 25 | 1.3400 | 0.0336 |
| 26 | 1.3730 | 0.0331 |
| 27 | 1.4056 | 0.0326 |
| 28 | 1.4378 | 0.0321 |
| 29 | 1.4695 | 0.0317 |
| 30 | 1.5008 | 0.0313 |
| 31 | 1.5317 | 0.0309 |
| 32 | 1.5622 | 0.0305 |
| 33 | 1.5923 | 0.0302 |
| 34 | 1.6222 | 0.0298 |
| 35 | 1.6517 | 0.0295 |
| 36 | 1.6808 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7383 | 0.0286 |
| 39 | 1.7665 | 0.0283 |
| 40 | 1.7945 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8498 | 0.0275 |
| 43 | 1.8770 | 0.0272 |
| 44 | 1.9040 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9573 | 0.0265 |
| 47 | 1.9836 | 0.0263 |
| 48 | 2.0098 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1122 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1623 | 0.0250 |
| 55 | 2.1871 | 0.0248 |
| 56 | 2.2117 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2846 | 0.0241 |
| 60 | 2.3086 | 0.0240 |
| 61 | 2.3324 | 0.0238 |
| 62 | 2.3561 | 0.0237 |
| 63 | 2.3797 | 0.0235 |
| 64 | 2.4031 | 0.0234 |
| 65 | 2.4263 | 0.0233 |
| 66 | 2.4494 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5180 | 0.0227 |
| 70 | 2.5406 | 0.0226 |
| 71 | 2.5631 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6278 | 0.0211 |
| 75 | 2.6487 | 0.0210 |
| 76 | 2.6696 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7109 | 0.0206 |
| 79 | 2.7314 | 0.0205 |

| | | |
|---|---|---|
| 80 | 2.7519 | 0.0204 |
| 81 | 2.7722 | 0.0203 |
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |
| 84 | 2.8325 | 0.0200 |
| 85 | 2.8524 | 0.0199 |
| 86 | 2.8722 | 0.0198 |
| 87 | 2.8919 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9311 | 0.0195 |
| 90 | 2.9506 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0465 | 0.0190 |
| 96 | 3.0655 | 0.0189 |
| 97 | 3.0843 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1218 | 0.0187 |
| 100 | 3.1404 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1775 | 0.0185 |
| 103 | 3.1959 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2325 | 0.0183 |
| 106 | 3.2506 | 0.0182 |
| 107 | 3.2688 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3405 | 0.0178 |
| 112 | 3.3583 | 0.0178 |
| 113 | 3.3760 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4288 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4810 | 0.0173 |
| 120 | 3.4983 | 0.0173 |
| 121 | 3.5155 | 0.0172 |
| 122 | 3.5327 | 0.0172 |
| 123 | 3.5498 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6008 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6345 | 0.0168 |
| 129 | 3.6513 | 0.0168 |
| 130 | 3.6680 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7013 | 0.0166 |
| 133 | 3.7179 | 0.0166 |
| 134 | 3.7344 | 0.0165 |
| 135 | 3.7509 | 0.0165 |
| 136 | 3.7673 | 0.0164 |
| 137 | 3.7837 | 0.0164 |
| 138 | 3.8000 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8325 | 0.0162 |
| 141 | 3.8487 | 0.0162 |
| 142 | 3.8648 | 0.0161 |
| 143 | 3.8809 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9448 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9765 | 0.0158 |
| 150 | 3.9923 | 0.0158 |

| | | |
|---|---|---|
| 151 | 4.0080 | 0.0157 |
| 152 | 4.0237 | 0.0157 |
| 153 | 4.0394 | 0.0156 |
| 154 | 4.0550 | 0.0156 |
| 155 | 4.0705 | 0.0156 |
| 156 | 4.0861 | 0.0155 |
| 157 | 4.1015 | 0.0155 |
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1477 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1784 | 0.0153 |
| 163 | 4.1936 | 0.0152 |
| 164 | 4.2088 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2542 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2843 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3142 | 0.0150 |
| 172 | 4.3292 | 0.0149 |
| 173 | 4.3440 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4032 | 0.0147 |
| 178 | 4.4179 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4472 | 0.0146 |
| 181 | 4.4618 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4910 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5200 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5488 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5776 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6062 | 0.0143 |
| 192 | 4.6204 | 0.0143 |
| 193 | 4.6346 | 0.0142 |
| 194 | 4.6488 | 0.0142 |
| 195 | 4.6630 | 0.0142 |
| 196 | 4.6772 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7053 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7474 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7892 | 0.0139 |
| 205 | 4.8031 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8721 | 0.0137 |
| 211 | 4.8858 | 0.0137 |
| 212 | 4.8995 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9268 | 0.0136 |
| 215 | 4.9405 | 0.0136 |
| 216 | 4.9540 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9811 | 0.0135 |
| 219 | 4.9947 | 0.0135 |
| 220 | 5.0081 | 0.0135 |
| 221 | 5.0216 | 0.0135 |

| | | |
|---|---|---|
| 222 | 5.0350 | 0.0134 |
| 223 | 5.0485 | 0.0134 |
| 224 | 5.0618 | 0.0134 |
| 225 | 5.0752 | 0.0134 |
| 226 | 5.0885 | 0.0133 |
| 227 | 5.1019 | 0.0133 |
| 228 | 5.1152 | 0.0133 |
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1417 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1813 | 0.0132 |
| 234 | 5.1944 | 0.0132 |
| 235 | 5.2075 | 0.0131 |
| 236 | 5.2206 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2728 | 0.0130 |
| 241 | 5.2858 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3118 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3633 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4273 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5035 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5413 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5663 | 0.0125 |
| 264 | 5.5789 | 0.0125 |
| 265 | 5.5914 | 0.0125 |
| 266 | 5.6038 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6287 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6660 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7521 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8131 | 0.0122 |
| 284 | 5.8253 | 0.0121 |
| 285 | 5.8374 | 0.0121 |
| 286 | 5.8495 | 0.0121 |
| 287 | 5.8616 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 0.0121 | 0.0099 | 0.0021 |
| 2 | 0.0121 | 0.0100 | 0.0021 |
| 3 | 0.0121 | 0.0100 | 0.0022 |
| 4 | 0.0121 | 0.0100 | 0.0022 |
| 5 | 0.0122 | 0.0100 | 0.0022 |
| 6 | 0.0122 | 0.0100 | 0.0022 |
| 7 | 0.0122 | 0.0101 | 0.0022 |
| 8 | 0.0123 | 0.0101 | 0.0022 |
| 9 | 0.0123 | 0.0101 | 0.0022 |
| 10 | 0.0123 | 0.0101 | 0.0022 |
| 11 | 0.0123 | 0.0102 | 0.0022 |
| 12 | 0.0124 | 0.0102 | 0.0022 |
| 13 | 0.0124 | 0.0102 | 0.0022 |
| 14 | 0.0124 | 0.0102 | 0.0022 |
| 15 | 0.0125 | 0.0102 | 0.0022 |
| 16 | 0.0125 | 0.0103 | 0.0022 |
| 17 | 0.0125 | 0.0103 | 0.0022 |
| 18 | 0.0125 | 0.0103 | 0.0022 |
| 19 | 0.0126 | 0.0103 | 0.0022 |
| 20 | 0.0126 | 0.0104 | 0.0022 |
| 21 | 0.0126 | 0.0104 | 0.0022 |
| 22 | 0.0127 | 0.0104 | 0.0022 |
| 23 | 0.0127 | 0.0104 | 0.0023 |
| 24 | 0.0127 | 0.0105 | 0.0023 |
| 25 | 0.0128 | 0.0105 | 0.0023 |
| 26 | 0.0128 | 0.0105 | 0.0023 |
| 27 | 0.0128 | 0.0105 | 0.0023 |
| 28 | 0.0128 | 0.0106 | 0.0023 |
| 29 | 0.0129 | 0.0106 | 0.0023 |
| 30 | 0.0129 | 0.0106 | 0.0023 |
| 31 | 0.0129 | 0.0107 | 0.0023 |
| 32 | 0.0130 | 0.0107 | 0.0023 |
| 33 | 0.0130 | 0.0107 | 0.0023 |
| 34 | 0.0130 | 0.0107 | 0.0023 |
| 35 | 0.0131 | 0.0108 | 0.0023 |
| 36 | 0.0131 | 0.0108 | 0.0023 |
| 37 | 0.0132 | 0.0108 | 0.0023 |
| 38 | 0.0132 | 0.0108 | 0.0023 |
| 39 | 0.0132 | 0.0109 | 0.0023 |
| 40 | 0.0132 | 0.0109 | 0.0024 |
| 41 | 0.0133 | 0.0109 | 0.0024 |
| 42 | 0.0133 | 0.0110 | 0.0024 |
| 43 | 0.0134 | 0.0110 | 0.0024 |
| 44 | 0.0134 | 0.0110 | 0.0024 |
| 45 | 0.0134 | 0.0111 | 0.0024 |
| 46 | 0.0135 | 0.0111 | 0.0024 |
| 47 | 0.0135 | 0.0111 | 0.0024 |
| 48 | 0.0135 | 0.0111 | 0.0024 |
| 49 | 0.0136 | 0.0112 | 0.0024 |
| 50 | 0.0136 | 0.0112 | 0.0024 |
| 51 | 0.0137 | 0.0112 | 0.0024 |
| 52 | 0.0137 | 0.0113 | 0.0024 |
| 53 | 0.0137 | 0.0113 | 0.0024 |
| 54 | 0.0138 | 0.0113 | 0.0024 |
| 55 | 0.0138 | 0.0114 | 0.0025 |
| 56 | 0.0139 | 0.0114 | 0.0025 |
| 57 | 0.0139 | 0.0114 | 0.0025 |
| 58 | 0.0139 | 0.0115 | 0.0025 |
| 59 | 0.0140 | 0.0115 | 0.0025 |
| 60 | 0.0140 | 0.0115 | 0.0025 |
| 61 | 0.0141 | 0.0116 | 0.0025 |
| 62 | 0.0141 | 0.0116 | 0.0025 |
| 63 | 0.0142 | 0.0117 | 0.0025 |
| 64 | 0.0142 | 0.0117 | 0.0025 |
| 65 | 0.0143 | 0.0117 | 0.0025 |
| 66 | 0.0143 | 0.0118 | 0.0025 |
| 67 | 0.0144 | 0.0118 | 0.0025 |
| 68 | 0.0144 | 0.0118 | 0.0026 |
| 69 | 0.0144 | 0.0119 | 0.0026 |
| 70 | 0.0145 | 0.0119 | 0.0026 |

| | | | |
|---|---|---|---|
| 71 | 0.0145 | 0.0120 | 0.0026 |
| 72 | 0.0146 | 0.0120 | 0.0026 |
| 73 | 0.0146 | 0.0120 | 0.0026 |
| 74 | 0.0147 | 0.0121 | 0.0026 |
| 75 | 0.0147 | 0.0121 | 0.0026 |
| 76 | 0.0148 | 0.0122 | 0.0026 |
| 77 | 0.0148 | 0.0122 | 0.0026 |
| 78 | 0.0149 | 0.0122 | 0.0026 |
| 79 | 0.0150 | 0.0123 | 0.0027 |
| 80 | 0.0150 | 0.0123 | 0.0027 |
| 81 | 0.0151 | 0.0124 | 0.0027 |
| 82 | 0.0151 | 0.0124 | 0.0027 |
| 83 | 0.0152 | 0.0125 | 0.0027 |
| 84 | 0.0152 | 0.0125 | 0.0027 |
| 85 | 0.0153 | 0.0126 | 0.0027 |
| 86 | 0.0153 | 0.0126 | 0.0027 |
| 87 | 0.0154 | 0.0127 | 0.0027 |
| 88 | 0.0154 | 0.0127 | 0.0027 |
| 89 | 0.0155 | 0.0128 | 0.0028 |
| 90 | 0.0156 | 0.0128 | 0.0028 |
| 91 | 0.0156 | 0.0129 | 0.0028 |
| 92 | 0.0157 | 0.0129 | 0.0028 |
| 93 | 0.0158 | 0.0130 | 0.0028 |
| 94 | 0.0158 | 0.0130 | 0.0028 |
| 95 | 0.0159 | 0.0131 | 0.0028 |
| 96 | 0.0160 | 0.0131 | 0.0028 |
| 97 | 0.0160 | 0.0132 | 0.0028 |
| 98 | 0.0161 | 0.0132 | 0.0029 |
| 99 | 0.0162 | 0.0133 | 0.0029 |
| 100 | 0.0162 | 0.0133 | 0.0029 |
| 101 | 0.0163 | 0.0134 | 0.0029 |
| 102 | 0.0164 | 0.0135 | 0.0029 |
| 103 | 0.0165 | 0.0135 | 0.0029 |
| 104 | 0.0165 | 0.0136 | 0.0029 |
| 105 | 0.0166 | 0.0137 | 0.0030 |
| 106 | 0.0167 | 0.0137 | 0.0030 |
| 107 | 0.0168 | 0.0138 | 0.0030 |
| 108 | 0.0168 | 0.0138 | 0.0030 |
| 109 | 0.0169 | 0.0139 | 0.0030 |
| 110 | 0.0170 | 0.0140 | 0.0030 |
| 111 | 0.0171 | 0.0141 | 0.0030 |
| 112 | 0.0172 | 0.0141 | 0.0030 |
| 113 | 0.0173 | 0.0142 | 0.0031 |
| 114 | 0.0173 | 0.0143 | 0.0031 |
| 115 | 0.0175 | 0.0144 | 0.0031 |
| 116 | 0.0175 | 0.0144 | 0.0031 |
| 117 | 0.0177 | 0.0145 | 0.0031 |
| 118 | 0.0177 | 0.0146 | 0.0031 |
| 119 | 0.0178 | 0.0147 | 0.0032 |
| 120 | 0.0179 | 0.0147 | 0.0032 |
| 121 | 0.0180 | 0.0148 | 0.0032 |
| 122 | 0.0181 | 0.0149 | 0.0032 |
| 123 | 0.0183 | 0.0150 | 0.0032 |
| 124 | 0.0183 | 0.0151 | 0.0033 |
| 125 | 0.0185 | 0.0152 | 0.0033 |
| 126 | 0.0186 | 0.0153 | 0.0033 |
| 127 | 0.0187 | 0.0154 | 0.0033 |
| 128 | 0.0188 | 0.0154 | 0.0033 |
| 129 | 0.0189 | 0.0156 | 0.0034 |
| 130 | 0.0190 | 0.0156 | 0.0034 |
| 131 | 0.0192 | 0.0158 | 0.0034 |
| 132 | 0.0193 | 0.0159 | 0.0034 |
| 133 | 0.0194 | 0.0160 | 0.0035 |
| 134 | 0.0195 | 0.0161 | 0.0035 |
| 135 | 0.0197 | 0.0162 | 0.0035 |
| 136 | 0.0198 | 0.0163 | 0.0035 |
| 137 | 0.0200 | 0.0165 | 0.0036 |
| 138 | 0.0201 | 0.0165 | 0.0036 |
| 139 | 0.0203 | 0.0167 | 0.0036 |
| 140 | 0.0204 | 0.0168 | 0.0036 |
| 141 | 0.0206 | 0.0170 | 0.0037 |

| | | | |
|---|---|---|---|
| 142 | 0.0207 | 0.0171 | 0.0037 |
| 143 | 0.0210 | 0.0172 | 0.0037 |
| 144 | 0.0211 | 0.0173 | 0.0037 |
| 145 | 0.0224 | 0.0184 | 0.0040 |
| 146 | 0.0225 | 0.0185 | 0.0040 |
| 147 | 0.0227 | 0.0187 | 0.0040 |
| 148 | 0.0229 | 0.0188 | 0.0041 |
| 149 | 0.0231 | 0.0190 | 0.0041 |
| 150 | 0.0233 | 0.0191 | 0.0041 |
| 151 | 0.0235 | 0.0194 | 0.0042 |
| 152 | 0.0237 | 0.0195 | 0.0042 |
| 153 | 0.0240 | 0.0197 | 0.0043 |
| 154 | 0.0241 | 0.0198 | 0.0043 |
| 155 | 0.0245 | 0.0201 | 0.0043 |
| 156 | 0.0246 | 0.0202 | 0.0044 |
| 157 | 0.0250 | 0.0205 | 0.0044 |
| 158 | 0.0251 | 0.0207 | 0.0045 |
| 159 | 0.0255 | 0.0210 | 0.0045 |
| 160 | 0.0257 | 0.0211 | 0.0046 |
| 161 | 0.0261 | 0.0215 | 0.0046 |
| 162 | 0.0263 | 0.0217 | 0.0047 |
| 163 | 0.0268 | 0.0220 | 0.0048 |
| 164 | 0.0270 | 0.0222 | 0.0048 |
| 165 | 0.0275 | 0.0226 | 0.0049 |
| 166 | 0.0277 | 0.0228 | 0.0049 |
| 167 | 0.0283 | 0.0233 | 0.0050 |
| 168 | 0.0286 | 0.0235 | 0.0051 |
| 169 | 0.0292 | 0.0240 | 0.0052 |
| 170 | 0.0295 | 0.0243 | 0.0052 |
| 171 | 0.0302 | 0.0248 | 0.0054 |
| 172 | 0.0305 | 0.0251 | 0.0054 |
| 173 | 0.0313 | 0.0257 | 0.0056 |
| 174 | 0.0317 | 0.0261 | 0.0056 |
| 175 | 0.0326 | 0.0268 | 0.0058 |
| 176 | 0.0331 | 0.0272 | 0.0059 |
| 177 | 0.0341 | 0.0281 | 0.0061 |
| 178 | 0.0347 | 0.0285 | 0.0062 |
| 179 | 0.0359 | 0.0295 | 0.0064 |
| 180 | 0.0366 | 0.0301 | 0.0065 |
| 181 | 0.0381 | 0.0314 | 0.0068 |
| 182 | 0.0390 | 0.0321 | 0.0069 |
| 183 | 0.0409 | 0.0337 | 0.0073 |
| 184 | 0.0421 | 0.0346 | 0.0075 |
| 185 | 0.0219 | 0.0180 | 0.0039 |
| 186 | 0.0233 | 0.0192 | 0.0041 |
| 187 | 0.0270 | 0.0222 | 0.0048 |
| 188 | 0.0295 | 0.0243 | 0.0052 |
| 189 | 0.0367 | 0.0302 | 0.0065 |
| 190 | 0.0423 | 0.0348 | 0.0075 |
| 191 | 0.0642 | 0.0528 | 0.0114 |
| 192 | 0.0931 | 0.0680 | 0.0251 |
| 193 | 0.4029 | 0.0680 | 0.3349 |
| 194 | 0.0505 | 0.0415 | 0.0090 |
| 195 | 0.0326 | 0.0268 | 0.0058 |
| 196 | 0.0250 | 0.0206 | 0.0044 |
| 197 | 0.0433 | 0.0356 | 0.0077 |
| 198 | 0.0399 | 0.0328 | 0.0071 |
| 199 | 0.0373 | 0.0307 | 0.0066 |
| 200 | 0.0353 | 0.0290 | 0.0063 |
| 201 | 0.0336 | 0.0276 | 0.0060 |
| 202 | 0.0321 | 0.0264 | 0.0057 |
| 203 | 0.0309 | 0.0254 | 0.0055 |
| 204 | 0.0298 | 0.0245 | 0.0053 |
| 205 | 0.0289 | 0.0237 | 0.0051 |
| 206 | 0.0280 | 0.0230 | 0.0050 |
| 207 | 0.0272 | 0.0224 | 0.0048 |
| 208 | 0.0265 | 0.0218 | 0.0047 |
| 209 | 0.0259 | 0.0213 | 0.0046 |
| 210 | 0.0253 | 0.0208 | 0.0045 |
| 211 | 0.0248 | 0.0204 | 0.0044 |
| 212 | 0.0243 | 0.0200 | 0.0043 |

| | | | |
|---|---|---|---|
| 213 | 0.0238 | 0.0196 | 0.0042 |
| 214 | 0.0234 | 0.0192 | 0.0042 |
| 215 | 0.0230 | 0.0189 | 0.0041 |
| 216 | 0.0226 | 0.0186 | 0.0040 |
| 217 | 0.0212 | 0.0174 | 0.0038 |
| 218 | 0.0208 | 0.0171 | 0.0037 |
| 219 | 0.0205 | 0.0169 | 0.0036 |
| 220 | 0.0202 | 0.0166 | 0.0036 |
| 221 | 0.0199 | 0.0164 | 0.0035 |
| 222 | 0.0196 | 0.0161 | 0.0035 |
| 223 | 0.0194 | 0.0159 | 0.0034 |
| 224 | 0.0191 | 0.0157 | 0.0034 |
| 225 | 0.0189 | 0.0155 | 0.0033 |
| 226 | 0.0186 | 0.0153 | 0.0033 |
| 227 | 0.0184 | 0.0151 | 0.0033 |
| 228 | 0.0182 | 0.0150 | 0.0032 |
| 229 | 0.0180 | 0.0148 | 0.0032 |
| 230 | 0.0178 | 0.0146 | 0.0032 |
| 231 | 0.0176 | 0.0145 | 0.0031 |
| 232 | 0.0174 | 0.0143 | 0.0031 |
| 233 | 0.0172 | 0.0142 | 0.0031 |
| 234 | 0.0171 | 0.0140 | 0.0030 |
| 235 | 0.0169 | 0.0139 | 0.0030 |
| 236 | 0.0167 | 0.0138 | 0.0030 |
| 237 | 0.0166 | 0.0136 | 0.0029 |
| 238 | 0.0164 | 0.0135 | 0.0029 |
| 239 | 0.0163 | 0.0134 | 0.0029 |
| 240 | 0.0161 | 0.0133 | 0.0029 |
| 241 | 0.0160 | 0.0132 | 0.0028 |
| 242 | 0.0159 | 0.0130 | 0.0028 |
| 243 | 0.0157 | 0.0129 | 0.0028 |
| 244 | 0.0156 | 0.0128 | 0.0028 |
| 245 | 0.0155 | 0.0127 | 0.0027 |
| 246 | 0.0154 | 0.0126 | 0.0027 |
| 247 | 0.0152 | 0.0125 | 0.0027 |
| 248 | 0.0151 | 0.0124 | 0.0027 |
| 249 | 0.0150 | 0.0124 | 0.0027 |
| 250 | 0.0149 | 0.0123 | 0.0026 |
| 251 | 0.0148 | 0.0122 | 0.0026 |
| 252 | 0.0147 | 0.0121 | 0.0026 |
| 253 | 0.0146 | 0.0120 | 0.0026 |
| 254 | 0.0145 | 0.0119 | 0.0026 |
| 255 | 0.0144 | 0.0119 | 0.0026 |
| 256 | 0.0143 | 0.0118 | 0.0025 |
| 257 | 0.0142 | 0.0117 | 0.0025 |
| 258 | 0.0141 | 0.0116 | 0.0025 |
| 259 | 0.0141 | 0.0116 | 0.0025 |
| 260 | 0.0140 | 0.0115 | 0.0025 |
| 261 | 0.0139 | 0.0114 | 0.0025 |
| 262 | 0.0138 | 0.0114 | 0.0025 |
| 263 | 0.0137 | 0.0113 | 0.0024 |
| 264 | 0.0136 | 0.0112 | 0.0024 |
| 265 | 0.0136 | 0.0112 | 0.0024 |
| 266 | 0.0135 | 0.0111 | 0.0024 |
| 267 | 0.0134 | 0.0110 | 0.0024 |
| 268 | 0.0133 | 0.0110 | 0.0024 |
| 269 | 0.0133 | 0.0109 | 0.0024 |
| 270 | 0.0132 | 0.0109 | 0.0023 |
| 271 | 0.0131 | 0.0108 | 0.0023 |
| 272 | 0.0131 | 0.0107 | 0.0023 |
| 273 | 0.0130 | 0.0107 | 0.0023 |
| 274 | 0.0129 | 0.0106 | 0.0023 |
| 275 | 0.0129 | 0.0106 | 0.0023 |
| 276 | 0.0128 | 0.0105 | 0.0023 |
| 277 | 0.0127 | 0.0105 | 0.0023 |
| 278 | 0.0127 | 0.0104 | 0.0023 |
| 279 | 0.0126 | 0.0104 | 0.0022 |
| 280 | 0.0126 | 0.0103 | 0.0022 |
| 281 | 0.0125 | 0.0103 | 0.0022 |
| 282 | 0.0124 | 0.0102 | 0.0022 |
| 283 | 0.0124 | 0.0102 | 0.0022 |

```
      284              0.0123           0.0101              0.0022
      285              0.0123           0.0101              0.0022
      286              0.0122           0.0101              0.0022
      287              0.0122           0.0100              0.0022
      288              0.0121           0.0100              0.0022
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      4.56(In)
      Total effective rainfall =      1.31(In)
      Peak flow rate in flood hydrograph =     13.01(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0003      0.04  Q         |         |         |         |
  0+15       0.0011      0.11  Q         |         |         |         |
  0+20       0.0022      0.17  Q         |         |         |         |
  0+25       0.0036      0.19  Q         |         |         |         |
  0+30       0.0050      0.21  Q         |         |         |         |
  0+35       0.0066      0.22  Q         |         |         |         |
  0+40       0.0082      0.23  Q         |         |         |         |
  0+45       0.0098      0.24  Q         |         |         |         |
  0+50       0.0115      0.24  Q         |         |         |         |
  0+55       0.0132      0.25  Q         |         |         |         |
  1+ 0       0.0149      0.25  Q         |         |         |         |
  1+ 5       0.0166      0.25  Q         |         |         |         |
  1+10       0.0183      0.25  Q         |         |         |         |
  1+15       0.0201      0.25  Q         |         |         |         |
  1+20       0.0218      0.25  Q         |         |         |         |
  1+25       0.0235      0.25  Q         |         |         |         |
  1+30       0.0253      0.25  Q         |         |         |         |
  1+35       0.0271      0.26  QV        |         |         |         |
  1+40       0.0288      0.26  QV        |         |         |         |
  1+45       0.0306      0.26  QV        |         |         |         |
  1+50       0.0323      0.26  QV        |         |         |         |
  1+55       0.0341      0.26  QV        |         |         |         |
  2+ 0       0.0359      0.26  QV        |         |         |         |
  2+ 5       0.0377      0.26  QV        |         |         |         |
  2+10       0.0395      0.26  QV        |         |         |         |
  2+15       0.0412      0.26  QV        |         |         |         |
  2+20       0.0430      0.26  QV        |         |         |         |
  2+25       0.0448      0.26  QV        |         |         |         |
  2+30       0.0466      0.26  QV        |         |         |         |
  2+35       0.0485      0.26  QV        |         |         |         |
  2+40       0.0503      0.26  QV        |         |         |         |
  2+45       0.0521      0.26  QV        |         |         |         |
  2+50       0.0539      0.26  Q V       |         |         |         |
  2+55       0.0557      0.27  Q V       |         |         |         |
  3+ 0       0.0576      0.27  Q V       |         |         |         |
  3+ 5       0.0594      0.27  Q V       |         |         |         |
  3+10       0.0612      0.27  Q V       |         |         |         |
  3+15       0.0631      0.27  Q V       |         |         |         |
  3+20       0.0649      0.27  Q V       |         |         |         |
  3+25       0.0668      0.27  Q V       |         |         |         |
  3+30       0.0686      0.27  Q V       |         |         |         |
  3+35       0.0705      0.27  Q V       |         |         |         |
  3+40       0.0724      0.27  Q V       |         |         |         |
  3+45       0.0742      0.27  Q V       |         |         |         |
  3+50       0.0761      0.27  Q V       |         |         |         |
  3+55       0.0780      0.27  Q V       |         |         |         |
  4+ 0       0.0799      0.27  Q  V      |         |         |         |
  4+ 5       0.0818      0.28  Q  V      |         |         |         |
  4+10       0.0837      0.28  Q  V      |         |         |         |
  4+15       0.0856      0.28  Q  V      |         |         |         |
```

```
 4+20      0.0875      0.28  Q  V      |          |          |          |
 4+25      0.0894      0.28  Q  V      |          |          |          |
 4+30      0.0913      0.28  Q  V      |          |          |          |
 4+35      0.0933      0.28  Q  V      |          |          |          |
 4+40      0.0952      0.28  Q  V      |          |          |          |
 4+45      0.0971      0.28  Q  V      |          |          |          |
 4+50      0.0991      0.28  Q  V      |          |          |          |
 4+55      0.1010      0.28  Q  V      |          |          |          |
 5+ 0      0.1030      0.28  Q  V      |          |          |          |
 5+ 5      0.1049      0.28  Q   V     |          |          |          |
 5+10      0.1069      0.29  Q   V     |          |          |          |
 5+15      0.1089      0.29  Q   V     |          |          |          |
 5+20      0.1109      0.29  Q   V     |          |          |          |
 5+25      0.1129      0.29  Q   V     |          |          |          |
 5+30      0.1148      0.29  Q   V     |          |          |          |
 5+35      0.1168      0.29  Q   V     |          |          |          |
 5+40      0.1188      0.29  Q   V     |          |          |          |
 5+45      0.1209      0.29  Q   V     |          |          |          |
 5+50      0.1229      0.29  Q   V     |          |          |          |
 5+55      0.1249      0.29  Q   V     |          |          |          |
 6+ 0      0.1269      0.29  Q   V     |          |          |          |
 6+ 5      0.1290      0.30  Q   V     |          |          |          |
 6+10      0.1310      0.30  Q    V    |          |          |          |
 6+15      0.1331      0.30  Q    V    |          |          |          |
 6+20      0.1351      0.30  Q    V    |          |          |          |
 6+25      0.1372      0.30  Q    V    |          |          |          |
 6+30      0.1393      0.30  Q    V    |          |          |          |
 6+35      0.1413      0.30  Q    V    |          |          |          |
 6+40      0.1434      0.30  Q    V    |          |          |          |
 6+45      0.1455      0.30  Q    V    |          |          |          |
 6+50      0.1476      0.31  Q    V    |          |          |          |
 6+55      0.1497      0.31  Q    V    |          |          |          |
 7+ 0      0.1518      0.31  Q    V    |          |          |          |
 7+ 5      0.1540      0.31  Q    V    |          |          |          |
 7+10      0.1561      0.31  Q    V    |          |          |          |
 7+15      0.1582      0.31  Q     V   |          |          |          |
 7+20      0.1604      0.31  Q     V   |          |          |          |
 7+25      0.1625      0.31  Q     V   |          |          |          |
 7+30      0.1647      0.31  Q     V   |          |          |          |
 7+35      0.1669      0.32  Q     V   |          |          |          |
 7+40      0.1691      0.32  Q     V   |          |          |          |
 7+45      0.1713      0.32  Q     V   |          |          |          |
 7+50      0.1734      0.32  Q     V   |          |          |          |
 7+55      0.1757      0.32  Q     V   |          |          |          |
 8+ 0      0.1779      0.32  Q     V   |          |          |          |
 8+ 5      0.1801      0.32  Q     V   |          |          |          |
 8+10      0.1823      0.32  Q     V   |          |          |          |
 8+15      0.1846      0.33  Q      V  |          |          |          |
 8+20      0.1868      0.33  Q      V  |          |          |          |
 8+25      0.1891      0.33  Q      V  |          |          |          |
 8+30      0.1914      0.33  Q      V  |          |          |          |
 8+35      0.1937      0.33  Q      V  |          |          |          |
 8+40      0.1959      0.33  Q      V  |          |          |          |
 8+45      0.1982      0.33  Q      V  |          |          |          |
 8+50      0.2006      0.34  Q      V  |          |          |          |
 8+55      0.2029      0.34  Q      V  |          |          |          |
 9+ 0      0.2052      0.34  Q      V  |          |          |          |
 9+ 5      0.2076      0.34  Q      V  |          |          |          |
 9+10      0.2099      0.34  Q       V |          |          |          |
 9+15      0.2123      0.34  Q       V |          |          |          |
 9+20      0.2147      0.35  Q       V |          |          |          |
 9+25      0.2171      0.35  Q       V |          |          |          |
 9+30      0.2195      0.35  Q       V |          |          |          |
 9+35      0.2219      0.35  Q       V |          |          |          |
 9+40      0.2243      0.35  Q       V |          |          |          |
 9+45      0.2268      0.35  Q       V |          |          |          |
 9+50      0.2292      0.36  Q       V |          |          |          |
 9+55      0.2317      0.36  Q       V |          |          |          |
10+ 0      0.2341      0.36  Q       V |          |          |          |
10+ 5      0.2366      0.36  Q        V|          |          |          |
10+10      0.2391      0.36  Q        V|          |          |          |
```

```
10+15      0.2417      0.37  Q       V|         |         |         |
10+20      0.2442      0.37  Q       V|         |         |         |
10+25      0.2467      0.37  Q       V|         |         |         |
10+30      0.2493      0.37  Q       V|         |         |         |
10+35      0.2519      0.37  Q       V|         |         |         |
10+40      0.2545      0.38  Q       V|         |         |         |
10+45      0.2571      0.38  Q       V|         |         |         |
10+50      0.2597      0.38  Q       V|         |         |         |
10+55      0.2624      0.38  Q        V         |         |         |
11+ 0      0.2650      0.39  Q        V         |         |         |
11+ 5      0.2677      0.39  Q        V         |         |         |
11+10      0.2704      0.39  Q        V         |         |         |
11+15      0.2731      0.39  Q        V         |         |         |
11+20      0.2758      0.40  Q        V         |         |         |
11+25      0.2786      0.40  Q        V         |         |         |
11+30      0.2813      0.40  Q        V         |         |         |
11+35      0.2841      0.40  Q        V         |         |         |
11+40      0.2869      0.41  Q        |V        |         |         |
11+45      0.2898      0.41  Q        |V        |         |         |
11+50      0.2926      0.41  Q        |V        |         |         |
11+55      0.2955      0.42  Q        |V        |         |         |
12+ 0      0.2984      0.42  Q        |V        |         |         |
12+ 5      0.3013      0.42  Q        |V        |         |         |
12+10      0.3043      0.43  Q        |V        |         |         |
12+15      0.3073      0.44  Q        |V        |         |         |
12+20      0.3104      0.45  Q        |V        |         |         |
12+25      0.3135      0.45  Q        | V       |         |         |
12+30      0.3167      0.46  Q        | V       |         |         |
12+35      0.3199      0.46  Q        | V       |         |         |
12+40      0.3231      0.47  Q        | V       |         |         |
12+45      0.3264      0.47  Q        | V       |         |         |
12+50      0.3297      0.48  Q        | V       |         |         |
12+55      0.3330      0.48  Q        | V       |         |         |
13+ 0      0.3364      0.49  Q        | V       |         |         |
13+ 5      0.3398      0.49  Q        |  V      |         |         |
13+10      0.3432      0.50  Q        |  V      |         |         |
13+15      0.3467      0.50  |Q       |  V      |         |         |
13+20      0.3502      0.51  |Q       |  V      |         |         |
13+25      0.3537      0.51  |Q       |  V      |         |         |
13+30      0.3573      0.52  |Q       |  V      |         |         |
13+35      0.3609      0.53  |Q       |  V      |         |         |
13+40      0.3645      0.53  |Q       |  V      |         |         |
13+45      0.3682      0.54  |Q       |   V     |         |         |
13+50      0.3720      0.54  |Q       |   V     |         |         |
13+55      0.3758      0.55  |Q       |   V     |         |         |
14+ 0      0.3796      0.56  |Q       |   V     |         |         |
14+ 5      0.3835      0.57  |Q       |   V     |         |         |
14+10      0.3875      0.57  |Q       |   V     |         |         |
14+15      0.3915      0.58  |Q       |    V    |         |         |
14+20      0.3956      0.59  |Q       |    V    |         |         |
14+25      0.3998      0.60  |Q       |    V    |         |         |
14+30      0.4040      0.61  |Q       |    V    |         |         |
14+35      0.4083      0.62  |Q       |    V    |         |         |
14+40      0.4126      0.64  |Q       |    V    |         |         |
14+45      0.4171      0.65  |Q       |     V   |         |         |
14+50      0.4217      0.66  |Q       |     V   |         |         |
14+55      0.4263      0.68  |Q       |     V   |         |         |
15+ 0      0.4311      0.69  |Q       |     V   |         |         |
15+ 5      0.4360      0.71  |Q       |     V   |         |         |
15+10      0.4410      0.73  |Q       |     V   |         |         |
15+15      0.4462      0.75  |Q       |      V  |         |         |
15+20      0.4515      0.77  |Q       |      V  |         |         |
15+25      0.4569      0.79  |Q       |      V  |         |         |
15+30      0.4621      0.76  |Q       |      V  |         |         |
15+35      0.4666      0.65  |Q       |      V  |         |         |
15+40      0.4707      0.59  |Q       |       V |         |         |
15+45      0.4748      0.59  |Q       |       V |         |         |
15+50      0.4791      0.62  |Q       |       V |         |         |
15+55      0.4839      0.70  |Q       |       V |         |         |
16+ 0      0.4899      0.87  |Q       |       V |         |         |
16+ 5      0.5060      2.34  |   Q    |        V|         |         |
```

```
16+10       0.5468      5.93  |          |Q         V          |          |
16+15       0.6364     13.01  |          |          |   V Q    |          |
16+20       0.7029      9.65  |          |         Q|     V    |          |
16+25       0.7353      4.72  |         Q|          |       V  |          |
16+30       0.7584      3.35  |     Q    |          |         V|          |
16+35       0.7765      2.63  |    Q     |          |         V|          |
16+40       0.7913      2.14  |   Q      |          |          V          |
16+45       0.8031      1.72  |  Q       |          |          V          |
16+50       0.8126      1.38  | Q        |          |          |V         |
16+55       0.8199      1.06  | Q        |          |          |V         |
17+ 0       0.8259      0.87  |Q         |          |          |V         |
17+ 5       0.8315      0.82  |Q         |          |          |V         |
17+10       0.8367      0.75  |Q         |          |          | V        |
17+15       0.8418      0.74  |Q         |          |          | V        |
17+20       0.8466      0.70  |Q         |          |          | V        |
17+25       0.8510      0.64  |Q         |          |          | V        |
17+30       0.8552      0.60  |Q         |          |          | V        |
17+35       0.8590      0.55  |Q         |          |          | V        |
17+40       0.8627      0.54  |Q         |          |          |  V       |
17+45       0.8663      0.53  |Q         |          |          |  V       |
17+50       0.8698      0.51  |Q         |          |          |  V       |
17+55       0.8733      0.50  |Q         |          |          |  V       |
18+ 0       0.8767      0.49  Q          |          |          |  V       |
18+ 5       0.8800      0.48  Q          |          |          |  V       |
18+10       0.8833      0.47  Q          |          |          |  V       |
18+15       0.8864      0.46  Q          |          |          |   V      |
18+20       0.8895      0.44  Q          |          |          |   V      |
18+25       0.8925      0.43  Q          |          |          |   V      |
18+30       0.8954      0.43  Q          |          |          |   V      |
18+35       0.8983      0.42  Q          |          |          |   V      |
18+40       0.9011      0.41  Q          |          |          |   V      |
18+45       0.9039      0.41  Q          |          |          |   V      |
18+50       0.9067      0.40  Q          |          |          |   V      |
18+55       0.9094      0.39  Q          |          |          |   V      |
19+ 0       0.9120      0.39  Q          |          |          |   V      |
19+ 5       0.9147      0.38  Q          |          |          |    V     |
19+10       0.9173      0.38  Q          |          |          |    V     |
19+15       0.9199      0.37  Q          |          |          |    V     |
19+20       0.9224      0.37  Q          |          |          |    V     |
19+25       0.9249      0.37  Q          |          |          |    V     |
19+30       0.9274      0.36  Q          |          |          |    V     |
19+35       0.9299      0.36  Q          |          |          |    V     |
19+40       0.9323      0.35  Q          |          |          |    V     |
19+45       0.9347      0.35  Q          |          |          |    V     |
19+50       0.9371      0.35  Q          |          |          |    V     |
19+55       0.9395      0.34  Q          |          |          |     V    |
20+ 0       0.9418      0.34  Q          |          |          |     V    |
20+ 5       0.9441      0.34  Q          |          |          |     V    |
20+10       0.9464      0.33  Q          |          |          |     V    |
20+15       0.9487      0.33  Q          |          |          |     V    |
20+20       0.9510      0.33  Q          |          |          |     V    |
20+25       0.9532      0.33  Q          |          |          |     V    |
20+30       0.9554      0.32  Q          |          |          |     V    |
20+35       0.9576      0.32  Q          |          |          |     V    |
20+40       0.9598      0.32  Q          |          |          |     V    |
20+45       0.9620      0.32  Q          |          |          |     V    |
20+50       0.9642      0.31  Q          |          |          |     V    |
20+55       0.9663      0.31  Q          |          |          |      V   |
21+ 0       0.9684      0.31  Q          |          |          |      V   |
21+ 5       0.9705      0.31  Q          |          |          |      V   |
21+10       0.9726      0.30  Q          |          |          |      V   |
21+15       0.9747      0.30  Q          |          |          |      V   |
21+20       0.9768      0.30  Q          |          |          |      V   |
21+25       0.9788      0.30  Q          |          |          |      V   |
21+30       0.9808      0.30  Q          |          |          |      V   |
21+35       0.9829      0.29  Q          |          |          |      V   |
21+40       0.9849      0.29  Q          |          |          |      V   |
21+45       0.9869      0.29  Q          |          |          |      V   |
21+50       0.9888      0.29  Q          |          |          |      V   |
21+55       0.9908      0.29  Q          |          |          |       V  |
22+ 0       0.9928      0.28  Q          |          |          |       V  |
```

```
  22+ 5       0.9947      0.28  Q          |          |          |       V |
  22+10       0.9967      0.28  Q          |          |          |       V |
  22+15       0.9986      0.28  Q          |          |          |       V |
  22+20       1.0005      0.28  Q          |          |          |       V |
  22+25       1.0024      0.28  Q          |          |          |       V |
  22+30       1.0043      0.27  Q          |          |          |       V |
  22+35       1.0062      0.27  Q          |          |          |       V |
  22+40       1.0081      0.27  Q          |          |          |       V |
  22+45       1.0099      0.27  Q          |          |          |       V |
  22+50       1.0118      0.27  Q          |          |          |       V |
  22+55       1.0136      0.27  Q          |          |          |       V |
  23+ 0       1.0154      0.27  Q          |          |          |       V |
  23+ 5       1.0173      0.26  Q          |          |          |        V|
  23+10       1.0191      0.26  Q          |          |          |        V|
  23+15       1.0209      0.26  Q          |          |          |        V|
  23+20       1.0227      0.26  Q          |          |          |        V|
  23+25       1.0245      0.26  Q          |          |          |        V|
  23+30       1.0262      0.26  Q          |          |          |        V|
  23+35       1.0280      0.26  Q          |          |          |        V|
  23+40       1.0298      0.26  Q          |          |          |        V|
  23+45       1.0315      0.25  Q          |          |          |        V|
  23+50       1.0333      0.25  Q          |          |          |        V|
  23+55       1.0350      0.25  Q          |          |          |        V|
  24+ 0       1.0368      0.25  Q          |          |          |        V|
  24+ 5       1.0384      0.24  Q          |          |          |        V|
  24+10       1.0399      0.21  Q          |          |          |        V|
  24+15       1.0408      0.14  Q          |          |          |        V|
  24+20       1.0414      0.08  Q          |          |          |        V|
  24+25       1.0417      0.05  Q          |          |          |        V|
  24+30       1.0420      0.04  Q          |          |          |        V|
  24+35       1.0422      0.03  Q          |          |          |        V|
  24+40       1.0423      0.02  Q          |          |          |        V|
  24+45       1.0424      0.01  Q          |          |          |        V|
  24+50       1.0424      0.01  Q          |          |          |        V|
  24+55       1.0424      0.00  Q          |          |          |        V|
  25+ 0       1.0425      0.00  Q          |          |          |        V|
  25+ 5       1.0425      0.00  Q          |          |          |        V|
  25+10       1.0425      0.00  Q          |          |          |        V|
  25+15       1.0425      0.00  Q          |          |          |        V|
  25+20       1.0425      0.00  Q          |          |          |        V|
  25+25       1.0425      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area 'D' – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

              Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'D'
10 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

       Storm Event Year = 10

       Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
            9.52           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            9.52           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            9.52          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            9.52           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            9.52           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            9.52          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 68.7      68.7          9.52      1.000     0.553    1.000    0.553

Area-averaged adjusted loss rate Fm (In/Hr) =  0.553

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 9.52 | 1.000 | 68.7 | 68.7 | 4.56 | 0.510 |

Area-averaged catchment yield fraction, Y = 0.510
Area-averaged low loss fraction, Yb = 0.490
User entry of time of concentration = 0.262 (hours)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Watershed area = 9.52(Ac.)
Catchment Lag time = 0.210 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 39.7583
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.553(In/Hr)
Average low loss rate fraction (Yb) = 0.490 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 9.52(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.474(In)
30-minute factor = 1.000 Adjusted rainfall = 0.812(In)
1-hour factor = 1.000 Adjusted rainfall = 1.000(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)

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U n i t H y d r o g r a p h

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 115.13 (CFS)) | |
| 1 | 3.107 | 3.578 |
| 2 | 14.718 | 13.368 |
| 3 | 45.653 | 35.616 |
| 4 | 68.346 | 26.128 |
| 5 | 78.353 | 11.521 |
| 6 | 85.032 | 7.690 |
| 7 | 89.767 | 5.452 |
| 8 | 93.189 | 3.940 |
| 9 | 95.606 | 2.782 |
| 10 | 97.231 | 1.872 |
| 11 | 98.108 | 1.010 |
| 12 | 98.568 | 0.529 |
| 13 | 98.955 | 0.446 |
| 14 | 99.222 | 0.306 |
| 15 | 99.512 | 0.334 |
| 16 | 99.764 | 0.291 |
| 17 | 99.907 | 0.164 |
| 18 | 100.000 | 0.107 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4743 | 0.4743 |
| 2 | 0.5839 | 0.1096 |
| 3 | 0.6595 | 0.0755 |
| 4 | 0.7189 | 0.0594 |
| 5 | 0.7687 | 0.0498 |
| 6 | 0.8119 | 0.0432 |
| 7 | 0.8503 | 0.0384 |
| 8 | 0.8851 | 0.0348 |

| | | |
|---|---|---|
| 9 | 0.9169 | 0.0318 |
| 10 | 0.9463 | 0.0294 |
| 11 | 0.9738 | 0.0274 |
| 12 | 0.9996 | 0.0258 |
| 13 | 1.0503 | 0.0508 |
| 14 | 1.0996 | 0.0493 |
| 15 | 1.1476 | 0.0480 |
| 16 | 1.1943 | 0.0468 |
| 17 | 1.2400 | 0.0457 |
| 18 | 1.2846 | 0.0446 |
| 19 | 1.3283 | 0.0437 |
| 20 | 1.3711 | 0.0428 |
| 21 | 1.4132 | 0.0420 |
| 22 | 1.4544 | 0.0413 |
| 23 | 1.4950 | 0.0406 |
| 24 | 1.5349 | 0.0399 |
| 25 | 1.5742 | 0.0393 |
| 26 | 1.6128 | 0.0387 |
| 27 | 1.6509 | 0.0381 |
| 28 | 1.6885 | 0.0376 |
| 29 | 1.7256 | 0.0371 |
| 30 | 1.7622 | 0.0366 |
| 31 | 1.7983 | 0.0361 |
| 32 | 1.8340 | 0.0357 |
| 33 | 1.8692 | 0.0353 |
| 34 | 1.9041 | 0.0348 |
| 35 | 1.9385 | 0.0345 |
| 36 | 1.9726 | 0.0341 |
| 37 | 2.0063 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0727 | 0.0330 |
| 40 | 2.1054 | 0.0327 |
| 41 | 2.1378 | 0.0324 |
| 42 | 2.1699 | 0.0321 |
| 43 | 2.2017 | 0.0318 |
| 44 | 2.2333 | 0.0315 |
| 45 | 2.2645 | 0.0313 |
| 46 | 2.2955 | 0.0310 |
| 47 | 2.3262 | 0.0307 |
| 48 | 2.3567 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4170 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4763 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5348 | 0.0291 |
| 55 | 2.5637 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6210 | 0.0285 |
| 58 | 2.6494 | 0.0283 |
| 59 | 2.6775 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7609 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8157 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8698 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9232 | 0.0267 |
| 69 | 2.9498 | 0.0265 |
| 70 | 2.9761 | 0.0264 |
| 71 | 3.0023 | 0.0262 |
| 72 | 3.0284 | 0.0261 |
| 73 | 3.0550 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1078 | 0.0263 |
| 76 | 3.1340 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1860 | 0.0259 |
| 79 | 3.2119 | 0.0258 |

| | | |
|---|---|---|
| 80 | 3.2376 | 0.0257 |
| 81 | 3.2632 | 0.0256 |
| 82 | 3.2886 | 0.0255 |
| 83 | 3.3140 | 0.0254 |
| 84 | 3.3392 | 0.0253 |
| 85 | 3.3644 | 0.0251 |
| 86 | 3.3894 | 0.0250 |
| 87 | 3.4143 | 0.0249 |
| 88 | 3.4392 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5130 | 0.0245 |
| 92 | 3.5374 | 0.0244 |
| 93 | 3.5618 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6101 | 0.0241 |
| 96 | 3.6341 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6820 | 0.0239 |
| 99 | 3.7057 | 0.0238 |
| 100 | 3.7294 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7765 | 0.0235 |
| 103 | 3.7999 | 0.0234 |
| 104 | 3.8233 | 0.0233 |
| 105 | 3.8465 | 0.0233 |
| 106 | 3.8697 | 0.0232 |
| 107 | 3.8928 | 0.0231 |
| 108 | 3.9158 | 0.0230 |
| 109 | 3.9388 | 0.0229 |
| 110 | 3.9616 | 0.0229 |
| 111 | 3.9844 | 0.0228 |
| 112 | 4.0071 | 0.0227 |
| 113 | 4.0298 | 0.0226 |
| 114 | 4.0523 | 0.0226 |
| 115 | 4.0748 | 0.0225 |
| 116 | 4.0972 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1862 | 0.0221 |
| 121 | 4.2083 | 0.0221 |
| 122 | 4.2303 | 0.0220 |
| 123 | 4.2523 | 0.0219 |
| 124 | 4.2741 | 0.0219 |
| 125 | 4.2960 | 0.0218 |
| 126 | 4.3177 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3610 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4255 | 0.0214 |
| 132 | 4.4469 | 0.0214 |
| 133 | 4.4682 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5318 | 0.0211 |
| 137 | 4.5529 | 0.0211 |
| 138 | 4.5740 | 0.0210 |
| 139 | 4.5949 | 0.0210 |
| 140 | 4.6159 | 0.0209 |
| 141 | 4.6367 | 0.0209 |
| 142 | 4.6576 | 0.0208 |
| 143 | 4.6783 | 0.0208 |
| 144 | 4.6990 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7608 | 0.0206 |
| 148 | 4.7813 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |

| | | |
|---|---|---|
| 151 | 4.8425 | 0.0204 |
| 152 | 4.8628 | 0.0203 |
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |
| 155 | 4.9234 | 0.0202 |
| 156 | 4.9436 | 0.0201 |
| 157 | 4.9636 | 0.0201 |
| 158 | 4.9836 | 0.0200 |
| 159 | 5.0036 | 0.0200 |
| 160 | 5.0235 | 0.0199 |
| 161 | 5.0434 | 0.0199 |
| 162 | 5.0632 | 0.0198 |
| 163 | 5.0830 | 0.0198 |
| 164 | 5.1028 | 0.0197 |
| 165 | 5.1225 | 0.0197 |
| 166 | 5.1421 | 0.0197 |
| 167 | 5.1617 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2008 | 0.0195 |
| 170 | 5.2203 | 0.0195 |
| 171 | 5.2397 | 0.0194 |
| 172 | 5.2591 | 0.0194 |
| 173 | 5.2785 | 0.0194 |
| 174 | 5.2978 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3363 | 0.0192 |
| 177 | 5.3555 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3938 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4319 | 0.0190 |
| 182 | 5.4509 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4888 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5265 | 0.0189 |
| 187 | 5.5454 | 0.0188 |
| 188 | 5.5641 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6202 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6760 | 0.0186 |
| 195 | 5.6946 | 0.0185 |
| 196 | 5.7131 | 0.0185 |
| 197 | 5.7315 | 0.0185 |
| 198 | 5.7499 | 0.0184 |
| 199 | 5.7683 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8415 | 0.0183 |
| 204 | 5.8598 | 0.0182 |
| 205 | 5.8779 | 0.0182 |
| 206 | 5.8961 | 0.0182 |
| 207 | 5.9142 | 0.0181 |
| 208 | 5.9323 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9684 | 0.0180 |
| 211 | 5.9864 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0223 | 0.0179 |
| 214 | 6.0402 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0759 | 0.0178 |
| 217 | 6.0937 | 0.0178 |
| 218 | 6.1115 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1470 | 0.0177 |
| 221 | 6.1647 | 0.0177 |

| | | |
|---|---|---|
| 222 | 6.1824 | 0.0177 |
| 223 | 6.2000 | 0.0176 |
| 224 | 6.2176 | 0.0176 |
| 225 | 6.2352 | 0.0176 |
| 226 | 6.2527 | 0.0175 |
| 227 | 6.2703 | 0.0175 |
| 228 | 6.2877 | 0.0175 |
| 229 | 6.3052 | 0.0175 |
| 230 | 6.3226 | 0.0174 |
| 231 | 6.3401 | 0.0174 |
| 232 | 6.3574 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3921 | 0.0173 |
| 235 | 6.4094 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4439 | 0.0172 |
| 238 | 6.4612 | 0.0172 |
| 239 | 6.4783 | 0.0172 |
| 240 | 6.4955 | 0.0172 |
| 241 | 6.5127 | 0.0171 |
| 242 | 6.5298 | 0.0171 |
| 243 | 6.5469 | 0.0171 |
| 244 | 6.5639 | 0.0171 |
| 245 | 6.5810 | 0.0170 |
| 246 | 6.5980 | 0.0170 |
| 247 | 6.6150 | 0.0170 |
| 248 | 6.6319 | 0.0170 |
| 249 | 6.6488 | 0.0169 |
| 250 | 6.6658 | 0.0169 |
| 251 | 6.6826 | 0.0169 |
| 252 | 6.6995 | 0.0169 |
| 253 | 6.7163 | 0.0168 |
| 254 | 6.7332 | 0.0168 |
| 255 | 6.7499 | 0.0168 |
| 256 | 6.7667 | 0.0168 |
| 257 | 6.7835 | 0.0167 |
| 258 | 6.8002 | 0.0167 |
| 259 | 6.8169 | 0.0167 |
| 260 | 6.8335 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8668 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9165 | 0.0166 |
| 266 | 6.9331 | 0.0165 |
| 267 | 6.9496 | 0.0165 |
| 268 | 6.9661 | 0.0165 |
| 269 | 6.9825 | 0.0165 |
| 270 | 6.9990 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0481 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0808 | 0.0163 |
| 276 | 7.0971 | 0.0163 |
| 277 | 7.1134 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1459 | 0.0162 |
| 280 | 7.1622 | 0.0162 |
| 281 | 7.1784 | 0.0162 |
| 282 | 7.1945 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2268 | 0.0161 |
| 285 | 7.2429 | 0.0161 |
| 286 | 7.2590 | 0.0161 |
| 287 | 7.2751 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 0.0161 | 0.0079 | 0.0082 |
| 2 | 0.0161 | 0.0079 | 0.0082 |
| 3 | 0.0161 | 0.0079 | 0.0082 |
| 4 | 0.0161 | 0.0079 | 0.0082 |
| 5 | 0.0162 | 0.0079 | 0.0083 |
| 6 | 0.0162 | 0.0079 | 0.0083 |
| 7 | 0.0162 | 0.0080 | 0.0083 |
| 8 | 0.0163 | 0.0080 | 0.0083 |
| 9 | 0.0163 | 0.0080 | 0.0083 |
| 10 | 0.0163 | 0.0080 | 0.0083 |
| 11 | 0.0164 | 0.0080 | 0.0084 |
| 12 | 0.0164 | 0.0080 | 0.0084 |
| 13 | 0.0164 | 0.0080 | 0.0084 |
| 14 | 0.0165 | 0.0081 | 0.0084 |
| 15 | 0.0165 | 0.0081 | 0.0084 |
| 16 | 0.0165 | 0.0081 | 0.0084 |
| 17 | 0.0166 | 0.0081 | 0.0085 |
| 18 | 0.0166 | 0.0081 | 0.0085 |
| 19 | 0.0166 | 0.0081 | 0.0085 |
| 20 | 0.0167 | 0.0082 | 0.0085 |
| 21 | 0.0167 | 0.0082 | 0.0085 |
| 22 | 0.0167 | 0.0082 | 0.0085 |
| 23 | 0.0168 | 0.0082 | 0.0086 |
| 24 | 0.0168 | 0.0082 | 0.0086 |
| 25 | 0.0169 | 0.0083 | 0.0086 |
| 26 | 0.0169 | 0.0083 | 0.0086 |
| 27 | 0.0169 | 0.0083 | 0.0086 |
| 28 | 0.0170 | 0.0083 | 0.0087 |
| 29 | 0.0170 | 0.0083 | 0.0087 |
| 30 | 0.0170 | 0.0083 | 0.0087 |
| 31 | 0.0171 | 0.0084 | 0.0087 |
| 32 | 0.0171 | 0.0084 | 0.0087 |
| 33 | 0.0172 | 0.0084 | 0.0088 |
| 34 | 0.0172 | 0.0084 | 0.0088 |
| 35 | 0.0172 | 0.0084 | 0.0088 |
| 36 | 0.0173 | 0.0085 | 0.0088 |
| 37 | 0.0173 | 0.0085 | 0.0088 |
| 38 | 0.0174 | 0.0085 | 0.0089 |
| 39 | 0.0174 | 0.0085 | 0.0089 |
| 40 | 0.0174 | 0.0085 | 0.0089 |
| 41 | 0.0175 | 0.0086 | 0.0089 |
| 42 | 0.0175 | 0.0086 | 0.0089 |
| 43 | 0.0176 | 0.0086 | 0.0090 |
| 44 | 0.0176 | 0.0086 | 0.0090 |
| 45 | 0.0177 | 0.0086 | 0.0090 |
| 46 | 0.0177 | 0.0087 | 0.0090 |
| 47 | 0.0178 | 0.0087 | 0.0091 |
| 48 | 0.0178 | 0.0087 | 0.0091 |
| 49 | 0.0178 | 0.0087 | 0.0091 |
| 50 | 0.0179 | 0.0087 | 0.0091 |
| 51 | 0.0179 | 0.0088 | 0.0092 |
| 52 | 0.0180 | 0.0088 | 0.0092 |
| 53 | 0.0180 | 0.0088 | 0.0092 |
| 54 | 0.0181 | 0.0088 | 0.0092 |
| 55 | 0.0181 | 0.0089 | 0.0093 |
| 56 | 0.0182 | 0.0089 | 0.0093 |
| 57 | 0.0182 | 0.0089 | 0.0093 |
| 58 | 0.0183 | 0.0089 | 0.0093 |
| 59 | 0.0183 | 0.0090 | 0.0094 |
| 60 | 0.0184 | 0.0090 | 0.0094 |
| 61 | 0.0184 | 0.0090 | 0.0094 |
| 62 | 0.0185 | 0.0090 | 0.0094 |
| 63 | 0.0185 | 0.0091 | 0.0095 |
| 64 | 0.0186 | 0.0091 | 0.0095 |
| 65 | 0.0186 | 0.0091 | 0.0095 |
| 66 | 0.0187 | 0.0091 | 0.0095 |
| 67 | 0.0187 | 0.0092 | 0.0096 |
| 68 | 0.0188 | 0.0092 | 0.0096 |
| 69 | 0.0189 | 0.0092 | 0.0096 |
| 70 | 0.0189 | 0.0092 | 0.0096 |

| | | | |
|---|---|---|---|
| 71 | 0.0190 | 0.0093 | 0.0097 |
| 72 | 0.0190 | 0.0093 | 0.0097 |
| 73 | 0.0191 | 0.0093 | 0.0097 |
| 74 | 0.0191 | 0.0094 | 0.0098 |
| 75 | 0.0192 | 0.0094 | 0.0098 |
| 76 | 0.0192 | 0.0094 | 0.0098 |
| 77 | 0.0193 | 0.0095 | 0.0099 |
| 78 | 0.0194 | 0.0095 | 0.0099 |
| 79 | 0.0194 | 0.0095 | 0.0099 |
| 80 | 0.0195 | 0.0095 | 0.0099 |
| 81 | 0.0196 | 0.0096 | 0.0100 |
| 82 | 0.0196 | 0.0096 | 0.0100 |
| 83 | 0.0197 | 0.0096 | 0.0101 |
| 84 | 0.0197 | 0.0097 | 0.0101 |
| 85 | 0.0198 | 0.0097 | 0.0101 |
| 86 | 0.0199 | 0.0097 | 0.0101 |
| 87 | 0.0200 | 0.0098 | 0.0102 |
| 88 | 0.0200 | 0.0098 | 0.0102 |
| 89 | 0.0201 | 0.0098 | 0.0103 |
| 90 | 0.0202 | 0.0099 | 0.0103 |
| 91 | 0.0203 | 0.0099 | 0.0103 |
| 92 | 0.0203 | 0.0099 | 0.0104 |
| 93 | 0.0204 | 0.0100 | 0.0104 |
| 94 | 0.0205 | 0.0100 | 0.0104 |
| 95 | 0.0206 | 0.0101 | 0.0105 |
| 96 | 0.0206 | 0.0101 | 0.0105 |
| 97 | 0.0207 | 0.0101 | 0.0106 |
| 98 | 0.0208 | 0.0102 | 0.0106 |
| 99 | 0.0209 | 0.0102 | 0.0107 |
| 100 | 0.0209 | 0.0102 | 0.0107 |
| 101 | 0.0210 | 0.0103 | 0.0107 |
| 102 | 0.0211 | 0.0103 | 0.0108 |
| 103 | 0.0212 | 0.0104 | 0.0108 |
| 104 | 0.0213 | 0.0104 | 0.0109 |
| 105 | 0.0214 | 0.0105 | 0.0109 |
| 106 | 0.0214 | 0.0105 | 0.0109 |
| 107 | 0.0216 | 0.0106 | 0.0110 |
| 108 | 0.0216 | 0.0106 | 0.0110 |
| 109 | 0.0218 | 0.0106 | 0.0111 |
| 110 | 0.0218 | 0.0107 | 0.0111 |
| 111 | 0.0219 | 0.0107 | 0.0112 |
| 112 | 0.0220 | 0.0108 | 0.0112 |
| 113 | 0.0221 | 0.0108 | 0.0113 |
| 114 | 0.0222 | 0.0109 | 0.0113 |
| 115 | 0.0224 | 0.0109 | 0.0114 |
| 116 | 0.0224 | 0.0110 | 0.0114 |
| 117 | 0.0226 | 0.0110 | 0.0115 |
| 118 | 0.0226 | 0.0111 | 0.0116 |
| 119 | 0.0228 | 0.0112 | 0.0116 |
| 120 | 0.0229 | 0.0112 | 0.0117 |
| 121 | 0.0230 | 0.0113 | 0.0118 |
| 122 | 0.0231 | 0.0113 | 0.0118 |
| 123 | 0.0233 | 0.0114 | 0.0119 |
| 124 | 0.0233 | 0.0114 | 0.0119 |
| 125 | 0.0235 | 0.0115 | 0.0120 |
| 126 | 0.0236 | 0.0115 | 0.0120 |
| 127 | 0.0238 | 0.0116 | 0.0121 |
| 128 | 0.0239 | 0.0117 | 0.0122 |
| 129 | 0.0240 | 0.0118 | 0.0123 |
| 130 | 0.0241 | 0.0118 | 0.0123 |
| 131 | 0.0243 | 0.0119 | 0.0124 |
| 132 | 0.0244 | 0.0120 | 0.0125 |
| 133 | 0.0246 | 0.0121 | 0.0126 |
| 134 | 0.0247 | 0.0121 | 0.0126 |
| 135 | 0.0249 | 0.0122 | 0.0127 |
| 136 | 0.0250 | 0.0123 | 0.0128 |
| 137 | 0.0253 | 0.0124 | 0.0129 |
| 138 | 0.0254 | 0.0124 | 0.0129 |
| 139 | 0.0256 | 0.0125 | 0.0131 |
| 140 | 0.0257 | 0.0126 | 0.0131 |
| 141 | 0.0259 | 0.0127 | 0.0132 |

| | | | |
|---|---|---|---|
| 142 | 0.0261 | 0.0128 | 0.0133 |
| 143 | 0.0263 | 0.0129 | 0.0134 |
| 144 | 0.0265 | 0.0130 | 0.0135 |
| 145 | 0.0261 | 0.0128 | 0.0133 |
| 146 | 0.0262 | 0.0128 | 0.0134 |
| 147 | 0.0265 | 0.0130 | 0.0135 |
| 148 | 0.0267 | 0.0131 | 0.0136 |
| 149 | 0.0270 | 0.0132 | 0.0138 |
| 150 | 0.0271 | 0.0133 | 0.0138 |
| 151 | 0.0275 | 0.0134 | 0.0140 |
| 152 | 0.0276 | 0.0135 | 0.0141 |
| 153 | 0.0280 | 0.0137 | 0.0143 |
| 154 | 0.0282 | 0.0138 | 0.0144 |
| 155 | 0.0285 | 0.0140 | 0.0146 |
| 156 | 0.0287 | 0.0141 | 0.0147 |
| 157 | 0.0291 | 0.0143 | 0.0149 |
| 158 | 0.0293 | 0.0144 | 0.0150 |
| 159 | 0.0298 | 0.0146 | 0.0152 |
| 160 | 0.0300 | 0.0147 | 0.0153 |
| 161 | 0.0305 | 0.0149 | 0.0156 |
| 162 | 0.0307 | 0.0150 | 0.0157 |
| 163 | 0.0313 | 0.0153 | 0.0160 |
| 164 | 0.0315 | 0.0154 | 0.0161 |
| 165 | 0.0321 | 0.0157 | 0.0164 |
| 166 | 0.0324 | 0.0159 | 0.0165 |
| 167 | 0.0330 | 0.0162 | 0.0169 |
| 168 | 0.0334 | 0.0163 | 0.0170 |
| 169 | 0.0341 | 0.0167 | 0.0174 |
| 170 | 0.0345 | 0.0169 | 0.0176 |
| 171 | 0.0353 | 0.0173 | 0.0180 |
| 172 | 0.0357 | 0.0175 | 0.0182 |
| 173 | 0.0366 | 0.0179 | 0.0187 |
| 174 | 0.0371 | 0.0181 | 0.0189 |
| 175 | 0.0381 | 0.0187 | 0.0195 |
| 176 | 0.0387 | 0.0189 | 0.0197 |
| 177 | 0.0399 | 0.0195 | 0.0204 |
| 178 | 0.0406 | 0.0199 | 0.0207 |
| 179 | 0.0420 | 0.0206 | 0.0215 |
| 180 | 0.0428 | 0.0210 | 0.0219 |
| 181 | 0.0446 | 0.0219 | 0.0228 |
| 182 | 0.0457 | 0.0223 | 0.0233 |
| 183 | 0.0480 | 0.0235 | 0.0245 |
| 184 | 0.0493 | 0.0241 | 0.0252 |
| 185 | 0.0258 | 0.0126 | 0.0131 |
| 186 | 0.0274 | 0.0134 | 0.0140 |
| 187 | 0.0318 | 0.0156 | 0.0163 |
| 188 | 0.0348 | 0.0170 | 0.0177 |
| 189 | 0.0432 | 0.0212 | 0.0221 |
| 190 | 0.0498 | 0.0244 | 0.0254 |
| 191 | 0.0755 | 0.0370 | 0.0386 |
| 192 | 0.1096 | 0.0460 | 0.0636 |
| 193 | 0.4743 | 0.0460 | 0.4283 |
| 194 | 0.0594 | 0.0291 | 0.0303 |
| 195 | 0.0384 | 0.0188 | 0.0196 |
| 196 | 0.0294 | 0.0144 | 0.0150 |
| 197 | 0.0508 | 0.0248 | 0.0259 |
| 198 | 0.0468 | 0.0229 | 0.0239 |
| 199 | 0.0437 | 0.0214 | 0.0223 |
| 200 | 0.0413 | 0.0202 | 0.0211 |
| 201 | 0.0393 | 0.0192 | 0.0200 |
| 202 | 0.0376 | 0.0184 | 0.0192 |
| 203 | 0.0361 | 0.0177 | 0.0184 |
| 204 | 0.0348 | 0.0171 | 0.0178 |
| 205 | 0.0337 | 0.0165 | 0.0172 |
| 206 | 0.0327 | 0.0160 | 0.0167 |
| 207 | 0.0318 | 0.0156 | 0.0162 |
| 208 | 0.0310 | 0.0152 | 0.0158 |
| 209 | 0.0302 | 0.0148 | 0.0154 |
| 210 | 0.0296 | 0.0145 | 0.0151 |
| 211 | 0.0289 | 0.0142 | 0.0148 |
| 212 | 0.0283 | 0.0139 | 0.0145 |

| | | | |
|---|---|---|---|
| 213 | 0.0278 | 0.0136 | 0.0142 |
| 214 | 0.0273 | 0.0134 | 0.0139 |
| 215 | 0.0268 | 0.0131 | 0.0137 |
| 216 | 0.0264 | 0.0129 | 0.0135 |
| 217 | 0.0266 | 0.0130 | 0.0136 |
| 218 | 0.0262 | 0.0128 | 0.0134 |
| 219 | 0.0258 | 0.0126 | 0.0132 |
| 220 | 0.0255 | 0.0125 | 0.0130 |
| 221 | 0.0251 | 0.0123 | 0.0128 |
| 222 | 0.0248 | 0.0122 | 0.0127 |
| 223 | 0.0245 | 0.0120 | 0.0125 |
| 224 | 0.0242 | 0.0119 | 0.0124 |
| 225 | 0.0239 | 0.0117 | 0.0122 |
| 226 | 0.0237 | 0.0116 | 0.0121 |
| 227 | 0.0234 | 0.0115 | 0.0120 |
| 228 | 0.0232 | 0.0113 | 0.0118 |
| 229 | 0.0229 | 0.0112 | 0.0117 |
| 230 | 0.0227 | 0.0111 | 0.0116 |
| 231 | 0.0225 | 0.0110 | 0.0115 |
| 232 | 0.0223 | 0.0109 | 0.0114 |
| 233 | 0.0221 | 0.0108 | 0.0113 |
| 234 | 0.0219 | 0.0107 | 0.0112 |
| 235 | 0.0217 | 0.0106 | 0.0111 |
| 236 | 0.0215 | 0.0105 | 0.0110 |
| 237 | 0.0213 | 0.0104 | 0.0109 |
| 238 | 0.0211 | 0.0104 | 0.0108 |
| 239 | 0.0210 | 0.0103 | 0.0107 |
| 240 | 0.0208 | 0.0102 | 0.0106 |
| 241 | 0.0207 | 0.0101 | 0.0105 |
| 242 | 0.0205 | 0.0100 | 0.0105 |
| 243 | 0.0204 | 0.0100 | 0.0104 |
| 244 | 0.0202 | 0.0099 | 0.0103 |
| 245 | 0.0201 | 0.0098 | 0.0102 |
| 246 | 0.0199 | 0.0098 | 0.0102 |
| 247 | 0.0198 | 0.0097 | 0.0101 |
| 248 | 0.0197 | 0.0096 | 0.0100 |
| 249 | 0.0195 | 0.0096 | 0.0100 |
| 250 | 0.0194 | 0.0095 | 0.0099 |
| 251 | 0.0193 | 0.0094 | 0.0098 |
| 252 | 0.0192 | 0.0094 | 0.0098 |
| 253 | 0.0190 | 0.0093 | 0.0097 |
| 254 | 0.0189 | 0.0093 | 0.0097 |
| 255 | 0.0188 | 0.0092 | 0.0096 |
| 256 | 0.0187 | 0.0092 | 0.0095 |
| 257 | 0.0186 | 0.0091 | 0.0095 |
| 258 | 0.0185 | 0.0091 | 0.0094 |
| 259 | 0.0184 | 0.0090 | 0.0094 |
| 260 | 0.0183 | 0.0090 | 0.0093 |
| 261 | 0.0182 | 0.0089 | 0.0093 |
| 262 | 0.0181 | 0.0089 | 0.0092 |
| 263 | 0.0180 | 0.0088 | 0.0092 |
| 264 | 0.0179 | 0.0088 | 0.0091 |
| 265 | 0.0178 | 0.0087 | 0.0091 |
| 266 | 0.0177 | 0.0087 | 0.0090 |
| 267 | 0.0176 | 0.0086 | 0.0090 |
| 268 | 0.0175 | 0.0086 | 0.0090 |
| 269 | 0.0175 | 0.0085 | 0.0089 |
| 270 | 0.0174 | 0.0085 | 0.0089 |
| 271 | 0.0173 | 0.0085 | 0.0088 |
| 272 | 0.0172 | 0.0084 | 0.0088 |
| 273 | 0.0171 | 0.0084 | 0.0087 |
| 274 | 0.0171 | 0.0084 | 0.0087 |
| 275 | 0.0170 | 0.0083 | 0.0087 |
| 276 | 0.0169 | 0.0083 | 0.0086 |
| 277 | 0.0168 | 0.0082 | 0.0086 |
| 278 | 0.0168 | 0.0082 | 0.0086 |
| 279 | 0.0167 | 0.0082 | 0.0085 |
| 280 | 0.0166 | 0.0081 | 0.0085 |
| 281 | 0.0166 | 0.0081 | 0.0085 |
| 282 | 0.0165 | 0.0081 | 0.0084 |
| 283 | 0.0164 | 0.0080 | 0.0084 |

```
      284              0.0164           0.0080              0.0083
      285              0.0163           0.0080              0.0083
      286              0.0162           0.0079              0.0083
      287              0.0162           0.0079              0.0082
      288              0.0161           0.0079              0.0082
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.38(In)
      Total effective rainfall =      3.92(In)
      Peak flow rate in flood hydrograph =     18.36(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q          |          |          |          |
  0+10       0.0012      0.14  Q          |          |          |          |
  0+15       0.0041      0.43  Q          |          |          |          |
  0+20       0.0086      0.65  VQ         |          |          |          |
  0+25       0.0137      0.74  VQ         |          |          |          |
  0+30       0.0192      0.81  VQ         |          |          |          |
  0+35       0.0251      0.85  VQ         |          |          |          |
  0+40       0.0312      0.89  VQ         |          |          |          |
  0+45       0.0375      0.91  VQ         |          |          |          |
  0+50       0.0439      0.93  VQ         |          |          |          |
  0+55       0.0503      0.94  VQ         |          |          |          |
  1+ 0       0.0568      0.94  VQ         |          |          |          |
  1+ 5       0.0634      0.95  VQ         |          |          |          |
  1+10       0.0699      0.95  VQ         |          |          |          |
  1+15       0.0765      0.96  VQ         |          |          |          |
  1+20       0.0832      0.96  |Q         |          |          |          |
  1+25       0.0898      0.97  |Q         |          |          |          |
  1+30       0.0965      0.97  |Q         |          |          |          |
  1+35       0.1032      0.97  |Q         |          |          |          |
  1+40       0.1099      0.97  |Q         |          |          |          |
  1+45       0.1166      0.98  |Q         |          |          |          |
  1+50       0.1233      0.98  |Q         |          |          |          |
  1+55       0.1301      0.98  |Q         |          |          |          |
  2+ 0       0.1369      0.98  |Q         |          |          |          |
  2+ 5       0.1436      0.98  |Q         |          |          |          |
  2+10       0.1504      0.99  |Q         |          |          |          |
  2+15       0.1572      0.99  |QV        |          |          |          |
  2+20       0.1640      0.99  |QV        |          |          |          |
  2+25       0.1709      0.99  |QV        |          |          |          |
  2+30       0.1777      0.99  |QV        |          |          |          |
  2+35       0.1846      1.00  |QV        |          |          |          |
  2+40       0.1915      1.00  |QV        |          |          |          |
  2+45       0.1984      1.00  | Q        |          |          |          |
  2+50       0.2053      1.00  | Q        |          |          |          |
  2+55       0.2122      1.01  | Q        |          |          |          |
  3+ 0       0.2191      1.01  | Q        |          |          |          |
  3+ 5       0.2261      1.01  | Q        |          |          |          |
  3+10       0.2331      1.01  | QV       |          |          |          |
  3+15       0.2400      1.01  | QV       |          |          |          |
  3+20       0.2470      1.02  | QV       |          |          |          |
  3+25       0.2541      1.02  | QV       |          |          |          |
  3+30       0.2611      1.02  | QV       |          |          |          |
  3+35       0.2682      1.02  | QV       |          |          |          |
  3+40       0.2752      1.03  | QV       |          |          |          |
  3+45       0.2823      1.03  | QV       |          |          |          |
  3+50       0.2894      1.03  | QV       |          |          |          |
  3+55       0.2966      1.03  | QV       |          |          |          |
  4+ 0       0.3037      1.04  | QV       |          |          |          |
  4+ 5       0.3109      1.04  | Q V      |          |          |          |
  4+10       0.3180      1.04  | Q V      |          |          |          |
  4+15       0.3252      1.04  | Q V      |          |          |          |
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 4+20      0.3324      1.05  | Q V     |         |         |         |
 4+25      0.3397      1.05  | Q V     |         |         |         |
 4+30      0.3469      1.05  | Q V     |         |         |         |
 4+35      0.3542      1.06  | Q V     |         |         |         |
 4+40      0.3615      1.06  | Q V     |         |         |         |
 4+45      0.3688      1.06  | Q V     |         |         |         |
 4+50      0.3761      1.06  | Q V     |         |         |         |
 4+55      0.3835      1.07  | Q V     |         |         |         |
 5+ 0      0.3908      1.07  | Q  V    |         |         |         |
 5+ 5      0.3982      1.07  | Q  V    |         |         |         |
 5+10      0.4056      1.08  | Q  V    |         |         |         |
 5+15      0.4130      1.08  | Q  V    |         |         |         |
 5+20      0.4205      1.08  | Q  V    |         |         |         |
 5+25      0.4280      1.08  | Q  V    |         |         |         |
 5+30      0.4355      1.09  | Q  V    |         |         |         |
 5+35      0.4430      1.09  | Q  V    |         |         |         |
 5+40      0.4505      1.09  | Q  V    |         |         |         |
 5+45      0.4580      1.10  | Q  V    |         |         |         |
 5+50      0.4656      1.10  | Q  V    |         |         |         |
 5+55      0.4732      1.10  | Q   V   |         |         |         |
 6+ 0      0.4808      1.11  | Q   V   |         |         |         |
 6+ 5      0.4885      1.11  | Q   V   |         |         |         |
 6+10      0.4961      1.11  | Q   V   |         |         |         |
 6+15      0.5038      1.12  | Q   V   |         |         |         |
 6+20      0.5115      1.12  | Q   V   |         |         |         |
 6+25      0.5193      1.12  | Q   V   |         |         |         |
 6+30      0.5270      1.13  | Q   V   |         |         |         |
 6+35      0.5348      1.13  | Q   V   |         |         |         |
 6+40      0.5426      1.13  | Q   V   |         |         |         |
 6+45      0.5505      1.14  | Q    V  |         |         |         |
 6+50      0.5583      1.14  | Q    V  |         |         |         |
 6+55      0.5662      1.14  | Q    V  |         |         |         |
 7+ 0      0.5741      1.15  | Q    V  |         |         |         |
 7+ 5      0.5820      1.15  | Q    V  |         |         |         |
 7+10      0.5900      1.16  | Q    V  |         |         |         |
 7+15      0.5980      1.16  | Q    V  |         |         |         |
 7+20      0.6060      1.16  | Q    V  |         |         |         |
 7+25      0.6140      1.17  | Q    V  |         |         |         |
 7+30      0.6221      1.17  | Q     V |         |         |         |
 7+35      0.6302      1.18  | Q     V |         |         |         |
 7+40      0.6383      1.18  | Q     V |         |         |         |
 7+45      0.6465      1.18  | Q     V |         |         |         |
 7+50      0.6547      1.19  | Q     V |         |         |         |
 7+55      0.6629      1.19  | Q     V |         |         |         |
 8+ 0      0.6711      1.20  | Q     V |         |         |         |
 8+ 5      0.6794      1.20  | Q     V |         |         |         |
 8+10      0.6877      1.21  | Q     V |         |         |         |
 8+15      0.6960      1.21  | Q     V |         |         |         |
 8+20      0.7044      1.21  | Q      V|         |         |         |
 8+25      0.7128      1.22  | Q      V|         |         |         |
 8+30      0.7212      1.22  | Q      V|         |         |         |
 8+35      0.7297      1.23  | Q      V|         |         |         |
 8+40      0.7382      1.23  | Q      V|         |         |         |
 8+45      0.7467      1.24  | Q      V|         |         |         |
 8+50      0.7553      1.24  | Q      V|         |         |         |
 8+55      0.7639      1.25  | Q      V|         |         |         |
 9+ 0      0.7725      1.25  | Q      V|         |         |         |
 9+ 5      0.7812      1.26  | Q       V         |         |         |
 9+10      0.7899      1.26  | Q       V         |         |         |
 9+15      0.7987      1.27  | Q       V         |         |         |
 9+20      0.8075      1.28  | Q       V         |         |         |
 9+25      0.8163      1.28  | Q       V         |         |         |
 9+30      0.8251      1.29  | Q       V         |         |         |
 9+35      0.8341      1.29  | Q       V         |         |         |
 9+40      0.8430      1.30  | Q       V         |         |         |
 9+45      0.8520      1.30  | Q       V         |         |         |
 9+50      0.8610      1.31  | Q       |V        |         |         |
 9+55      0.8701      1.32  | Q       |V        |         |         |
10+ 0      0.8792      1.32  | Q       |V        |         |         |
10+ 5      0.8884      1.33  | Q       |V        |         |         |
10+10      0.8976      1.34  | Q       |V        |         |         |
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10+15      0.9068      1.34  | Q       |V        |         |         |
10+20      0.9161      1.35  | Q       |V        |         |         |
10+25      0.9254      1.36  | Q       |V        |         |         |
10+30      0.9348      1.36  | Q       | V       |         |         |
10+35      0.9443      1.37  | Q       | V       |         |         |
10+40      0.9538      1.38  | Q       | V       |         |         |
10+45      0.9633      1.39  | Q       | V       |         |         |
10+50      0.9729      1.39  | Q       | V       |         |         |
10+55      0.9826      1.40  | Q       | V       |         |         |
11+ 0      0.9923      1.41  | Q       | V       |         |         |
11+ 5      1.0020      1.42  | Q       | V       |         |         |
11+10      1.0118      1.43  | Q       |  V      |         |         |
11+15      1.0217      1.43  | Q       |  V      |         |         |
11+20      1.0317      1.44  | Q       |  V      |         |         |
11+25      1.0417      1.45  | Q       |  V      |         |         |
11+30      1.0517      1.46  | Q       |  V      |         |         |
11+35      1.0618      1.47  | Q       |  V      |         |         |
11+40      1.0720      1.48  | Q       |  V      |         |         |
11+45      1.0823      1.49  | Q       |  V      |         |         |
11+50      1.0926      1.50  | Q       |   V     |         |         |
11+55      1.1030      1.51  |  Q      |   V     |         |         |
12+ 0      1.1135      1.52  |  Q      |   V     |         |         |
12+ 5      1.1240      1.53  |  Q      |   V     |         |         |
12+10      1.1346      1.54  |  Q      |   V     |         |         |
12+15      1.1452      1.54  |  Q      |   V     |         |         |
12+20      1.1558      1.54  |  Q      |   V     |         |         |
12+25      1.1665      1.55  |  Q      |    V    |         |         |
12+30      1.1772      1.56  |  Q      |    V    |         |         |
12+35      1.1880      1.57  |  Q      |    V    |         |         |
12+40      1.1989      1.58  |  Q      |    V    |         |         |
12+45      1.2099      1.59  |  Q      |    V    |         |         |
12+50      1.2210      1.61  |  Q      |    V    |         |         |
12+55      1.2321      1.62  |  Q      |    V    |         |         |
13+ 0      1.2434      1.64  |  Q      |     V   |         |         |
13+ 5      1.2548      1.65  |  Q      |     V   |         |         |
13+10      1.2663      1.67  |  Q      |     V   |         |         |
13+15      1.2779      1.69  |  Q      |     V   |         |         |
13+20      1.2897      1.70  |  Q      |     V   |         |         |
13+25      1.3015      1.72  |  Q      |     V   |         |         |
13+30      1.3135      1.74  |  Q      |     V   |         |         |
13+35      1.3257      1.76  |  Q      |      V  |         |         |
13+40      1.3380      1.78  |  Q      |      V  |         |         |
13+45      1.3504      1.81  |  Q      |      V  |         |         |
13+50      1.3630      1.83  |  Q      |      V  |         |         |
13+55      1.3757      1.85  |  Q      |      V  |         |         |
14+ 0      1.3887      1.88  |  Q      |      V  |         |         |
14+ 5      1.4018      1.90  |  Q      |       V |         |         |
14+10      1.4151      1.93  |  Q      |       V |         |         |
14+15      1.4286      1.96  |  Q      |       V |         |         |
14+20      1.4423      1.99  |  Q      |       V |         |         |
14+25      1.4562      2.02  |   Q     |       V |         |         |
14+30      1.4704      2.06  |   Q     |       V |         |         |
14+35      1.4848      2.10  |   Q     |        V|         |         |
14+40      1.4995      2.14  |   Q     |        V|         |         |
14+45      1.5146      2.18  |   Q     |        V|         |         |
14+50      1.5299      2.22  |   Q     |        V|         |         |
14+55      1.5455      2.27  |   Q     |        V|         |         |
15+ 0      1.5616      2.33  |   Q     |         V         |         |
15+ 5      1.5780      2.39  |   Q     |         V         |         |
15+10      1.5949      2.45  |   Q     |         V         |         |
15+15      1.6123      2.52  |    Q    |         V         |         |
15+20      1.6302      2.60  |    Q    |         |V        |         |
15+25      1.6484      2.65  |    Q    |         |V        |         |
15+30      1.6661      2.57  |    Q    |         |V        |         |
15+35      1.6812      2.20  |   Q     |         |V        |         |
15+40      1.6949      1.98  |  Q      |         |V        |         |
15+45      1.7087      2.00  |   Q     |         | V       |         |
15+50      1.7232      2.11  |   Q     |         | V       |         |
15+55      1.7396      2.37  |   Q     |         | V       |         |
16+ 0      1.7593      2.87  |    Q    |         | V       |         |
16+ 5      1.7945      5.11  |         Q         |  V      |         |
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16+10       1.8625      9.87  |          |         Q|  V       |          |
16+15       1.9889     18.36  |          |          |    V     |      Q   |
16+20       2.0852     13.98  |          |          |     VQ   |          |
16+25       2.1380      7.67  |          |     Q    |       V  |          |
16+30       2.1779      5.79  |          |Q         |        V |          |
16+35       2.2121      4.98  |          |  Q       |        V |          |
16+40       2.2424      4.39  |          |    Q     |        V |          |
16+45       2.2686      3.80  |          |      Q   |         V|          |
16+50       2.2914      3.31  |          |       Q  |         V|          |
16+55       2.3110      2.85  |          |     Q    |         V|          |
17+ 0       2.3286      2.56  |          |     Q    |         V|          |
17+ 5       2.3454      2.44  |          |    Q     |          V          |
17+10       2.3613      2.31  |          |    Q     |          V          |
17+15       2.3767      2.24  |          |    Q     |          V          |
17+20       2.3915      2.15  |          |    Q     |          V          |
17+25       2.4055      2.03  |          |    Q     |          V          |
17+30       2.4189      1.95  |          |  Q       |          |V         |
17+35       2.4317      1.85  |          |  Q       |          |V         |
17+40       2.4441      1.81  |          |  Q       |          |V         |
17+45       2.4563      1.76  |          |  Q       |          |V         |
17+50       2.4681      1.72  |          |  Q       |          |V         |
17+55       2.4798      1.69  |          |  Q       |          |V         |
18+ 0       2.4911      1.65  |          |  Q       |          | V        |
18+ 5       2.5023      1.62  |          |  Q       |          | V        |
18+10       2.5133      1.60  |          |  Q       |          | V        |
18+15       2.5242      1.58  |          |  Q       |          | V        |
18+20       2.5350      1.56  |          |  Q       |          | V        |
18+25       2.5456      1.54  |          |  Q       |          | V        |
18+30       2.5561      1.52  |          |  Q       |          | V        |
18+35       2.5665      1.50  |          |  Q       |          |  V       |
18+40       2.5767      1.49  |          | Q        |          |  V       |
18+45       2.5868      1.47  |          | Q        |          |  V       |
18+50       2.5968      1.45  |          | Q        |          |  V       |
18+55       2.6067      1.43  |          | Q        |          |  V       |
19+ 0       2.6164      1.41  |          | Q        |          |  V       |
19+ 5       2.6260      1.40  |          | Q        |          |  V       |
19+10       2.6356      1.38  |          | Q        |          |  V       |
19+15       2.6450      1.37  |          | Q        |          |   V      |
19+20       2.6543      1.35  |          | Q        |          |   V      |
19+25       2.6636      1.34  |          | Q        |          |   V      |
19+30       2.6727      1.33  |          | Q        |          |   V      |
19+35       2.6818      1.32  |          | Q        |          |   V      |
19+40       2.6907      1.30  |          | Q        |          |   V      |
19+45       2.6996      1.29  |          | Q        |          |   V      |
19+50       2.7084      1.28  |          | Q        |          |   V      |
19+55       2.7172      1.27  |          | Q        |          |    V     |
20+ 0       2.7258      1.26  |          | Q        |          |    V     |
20+ 5       2.7344      1.25  |          | Q        |          |    V     |
20+10       2.7430      1.24  |          | Q        |          |    V     |
20+15       2.7514      1.23  |          | Q        |          |    V     |
20+20       2.7598      1.22  |          | Q        |          |    V     |
20+25       2.7681      1.21  |          | Q        |          |    V     |
20+30       2.7764      1.20  |          | Q        |          |    V     |
20+35       2.7846      1.19  |          | Q        |          |    V     |
20+40       2.7927      1.18  |          | Q        |          |    V     |
20+45       2.8008      1.17  |          | Q        |          |     V    |
20+50       2.8089      1.17  |          | Q        |          |     V    |
20+55       2.8168      1.16  |          | Q        |          |     V    |
21+ 0       2.8248      1.15  |          | Q        |          |     V    |
21+ 5       2.8326      1.14  |          | Q        |          |     V    |
21+10       2.8405      1.14  |          | Q        |          |     V    |
21+15       2.8482      1.13  |          | Q        |          |     V    |
21+20       2.8560      1.12  |          | Q        |          |     V    |
21+25       2.8636      1.12  |          | Q        |          |     V    |
21+30       2.8713      1.11  |          | Q        |          |     V    |
21+35       2.8789      1.10  |          | Q        |          |      V   |
21+40       2.8864      1.10  |          | Q        |          |      V   |
21+45       2.8939      1.09  |          | Q        |          |      V   |
21+50       2.9014      1.08  |          | Q        |          |      V   |
21+55       2.9088      1.08  |          | Q        |          |      V   |
22+ 0       2.9162      1.07  |          | Q        |          |      V   |
```

```
  22+ 5       2.9235      1.07  | Q       |         |         |      V  |
  22+10       2.9308      1.06  | Q       |         |         |      V  |
  22+15       2.9381      1.05  | Q       |         |         |      V  |
  22+20       2.9453      1.05  | Q       |         |         |      V  |
  22+25       2.9525      1.04  | Q       |         |         |       V |
  22+30       2.9596      1.04  | Q       |         |         |       V |
  22+35       2.9668      1.03  | Q       |         |         |       V |
  22+40       2.9738      1.03  | Q       |         |         |       V |
  22+45       2.9809      1.02  | Q       |         |         |       V |
  22+50       2.9879      1.02  | Q       |         |         |       V |
  22+55       2.9949      1.01  | Q       |         |         |       V |
  23+ 0       3.0018      1.01  | Q       |         |         |       V |
  23+ 5       3.0088      1.00  | Q       |         |         |       V |
  23+10       3.0157      1.00  | Q       |         |         |       V |
  23+15       3.0225      1.00  |Q        |         |         |       V |
  23+20       3.0293      0.99  |Q        |         |         |        V|
  23+25       3.0361      0.99  |Q        |         |         |        V|
  23+30       3.0429      0.98  |Q        |         |         |        V|
  23+35       3.0496      0.98  |Q        |         |         |        V|
  23+40       3.0564      0.97  |Q        |         |         |        V|
  23+45       3.0630      0.97  |Q        |         |         |        V|
  23+50       3.0697      0.97  |Q        |         |         |        V|
  23+55       3.0763      0.96  |Q        |         |         |        V|
  24+ 0       3.0829      0.96  |Q        |         |         |        V|
  24+ 5       3.0893      0.93  |Q        |         |         |        V|
  24+10       3.0949      0.81  |Q        |         |         |        V|
  24+15       3.0985      0.52  |Q        |         |         |        V|
  24+20       3.1005      0.30  Q         |         |         |        V|
  24+25       3.1020      0.21  Q         |         |         |        V|
  24+30       3.1030      0.14  Q         |         |         |        V|
  24+35       3.1036      0.10  Q         |         |         |        V|
  24+40       3.1041      0.06  Q         |         |         |        V|
  24+45       3.1044      0.04  Q         |         |         |        V|
  24+50       3.1045      0.03  Q         |         |         |        V|
  24+55       3.1047      0.02  Q         |         |         |        V|
  25+ 0       3.1048      0.01  Q         |         |         |        V|
  25+ 5       3.1048      0.01  Q         |         |         |        V|
  25+10       3.1049      0.01  Q         |         |         |        V|
  25+15       3.1049      0.00  Q         |         |         |        V|
  25+20       3.1049      0.00  Q         |         |         |        V|
  25+25       3.1049      0.00  Q         |         |         |         V
--------------------------------------------------------------------------
```

Area 'D' – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'D'
25 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             9.52            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             9.52            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             9.52           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             9.52            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             9.52            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             9.52           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 68.7      68.7          9.52      1.000     0.553    1.000    0.553

Area-averaged adjusted loss rate Fm (In/Hr) =  0.553

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 9.52 | 1.000 | 68.7 | 68.7 | 4.56 | 0.580 |

Area-averaged catchment yield fraction, Y = 0.580
Area-averaged low loss fraction, Yb = 0.420
User entry of time of concentration = 0.262 (hours)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Watershed area = 9.52(Ac.)
Catchment Lag time = 0.210 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 39.7583
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.553(In/Hr)
Average low loss rate fraction (Yb) = 0.420 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 9.52(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.569(In)
30-minute factor = 1.000 Adjusted rainfall = 0.973(In)
1-hour factor = 1.000 Adjusted rainfall = 1.198(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

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U n i t H y d r o g r a p h

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 115.13 (CFS)) | |
| 1 | 3.107 | 3.578 |
| 2 | 14.718 | 13.368 |
| 3 | 45.653 | 35.616 |
| 4 | 68.346 | 26.128 |
| 5 | 78.353 | 11.521 |
| 6 | 85.032 | 7.690 |
| 7 | 89.767 | 5.452 |
| 8 | 93.189 | 3.940 |
| 9 | 95.606 | 2.782 |
| 10 | 97.231 | 1.872 |
| 11 | 98.108 | 1.010 |
| 12 | 98.568 | 0.529 |
| 13 | 98.955 | 0.446 |
| 14 | 99.222 | 0.306 |
| 15 | 99.512 | 0.334 |
| 16 | 99.764 | 0.291 |
| 17 | 99.907 | 0.164 |
| 18 | 100.000 | 0.107 |

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| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5687 | 0.5687 |
| 2 | 0.7001 | 0.1314 |
| 3 | 0.7907 | 0.0906 |
| 4 | 0.8619 | 0.0713 |
| 5 | 0.9216 | 0.0597 |
| 6 | 0.9734 | 0.0518 |
| 7 | 1.0195 | 0.0461 |
| 8 | 1.0612 | 0.0417 |

| | | |
|---|---|---|
| 9 | 1.0993 | 0.0382 |
| 10 | 1.1346 | 0.0353 |
| 11 | 1.1676 | 0.0329 |
| 12 | 1.1984 | 0.0309 |
| 13 | 1.2590 | 0.0606 |
| 14 | 1.3178 | 0.0588 |
| 15 | 1.3751 | 0.0572 |
| 16 | 1.4309 | 0.0558 |
| 17 | 1.4853 | 0.0545 |
| 18 | 1.5386 | 0.0532 |
| 19 | 1.5907 | 0.0521 |
| 20 | 1.6418 | 0.0511 |
| 21 | 1.6919 | 0.0501 |
| 22 | 1.7411 | 0.0492 |
| 23 | 1.7894 | 0.0483 |
| 24 | 1.8369 | 0.0475 |
| 25 | 1.8837 | 0.0468 |
| 26 | 1.9298 | 0.0461 |
| 27 | 1.9752 | 0.0454 |
| 28 | 2.0200 | 0.0448 |
| 29 | 2.0641 | 0.0442 |
| 30 | 2.1077 | 0.0436 |
| 31 | 2.1507 | 0.0430 |
| 32 | 2.1932 | 0.0425 |
| 33 | 2.2352 | 0.0420 |
| 34 | 2.2767 | 0.0415 |
| 35 | 2.3177 | 0.0410 |
| 36 | 2.3583 | 0.0406 |
| 37 | 2.3984 | 0.0401 |
| 38 | 2.4381 | 0.0397 |
| 39 | 2.4775 | 0.0393 |
| 40 | 2.5164 | 0.0389 |
| 41 | 2.5549 | 0.0386 |
| 42 | 2.5931 | 0.0382 |
| 43 | 2.6310 | 0.0379 |
| 44 | 2.6685 | 0.0375 |
| 45 | 2.7057 | 0.0372 |
| 46 | 2.7426 | 0.0369 |
| 47 | 2.7791 | 0.0366 |
| 48 | 2.8154 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8871 | 0.0357 |
| 51 | 2.9225 | 0.0354 |
| 52 | 2.9577 | 0.0352 |
| 53 | 2.9926 | 0.0349 |
| 54 | 3.0272 | 0.0346 |
| 55 | 3.0616 | 0.0344 |
| 56 | 3.0958 | 0.0342 |
| 57 | 3.1297 | 0.0339 |
| 58 | 3.1634 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2301 | 0.0333 |
| 61 | 3.2632 | 0.0330 |
| 62 | 3.2960 | 0.0328 |
| 63 | 3.3287 | 0.0326 |
| 64 | 3.3611 | 0.0324 |
| 65 | 3.3934 | 0.0322 |
| 66 | 3.4254 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4890 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5518 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6140 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6811 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7475 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8135 | 0.0329 |
| 79 | 3.8462 | 0.0328 |

| | | |
|---|---|---|
| 80 | 3.8788 | 0.0326 |
| 81 | 3.9113 | 0.0325 |
| 82 | 3.9437 | 0.0323 |
| 83 | 3.9759 | 0.0322 |
| 84 | 4.0080 | 0.0321 |
| 85 | 4.0399 | 0.0320 |
| 86 | 4.0718 | 0.0318 |
| 87 | 4.1035 | 0.0317 |
| 88 | 4.1351 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1980 | 0.0314 |
| 91 | 4.2292 | 0.0313 |
| 92 | 4.2603 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3223 | 0.0309 |
| 95 | 4.3531 | 0.0308 |
| 96 | 4.3838 | 0.0307 |
| 97 | 4.4144 | 0.0306 |
| 98 | 4.4449 | 0.0305 |
| 99 | 4.4753 | 0.0304 |
| 100 | 4.5056 | 0.0303 |
| 101 | 4.5358 | 0.0302 |
| 102 | 4.5659 | 0.0301 |
| 103 | 4.5959 | 0.0300 |
| 104 | 4.6258 | 0.0299 |
| 105 | 4.6556 | 0.0298 |
| 106 | 4.6853 | 0.0297 |
| 107 | 4.7150 | 0.0296 |
| 108 | 4.7445 | 0.0295 |
| 109 | 4.7739 | 0.0294 |
| 110 | 4.8033 | 0.0294 |
| 111 | 4.8326 | 0.0293 |
| 112 | 4.8617 | 0.0292 |
| 113 | 4.8908 | 0.0291 |
| 114 | 4.9199 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9776 | 0.0288 |
| 117 | 5.0064 | 0.0288 |
| 118 | 5.0351 | 0.0287 |
| 119 | 5.0637 | 0.0286 |
| 120 | 5.0922 | 0.0285 |
| 121 | 5.1206 | 0.0284 |
| 122 | 5.1490 | 0.0284 |
| 123 | 5.1773 | 0.0283 |
| 124 | 5.2055 | 0.0282 |
| 125 | 5.2337 | 0.0281 |
| 126 | 5.2617 | 0.0281 |
| 127 | 5.2897 | 0.0280 |
| 128 | 5.3177 | 0.0279 |
| 129 | 5.3455 | 0.0279 |
| 130 | 5.3733 | 0.0278 |
| 131 | 5.4010 | 0.0277 |
| 132 | 5.4286 | 0.0276 |
| 133 | 5.4562 | 0.0276 |
| 134 | 5.4837 | 0.0275 |
| 135 | 5.5112 | 0.0274 |
| 136 | 5.5385 | 0.0274 |
| 137 | 5.5658 | 0.0273 |
| 138 | 5.5931 | 0.0272 |
| 139 | 5.6202 | 0.0272 |
| 140 | 5.6474 | 0.0271 |
| 141 | 5.6744 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7283 | 0.0269 |
| 144 | 5.7552 | 0.0269 |
| 145 | 5.7820 | 0.0268 |
| 146 | 5.8087 | 0.0267 |
| 147 | 5.8354 | 0.0267 |
| 148 | 5.8620 | 0.0266 |
| 149 | 5.8885 | 0.0266 |
| 150 | 5.9150 | 0.0265 |

| | | |
|---|---|---|
| 151 | 5.9415 | 0.0264 |
| 152 | 5.9679 | 0.0264 |
| 153 | 5.9942 | 0.0263 |
| 154 | 6.0205 | 0.0263 |
| 155 | 6.0467 | 0.0262 |
| 156 | 6.0728 | 0.0262 |
| 157 | 6.0990 | 0.0261 |
| 158 | 6.1250 | 0.0260 |
| 159 | 6.1510 | 0.0260 |
| 160 | 6.1769 | 0.0259 |
| 161 | 6.2028 | 0.0259 |
| 162 | 6.2287 | 0.0258 |
| 163 | 6.2544 | 0.0258 |
| 164 | 6.2802 | 0.0257 |
| 165 | 6.3059 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3571 | 0.0256 |
| 168 | 6.3826 | 0.0255 |
| 169 | 6.4081 | 0.0255 |
| 170 | 6.4335 | 0.0254 |
| 171 | 6.4589 | 0.0254 |
| 172 | 6.4842 | 0.0253 |
| 173 | 6.5095 | 0.0253 |
| 174 | 6.5347 | 0.0252 |
| 175 | 6.5599 | 0.0252 |
| 176 | 6.5850 | 0.0251 |
| 177 | 6.6101 | 0.0251 |
| 178 | 6.6352 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6851 | 0.0250 |
| 181 | 6.7100 | 0.0249 |
| 182 | 6.7349 | 0.0249 |
| 183 | 6.7597 | 0.0248 |
| 184 | 6.7845 | 0.0248 |
| 185 | 6.8092 | 0.0247 |
| 186 | 6.8339 | 0.0247 |
| 187 | 6.8586 | 0.0246 |
| 188 | 6.8832 | 0.0246 |
| 189 | 6.9077 | 0.0246 |
| 190 | 6.9322 | 0.0245 |
| 191 | 6.9567 | 0.0245 |
| 192 | 6.9811 | 0.0244 |
| 193 | 7.0055 | 0.0244 |
| 194 | 7.0299 | 0.0243 |
| 195 | 7.0542 | 0.0243 |
| 196 | 7.0784 | 0.0243 |
| 197 | 7.1026 | 0.0242 |
| 198 | 7.1268 | 0.0242 |
| 199 | 7.1510 | 0.0241 |
| 200 | 7.1751 | 0.0241 |
| 201 | 7.1991 | 0.0241 |
| 202 | 7.2232 | 0.0240 |
| 203 | 7.2471 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2950 | 0.0239 |
| 206 | 7.3189 | 0.0239 |
| 207 | 7.3427 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3902 | 0.0238 |
| 210 | 7.4140 | 0.0237 |
| 211 | 7.4376 | 0.0237 |
| 212 | 7.4613 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5085 | 0.0236 |
| 215 | 7.5320 | 0.0235 |
| 216 | 7.5555 | 0.0235 |
| 217 | 7.5789 | 0.0235 |
| 218 | 7.6024 | 0.0234 |
| 219 | 7.6258 | 0.0234 |
| 220 | 7.6491 | 0.0234 |
| 221 | 7.6724 | 0.0233 |

| | | |
|---|---|---|
| 222 | 7.6957 | 0.0233 |
| 223 | 7.7190 | 0.0233 |
| 224 | 7.7422 | 0.0232 |
| 225 | 7.7654 | 0.0232 |
| 226 | 7.7885 | 0.0232 |
| 227 | 7.8117 | 0.0231 |
| 228 | 7.8347 | 0.0231 |
| 229 | 7.8578 | 0.0231 |
| 230 | 7.8808 | 0.0230 |
| 231 | 7.9038 | 0.0230 |
| 232 | 7.9267 | 0.0230 |
| 233 | 7.9497 | 0.0229 |
| 234 | 7.9725 | 0.0229 |
| 235 | 7.9954 | 0.0229 |
| 236 | 8.0182 | 0.0228 |
| 237 | 8.0410 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0865 | 0.0227 |
| 240 | 8.1092 | 0.0227 |
| 241 | 8.1319 | 0.0227 |
| 242 | 8.1545 | 0.0226 |
| 243 | 8.1771 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2222 | 0.0225 |
| 246 | 8.2447 | 0.0225 |
| 247 | 8.2672 | 0.0225 |
| 248 | 8.2897 | 0.0225 |
| 249 | 8.3121 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3569 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4015 | 0.0223 |
| 254 | 8.4238 | 0.0223 |
| 255 | 8.4460 | 0.0222 |
| 256 | 8.4682 | 0.0222 |
| 257 | 8.4904 | 0.0222 |
| 258 | 8.5126 | 0.0222 |
| 259 | 8.5347 | 0.0221 |
| 260 | 8.5568 | 0.0221 |
| 261 | 8.5789 | 0.0221 |
| 262 | 8.6010 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6669 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7108 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7545 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8200 | 0.0218 |
| 273 | 8.8417 | 0.0218 |
| 274 | 8.8634 | 0.0217 |
| 275 | 8.8851 | 0.0217 |
| 276 | 8.9068 | 0.0217 |
| 277 | 8.9285 | 0.0216 |
| 278 | 8.9501 | 0.0216 |
| 279 | 8.9717 | 0.0216 |
| 280 | 8.9933 | 0.0216 |
| 281 | 9.0148 | 0.0215 |
| 282 | 9.0363 | 0.0215 |
| 283 | 9.0578 | 0.0215 |
| 284 | 9.0793 | 0.0215 |
| 285 | 9.1008 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1649 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 0.0214 | 0.0090 | 0.0124 |
| 2 | 0.0214 | 0.0090 | 0.0124 |
| 3 | 0.0214 | 0.0090 | 0.0124 |
| 4 | 0.0215 | 0.0090 | 0.0125 |
| 5 | 0.0215 | 0.0090 | 0.0125 |
| 6 | 0.0215 | 0.0090 | 0.0125 |
| 7 | 0.0216 | 0.0091 | 0.0125 |
| 8 | 0.0216 | 0.0091 | 0.0125 |
| 9 | 0.0217 | 0.0091 | 0.0126 |
| 10 | 0.0217 | 0.0091 | 0.0126 |
| 11 | 0.0218 | 0.0091 | 0.0126 |
| 12 | 0.0218 | 0.0091 | 0.0126 |
| 13 | 0.0218 | 0.0092 | 0.0127 |
| 14 | 0.0219 | 0.0092 | 0.0127 |
| 15 | 0.0219 | 0.0092 | 0.0127 |
| 16 | 0.0219 | 0.0092 | 0.0127 |
| 17 | 0.0220 | 0.0092 | 0.0128 |
| 18 | 0.0220 | 0.0092 | 0.0128 |
| 19 | 0.0221 | 0.0093 | 0.0128 |
| 20 | 0.0221 | 0.0093 | 0.0128 |
| 21 | 0.0222 | 0.0093 | 0.0129 |
| 22 | 0.0222 | 0.0093 | 0.0129 |
| 23 | 0.0222 | 0.0093 | 0.0129 |
| 24 | 0.0223 | 0.0094 | 0.0129 |
| 25 | 0.0223 | 0.0094 | 0.0130 |
| 26 | 0.0224 | 0.0094 | 0.0130 |
| 27 | 0.0224 | 0.0094 | 0.0130 |
| 28 | 0.0225 | 0.0094 | 0.0130 |
| 29 | 0.0225 | 0.0094 | 0.0131 |
| 30 | 0.0225 | 0.0095 | 0.0131 |
| 31 | 0.0226 | 0.0095 | 0.0131 |
| 32 | 0.0226 | 0.0095 | 0.0131 |
| 33 | 0.0227 | 0.0095 | 0.0132 |
| 34 | 0.0227 | 0.0095 | 0.0132 |
| 35 | 0.0228 | 0.0096 | 0.0132 |
| 36 | 0.0228 | 0.0096 | 0.0132 |
| 37 | 0.0229 | 0.0096 | 0.0133 |
| 38 | 0.0229 | 0.0096 | 0.0133 |
| 39 | 0.0230 | 0.0096 | 0.0133 |
| 40 | 0.0230 | 0.0097 | 0.0134 |
| 41 | 0.0231 | 0.0097 | 0.0134 |
| 42 | 0.0231 | 0.0097 | 0.0134 |
| 43 | 0.0232 | 0.0097 | 0.0135 |
| 44 | 0.0232 | 0.0097 | 0.0135 |
| 45 | 0.0233 | 0.0098 | 0.0135 |
| 46 | 0.0233 | 0.0098 | 0.0135 |
| 47 | 0.0234 | 0.0098 | 0.0136 |
| 48 | 0.0234 | 0.0098 | 0.0136 |
| 49 | 0.0235 | 0.0099 | 0.0136 |
| 50 | 0.0235 | 0.0099 | 0.0137 |
| 51 | 0.0236 | 0.0099 | 0.0137 |
| 52 | 0.0236 | 0.0099 | 0.0137 |
| 53 | 0.0237 | 0.0100 | 0.0138 |
| 54 | 0.0238 | 0.0100 | 0.0138 |
| 55 | 0.0238 | 0.0100 | 0.0138 |
| 56 | 0.0239 | 0.0100 | 0.0139 |
| 57 | 0.0239 | 0.0101 | 0.0139 |
| 58 | 0.0240 | 0.0101 | 0.0139 |
| 59 | 0.0241 | 0.0101 | 0.0140 |
| 60 | 0.0241 | 0.0101 | 0.0140 |
| 61 | 0.0242 | 0.0101 | 0.0140 |
| 62 | 0.0242 | 0.0102 | 0.0141 |
| 63 | 0.0243 | 0.0102 | 0.0141 |
| 64 | 0.0243 | 0.0102 | 0.0141 |
| 65 | 0.0244 | 0.0103 | 0.0142 |
| 66 | 0.0245 | 0.0103 | 0.0142 |
| 67 | 0.0246 | 0.0103 | 0.0142 |
| 68 | 0.0246 | 0.0103 | 0.0143 |
| 69 | 0.0247 | 0.0104 | 0.0143 |
| 70 | 0.0247 | 0.0104 | 0.0143 |

| | | | |
|---|---|---|---|
| 71 | 0.0248 | 0.0104 | 0.0144 |
| 72 | 0.0249 | 0.0104 | 0.0144 |
| 73 | 0.0250 | 0.0105 | 0.0145 |
| 74 | 0.0250 | 0.0105 | 0.0145 |
| 75 | 0.0251 | 0.0105 | 0.0146 |
| 76 | 0.0251 | 0.0106 | 0.0146 |
| 77 | 0.0252 | 0.0106 | 0.0146 |
| 78 | 0.0253 | 0.0106 | 0.0147 |
| 79 | 0.0254 | 0.0107 | 0.0147 |
| 80 | 0.0254 | 0.0107 | 0.0148 |
| 81 | 0.0255 | 0.0107 | 0.0148 |
| 82 | 0.0256 | 0.0107 | 0.0148 |
| 83 | 0.0257 | 0.0108 | 0.0149 |
| 84 | 0.0257 | 0.0108 | 0.0149 |
| 85 | 0.0258 | 0.0108 | 0.0150 |
| 86 | 0.0259 | 0.0109 | 0.0150 |
| 87 | 0.0260 | 0.0109 | 0.0151 |
| 88 | 0.0260 | 0.0109 | 0.0151 |
| 89 | 0.0262 | 0.0110 | 0.0152 |
| 90 | 0.0262 | 0.0110 | 0.0152 |
| 91 | 0.0263 | 0.0111 | 0.0153 |
| 92 | 0.0264 | 0.0111 | 0.0153 |
| 93 | 0.0265 | 0.0111 | 0.0154 |
| 94 | 0.0266 | 0.0111 | 0.0154 |
| 95 | 0.0267 | 0.0112 | 0.0155 |
| 96 | 0.0267 | 0.0112 | 0.0155 |
| 97 | 0.0269 | 0.0113 | 0.0156 |
| 98 | 0.0269 | 0.0113 | 0.0156 |
| 99 | 0.0270 | 0.0114 | 0.0157 |
| 100 | 0.0271 | 0.0114 | 0.0157 |
| 101 | 0.0272 | 0.0114 | 0.0158 |
| 102 | 0.0273 | 0.0115 | 0.0158 |
| 103 | 0.0274 | 0.0115 | 0.0159 |
| 104 | 0.0275 | 0.0115 | 0.0160 |
| 105 | 0.0276 | 0.0116 | 0.0160 |
| 106 | 0.0277 | 0.0116 | 0.0161 |
| 107 | 0.0279 | 0.0117 | 0.0162 |
| 108 | 0.0279 | 0.0117 | 0.0162 |
| 109 | 0.0281 | 0.0118 | 0.0163 |
| 110 | 0.0281 | 0.0118 | 0.0163 |
| 111 | 0.0283 | 0.0119 | 0.0164 |
| 112 | 0.0284 | 0.0119 | 0.0165 |
| 113 | 0.0285 | 0.0120 | 0.0166 |
| 114 | 0.0286 | 0.0120 | 0.0166 |
| 115 | 0.0288 | 0.0121 | 0.0167 |
| 116 | 0.0288 | 0.0121 | 0.0167 |
| 117 | 0.0290 | 0.0122 | 0.0168 |
| 118 | 0.0291 | 0.0122 | 0.0169 |
| 119 | 0.0293 | 0.0123 | 0.0170 |
| 120 | 0.0294 | 0.0123 | 0.0170 |
| 121 | 0.0295 | 0.0124 | 0.0171 |
| 122 | 0.0296 | 0.0124 | 0.0172 |
| 123 | 0.0298 | 0.0125 | 0.0173 |
| 124 | 0.0299 | 0.0126 | 0.0174 |
| 125 | 0.0301 | 0.0126 | 0.0175 |
| 126 | 0.0302 | 0.0127 | 0.0175 |
| 127 | 0.0304 | 0.0128 | 0.0176 |
| 128 | 0.0305 | 0.0128 | 0.0177 |
| 129 | 0.0307 | 0.0129 | 0.0178 |
| 130 | 0.0308 | 0.0129 | 0.0179 |
| 131 | 0.0310 | 0.0130 | 0.0180 |
| 132 | 0.0311 | 0.0131 | 0.0181 |
| 133 | 0.0314 | 0.0132 | 0.0182 |
| 134 | 0.0315 | 0.0132 | 0.0183 |
| 135 | 0.0317 | 0.0133 | 0.0184 |
| 136 | 0.0318 | 0.0134 | 0.0185 |
| 137 | 0.0321 | 0.0135 | 0.0186 |
| 138 | 0.0322 | 0.0135 | 0.0187 |
| 139 | 0.0325 | 0.0136 | 0.0188 |
| 140 | 0.0326 | 0.0137 | 0.0189 |
| 141 | 0.0329 | 0.0138 | 0.0191 |

| | | | |
|---|---|---|---|
| 142 | 0.0330 | 0.0139 | 0.0192 |
| 143 | 0.0333 | 0.0140 | 0.0193 |
| 144 | 0.0335 | 0.0140 | 0.0194 |
| 145 | 0.0310 | 0.0130 | 0.0180 |
| 146 | 0.0312 | 0.0131 | 0.0181 |
| 147 | 0.0315 | 0.0132 | 0.0183 |
| 148 | 0.0317 | 0.0133 | 0.0184 |
| 149 | 0.0321 | 0.0135 | 0.0186 |
| 150 | 0.0322 | 0.0135 | 0.0187 |
| 151 | 0.0326 | 0.0137 | 0.0189 |
| 152 | 0.0328 | 0.0138 | 0.0191 |
| 153 | 0.0333 | 0.0140 | 0.0193 |
| 154 | 0.0335 | 0.0141 | 0.0194 |
| 155 | 0.0339 | 0.0142 | 0.0197 |
| 156 | 0.0342 | 0.0143 | 0.0198 |
| 157 | 0.0346 | 0.0145 | 0.0201 |
| 158 | 0.0349 | 0.0146 | 0.0203 |
| 159 | 0.0354 | 0.0149 | 0.0206 |
| 160 | 0.0357 | 0.0150 | 0.0207 |
| 161 | 0.0363 | 0.0152 | 0.0210 |
| 162 | 0.0366 | 0.0153 | 0.0212 |
| 163 | 0.0372 | 0.0156 | 0.0216 |
| 164 | 0.0375 | 0.0157 | 0.0218 |
| 165 | 0.0382 | 0.0160 | 0.0222 |
| 166 | 0.0386 | 0.0162 | 0.0224 |
| 167 | 0.0393 | 0.0165 | 0.0228 |
| 168 | 0.0397 | 0.0167 | 0.0230 |
| 169 | 0.0406 | 0.0170 | 0.0235 |
| 170 | 0.0410 | 0.0172 | 0.0238 |
| 171 | 0.0420 | 0.0176 | 0.0244 |
| 172 | 0.0425 | 0.0178 | 0.0247 |
| 173 | 0.0436 | 0.0183 | 0.0253 |
| 174 | 0.0442 | 0.0185 | 0.0256 |
| 175 | 0.0454 | 0.0191 | 0.0263 |
| 176 | 0.0461 | 0.0193 | 0.0267 |
| 177 | 0.0475 | 0.0200 | 0.0276 |
| 178 | 0.0483 | 0.0203 | 0.0281 |
| 179 | 0.0501 | 0.0210 | 0.0291 |
| 180 | 0.0511 | 0.0214 | 0.0296 |
| 181 | 0.0532 | 0.0223 | 0.0309 |
| 182 | 0.0545 | 0.0229 | 0.0316 |
| 183 | 0.0572 | 0.0240 | 0.0332 |
| 184 | 0.0588 | 0.0247 | 0.0341 |
| 185 | 0.0309 | 0.0130 | 0.0179 |
| 186 | 0.0329 | 0.0138 | 0.0191 |
| 187 | 0.0382 | 0.0160 | 0.0221 |
| 188 | 0.0417 | 0.0175 | 0.0242 |
| 189 | 0.0518 | 0.0217 | 0.0301 |
| 190 | 0.0597 | 0.0250 | 0.0346 |
| 191 | 0.0906 | 0.0380 | 0.0525 |
| 192 | 0.1314 | 0.0460 | 0.0854 |
| 193 | 0.5687 | 0.0460 | 0.5226 |
| 194 | 0.0713 | 0.0299 | 0.0414 |
| 195 | 0.0461 | 0.0193 | 0.0267 |
| 196 | 0.0353 | 0.0148 | 0.0205 |
| 197 | 0.0606 | 0.0254 | 0.0352 |
| 198 | 0.0558 | 0.0234 | 0.0324 |
| 199 | 0.0521 | 0.0219 | 0.0302 |
| 200 | 0.0492 | 0.0206 | 0.0285 |
| 201 | 0.0468 | 0.0196 | 0.0272 |
| 202 | 0.0448 | 0.0188 | 0.0260 |
| 203 | 0.0430 | 0.0181 | 0.0250 |
| 204 | 0.0415 | 0.0174 | 0.0241 |
| 205 | 0.0401 | 0.0168 | 0.0233 |
| 206 | 0.0389 | 0.0163 | 0.0226 |
| 207 | 0.0379 | 0.0159 | 0.0220 |
| 208 | 0.0369 | 0.0155 | 0.0214 |
| 209 | 0.0360 | 0.0151 | 0.0209 |
| 210 | 0.0352 | 0.0148 | 0.0204 |
| 211 | 0.0344 | 0.0144 | 0.0200 |
| 212 | 0.0337 | 0.0141 | 0.0196 |

| | | | |
|---|---|---|---|
| 213 | 0.0330 | 0.0139 | 0.0192 |
| 214 | 0.0324 | 0.0136 | 0.0188 |
| 215 | 0.0319 | 0.0134 | 0.0185 |
| 216 | 0.0313 | 0.0132 | 0.0182 |
| 217 | 0.0336 | 0.0141 | 0.0195 |
| 218 | 0.0332 | 0.0139 | 0.0192 |
| 219 | 0.0328 | 0.0137 | 0.0190 |
| 220 | 0.0323 | 0.0136 | 0.0188 |
| 221 | 0.0320 | 0.0134 | 0.0185 |
| 222 | 0.0316 | 0.0133 | 0.0183 |
| 223 | 0.0313 | 0.0131 | 0.0181 |
| 224 | 0.0309 | 0.0130 | 0.0179 |
| 225 | 0.0306 | 0.0128 | 0.0178 |
| 226 | 0.0303 | 0.0127 | 0.0176 |
| 227 | 0.0300 | 0.0126 | 0.0174 |
| 228 | 0.0297 | 0.0125 | 0.0172 |
| 229 | 0.0294 | 0.0124 | 0.0171 |
| 230 | 0.0292 | 0.0122 | 0.0169 |
| 231 | 0.0289 | 0.0121 | 0.0168 |
| 232 | 0.0287 | 0.0120 | 0.0166 |
| 233 | 0.0284 | 0.0119 | 0.0165 |
| 234 | 0.0282 | 0.0118 | 0.0164 |
| 235 | 0.0280 | 0.0118 | 0.0162 |
| 236 | 0.0278 | 0.0117 | 0.0161 |
| 237 | 0.0276 | 0.0116 | 0.0160 |
| 238 | 0.0274 | 0.0115 | 0.0159 |
| 239 | 0.0272 | 0.0114 | 0.0158 |
| 240 | 0.0270 | 0.0113 | 0.0157 |
| 241 | 0.0268 | 0.0112 | 0.0156 |
| 242 | 0.0266 | 0.0112 | 0.0154 |
| 243 | 0.0264 | 0.0111 | 0.0153 |
| 244 | 0.0263 | 0.0110 | 0.0152 |
| 245 | 0.0261 | 0.0110 | 0.0151 |
| 246 | 0.0259 | 0.0109 | 0.0151 |
| 247 | 0.0258 | 0.0108 | 0.0150 |
| 248 | 0.0256 | 0.0108 | 0.0149 |
| 249 | 0.0255 | 0.0107 | 0.0148 |
| 250 | 0.0253 | 0.0106 | 0.0147 |
| 251 | 0.0252 | 0.0106 | 0.0146 |
| 252 | 0.0250 | 0.0105 | 0.0145 |
| 253 | 0.0249 | 0.0105 | 0.0145 |
| 254 | 0.0248 | 0.0104 | 0.0144 |
| 255 | 0.0246 | 0.0103 | 0.0143 |
| 256 | 0.0245 | 0.0103 | 0.0142 |
| 257 | 0.0244 | 0.0102 | 0.0142 |
| 258 | 0.0243 | 0.0102 | 0.0141 |
| 259 | 0.0241 | 0.0101 | 0.0140 |
| 260 | 0.0240 | 0.0101 | 0.0139 |
| 261 | 0.0239 | 0.0100 | 0.0139 |
| 262 | 0.0238 | 0.0100 | 0.0138 |
| 263 | 0.0237 | 0.0099 | 0.0137 |
| 264 | 0.0236 | 0.0099 | 0.0137 |
| 265 | 0.0235 | 0.0098 | 0.0136 |
| 266 | 0.0234 | 0.0098 | 0.0136 |
| 267 | 0.0233 | 0.0098 | 0.0135 |
| 268 | 0.0232 | 0.0097 | 0.0134 |
| 269 | 0.0231 | 0.0097 | 0.0134 |
| 270 | 0.0230 | 0.0096 | 0.0133 |
| 271 | 0.0229 | 0.0096 | 0.0133 |
| 272 | 0.0228 | 0.0096 | 0.0132 |
| 273 | 0.0227 | 0.0095 | 0.0132 |
| 274 | 0.0226 | 0.0095 | 0.0131 |
| 275 | 0.0225 | 0.0094 | 0.0130 |
| 276 | 0.0224 | 0.0094 | 0.0130 |
| 277 | 0.0223 | 0.0094 | 0.0129 |
| 278 | 0.0222 | 0.0093 | 0.0129 |
| 279 | 0.0221 | 0.0093 | 0.0128 |
| 280 | 0.0221 | 0.0093 | 0.0128 |
| 281 | 0.0220 | 0.0092 | 0.0127 |
| 282 | 0.0219 | 0.0092 | 0.0127 |
| 283 | 0.0218 | 0.0092 | 0.0127 |

```
      284              0.0217           0.0091              0.0126
      285              0.0216           0.0091              0.0126
      286              0.0216           0.0091              0.0125
      287              0.0215           0.0090              0.0125
      288              0.0214           0.0090              0.0124
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.65(In)
      Total effective rainfall =      5.52(In)
      Peak flow rate in flood hydrograph =     22.81(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
      ---------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-------------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q         |          |          |          |
  0+10       0.0018      0.21  Q         |          |          |          |
  0+15       0.0062      0.65  Q         |          |          |          |
  0+20       0.0130      0.98  VQ        |          |          |          |
  0+25       0.0207      1.12  VQ        |          |          |          |
  0+30       0.0291      1.22  VQ        |          |          |          |
  0+35       0.0380      1.29  VQ        |          |          |          |
  0+40       0.0472      1.34  VQ        |          |          |          |
  0+45       0.0567      1.38  VQ        |          |          |          |
  0+50       0.0663      1.40  VQ        |          |          |          |
  0+55       0.0761      1.42  VQ        |          |          |          |
  1+ 0       0.0859      1.43  VQ        |          |          |          |
  1+ 5       0.0958      1.43  VQ        |          |          |          |
  1+10       0.1057      1.44  VQ        |          |          |          |
  1+15       0.1157      1.45  |Q        |          |          |          |
  1+20       0.1257      1.45  |Q        |          |          |          |
  1+25       0.1358      1.46  |Q        |          |          |          |
  1+30       0.1458      1.46  |Q        |          |          |          |
  1+35       0.1559      1.47  |Q        |          |          |          |
  1+40       0.1660      1.47  |Q        |          |          |          |
  1+45       0.1762      1.47  |Q        |          |          |          |
  1+50       0.1863      1.47  |Q        |          |          |          |
  1+55       0.1965      1.48  |Q        |          |          |          |
  2+ 0       0.2067      1.48  |Q        |          |          |          |
  2+ 5       0.2169      1.48  |Q        |          |          |          |
  2+10       0.2271      1.48  |QV       |          |          |          |
  2+15       0.2374      1.49  |QV       |          |          |          |
  2+20       0.2476      1.49  |QV       |          |          |          |
  2+25       0.2579      1.49  |QV       |          |          |          |
  2+30       0.2682      1.50  |QV       |          |          |          |
  2+35       0.2785      1.50  |QV       |          |          |          |
  2+40       0.2889      1.50  | Q       |          |          |          |
  2+45       0.2993      1.51  | Q       |          |          |          |
  2+50       0.3096      1.51  | Q       |          |          |          |
  2+55       0.3201      1.51  | Q       |          |          |          |
  3+ 0       0.3305      1.51  | QV      |          |          |          |
  3+ 5       0.3409      1.52  | QV      |          |          |          |
  3+10       0.3514      1.52  | QV      |          |          |          |
  3+15       0.3619      1.52  | QV      |          |          |          |
  3+20       0.3724      1.53  | QV      |          |          |          |
  3+25       0.3830      1.53  | QV      |          |          |          |
  3+30       0.3935      1.53  | QV      |          |          |          |
  3+35       0.4041      1.54  | QV      |          |          |          |
  3+40       0.4147      1.54  | QV      |          |          |          |
  3+45       0.4254      1.54  | QV      |          |          |          |
  3+50       0.4360      1.55  | QV      |          |          |          |
  3+55       0.4467      1.55  | Q V     |          |          |          |
  4+ 0       0.4574      1.55  | Q V     |          |          |          |
  4+ 5       0.4681      1.56  | Q V     |          |          |          |
  4+10       0.4789      1.56  | Q V     |          |          |          |
  4+15       0.4897      1.56  | Q V     |          |          |          |
```

```
 4+20      0.5005      1.57  | Q V     |         |         |         |
 4+25      0.5113      1.57  | Q V     |         |         |         |
 4+30      0.5221      1.58  | Q V     |         |         |         |
 4+35      0.5330      1.58  | Q V     |         |         |         |
 4+40      0.5439      1.58  | Q V     |         |         |         |
 4+45      0.5548      1.59  | Q  V    |         |         |         |
 4+50      0.5658      1.59  | Q  V    |         |         |         |
 4+55      0.5768      1.59  | Q  V    |         |         |         |
 5+ 0      0.5878      1.60  | Q  V    |         |         |         |
 5+ 5      0.5988      1.60  | Q  V    |         |         |         |
 5+10      0.6099      1.61  | Q  V    |         |         |         |
 5+15      0.6209      1.61  | Q  V    |         |         |         |
 5+20      0.6321      1.61  | Q  V    |         |         |         |
 5+25      0.6432      1.62  | Q  V    |         |         |         |
 5+30      0.6544      1.62  | Q  V    |         |         |         |
 5+35      0.6656      1.63  | Q   V   |         |         |         |
 5+40      0.6768      1.63  | Q   V   |         |         |         |
 5+45      0.6880      1.63  | Q   V   |         |         |         |
 5+50      0.6993      1.64  | Q   V   |         |         |         |
 5+55      0.7106      1.64  | Q   V   |         |         |         |
 6+ 0      0.7220      1.65  | Q   V   |         |         |         |
 6+ 5      0.7334      1.65  | Q   V   |         |         |         |
 6+10      0.7448      1.66  | Q   V   |         |         |         |
 6+15      0.7562      1.66  | Q   V   |         |         |         |
 6+20      0.7677      1.66  | Q    V  |         |         |         |
 6+25      0.7792      1.67  | Q    V  |         |         |         |
 6+30      0.7907      1.67  | Q    V  |         |         |         |
 6+35      0.8023      1.68  | Q    V  |         |         |         |
 6+40      0.8139      1.68  | Q    V  |         |         |         |
 6+45      0.8255      1.69  | Q    V  |         |         |         |
 6+50      0.8371      1.69  | Q    V  |         |         |         |
 6+55      0.8488      1.70  | Q    V  |         |         |         |
 7+ 0      0.8606      1.70  | Q    V  |         |         |         |
 7+ 5      0.8723      1.71  | Q    V  |         |         |         |
 7+10      0.8841      1.71  | Q     V |         |         |         |
 7+15      0.8960      1.72  | Q     V |         |         |         |
 7+20      0.9078      1.72  | Q     V |         |         |         |
 7+25      0.9197      1.73  | Q     V |         |         |         |
 7+30      0.9317      1.73  | Q     V |         |         |         |
 7+35      0.9437      1.74  | Q     V |         |         |         |
 7+40      0.9557      1.74  | Q     V |         |         |         |
 7+45      0.9677      1.75  | Q     V |         |         |         |
 7+50      0.9798      1.76  | Q     V |         |         |         |
 7+55      0.9920      1.76  | Q      V|         |         |         |
 8+ 0      1.0041      1.77  | Q      V|         |         |         |
 8+ 5      1.0164      1.77  | Q      V|         |         |         |
 8+10      1.0286      1.78  | Q      V|         |         |         |
 8+15      1.0409      1.79  | Q      V|         |         |         |
 8+20      1.0532      1.79  | Q      V|         |         |         |
 8+25      1.0656      1.80  | Q      V|         |         |         |
 8+30      1.0780      1.80  | Q      V|         |         |         |
 8+35      1.0905      1.81  | Q      V|         |         |         |
 8+40      1.1030      1.82  | Q       V         |         |         |
 8+45      1.1156      1.82  | Q       V         |         |         |
 8+50      1.1282      1.83  | Q       V         |         |         |
 8+55      1.1408      1.84  | Q       V         |         |         |
 9+ 0      1.1535      1.84  | Q       V         |         |         |
 9+ 5      1.1663      1.85  | Q       V         |         |         |
 9+10      1.1791      1.86  | Q       V         |         |         |
 9+15      1.1919      1.86  | Q       V         |         |         |
 9+20      1.2048      1.87  | Q       |V        |         |         |
 9+25      1.2177      1.88  | Q       |V        |         |         |
 9+30      1.2307      1.89  | Q       |V        |         |         |
 9+35      1.2438      1.89  | Q       |V        |         |         |
 9+40      1.2569      1.90  | Q       |V        |         |         |
 9+45      1.2700      1.91  | Q       |V        |         |         |
 9+50      1.2832      1.92  | Q       |V        |         |         |
 9+55      1.2965      1.93  | Q       |V        |         |         |
10+ 0      1.3098      1.93  | Q       |V        |         |         |
10+ 5      1.3232      1.94  | Q       | V       |         |         |
10+10      1.3366      1.95  | Q       | V       |         |         |
```

```
10+15       1.3501      1.96  | Q       | V       |         |         |
10+20       1.3637      1.97  | Q       | V       |         |         |
10+25       1.3773      1.98  | Q       | V       |         |         |
10+30       1.3910      1.99  | Q       | V       |         |         |
10+35       1.4048      2.00  | Q       | V       |         |         |
10+40       1.4186      2.01  | Q       | V       |         |         |
10+45       1.4325      2.02  | Q       |  V      |         |         |
10+50       1.4464      2.03  | Q       |  V      |         |         |
10+55       1.4604      2.04  | Q       |  V      |         |         |
11+ 0       1.4745      2.05  | Q       |  V      |         |         |
11+ 5       1.4887      2.06  | Q       |  V      |         |         |
11+10       1.5029      2.07  | Q       |  V      |         |         |
11+15       1.5173      2.08  | Q       |  V      |         |         |
11+20       1.5317      2.09  | Q       |  V      |         |         |
11+25       1.5461      2.10  | Q       |   V     |         |         |
11+30       1.5607      2.11  | Q       |   V     |         |         |
11+35       1.5753      2.13  | Q       |   V     |         |         |
11+40       1.5901      2.14  | Q       |   V     |         |         |
11+45       1.6049      2.15  | Q       |   V     |         |         |
11+50       1.6198      2.16  | Q       |   V     |         |         |
11+55       1.6348      2.18  | Q       |   V     |         |         |
12+ 0       1.6499      2.19  | Q       |    V    |         |         |
12+ 5       1.6650      2.20  | Q       |    V    |         |         |
12+10       1.6801      2.19  | Q       |    V    |         |         |
12+15       1.6949      2.15  | Q       |    V    |         |         |
12+20       1.7095      2.12  | Q       |    V    |         |         |
12+25       1.7241      2.12  | Q       |    V    |         |         |
12+30       1.7388      2.13  | Q       |    V    |         |         |
12+35       1.7535      2.13  | Q       |     V   |         |         |
12+40       1.7683      2.15  | Q       |     V   |         |         |
12+45       1.7832      2.16  | Q       |     V   |         |         |
12+50       1.7981      2.18  | Q       |     V   |         |         |
12+55       1.8133      2.20  | Q       |     V   |         |         |
13+ 0       1.8285      2.22  | Q       |     V   |         |         |
13+ 5       1.8439      2.24  | Q       |     V   |         |         |
13+10       1.8595      2.26  |  Q      |     V   |         |         |
13+15       1.8752      2.28  |  Q      |      V  |         |         |
13+20       1.8911      2.30  |  Q      |      V  |         |         |
13+25       1.9071      2.33  |  Q      |      V  |         |         |
13+30       1.9233      2.36  |  Q      |      V  |         |         |
13+35       1.9398      2.38  |  Q      |      V  |         |         |
13+40       1.9564      2.41  |  Q      |      V  |         |         |
13+45       1.9732      2.44  |  Q      |       V |         |         |
13+50       1.9902      2.47  |  Q      |       V |         |         |
13+55       2.0074      2.50  |  Q      |       V |         |         |
14+ 0       2.0249      2.54  |  Q      |       V |         |         |
14+ 5       2.0427      2.57  |  Q      |       V |         |         |
14+10       2.0606      2.61  |  Q      |       V |         |         |
14+15       2.0789      2.65  |  Q      |       V |         |         |
14+20       2.0975      2.69  |  Q      |        V|         |         |
14+25       2.1163      2.74  |  Q      |        V|         |         |
14+30       2.1355      2.79  |  Q      |        V|         |         |
14+35       2.1551      2.84  |  Q      |        V|         |         |
14+40       2.1750      2.89  |  Q      |        V|         |         |
14+45       2.1953      2.95  |  Q      |         V         |         |
14+50       2.2161      3.01  |   Q     |         V         |         |
14+55       2.2373      3.08  |   Q     |         V         |         |
15+ 0       2.2590      3.15  |   Q     |         V         |         |
15+ 5       2.2813      3.23  |   Q     |         V         |         |
15+10       2.3041      3.32  |   Q     |         |V        |         |
15+15       2.3277      3.42  |   Q     |         |V        |         |
15+20       2.3520      3.53  |   Q     |         |V        |         |
15+25       2.3767      3.59  |   Q     |         |V        |         |
15+30       2.4007      3.48  |   Q     |         |V        |         |
15+35       2.4213      2.99  |  Q      |         | V       |         |
15+40       2.4399      2.70  |  Q      |         | V       |         |
15+45       2.4586      2.72  |  Q      |         | V       |         |
15+50       2.4784      2.88  |  Q      |         | V       |         |
15+55       2.5007      3.23  |   Q     |         | V       |         |
16+ 0       2.5275      3.90  |    Q    |         |  V      |         |
16+ 5       2.5739      6.73  |       Q |         |  V      |         |
```

```
16+10       2.6606     12.59  |          |     Q    |   V      |          |
16+15       2.8176     22.81  |          |          |    V     Q          |
16+20       2.9378     17.44  |          |          |  Q  V    |          |
16+25       3.0049      9.74  |          | Q        |      V   |          |
16+30       3.0559      7.41  |         Q|          |      V   |          |
16+35       3.1003      6.43  |        Q |          |       V  |          |
16+40       3.1397      5.73  |       Q  |          |       V  |          |
16+45       3.1741      5.00  |     Q    |          |        V |          |
16+50       3.2043      4.37  |    Q     |          |        V |          |
16+55       3.2304      3.80  |    Q     |          |        V |          |
17+ 0       3.2541      3.44  |   Q      |          |        V |          |
17+ 5       3.2767      3.28  |   Q      |          |        V |          |
17+10       3.2981      3.11  |   Q      |          |         V          |
17+15       3.3188      3.01  |   Q      |          |         V          |
17+20       3.3387      2.89  |  Q       |          |         V          |
17+25       3.3576      2.74  |  Q       |          |         V          |
17+30       3.3757      2.63  |  Q       |          |         V          |
17+35       3.3930      2.51  |  Q       |          |         |V         |
17+40       3.4098      2.44  |  Q       |          |         |V         |
17+45       3.4262      2.39  |  Q       |          |         |V         |
17+50       3.4423      2.33  |  Q       |          |         |V         |
17+55       3.4580      2.28  |  Q       |          |         |V         |
18+ 0       3.4734      2.23  | Q        |          |         |V         |
18+ 5       3.4885      2.20  | Q        |          |         |V         |
18+10       3.5035      2.18  | Q        |          |         | V        |
18+15       3.5187      2.20  | Q        |          |         | V        |
18+20       3.5339      2.21  | Q        |          |         | V        |
18+25       3.5490      2.19  | Q        |          |         | V        |
18+30       3.5640      2.18  | Q        |          |         | V        |
18+35       3.5788      2.16  | Q        |          |         | V        |
18+40       3.5935      2.14  | Q        |          |         | V        |
18+45       3.6081      2.12  | Q        |          |         | V        |
18+50       3.6225      2.09  | Q        |          |         |  V       |
18+55       3.6368      2.07  | Q        |          |         |  V       |
19+ 0       3.6509      2.05  | Q        |          |         |  V       |
19+ 5       3.6649      2.03  | Q        |          |         |  V       |
19+10       3.6788      2.01  | Q        |          |         |  V       |
19+15       3.6925      1.99  | Q        |          |         |  V       |
19+20       3.7061      1.98  | Q        |          |         |  V       |
19+25       3.7196      1.96  | Q        |          |         |  V       |
19+30       3.7330      1.94  | Q        |          |         |   V      |
19+35       3.7462      1.92  | Q        |          |         |   V      |
19+40       3.7594      1.91  | Q        |          |         |   V      |
19+45       3.7724      1.89  | Q        |          |         |   V      |
19+50       3.7853      1.88  | Q        |          |         |   V      |
19+55       3.7981      1.86  | Q        |          |         |   V      |
20+ 0       3.8109      1.85  | Q        |          |         |   V      |
20+ 5       3.8235      1.83  | Q        |          |         |   V      |
20+10       3.8360      1.82  | Q        |          |         |    V     |
20+15       3.8485      1.81  | Q        |          |         |    V     |
20+20       3.8609      1.80  | Q        |          |         |    V     |
20+25       3.8731      1.78  | Q        |          |         |    V     |
20+30       3.8853      1.77  | Q        |          |         |    V     |
20+35       3.8975      1.76  | Q        |          |         |    V     |
20+40       3.9095      1.75  | Q        |          |         |    V     |
20+45       3.9215      1.74  | Q        |          |         |    V     |
20+50       3.9334      1.73  | Q        |          |         |    V     |
20+55       3.9452      1.72  | Q        |          |         |     V    |
21+ 0       3.9569      1.71  | Q        |          |         |     V    |
21+ 5       3.9686      1.70  | Q        |          |         |     V    |
21+10       3.9802      1.69  | Q        |          |         |     V    |
21+15       3.9918      1.68  | Q        |          |         |     V    |
21+20       4.0033      1.67  | Q        |          |         |     V    |
21+25       4.0147      1.66  | Q        |          |         |     V    |
21+30       4.0261      1.65  | Q        |          |         |     V    |
21+35       4.0374      1.64  | Q        |          |         |     V    |
21+40       4.0486      1.63  | Q        |          |         |     V    |
21+45       4.0598      1.62  | Q        |          |         |      V   |
21+50       4.0709      1.62  | Q        |          |         |      V   |
21+55       4.0820      1.61  | Q        |          |         |      V   |
22+ 0       4.0930      1.60  | Q        |          |         |      V   |
```

```
  22+ 5       4.1040      1.59  | Q       |         |         |      V  |
  22+10       4.1149      1.59  | Q       |         |         |      V  |
  22+15       4.1258      1.58  | Q       |         |         |      V  |
  22+20       4.1366      1.57  | Q       |         |         |      V  |
  22+25       4.1474      1.56  | Q       |         |         |      V  |
  22+30       4.1581      1.56  | Q       |         |         |       V |
  22+35       4.1688      1.55  | Q       |         |         |       V |
  22+40       4.1794      1.54  | Q       |         |         |       V |
  22+45       4.1900      1.54  | Q       |         |         |       V |
  22+50       4.2005      1.53  | Q       |         |         |       V |
  22+55       4.2110      1.52  | Q       |         |         |       V |
  23+ 0       4.2214      1.52  | Q       |         |         |       V |
  23+ 5       4.2318      1.51  | Q       |         |         |       V |
  23+10       4.2422      1.50  | Q       |         |         |       V |
  23+15       4.2525      1.50  |Q        |         |         |       V |
  23+20       4.2628      1.49  |Q        |         |         |       V |
  23+25       4.2730      1.49  |Q        |         |         |        V|
  23+30       4.2832      1.48  |Q        |         |         |        V|
  23+35       4.2934      1.48  |Q        |         |         |        V|
  23+40       4.3035      1.47  |Q        |         |         |        V|
  23+45       4.3136      1.46  |Q        |         |         |        V|
  23+50       4.3236      1.46  |Q        |         |         |        V|
  23+55       4.3337      1.45  |Q        |         |         |        V|
  24+ 0       4.3436      1.45  |Q        |         |         |        V|
  24+ 5       4.3533      1.40  |Q        |         |         |        V|
  24+10       4.3617      1.23  |Q        |         |         |        V|
  24+15       4.3671      0.78  |Q        |         |         |        V|
  24+20       4.3703      0.46  Q         |         |         |        V|
  24+25       4.3724      0.31  Q         |         |         |        V|
  24+30       4.3739      0.22  Q         |         |         |        V|
  24+35       4.3749      0.15  Q         |         |         |        V|
  24+40       4.3756      0.10  Q         |         |         |        V|
  24+45       4.3760      0.06  Q         |         |         |        V|
  24+50       4.3763      0.04  Q         |         |         |        V|
  24+55       4.3765      0.03  Q         |         |         |        V|
  25+ 0       4.3766      0.02  Q         |         |         |        V|
  25+ 5       4.3767      0.02  Q         |         |         |        V|
  25+10       4.3768      0.01  Q         |         |         |        V|
  25+15       4.3769      0.01  Q         |         |         |        V|
  25+20       4.3769      0.00  Q         |         |         |        V|
  25+25       4.3769      0.00  Q         |         |         |         V
--------------------------------------------------------------------------
```

Area 'D' – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'D'
100 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             9.52            1           1.00
------------------------------------------------------------------
Rainfall data for year 2
             9.52            6           2.00
------------------------------------------------------------------
Rainfall data for year 2
             9.52           24           4.00
------------------------------------------------------------------
Rainfall data for year 100
             9.52            1           1.50
------------------------------------------------------------------
Rainfall data for year 100
             9.52            6           4.50
------------------------------------------------------------------
Rainfall data for year 100
             9.52           24          12.00
------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 68.7      86.0          9.52      1.000     0.266    1.000    0.266

Area-averaged adjusted loss rate Fm (In/Hr) =  0.266

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 9.52 | 1.000 | 68.7 | 86.0 | 1.63 | 0.853 |

Area-averaged catchment yield fraction, Y = 0.853
Area-averaged low loss fraction, Yb = 0.147
User entry of time of concentration = 0.262 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 9.52(Ac.)
Catchment Lag time = 0.210 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 39.7583
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.266(In/Hr)
Average low loss rate fraction (Yb) = 0.147 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 9.52(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.711(In)
30-minute factor = 1.000 Adjusted rainfall = 1.218(In)
1-hour factor = 1.000 Adjusted rainfall = 1.499(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 115.13 (CFS)) | |
| 1 | 3.107 | 3.578 |
| 2 | 14.718 | 13.368 |
| 3 | 45.653 | 35.616 |
| 4 | 68.346 | 26.128 |
| 5 | 78.353 | 11.521 |
| 6 | 85.032 | 7.690 |
| 7 | 89.767 | 5.452 |
| 8 | 93.189 | 3.940 |
| 9 | 95.606 | 2.782 |
| 10 | 97.231 | 1.872 |
| 11 | 98.108 | 1.010 |
| 12 | 98.568 | 0.529 |
| 13 | 98.955 | 0.446 |
| 14 | 99.222 | 0.306 |
| 15 | 99.512 | 0.334 |
| 16 | 99.764 | 0.291 |
| 17 | 99.907 | 0.164 |
| 18 | 100.000 | 0.107 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7114 | 0.7114 |
| 2 | 0.8759 | 0.1644 |
| 3 | 0.9892 | 0.1133 |
| 4 | 1.0784 | 0.0892 |
| 5 | 1.1530 | 0.0747 |
| 6 | 1.2178 | 0.0648 |
| 7 | 1.2755 | 0.0576 |
| 8 | 1.3276 | 0.0521 |

| | | |
|---|---|---|
| 9 | 1.3754 | 0.0477 |
| 10 | 1.4195 | 0.0442 |
| 11 | 1.4607 | 0.0412 |
| 12 | 1.4993 | 0.0386 |
| 13 | 1.5748 | 0.0755 |
| 14 | 1.6480 | 0.0733 |
| 15 | 1.7193 | 0.0713 |
| 16 | 1.7887 | 0.0694 |
| 17 | 1.8565 | 0.0678 |
| 18 | 1.9228 | 0.0663 |
| 19 | 1.9876 | 0.0648 |
| 20 | 2.0512 | 0.0635 |
| 21 | 2.1135 | 0.0623 |
| 22 | 2.1747 | 0.0612 |
| 23 | 2.2348 | 0.0601 |
| 24 | 2.2939 | 0.0591 |
| 25 | 2.3521 | 0.0582 |
| 26 | 2.4094 | 0.0573 |
| 27 | 2.4658 | 0.0564 |
| 28 | 2.5215 | 0.0556 |
| 29 | 2.5763 | 0.0549 |
| 30 | 2.6305 | 0.0541 |
| 31 | 2.6839 | 0.0535 |
| 32 | 2.7367 | 0.0528 |
| 33 | 2.7889 | 0.0522 |
| 34 | 2.8404 | 0.0515 |
| 35 | 2.8914 | 0.0510 |
| 36 | 2.9418 | 0.0504 |
| 37 | 2.9916 | 0.0498 |
| 38 | 3.0410 | 0.0493 |
| 39 | 3.0898 | 0.0488 |
| 40 | 3.1381 | 0.0483 |
| 41 | 3.1860 | 0.0479 |
| 42 | 3.2334 | 0.0474 |
| 43 | 3.2804 | 0.0470 |
| 44 | 3.3270 | 0.0466 |
| 45 | 3.3732 | 0.0462 |
| 46 | 3.4189 | 0.0458 |
| 47 | 3.4643 | 0.0454 |
| 48 | 3.5093 | 0.0450 |
| 49 | 3.5540 | 0.0447 |
| 50 | 3.5983 | 0.0443 |
| 51 | 3.6422 | 0.0440 |
| 52 | 3.6859 | 0.0436 |
| 53 | 3.7292 | 0.0433 |
| 54 | 3.7721 | 0.0430 |
| 55 | 3.8148 | 0.0427 |
| 56 | 3.8572 | 0.0424 |
| 57 | 3.8993 | 0.0421 |
| 58 | 3.9411 | 0.0418 |
| 59 | 3.9826 | 0.0415 |
| 60 | 4.0239 | 0.0413 |
| 61 | 4.0649 | 0.0410 |
| 62 | 4.1056 | 0.0407 |
| 63 | 4.1461 | 0.0405 |
| 64 | 4.1863 | 0.0402 |
| 65 | 4.2263 | 0.0400 |
| 66 | 4.2661 | 0.0398 |
| 67 | 4.3056 | 0.0395 |
| 68 | 4.3449 | 0.0393 |
| 69 | 4.3840 | 0.0391 |
| 70 | 4.4228 | 0.0389 |
| 71 | 4.4614 | 0.0386 |
| 72 | 4.4999 | 0.0384 |
| 73 | 4.5440 | 0.0441 |
| 74 | 4.5879 | 0.0440 |
| 75 | 4.6317 | 0.0438 |
| 76 | 4.6753 | 0.0436 |
| 77 | 4.7188 | 0.0434 |
| 78 | 4.7621 | 0.0433 |
| 79 | 4.8052 | 0.0431 |

| | | |
|---|---|---|
| 80 | 4.8481 | 0.0430 |
| 81 | 4.8909 | 0.0428 |
| 82 | 4.9336 | 0.0426 |
| 83 | 4.9761 | 0.0425 |
| 84 | 5.0184 | 0.0423 |
| 85 | 5.0606 | 0.0422 |
| 86 | 5.1027 | 0.0421 |
| 87 | 5.1446 | 0.0419 |
| 88 | 5.1863 | 0.0418 |
| 89 | 5.2280 | 0.0416 |
| 90 | 5.2695 | 0.0415 |
| 91 | 5.3108 | 0.0414 |
| 92 | 5.3520 | 0.0412 |
| 93 | 5.3931 | 0.0411 |
| 94 | 5.4341 | 0.0410 |
| 95 | 5.4749 | 0.0408 |
| 96 | 5.5157 | 0.0407 |
| 97 | 5.5563 | 0.0406 |
| 98 | 5.5967 | 0.0405 |
| 99 | 5.6371 | 0.0403 |
| 100 | 5.6773 | 0.0402 |
| 101 | 5.7174 | 0.0401 |
| 102 | 5.7574 | 0.0400 |
| 103 | 5.7973 | 0.0399 |
| 104 | 5.8370 | 0.0398 |
| 105 | 5.8767 | 0.0397 |
| 106 | 5.9162 | 0.0395 |
| 107 | 5.9557 | 0.0394 |
| 108 | 5.9950 | 0.0393 |
| 109 | 6.0342 | 0.0392 |
| 110 | 6.0733 | 0.0391 |
| 111 | 6.1124 | 0.0390 |
| 112 | 6.1513 | 0.0389 |
| 113 | 6.1901 | 0.0388 |
| 114 | 6.2288 | 0.0387 |
| 115 | 6.2674 | 0.0386 |
| 116 | 6.3059 | 0.0385 |
| 117 | 6.3443 | 0.0384 |
| 118 | 6.3826 | 0.0383 |
| 119 | 6.4209 | 0.0382 |
| 120 | 6.4590 | 0.0381 |
| 121 | 6.4970 | 0.0380 |
| 122 | 6.5350 | 0.0379 |
| 123 | 6.5728 | 0.0379 |
| 124 | 6.6106 | 0.0378 |
| 125 | 6.6483 | 0.0377 |
| 126 | 6.6859 | 0.0376 |
| 127 | 6.7234 | 0.0375 |
| 128 | 6.7608 | 0.0374 |
| 129 | 6.7981 | 0.0373 |
| 130 | 6.8353 | 0.0372 |
| 131 | 6.8725 | 0.0372 |
| 132 | 6.9096 | 0.0371 |
| 133 | 6.9466 | 0.0370 |
| 134 | 6.9835 | 0.0369 |
| 135 | 7.0203 | 0.0368 |
| 136 | 7.0571 | 0.0368 |
| 137 | 7.0937 | 0.0367 |
| 138 | 7.1303 | 0.0366 |
| 139 | 7.1669 | 0.0365 |
| 140 | 7.2033 | 0.0364 |
| 141 | 7.2397 | 0.0364 |
| 142 | 7.2760 | 0.0363 |
| 143 | 7.3122 | 0.0362 |
| 144 | 7.3483 | 0.0361 |
| 145 | 7.3844 | 0.0361 |
| 146 | 7.4204 | 0.0360 |
| 147 | 7.4563 | 0.0359 |
| 148 | 7.4922 | 0.0359 |
| 149 | 7.5279 | 0.0358 |
| 150 | 7.5637 | 0.0357 |

| | | |
|---|---|---|
| 151 | 7.5993 | 0.0356 |
| 152 | 7.6349 | 0.0356 |
| 153 | 7.6704 | 0.0355 |
| 154 | 7.7058 | 0.0354 |
| 155 | 7.7412 | 0.0354 |
| 156 | 7.7765 | 0.0353 |
| 157 | 7.8117 | 0.0352 |
| 158 | 7.8469 | 0.0352 |
| 159 | 7.8820 | 0.0351 |
| 160 | 7.9170 | 0.0350 |
| 161 | 7.9520 | 0.0350 |
| 162 | 7.9869 | 0.0349 |
| 163 | 8.0218 | 0.0349 |
| 164 | 8.0566 | 0.0348 |
| 165 | 8.0913 | 0.0347 |
| 166 | 8.1260 | 0.0347 |
| 167 | 8.1606 | 0.0346 |
| 168 | 8.1951 | 0.0345 |
| 169 | 8.2296 | 0.0345 |
| 170 | 8.2640 | 0.0344 |
| 171 | 8.2984 | 0.0344 |
| 172 | 8.3327 | 0.0343 |
| 173 | 8.3669 | 0.0342 |
| 174 | 8.4011 | 0.0342 |
| 175 | 8.4353 | 0.0341 |
| 176 | 8.4693 | 0.0341 |
| 177 | 8.5034 | 0.0340 |
| 178 | 8.5373 | 0.0340 |
| 179 | 8.5712 | 0.0339 |
| 180 | 8.6051 | 0.0339 |
| 181 | 8.6389 | 0.0338 |
| 182 | 8.6726 | 0.0337 |
| 183 | 8.7063 | 0.0337 |
| 184 | 8.7399 | 0.0336 |
| 185 | 8.7735 | 0.0336 |
| 186 | 8.8070 | 0.0335 |
| 187 | 8.8405 | 0.0335 |
| 188 | 8.8739 | 0.0334 |
| 189 | 8.9073 | 0.0334 |
| 190 | 8.9406 | 0.0333 |
| 191 | 8.9739 | 0.0333 |
| 192 | 9.0071 | 0.0332 |
| 193 | 9.0403 | 0.0332 |
| 194 | 9.0734 | 0.0331 |
| 195 | 9.1065 | 0.0331 |
| 196 | 9.1395 | 0.0330 |
| 197 | 9.1725 | 0.0330 |
| 198 | 9.2054 | 0.0329 |
| 199 | 9.2382 | 0.0329 |
| 200 | 9.2711 | 0.0328 |
| 201 | 9.3038 | 0.0328 |
| 202 | 9.3366 | 0.0327 |
| 203 | 9.3692 | 0.0327 |
| 204 | 9.4019 | 0.0326 |
| 205 | 9.4345 | 0.0326 |
| 206 | 9.4670 | 0.0325 |
| 207 | 9.4995 | 0.0325 |
| 208 | 9.5319 | 0.0324 |
| 209 | 9.5643 | 0.0324 |
| 210 | 9.5967 | 0.0324 |
| 211 | 9.6290 | 0.0323 |
| 212 | 9.6613 | 0.0323 |
| 213 | 9.6935 | 0.0322 |
| 214 | 9.7257 | 0.0322 |
| 215 | 9.7578 | 0.0321 |
| 216 | 9.7899 | 0.0321 |
| 217 | 9.8219 | 0.0320 |
| 218 | 9.8539 | 0.0320 |
| 219 | 9.8859 | 0.0320 |
| 220 | 9.9178 | 0.0319 |
| 221 | 9.9497 | 0.0319 |

| | | | |
|---|---|---|---|
| 222 | 9.9815 | 0.0318 | |
| 223 | 10.0133 | 0.0318 | |
| 224 | 10.0451 | 0.0317 | |
| 225 | 10.0768 | 0.0317 | |
| 226 | 10.1084 | 0.0317 | |
| 227 | 10.1401 | 0.0316 | |
| 228 | 10.1717 | 0.0316 | |
| 229 | 10.2032 | 0.0315 | |
| 230 | 10.2347 | 0.0315 | |
| 231 | 10.2662 | 0.0315 | |
| 232 | 10.2976 | 0.0314 | |
| 233 | 10.3290 | 0.0314 | |
| 234 | 10.3603 | 0.0313 | |
| 235 | 10.3916 | 0.0313 | |
| 236 | 10.4229 | 0.0313 | |
| 237 | 10.4541 | 0.0312 | |
| 238 | 10.4853 | 0.0312 | |
| 239 | 10.5165 | 0.0312 | |
| 240 | 10.5476 | 0.0311 | |
| 241 | 10.5787 | 0.0311 | |
| 242 | 10.6097 | 0.0310 | |
| 243 | 10.6407 | 0.0310 | |
| 244 | 10.6717 | 0.0310 | |
| 245 | 10.7026 | 0.0309 | |
| 246 | 10.7335 | 0.0309 | |
| 247 | 10.7643 | 0.0309 | |
| 248 | 10.7951 | 0.0308 | |
| 249 | 10.8259 | 0.0308 | |
| 250 | 10.8567 | 0.0307 | |
| 251 | 10.8874 | 0.0307 | |
| 252 | 10.9180 | 0.0307 | |
| 253 | 10.9487 | 0.0306 | |
| 254 | 10.9793 | 0.0306 | |
| 255 | 11.0098 | 0.0306 | |
| 256 | 11.0404 | 0.0305 | |
| 257 | 11.0709 | 0.0305 | |
| 258 | 11.1013 | 0.0305 | |
| 259 | 11.1318 | 0.0304 | |
| 260 | 11.1622 | 0.0304 | |
| 261 | 11.1925 | 0.0304 | |
| 262 | 11.2228 | 0.0303 | |
| 263 | 11.2531 | 0.0303 | |
| 264 | 11.2834 | 0.0303 | |
| 265 | 11.3136 | 0.0302 | |
| 266 | 11.3438 | 0.0302 | |
| 267 | 11.3740 | 0.0302 | |
| 268 | 11.4041 | 0.0301 | |
| 269 | 11.4342 | 0.0301 | |
| 270 | 11.4642 | 0.0301 | |
| 271 | 11.4943 | 0.0300 | |
| 272 | 11.5242 | 0.0300 | |
| 273 | 11.5542 | 0.0300 | |
| 274 | 11.5841 | 0.0299 | |
| 275 | 11.6140 | 0.0299 | |
| 276 | 11.6439 | 0.0299 | |
| 277 | 11.6737 | 0.0298 | |
| 278 | 11.7035 | 0.0298 | |
| 279 | 11.7333 | 0.0298 | |
| 280 | 11.7630 | 0.0297 | |
| 281 | 11.7928 | 0.0297 | |
| 282 | 11.8224 | 0.0297 | |
| 283 | 11.8521 | 0.0296 | |
| 284 | 11.8817 | 0.0296 | |
| 285 | 11.9113 | 0.0296 | |
| 286 | 11.9408 | 0.0296 | |
| 287 | 11.9704 | 0.0295 | |
| 288 | 11.9999 | 0.0295 | |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|

| | | | |
|---|---|---|---|
| 1 | 0.0295 | 0.0043 | 0.0252 |
| 2 | 0.0295 | 0.0043 | 0.0252 |
| 3 | 0.0296 | 0.0043 | 0.0252 |
| 4 | 0.0296 | 0.0043 | 0.0253 |
| 5 | 0.0297 | 0.0044 | 0.0253 |
| 6 | 0.0297 | 0.0044 | 0.0254 |
| 7 | 0.0298 | 0.0044 | 0.0254 |
| 8 | 0.0298 | 0.0044 | 0.0254 |
| 9 | 0.0299 | 0.0044 | 0.0255 |
| 10 | 0.0299 | 0.0044 | 0.0255 |
| 11 | 0.0300 | 0.0044 | 0.0256 |
| 12 | 0.0300 | 0.0044 | 0.0256 |
| 13 | 0.0301 | 0.0044 | 0.0257 |
| 14 | 0.0301 | 0.0044 | 0.0257 |
| 15 | 0.0302 | 0.0044 | 0.0257 |
| 16 | 0.0302 | 0.0044 | 0.0258 |
| 17 | 0.0303 | 0.0044 | 0.0258 |
| 18 | 0.0303 | 0.0044 | 0.0258 |
| 19 | 0.0304 | 0.0045 | 0.0259 |
| 20 | 0.0304 | 0.0045 | 0.0259 |
| 21 | 0.0305 | 0.0045 | 0.0260 |
| 22 | 0.0305 | 0.0045 | 0.0260 |
| 23 | 0.0306 | 0.0045 | 0.0261 |
| 24 | 0.0306 | 0.0045 | 0.0261 |
| 25 | 0.0307 | 0.0045 | 0.0262 |
| 26 | 0.0307 | 0.0045 | 0.0262 |
| 27 | 0.0308 | 0.0045 | 0.0263 |
| 28 | 0.0308 | 0.0045 | 0.0263 |
| 29 | 0.0309 | 0.0045 | 0.0264 |
| 30 | 0.0309 | 0.0045 | 0.0264 |
| 31 | 0.0310 | 0.0045 | 0.0265 |
| 32 | 0.0310 | 0.0046 | 0.0265 |
| 33 | 0.0311 | 0.0046 | 0.0266 |
| 34 | 0.0312 | 0.0046 | 0.0266 |
| 35 | 0.0312 | 0.0046 | 0.0266 |
| 36 | 0.0313 | 0.0046 | 0.0267 |
| 37 | 0.0313 | 0.0046 | 0.0267 |
| 38 | 0.0314 | 0.0046 | 0.0268 |
| 39 | 0.0315 | 0.0046 | 0.0269 |
| 40 | 0.0315 | 0.0046 | 0.0269 |
| 41 | 0.0316 | 0.0046 | 0.0270 |
| 42 | 0.0316 | 0.0046 | 0.0270 |
| 43 | 0.0317 | 0.0046 | 0.0271 |
| 44 | 0.0317 | 0.0047 | 0.0271 |
| 45 | 0.0318 | 0.0047 | 0.0272 |
| 46 | 0.0319 | 0.0047 | 0.0272 |
| 47 | 0.0320 | 0.0047 | 0.0273 |
| 48 | 0.0320 | 0.0047 | 0.0273 |
| 49 | 0.0321 | 0.0047 | 0.0274 |
| 50 | 0.0321 | 0.0047 | 0.0274 |
| 51 | 0.0322 | 0.0047 | 0.0275 |
| 52 | 0.0323 | 0.0047 | 0.0275 |
| 53 | 0.0324 | 0.0047 | 0.0276 |
| 54 | 0.0324 | 0.0048 | 0.0277 |
| 55 | 0.0325 | 0.0048 | 0.0277 |
| 56 | 0.0325 | 0.0048 | 0.0278 |
| 57 | 0.0326 | 0.0048 | 0.0278 |
| 58 | 0.0327 | 0.0048 | 0.0279 |
| 59 | 0.0328 | 0.0048 | 0.0280 |
| 60 | 0.0328 | 0.0048 | 0.0280 |
| 61 | 0.0329 | 0.0048 | 0.0281 |
| 62 | 0.0330 | 0.0048 | 0.0281 |
| 63 | 0.0331 | 0.0048 | 0.0282 |
| 64 | 0.0331 | 0.0049 | 0.0283 |
| 65 | 0.0332 | 0.0049 | 0.0283 |
| 66 | 0.0333 | 0.0049 | 0.0284 |
| 67 | 0.0334 | 0.0049 | 0.0285 |
| 68 | 0.0334 | 0.0049 | 0.0285 |
| 69 | 0.0335 | 0.0049 | 0.0286 |
| 70 | 0.0336 | 0.0049 | 0.0287 |

| | | | |
|---|---|---|---|
| 71 | 0.0337 | 0.0049 | 0.0287 |
| 72 | 0.0337 | 0.0049 | 0.0288 |
| 73 | 0.0339 | 0.0050 | 0.0289 |
| 74 | 0.0339 | 0.0050 | 0.0289 |
| 75 | 0.0340 | 0.0050 | 0.0290 |
| 76 | 0.0341 | 0.0050 | 0.0291 |
| 77 | 0.0342 | 0.0050 | 0.0292 |
| 78 | 0.0342 | 0.0050 | 0.0292 |
| 79 | 0.0344 | 0.0050 | 0.0293 |
| 80 | 0.0344 | 0.0050 | 0.0294 |
| 81 | 0.0345 | 0.0051 | 0.0295 |
| 82 | 0.0346 | 0.0051 | 0.0295 |
| 83 | 0.0347 | 0.0051 | 0.0296 |
| 84 | 0.0348 | 0.0051 | 0.0297 |
| 85 | 0.0349 | 0.0051 | 0.0298 |
| 86 | 0.0350 | 0.0051 | 0.0298 |
| 87 | 0.0351 | 0.0051 | 0.0300 |
| 88 | 0.0352 | 0.0052 | 0.0300 |
| 89 | 0.0353 | 0.0052 | 0.0301 |
| 90 | 0.0354 | 0.0052 | 0.0302 |
| 91 | 0.0355 | 0.0052 | 0.0303 |
| 92 | 0.0356 | 0.0052 | 0.0304 |
| 93 | 0.0357 | 0.0052 | 0.0305 |
| 94 | 0.0358 | 0.0052 | 0.0305 |
| 95 | 0.0359 | 0.0053 | 0.0307 |
| 96 | 0.0360 | 0.0053 | 0.0307 |
| 97 | 0.0361 | 0.0053 | 0.0308 |
| 98 | 0.0362 | 0.0053 | 0.0309 |
| 99 | 0.0364 | 0.0053 | 0.0310 |
| 100 | 0.0364 | 0.0053 | 0.0311 |
| 101 | 0.0366 | 0.0054 | 0.0312 |
| 102 | 0.0367 | 0.0054 | 0.0313 |
| 103 | 0.0368 | 0.0054 | 0.0314 |
| 104 | 0.0369 | 0.0054 | 0.0315 |
| 105 | 0.0371 | 0.0054 | 0.0316 |
| 106 | 0.0372 | 0.0054 | 0.0317 |
| 107 | 0.0373 | 0.0055 | 0.0319 |
| 108 | 0.0374 | 0.0055 | 0.0319 |
| 109 | 0.0376 | 0.0055 | 0.0321 |
| 110 | 0.0377 | 0.0055 | 0.0322 |
| 111 | 0.0379 | 0.0056 | 0.0323 |
| 112 | 0.0379 | 0.0056 | 0.0324 |
| 113 | 0.0381 | 0.0056 | 0.0325 |
| 114 | 0.0382 | 0.0056 | 0.0326 |
| 115 | 0.0384 | 0.0056 | 0.0328 |
| 116 | 0.0385 | 0.0056 | 0.0329 |
| 117 | 0.0387 | 0.0057 | 0.0330 |
| 118 | 0.0388 | 0.0057 | 0.0331 |
| 119 | 0.0390 | 0.0057 | 0.0333 |
| 120 | 0.0391 | 0.0057 | 0.0334 |
| 121 | 0.0393 | 0.0058 | 0.0336 |
| 122 | 0.0394 | 0.0058 | 0.0337 |
| 123 | 0.0397 | 0.0058 | 0.0338 |
| 124 | 0.0398 | 0.0058 | 0.0339 |
| 125 | 0.0400 | 0.0059 | 0.0341 |
| 126 | 0.0401 | 0.0059 | 0.0342 |
| 127 | 0.0403 | 0.0059 | 0.0344 |
| 128 | 0.0405 | 0.0059 | 0.0345 |
| 129 | 0.0407 | 0.0060 | 0.0347 |
| 130 | 0.0408 | 0.0060 | 0.0349 |
| 131 | 0.0411 | 0.0060 | 0.0351 |
| 132 | 0.0412 | 0.0060 | 0.0352 |
| 133 | 0.0415 | 0.0061 | 0.0354 |
| 134 | 0.0416 | 0.0061 | 0.0355 |
| 135 | 0.0419 | 0.0061 | 0.0358 |
| 136 | 0.0421 | 0.0062 | 0.0359 |
| 137 | 0.0423 | 0.0062 | 0.0361 |
| 138 | 0.0425 | 0.0062 | 0.0363 |
| 139 | 0.0428 | 0.0063 | 0.0365 |
| 140 | 0.0430 | 0.0063 | 0.0367 |
| 141 | 0.0433 | 0.0063 | 0.0369 |

| | | | |
|---|---|---|---|
| 142 | 0.0434 | 0.0064 | 0.0371 |
| 143 | 0.0438 | 0.0064 | 0.0374 |
| 144 | 0.0440 | 0.0064 | 0.0375 |
| 145 | 0.0384 | 0.0056 | 0.0328 |
| 146 | 0.0386 | 0.0057 | 0.0330 |
| 147 | 0.0391 | 0.0057 | 0.0333 |
| 148 | 0.0393 | 0.0058 | 0.0335 |
| 149 | 0.0398 | 0.0058 | 0.0339 |
| 150 | 0.0400 | 0.0059 | 0.0341 |
| 151 | 0.0405 | 0.0059 | 0.0345 |
| 152 | 0.0407 | 0.0060 | 0.0348 |
| 153 | 0.0413 | 0.0060 | 0.0352 |
| 154 | 0.0415 | 0.0061 | 0.0354 |
| 155 | 0.0421 | 0.0062 | 0.0359 |
| 156 | 0.0424 | 0.0062 | 0.0362 |
| 157 | 0.0430 | 0.0063 | 0.0367 |
| 158 | 0.0433 | 0.0063 | 0.0370 |
| 159 | 0.0440 | 0.0064 | 0.0375 |
| 160 | 0.0443 | 0.0065 | 0.0378 |
| 161 | 0.0450 | 0.0066 | 0.0384 |
| 162 | 0.0454 | 0.0067 | 0.0387 |
| 163 | 0.0462 | 0.0068 | 0.0394 |
| 164 | 0.0466 | 0.0068 | 0.0397 |
| 165 | 0.0474 | 0.0070 | 0.0405 |
| 166 | 0.0479 | 0.0070 | 0.0409 |
| 167 | 0.0488 | 0.0072 | 0.0417 |
| 168 | 0.0493 | 0.0072 | 0.0421 |
| 169 | 0.0504 | 0.0074 | 0.0430 |
| 170 | 0.0510 | 0.0075 | 0.0435 |
| 171 | 0.0522 | 0.0076 | 0.0445 |
| 172 | 0.0528 | 0.0077 | 0.0450 |
| 173 | 0.0541 | 0.0079 | 0.0462 |
| 174 | 0.0549 | 0.0080 | 0.0468 |
| 175 | 0.0564 | 0.0083 | 0.0482 |
| 176 | 0.0573 | 0.0084 | 0.0489 |
| 177 | 0.0591 | 0.0087 | 0.0505 |
| 178 | 0.0601 | 0.0088 | 0.0513 |
| 179 | 0.0623 | 0.0091 | 0.0532 |
| 180 | 0.0635 | 0.0093 | 0.0542 |
| 181 | 0.0663 | 0.0097 | 0.0565 |
| 182 | 0.0678 | 0.0099 | 0.0578 |
| 183 | 0.0713 | 0.0104 | 0.0608 |
| 184 | 0.0733 | 0.0107 | 0.0625 |
| 185 | 0.0386 | 0.0057 | 0.0330 |
| 186 | 0.0412 | 0.0060 | 0.0351 |
| 187 | 0.0477 | 0.0070 | 0.0407 |
| 188 | 0.0521 | 0.0076 | 0.0445 |
| 189 | 0.0648 | 0.0095 | 0.0553 |
| 190 | 0.0747 | 0.0109 | 0.0637 |
| 191 | 0.1133 | 0.0166 | 0.0967 |
| 192 | 0.1644 | 0.0222 | 0.1423 |
| 193 | 0.7114 | 0.0222 | 0.6893 |
| 194 | 0.0892 | 0.0131 | 0.0761 |
| 195 | 0.0576 | 0.0085 | 0.0492 |
| 196 | 0.0442 | 0.0065 | 0.0377 |
| 197 | 0.0755 | 0.0111 | 0.0644 |
| 198 | 0.0694 | 0.0102 | 0.0593 |
| 199 | 0.0648 | 0.0095 | 0.0553 |
| 200 | 0.0612 | 0.0090 | 0.0522 |
| 201 | 0.0582 | 0.0085 | 0.0496 |
| 202 | 0.0556 | 0.0082 | 0.0475 |
| 203 | 0.0535 | 0.0078 | 0.0456 |
| 204 | 0.0515 | 0.0076 | 0.0440 |
| 205 | 0.0498 | 0.0073 | 0.0425 |
| 206 | 0.0483 | 0.0071 | 0.0413 |
| 207 | 0.0470 | 0.0069 | 0.0401 |
| 208 | 0.0458 | 0.0067 | 0.0391 |
| 209 | 0.0447 | 0.0065 | 0.0381 |
| 210 | 0.0436 | 0.0064 | 0.0372 |
| 211 | 0.0427 | 0.0063 | 0.0364 |
| 212 | 0.0418 | 0.0061 | 0.0357 |

| | | | |
|---|---|---|---|
| 213 | 0.0410 | 0.0060 | 0.0350 |
| 214 | 0.0402 | 0.0059 | 0.0343 |
| 215 | 0.0395 | 0.0058 | 0.0337 |
| 216 | 0.0389 | 0.0057 | 0.0332 |
| 217 | 0.0441 | 0.0065 | 0.0377 |
| 218 | 0.0436 | 0.0064 | 0.0372 |
| 219 | 0.0431 | 0.0063 | 0.0368 |
| 220 | 0.0426 | 0.0063 | 0.0364 |
| 221 | 0.0422 | 0.0062 | 0.0360 |
| 222 | 0.0418 | 0.0061 | 0.0356 |
| 223 | 0.0414 | 0.0061 | 0.0353 |
| 224 | 0.0410 | 0.0060 | 0.0350 |
| 225 | 0.0406 | 0.0060 | 0.0346 |
| 226 | 0.0402 | 0.0059 | 0.0343 |
| 227 | 0.0399 | 0.0058 | 0.0340 |
| 228 | 0.0395 | 0.0058 | 0.0337 |
| 229 | 0.0392 | 0.0058 | 0.0335 |
| 230 | 0.0389 | 0.0057 | 0.0332 |
| 231 | 0.0386 | 0.0057 | 0.0329 |
| 232 | 0.0383 | 0.0056 | 0.0327 |
| 233 | 0.0380 | 0.0056 | 0.0325 |
| 234 | 0.0378 | 0.0055 | 0.0322 |
| 235 | 0.0375 | 0.0055 | 0.0320 |
| 236 | 0.0372 | 0.0055 | 0.0318 |
| 237 | 0.0370 | 0.0054 | 0.0316 |
| 238 | 0.0368 | 0.0054 | 0.0314 |
| 239 | 0.0365 | 0.0054 | 0.0312 |
| 240 | 0.0363 | 0.0053 | 0.0310 |
| 241 | 0.0361 | 0.0053 | 0.0308 |
| 242 | 0.0359 | 0.0053 | 0.0306 |
| 243 | 0.0356 | 0.0052 | 0.0304 |
| 244 | 0.0354 | 0.0052 | 0.0302 |
| 245 | 0.0352 | 0.0052 | 0.0301 |
| 246 | 0.0350 | 0.0051 | 0.0299 |
| 247 | 0.0349 | 0.0051 | 0.0297 |
| 248 | 0.0347 | 0.0051 | 0.0296 |
| 249 | 0.0345 | 0.0051 | 0.0294 |
| 250 | 0.0343 | 0.0050 | 0.0293 |
| 251 | 0.0341 | 0.0050 | 0.0291 |
| 252 | 0.0340 | 0.0050 | 0.0290 |
| 253 | 0.0338 | 0.0050 | 0.0288 |
| 254 | 0.0336 | 0.0049 | 0.0287 |
| 255 | 0.0335 | 0.0049 | 0.0286 |
| 256 | 0.0333 | 0.0049 | 0.0284 |
| 257 | 0.0332 | 0.0049 | 0.0283 |
| 258 | 0.0330 | 0.0048 | 0.0282 |
| 259 | 0.0329 | 0.0048 | 0.0281 |
| 260 | 0.0327 | 0.0048 | 0.0279 |
| 261 | 0.0326 | 0.0048 | 0.0278 |
| 262 | 0.0324 | 0.0048 | 0.0277 |
| 263 | 0.0323 | 0.0047 | 0.0276 |
| 264 | 0.0322 | 0.0047 | 0.0275 |
| 265 | 0.0320 | 0.0047 | 0.0273 |
| 266 | 0.0319 | 0.0047 | 0.0272 |
| 267 | 0.0318 | 0.0047 | 0.0271 |
| 268 | 0.0317 | 0.0046 | 0.0270 |
| 269 | 0.0315 | 0.0046 | 0.0269 |
| 270 | 0.0314 | 0.0046 | 0.0268 |
| 271 | 0.0313 | 0.0046 | 0.0267 |
| 272 | 0.0312 | 0.0046 | 0.0266 |
| 273 | 0.0311 | 0.0046 | 0.0265 |
| 274 | 0.0310 | 0.0045 | 0.0264 |
| 275 | 0.0309 | 0.0045 | 0.0263 |
| 276 | 0.0307 | 0.0045 | 0.0262 |
| 277 | 0.0306 | 0.0045 | 0.0261 |
| 278 | 0.0305 | 0.0045 | 0.0261 |
| 279 | 0.0304 | 0.0045 | 0.0260 |
| 280 | 0.0303 | 0.0044 | 0.0259 |
| 281 | 0.0302 | 0.0044 | 0.0258 |
| 282 | 0.0301 | 0.0044 | 0.0257 |
| 283 | 0.0300 | 0.0044 | 0.0256 |

```
      284             0.0299          0.0044             0.0255
      285             0.0298          0.0044             0.0255
      286             0.0297          0.0044             0.0254
      287             0.0296          0.0043             0.0253
      288             0.0296          0.0043             0.0252
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      1.68(In)
      Total effective rainfall =     10.32(In)
      Peak flow rate in flood hydrograph =     31.88(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f     H y d r o g r a p h
      ------------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
----------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0036      0.43  Q         |         |         |         |
  0+15       0.0127      1.32  VQ        |         |         |         |
  0+20       0.0263      1.98  VQ        |         |         |         |
  0+25       0.0420      2.28  V Q       |         |         |         |
  0+30       0.0590      2.47  V Q       |         |         |         |
  0+35       0.0770      2.61  V Q       |         |         |         |
  0+40       0.0958      2.72  V Q       |         |         |         |
  0+45       0.1150      2.79  V Q       |         |         |         |
  0+50       0.1346      2.84  V Q       |         |         |         |
  0+55       0.1543      2.87  V Q       |         |         |         |
  1+ 0       0.1742      2.89  V Q       |         |         |         |
  1+ 5       0.1943      2.91  V Q       |         |         |         |
  1+10       0.2144      2.92  |VQ       |         |         |         |
  1+15       0.2346      2.93  |VQ       |         |         |         |
  1+20       0.2548      2.94  |VQ       |         |         |         |
  1+25       0.2752      2.95  |VQ       |         |         |         |
  1+30       0.2956      2.96  |VQ       |         |         |         |
  1+35       0.3160      2.97  |VQ       |         |         |         |
  1+40       0.3364      2.97  |VQ       |         |         |         |
  1+45       0.3569      2.98  |VQ       |         |         |         |
  1+50       0.3775      2.98  |VQ       |         |         |         |
  1+55       0.3980      2.99  |VQ       |         |         |         |
  2+ 0       0.4186      2.99  | Q       |         |         |         |
  2+ 5       0.4392      3.00  | Q       |         |         |         |
  2+10       0.4599      3.00  | VQ      |         |         |         |
  2+15       0.4806      3.01  | VQ      |         |         |         |
  2+20       0.5013      3.01  | VQ      |         |         |         |
  2+25       0.5221      3.02  | VQ      |         |         |         |
  2+30       0.5429      3.02  | VQ      |         |         |         |
  2+35       0.5638      3.03  | VQ      |         |         |         |
  2+40       0.5847      3.03  | VQ      |         |         |         |
  2+45       0.6056      3.04  | VQ      |         |         |         |
  2+50       0.6265      3.04  |  Q      |         |         |         |
  2+55       0.6475      3.05  |  Q      |         |         |         |
  3+ 0       0.6686      3.05  |  Q      |         |         |         |
  3+ 5       0.6896      3.06  |  Q      |         |         |         |
  3+10       0.7108      3.07  |  Q      |         |         |         |
  3+15       0.7319      3.07  |  Q      |         |         |         |
  3+20       0.7531      3.08  |  Q      |         |         |         |
  3+25       0.7743      3.08  |  Q      |         |         |         |
  3+30       0.7956      3.09  |  Q      |         |         |         |
  3+35       0.8169      3.09  |  Q      |         |         |         |
  3+40       0.8383      3.10  |  QV     |         |         |         |
  3+45       0.8597      3.11  |  QV     |         |         |         |
  3+50       0.8811      3.11  |  QV     |         |         |         |
  3+55       0.9026      3.12  |  QV     |         |         |         |
  4+ 0       0.9241      3.12  |  QV     |         |         |         |
  4+ 5       0.9456      3.13  |  QV     |         |         |         |
  4+10       0.9673      3.14  |  QV     |         |         |         |
  4+15       0.9889      3.14  |  QV     |         |         |         |
```

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 4+20      1.0106      3.15  |  QV     |         |         |         |
 4+25      1.0323      3.16  |  Q V    |         |         |         |
 4+30      1.0541      3.16  |  Q V    |         |         |         |
 4+35      1.0759      3.17  |  Q V    |         |         |         |
 4+40      1.0978      3.18  |  Q V    |         |         |         |
 4+45      1.1197      3.18  |  Q V    |         |         |         |
 4+50      1.1417      3.19  |  Q V    |         |         |         |
 4+55      1.1637      3.20  |  Q V    |         |         |         |
 5+ 0      1.1858      3.20  |  Q V    |         |         |         |
 5+ 5      1.2079      3.21  |  Q V    |         |         |         |
 5+10      1.2300      3.22  |  Q  V   |         |         |         |
 5+15      1.2522      3.22  |  Q  V   |         |         |         |
 5+20      1.2745      3.23  |  Q  V   |         |         |         |
 5+25      1.2968      3.24  |  Q  V   |         |         |         |
 5+30      1.3191      3.25  |  Q  V   |         |         |         |
 5+35      1.3415      3.25  |  Q  V   |         |         |         |
 5+40      1.3640      3.26  |  Q  V   |         |         |         |
 5+45      1.3865      3.27  |  Q  V   |         |         |         |
 5+50      1.4090      3.27  |  Q  V   |         |         |         |
 5+55      1.4316      3.28  |  Q  V   |         |         |         |
 6+ 0      1.4543      3.29  |  Q   V  |         |         |         |
 6+ 5      1.4770      3.30  |  Q   V  |         |         |         |
 6+10      1.4998      3.31  |  Q   V  |         |         |         |
 6+15      1.5226      3.31  |  Q   V  |         |         |         |
 6+20      1.5455      3.32  |  Q   V  |         |         |         |
 6+25      1.5684      3.33  |  Q   V  |         |         |         |
 6+30      1.5914      3.34  |  Q   V  |         |         |         |
 6+35      1.6145      3.35  |  Q   V  |         |         |         |
 6+40      1.6376      3.36  |  Q    V |         |         |         |
 6+45      1.6607      3.36  |  Q    V |         |         |         |
 6+50      1.6840      3.37  |  Q    V |         |         |         |
 6+55      1.7072      3.38  |  Q    V |         |         |         |
 7+ 0      1.7306      3.39  |  Q    V |         |         |         |
 7+ 5      1.7540      3.40  |  Q    V |         |         |         |
 7+10      1.7775      3.41  |  Q    V |         |         |         |
 7+15      1.8010      3.42  |  Q    V |         |         |         |
 7+20      1.8246      3.43  |  Q    V |         |         |         |
 7+25      1.8482      3.44  |  Q     V|         |         |         |
 7+30      1.8720      3.44  |  Q     V|         |         |         |
 7+35      1.8958      3.45  |  Q     V|         |         |         |
 7+40      1.9196      3.46  |  Q     V|         |         |         |
 7+45      1.9435      3.47  |  Q     V|         |         |         |
 7+50      1.9675      3.48  |  Q     V|         |         |         |
 7+55      1.9916      3.49  |  Q     V|         |         |         |
 8+ 0      2.0157      3.50  |  Q     V|         |         |         |
 8+ 5      2.0399      3.51  |  Q     V|         |         |         |
 8+10      2.0642      3.52  |  Q      V         |         |         |
 8+15      2.0885      3.54  |  Q      V         |         |         |
 8+20      2.1130      3.55  |  Q      V         |         |         |
 8+25      2.1375      3.56  |  Q      V         |         |         |
 8+30      2.1620      3.57  |  Q      V         |         |         |
 8+35      2.1867      3.58  |  Q      V         |         |         |
 8+40      2.2114      3.59  |  Q      V         |         |         |
 8+45      2.2362      3.60  |  Q      V         |         |         |
 8+50      2.2611      3.61  |  Q       |V       |         |         |
 8+55      2.2861      3.63  |  Q       |V       |         |         |
 9+ 0      2.3111      3.64  |  Q       |V       |         |         |
 9+ 5      2.3362      3.65  |  Q       |V       |         |         |
 9+10      2.3615      3.66  |  Q       |V       |         |         |
 9+15      2.3868      3.67  |  Q       |V       |         |         |
 9+20      2.4122      3.69  |  Q       |V       |         |         |
 9+25      2.4376      3.70  |  Q       |V       |         |         |
 9+30      2.4632      3.71  |  Q       | V      |         |         |
 9+35      2.4889      3.73  |  Q       | V      |         |         |
 9+40      2.5146      3.74  |  Q       | V      |         |         |
 9+45      2.5405      3.75  |  Q       | V      |         |         |
 9+50      2.5664      3.77  |  Q       | V      |         |         |
 9+55      2.5925      3.78  |  Q       | V      |         |         |
10+ 0      2.6186      3.80  |  Q       | V      |         |         |
10+ 5      2.6449      3.81  |  Q       | V      |         |         |
10+10      2.6712      3.83  |  Q       |  V     |         |         |
```

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10+15       2.6977      3.84  |  Q       |  V       |          |          |
10+20       2.7242      3.86  |  Q       |  V       |          |          |
10+25       2.7509      3.87  |  Q       |  V       |          |          |
10+30       2.7777      3.89  |  Q       |  V       |          |          |
10+35       2.8046      3.91  |  Q       |  V       |          |          |
10+40       2.8316      3.92  |  Q       |  V       |          |          |
10+45       2.8587      3.94  |  Q       |  V       |          |          |
10+50       2.8859      3.96  |  Q       |   V      |          |          |
10+55       2.9133      3.97  |  Q       |   V      |          |          |
11+ 0       2.9408      3.99  |  Q       |   V      |          |          |
11+ 5       2.9684      4.01  |   Q      |   V      |          |          |
11+10       2.9962      4.03  |   Q      |   V      |          |          |
11+15       3.0241      4.05  |   Q      |   V      |          |          |
11+20       3.0521      4.07  |   Q      |   V      |          |          |
11+25       3.0802      4.09  |   Q      |    V     |          |          |
11+30       3.1085      4.11  |   Q      |    V     |          |          |
11+35       3.1370      4.13  |   Q      |    V     |          |          |
11+40       3.1655      4.15  |   Q      |    V     |          |          |
11+45       3.1943      4.17  |   Q      |    V     |          |          |
11+50       3.2232      4.19  |   Q      |    V     |          |          |
11+55       3.2522      4.22  |   Q      |    V     |          |          |
12+ 0       3.2814      4.24  |   Q      |     V    |          |          |
12+ 5       3.3107      4.25  |   Q      |     V    |          |          |
12+10       3.3396      4.21  |   Q      |     V    |          |          |
12+15       3.3675      4.05  |   Q      |     V    |          |          |
12+20       3.3947      3.95  |  Q       |     V    |          |          |
12+25       3.4217      3.92  |  Q       |     V    |          |          |
12+30       3.4487      3.91  |  Q       |     V    |          |          |
12+35       3.4757      3.92  |  Q       |     V    |          |          |
12+40       3.5027      3.93  |  Q       |      V   |          |          |
12+45       3.5300      3.95  |  Q       |      V   |          |          |
12+50       3.5574      3.98  |  Q       |      V   |          |          |
12+55       3.5850      4.01  |   Q      |      V   |          |          |
13+ 0       3.6128      4.05  |   Q      |      V   |          |          |
13+ 5       3.6410      4.08  |   Q      |      V   |          |          |
13+10       3.6693      4.12  |   Q      |      V   |          |          |
13+15       3.6980      4.16  |   Q      |       V  |          |          |
13+20       3.7270      4.21  |   Q      |       V  |          |          |
13+25       3.7563      4.25  |   Q      |       V  |          |          |
13+30       3.7859      4.30  |   Q      |       V  |          |          |
13+35       3.8158      4.35  |   Q      |       V  |          |          |
13+40       3.8461      4.40  |   Q      |       V  |          |          |
13+45       3.8768      4.46  |   Q      |       V  |          |          |
13+50       3.9079      4.51  |   Q      |        V |          |          |
13+55       3.9394      4.57  |   Q      |        V |          |          |
14+ 0       3.9713      4.63  |   Q      |        V |          |          |
14+ 5       4.0037      4.70  |   Q      |        V |          |          |
14+10       4.0365      4.77  |   Q      |        V |          |          |
14+15       4.0699      4.85  |   Q      |        V |          |          |
14+20       4.1038      4.92  |   Q      |         V|          |          |
14+25       4.1383      5.01  |    Q     |         V|          |          |
14+30       4.1733      5.09  |    Q     |         V|          |          |
14+35       4.2091      5.19  |    Q     |         V|          |          |
14+40       4.2454      5.28  |    Q     |         V|          |          |
14+45       4.2826      5.39  |    Q     |         V|          |          |
14+50       4.3205      5.51  |    Q     |          |V         |          |
14+55       4.3593      5.63  |    Q     |          |V         |          |
15+ 0       4.3990      5.76  |    Q     |          |V         |          |
15+ 5       4.4397      5.92  |    Q     |          |V         |          |
15+10       4.4816      6.07  |     Q    |          |V         |          |
15+15       4.5247      6.26  |     Q    |          | V        |          |
15+20       4.5691      6.46  |     Q    |          | V        |          |
15+25       4.6144      6.57  |     Q    |          | V        |          |
15+30       4.6583      6.37  |     Q    |          | V        |          |
15+35       4.6961      5.49  |    Q     |          | V        |          |
15+40       4.7302      4.95  |   Q      |          |  V       |          |
15+45       4.7646      5.00  |    Q     |          |  V       |          |
15+50       4.8010      5.29  |    Q     |          |  V       |          |
15+55       4.8419      5.94  |    Q     |          |  V       |          |
16+ 0       4.8910      7.12  |      Q   |          |  V       |          |
16+ 5       4.9682     11.21  |          |Q         |   V      |          |
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16+10       5.0990     18.99  |          |        Q |   V      |          |
16+15       5.3185     31.88  |          |          |    V     |Q         |
16+20       5.4894     24.81  |          |          |   Q V    |          |
16+25       5.5904     14.67  |          |    Q     |      V   |          |
16+30       5.6694     11.46  |          |  Q       |      V   |          |
16+35       5.7402     10.28  |          |Q         |       V  |          |
16+40       5.8049      9.40  |          |  Q       |       V  |          |
16+45       5.8627      8.38  |          |   Q      |       V  |          |
16+50       5.9143      7.49  |          |    Q     |       V  |          |
16+55       5.9603      6.68  |          |     Q    |        V |          |
17+ 0       6.0026      6.14  |          |     Q    |        V |          |
17+ 5       6.0430      5.87  |          |      Q   |        V |          |
17+10       6.0815      5.59  |          |      Q   |        V |          |
17+15       6.1188      5.42  |          |      Q   |        V |          |
17+20       6.1546      5.20  |          |      Q   |         V|          |
17+25       6.1888      4.96  |          |       Q  |         V|          |
17+30       6.2216      4.77  |          |       Q  |         V|          |
17+35       6.2531      4.58  |          |       Q  |         V|          |
17+40       6.2839      4.46  |          |       Q  |         V|          |
17+45       6.3138      4.35  |          |       Q  |         V|          |
17+50       6.3431      4.26  |          |       Q  |         V|          |
17+55       6.3718      4.16  |          |       Q  |          |V         |
18+ 0       6.3999      4.08  |          |       Q  |          |V         |
18+ 5       6.4275      4.02  |          |       Q  |          |V         |
18+10       6.4551      4.01  |          |       Q  |          |V         |
18+15       6.4835      4.12  |          |       Q  |          |V         |
18+20       6.5124      4.19  |          |       Q  |          |V         |
18+25       6.5413      4.19  |          |       Q  |          |V         |
18+30       6.5700      4.18  |          |       Q  |          | V        |
18+35       6.5987      4.16  |          |       Q  |          | V        |
18+40       6.6271      4.13  |          |       Q  |          | V        |
18+45       6.6554      4.10  |          |       Q  |          | V        |
18+50       6.6834      4.07  |          |       Q  |          | V        |
18+55       6.7112      4.03  |          |       Q  |          | V        |
19+ 0       6.7387      4.00  |          |      Q   |          | V        |
19+ 5       6.7660      3.96  |          |      Q   |          |  V       |
19+10       6.7931      3.93  |          |      Q   |          |  V       |
19+15       6.8199      3.90  |          |      Q   |          |  V       |
19+20       6.8465      3.87  |          |      Q   |          |  V       |
19+25       6.8730      3.84  |          |      Q   |          |  V       |
19+30       6.8992      3.81  |          |      Q   |          |  V       |
19+35       6.9252      3.78  |          |      Q   |          |  V       |
19+40       6.9510      3.75  |          |      Q   |          |  V       |
19+45       6.9767      3.72  |          |      Q   |          |   V      |
19+50       7.0021      3.70  |          |      Q   |          |   V      |
19+55       7.0274      3.67  |          |      Q   |          |   V      |
20+ 0       7.0525      3.65  |          |      Q   |          |   V      |
20+ 5       7.0774      3.62  |          |      Q   |          |   V      |
20+10       7.1022      3.60  |          |      Q   |          |   V      |
20+15       7.1268      3.58  |          |      Q   |          |   V      |
20+20       7.1513      3.55  |          |      Q   |          |   V      |
20+25       7.1756      3.53  |          |      Q   |          |    V     |
20+30       7.1998      3.51  |          |      Q   |          |    V     |
20+35       7.2238      3.49  |          |      Q   |          |    V     |
20+40       7.2477      3.47  |          |      Q   |          |    V     |
20+45       7.2715      3.45  |          |      Q   |          |    V     |
20+50       7.2952      3.43  |          |      Q   |          |    V     |
20+55       7.3187      3.41  |          |      Q   |          |    V     |
21+ 0       7.3420      3.40  |          |      Q   |          |    V     |
21+ 5       7.3653      3.38  |          |      Q   |          |    V     |
21+10       7.3885      3.36  |          |      Q   |          |     V    |
21+15       7.4115      3.34  |          |      Q   |          |     V    |
21+20       7.4344      3.33  |          |      Q   |          |     V    |
21+25       7.4572      3.31  |          |      Q   |          |     V    |
21+30       7.4799      3.30  |          |      Q   |          |     V    |
21+35       7.5025      3.28  |          |      Q   |          |     V    |
21+40       7.5250      3.26  |          |      Q   |          |     V    |
21+45       7.5474      3.25  |          |      Q   |          |     V    |
21+50       7.5696      3.24  |          |      Q   |          |     V    |
21+55       7.5918      3.22  |          |      Q   |          |      V   |
22+ 0       7.6139      3.21  |          |      Q   |          |      V   |
```

```
  22+ 5       7.6359      3.19  |  Q      |         |         |      V  |
  22+10       7.6578      3.18  |  Q      |         |         |      V  |
  22+15       7.6796      3.17  |  Q      |         |         |      V  |
  22+20       7.7013      3.15  |  Q      |         |         |      V  |
  22+25       7.7230      3.14  |  Q      |         |         |      V  |
  22+30       7.7445      3.13  |  Q      |         |         |      V  |
  22+35       7.7660      3.12  |  Q      |         |         |      V  |
  22+40       7.7874      3.10  |  Q      |         |         |       V |
  22+45       7.8087      3.09  |  Q      |         |         |       V |
  22+50       7.8299      3.08  |  Q      |         |         |       V |
  22+55       7.8510      3.07  |  Q      |         |         |       V |
  23+ 0       7.8721      3.06  |  Q      |         |         |       V |
  23+ 5       7.8930      3.05  |  Q      |         |         |       V |
  23+10       7.9140      3.04  |  Q      |         |         |       V |
  23+15       7.9348      3.02  |  Q      |         |         |       V |
  23+20       7.9555      3.01  |  Q      |         |         |       V |
  23+25       7.9762      3.00  |  Q      |         |         |       V |
  23+30       7.9968      2.99  | Q       |         |         |        V|
  23+35       8.0174      2.98  | Q       |         |         |        V|
  23+40       8.0379      2.97  | Q       |         |         |        V|
  23+45       8.0583      2.96  | Q       |         |         |        V|
  23+50       8.0786      2.95  | Q       |         |         |        V|
  23+55       8.0989      2.94  | Q       |         |         |        V|
  24+ 0       8.1191      2.93  | Q       |         |         |        V|
  24+ 5       8.1386      2.84  | Q       |         |         |        V|
  24+10       8.1558      2.49  | Q       |         |         |        V|
  24+15       8.1667      1.59  |Q        |         |         |        V|
  24+20       8.1731      0.93  Q         |         |         |        V|
  24+25       8.1775      0.63  Q         |         |         |        V|
  24+30       8.1805      0.44  Q         |         |         |        V|
  24+35       8.1825      0.30  Q         |         |         |        V|
  24+40       8.1839      0.20  Q         |         |         |        V|
  24+45       8.1848      0.13  Q         |         |         |        V|
  24+50       8.1853      0.08  Q         |         |         |        V|
  24+55       8.1857      0.06  Q         |         |         |        V|
  25+ 0       8.1860      0.04  Q         |         |         |        V|
  25+ 5       8.1862      0.03  Q         |         |         |        V|
  25+10       8.1864      0.02  Q         |         |         |        V|
  25+15       8.1865      0.01  Q         |         |         |        V|
  25+20       8.1865      0.01  Q         |         |         |        V|
  25+25       8.1865      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area ‘E’ – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'E'
2 YEAR 24 HOUR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            36.66            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 74.9      56.9         36.66      1.000     0.722    1.000    0.722

Area-averaged adjusted loss rate Fm (In/Hr) =  0.722

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 36.66 | 1.000 | 74.9 | 56.9 | 7.58 | 0.153 |

Area-averaged catchment yield fraction, Y = 0.153
Area-averaged low loss fraction, Yb = 0.847
User entry of time of concentration = 0.293 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 36.66(Ac.)
Catchment Lag time = 0.234 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.5518
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.722(In/Hr)
Average low loss rate fraction (Yb) = 0.847 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 36.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.308(In)
30-minute factor = 0.998 Adjusted rainfall = 0.527(In)
1-hour factor = 0.998 Adjusted rainfall = 0.649(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 443.36 (CFS)) | |
| 1 | 2.675 | 11.860 |
| 2 | 12.024 | 41.451 |
| 3 | 35.644 | 104.718 |
| 4 | 63.026 | 121.402 |
| 5 | 74.204 | 49.558 |
| 6 | 81.479 | 32.252 |
| 7 | 86.684 | 23.079 |
| 8 | 90.577 | 17.258 |
| 9 | 93.485 | 12.896 |
| 10 | 95.602 | 9.386 |
| 11 | 97.088 | 6.587 |
| 12 | 97.988 | 3.990 |
| 13 | 98.429 | 1.953 |
| 14 | 98.799 | 1.644 |
| 15 | 99.093 | 1.300 |
| 16 | 99.316 | 0.991 |
| 17 | 99.592 | 1.221 |
| 18 | 99.789 | 0.873 |
| 19 | 99.913 | 0.549 |
| 20 | 100.000 | 0.388 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3081 | 0.3081 |
| 2 | 0.3794 | 0.0712 |
| 3 | 0.4284 | 0.0491 |
| 4 | 0.4671 | 0.0386 |
| 5 | 0.4994 | 0.0323 |
| 6 | 0.5275 | 0.0281 |

| | | |
|---|---|---|
| 7 | 0.5524 | 0.0250 |
| 8 | 0.5750 | 0.0226 |
| 9 | 0.5957 | 0.0207 |
| 10 | 0.6148 | 0.0191 |
| 11 | 0.6327 | 0.0178 |
| 12 | 0.6494 | 0.0167 |
| 13 | 0.6829 | 0.0335 |
| 14 | 0.7154 | 0.0325 |
| 15 | 0.7471 | 0.0317 |
| 16 | 0.7780 | 0.0309 |
| 17 | 0.8082 | 0.0302 |
| 18 | 0.8378 | 0.0295 |
| 19 | 0.8667 | 0.0289 |
| 20 | 0.8951 | 0.0284 |
| 21 | 0.9230 | 0.0279 |
| 22 | 0.9503 | 0.0274 |
| 23 | 0.9773 | 0.0269 |
| 24 | 1.0037 | 0.0265 |
| 25 | 1.0298 | 0.0261 |
| 26 | 1.0555 | 0.0257 |
| 27 | 1.0808 | 0.0253 |
| 28 | 1.1058 | 0.0250 |
| 29 | 1.1304 | 0.0246 |
| 30 | 1.1548 | 0.0243 |
| 31 | 1.1788 | 0.0240 |
| 32 | 1.2026 | 0.0237 |
| 33 | 1.2260 | 0.0235 |
| 34 | 1.2492 | 0.0232 |
| 35 | 1.2722 | 0.0230 |
| 36 | 1.2949 | 0.0227 |
| 37 | 1.3173 | 0.0224 |
| 38 | 1.3396 | 0.0222 |
| 39 | 1.3616 | 0.0220 |
| 40 | 1.3833 | 0.0218 |
| 41 | 1.4049 | 0.0216 |
| 42 | 1.4263 | 0.0214 |
| 43 | 1.4475 | 0.0212 |
| 44 | 1.4685 | 0.0210 |
| 45 | 1.4894 | 0.0208 |
| 46 | 1.5100 | 0.0207 |
| 47 | 1.5305 | 0.0205 |
| 48 | 1.5509 | 0.0203 |
| 49 | 1.5710 | 0.0202 |
| 50 | 1.5911 | 0.0200 |
| 51 | 1.6109 | 0.0199 |
| 52 | 1.6307 | 0.0197 |
| 53 | 1.6503 | 0.0196 |
| 54 | 1.6697 | 0.0195 |
| 55 | 1.6890 | 0.0193 |
| 56 | 1.7082 | 0.0192 |
| 57 | 1.7273 | 0.0191 |
| 58 | 1.7462 | 0.0189 |
| 59 | 1.7651 | 0.0188 |
| 60 | 1.7838 | 0.0187 |
| 61 | 1.8023 | 0.0186 |
| 62 | 1.8208 | 0.0185 |
| 63 | 1.8392 | 0.0184 |
| 64 | 1.8574 | 0.0182 |
| 65 | 1.8756 | 0.0181 |
| 66 | 1.8936 | 0.0180 |
| 67 | 1.9115 | 0.0179 |
| 68 | 1.9294 | 0.0178 |
| 69 | 1.9471 | 0.0177 |
| 70 | 1.9648 | 0.0176 |
| 71 | 1.9823 | 0.0176 |
| 72 | 1.9998 | 0.0175 |
| 73 | 2.0136 | 0.0138 |
| 74 | 2.0274 | 0.0137 |
| 75 | 2.0410 | 0.0137 |
| 76 | 2.0546 | 0.0136 |
| 77 | 2.0680 | 0.0135 |

| | | |
|---|---|---|
| 78 | 2.0814 | 0.0134 |
| 79 | 2.0947 | 0.0133 |
| 80 | 2.1080 | 0.0132 |
| 81 | 2.1211 | 0.0131 |
| 82 | 2.1341 | 0.0131 |
| 83 | 2.1471 | 0.0130 |
| 84 | 2.1600 | 0.0129 |
| 85 | 2.1728 | 0.0128 |
| 86 | 2.1856 | 0.0127 |
| 87 | 2.1983 | 0.0127 |
| 88 | 2.2109 | 0.0126 |
| 89 | 2.2234 | 0.0125 |
| 90 | 2.2358 | 0.0125 |
| 91 | 2.2482 | 0.0124 |
| 92 | 2.2605 | 0.0123 |
| 93 | 2.2728 | 0.0123 |
| 94 | 2.2850 | 0.0122 |
| 95 | 2.2971 | 0.0121 |
| 96 | 2.3092 | 0.0121 |
| 97 | 2.3212 | 0.0120 |
| 98 | 2.3331 | 0.0119 |
| 99 | 2.3450 | 0.0119 |
| 100 | 2.3568 | 0.0118 |
| 101 | 2.3685 | 0.0118 |
| 102 | 2.3802 | 0.0117 |
| 103 | 2.3919 | 0.0116 |
| 104 | 2.4035 | 0.0116 |
| 105 | 2.4150 | 0.0115 |
| 106 | 2.4265 | 0.0115 |
| 107 | 2.4379 | 0.0114 |
| 108 | 2.4493 | 0.0114 |
| 109 | 2.4606 | 0.0113 |
| 110 | 2.4718 | 0.0113 |
| 111 | 2.4830 | 0.0112 |
| 112 | 2.4942 | 0.0112 |
| 113 | 2.5053 | 0.0111 |
| 114 | 2.5164 | 0.0111 |
| 115 | 2.5274 | 0.0110 |
| 116 | 2.5384 | 0.0110 |
| 117 | 2.5493 | 0.0109 |
| 118 | 2.5602 | 0.0109 |
| 119 | 2.5710 | 0.0108 |
| 120 | 2.5818 | 0.0108 |
| 121 | 2.5925 | 0.0107 |
| 122 | 2.6032 | 0.0107 |
| 123 | 2.6138 | 0.0106 |
| 124 | 2.6244 | 0.0106 |
| 125 | 2.6350 | 0.0106 |
| 126 | 2.6455 | 0.0105 |
| 127 | 2.6560 | 0.0105 |
| 128 | 2.6664 | 0.0104 |
| 129 | 2.6768 | 0.0104 |
| 130 | 2.6872 | 0.0104 |
| 131 | 2.6975 | 0.0103 |
| 132 | 2.7078 | 0.0103 |
| 133 | 2.7180 | 0.0102 |
| 134 | 2.7282 | 0.0102 |
| 135 | 2.7384 | 0.0102 |
| 136 | 2.7485 | 0.0101 |
| 137 | 2.7586 | 0.0101 |
| 138 | 2.7686 | 0.0101 |
| 139 | 2.7787 | 0.0100 |
| 140 | 2.7886 | 0.0100 |
| 141 | 2.7986 | 0.0099 |
| 142 | 2.8085 | 0.0099 |
| 143 | 2.8184 | 0.0099 |
| 144 | 2.8282 | 0.0098 |
| 145 | 2.8380 | 0.0098 |
| 146 | 2.8478 | 0.0098 |
| 147 | 2.8575 | 0.0097 |
| 148 | 2.8672 | 0.0097 |

| | | |
|---|---|---|
| 149 | 2.8769 | 0.0097 |
| 150 | 2.8865 | 0.0096 |
| 151 | 2.8961 | 0.0096 |
| 152 | 2.9057 | 0.0096 |
| 153 | 2.9153 | 0.0095 |
| 154 | 2.9248 | 0.0095 |
| 155 | 2.9342 | 0.0095 |
| 156 | 2.9437 | 0.0095 |
| 157 | 2.9531 | 0.0094 |
| 158 | 2.9625 | 0.0094 |
| 159 | 2.9719 | 0.0094 |
| 160 | 2.9812 | 0.0093 |
| 161 | 2.9905 | 0.0093 |
| 162 | 2.9998 | 0.0093 |
| 163 | 3.0090 | 0.0092 |
| 164 | 3.0182 | 0.0092 |
| 165 | 3.0274 | 0.0092 |
| 166 | 3.0366 | 0.0092 |
| 167 | 3.0457 | 0.0091 |
| 168 | 3.0548 | 0.0091 |
| 169 | 3.0639 | 0.0091 |
| 170 | 3.0730 | 0.0091 |
| 171 | 3.0820 | 0.0090 |
| 172 | 3.0910 | 0.0090 |
| 173 | 3.1000 | 0.0090 |
| 174 | 3.1089 | 0.0089 |
| 175 | 3.1178 | 0.0089 |
| 176 | 3.1267 | 0.0089 |
| 177 | 3.1356 | 0.0089 |
| 178 | 3.1444 | 0.0088 |
| 179 | 3.1533 | 0.0088 |
| 180 | 3.1621 | 0.0088 |
| 181 | 3.1708 | 0.0088 |
| 182 | 3.1796 | 0.0087 |
| 183 | 3.1883 | 0.0087 |
| 184 | 3.1970 | 0.0087 |
| 185 | 3.2057 | 0.0087 |
| 186 | 3.2143 | 0.0087 |
| 187 | 3.2230 | 0.0086 |
| 188 | 3.2316 | 0.0086 |
| 189 | 3.2402 | 0.0086 |
| 190 | 3.2487 | 0.0086 |
| 191 | 3.2573 | 0.0085 |
| 192 | 3.2658 | 0.0085 |
| 193 | 3.2743 | 0.0085 |
| 194 | 3.2827 | 0.0085 |
| 195 | 3.2912 | 0.0085 |
| 196 | 3.2996 | 0.0084 |
| 197 | 3.3080 | 0.0084 |
| 198 | 3.3164 | 0.0084 |
| 199 | 3.3248 | 0.0084 |
| 200 | 3.3331 | 0.0083 |
| 201 | 3.3414 | 0.0083 |
| 202 | 3.3497 | 0.0083 |
| 203 | 3.3580 | 0.0083 |
| 204 | 3.3663 | 0.0083 |
| 205 | 3.3745 | 0.0082 |
| 206 | 3.3828 | 0.0082 |
| 207 | 3.3910 | 0.0082 |
| 208 | 3.3991 | 0.0082 |
| 209 | 3.4073 | 0.0082 |
| 210 | 3.4154 | 0.0081 |
| 211 | 3.4236 | 0.0081 |
| 212 | 3.4317 | 0.0081 |
| 213 | 3.4398 | 0.0081 |
| 214 | 3.4478 | 0.0081 |
| 215 | 3.4559 | 0.0080 |
| 216 | 3.4639 | 0.0080 |
| 217 | 3.4719 | 0.0080 |
| 218 | 3.4799 | 0.0080 |
| 219 | 3.4879 | 0.0080 |

| | | |
|---|---|---|
| 220 | 3.4958 | 0.0080 |
| 221 | 3.5038 | 0.0079 |
| 222 | 3.5117 | 0.0079 |
| 223 | 3.5196 | 0.0079 |
| 224 | 3.5275 | 0.0079 |
| 225 | 3.5353 | 0.0079 |
| 226 | 3.5432 | 0.0078 |
| 227 | 3.5510 | 0.0078 |
| 228 | 3.5588 | 0.0078 |
| 229 | 3.5666 | 0.0078 |
| 230 | 3.5744 | 0.0078 |
| 231 | 3.5822 | 0.0078 |
| 232 | 3.5899 | 0.0077 |
| 233 | 3.5976 | 0.0077 |
| 234 | 3.6053 | 0.0077 |
| 235 | 3.6130 | 0.0077 |
| 236 | 3.6207 | 0.0077 |
| 237 | 3.6284 | 0.0077 |
| 238 | 3.6360 | 0.0076 |
| 239 | 3.6437 | 0.0076 |
| 240 | 3.6513 | 0.0076 |
| 241 | 3.6589 | 0.0076 |
| 242 | 3.6665 | 0.0076 |
| 243 | 3.6740 | 0.0076 |
| 244 | 3.6816 | 0.0076 |
| 245 | 3.6891 | 0.0075 |
| 246 | 3.6966 | 0.0075 |
| 247 | 3.7042 | 0.0075 |
| 248 | 3.7116 | 0.0075 |
| 249 | 3.7191 | 0.0075 |
| 250 | 3.7266 | 0.0075 |
| 251 | 3.7340 | 0.0074 |
| 252 | 3.7415 | 0.0074 |
| 253 | 3.7489 | 0.0074 |
| 254 | 3.7563 | 0.0074 |
| 255 | 3.7637 | 0.0074 |
| 256 | 3.7710 | 0.0074 |
| 257 | 3.7784 | 0.0074 |
| 258 | 3.7857 | 0.0073 |
| 259 | 3.7931 | 0.0073 |
| 260 | 3.8004 | 0.0073 |
| 261 | 3.8077 | 0.0073 |
| 262 | 3.8150 | 0.0073 |
| 263 | 3.8223 | 0.0073 |
| 264 | 3.8295 | 0.0073 |
| 265 | 3.8368 | 0.0072 |
| 266 | 3.8440 | 0.0072 |
| 267 | 3.8512 | 0.0072 |
| 268 | 3.8584 | 0.0072 |
| 269 | 3.8656 | 0.0072 |
| 270 | 3.8728 | 0.0072 |
| 271 | 3.8800 | 0.0072 |
| 272 | 3.8871 | 0.0072 |
| 273 | 3.8943 | 0.0071 |
| 274 | 3.9014 | 0.0071 |
| 275 | 3.9085 | 0.0071 |
| 276 | 3.9156 | 0.0071 |
| 277 | 3.9227 | 0.0071 |
| 278 | 3.9298 | 0.0071 |
| 279 | 3.9368 | 0.0071 |
| 280 | 3.9439 | 0.0070 |
| 281 | 3.9509 | 0.0070 |
| 282 | 3.9579 | 0.0070 |
| 283 | 3.9649 | 0.0070 |
| 284 | 3.9719 | 0.0070 |
| 285 | 3.9789 | 0.0070 |
| 286 | 3.9859 | 0.0070 |
| 287 | 3.9929 | 0.0070 |
| 288 | 3.9998 | 0.0070 |

| Unit | Unit | Unit | Effective |
|---|---|---|---|

| Period (number) | Rainfall (In) | Soil-Loss (In) | Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0059 | 0.0011 |
| 2 | 0.0070 | 0.0059 | 0.0011 |
| 3 | 0.0070 | 0.0059 | 0.0011 |
| 4 | 0.0070 | 0.0059 | 0.0011 |
| 5 | 0.0070 | 0.0059 | 0.0011 |
| 6 | 0.0070 | 0.0060 | 0.0011 |
| 7 | 0.0071 | 0.0060 | 0.0011 |
| 8 | 0.0071 | 0.0060 | 0.0011 |
| 9 | 0.0071 | 0.0060 | 0.0011 |
| 10 | 0.0071 | 0.0060 | 0.0011 |
| 11 | 0.0071 | 0.0060 | 0.0011 |
| 12 | 0.0072 | 0.0061 | 0.0011 |
| 13 | 0.0072 | 0.0061 | 0.0011 |
| 14 | 0.0072 | 0.0061 | 0.0011 |
| 15 | 0.0072 | 0.0061 | 0.0011 |
| 16 | 0.0072 | 0.0061 | 0.0011 |
| 17 | 0.0073 | 0.0061 | 0.0011 |
| 18 | 0.0073 | 0.0062 | 0.0011 |
| 19 | 0.0073 | 0.0062 | 0.0011 |
| 20 | 0.0073 | 0.0062 | 0.0011 |
| 21 | 0.0073 | 0.0062 | 0.0011 |
| 22 | 0.0074 | 0.0062 | 0.0011 |
| 23 | 0.0074 | 0.0063 | 0.0011 |
| 24 | 0.0074 | 0.0063 | 0.0011 |
| 25 | 0.0074 | 0.0063 | 0.0011 |
| 26 | 0.0074 | 0.0063 | 0.0011 |
| 27 | 0.0075 | 0.0063 | 0.0011 |
| 28 | 0.0075 | 0.0063 | 0.0011 |
| 29 | 0.0075 | 0.0064 | 0.0012 |
| 30 | 0.0075 | 0.0064 | 0.0012 |
| 31 | 0.0076 | 0.0064 | 0.0012 |
| 32 | 0.0076 | 0.0064 | 0.0012 |
| 33 | 0.0076 | 0.0064 | 0.0012 |
| 34 | 0.0076 | 0.0065 | 0.0012 |
| 35 | 0.0077 | 0.0065 | 0.0012 |
| 36 | 0.0077 | 0.0065 | 0.0012 |
| 37 | 0.0077 | 0.0065 | 0.0012 |
| 38 | 0.0077 | 0.0065 | 0.0012 |
| 39 | 0.0078 | 0.0066 | 0.0012 |
| 40 | 0.0078 | 0.0066 | 0.0012 |
| 41 | 0.0078 | 0.0066 | 0.0012 |
| 42 | 0.0078 | 0.0066 | 0.0012 |
| 43 | 0.0079 | 0.0067 | 0.0012 |
| 44 | 0.0079 | 0.0067 | 0.0012 |
| 45 | 0.0079 | 0.0067 | 0.0012 |
| 46 | 0.0079 | 0.0067 | 0.0012 |
| 47 | 0.0080 | 0.0068 | 0.0012 |
| 48 | 0.0080 | 0.0068 | 0.0012 |
| 49 | 0.0080 | 0.0068 | 0.0012 |
| 50 | 0.0080 | 0.0068 | 0.0012 |
| 51 | 0.0081 | 0.0068 | 0.0012 |
| 52 | 0.0081 | 0.0069 | 0.0012 |
| 53 | 0.0081 | 0.0069 | 0.0012 |
| 54 | 0.0082 | 0.0069 | 0.0013 |
| 55 | 0.0082 | 0.0069 | 0.0013 |
| 56 | 0.0082 | 0.0070 | 0.0013 |
| 57 | 0.0083 | 0.0070 | 0.0013 |
| 58 | 0.0083 | 0.0070 | 0.0013 |
| 59 | 0.0083 | 0.0070 | 0.0013 |
| 60 | 0.0083 | 0.0071 | 0.0013 |
| 61 | 0.0084 | 0.0071 | 0.0013 |
| 62 | 0.0084 | 0.0071 | 0.0013 |
| 63 | 0.0085 | 0.0072 | 0.0013 |
| 64 | 0.0085 | 0.0072 | 0.0013 |
| 65 | 0.0085 | 0.0072 | 0.0013 |
| 66 | 0.0085 | 0.0072 | 0.0013 |
| 67 | 0.0086 | 0.0073 | 0.0013 |
| 68 | 0.0086 | 0.0073 | 0.0013 |

| | | | |
|---|---|---|---|
| 69 | 0.0087 | 0.0073 | 0.0013 |
| 70 | 0.0087 | 0.0073 | 0.0013 |
| 71 | 0.0087 | 0.0074 | 0.0013 |
| 72 | 0.0087 | 0.0074 | 0.0013 |
| 73 | 0.0088 | 0.0074 | 0.0013 |
| 74 | 0.0088 | 0.0075 | 0.0014 |
| 75 | 0.0089 | 0.0075 | 0.0014 |
| 76 | 0.0089 | 0.0075 | 0.0014 |
| 77 | 0.0089 | 0.0076 | 0.0014 |
| 78 | 0.0090 | 0.0076 | 0.0014 |
| 79 | 0.0090 | 0.0076 | 0.0014 |
| 80 | 0.0091 | 0.0077 | 0.0014 |
| 81 | 0.0091 | 0.0077 | 0.0014 |
| 82 | 0.0091 | 0.0077 | 0.0014 |
| 83 | 0.0092 | 0.0078 | 0.0014 |
| 84 | 0.0092 | 0.0078 | 0.0014 |
| 85 | 0.0093 | 0.0079 | 0.0014 |
| 86 | 0.0093 | 0.0079 | 0.0014 |
| 87 | 0.0094 | 0.0079 | 0.0014 |
| 88 | 0.0094 | 0.0080 | 0.0014 |
| 89 | 0.0095 | 0.0080 | 0.0014 |
| 90 | 0.0095 | 0.0080 | 0.0015 |
| 91 | 0.0095 | 0.0081 | 0.0015 |
| 92 | 0.0096 | 0.0081 | 0.0015 |
| 93 | 0.0096 | 0.0082 | 0.0015 |
| 94 | 0.0097 | 0.0082 | 0.0015 |
| 95 | 0.0097 | 0.0082 | 0.0015 |
| 96 | 0.0098 | 0.0083 | 0.0015 |
| 97 | 0.0098 | 0.0083 | 0.0015 |
| 98 | 0.0099 | 0.0084 | 0.0015 |
| 99 | 0.0099 | 0.0084 | 0.0015 |
| 100 | 0.0100 | 0.0084 | 0.0015 |
| 101 | 0.0101 | 0.0085 | 0.0015 |
| 102 | 0.0101 | 0.0085 | 0.0015 |
| 103 | 0.0102 | 0.0086 | 0.0016 |
| 104 | 0.0102 | 0.0086 | 0.0016 |
| 105 | 0.0103 | 0.0087 | 0.0016 |
| 106 | 0.0103 | 0.0087 | 0.0016 |
| 107 | 0.0104 | 0.0088 | 0.0016 |
| 108 | 0.0104 | 0.0088 | 0.0016 |
| 109 | 0.0105 | 0.0089 | 0.0016 |
| 110 | 0.0106 | 0.0089 | 0.0016 |
| 111 | 0.0106 | 0.0090 | 0.0016 |
| 112 | 0.0107 | 0.0091 | 0.0016 |
| 113 | 0.0108 | 0.0091 | 0.0017 |
| 114 | 0.0108 | 0.0092 | 0.0017 |
| 115 | 0.0109 | 0.0092 | 0.0017 |
| 116 | 0.0110 | 0.0093 | 0.0017 |
| 117 | 0.0111 | 0.0094 | 0.0017 |
| 118 | 0.0111 | 0.0094 | 0.0017 |
| 119 | 0.0112 | 0.0095 | 0.0017 |
| 120 | 0.0113 | 0.0095 | 0.0017 |
| 121 | 0.0114 | 0.0096 | 0.0017 |
| 122 | 0.0114 | 0.0097 | 0.0018 |
| 123 | 0.0115 | 0.0098 | 0.0018 |
| 124 | 0.0116 | 0.0098 | 0.0018 |
| 125 | 0.0117 | 0.0099 | 0.0018 |
| 126 | 0.0118 | 0.0100 | 0.0018 |
| 127 | 0.0119 | 0.0101 | 0.0018 |
| 128 | 0.0119 | 0.0101 | 0.0018 |
| 129 | 0.0121 | 0.0102 | 0.0018 |
| 130 | 0.0121 | 0.0103 | 0.0019 |
| 131 | 0.0123 | 0.0104 | 0.0019 |
| 132 | 0.0123 | 0.0104 | 0.0019 |
| 133 | 0.0125 | 0.0105 | 0.0019 |
| 134 | 0.0125 | 0.0106 | 0.0019 |
| 135 | 0.0127 | 0.0107 | 0.0019 |
| 136 | 0.0127 | 0.0108 | 0.0020 |
| 137 | 0.0129 | 0.0109 | 0.0020 |
| 138 | 0.0130 | 0.0110 | 0.0020 |
| 139 | 0.0131 | 0.0111 | 0.0020 |

| | | | |
|---|---|---|---|
| 140 | 0.0132 | 0.0112 | 0.0020 |
| 141 | 0.0134 | 0.0113 | 0.0021 |
| 142 | 0.0135 | 0.0114 | 0.0021 |
| 143 | 0.0137 | 0.0116 | 0.0021 |
| 144 | 0.0137 | 0.0116 | 0.0021 |
| 145 | 0.0175 | 0.0148 | 0.0027 |
| 146 | 0.0176 | 0.0149 | 0.0027 |
| 147 | 0.0177 | 0.0150 | 0.0027 |
| 148 | 0.0178 | 0.0151 | 0.0027 |
| 149 | 0.0180 | 0.0153 | 0.0028 |
| 150 | 0.0181 | 0.0154 | 0.0028 |
| 151 | 0.0184 | 0.0155 | 0.0028 |
| 152 | 0.0185 | 0.0156 | 0.0028 |
| 153 | 0.0187 | 0.0158 | 0.0029 |
| 154 | 0.0188 | 0.0159 | 0.0029 |
| 155 | 0.0191 | 0.0161 | 0.0029 |
| 156 | 0.0192 | 0.0162 | 0.0029 |
| 157 | 0.0195 | 0.0165 | 0.0030 |
| 158 | 0.0196 | 0.0166 | 0.0030 |
| 159 | 0.0199 | 0.0168 | 0.0030 |
| 160 | 0.0200 | 0.0170 | 0.0031 |
| 161 | 0.0203 | 0.0172 | 0.0031 |
| 162 | 0.0205 | 0.0174 | 0.0031 |
| 163 | 0.0208 | 0.0176 | 0.0032 |
| 164 | 0.0210 | 0.0178 | 0.0032 |
| 165 | 0.0214 | 0.0181 | 0.0033 |
| 166 | 0.0216 | 0.0183 | 0.0033 |
| 167 | 0.0220 | 0.0186 | 0.0034 |
| 168 | 0.0222 | 0.0188 | 0.0034 |
| 169 | 0.0227 | 0.0192 | 0.0035 |
| 170 | 0.0230 | 0.0194 | 0.0035 |
| 171 | 0.0235 | 0.0199 | 0.0036 |
| 172 | 0.0237 | 0.0201 | 0.0036 |
| 173 | 0.0243 | 0.0206 | 0.0037 |
| 174 | 0.0246 | 0.0209 | 0.0038 |
| 175 | 0.0253 | 0.0214 | 0.0039 |
| 176 | 0.0257 | 0.0218 | 0.0039 |
| 177 | 0.0265 | 0.0224 | 0.0041 |
| 178 | 0.0269 | 0.0228 | 0.0041 |
| 179 | 0.0279 | 0.0236 | 0.0043 |
| 180 | 0.0284 | 0.0240 | 0.0043 |
| 181 | 0.0295 | 0.0250 | 0.0045 |
| 182 | 0.0302 | 0.0256 | 0.0046 |
| 183 | 0.0317 | 0.0268 | 0.0049 |
| 184 | 0.0325 | 0.0276 | 0.0050 |
| 185 | 0.0167 | 0.0142 | 0.0026 |
| 186 | 0.0178 | 0.0151 | 0.0027 |
| 187 | 0.0207 | 0.0175 | 0.0032 |
| 188 | 0.0226 | 0.0191 | 0.0035 |
| 189 | 0.0281 | 0.0238 | 0.0043 |
| 190 | 0.0323 | 0.0274 | 0.0050 |
| 191 | 0.0491 | 0.0416 | 0.0075 |
| 192 | 0.0712 | 0.0602 | 0.0110 |
| 193 | 0.3081 | 0.0602 | 0.2480 |
| 194 | 0.0386 | 0.0327 | 0.0059 |
| 195 | 0.0250 | 0.0211 | 0.0038 |
| 196 | 0.0191 | 0.0162 | 0.0029 |
| 197 | 0.0335 | 0.0284 | 0.0051 |
| 198 | 0.0309 | 0.0262 | 0.0047 |
| 199 | 0.0289 | 0.0245 | 0.0044 |
| 200 | 0.0274 | 0.0232 | 0.0042 |
| 201 | 0.0261 | 0.0221 | 0.0040 |
| 202 | 0.0250 | 0.0211 | 0.0038 |
| 203 | 0.0240 | 0.0204 | 0.0037 |
| 204 | 0.0232 | 0.0197 | 0.0036 |
| 205 | 0.0224 | 0.0190 | 0.0034 |
| 206 | 0.0218 | 0.0184 | 0.0033 |
| 207 | 0.0212 | 0.0180 | 0.0032 |
| 208 | 0.0207 | 0.0175 | 0.0032 |
| 209 | 0.0202 | 0.0171 | 0.0031 |
| 210 | 0.0197 | 0.0167 | 0.0030 |

| | | | |
|---|---|---|---|
| 211 | 0.0193 | 0.0164 | 0.0030 |
| 212 | 0.0189 | 0.0160 | 0.0029 |
| 213 | 0.0186 | 0.0157 | 0.0028 |
| 214 | 0.0182 | 0.0155 | 0.0028 |
| 215 | 0.0179 | 0.0152 | 0.0027 |
| 216 | 0.0176 | 0.0149 | 0.0027 |
| 217 | 0.0138 | 0.0117 | 0.0021 |
| 218 | 0.0136 | 0.0115 | 0.0021 |
| 219 | 0.0133 | 0.0113 | 0.0020 |
| 220 | 0.0131 | 0.0111 | 0.0020 |
| 221 | 0.0128 | 0.0109 | 0.0020 |
| 222 | 0.0126 | 0.0107 | 0.0019 |
| 223 | 0.0124 | 0.0105 | 0.0019 |
| 224 | 0.0122 | 0.0103 | 0.0019 |
| 225 | 0.0120 | 0.0102 | 0.0018 |
| 226 | 0.0118 | 0.0100 | 0.0018 |
| 227 | 0.0116 | 0.0099 | 0.0018 |
| 228 | 0.0115 | 0.0097 | 0.0018 |
| 229 | 0.0113 | 0.0096 | 0.0017 |
| 230 | 0.0112 | 0.0095 | 0.0017 |
| 231 | 0.0110 | 0.0093 | 0.0017 |
| 232 | 0.0109 | 0.0092 | 0.0017 |
| 233 | 0.0107 | 0.0091 | 0.0016 |
| 234 | 0.0106 | 0.0090 | 0.0016 |
| 235 | 0.0105 | 0.0089 | 0.0016 |
| 236 | 0.0104 | 0.0088 | 0.0016 |
| 237 | 0.0102 | 0.0087 | 0.0016 |
| 238 | 0.0101 | 0.0086 | 0.0016 |
| 239 | 0.0100 | 0.0085 | 0.0015 |
| 240 | 0.0099 | 0.0084 | 0.0015 |
| 241 | 0.0098 | 0.0083 | 0.0015 |
| 242 | 0.0097 | 0.0082 | 0.0015 |
| 243 | 0.0096 | 0.0081 | 0.0015 |
| 244 | 0.0095 | 0.0081 | 0.0015 |
| 245 | 0.0094 | 0.0080 | 0.0014 |
| 246 | 0.0093 | 0.0079 | 0.0014 |
| 247 | 0.0092 | 0.0078 | 0.0014 |
| 248 | 0.0092 | 0.0078 | 0.0014 |
| 249 | 0.0091 | 0.0077 | 0.0014 |
| 250 | 0.0090 | 0.0076 | 0.0014 |
| 251 | 0.0089 | 0.0076 | 0.0014 |
| 252 | 0.0088 | 0.0075 | 0.0014 |
| 253 | 0.0088 | 0.0074 | 0.0013 |
| 254 | 0.0087 | 0.0074 | 0.0013 |
| 255 | 0.0086 | 0.0073 | 0.0013 |
| 256 | 0.0086 | 0.0072 | 0.0013 |
| 257 | 0.0085 | 0.0072 | 0.0013 |
| 258 | 0.0084 | 0.0071 | 0.0013 |
| 259 | 0.0084 | 0.0071 | 0.0013 |
| 260 | 0.0083 | 0.0070 | 0.0013 |
| 261 | 0.0082 | 0.0070 | 0.0013 |
| 262 | 0.0082 | 0.0069 | 0.0013 |
| 263 | 0.0081 | 0.0069 | 0.0012 |
| 264 | 0.0081 | 0.0068 | 0.0012 |
| 265 | 0.0080 | 0.0068 | 0.0012 |
| 266 | 0.0080 | 0.0067 | 0.0012 |
| 267 | 0.0079 | 0.0067 | 0.0012 |
| 268 | 0.0078 | 0.0066 | 0.0012 |
| 269 | 0.0078 | 0.0066 | 0.0012 |
| 270 | 0.0077 | 0.0066 | 0.0012 |
| 271 | 0.0077 | 0.0065 | 0.0012 |
| 272 | 0.0076 | 0.0065 | 0.0012 |
| 273 | 0.0076 | 0.0064 | 0.0012 |
| 274 | 0.0076 | 0.0064 | 0.0012 |
| 275 | 0.0075 | 0.0064 | 0.0012 |
| 276 | 0.0075 | 0.0063 | 0.0011 |
| 277 | 0.0074 | 0.0063 | 0.0011 |
| 278 | 0.0074 | 0.0062 | 0.0011 |
| 279 | 0.0073 | 0.0062 | 0.0011 |
| 280 | 0.0073 | 0.0062 | 0.0011 |
| 281 | 0.0072 | 0.0061 | 0.0011 |

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      282              0.0072           0.0061              0.0011
      283              0.0072           0.0061              0.0011
      284              0.0071           0.0060              0.0011
      285              0.0071           0.0060              0.0011
      286              0.0070           0.0060              0.0011
      287              0.0070           0.0059              0.0011
      288              0.0070           0.0059              0.0011
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.19(In)
      Total effective rainfall =      0.81(In)
      Peak flow rate in flood hydrograph =     32.04(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
---------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q         |         |         |         |
  0+10       0.0005      0.06  Q         |         |         |         |
  0+15       0.0016      0.17  Q         |         |         |         |
  0+20       0.0037      0.30  Q         |         |         |         |
  0+25       0.0061      0.35  Q         |         |         |         |
  0+30       0.0088      0.39  Q         |         |         |         |
  0+35       0.0116      0.41  Q         |         |         |         |
  0+40       0.0146      0.43  Q         |         |         |         |
  0+45       0.0177      0.45  Q         |         |         |         |
  0+50       0.0208      0.46  Q         |         |         |         |
  0+55       0.0240      0.47  Q         |         |         |         |
  1+ 0       0.0273      0.47  Q         |         |         |         |
  1+ 5       0.0306      0.48  Q         |         |         |         |
  1+10       0.0339      0.48  Q         |         |         |         |
  1+15       0.0372      0.48  Q         |         |         |         |
  1+20       0.0405      0.48  Q         |         |         |         |
  1+25       0.0438      0.49  Q         |         |         |         |
  1+30       0.0472      0.49  Q         |         |         |         |
  1+35       0.0506      0.49  Q         |         |         |         |
  1+40       0.0540      0.49  Q         |         |         |         |
  1+45       0.0574      0.49  Q         |         |         |         |
  1+50       0.0608      0.49  Q         |         |         |         |
  1+55       0.0642      0.50  QV        |         |         |         |
  2+ 0       0.0676      0.50  QV        |         |         |         |
  2+ 5       0.0711      0.50  QV        |         |         |         |
  2+10       0.0745      0.50  QV        |         |         |         |
  2+15       0.0780      0.50  QV        |         |         |         |
  2+20       0.0814      0.50  QV        |         |         |         |
  2+25       0.0849      0.51  QV        |         |         |         |
  2+30       0.0884      0.51  QV        |         |         |         |
  2+35       0.0919      0.51  QV        |         |         |         |
  2+40       0.0954      0.51  QV        |         |         |         |
  2+45       0.0989      0.51  QV        |         |         |         |
  2+50       0.1025      0.51  QV        |         |         |         |
  2+55       0.1060      0.51  QV        |         |         |         |
  3+ 0       0.1096      0.52  QV        |         |         |         |
  3+ 5       0.1131      0.52  QV        |         |         |         |
  3+10       0.1167      0.52  QV        |         |         |         |
  3+15       0.1203      0.52  QV        |         |         |         |
  3+20       0.1239      0.52  QV        |         |         |         |
  3+25       0.1275      0.52  Q V       |         |         |         |
  3+30       0.1311      0.53  Q V       |         |         |         |
  3+35       0.1348      0.53  Q V       |         |         |         |
  3+40       0.1384      0.53  Q V       |         |         |         |
  3+45       0.1421      0.53  Q V       |         |         |         |
  3+50       0.1457      0.53  Q V       |         |         |         |
  3+55       0.1494      0.53  Q V       |         |         |         |
  4+ 0       0.1531      0.54  Q V       |         |         |         |
  4+ 5       0.1568      0.54  Q V       |         |         |         |
```

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 4+10      0.1605      0.54  Q V       |         |         |         |
 4+15      0.1643      0.54  Q V       |         |         |         |
 4+20      0.1680      0.54  Q V       |         |         |         |
 4+25      0.1718      0.55  Q V       |         |         |         |
 4+30      0.1755      0.55  Q V       |         |         |         |
 4+35      0.1793      0.55  Q V       |         |         |         |
 4+40      0.1831      0.55  Q V       |         |         |         |
 4+45      0.1869      0.55  Q  V      |         |         |         |
 4+50      0.1908      0.56  Q  V      |         |         |         |
 4+55      0.1946      0.56  Q  V      |         |         |         |
 5+ 0      0.1985      0.56  Q  V      |         |         |         |
 5+ 5      0.2023      0.56  Q  V      |         |         |         |
 5+10      0.2062      0.56  Q  V      |         |         |         |
 5+15      0.2101      0.57  Q  V      |         |         |         |
 5+20      0.2140      0.57  Q  V      |         |         |         |
 5+25      0.2179      0.57  Q  V      |         |         |         |
 5+30      0.2219      0.57  Q  V      |         |         |         |
 5+35      0.2258      0.57  Q  V      |         |         |         |
 5+40      0.2298      0.58  Q  V      |         |         |         |
 5+45      0.2338      0.58  Q  V      |         |         |         |
 5+50      0.2378      0.58  Q  V      |         |         |         |
 5+55      0.2418      0.58  Q  V      |         |         |         |
 6+ 0      0.2458      0.59  Q  V      |         |         |         |
 6+ 5      0.2499      0.59  Q   V     |         |         |         |
 6+10      0.2540      0.59  Q   V     |         |         |         |
 6+15      0.2581      0.59  Q   V     |         |         |         |
 6+20      0.2622      0.60  Q   V     |         |         |         |
 6+25      0.2663      0.60  Q   V     |         |         |         |
 6+30      0.2704      0.60  Q   V     |         |         |         |
 6+35      0.2746      0.60  Q   V     |         |         |         |
 6+40      0.2787      0.61  Q   V     |         |         |         |
 6+45      0.2829      0.61  Q   V     |         |         |         |
 6+50      0.2871      0.61  Q   V     |         |         |         |
 6+55      0.2914      0.61  Q   V     |         |         |         |
 7+ 0      0.2956      0.62  Q   V     |         |         |         |
 7+ 5      0.2999      0.62  Q   V     |         |         |         |
 7+10      0.3041      0.62  Q   V     |         |         |         |
 7+15      0.3084      0.62  Q   V     |         |         |         |
 7+20      0.3128      0.63  Q    V    |         |         |         |
 7+25      0.3171      0.63  Q    V    |         |         |         |
 7+30      0.3215      0.63  Q    V    |         |         |         |
 7+35      0.3259      0.64  Q    V    |         |         |         |
 7+40      0.3303      0.64  Q    V    |         |         |         |
 7+45      0.3347      0.64  Q    V    |         |         |         |
 7+50      0.3391      0.65  Q    V    |         |         |         |
 7+55      0.3436      0.65  Q    V    |         |         |         |
 8+ 0      0.3481      0.65  Q    V    |         |         |         |
 8+ 5      0.3526      0.66  Q    V    |         |         |         |
 8+10      0.3571      0.66  Q    V    |         |         |         |
 8+15      0.3617      0.66  Q    V    |         |         |         |
 8+20      0.3663      0.67  Q    V    |         |         |         |
 8+25      0.3709      0.67  Q    V    |         |         |         |
 8+30      0.3755      0.67  Q     V   |         |         |         |
 8+35      0.3802      0.68  Q     V   |         |         |         |
 8+40      0.3849      0.68  Q     V   |         |         |         |
 8+45      0.3896      0.68  Q     V   |         |         |         |
 8+50      0.3943      0.69  Q     V   |         |         |         |
 8+55      0.3991      0.69  Q     V   |         |         |         |
 9+ 0      0.4038      0.69  Q     V   |         |         |         |
 9+ 5      0.4087      0.70  Q     V   |         |         |         |
 9+10      0.4135      0.70  Q     V   |         |         |         |
 9+15      0.4184      0.71  Q     V   |         |         |         |
 9+20      0.4233      0.71  Q     V   |         |         |         |
 9+25      0.4282      0.72  Q     V   |         |         |         |
 9+30      0.4331      0.72  Q     V   |         |         |         |
 9+35      0.4381      0.72  Q      V  |         |         |         |
 9+40      0.4432      0.73  Q      V  |         |         |         |
 9+45      0.4482      0.73  Q      V  |         |         |         |
 9+50      0.4533      0.74  Q      V  |         |         |         |
 9+55      0.4584      0.74  Q      V  |         |         |         |
10+ 0      0.4635      0.75  Q      V  |         |         |         |
```

```
10+ 5       0.4687      0.75  Q      V  |          |          |          |
10+10       0.4739      0.76  Q      V  |          |          |          |
10+15       0.4792      0.76  Q      V  |          |          |          |
10+20       0.4845      0.77  Q      V  |          |          |          |
10+25       0.4898      0.77  Q      V  |          |          |          |
10+30       0.4952      0.78  Q      V  |          |          |          |
10+35       0.5006      0.78  Q       V |          |          |          |
10+40       0.5060      0.79  Q       V |          |          |          |
10+45       0.5115      0.80  Q       V |          |          |          |
10+50       0.5170      0.80  Q       V |          |          |          |
10+55       0.5226      0.81  Q       V |          |          |          |
11+ 0       0.5282      0.81  Q       V |          |          |          |
11+ 5       0.5338      0.82  Q       V |          |          |          |
11+10       0.5395      0.83  Q       V |          |          |          |
11+15       0.5453      0.83  Q       V |          |          |          |
11+20       0.5511      0.84  Q       V |          |          |          |
11+25       0.5569      0.85  Q       V |          |          |          |
11+30       0.5628      0.85  Q        V|          |          |          |
11+35       0.5687      0.86  Q        V|          |          |          |
11+40       0.5747      0.87  Q        V|          |          |          |
11+45       0.5808      0.88  Q        V|          |          |          |
11+50       0.5869      0.89  Q        V|          |          |          |
11+55       0.5930      0.89  Q        V|          |          |          |
12+ 0       0.5992      0.90  Q        V|          |          |          |
12+ 5       0.6055      0.92  Q        V|          |          |          |
12+10       0.6121      0.95  Q        V|          |          |          |
12+15       0.6191      1.01  |Q       V|          |          |          |
12+20       0.6266      1.09  |Q        V          |          |          |
12+25       0.6343      1.13  |Q        V          |          |          |
12+30       0.6423      1.15  |Q        V          |          |          |
12+35       0.6504      1.18  |Q        V          |          |          |
12+40       0.6586      1.19  |Q        V          |          |          |
12+45       0.6669      1.21  |Q        V          |          |          |
12+50       0.6754      1.23  |Q        V          |          |          |
12+55       0.6839      1.24  |Q         |V         |          |          |
13+ 0       0.6926      1.26  |Q         |V         |          |          |
13+ 5       0.7013      1.27  |Q         |V         |          |          |
13+10       0.7102      1.28  |Q         |V         |          |          |
13+15       0.7191      1.30  |Q         |V         |          |          |
13+20       0.7281      1.31  |Q         |V         |          |          |
13+25       0.7372      1.32  |Q         |V         |          |          |
13+30       0.7464      1.34  |Q         | V        |          |          |
13+35       0.7558      1.35  |Q         | V        |          |          |
13+40       0.7652      1.37  |Q         | V        |          |          |
13+45       0.7747      1.39  |Q         | V        |          |          |
13+50       0.7844      1.40  |Q         | V        |          |          |
13+55       0.7942      1.42  |Q         | V        |          |          |
14+ 0       0.8041      1.44  |Q         | V        |          |          |
14+ 5       0.8141      1.46  |Q         |  V       |          |          |
14+10       0.8243      1.48  |Q         |  V       |          |          |
14+15       0.8347      1.50  |Q         |  V       |          |          |
14+20       0.8452      1.52  |Q         |  V       |          |          |
14+25       0.8558      1.55  |Q         |  V       |          |          |
14+30       0.8667      1.58  |Q         |  V       |          |          |
14+35       0.8777      1.60  |Q         |   V      |          |          |
14+40       0.8889      1.63  |Q         |   V      |          |          |
14+45       0.9004      1.66  |Q         |   V      |          |          |
14+50       0.9121      1.70  |Q         |   V      |          |          |
14+55       0.9240      1.73  |Q         |   V      |          |          |
15+ 0       0.9362      1.77  |Q         |    V     |          |          |
15+ 5       0.9487      1.81  |Q         |    V     |          |          |
15+10       0.9615      1.86  |Q         |    V     |          |          |
15+15       0.9747      1.91  |Q         |    V     |          |          |
15+20       0.9883      1.97  |Q         |    V     |          |          |
15+25       1.0021      2.00  | Q       |     V    |          |          |
15+30       1.0156      1.96  |Q        |     V    |          |          |
15+35       1.0278      1.76  |Q        |     V    |          |          |
15+40       1.0383      1.53  |Q        |     V    |          |          |
15+45       1.0487      1.52  |Q        |     V    |          |          |
15+50       1.0597      1.58  |Q        |      V   |          |          |
15+55       1.0717      1.74  |Q        |      V   |          |          |
```

```
16+ 0       1.0859      2.06  | Q        |      V  |          |          |
16+ 5       1.1231      5.40  |    Q     |       V |          |          |
16+10       1.2132     13.09  |          |  Q     V|          |          |
16+15       1.4090     28.43  |          |          | V     Q  |          |
16+20       1.6296     32.04  |          |          |     V    | Q        |
16+25       1.7285     14.36  |          |   Q      |      V   |          |
16+30       1.7966      9.89  |          Q|         |       V  |          |
16+35       1.8494      7.65  |       Q  |         |        V |          |
16+40       1.8930      6.33  |     Q    |         |          V          |
16+45       1.9288      5.20  |    Q     |         |          |V         |
16+50       1.9582      4.26  |   Q      |         |          |V         |
16+55       1.9822      3.50  |  Q       |         |          |V         |
17+ 0       2.0014      2.79  | Q        |         |          | V        |
17+ 5       2.0168      2.23  | Q        |         |          | V        |
17+10       2.0312      2.09  | Q        |         |          | V        |
17+15       2.0446      1.95  |Q         |         |          | V        |
17+20       2.0572      1.83  |Q         |         |          |  V       |
17+25       2.0699      1.83  |Q         |         |          |  V       |
17+30       2.0816      1.70  |Q         |         |          |  V       |
17+35       2.0925      1.58  |Q         |         |          |  V       |
17+40       2.1028      1.50  |Q         |         |          |  V       |
17+45       2.1123      1.37  |Q         |         |          |   V      |
17+50       2.1215      1.34  |Q         |         |          |   V      |
17+55       2.1306      1.32  |Q         |         |          |   V      |
18+ 0       2.1395      1.29  |Q         |         |          |   V      |
18+ 5       2.1481      1.26  |Q         |         |          |   V      |
18+10       2.1565      1.21  |Q         |         |          |   V      |
18+15       2.1643      1.13  |Q         |         |          |   V      |
18+20       2.1715      1.05  |Q         |         |          |   V      |
18+25       2.1784      1.00  |Q         |         |          |    V     |
18+30       2.1851      0.97  Q          |         |          |    V     |
18+35       2.1915      0.93  Q          |         |          |    V     |
18+40       2.1978      0.91  Q          |         |          |    V     |
18+45       2.2039      0.89  Q          |         |          |    V     |
18+50       2.2098      0.87  Q          |         |          |    V     |
18+55       2.2157      0.85  Q          |         |          |    V     |
19+ 0       2.2214      0.83  Q          |         |          |    V     |
19+ 5       2.2270      0.82  Q          |         |          |    V     |
19+10       2.2326      0.80  Q          |         |          |    V     |
19+15       2.2380      0.79  Q          |         |          |     V    |
19+20       2.2434      0.78  Q          |         |          |     V    |
19+25       2.2487      0.77  Q          |         |          |     V    |
19+30       2.2539      0.76  Q          |         |          |     V    |
19+35       2.2591      0.75  Q          |         |          |     V    |
19+40       2.2641      0.74  Q          |         |          |     V    |
19+45       2.2692      0.73  Q          |         |          |     V    |
19+50       2.2741      0.72  Q          |         |          |     V    |
19+55       2.2790      0.71  Q          |         |          |     V    |
20+ 0       2.2839      0.70  Q          |         |          |     V    |
20+ 5       2.2886      0.69  Q          |         |          |     V    |
20+10       2.2934      0.69  Q          |         |          |     V    |
20+15       2.2980      0.68  Q          |         |          |     V    |
20+20       2.3027      0.67  Q          |         |          |      V   |
20+25       2.3073      0.67  Q          |         |          |      V   |
20+30       2.3118      0.66  Q          |         |          |      V   |
20+35       2.3163      0.65  Q          |         |          |      V   |
20+40       2.3207      0.65  Q          |         |          |      V   |
20+45       2.3251      0.64  Q          |         |          |      V   |
20+50       2.3295      0.63  Q          |         |          |      V   |
20+55       2.3338      0.63  Q          |         |          |      V   |
21+ 0       2.3381      0.62  Q          |         |          |      V   |
21+ 5       2.3423      0.62  Q          |         |          |      V   |
21+10       2.3465      0.61  Q          |         |          |      V   |
21+15       2.3507      0.61  Q          |         |          |      V   |
21+20       2.3548      0.60  Q          |         |          |      V   |
21+25       2.3589      0.60  Q          |         |          |      V   |
21+30       2.3630      0.59  Q          |         |          |       V  |
21+35       2.3670      0.59  Q          |         |          |       V  |
21+40       2.3710      0.58  Q          |         |          |       V  |
21+45       2.3750      0.58  Q          |         |          |       V  |
21+50       2.3790      0.57  Q          |         |          |       V  |
```

```
  21+55       2.3829      0.57  Q          |          |          |       V |
  22+ 0       2.3867      0.56  Q          |          |          |       V |
  22+ 5       2.3906      0.56  Q          |          |          |       V |
  22+10       2.3944      0.56  Q          |          |          |       V |
  22+15       2.3982      0.55  Q          |          |          |       V |
  22+20       2.4020      0.55  Q          |          |          |       V |
  22+25       2.4057      0.54  Q          |          |          |       V |
  22+30       2.4094      0.54  Q          |          |          |       V |
  22+35       2.4131      0.54  Q          |          |          |       V |
  22+40       2.4168      0.53  Q          |          |          |       V |
  22+45       2.4204      0.53  Q          |          |          |       V |
  22+50       2.4241      0.53  Q          |          |          |        V|
  22+55       2.4277      0.52  Q          |          |          |        V|
  23+ 0       2.4312      0.52  Q          |          |          |        V|
  23+ 5       2.4348      0.52  Q          |          |          |        V|
  23+10       2.4383      0.51  Q          |          |          |        V|
  23+15       2.4418      0.51  Q          |          |          |        V|
  23+20       2.4453      0.51  Q          |          |          |        V|
  23+25       2.4488      0.50  Q          |          |          |        V|
  23+30       2.4522      0.50  Q          |          |          |        V|
  23+35       2.4557      0.50  Q          |          |          |        V|
  23+40       2.4591      0.49  Q          |          |          |        V|
  23+45       2.4625      0.49  Q          |          |          |        V|
  23+50       2.4658      0.49  Q          |          |          |        V|
  23+55       2.4692      0.49  Q          |          |          |        V|
  24+ 0       2.4725      0.48  Q          |          |          |        V|
  24+ 5       2.4757      0.47  Q          |          |          |        V|
  24+10       2.4786      0.42  Q          |          |          |        V|
  24+15       2.4808      0.31  Q          |          |          |        V|
  24+20       2.4820      0.18  Q          |          |          |        V|
  24+25       2.4828      0.12  Q          |          |          |        V|
  24+30       2.4834      0.09  Q          |          |          |        V|
  24+35       2.4839      0.06  Q          |          |          |        V|
  24+40       2.4842      0.05  Q          |          |          |        V|
  24+45       2.4844      0.03  Q          |          |          |        V|
  24+50       2.4846      0.02  Q          |          |          |        V|
  24+55       2.4847      0.01  Q          |          |          |        V|
  25+ 0       2.4847      0.01  Q          |          |          |        V|
  25+ 5       2.4848      0.01  Q          |          |          |        V|
  25+10       2.4848      0.01  Q          |          |          |        V|
  25+15       2.4848      0.00  Q          |          |          |        V|
  25+20       2.4849      0.00  Q          |          |          |        V|
  25+25       2.4849      0.00  Q          |          |          |        V|
  25+30       2.4849      0.00  Q          |          |          |        V|
  25+35       2.4849      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area ‘E’ – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/17/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'E'
5 YEAR 24 HOUR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            36.66            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 74.9      56.9         36.66      1.000     0.722    1.000    0.722

Area-averaged adjusted loss rate Fm (In/Hr) =  0.722

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 36.66 | 1.000 | 74.9 | 56.9 | 7.58 | 0.271 |

Area-averaged catchment yield fraction, Y = 0.271
Area-averaged low loss fraction, Yb = 0.729
User entry of time of concentration = 0.293 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 36.66(Ac.)
Catchment Lag time = 0.234 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.5518
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.722(In/Hr)
Average low loss rate fraction (Yb) = 0.729 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 36.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.402(In)
30-minute factor = 0.998 Adjusted rainfall = 0.689(In)
1-hour factor = 0.998 Adjusted rainfall = 0.848(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 443.36 (CFS)) | |
| 1 | 2.675 | 11.860 |
| 2 | 12.024 | 41.451 |
| 3 | 35.644 | 104.718 |
| 4 | 63.026 | 121.402 |
| 5 | 74.204 | 49.558 |
| 6 | 81.479 | 32.252 |
| 7 | 86.684 | 23.079 |
| 8 | 90.577 | 17.258 |
| 9 | 93.485 | 12.896 |
| 10 | 95.602 | 9.386 |
| 11 | 97.088 | 6.587 |
| 12 | 97.988 | 3.990 |
| 13 | 98.429 | 1.953 |
| 14 | 98.799 | 1.644 |
| 15 | 99.093 | 1.300 |
| 16 | 99.316 | 0.991 |
| 17 | 99.592 | 1.221 |
| 18 | 99.789 | 0.873 |
| 19 | 99.913 | 0.549 |
| 20 | 100.000 | 0.388 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4024 | 0.4024 |
| 2 | 0.4954 | 0.0930 |
| 3 | 0.5595 | 0.0641 |
| 4 | 0.6099 | 0.0504 |
| 5 | 0.6521 | 0.0422 |
| 6 | 0.6888 | 0.0367 |

| | | |
|---|---|---|
| 7 | 0.7214 | 0.0326 |
| 8 | 0.7509 | 0.0295 |
| 9 | 0.7779 | 0.0270 |
| 10 | 0.8029 | 0.0250 |
| 11 | 0.8262 | 0.0233 |
| 12 | 0.8480 | 0.0218 |
| 13 | 0.8914 | 0.0433 |
| 14 | 0.9334 | 0.0421 |
| 15 | 0.9744 | 0.0410 |
| 16 | 1.0144 | 0.0399 |
| 17 | 1.0534 | 0.0390 |
| 18 | 1.0915 | 0.0382 |
| 19 | 1.1289 | 0.0374 |
| 20 | 1.1655 | 0.0366 |
| 21 | 1.2015 | 0.0359 |
| 22 | 1.2368 | 0.0353 |
| 23 | 1.2715 | 0.0347 |
| 24 | 1.3056 | 0.0341 |
| 25 | 1.3393 | 0.0336 |
| 26 | 1.3724 | 0.0331 |
| 27 | 1.4050 | 0.0326 |
| 28 | 1.4372 | 0.0322 |
| 29 | 1.4689 | 0.0317 |
| 30 | 1.5002 | 0.0313 |
| 31 | 1.5312 | 0.0309 |
| 32 | 1.5617 | 0.0306 |
| 33 | 1.5920 | 0.0302 |
| 34 | 1.6218 | 0.0299 |
| 35 | 1.6513 | 0.0295 |
| 36 | 1.6806 | 0.0292 |
| 37 | 1.7094 | 0.0289 |
| 38 | 1.7380 | 0.0286 |
| 39 | 1.7663 | 0.0283 |
| 40 | 1.7943 | 0.0280 |
| 41 | 1.8220 | 0.0277 |
| 42 | 1.8495 | 0.0275 |
| 43 | 1.8767 | 0.0272 |
| 44 | 1.9037 | 0.0270 |
| 45 | 1.9305 | 0.0268 |
| 46 | 1.9571 | 0.0265 |
| 47 | 1.9834 | 0.0263 |
| 48 | 2.0095 | 0.0261 |
| 49 | 2.0354 | 0.0259 |
| 50 | 2.0611 | 0.0257 |
| 51 | 2.0866 | 0.0255 |
| 52 | 2.1120 | 0.0253 |
| 53 | 2.1371 | 0.0251 |
| 54 | 2.1621 | 0.0250 |
| 55 | 2.1869 | 0.0248 |
| 56 | 2.2115 | 0.0246 |
| 57 | 2.2360 | 0.0245 |
| 58 | 2.2602 | 0.0243 |
| 59 | 2.2844 | 0.0241 |
| 60 | 2.3084 | 0.0240 |
| 61 | 2.3322 | 0.0238 |
| 62 | 2.3559 | 0.0237 |
| 63 | 2.3794 | 0.0235 |
| 64 | 2.4028 | 0.0234 |
| 65 | 2.4261 | 0.0233 |
| 66 | 2.4492 | 0.0231 |
| 67 | 2.4722 | 0.0230 |
| 68 | 2.4951 | 0.0229 |
| 69 | 2.5178 | 0.0227 |
| 70 | 2.5404 | 0.0226 |
| 71 | 2.5629 | 0.0225 |
| 72 | 2.5853 | 0.0224 |
| 73 | 2.6065 | 0.0212 |
| 74 | 2.6275 | 0.0211 |
| 75 | 2.6485 | 0.0210 |
| 76 | 2.6693 | 0.0208 |
| 77 | 2.6901 | 0.0207 |

| | | |
|---|---|---|
| 78 | 2.7107 | 0.0206 |
| 79 | 2.7312 | 0.0205 |
| 80 | 2.7516 | 0.0204 |
| 81 | 2.7719 | 0.0203 |
| 82 | 2.7922 | 0.0202 |
| 83 | 2.8123 | 0.0201 |
| 84 | 2.8323 | 0.0200 |
| 85 | 2.8522 | 0.0199 |
| 86 | 2.8720 | 0.0198 |
| 87 | 2.8917 | 0.0197 |
| 88 | 2.9113 | 0.0196 |
| 89 | 2.9309 | 0.0195 |
| 90 | 2.9503 | 0.0194 |
| 91 | 2.9697 | 0.0194 |
| 92 | 2.9890 | 0.0193 |
| 93 | 3.0082 | 0.0192 |
| 94 | 3.0273 | 0.0191 |
| 95 | 3.0463 | 0.0190 |
| 96 | 3.0652 | 0.0189 |
| 97 | 3.0841 | 0.0189 |
| 98 | 3.1029 | 0.0188 |
| 99 | 3.1216 | 0.0187 |
| 100 | 3.1402 | 0.0186 |
| 101 | 3.1588 | 0.0186 |
| 102 | 3.1772 | 0.0185 |
| 103 | 3.1956 | 0.0184 |
| 104 | 3.2140 | 0.0183 |
| 105 | 3.2322 | 0.0183 |
| 106 | 3.2504 | 0.0182 |
| 107 | 3.2685 | 0.0181 |
| 108 | 3.2866 | 0.0180 |
| 109 | 3.3046 | 0.0180 |
| 110 | 3.3225 | 0.0179 |
| 111 | 3.3403 | 0.0178 |
| 112 | 3.3581 | 0.0178 |
| 113 | 3.3758 | 0.0177 |
| 114 | 3.3935 | 0.0177 |
| 115 | 3.4111 | 0.0176 |
| 116 | 3.4286 | 0.0175 |
| 117 | 3.4460 | 0.0175 |
| 118 | 3.4635 | 0.0174 |
| 119 | 3.4808 | 0.0173 |
| 120 | 3.4981 | 0.0173 |
| 121 | 3.5153 | 0.0172 |
| 122 | 3.5325 | 0.0172 |
| 123 | 3.5496 | 0.0171 |
| 124 | 3.5666 | 0.0171 |
| 125 | 3.5836 | 0.0170 |
| 126 | 3.6006 | 0.0169 |
| 127 | 3.6175 | 0.0169 |
| 128 | 3.6343 | 0.0168 |
| 129 | 3.6511 | 0.0168 |
| 130 | 3.6678 | 0.0167 |
| 131 | 3.6845 | 0.0167 |
| 132 | 3.7011 | 0.0166 |
| 133 | 3.7177 | 0.0166 |
| 134 | 3.7342 | 0.0165 |
| 135 | 3.7507 | 0.0165 |
| 136 | 3.7671 | 0.0164 |
| 137 | 3.7835 | 0.0164 |
| 138 | 3.7998 | 0.0163 |
| 139 | 3.8161 | 0.0163 |
| 140 | 3.8323 | 0.0162 |
| 141 | 3.8485 | 0.0162 |
| 142 | 3.8646 | 0.0161 |
| 143 | 3.8807 | 0.0161 |
| 144 | 3.8967 | 0.0160 |
| 145 | 3.9127 | 0.0160 |
| 146 | 3.9287 | 0.0160 |
| 147 | 3.9446 | 0.0159 |
| 148 | 3.9605 | 0.0159 |

| | | |
|---|---|---|
| 149 | 3.9763 | 0.0158 |
| 150 | 3.9921 | 0.0158 |
| 151 | 4.0078 | 0.0157 |
| 152 | 4.0235 | 0.0157 |
| 153 | 4.0391 | 0.0156 |
| 154 | 4.0547 | 0.0156 |
| 155 | 4.0703 | 0.0156 |
| 156 | 4.0858 | 0.0155 |
| 157 | 4.1013 | 0.0155 |
| 158 | 4.1168 | 0.0154 |
| 159 | 4.1322 | 0.0154 |
| 160 | 4.1475 | 0.0154 |
| 161 | 4.1628 | 0.0153 |
| 162 | 4.1781 | 0.0153 |
| 163 | 4.1934 | 0.0152 |
| 164 | 4.2086 | 0.0152 |
| 165 | 4.2238 | 0.0152 |
| 166 | 4.2389 | 0.0151 |
| 167 | 4.2540 | 0.0151 |
| 168 | 4.2691 | 0.0151 |
| 169 | 4.2841 | 0.0150 |
| 170 | 4.2991 | 0.0150 |
| 171 | 4.3140 | 0.0150 |
| 172 | 4.3289 | 0.0149 |
| 173 | 4.3438 | 0.0149 |
| 174 | 4.3587 | 0.0148 |
| 175 | 4.3735 | 0.0148 |
| 176 | 4.3882 | 0.0148 |
| 177 | 4.4030 | 0.0147 |
| 178 | 4.4177 | 0.0147 |
| 179 | 4.4324 | 0.0147 |
| 180 | 4.4470 | 0.0146 |
| 181 | 4.4616 | 0.0146 |
| 182 | 4.4762 | 0.0146 |
| 183 | 4.4907 | 0.0145 |
| 184 | 4.5053 | 0.0145 |
| 185 | 4.5197 | 0.0145 |
| 186 | 4.5342 | 0.0144 |
| 187 | 4.5486 | 0.0144 |
| 188 | 4.5630 | 0.0144 |
| 189 | 4.5773 | 0.0144 |
| 190 | 4.5916 | 0.0143 |
| 191 | 4.6059 | 0.0143 |
| 192 | 4.6202 | 0.0143 |
| 193 | 4.6344 | 0.0142 |
| 194 | 4.6486 | 0.0142 |
| 195 | 4.6628 | 0.0142 |
| 196 | 4.6769 | 0.0141 |
| 197 | 4.6910 | 0.0141 |
| 198 | 4.7051 | 0.0141 |
| 199 | 4.7192 | 0.0141 |
| 200 | 4.7332 | 0.0140 |
| 201 | 4.7472 | 0.0140 |
| 202 | 4.7612 | 0.0140 |
| 203 | 4.7751 | 0.0139 |
| 204 | 4.7890 | 0.0139 |
| 205 | 4.8029 | 0.0139 |
| 206 | 4.8167 | 0.0139 |
| 207 | 4.8306 | 0.0138 |
| 208 | 4.8444 | 0.0138 |
| 209 | 4.8582 | 0.0138 |
| 210 | 4.8719 | 0.0137 |
| 211 | 4.8856 | 0.0137 |
| 212 | 4.8993 | 0.0137 |
| 213 | 4.9130 | 0.0137 |
| 214 | 4.9266 | 0.0136 |
| 215 | 4.9402 | 0.0136 |
| 216 | 4.9538 | 0.0136 |
| 217 | 4.9674 | 0.0136 |
| 218 | 4.9809 | 0.0135 |
| 219 | 4.9944 | 0.0135 |

| | | |
|---|---|---|
| 220 | 5.0079 | 0.0135 |
| 221 | 5.0214 | 0.0135 |
| 222 | 5.0348 | 0.0134 |
| 223 | 5.0482 | 0.0134 |
| 224 | 5.0616 | 0.0134 |
| 225 | 5.0750 | 0.0134 |
| 226 | 5.0883 | 0.0133 |
| 227 | 5.1016 | 0.0133 |
| 228 | 5.1149 | 0.0133 |
| 229 | 5.1282 | 0.0133 |
| 230 | 5.1414 | 0.0132 |
| 231 | 5.1547 | 0.0132 |
| 232 | 5.1679 | 0.0132 |
| 233 | 5.1810 | 0.0132 |
| 234 | 5.1942 | 0.0132 |
| 235 | 5.2073 | 0.0131 |
| 236 | 5.2204 | 0.0131 |
| 237 | 5.2335 | 0.0131 |
| 238 | 5.2466 | 0.0131 |
| 239 | 5.2596 | 0.0130 |
| 240 | 5.2726 | 0.0130 |
| 241 | 5.2856 | 0.0130 |
| 242 | 5.2986 | 0.0130 |
| 243 | 5.3115 | 0.0130 |
| 244 | 5.3245 | 0.0129 |
| 245 | 5.3374 | 0.0129 |
| 246 | 5.3503 | 0.0129 |
| 247 | 5.3631 | 0.0129 |
| 248 | 5.3760 | 0.0128 |
| 249 | 5.3888 | 0.0128 |
| 250 | 5.4016 | 0.0128 |
| 251 | 5.4144 | 0.0128 |
| 252 | 5.4271 | 0.0128 |
| 253 | 5.4399 | 0.0127 |
| 254 | 5.4526 | 0.0127 |
| 255 | 5.4653 | 0.0127 |
| 256 | 5.4780 | 0.0127 |
| 257 | 5.4906 | 0.0127 |
| 258 | 5.5033 | 0.0126 |
| 259 | 5.5159 | 0.0126 |
| 260 | 5.5285 | 0.0126 |
| 261 | 5.5410 | 0.0126 |
| 262 | 5.5536 | 0.0126 |
| 263 | 5.5661 | 0.0125 |
| 264 | 5.5787 | 0.0125 |
| 265 | 5.5912 | 0.0125 |
| 266 | 5.6036 | 0.0125 |
| 267 | 5.6161 | 0.0125 |
| 268 | 5.6285 | 0.0124 |
| 269 | 5.6410 | 0.0124 |
| 270 | 5.6534 | 0.0124 |
| 271 | 5.6658 | 0.0124 |
| 272 | 5.6781 | 0.0124 |
| 273 | 5.6905 | 0.0123 |
| 274 | 5.7028 | 0.0123 |
| 275 | 5.7151 | 0.0123 |
| 276 | 5.7274 | 0.0123 |
| 277 | 5.7397 | 0.0123 |
| 278 | 5.7519 | 0.0123 |
| 279 | 5.7642 | 0.0122 |
| 280 | 5.7764 | 0.0122 |
| 281 | 5.7886 | 0.0122 |
| 282 | 5.8008 | 0.0122 |
| 283 | 5.8129 | 0.0122 |
| 284 | 5.8251 | 0.0122 |
| 285 | 5.8372 | 0.0121 |
| 286 | 5.8493 | 0.0121 |
| 287 | 5.8614 | 0.0121 |
| 288 | 5.8735 | 0.0121 |

| Unit | Unit | Unit | Effective |
|---|---|---|---|

| Period (number) | Rainfall (In) | Soil-Loss (In) | Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0088 | 0.0033 |
| 2 | 0.0121 | 0.0088 | 0.0033 |
| 3 | 0.0121 | 0.0088 | 0.0033 |
| 4 | 0.0122 | 0.0089 | 0.0033 |
| 5 | 0.0122 | 0.0089 | 0.0033 |
| 6 | 0.0122 | 0.0089 | 0.0033 |
| 7 | 0.0122 | 0.0089 | 0.0033 |
| 8 | 0.0123 | 0.0089 | 0.0033 |
| 9 | 0.0123 | 0.0090 | 0.0033 |
| 10 | 0.0123 | 0.0090 | 0.0033 |
| 11 | 0.0123 | 0.0090 | 0.0033 |
| 12 | 0.0124 | 0.0090 | 0.0033 |
| 13 | 0.0124 | 0.0090 | 0.0034 |
| 14 | 0.0124 | 0.0091 | 0.0034 |
| 15 | 0.0125 | 0.0091 | 0.0034 |
| 16 | 0.0125 | 0.0091 | 0.0034 |
| 17 | 0.0125 | 0.0091 | 0.0034 |
| 18 | 0.0125 | 0.0091 | 0.0034 |
| 19 | 0.0126 | 0.0092 | 0.0034 |
| 20 | 0.0126 | 0.0092 | 0.0034 |
| 21 | 0.0126 | 0.0092 | 0.0034 |
| 22 | 0.0127 | 0.0092 | 0.0034 |
| 23 | 0.0127 | 0.0093 | 0.0034 |
| 24 | 0.0127 | 0.0093 | 0.0034 |
| 25 | 0.0128 | 0.0093 | 0.0035 |
| 26 | 0.0128 | 0.0093 | 0.0035 |
| 27 | 0.0128 | 0.0093 | 0.0035 |
| 28 | 0.0128 | 0.0094 | 0.0035 |
| 29 | 0.0129 | 0.0094 | 0.0035 |
| 30 | 0.0129 | 0.0094 | 0.0035 |
| 31 | 0.0130 | 0.0094 | 0.0035 |
| 32 | 0.0130 | 0.0095 | 0.0035 |
| 33 | 0.0130 | 0.0095 | 0.0035 |
| 34 | 0.0130 | 0.0095 | 0.0035 |
| 35 | 0.0131 | 0.0095 | 0.0035 |
| 36 | 0.0131 | 0.0096 | 0.0035 |
| 37 | 0.0132 | 0.0096 | 0.0036 |
| 38 | 0.0132 | 0.0096 | 0.0036 |
| 39 | 0.0132 | 0.0096 | 0.0036 |
| 40 | 0.0132 | 0.0097 | 0.0036 |
| 41 | 0.0133 | 0.0097 | 0.0036 |
| 42 | 0.0133 | 0.0097 | 0.0036 |
| 43 | 0.0134 | 0.0097 | 0.0036 |
| 44 | 0.0134 | 0.0098 | 0.0036 |
| 45 | 0.0134 | 0.0098 | 0.0036 |
| 46 | 0.0135 | 0.0098 | 0.0036 |
| 47 | 0.0135 | 0.0099 | 0.0037 |
| 48 | 0.0135 | 0.0099 | 0.0037 |
| 49 | 0.0136 | 0.0099 | 0.0037 |
| 50 | 0.0136 | 0.0099 | 0.0037 |
| 51 | 0.0137 | 0.0100 | 0.0037 |
| 52 | 0.0137 | 0.0100 | 0.0037 |
| 53 | 0.0137 | 0.0100 | 0.0037 |
| 54 | 0.0138 | 0.0100 | 0.0037 |
| 55 | 0.0138 | 0.0101 | 0.0037 |
| 56 | 0.0139 | 0.0101 | 0.0038 |
| 57 | 0.0139 | 0.0101 | 0.0038 |
| 58 | 0.0139 | 0.0102 | 0.0038 |
| 59 | 0.0140 | 0.0102 | 0.0038 |
| 60 | 0.0140 | 0.0102 | 0.0038 |
| 61 | 0.0141 | 0.0103 | 0.0038 |
| 62 | 0.0141 | 0.0103 | 0.0038 |
| 63 | 0.0142 | 0.0103 | 0.0038 |
| 64 | 0.0142 | 0.0104 | 0.0038 |
| 65 | 0.0143 | 0.0104 | 0.0039 |
| 66 | 0.0143 | 0.0104 | 0.0039 |
| 67 | 0.0144 | 0.0105 | 0.0039 |
| 68 | 0.0144 | 0.0105 | 0.0039 |

| | | | |
|---|---|---|---|
| 69 | 0.0144 | 0.0105 | 0.0039 |
| 70 | 0.0145 | 0.0106 | 0.0039 |
| 71 | 0.0145 | 0.0106 | 0.0039 |
| 72 | 0.0146 | 0.0106 | 0.0039 |
| 73 | 0.0146 | 0.0107 | 0.0040 |
| 74 | 0.0147 | 0.0107 | 0.0040 |
| 75 | 0.0147 | 0.0108 | 0.0040 |
| 76 | 0.0148 | 0.0108 | 0.0040 |
| 77 | 0.0148 | 0.0108 | 0.0040 |
| 78 | 0.0149 | 0.0109 | 0.0040 |
| 79 | 0.0150 | 0.0109 | 0.0040 |
| 80 | 0.0150 | 0.0109 | 0.0041 |
| 81 | 0.0151 | 0.0110 | 0.0041 |
| 82 | 0.0151 | 0.0110 | 0.0041 |
| 83 | 0.0152 | 0.0111 | 0.0041 |
| 84 | 0.0152 | 0.0111 | 0.0041 |
| 85 | 0.0153 | 0.0111 | 0.0041 |
| 86 | 0.0153 | 0.0112 | 0.0041 |
| 87 | 0.0154 | 0.0112 | 0.0042 |
| 88 | 0.0154 | 0.0113 | 0.0042 |
| 89 | 0.0155 | 0.0113 | 0.0042 |
| 90 | 0.0156 | 0.0114 | 0.0042 |
| 91 | 0.0156 | 0.0114 | 0.0042 |
| 92 | 0.0157 | 0.0114 | 0.0042 |
| 93 | 0.0158 | 0.0115 | 0.0043 |
| 94 | 0.0158 | 0.0115 | 0.0043 |
| 95 | 0.0159 | 0.0116 | 0.0043 |
| 96 | 0.0160 | 0.0116 | 0.0043 |
| 97 | 0.0160 | 0.0117 | 0.0043 |
| 98 | 0.0161 | 0.0117 | 0.0044 |
| 99 | 0.0162 | 0.0118 | 0.0044 |
| 100 | 0.0162 | 0.0118 | 0.0044 |
| 101 | 0.0163 | 0.0119 | 0.0044 |
| 102 | 0.0164 | 0.0119 | 0.0044 |
| 103 | 0.0165 | 0.0120 | 0.0045 |
| 104 | 0.0165 | 0.0120 | 0.0045 |
| 105 | 0.0166 | 0.0121 | 0.0045 |
| 106 | 0.0167 | 0.0122 | 0.0045 |
| 107 | 0.0168 | 0.0122 | 0.0045 |
| 108 | 0.0168 | 0.0123 | 0.0046 |
| 109 | 0.0169 | 0.0124 | 0.0046 |
| 110 | 0.0170 | 0.0124 | 0.0046 |
| 111 | 0.0171 | 0.0125 | 0.0046 |
| 112 | 0.0172 | 0.0125 | 0.0046 |
| 113 | 0.0173 | 0.0126 | 0.0047 |
| 114 | 0.0173 | 0.0126 | 0.0047 |
| 115 | 0.0175 | 0.0127 | 0.0047 |
| 116 | 0.0175 | 0.0128 | 0.0047 |
| 117 | 0.0177 | 0.0129 | 0.0048 |
| 118 | 0.0177 | 0.0129 | 0.0048 |
| 119 | 0.0178 | 0.0130 | 0.0048 |
| 120 | 0.0179 | 0.0131 | 0.0049 |
| 121 | 0.0180 | 0.0132 | 0.0049 |
| 122 | 0.0181 | 0.0132 | 0.0049 |
| 123 | 0.0183 | 0.0133 | 0.0049 |
| 124 | 0.0183 | 0.0134 | 0.0050 |
| 125 | 0.0185 | 0.0135 | 0.0050 |
| 126 | 0.0186 | 0.0135 | 0.0050 |
| 127 | 0.0187 | 0.0136 | 0.0051 |
| 128 | 0.0188 | 0.0137 | 0.0051 |
| 129 | 0.0189 | 0.0138 | 0.0051 |
| 130 | 0.0190 | 0.0139 | 0.0052 |
| 131 | 0.0192 | 0.0140 | 0.0052 |
| 132 | 0.0193 | 0.0141 | 0.0052 |
| 133 | 0.0194 | 0.0142 | 0.0053 |
| 134 | 0.0195 | 0.0142 | 0.0053 |
| 135 | 0.0197 | 0.0144 | 0.0053 |
| 136 | 0.0198 | 0.0144 | 0.0054 |
| 137 | 0.0200 | 0.0146 | 0.0054 |
| 138 | 0.0201 | 0.0147 | 0.0054 |
| 139 | 0.0203 | 0.0148 | 0.0055 |

| | | | |
|---|---|---|---|
| 140 | 0.0204 | 0.0149 | 0.0055 |
| 141 | 0.0206 | 0.0150 | 0.0056 |
| 142 | 0.0207 | 0.0151 | 0.0056 |
| 143 | 0.0210 | 0.0153 | 0.0057 |
| 144 | 0.0211 | 0.0154 | 0.0057 |
| 145 | 0.0224 | 0.0163 | 0.0061 |
| 146 | 0.0225 | 0.0164 | 0.0061 |
| 147 | 0.0227 | 0.0166 | 0.0062 |
| 148 | 0.0229 | 0.0167 | 0.0062 |
| 149 | 0.0231 | 0.0169 | 0.0063 |
| 150 | 0.0233 | 0.0170 | 0.0063 |
| 151 | 0.0235 | 0.0172 | 0.0064 |
| 152 | 0.0237 | 0.0173 | 0.0064 |
| 153 | 0.0240 | 0.0175 | 0.0065 |
| 154 | 0.0241 | 0.0176 | 0.0065 |
| 155 | 0.0245 | 0.0178 | 0.0066 |
| 156 | 0.0246 | 0.0180 | 0.0067 |
| 157 | 0.0250 | 0.0182 | 0.0068 |
| 158 | 0.0251 | 0.0183 | 0.0068 |
| 159 | 0.0255 | 0.0186 | 0.0069 |
| 160 | 0.0257 | 0.0187 | 0.0070 |
| 161 | 0.0261 | 0.0190 | 0.0071 |
| 162 | 0.0263 | 0.0192 | 0.0071 |
| 163 | 0.0268 | 0.0195 | 0.0072 |
| 164 | 0.0270 | 0.0197 | 0.0073 |
| 165 | 0.0275 | 0.0200 | 0.0074 |
| 166 | 0.0277 | 0.0202 | 0.0075 |
| 167 | 0.0283 | 0.0206 | 0.0077 |
| 168 | 0.0286 | 0.0208 | 0.0077 |
| 169 | 0.0292 | 0.0213 | 0.0079 |
| 170 | 0.0295 | 0.0215 | 0.0080 |
| 171 | 0.0302 | 0.0220 | 0.0082 |
| 172 | 0.0306 | 0.0223 | 0.0083 |
| 173 | 0.0313 | 0.0228 | 0.0085 |
| 174 | 0.0317 | 0.0231 | 0.0086 |
| 175 | 0.0326 | 0.0238 | 0.0088 |
| 176 | 0.0331 | 0.0241 | 0.0090 |
| 177 | 0.0341 | 0.0249 | 0.0092 |
| 178 | 0.0347 | 0.0253 | 0.0094 |
| 179 | 0.0359 | 0.0262 | 0.0097 |
| 180 | 0.0366 | 0.0267 | 0.0099 |
| 181 | 0.0382 | 0.0278 | 0.0103 |
| 182 | 0.0390 | 0.0285 | 0.0106 |
| 183 | 0.0410 | 0.0299 | 0.0111 |
| 184 | 0.0421 | 0.0307 | 0.0114 |
| 185 | 0.0218 | 0.0159 | 0.0059 |
| 186 | 0.0233 | 0.0170 | 0.0063 |
| 187 | 0.0270 | 0.0197 | 0.0073 |
| 188 | 0.0295 | 0.0215 | 0.0080 |
| 189 | 0.0367 | 0.0267 | 0.0099 |
| 190 | 0.0422 | 0.0308 | 0.0114 |
| 191 | 0.0641 | 0.0467 | 0.0174 |
| 192 | 0.0930 | 0.0602 | 0.0328 |
| 193 | 0.4024 | 0.0602 | 0.3422 |
| 194 | 0.0504 | 0.0368 | 0.0137 |
| 195 | 0.0326 | 0.0238 | 0.0088 |
| 196 | 0.0250 | 0.0182 | 0.0068 |
| 197 | 0.0433 | 0.0316 | 0.0117 |
| 198 | 0.0399 | 0.0291 | 0.0108 |
| 199 | 0.0374 | 0.0272 | 0.0101 |
| 200 | 0.0353 | 0.0257 | 0.0096 |
| 201 | 0.0336 | 0.0245 | 0.0091 |
| 202 | 0.0322 | 0.0235 | 0.0087 |
| 203 | 0.0309 | 0.0226 | 0.0084 |
| 204 | 0.0299 | 0.0218 | 0.0081 |
| 205 | 0.0289 | 0.0210 | 0.0078 |
| 206 | 0.0280 | 0.0204 | 0.0076 |
| 207 | 0.0272 | 0.0199 | 0.0074 |
| 208 | 0.0265 | 0.0194 | 0.0072 |
| 209 | 0.0259 | 0.0189 | 0.0070 |
| 210 | 0.0253 | 0.0185 | 0.0069 |

| | | | |
|---|---|---|---|
| 211 | 0.0248 | 0.0181 | 0.0067 |
| 212 | 0.0243 | 0.0177 | 0.0066 |
| 213 | 0.0238 | 0.0174 | 0.0065 |
| 214 | 0.0234 | 0.0171 | 0.0063 |
| 215 | 0.0230 | 0.0168 | 0.0062 |
| 216 | 0.0226 | 0.0165 | 0.0061 |
| 217 | 0.0212 | 0.0155 | 0.0057 |
| 218 | 0.0208 | 0.0152 | 0.0056 |
| 219 | 0.0205 | 0.0150 | 0.0056 |
| 220 | 0.0202 | 0.0147 | 0.0055 |
| 221 | 0.0199 | 0.0145 | 0.0054 |
| 222 | 0.0196 | 0.0143 | 0.0053 |
| 223 | 0.0194 | 0.0141 | 0.0052 |
| 224 | 0.0191 | 0.0139 | 0.0052 |
| 225 | 0.0189 | 0.0138 | 0.0051 |
| 226 | 0.0186 | 0.0136 | 0.0050 |
| 227 | 0.0184 | 0.0134 | 0.0050 |
| 228 | 0.0182 | 0.0133 | 0.0049 |
| 229 | 0.0180 | 0.0131 | 0.0049 |
| 230 | 0.0178 | 0.0130 | 0.0048 |
| 231 | 0.0176 | 0.0128 | 0.0048 |
| 232 | 0.0174 | 0.0127 | 0.0047 |
| 233 | 0.0172 | 0.0126 | 0.0047 |
| 234 | 0.0171 | 0.0124 | 0.0046 |
| 235 | 0.0169 | 0.0123 | 0.0046 |
| 236 | 0.0167 | 0.0122 | 0.0045 |
| 237 | 0.0166 | 0.0121 | 0.0045 |
| 238 | 0.0164 | 0.0120 | 0.0044 |
| 239 | 0.0163 | 0.0119 | 0.0044 |
| 240 | 0.0161 | 0.0118 | 0.0044 |
| 241 | 0.0160 | 0.0117 | 0.0043 |
| 242 | 0.0159 | 0.0116 | 0.0043 |
| 243 | 0.0157 | 0.0115 | 0.0043 |
| 244 | 0.0156 | 0.0114 | 0.0042 |
| 245 | 0.0155 | 0.0113 | 0.0042 |
| 246 | 0.0154 | 0.0112 | 0.0042 |
| 247 | 0.0152 | 0.0111 | 0.0041 |
| 248 | 0.0151 | 0.0110 | 0.0041 |
| 249 | 0.0150 | 0.0110 | 0.0041 |
| 250 | 0.0149 | 0.0109 | 0.0040 |
| 251 | 0.0148 | 0.0108 | 0.0040 |
| 252 | 0.0147 | 0.0107 | 0.0040 |
| 253 | 0.0146 | 0.0107 | 0.0040 |
| 254 | 0.0145 | 0.0106 | 0.0039 |
| 255 | 0.0144 | 0.0105 | 0.0039 |
| 256 | 0.0143 | 0.0104 | 0.0039 |
| 257 | 0.0142 | 0.0104 | 0.0039 |
| 258 | 0.0141 | 0.0103 | 0.0038 |
| 259 | 0.0141 | 0.0102 | 0.0038 |
| 260 | 0.0140 | 0.0102 | 0.0038 |
| 261 | 0.0139 | 0.0101 | 0.0038 |
| 262 | 0.0138 | 0.0101 | 0.0037 |
| 263 | 0.0137 | 0.0100 | 0.0037 |
| 264 | 0.0136 | 0.0099 | 0.0037 |
| 265 | 0.0136 | 0.0099 | 0.0037 |
| 266 | 0.0135 | 0.0098 | 0.0037 |
| 267 | 0.0134 | 0.0098 | 0.0036 |
| 268 | 0.0133 | 0.0097 | 0.0036 |
| 269 | 0.0133 | 0.0097 | 0.0036 |
| 270 | 0.0132 | 0.0096 | 0.0036 |
| 271 | 0.0131 | 0.0096 | 0.0036 |
| 272 | 0.0131 | 0.0095 | 0.0035 |
| 273 | 0.0130 | 0.0095 | 0.0035 |
| 274 | 0.0129 | 0.0094 | 0.0035 |
| 275 | 0.0129 | 0.0094 | 0.0035 |
| 276 | 0.0128 | 0.0093 | 0.0035 |
| 277 | 0.0127 | 0.0093 | 0.0034 |
| 278 | 0.0127 | 0.0092 | 0.0034 |
| 279 | 0.0126 | 0.0092 | 0.0034 |
| 280 | 0.0126 | 0.0092 | 0.0034 |
| 281 | 0.0125 | 0.0091 | 0.0034 |

```
      282              0.0124           0.0091              0.0034
      283              0.0124           0.0090              0.0034
      284              0.0123           0.0090              0.0033
      285              0.0123           0.0090              0.0033
      286              0.0122           0.0089              0.0033
      287              0.0122           0.0089              0.0033
      288              0.0121           0.0088              0.0033
      ----------------------------------------------------------------------
      ----------------------------------------------------------------------
      Total soil rain loss =      4.04(In)
      Total effective rainfall =      1.83(In)
      Peak flow rate in flood hydrograph =     46.37(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
----------------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q         |         |         |         |
  0+10       0.0015      0.17  Q         |         |         |         |
  0+15       0.0050      0.52  Q         |         |         |         |
  0+20       0.0113      0.92  Q         |         |         |         |
  0+25       0.0188      1.08  Q         |         |         |         |
  0+30       0.0269      1.19  Q         |         |         |         |
  0+35       0.0357      1.27  VQ        |         |         |         |
  0+40       0.0448      1.32  VQ        |         |         |         |
  0+45       0.0542      1.37  VQ        |         |         |         |
  0+50       0.0639      1.40  VQ        |         |         |         |
  0+55       0.0737      1.43  VQ        |         |         |         |
  1+ 0       0.0837      1.44  VQ        |         |         |         |
  1+ 5       0.0937      1.45  VQ        |         |         |         |
  1+10       0.1037      1.46  VQ        |         |         |         |
  1+15       0.1139      1.47  VQ        |         |         |         |
  1+20       0.1240      1.48  VQ        |         |         |         |
  1+25       0.1342      1.48  VQ        |         |         |         |
  1+30       0.1445      1.49  |Q        |         |         |         |
  1+35       0.1548      1.50  |Q        |         |         |         |
  1+40       0.1651      1.50  |Q        |         |         |         |
  1+45       0.1755      1.50  |Q        |         |         |         |
  1+50       0.1859      1.51  |Q        |         |         |         |
  1+55       0.1963      1.51  |Q        |         |         |         |
  2+ 0       0.2067      1.51  |Q        |         |         |         |
  2+ 5       0.2171      1.52  |Q        |         |         |         |
  2+10       0.2276      1.52  |Q        |         |         |         |
  2+15       0.2381      1.52  |Q        |         |         |         |
  2+20       0.2486      1.53  |Q        |         |         |         |
  2+25       0.2592      1.53  |Q        |         |         |         |
  2+30       0.2698      1.54  |Q        |         |         |         |
  2+35       0.2804      1.54  |QV       |         |         |         |
  2+40       0.2910      1.54  |QV       |         |         |         |
  2+45       0.3017      1.55  |QV       |         |         |         |
  2+50       0.3124      1.55  |QV       |         |         |         |
  2+55       0.3231      1.56  |QV       |         |         |         |
  3+ 0       0.3338      1.56  |QV       |         |         |         |
  3+ 5       0.3446      1.56  |QV       |         |         |         |
  3+10       0.3554      1.57  |QV       |         |         |         |
  3+15       0.3662      1.57  |QV       |         |         |         |
  3+20       0.3770      1.58  |QV       |         |         |         |
  3+25       0.3879      1.58  |QV       |         |         |         |
  3+30       0.3988      1.58  |QV       |         |         |         |
  3+35       0.4098      1.59  |QV       |         |         |         |
  3+40       0.4207      1.59  |Q V      |         |         |         |
  3+45       0.4317      1.60  |Q V      |         |         |         |
  3+50       0.4427      1.60  |Q V      |         |         |         |
  3+55       0.4538      1.60  |Q V      |         |         |         |
  4+ 0       0.4649      1.61  |Q V      |         |         |         |
  4+ 5       0.4760      1.61  |Q V      |         |         |         |
```

```
 4+10      0.4871      1.62  |Q V      |         |         |         |
 4+15      0.4983      1.62  |Q V      |         |         |         |
 4+20      0.5095      1.63  |Q V      |         |         |         |
 4+25      0.5208      1.63  |Q V      |         |         |         |
 4+30      0.5320      1.64  |Q V      |         |         |         |
 4+35      0.5433      1.64  |Q V      |         |         |         |
 4+40      0.5547      1.65  |Q V      |         |         |         |
 4+45      0.5660      1.65  |Q  V     |         |         |         |
 4+50      0.5774      1.66  |Q  V     |         |         |         |
 4+55      0.5889      1.66  |Q  V     |         |         |         |
 5+ 0      0.6003      1.67  |Q  V     |         |         |         |
 5+ 5      0.6119      1.67  |Q  V     |         |         |         |
 5+10      0.6234      1.68  |Q  V     |         |         |         |
 5+15      0.6350      1.68  |Q  V     |         |         |         |
 5+20      0.6466      1.69  |Q  V     |         |         |         |
 5+25      0.6582      1.69  |Q  V     |         |         |         |
 5+30      0.6699      1.70  |Q  V     |         |         |         |
 5+35      0.6816      1.70  |Q  V     |         |         |         |
 5+40      0.6934      1.71  |Q  V     |         |         |         |
 5+45      0.7052      1.71  |Q   V    |         |         |         |
 5+50      0.7170      1.72  |Q   V    |         |         |         |
 5+55      0.7289      1.72  |Q   V    |         |         |         |
 6+ 0      0.7408      1.73  |Q   V    |         |         |         |
 6+ 5      0.7528      1.74  |Q   V    |         |         |         |
 6+10      0.7647      1.74  |Q   V    |         |         |         |
 6+15      0.7768      1.75  |Q   V    |         |         |         |
 6+20      0.7888      1.75  |Q   V    |         |         |         |
 6+25      0.8010      1.76  |Q   V    |         |         |         |
 6+30      0.8131      1.76  |Q   V    |         |         |         |
 6+35      0.8253      1.77  |Q   V    |         |         |         |
 6+40      0.8375      1.78  |Q   V    |         |         |         |
 6+45      0.8498      1.78  |Q    V   |         |         |         |
 6+50      0.8621      1.79  |Q    V   |         |         |         |
 6+55      0.8745      1.80  |Q    V   |         |         |         |
 7+ 0      0.8869      1.80  |Q    V   |         |         |         |
 7+ 5      0.8994      1.81  |Q    V   |         |         |         |
 7+10      0.9119      1.82  |Q    V   |         |         |         |
 7+15      0.9244      1.82  |Q    V   |         |         |         |
 7+20      0.9370      1.83  |Q    V   |         |         |         |
 7+25      0.9497      1.84  |Q    V   |         |         |         |
 7+30      0.9624      1.84  |Q    V   |         |         |         |
 7+35      0.9751      1.85  |Q    V   |         |         |         |
 7+40      0.9879      1.86  |Q     V  |         |         |         |
 7+45      1.0008      1.86  |Q     V  |         |         |         |
 7+50      1.0136      1.87  |Q     V  |         |         |         |
 7+55      1.0266      1.88  |Q     V  |         |         |         |
 8+ 0      1.0396      1.89  |Q     V  |         |         |         |
 8+ 5      1.0526      1.89  |Q     V  |         |         |         |
 8+10      1.0657      1.90  |Q     V  |         |         |         |
 8+15      1.0789      1.91  |Q     V  |         |         |         |
 8+20      1.0921      1.92  |Q     V  |         |         |         |
 8+25      1.1054      1.93  |Q     V  |         |         |         |
 8+30      1.1187      1.94  |Q      V |         |         |         |
 8+35      1.1321      1.94  |Q      V |         |         |         |
 8+40      1.1456      1.95  |Q      V |         |         |         |
 8+45      1.1591      1.96  |Q      V |         |         |         |
 8+50      1.1726      1.97  |Q      V |         |         |         |
 8+55      1.1863      1.98  |Q      V |         |         |         |
 9+ 0      1.1999      1.99  |Q      V |         |         |         |
 9+ 5      1.2137      2.00  |Q      V |         |         |         |
 9+10      1.2275      2.01  |Q      V |         |         |         |
 9+15      1.2414      2.02  |Q      V |         |         |         |
 9+20      1.2554      2.03  |Q      V |         |         |         |
 9+25      1.2694      2.04  |Q       V|         |         |         |
 9+30      1.2835      2.05  |Q       V|         |         |         |
 9+35      1.2976      2.06  |Q       V|         |         |         |
 9+40      1.3119      2.07  |Q       V|         |         |         |
 9+45      1.3262      2.08  |Q       V|         |         |         |
 9+50      1.3405      2.09  |Q       V|         |         |         |
 9+55      1.3550      2.10  |Q       V|         |         |         |
10+ 0      1.3695      2.11  |Q       V|         |         |         |
```

```
10+ 5       1.3841      2.12  |Q       V|         |         |         |
10+10       1.3988      2.13  |Q        V         |         |         |
10+15       1.4136      2.14  |Q        V         |         |         |
10+20       1.4284      2.16  |Q        V         |         |         |
10+25       1.4434      2.17  |Q        V         |         |         |
10+30       1.4584      2.18  |Q        V         |         |         |
10+35       1.4735      2.19  |Q        V         |         |         |
10+40       1.4887      2.21  |Q        V         |         |         |
10+45       1.5040      2.22  |Q        V         |         |         |
10+50       1.5194      2.23  |Q        V         |         |         |
10+55       1.5349      2.25  |Q        V         |         |         |
11+ 0       1.5504      2.26  |Q        |V         |         |         |
11+ 5       1.5661      2.28  |Q        |V         |         |         |
11+10       1.5819      2.29  |Q        |V         |         |         |
11+15       1.5978      2.31  |Q        |V         |         |         |
11+20       1.6138      2.32  |Q        |V         |         |         |
11+25       1.6299      2.34  |Q        |V         |         |         |
11+30       1.6461      2.35  |Q        |V         |         |         |
11+35       1.6624      2.37  |Q        |V         |         |         |
11+40       1.6788      2.39  |Q        | V        |         |         |
11+45       1.6954      2.41  |Q        | V        |         |         |
11+50       1.7121      2.42  |Q        | V        |         |         |
11+55       1.7289      2.44  |Q        | V        |         |         |
12+ 0       1.7459      2.46  |Q        | V        |         |         |
12+ 5       1.7630      2.48  |Q        | V        |         |         |
12+10       1.7803      2.52  | Q       | V        |         |         |
12+15       1.7980      2.57  | Q       | V        |         |         |
12+20       1.8160      2.62  | Q       | V        |         |         |
12+25       1.8343      2.66  | Q       |  V       |         |         |
12+30       1.8528      2.69  | Q       |  V       |         |         |
12+35       1.8715      2.72  | Q       |  V       |         |         |
12+40       1.8904      2.75  | Q       |  V       |         |         |
12+45       1.9095      2.77  | Q       |  V       |         |         |
12+50       1.9288      2.80  | Q       |  V       |         |         |
12+55       1.9483      2.83  | Q       |  V       |         |         |
13+ 0       1.9679      2.86  | Q       |   V      |         |         |
13+ 5       1.9878      2.88  | Q       |   V      |         |         |
13+10       2.0078      2.91  | Q       |   V      |         |         |
13+15       2.0281      2.94  | Q       |   V      |         |         |
13+20       2.0486      2.97  | Q       |   V      |         |         |
13+25       2.0693      3.00  | Q       |   V      |         |         |
13+30       2.0902      3.04  | Q       |   V      |         |         |
13+35       2.1113      3.07  | Q       |    V     |         |         |
13+40       2.1327      3.11  | Q       |    V     |         |         |
13+45       2.1544      3.14  | Q       |    V     |         |         |
13+50       2.1763      3.18  | Q       |    V     |         |         |
13+55       2.1985      3.22  | Q       |    V     |         |         |
14+ 0       2.2210      3.27  | Q       |    V     |         |         |
14+ 5       2.2438      3.31  | Q       |     V    |         |         |
14+10       2.2669      3.36  | Q       |     V    |         |         |
14+15       2.2904      3.41  | Q       |     V    |         |         |
14+20       2.3143      3.47  | Q       |     V    |         |         |
14+25       2.3385      3.52  | Q       |     V    |         |         |
14+30       2.3632      3.58  | Q       |     V    |         |         |
14+35       2.3883      3.64  | Q       |      V   |         |         |
14+40       2.4139      3.71  | Q       |      V   |         |         |
14+45       2.4399      3.78  |  Q      |      V   |         |         |
14+50       2.4665      3.86  |  Q      |      V   |         |         |
14+55       2.4937      3.94  |  Q      |      V   |         |         |
15+ 0       2.5215      4.04  |  Q      |       V  |         |         |
15+ 5       2.5500      4.13  |  Q      |       V  |         |         |
15+10       2.5792      4.24  |  Q      |       V  |         |         |
15+15       2.6092      4.36  |  Q      |       V  |         |         |
15+20       2.6402      4.50  |  Q      |       V  |         |         |
15+25       2.6717      4.57  |  Q      |        V|         |         |
15+30       2.7026      4.49  |  Q      |        V|         |         |
15+35       2.7304      4.04  |  Q      |        V|         |         |
15+40       2.7547      3.52  | Q       |        V|         |         |
15+45       2.7787      3.49  | Q       |        V|         |         |
15+50       2.8038      3.65  | Q       |         V|         |         |
15+55       2.8314      4.02  |  Q      |         V|         |         |
```

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16+ 0       2.8648      4.84  |  Q       |          V          |          |
16+ 5       2.9339     10.04  |        Q |          V          |          |
16+10       3.0815     21.43  |          |       Q  | V        |          |
16+15       3.3736     42.42  |          |          |   V      |  Q       |
16+20       3.6930     46.37  |          |          |     V    |       Q  |
16+25       3.8443     21.98  |          |       Q  |       V  |          |
16+30       3.9515     15.57  |          | Q        |        V |          |
16+35       4.0374     12.46  |         Q|          |        V |          |
16+40       4.1111     10.71  |        Q |          |         V|          |
16+45       4.1736      9.07  |       Q  |          |         V|          |
16+50       4.2266      7.69  |     Q    |          |          V          |
16+55       4.2716      6.53  |    Q     |          |          V          |
17+ 0       4.3093      5.48  |   Q      |          |          V          |
17+ 5       4.3413      4.65  |  Q       |          |          |V         |
17+10       4.3717      4.41  |  Q       |          |          |V         |
17+15       4.4004      4.17  |  Q       |          |          |V         |
17+20       4.4276      3.95  |  Q       |          |          |V         |
17+25       4.4544      3.90  |  Q       |          |          |V         |
17+30       4.4798      3.68  | Q        |          |          | V        |
17+35       4.5037      3.47  | Q        |          |          | V        |
17+40       4.5266      3.32  | Q        |          |          | V        |
17+45       4.5481      3.12  | Q        |          |          | V        |
17+50       4.5691      3.05  | Q        |          |          | V        |
17+55       4.5896      2.98  | Q        |          |          | V        |
18+ 0       4.6098      2.92  | Q        |          |          | V        |
18+ 5       4.6295      2.86  | Q        |          |          |  V       |
18+10       4.6487      2.80  | Q        |          |          |  V       |
18+15       4.6674      2.72  | Q        |          |          |  V       |
18+20       4.6856      2.64  | Q        |          |          |  V       |
18+25       4.7033      2.58  | Q        |          |          |  V       |
18+30       4.7207      2.53  | Q        |          |          |  V       |
18+35       4.7378      2.48  |Q         |          |          |  V       |
18+40       4.7546      2.44  |Q         |          |          |   V      |
18+45       4.7711      2.40  |Q         |          |          |   V      |
18+50       4.7874      2.36  |Q         |          |          |   V      |
18+55       4.8034      2.33  |Q         |          |          |   V      |
19+ 0       4.8192      2.29  |Q         |          |          |   V      |
19+ 5       4.8348      2.26  |Q         |          |          |   V      |
19+10       4.8502      2.24  |Q         |          |          |   V      |
19+15       4.8654      2.21  |Q         |          |          |   V      |
19+20       4.8804      2.18  |Q         |          |          |   V      |
19+25       4.8953      2.16  |Q         |          |          |    V     |
19+30       4.9100      2.13  |Q         |          |          |    V     |
19+35       4.9245      2.11  |Q         |          |          |    V     |
19+40       4.9389      2.09  |Q         |          |          |    V     |
19+45       4.9531      2.07  |Q         |          |          |    V     |
19+50       4.9672      2.05  |Q         |          |          |    V     |
19+55       4.9811      2.03  |Q         |          |          |    V     |
20+ 0       4.9949      2.01  |Q         |          |          |    V     |
20+ 5       5.0086      1.99  |Q         |          |          |    V     |
20+10       5.0222      1.97  |Q         |          |          |    V     |
20+15       5.0356      1.95  |Q         |          |          |     V    |
20+20       5.0489      1.93  |Q         |          |          |     V    |
20+25       5.0622      1.92  |Q         |          |          |     V    |
20+30       5.0753      1.90  |Q         |          |          |     V    |
20+35       5.0883      1.89  |Q         |          |          |     V    |
20+40       5.1011      1.87  |Q         |          |          |     V    |
20+45       5.1139      1.86  |Q         |          |          |     V    |
20+50       5.1266      1.84  |Q         |          |          |     V    |
20+55       5.1392      1.83  |Q         |          |          |     V    |
21+ 0       5.1517      1.81  |Q         |          |          |     V    |
21+ 5       5.1641      1.80  |Q         |          |          |     V    |
21+10       5.1764      1.79  |Q         |          |          |      V   |
21+15       5.1887      1.78  |Q         |          |          |      V   |
21+20       5.2008      1.76  |Q         |          |          |      V   |
21+25       5.2129      1.75  |Q         |          |          |      V   |
21+30       5.2249      1.74  |Q         |          |          |      V   |
21+35       5.2368      1.73  |Q         |          |          |      V   |
21+40       5.2486      1.72  |Q         |          |          |      V   |
21+45       5.2604      1.71  |Q         |          |          |      V   |
21+50       5.2720      1.70  |Q         |          |          |      V   |
```

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  21+55       5.2836      1.69  |Q        |         |         |      V  |
  22+ 0       5.2952      1.68  |Q        |         |         |      V  |
  22+ 5       5.3066      1.66  |Q        |         |         |      V  |
  22+10       5.3180      1.66  |Q        |         |         |       V |
  22+15       5.3294      1.65  |Q        |         |         |       V |
  22+20       5.3406      1.64  |Q        |         |         |       V |
  22+25       5.3518      1.63  |Q        |         |         |       V |
  22+30       5.3630      1.62  |Q        |         |         |       V |
  22+35       5.3741      1.61  |Q        |         |         |       V |
  22+40       5.3851      1.60  |Q        |         |         |       V |
  22+45       5.3960      1.59  |Q        |         |         |       V |
  22+50       5.4069      1.58  |Q        |         |         |       V |
  22+55       5.4178      1.57  |Q        |         |         |       V |
  23+ 0       5.4286      1.57  |Q        |         |         |       V |
  23+ 5       5.4393      1.56  |Q        |         |         |       V |
  23+10       5.4500      1.55  |Q        |         |         |       V |
  23+15       5.4606      1.54  |Q        |         |         |        V|
  23+20       5.4712      1.54  |Q        |         |         |        V|
  23+25       5.4817      1.53  |Q        |         |         |        V|
  23+30       5.4922      1.52  |Q        |         |         |        V|
  23+35       5.5026      1.51  |Q        |         |         |        V|
  23+40       5.5130      1.51  |Q        |         |         |        V|
  23+45       5.5233      1.50  |Q        |         |         |        V|
  23+50       5.5336      1.49  |Q        |         |         |        V|
  23+55       5.5438      1.49  |Q        |         |         |        V|
  24+ 0       5.5540      1.48  |Q        |         |         |        V|
  24+ 5       5.5639      1.43  |Q        |         |         |        V|
  24+10       5.5728      1.29  |Q        |         |         |        V|
  24+15       5.5793      0.94  Q         |         |         |        V|
  24+20       5.5830      0.54  Q         |         |         |        V|
  24+25       5.5856      0.38  Q         |         |         |        V|
  24+30       5.5875      0.27  Q         |         |         |        V|
  24+35       5.5889      0.20  Q         |         |         |        V|
  24+40       5.5898      0.14  Q         |         |         |        V|
  24+45       5.5905      0.10  Q         |         |         |        V|
  24+50       5.5909      0.06  Q         |         |         |        V|
  24+55       5.5912      0.04  Q         |         |         |        V|
  25+ 0       5.5914      0.03  Q         |         |         |        V|
  25+ 5       5.5916      0.02  Q         |         |         |        V|
  25+10       5.5917      0.02  Q         |         |         |        V|
  25+15       5.5918      0.01  Q         |         |         |        V|
  25+20       5.5919      0.01  Q         |         |         |        V|
  25+25       5.5919      0.01  Q         |         |         |        V|
  25+30       5.5919      0.00  Q         |         |         |        V|
  25+35       5.5919      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area ‘E’ – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'E'
10 YEAR 24 HOUR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            36.66            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 74.9      74.9         36.66      1.000     0.455    1.000    0.455
```

```
Area-averaged adjusted loss rate Fm (In/Hr) =  0.455

********* Area-Averaged low loss rate fraction, Yb **********

Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC2)           Yield Fr
    36.66   1.000         74.9      74.9       3.35     0.603

Area-averaged catchment yield fraction, Y =  0.603
Area-averaged low loss fraction, Yb =  0.397
User entry of time of concentration  =   0.293 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      36.66(Ac.)
Catchment Lag time =   0.234 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 35.5518
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.455(In/Hr)
Average low loss rate fraction (Yb) = 0.397 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall =  0.475(In)
Computed peak 30-minute rainfall =  0.812(In)
Specified peak 1-hour rainfall =  1.000(In)
Computed peak 3-hour rainfall =  1.973(In)
Specified peak 6-hour rainfall =  3.029(In)
Specified peak 24-hour rainfall =  7.291(In)


Rainfall depth area reduction factors:
Using a total area of      36.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998     Adjusted rainfall =  0.474(In)
30-minute factor = 0.998    Adjusted rainfall =  0.811(In)
1-hour factor = 0.998       Adjusted rainfall =  0.998(In)
3-hour factor = 1.000       Adjusted rainfall =  1.972(In)
6-hour factor = 1.000       Adjusted rainfall =  3.028(In)
24-hour factor = 1.000      Adjusted rainfall =  7.291(In)
------------------------------------------------------------------------

                     U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
------------------------------------------------------------------------
               (K =       443.36 (CFS))

  1                2.675                  11.860
  2               12.024                  41.451
  3               35.644                 104.718
  4               63.026                 121.402
  5               74.204                  49.558
  6               81.479                  32.252
  7               86.684                  23.079
  8               90.577                  17.258
  9               93.485                  12.896
 10               95.602                   9.386
 11               97.088                   6.587
 12               97.988                   3.990
 13               98.429                   1.953
 14               98.799                   1.644
 15               99.093                   1.300
 16               99.316                   0.991
 17               99.592                   1.221
 18               99.789                   0.873
 19               99.913                   0.549
 20              100.000                   0.388
------------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.4737              0.4737
  2              0.5832              0.1095
```

| | | |
|---|---|---|
| 3 | 0.6586 | 0.0754 |
| 4 | 0.7180 | 0.0594 |
| 5 | 0.7677 | 0.0497 |
| 6 | 0.8109 | 0.0432 |
| 7 | 0.8492 | 0.0384 |
| 8 | 0.8839 | 0.0347 |
| 9 | 0.9157 | 0.0318 |
| 10 | 0.9451 | 0.0294 |
| 11 | 0.9726 | 0.0274 |
| 12 | 0.9983 | 0.0257 |
| 13 | 1.0491 | 0.0508 |
| 14 | 1.0984 | 0.0493 |
| 15 | 1.1464 | 0.0480 |
| 16 | 1.1931 | 0.0468 |
| 17 | 1.2388 | 0.0457 |
| 18 | 1.2835 | 0.0447 |
| 19 | 1.3272 | 0.0437 |
| 20 | 1.3701 | 0.0429 |
| 21 | 1.4122 | 0.0421 |
| 22 | 1.4535 | 0.0413 |
| 23 | 1.4941 | 0.0406 |
| 24 | 1.5340 | 0.0399 |
| 25 | 1.5733 | 0.0393 |
| 26 | 1.6120 | 0.0387 |
| 27 | 1.6502 | 0.0382 |
| 28 | 1.6878 | 0.0376 |
| 29 | 1.7249 | 0.0371 |
| 30 | 1.7615 | 0.0366 |
| 31 | 1.7977 | 0.0362 |
| 32 | 1.8334 | 0.0357 |
| 33 | 1.8687 | 0.0353 |
| 34 | 1.9036 | 0.0349 |
| 35 | 1.9382 | 0.0345 |
| 36 | 1.9723 | 0.0341 |
| 37 | 2.0060 | 0.0337 |
| 38 | 2.0394 | 0.0334 |
| 39 | 2.0724 | 0.0330 |
| 40 | 2.1051 | 0.0327 |
| 41 | 2.1375 | 0.0324 |
| 42 | 2.1696 | 0.0321 |
| 43 | 2.2014 | 0.0318 |
| 44 | 2.2330 | 0.0315 |
| 45 | 2.2642 | 0.0313 |
| 46 | 2.2952 | 0.0310 |
| 47 | 2.3259 | 0.0307 |
| 48 | 2.3564 | 0.0305 |
| 49 | 2.3867 | 0.0302 |
| 50 | 2.4167 | 0.0300 |
| 51 | 2.4465 | 0.0298 |
| 52 | 2.4760 | 0.0296 |
| 53 | 2.5054 | 0.0293 |
| 54 | 2.5345 | 0.0291 |
| 55 | 2.5635 | 0.0289 |
| 56 | 2.5922 | 0.0287 |
| 57 | 2.6207 | 0.0285 |
| 58 | 2.6491 | 0.0283 |
| 59 | 2.6772 | 0.0282 |
| 60 | 2.7052 | 0.0280 |
| 61 | 2.7330 | 0.0278 |
| 62 | 2.7606 | 0.0276 |
| 63 | 2.7881 | 0.0275 |
| 64 | 2.8154 | 0.0273 |
| 65 | 2.8425 | 0.0271 |
| 66 | 2.8695 | 0.0270 |
| 67 | 2.8963 | 0.0268 |
| 68 | 2.9230 | 0.0267 |
| 69 | 2.9495 | 0.0265 |
| 70 | 2.9759 | 0.0264 |
| 71 | 3.0021 | 0.0262 |
| 72 | 3.0282 | 0.0261 |
| 73 | 3.0548 | 0.0266 |

| | | |
|---|---|---|
| 74 | 3.0812 | 0.0265 |
| 75 | 3.1075 | 0.0263 |
| 76 | 3.1337 | 0.0262 |
| 77 | 3.1598 | 0.0261 |
| 78 | 3.1858 | 0.0259 |
| 79 | 3.2116 | 0.0258 |
| 80 | 3.2373 | 0.0257 |
| 81 | 3.2629 | 0.0256 |
| 82 | 3.2884 | 0.0255 |
| 83 | 3.3137 | 0.0254 |
| 84 | 3.3390 | 0.0252 |
| 85 | 3.3641 | 0.0251 |
| 86 | 3.3891 | 0.0250 |
| 87 | 3.4141 | 0.0249 |
| 88 | 3.4389 | 0.0248 |
| 89 | 3.4636 | 0.0247 |
| 90 | 3.4882 | 0.0246 |
| 91 | 3.5127 | 0.0245 |
| 92 | 3.5372 | 0.0244 |
| 93 | 3.5615 | 0.0243 |
| 94 | 3.5857 | 0.0242 |
| 95 | 3.6098 | 0.0241 |
| 96 | 3.6339 | 0.0240 |
| 97 | 3.6578 | 0.0239 |
| 98 | 3.6817 | 0.0239 |
| 99 | 3.7054 | 0.0238 |
| 100 | 3.7291 | 0.0237 |
| 101 | 3.7527 | 0.0236 |
| 102 | 3.7762 | 0.0235 |
| 103 | 3.7997 | 0.0234 |
| 104 | 3.8230 | 0.0233 |
| 105 | 3.8463 | 0.0233 |
| 106 | 3.8694 | 0.0232 |
| 107 | 3.8925 | 0.0231 |
| 108 | 3.9155 | 0.0230 |
| 109 | 3.9385 | 0.0229 |
| 110 | 3.9613 | 0.0229 |
| 111 | 3.9841 | 0.0228 |
| 112 | 4.0068 | 0.0227 |
| 113 | 4.0295 | 0.0226 |
| 114 | 4.0521 | 0.0226 |
| 115 | 4.0745 | 0.0225 |
| 116 | 4.0970 | 0.0224 |
| 117 | 4.1193 | 0.0224 |
| 118 | 4.1416 | 0.0223 |
| 119 | 4.1638 | 0.0222 |
| 120 | 4.1860 | 0.0221 |
| 121 | 4.2080 | 0.0221 |
| 122 | 4.2300 | 0.0220 |
| 123 | 4.2520 | 0.0219 |
| 124 | 4.2739 | 0.0219 |
| 125 | 4.2957 | 0.0218 |
| 126 | 4.3174 | 0.0217 |
| 127 | 4.3391 | 0.0217 |
| 128 | 4.3607 | 0.0216 |
| 129 | 4.3823 | 0.0216 |
| 130 | 4.4038 | 0.0215 |
| 131 | 4.4252 | 0.0214 |
| 132 | 4.4466 | 0.0214 |
| 133 | 4.4679 | 0.0213 |
| 134 | 4.4892 | 0.0213 |
| 135 | 4.5104 | 0.0212 |
| 136 | 4.5316 | 0.0211 |
| 137 | 4.5527 | 0.0211 |
| 138 | 4.5737 | 0.0210 |
| 139 | 4.5947 | 0.0210 |
| 140 | 4.6156 | 0.0209 |
| 141 | 4.6365 | 0.0209 |
| 142 | 4.6573 | 0.0208 |
| 143 | 4.6780 | 0.0208 |
| 144 | 4.6987 | 0.0207 |

| | | |
|---|---|---|
| 145 | 4.7194 | 0.0207 |
| 146 | 4.7400 | 0.0206 |
| 147 | 4.7606 | 0.0206 |
| 148 | 4.7811 | 0.0205 |
| 149 | 4.8015 | 0.0205 |
| 150 | 4.8219 | 0.0204 |
| 151 | 4.8423 | 0.0204 |
| 152 | 4.8626 | 0.0203 |
| 153 | 4.8828 | 0.0203 |
| 154 | 4.9030 | 0.0202 |
| 155 | 4.9232 | 0.0202 |
| 156 | 4.9433 | 0.0201 |
| 157 | 4.9633 | 0.0201 |
| 158 | 4.9834 | 0.0200 |
| 159 | 5.0033 | 0.0200 |
| 160 | 5.0232 | 0.0199 |
| 161 | 5.0431 | 0.0199 |
| 162 | 5.0630 | 0.0198 |
| 163 | 5.0827 | 0.0198 |
| 164 | 5.1025 | 0.0197 |
| 165 | 5.1222 | 0.0197 |
| 166 | 5.1418 | 0.0197 |
| 167 | 5.1614 | 0.0196 |
| 168 | 5.1810 | 0.0196 |
| 169 | 5.2005 | 0.0195 |
| 170 | 5.2200 | 0.0195 |
| 171 | 5.2395 | 0.0194 |
| 172 | 5.2589 | 0.0194 |
| 173 | 5.2782 | 0.0194 |
| 174 | 5.2975 | 0.0193 |
| 175 | 5.3168 | 0.0193 |
| 176 | 5.3361 | 0.0192 |
| 177 | 5.3552 | 0.0192 |
| 178 | 5.3744 | 0.0192 |
| 179 | 5.3935 | 0.0191 |
| 180 | 5.4126 | 0.0191 |
| 181 | 5.4316 | 0.0190 |
| 182 | 5.4506 | 0.0190 |
| 183 | 5.4696 | 0.0190 |
| 184 | 5.4885 | 0.0189 |
| 185 | 5.5074 | 0.0189 |
| 186 | 5.5263 | 0.0189 |
| 187 | 5.5451 | 0.0188 |
| 188 | 5.5639 | 0.0188 |
| 189 | 5.5826 | 0.0187 |
| 190 | 5.6013 | 0.0187 |
| 191 | 5.6200 | 0.0187 |
| 192 | 5.6386 | 0.0186 |
| 193 | 5.6572 | 0.0186 |
| 194 | 5.6758 | 0.0186 |
| 195 | 5.6943 | 0.0185 |
| 196 | 5.7128 | 0.0185 |
| 197 | 5.7312 | 0.0185 |
| 198 | 5.7497 | 0.0184 |
| 199 | 5.7680 | 0.0184 |
| 200 | 5.7864 | 0.0184 |
| 201 | 5.8047 | 0.0183 |
| 202 | 5.8230 | 0.0183 |
| 203 | 5.8413 | 0.0183 |
| 204 | 5.8595 | 0.0182 |
| 205 | 5.8777 | 0.0182 |
| 206 | 5.8958 | 0.0182 |
| 207 | 5.9140 | 0.0181 |
| 208 | 5.9320 | 0.0181 |
| 209 | 5.9501 | 0.0181 |
| 210 | 5.9681 | 0.0180 |
| 211 | 5.9861 | 0.0180 |
| 212 | 6.0041 | 0.0180 |
| 213 | 6.0220 | 0.0179 |
| 214 | 6.0399 | 0.0179 |
| 215 | 6.0578 | 0.0179 |

| | | |
|---|---|---|
| 216 | 6.0757 | 0.0178 |
| 217 | 6.0935 | 0.0178 |
| 218 | 6.1113 | 0.0178 |
| 219 | 6.1290 | 0.0178 |
| 220 | 6.1467 | 0.0177 |
| 221 | 6.1644 | 0.0177 |
| 222 | 6.1821 | 0.0177 |
| 223 | 6.1997 | 0.0176 |
| 224 | 6.2173 | 0.0176 |
| 225 | 6.2349 | 0.0176 |
| 226 | 6.2525 | 0.0175 |
| 227 | 6.2700 | 0.0175 |
| 228 | 6.2875 | 0.0175 |
| 229 | 6.3049 | 0.0175 |
| 230 | 6.3224 | 0.0174 |
| 231 | 6.3398 | 0.0174 |
| 232 | 6.3572 | 0.0174 |
| 233 | 6.3745 | 0.0174 |
| 234 | 6.3918 | 0.0173 |
| 235 | 6.4091 | 0.0173 |
| 236 | 6.4264 | 0.0173 |
| 237 | 6.4437 | 0.0172 |
| 238 | 6.4609 | 0.0172 |
| 239 | 6.4781 | 0.0172 |
| 240 | 6.4952 | 0.0172 |
| 241 | 6.5124 | 0.0171 |
| 242 | 6.5295 | 0.0171 |
| 243 | 6.5466 | 0.0171 |
| 244 | 6.5637 | 0.0171 |
| 245 | 6.5807 | 0.0170 |
| 246 | 6.5977 | 0.0170 |
| 247 | 6.6147 | 0.0170 |
| 248 | 6.6317 | 0.0170 |
| 249 | 6.6486 | 0.0169 |
| 250 | 6.6655 | 0.0169 |
| 251 | 6.6824 | 0.0169 |
| 252 | 6.6992 | 0.0169 |
| 253 | 6.7161 | 0.0168 |
| 254 | 6.7329 | 0.0168 |
| 255 | 6.7497 | 0.0168 |
| 256 | 6.7665 | 0.0168 |
| 257 | 6.7832 | 0.0167 |
| 258 | 6.7999 | 0.0167 |
| 259 | 6.8166 | 0.0167 |
| 260 | 6.8333 | 0.0167 |
| 261 | 6.8499 | 0.0166 |
| 262 | 6.8665 | 0.0166 |
| 263 | 6.8831 | 0.0166 |
| 264 | 6.8997 | 0.0166 |
| 265 | 6.9163 | 0.0166 |
| 266 | 6.9328 | 0.0165 |
| 267 | 6.9493 | 0.0165 |
| 268 | 6.9658 | 0.0165 |
| 269 | 6.9823 | 0.0165 |
| 270 | 6.9987 | 0.0164 |
| 271 | 7.0151 | 0.0164 |
| 272 | 7.0315 | 0.0164 |
| 273 | 7.0479 | 0.0164 |
| 274 | 7.0642 | 0.0164 |
| 275 | 7.0806 | 0.0163 |
| 276 | 7.0969 | 0.0163 |
| 277 | 7.1132 | 0.0163 |
| 278 | 7.1294 | 0.0163 |
| 279 | 7.1457 | 0.0162 |
| 280 | 7.1619 | 0.0162 |
| 281 | 7.1781 | 0.0162 |
| 282 | 7.1943 | 0.0162 |
| 283 | 7.2104 | 0.0162 |
| 284 | 7.2266 | 0.0161 |
| 285 | 7.2427 | 0.0161 |
| 286 | 7.2588 | 0.0161 |

| | | |
|---|---|---|
| 287 | 7.2749 | 0.0161 |
| 288 | 7.2909 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0064 | 0.0097 |
| 2 | 0.0161 | 0.0064 | 0.0097 |
| 3 | 0.0161 | 0.0064 | 0.0097 |
| 4 | 0.0161 | 0.0064 | 0.0097 |
| 5 | 0.0162 | 0.0064 | 0.0098 |
| 6 | 0.0162 | 0.0064 | 0.0098 |
| 7 | 0.0162 | 0.0065 | 0.0098 |
| 8 | 0.0163 | 0.0065 | 0.0098 |
| 9 | 0.0163 | 0.0065 | 0.0098 |
| 10 | 0.0163 | 0.0065 | 0.0098 |
| 11 | 0.0164 | 0.0065 | 0.0099 |
| 12 | 0.0164 | 0.0065 | 0.0099 |
| 13 | 0.0164 | 0.0065 | 0.0099 |
| 14 | 0.0165 | 0.0065 | 0.0099 |
| 15 | 0.0165 | 0.0066 | 0.0100 |
| 16 | 0.0165 | 0.0066 | 0.0100 |
| 17 | 0.0166 | 0.0066 | 0.0100 |
| 18 | 0.0166 | 0.0066 | 0.0100 |
| 19 | 0.0166 | 0.0066 | 0.0100 |
| 20 | 0.0167 | 0.0066 | 0.0101 |
| 21 | 0.0167 | 0.0066 | 0.0101 |
| 22 | 0.0167 | 0.0066 | 0.0101 |
| 23 | 0.0168 | 0.0067 | 0.0101 |
| 24 | 0.0168 | 0.0067 | 0.0101 |
| 25 | 0.0169 | 0.0067 | 0.0102 |
| 26 | 0.0169 | 0.0067 | 0.0102 |
| 27 | 0.0169 | 0.0067 | 0.0102 |
| 28 | 0.0170 | 0.0067 | 0.0102 |
| 29 | 0.0170 | 0.0068 | 0.0103 |
| 30 | 0.0170 | 0.0068 | 0.0103 |
| 31 | 0.0171 | 0.0068 | 0.0103 |
| 32 | 0.0171 | 0.0068 | 0.0103 |
| 33 | 0.0172 | 0.0068 | 0.0104 |
| 34 | 0.0172 | 0.0068 | 0.0104 |
| 35 | 0.0172 | 0.0068 | 0.0104 |
| 36 | 0.0173 | 0.0069 | 0.0104 |
| 37 | 0.0173 | 0.0069 | 0.0104 |
| 38 | 0.0174 | 0.0069 | 0.0105 |
| 39 | 0.0174 | 0.0069 | 0.0105 |
| 40 | 0.0174 | 0.0069 | 0.0105 |
| 41 | 0.0175 | 0.0069 | 0.0105 |
| 42 | 0.0175 | 0.0070 | 0.0106 |
| 43 | 0.0176 | 0.0070 | 0.0106 |
| 44 | 0.0176 | 0.0070 | 0.0106 |
| 45 | 0.0177 | 0.0070 | 0.0107 |
| 46 | 0.0177 | 0.0070 | 0.0107 |
| 47 | 0.0178 | 0.0070 | 0.0107 |
| 48 | 0.0178 | 0.0071 | 0.0107 |
| 49 | 0.0178 | 0.0071 | 0.0108 |
| 50 | 0.0179 | 0.0071 | 0.0108 |
| 51 | 0.0179 | 0.0071 | 0.0108 |
| 52 | 0.0180 | 0.0071 | 0.0108 |
| 53 | 0.0180 | 0.0072 | 0.0109 |
| 54 | 0.0181 | 0.0072 | 0.0109 |
| 55 | 0.0181 | 0.0072 | 0.0109 |
| 56 | 0.0182 | 0.0072 | 0.0109 |
| 57 | 0.0182 | 0.0072 | 0.0110 |
| 58 | 0.0183 | 0.0072 | 0.0110 |
| 59 | 0.0183 | 0.0073 | 0.0110 |
| 60 | 0.0184 | 0.0073 | 0.0111 |
| 61 | 0.0184 | 0.0073 | 0.0111 |
| 62 | 0.0185 | 0.0073 | 0.0111 |
| 63 | 0.0185 | 0.0074 | 0.0112 |
| 64 | 0.0186 | 0.0074 | 0.0112 |

| | | | |
|---|---|---|---|
| 65 | 0.0186 | 0.0074 | 0.0112 |
| 66 | 0.0187 | 0.0074 | 0.0113 |
| 67 | 0.0187 | 0.0074 | 0.0113 |
| 68 | 0.0188 | 0.0075 | 0.0113 |
| 69 | 0.0189 | 0.0075 | 0.0114 |
| 70 | 0.0189 | 0.0075 | 0.0114 |
| 71 | 0.0190 | 0.0075 | 0.0114 |
| 72 | 0.0190 | 0.0075 | 0.0115 |
| 73 | 0.0191 | 0.0076 | 0.0115 |
| 74 | 0.0191 | 0.0076 | 0.0115 |
| 75 | 0.0192 | 0.0076 | 0.0116 |
| 76 | 0.0192 | 0.0076 | 0.0116 |
| 77 | 0.0193 | 0.0077 | 0.0116 |
| 78 | 0.0194 | 0.0077 | 0.0117 |
| 79 | 0.0194 | 0.0077 | 0.0117 |
| 80 | 0.0195 | 0.0077 | 0.0117 |
| 81 | 0.0196 | 0.0078 | 0.0118 |
| 82 | 0.0196 | 0.0078 | 0.0118 |
| 83 | 0.0197 | 0.0078 | 0.0119 |
| 84 | 0.0197 | 0.0078 | 0.0119 |
| 85 | 0.0198 | 0.0079 | 0.0120 |
| 86 | 0.0199 | 0.0079 | 0.0120 |
| 87 | 0.0200 | 0.0079 | 0.0120 |
| 88 | 0.0200 | 0.0079 | 0.0121 |
| 89 | 0.0201 | 0.0080 | 0.0121 |
| 90 | 0.0202 | 0.0080 | 0.0122 |
| 91 | 0.0203 | 0.0080 | 0.0122 |
| 92 | 0.0203 | 0.0081 | 0.0122 |
| 93 | 0.0204 | 0.0081 | 0.0123 |
| 94 | 0.0205 | 0.0081 | 0.0123 |
| 95 | 0.0206 | 0.0082 | 0.0124 |
| 96 | 0.0206 | 0.0082 | 0.0124 |
| 97 | 0.0207 | 0.0082 | 0.0125 |
| 98 | 0.0208 | 0.0082 | 0.0125 |
| 99 | 0.0209 | 0.0083 | 0.0126 |
| 100 | 0.0209 | 0.0083 | 0.0126 |
| 101 | 0.0210 | 0.0084 | 0.0127 |
| 102 | 0.0211 | 0.0084 | 0.0127 |
| 103 | 0.0212 | 0.0084 | 0.0128 |
| 104 | 0.0213 | 0.0084 | 0.0128 |
| 105 | 0.0214 | 0.0085 | 0.0129 |
| 106 | 0.0214 | 0.0085 | 0.0129 |
| 107 | 0.0216 | 0.0086 | 0.0130 |
| 108 | 0.0216 | 0.0086 | 0.0130 |
| 109 | 0.0217 | 0.0086 | 0.0131 |
| 110 | 0.0218 | 0.0087 | 0.0132 |
| 111 | 0.0219 | 0.0087 | 0.0132 |
| 112 | 0.0220 | 0.0087 | 0.0133 |
| 113 | 0.0221 | 0.0088 | 0.0134 |
| 114 | 0.0222 | 0.0088 | 0.0134 |
| 115 | 0.0224 | 0.0089 | 0.0135 |
| 116 | 0.0224 | 0.0089 | 0.0135 |
| 117 | 0.0226 | 0.0090 | 0.0136 |
| 118 | 0.0226 | 0.0090 | 0.0136 |
| 119 | 0.0228 | 0.0090 | 0.0137 |
| 120 | 0.0229 | 0.0091 | 0.0138 |
| 121 | 0.0230 | 0.0091 | 0.0139 |
| 122 | 0.0231 | 0.0092 | 0.0139 |
| 123 | 0.0233 | 0.0092 | 0.0140 |
| 124 | 0.0233 | 0.0093 | 0.0141 |
| 125 | 0.0235 | 0.0093 | 0.0142 |
| 126 | 0.0236 | 0.0094 | 0.0142 |
| 127 | 0.0238 | 0.0094 | 0.0143 |
| 128 | 0.0239 | 0.0095 | 0.0144 |
| 129 | 0.0240 | 0.0095 | 0.0145 |
| 130 | 0.0241 | 0.0096 | 0.0145 |
| 131 | 0.0243 | 0.0097 | 0.0147 |
| 132 | 0.0244 | 0.0097 | 0.0147 |
| 133 | 0.0246 | 0.0098 | 0.0148 |
| 134 | 0.0247 | 0.0098 | 0.0149 |
| 135 | 0.0249 | 0.0099 | 0.0150 |

| | | | |
|---|---|---|---|
| 136 | 0.0250 | 0.0099 | 0.0151 |
| 137 | 0.0252 | 0.0100 | 0.0152 |
| 138 | 0.0254 | 0.0101 | 0.0153 |
| 139 | 0.0256 | 0.0102 | 0.0154 |
| 140 | 0.0257 | 0.0102 | 0.0155 |
| 141 | 0.0259 | 0.0103 | 0.0156 |
| 142 | 0.0261 | 0.0104 | 0.0157 |
| 143 | 0.0263 | 0.0105 | 0.0159 |
| 144 | 0.0265 | 0.0105 | 0.0160 |
| 145 | 0.0261 | 0.0104 | 0.0157 |
| 146 | 0.0262 | 0.0104 | 0.0158 |
| 147 | 0.0265 | 0.0105 | 0.0160 |
| 148 | 0.0267 | 0.0106 | 0.0161 |
| 149 | 0.0270 | 0.0107 | 0.0163 |
| 150 | 0.0271 | 0.0108 | 0.0164 |
| 151 | 0.0275 | 0.0109 | 0.0166 |
| 152 | 0.0276 | 0.0110 | 0.0167 |
| 153 | 0.0280 | 0.0111 | 0.0169 |
| 154 | 0.0282 | 0.0112 | 0.0170 |
| 155 | 0.0285 | 0.0113 | 0.0172 |
| 156 | 0.0287 | 0.0114 | 0.0173 |
| 157 | 0.0291 | 0.0116 | 0.0176 |
| 158 | 0.0293 | 0.0117 | 0.0177 |
| 159 | 0.0298 | 0.0118 | 0.0180 |
| 160 | 0.0300 | 0.0119 | 0.0181 |
| 161 | 0.0305 | 0.0121 | 0.0184 |
| 162 | 0.0307 | 0.0122 | 0.0185 |
| 163 | 0.0313 | 0.0124 | 0.0188 |
| 164 | 0.0315 | 0.0125 | 0.0190 |
| 165 | 0.0321 | 0.0127 | 0.0194 |
| 166 | 0.0324 | 0.0129 | 0.0195 |
| 167 | 0.0330 | 0.0131 | 0.0199 |
| 168 | 0.0334 | 0.0132 | 0.0201 |
| 169 | 0.0341 | 0.0136 | 0.0206 |
| 170 | 0.0345 | 0.0137 | 0.0208 |
| 171 | 0.0353 | 0.0140 | 0.0213 |
| 172 | 0.0357 | 0.0142 | 0.0215 |
| 173 | 0.0366 | 0.0145 | 0.0221 |
| 174 | 0.0371 | 0.0147 | 0.0224 |
| 175 | 0.0382 | 0.0151 | 0.0230 |
| 176 | 0.0387 | 0.0154 | 0.0233 |
| 177 | 0.0399 | 0.0159 | 0.0241 |
| 178 | 0.0406 | 0.0161 | 0.0245 |
| 179 | 0.0421 | 0.0167 | 0.0254 |
| 180 | 0.0429 | 0.0170 | 0.0258 |
| 181 | 0.0447 | 0.0177 | 0.0269 |
| 182 | 0.0457 | 0.0181 | 0.0275 |
| 183 | 0.0480 | 0.0191 | 0.0289 |
| 184 | 0.0493 | 0.0196 | 0.0297 |
| 185 | 0.0257 | 0.0102 | 0.0155 |
| 186 | 0.0274 | 0.0109 | 0.0165 |
| 187 | 0.0318 | 0.0126 | 0.0192 |
| 188 | 0.0347 | 0.0138 | 0.0209 |
| 189 | 0.0432 | 0.0171 | 0.0260 |
| 190 | 0.0497 | 0.0197 | 0.0300 |
| 191 | 0.0754 | 0.0300 | 0.0455 |
| 192 | 0.1095 | 0.0379 | 0.0716 |
| 193 | 0.4737 | 0.0379 | 0.4358 |
| 194 | 0.0594 | 0.0236 | 0.0358 |
| 195 | 0.0384 | 0.0152 | 0.0231 |
| 196 | 0.0294 | 0.0117 | 0.0177 |
| 197 | 0.0508 | 0.0202 | 0.0306 |
| 198 | 0.0468 | 0.0186 | 0.0282 |
| 199 | 0.0437 | 0.0174 | 0.0264 |
| 200 | 0.0413 | 0.0164 | 0.0249 |
| 201 | 0.0393 | 0.0156 | 0.0237 |
| 202 | 0.0376 | 0.0149 | 0.0227 |
| 203 | 0.0362 | 0.0144 | 0.0218 |
| 204 | 0.0349 | 0.0139 | 0.0210 |
| 205 | 0.0337 | 0.0134 | 0.0203 |
| 206 | 0.0327 | 0.0130 | 0.0197 |

| | | | |
|---|---|---|---|
| 207 | 0.0318 | 0.0126 | 0.0192 |
| 208 | 0.0310 | 0.0123 | 0.0187 |
| 209 | 0.0302 | 0.0120 | 0.0182 |
| 210 | 0.0296 | 0.0117 | 0.0178 |
| 211 | 0.0289 | 0.0115 | 0.0174 |
| 212 | 0.0283 | 0.0113 | 0.0171 |
| 213 | 0.0278 | 0.0110 | 0.0168 |
| 214 | 0.0273 | 0.0108 | 0.0165 |
| 215 | 0.0268 | 0.0106 | 0.0162 |
| 216 | 0.0264 | 0.0105 | 0.0159 |
| 217 | 0.0266 | 0.0106 | 0.0160 |
| 218 | 0.0262 | 0.0104 | 0.0158 |
| 219 | 0.0258 | 0.0103 | 0.0156 |
| 220 | 0.0255 | 0.0101 | 0.0154 |
| 221 | 0.0251 | 0.0100 | 0.0152 |
| 222 | 0.0248 | 0.0099 | 0.0150 |
| 223 | 0.0245 | 0.0097 | 0.0148 |
| 224 | 0.0242 | 0.0096 | 0.0146 |
| 225 | 0.0239 | 0.0095 | 0.0144 |
| 226 | 0.0237 | 0.0094 | 0.0143 |
| 227 | 0.0234 | 0.0093 | 0.0141 |
| 228 | 0.0232 | 0.0092 | 0.0140 |
| 229 | 0.0229 | 0.0091 | 0.0138 |
| 230 | 0.0227 | 0.0090 | 0.0137 |
| 231 | 0.0225 | 0.0089 | 0.0136 |
| 232 | 0.0223 | 0.0088 | 0.0134 |
| 233 | 0.0221 | 0.0088 | 0.0133 |
| 234 | 0.0219 | 0.0087 | 0.0132 |
| 235 | 0.0217 | 0.0086 | 0.0131 |
| 236 | 0.0215 | 0.0085 | 0.0130 |
| 237 | 0.0213 | 0.0085 | 0.0129 |
| 238 | 0.0211 | 0.0084 | 0.0128 |
| 239 | 0.0210 | 0.0083 | 0.0126 |
| 240 | 0.0208 | 0.0083 | 0.0125 |
| 241 | 0.0207 | 0.0082 | 0.0125 |
| 242 | 0.0205 | 0.0081 | 0.0124 |
| 243 | 0.0204 | 0.0081 | 0.0123 |
| 244 | 0.0202 | 0.0080 | 0.0122 |
| 245 | 0.0201 | 0.0080 | 0.0121 |
| 246 | 0.0199 | 0.0079 | 0.0120 |
| 247 | 0.0198 | 0.0079 | 0.0119 |
| 248 | 0.0197 | 0.0078 | 0.0119 |
| 249 | 0.0195 | 0.0078 | 0.0118 |
| 250 | 0.0194 | 0.0077 | 0.0117 |
| 251 | 0.0193 | 0.0077 | 0.0116 |
| 252 | 0.0192 | 0.0076 | 0.0116 |
| 253 | 0.0190 | 0.0076 | 0.0115 |
| 254 | 0.0189 | 0.0075 | 0.0114 |
| 255 | 0.0188 | 0.0075 | 0.0113 |
| 256 | 0.0187 | 0.0074 | 0.0113 |
| 257 | 0.0186 | 0.0074 | 0.0112 |
| 258 | 0.0185 | 0.0073 | 0.0111 |
| 259 | 0.0184 | 0.0073 | 0.0111 |
| 260 | 0.0183 | 0.0073 | 0.0110 |
| 261 | 0.0182 | 0.0072 | 0.0110 |
| 262 | 0.0181 | 0.0072 | 0.0109 |
| 263 | 0.0180 | 0.0071 | 0.0109 |
| 264 | 0.0179 | 0.0071 | 0.0108 |
| 265 | 0.0178 | 0.0071 | 0.0107 |
| 266 | 0.0177 | 0.0070 | 0.0107 |
| 267 | 0.0176 | 0.0070 | 0.0106 |
| 268 | 0.0175 | 0.0070 | 0.0106 |
| 269 | 0.0175 | 0.0069 | 0.0105 |
| 270 | 0.0174 | 0.0069 | 0.0105 |
| 271 | 0.0173 | 0.0069 | 0.0104 |
| 272 | 0.0172 | 0.0068 | 0.0104 |
| 273 | 0.0171 | 0.0068 | 0.0103 |
| 274 | 0.0171 | 0.0068 | 0.0103 |
| 275 | 0.0170 | 0.0067 | 0.0102 |
| 276 | 0.0169 | 0.0067 | 0.0102 |
| 277 | 0.0168 | 0.0067 | 0.0102 |

```
      278              0.0168           0.0067              0.0101
      279              0.0167           0.0066              0.0101
      280              0.0166           0.0066              0.0100
      281              0.0166           0.0066              0.0100
      282              0.0165           0.0065              0.0099
      283              0.0164           0.0065              0.0099
      284              0.0164           0.0065              0.0099
      285              0.0163           0.0065              0.0098
      286              0.0162           0.0064              0.0098
      287              0.0162           0.0064              0.0097
      288              0.0161           0.0064              0.0097
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      2.74(In)
      Total effective rainfall =      4.55(In)
      Peak flow rate in flood hydrograph =     64.85(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
-------------------------------------------------------------------------
  0+ 5       0.0008      0.11  Q          |         |         |         |
  0+10       0.0043      0.52  Q          |         |         |         |
  0+15       0.0149      1.53  Q          |         |         |         |
  0+20       0.0335      2.71  VQ         |         |         |         |
  0+25       0.0555      3.19  VQ         |         |         |         |
  0+30       0.0797      3.51  V Q        |         |         |         |
  0+35       0.1055      3.74  V Q        |         |         |         |
  0+40       0.1325      3.92  V Q        |         |         |         |
  0+45       0.1603      4.05  V Q        |         |         |         |
  0+50       0.1889      4.15  V Q        |         |         |         |
  0+55       0.2180      4.22  V Q        |         |         |         |
  1+ 0       0.2473      4.27  V Q        |         |         |         |
  1+ 5       0.2769      4.29  V Q        |         |         |         |
  1+10       0.3066      4.32  V Q        |         |         |         |
  1+15       0.3365      4.34  V Q        |         |         |         |
  1+20       0.3665      4.36  |VQ        |         |         |         |
  1+25       0.3967      4.38  |VQ        |         |         |         |
  1+30       0.4270      4.40  |VQ        |         |         |         |
  1+35       0.4573      4.41  |VQ        |         |         |         |
  1+40       0.4878      4.42  |VQ        |         |         |         |
  1+45       0.5183      4.43  |VQ        |         |         |         |
  1+50       0.5489      4.44  |VQ        |         |         |         |
  1+55       0.5796      4.45  |VQ        |         |         |         |
  2+ 0       0.6103      4.46  |VQ        |         |         |         |
  2+ 5       0.6411      4.47  |VQ        |         |         |         |
  2+10       0.6719      4.48  |VQ        |         |         |         |
  2+15       0.7028      4.49  | Q        |         |         |         |
  2+20       0.7338      4.50  | Q        |         |         |         |
  2+25       0.7649      4.51  | Q        |         |         |         |
  2+30       0.7960      4.52  | Q        |         |         |         |
  2+35       0.8272      4.53  | Q        |         |         |         |
  2+40       0.8584      4.54  | Q        |         |         |         |
  2+45       0.8898      4.55  | Q        |         |         |         |
  2+50       0.9212      4.56  | Q        |         |         |         |
  2+55       0.9526      4.57  | Q        |         |         |         |
  3+ 0       0.9842      4.58  | Q        |         |         |         |
  3+ 5       1.0158      4.59  | Q        |         |         |         |
  3+10       1.0475      4.60  | QV       |         |         |         |
  3+15       1.0792      4.61  | QV       |         |         |         |
  3+20       1.1110      4.62  | QV       |         |         |         |
  3+25       1.1430      4.63  | QV       |         |         |         |
  3+30       1.1749      4.64  | QV       |         |         |         |
  3+35       1.2070      4.65  | QV       |         |         |         |
  3+40       1.2391      4.67  | QV       |         |         |         |
  3+45       1.2713      4.68  | QV       |         |         |         |
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3+50       1.3036      4.69  | QV      |         |         |         |
3+55       1.3360      4.70  | QV      |         |         |         |
4+ 0       1.3685      4.71  | QV      |         |         |         |
4+ 5       1.4010      4.72  | Q V     |         |         |         |
4+10       1.4336      4.74  | Q V     |         |         |         |
4+15       1.4663      4.75  | Q V     |         |         |         |
4+20       1.4991      4.76  | Q V     |         |         |         |
4+25       1.5319      4.77  | Q V     |         |         |         |
4+30       1.5649      4.78  | Q V     |         |         |         |
4+35       1.5979      4.80  | Q V     |         |         |         |
4+40       1.6310      4.81  | Q V     |         |         |         |
4+45       1.6642      4.82  | Q V     |         |         |         |
4+50       1.6975      4.83  | Q V     |         |         |         |
4+55       1.7309      4.85  | Q V     |         |         |         |
5+ 0       1.7643      4.86  | Q  V    |         |         |         |
5+ 5       1.7979      4.87  | Q  V    |         |         |         |
5+10       1.8316      4.89  | Q  V    |         |         |         |
5+15       1.8653      4.90  | Q  V    |         |         |         |
5+20       1.8991      4.91  | Q  V    |         |         |         |
5+25       1.9331      4.93  | Q  V    |         |         |         |
5+30       1.9671      4.94  | Q  V    |         |         |         |
5+35       2.0012      4.95  | Q  V    |         |         |         |
5+40       2.0354      4.97  | Q  V    |         |         |         |
5+45       2.0697      4.98  | Q  V    |         |         |         |
5+50       2.1041      5.00  | Q   V   |         |         |         |
5+55       2.1386      5.01  | Q   V   |         |         |         |
6+ 0       2.1733      5.03  | Q   V   |         |         |         |
6+ 5       2.2080      5.04  | Q   V   |         |         |         |
6+10       2.2428      5.06  | Q   V   |         |         |         |
6+15       2.2777      5.07  | Q   V   |         |         |         |
6+20       2.3127      5.09  | Q   V   |         |         |         |
6+25       2.3479      5.10  | Q   V   |         |         |         |
6+30       2.3831      5.12  | Q   V   |         |         |         |
6+35       2.4185      5.13  | Q   V   |         |         |         |
6+40       2.4540      5.15  | Q    V  |         |         |         |
6+45       2.4895      5.17  | Q    V  |         |         |         |
6+50       2.5252      5.18  | Q    V  |         |         |         |
6+55       2.5610      5.20  | Q    V  |         |         |         |
7+ 0       2.5969      5.22  | Q    V  |         |         |         |
7+ 5       2.6330      5.23  | Q    V  |         |         |         |
7+10       2.6691      5.25  |  Q   V  |         |         |         |
7+15       2.7054      5.27  |  Q   V  |         |         |         |
7+20       2.7418      5.29  |  Q   V  |         |         |         |
7+25       2.7784      5.30  |  Q   V  |         |         |         |
7+30       2.8150      5.32  |  Q    V |         |         |         |
7+35       2.8518      5.34  |  Q    V |         |         |         |
7+40       2.8887      5.36  |  Q    V |         |         |         |
7+45       2.9257      5.38  |  Q    V |         |         |         |
7+50       2.9629      5.40  |  Q    V |         |         |         |
7+55       3.0002      5.42  |  Q    V |         |         |         |
8+ 0       3.0376      5.44  |  Q    V |         |         |         |
8+ 5       3.0752      5.46  |  Q    V |         |         |         |
8+10       3.1129      5.48  |  Q    V |         |         |         |
8+15       3.1508      5.50  |  Q     V|         |         |         |
8+20       3.1888      5.52  |  Q     V|         |         |         |
8+25       3.2269      5.54  |  Q     V|         |         |         |
8+30       3.2652      5.56  |  Q     V|         |         |         |
8+35       3.3036      5.58  |  Q     V|         |         |         |
8+40       3.3422      5.60  |  Q     V|         |         |         |
8+45       3.3810      5.63  |  Q     V|         |         |         |
8+50       3.4199      5.65  |  Q     V|         |         |         |
8+55       3.4589      5.67  |  Q     V|         |         |         |
9+ 0       3.4982      5.70  |  Q      V         |         |         |
9+ 5       3.5376      5.72  |  Q      V         |         |         |
9+10       3.5771      5.74  |  Q      V         |         |         |
9+15       3.6168      5.77  |  Q      V         |         |         |
9+20       3.6567      5.79  |  Q      V         |         |         |
9+25       3.6968      5.82  |  Q      V         |         |         |
9+30       3.7370      5.84  |  Q      V         |         |         |
9+35       3.7775      5.87  |  Q      V         |         |         |
9+40       3.8181      5.90  |  Q      V         |         |         |
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 9+45      3.8589     5.92  |  Q      |V        |         |         |
 9+50      3.8998     5.95  |  Q      |V        |         |         |
 9+55      3.9410     5.98  |  Q      |V        |         |         |
10+ 0      3.9824     6.01  |  Q      |V        |         |         |
10+ 5      4.0240     6.04  |  Q      |V        |         |         |
10+10      4.0657     6.07  |  Q      |V        |         |         |
10+15      4.1077     6.10  |  Q      |V        |         |         |
10+20      4.1499     6.13  |  Q      |V        |         |         |
10+25      4.1923     6.16  |  Q      | V       |         |         |
10+30      4.2350     6.19  |  Q      | V       |         |         |
10+35      4.2778     6.22  |  Q      | V       |         |         |
10+40      4.3209     6.26  |  Q      | V       |         |         |
10+45      4.3642     6.29  |  Q      | V       |         |         |
10+50      4.4078     6.32  |  Q      | V       |         |         |
10+55      4.4515     6.36  |  Q      | V       |         |         |
11+ 0      4.4956     6.40  |  Q      | V       |         |         |
11+ 5      4.5399     6.43  |  Q      |  V      |         |         |
11+10      4.5844     6.47  |  Q      |  V      |         |         |
11+15      4.6293     6.51  |  Q      |  V      |         |         |
11+20      4.6743     6.55  |  Q      |  V      |         |         |
11+25      4.7197     6.59  |  Q      |  V      |         |         |
11+30      4.7654     6.63  |  Q      |  V      |         |         |
11+35      4.8113     6.67  |  Q      |  V      |         |         |
11+40      4.8575     6.71  |  Q      |  V      |         |         |
11+45      4.9041     6.76  |  Q      |   V     |         |         |
11+50      4.9509     6.80  |  Q      |   V     |         |         |
11+55      4.9981     6.85  |  Q      |   V     |         |         |
12+ 0      5.0456     6.90  |  Q      |   V     |         |         |
12+ 5      5.0934     6.94  |  Q      |   V     |         |         |
12+10      5.1414     6.97  |  Q      |   V     |         |         |
12+15      5.1895     6.99  |  Q      |   V     |         |         |
12+20      5.2377     6.99  |  Q      |    V    |         |         |
12+25      5.2861     7.03  |   Q     |    V    |         |         |
12+30      5.3348     7.07  |   Q     |    V    |         |         |
12+35      5.3838     7.12  |   Q     |    V    |         |         |
12+40      5.4333     7.18  |   Q     |    V    |         |         |
12+45      5.4831     7.23  |   Q     |    V    |         |         |
12+50      5.5333     7.29  |   Q     |    V    |         |         |
12+55      5.5840     7.36  |   Q     |     V   |         |         |
13+ 0      5.6351     7.43  |   Q     |     V   |         |         |
13+ 5      5.6868     7.50  |   Q     |     V   |         |         |
13+10      5.7389     7.57  |   Q     |     V   |         |         |
13+15      5.7916     7.65  |   Q     |     V   |         |         |
13+20      5.8448     7.73  |   Q     |     V   |         |         |
13+25      5.8985     7.81  |   Q     |     V   |         |         |
13+30      5.9529     7.89  |   Q     |      V  |         |         |
13+35      6.0079     7.98  |   Q     |      V  |         |         |
13+40      6.0635     8.08  |   Q     |      V  |         |         |
13+45      6.1198     8.17  |   Q     |      V  |         |         |
13+50      6.1768     8.28  |   Q     |      V  |         |         |
13+55      6.2345     8.38  |   Q     |      V  |         |         |
14+ 0      6.2930     8.49  |   Q     |       V |         |         |
14+ 5      6.3523     8.61  |   Q     |       V |         |         |
14+10      6.4125     8.74  |   Q     |       V |         |         |
14+15      6.4735     8.87  |    Q    |       V |         |         |
14+20      6.5356     9.01  |    Q    |       V |         |         |
14+25      6.5987     9.16  |    Q    |       V |         |         |
14+30      6.6629     9.32  |    Q    |        V|         |         |
14+35      6.7282     9.48  |    Q    |        V|         |         |
14+40      6.7947     9.66  |    Q    |        V|         |         |
14+45      6.8625     9.85  |    Q    |        V|         |         |
14+50      6.9318    10.05  |    Q    |        V|         |         |
14+55      7.0025    10.27  |    Q    |         V         |         |
15+ 0      7.0749    10.51  |     Q   |         V         |         |
15+ 5      7.1491    10.77  |     Q   |         V         |         |
15+10      7.2252    11.06  |     Q   |         V         |         |
15+15      7.3035    11.37  |     Q   |          |V       |         |
15+20      7.3842    11.72  |     Q   |          |V       |         |
15+25      7.4664    11.92  |     Q   |          |V       |         |
15+30      7.5470    11.71  |     Q   |          |V       |         |
15+35      7.6196    10.54  |     Q   |          |V       |         |
```

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15+40       7.6829      9.19  |    Q    |          | V       |          |
15+45       7.7457      9.12  |    Q    |          | V       |          |
15+50       7.8114      9.54  |    Q    |          | V       |          |
15+55       7.8839     10.53  |     Q   |          | V       |          |
16+ 0       7.9700     12.50  |      Q  |          | V       |          |
16+ 5       8.1093     20.23  |         |Q         |  V      |          |
16+10       8.3542     35.55  |         |          Q   V     |          |
16+15       8.7752     61.13  |         |          |    V    |   Q      |
16+20       9.2218     64.85  |         |          |     V   |      Q   |
16+25       9.4579     34.29  |         |          Q|      V  |          |
16+30       9.6341     25.59  |         |   Q      |      V  |          |
16+35       9.7840     21.76  |         | Q        |       V |          |
16+40       9.9209     19.88  |         |Q         |       V |          |
16+45      10.0424     17.65  |         Q          |       V |          |
16+50      10.1503     15.67  |       Q |          |        V|          |
16+55      10.2466     13.97  |      Q  |          |        V|          |
17+ 0      10.3322     12.43  |      Q  |          |        V|          |
17+ 5      10.4093     11.20  |     Q   |          |        V|          |
17+10      10.4831     10.71  |     Q   |          |         V          |
17+15      10.5536     10.24  |    Q    |          |         V          |
17+20      10.6212      9.81  |    Q    |          |         V          |
17+25      10.6872      9.59  |    Q    |          |         V          |
17+30      10.7503      9.16  |    Q    |          |         V          |
17+35      10.8107      8.77  |    Q    |          |         |V         |
17+40      10.8690      8.47  |   Q     |          |         |V         |
17+45      10.9249      8.11  |   Q     |          |         |V         |
17+50      10.9795      7.92  |   Q     |          |         |V         |
17+55      11.0329      7.75  |   Q     |          |         |V         |
18+ 0      11.0852      7.60  |   Q     |          |         |V         |
18+ 5      11.1365      7.45  |   Q     |          |         | V        |
18+10      11.1869      7.33  |   Q     |          |         | V        |
18+15      11.2367      7.24  |   Q     |          |         | V        |
18+20      11.2861      7.16  |   Q     |          |         | V        |
18+25      11.3347      7.07  |   Q     |          |         | V        |
18+30      11.3828      6.97  |  Q      |          |         | V        |
18+35      11.4301      6.88  |  Q      |          |         | V        |
18+40      11.4769      6.79  |  Q      |          |         |  V       |
18+45      11.5231      6.71  |  Q      |          |         |  V       |
18+50      11.5687      6.62  |  Q      |          |         |  V       |
18+55      11.6138      6.54  |  Q      |          |         |  V       |
19+ 0      11.6583      6.47  |  Q      |          |         |  V       |
19+ 5      11.7023      6.39  |  Q      |          |         |  V       |
19+10      11.7459      6.32  |  Q      |          |         |  V       |
19+15      11.7890      6.25  |  Q      |          |         |  V       |
19+20      11.8316      6.19  |  Q      |          |         |   V      |
19+25      11.8738      6.13  |  Q      |          |         |   V      |
19+30      11.9155      6.06  |  Q      |          |         |   V      |
19+35      11.9569      6.01  |  Q      |          |         |   V      |
19+40      11.9979      5.95  |  Q      |          |         |   V      |
19+45      12.0385      5.90  |  Q      |          |         |   V      |
19+50      12.0787      5.84  |  Q      |          |         |   V      |
19+55      12.1186      5.79  |  Q      |          |         |   V      |
20+ 0      12.1581      5.74  |  Q      |          |         |   V      |
20+ 5      12.1974      5.69  |  Q      |          |         |    V     |
20+10      12.2362      5.65  |  Q      |          |         |    V     |
20+15      12.2748      5.60  |  Q      |          |         |    V     |
20+20      12.3131      5.56  |  Q      |          |         |    V     |
20+25      12.3511      5.52  |  Q      |          |         |    V     |
20+30      12.3888      5.47  |  Q      |          |         |    V     |
20+35      12.4262      5.43  |  Q      |          |         |    V     |
20+40      12.4634      5.39  |  Q      |          |         |    V     |
20+45      12.5003      5.36  |  Q      |          |         |    V     |
20+50      12.5369      5.32  |  Q      |          |         |     V    |
20+55      12.5733      5.28  |  Q      |          |         |     V    |
21+ 0      12.6094      5.25  | Q       |          |         |     V    |
21+ 5      12.6453      5.21  | Q       |          |         |     V    |
21+10      12.6810      5.18  | Q       |          |         |     V    |
21+15      12.7165      5.15  | Q       |          |         |     V    |
21+20      12.7517      5.12  | Q       |          |         |     V    |
21+25      12.7867      5.08  | Q       |          |         |     V    |
21+30      12.8215      5.05  | Q       |          |         |     V    |
```

```
   21+35      12.8561      5.02  | Q       |         |         |      V  |
   21+40      12.8905      4.99  | Q       |         |         |      V  |
   21+45      12.9247      4.97  | Q       |         |         |      V  |
   21+50      12.9587      4.94  | Q       |         |         |      V  |
   21+55      12.9926      4.91  | Q       |         |         |      V  |
   22+ 0      13.0262      4.88  | Q       |         |         |      V  |
   22+ 5      13.0597      4.86  | Q       |         |         |      V  |
   22+10      13.0929      4.83  | Q       |         |         |      V  |
   22+15      13.1260      4.81  | Q       |         |         |      V  |
   22+20      13.1590      4.78  | Q       |         |         |      V  |
   22+25      13.1917      4.76  | Q       |         |         |      V  |
   22+30      13.2243      4.73  | Q       |         |         |       V |
   22+35      13.2568      4.71  | Q       |         |         |       V |
   22+40      13.2890      4.69  | Q       |         |         |       V |
   22+45      13.3212      4.66  | Q       |         |         |       V |
   22+50      13.3531      4.64  | Q       |         |         |       V |
   22+55      13.3850      4.62  | Q       |         |         |       V |
   23+ 0      13.4166      4.60  | Q       |         |         |       V |
   23+ 5      13.4482      4.58  | Q       |         |         |       V |
   23+10      13.4795      4.56  | Q       |         |         |       V |
   23+15      13.5108      4.54  | Q       |         |         |       V |
   23+20      13.5419      4.52  | Q       |         |         |       V |
   23+25      13.5729      4.50  | Q       |         |         |        V|
   23+30      13.6037      4.48  | Q       |         |         |        V|
   23+35      13.6344      4.46  | Q       |         |         |        V|
   23+40      13.6650      4.44  | Q       |         |         |        V|
   23+45      13.6954      4.42  | Q       |         |         |        V|
   23+50      13.7258      4.40  | Q       |         |         |        V|
   23+55      13.7560      4.39  | Q       |         |         |        V|
   24+ 0      13.7860      4.37  | Q       |         |         |        V|
   24+ 5      13.8152      4.24  | Q       |         |         |        V|
   24+10      13.8415      3.82  | Q       |         |         |        V|
   24+15      13.8607      2.79  |Q        |         |         |        V|
   24+20      13.8718      1.61  Q         |         |         |        V|
   24+25      13.8795      1.12  Q         |         |         |        V|
   24+30      13.8851      0.80  Q         |         |         |        V|
   24+35      13.8890      0.58  Q         |         |         |        V|
   24+40      13.8919      0.41  Q         |         |         |        V|
   24+45      13.8938      0.28  Q         |         |         |        V|
   24+50      13.8951      0.19  Q         |         |         |        V|
   24+55      13.8960      0.13  Q         |         |         |        V|
   25+ 0      13.8966      0.09  Q         |         |         |        V|
   25+ 5      13.8971      0.07  Q         |         |         |        V|
   25+10      13.8974      0.05  Q         |         |         |        V|
   25+15      13.8977      0.04  Q         |         |         |        V|
   25+20      13.8979      0.03  Q         |         |         |        V|
   25+25      13.8980      0.02  Q         |         |         |        V|
   25+30      13.8981      0.01  Q         |         |         |        V|
   25+35      13.8981      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'E' – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/17/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'E'
25 YEAR 24 HOUR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            36.66            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            36.66           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            36.66           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 74.9      74.9         36.66      1.000     0.455    1.000    0.455

Area-averaged adjusted loss rate Fm (In/Hr) =  0.455

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 36.66 | 1.000 | 74.9 | 74.9 | 3.35 | 0.665 |

Area-averaged catchment yield fraction, Y = 0.665
Area-averaged low loss fraction, Yb = 0.335
User entry of time of concentration = 0.293 (hours)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

Watershed area = 36.66(Ac.)
Catchment Lag time = 0.234 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.5518
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.455(In/Hr)
Average low loss rate fraction (Yb) = 0.335 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 36.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.568(In)
30-minute factor = 0.998 Adjusted rainfall = 0.972(In)
1-hour factor = 0.998 Adjusted rainfall = 1.197(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

---

U n i t H y d r o g r a p h

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| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 443.36 (CFS)) | |
| 1 | 2.675 | 11.860 |
| 2 | 12.024 | 41.451 |
| 3 | 35.644 | 104.718 |
| 4 | 63.026 | 121.402 |
| 5 | 74.204 | 49.558 |
| 6 | 81.479 | 32.252 |
| 7 | 86.684 | 23.079 |
| 8 | 90.577 | 17.258 |
| 9 | 93.485 | 12.896 |
| 10 | 95.602 | 9.386 |
| 11 | 97.088 | 6.587 |
| 12 | 97.988 | 3.990 |
| 13 | 98.429 | 1.953 |
| 14 | 98.799 | 1.644 |
| 15 | 99.093 | 1.300 |
| 16 | 99.316 | 0.991 |
| 17 | 99.592 | 1.221 |
| 18 | 99.789 | 0.873 |
| 19 | 99.913 | 0.549 |
| 20 | 100.000 | 0.388 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5679 | 0.5679 |
| 2 | 0.6992 | 0.1313 |
| 3 | 0.7897 | 0.0904 |
| 4 | 0.8608 | 0.0712 |
| 5 | 0.9204 | 0.0596 |
| 6 | 0.9722 | 0.0517 |

| | | |
|---|---|---|
| 7 | 1.0182 | 0.0460 |
| 8 | 1.0598 | 0.0416 |
| 9 | 1.0979 | 0.0381 |
| 10 | 1.1332 | 0.0353 |
| 11 | 1.1661 | 0.0329 |
| 12 | 1.1969 | 0.0308 |
| 13 | 1.2575 | 0.0606 |
| 14 | 1.3164 | 0.0589 |
| 15 | 1.3736 | 0.0573 |
| 16 | 1.4295 | 0.0558 |
| 17 | 1.4840 | 0.0545 |
| 18 | 1.5372 | 0.0533 |
| 19 | 1.5894 | 0.0522 |
| 20 | 1.6405 | 0.0511 |
| 21 | 1.6907 | 0.0502 |
| 22 | 1.7399 | 0.0492 |
| 23 | 1.7883 | 0.0484 |
| 24 | 1.8359 | 0.0476 |
| 25 | 1.8827 | 0.0468 |
| 26 | 1.9289 | 0.0461 |
| 27 | 1.9743 | 0.0455 |
| 28 | 2.0191 | 0.0448 |
| 29 | 2.0633 | 0.0442 |
| 30 | 2.1070 | 0.0436 |
| 31 | 2.1500 | 0.0431 |
| 32 | 2.1926 | 0.0425 |
| 33 | 2.2346 | 0.0420 |
| 34 | 2.2762 | 0.0416 |
| 35 | 2.3173 | 0.0411 |
| 36 | 2.3579 | 0.0406 |
| 37 | 2.3980 | 0.0401 |
| 38 | 2.4378 | 0.0397 |
| 39 | 2.4771 | 0.0393 |
| 40 | 2.5160 | 0.0389 |
| 41 | 2.5546 | 0.0386 |
| 42 | 2.5928 | 0.0382 |
| 43 | 2.6306 | 0.0379 |
| 44 | 2.6681 | 0.0375 |
| 45 | 2.7053 | 0.0372 |
| 46 | 2.7422 | 0.0369 |
| 47 | 2.7788 | 0.0366 |
| 48 | 2.8150 | 0.0363 |
| 49 | 2.8510 | 0.0360 |
| 50 | 2.8867 | 0.0357 |
| 51 | 2.9221 | 0.0354 |
| 52 | 2.9573 | 0.0352 |
| 53 | 2.9922 | 0.0349 |
| 54 | 3.0269 | 0.0346 |
| 55 | 3.0613 | 0.0344 |
| 56 | 3.0954 | 0.0342 |
| 57 | 3.1294 | 0.0339 |
| 58 | 3.1631 | 0.0337 |
| 59 | 3.1965 | 0.0335 |
| 60 | 3.2298 | 0.0333 |
| 61 | 3.2629 | 0.0331 |
| 62 | 3.2957 | 0.0328 |
| 63 | 3.3283 | 0.0326 |
| 64 | 3.3608 | 0.0324 |
| 65 | 3.3930 | 0.0322 |
| 66 | 3.4251 | 0.0321 |
| 67 | 3.4570 | 0.0319 |
| 68 | 3.4887 | 0.0317 |
| 69 | 3.5202 | 0.0315 |
| 70 | 3.5515 | 0.0313 |
| 71 | 3.5827 | 0.0312 |
| 72 | 3.6137 | 0.0310 |
| 73 | 3.6473 | 0.0336 |
| 74 | 3.6807 | 0.0335 |
| 75 | 3.7141 | 0.0333 |
| 76 | 3.7472 | 0.0332 |
| 77 | 3.7803 | 0.0330 |

| | | |
|---|---|---|
| 78 | 3.8132 | 0.0329 |
| 79 | 3.8459 | 0.0327 |
| 80 | 3.8785 | 0.0326 |
| 81 | 3.9110 | 0.0325 |
| 82 | 3.9433 | 0.0323 |
| 83 | 3.9756 | 0.0322 |
| 84 | 4.0077 | 0.0321 |
| 85 | 4.0396 | 0.0320 |
| 86 | 4.0715 | 0.0318 |
| 87 | 4.1032 | 0.0317 |
| 88 | 4.1348 | 0.0316 |
| 89 | 4.1663 | 0.0315 |
| 90 | 4.1976 | 0.0314 |
| 91 | 4.2289 | 0.0313 |
| 92 | 4.2600 | 0.0311 |
| 93 | 4.2911 | 0.0310 |
| 94 | 4.3220 | 0.0309 |
| 95 | 4.3528 | 0.0308 |
| 96 | 4.3835 | 0.0307 |
| 97 | 4.4141 | 0.0306 |
| 98 | 4.4446 | 0.0305 |
| 99 | 4.4750 | 0.0304 |
| 100 | 4.5053 | 0.0303 |
| 101 | 4.5355 | 0.0302 |
| 102 | 4.5656 | 0.0301 |
| 103 | 4.5956 | 0.0300 |
| 104 | 4.6255 | 0.0299 |
| 105 | 4.6553 | 0.0298 |
| 106 | 4.6850 | 0.0297 |
| 107 | 4.7146 | 0.0296 |
| 108 | 4.7442 | 0.0295 |
| 109 | 4.7736 | 0.0294 |
| 110 | 4.8030 | 0.0294 |
| 111 | 4.8322 | 0.0293 |
| 112 | 4.8614 | 0.0292 |
| 113 | 4.8905 | 0.0291 |
| 114 | 4.9195 | 0.0290 |
| 115 | 4.9484 | 0.0289 |
| 116 | 4.9773 | 0.0288 |
| 117 | 5.0061 | 0.0288 |
| 118 | 5.0347 | 0.0287 |
| 119 | 5.0633 | 0.0286 |
| 120 | 5.0919 | 0.0285 |
| 121 | 5.1203 | 0.0284 |
| 122 | 5.1487 | 0.0284 |
| 123 | 5.1770 | 0.0283 |
| 124 | 5.2052 | 0.0282 |
| 125 | 5.2333 | 0.0281 |
| 126 | 5.2614 | 0.0281 |
| 127 | 5.2894 | 0.0280 |
| 128 | 5.3173 | 0.0279 |
| 129 | 5.3452 | 0.0279 |
| 130 | 5.3730 | 0.0278 |
| 131 | 5.4007 | 0.0277 |
| 132 | 5.4283 | 0.0276 |
| 133 | 5.4559 | 0.0276 |
| 134 | 5.4834 | 0.0275 |
| 135 | 5.5108 | 0.0274 |
| 136 | 5.5382 | 0.0274 |
| 137 | 5.5655 | 0.0273 |
| 138 | 5.5927 | 0.0272 |
| 139 | 5.6199 | 0.0272 |
| 140 | 5.6470 | 0.0271 |
| 141 | 5.6741 | 0.0270 |
| 142 | 5.7010 | 0.0270 |
| 143 | 5.7280 | 0.0269 |
| 144 | 5.7548 | 0.0269 |
| 145 | 5.7816 | 0.0268 |
| 146 | 5.8084 | 0.0267 |
| 147 | 5.8350 | 0.0267 |
| 148 | 5.8616 | 0.0266 |

| | | |
|---|---|---|
| 149 | 5.8882 | 0.0266 |
| 150 | 5.9147 | 0.0265 |
| 151 | 5.9411 | 0.0264 |
| 152 | 5.9675 | 0.0264 |
| 153 | 5.9939 | 0.0263 |
| 154 | 6.0201 | 0.0263 |
| 155 | 6.0463 | 0.0262 |
| 156 | 6.0725 | 0.0262 |
| 157 | 6.0986 | 0.0261 |
| 158 | 6.1247 | 0.0260 |
| 159 | 6.1507 | 0.0260 |
| 160 | 6.1766 | 0.0259 |
| 161 | 6.2025 | 0.0259 |
| 162 | 6.2283 | 0.0258 |
| 163 | 6.2541 | 0.0258 |
| 164 | 6.2798 | 0.0257 |
| 165 | 6.3055 | 0.0257 |
| 166 | 6.3311 | 0.0256 |
| 167 | 6.3567 | 0.0256 |
| 168 | 6.3822 | 0.0255 |
| 169 | 6.4077 | 0.0255 |
| 170 | 6.4332 | 0.0254 |
| 171 | 6.4585 | 0.0254 |
| 172 | 6.4839 | 0.0253 |
| 173 | 6.5091 | 0.0253 |
| 174 | 6.5344 | 0.0252 |
| 175 | 6.5596 | 0.0252 |
| 176 | 6.5847 | 0.0251 |
| 177 | 6.6098 | 0.0251 |
| 178 | 6.6348 | 0.0250 |
| 179 | 6.6598 | 0.0250 |
| 180 | 6.6848 | 0.0250 |
| 181 | 6.7097 | 0.0249 |
| 182 | 6.7346 | 0.0249 |
| 183 | 6.7594 | 0.0248 |
| 184 | 6.7842 | 0.0248 |
| 185 | 6.8089 | 0.0247 |
| 186 | 6.8336 | 0.0247 |
| 187 | 6.8582 | 0.0246 |
| 188 | 6.8828 | 0.0246 |
| 189 | 6.9074 | 0.0246 |
| 190 | 6.9319 | 0.0245 |
| 191 | 6.9564 | 0.0245 |
| 192 | 6.9808 | 0.0244 |
| 193 | 7.0052 | 0.0244 |
| 194 | 7.0295 | 0.0243 |
| 195 | 7.0538 | 0.0243 |
| 196 | 7.0781 | 0.0243 |
| 197 | 7.1023 | 0.0242 |
| 198 | 7.1265 | 0.0242 |
| 199 | 7.1506 | 0.0241 |
| 200 | 7.1747 | 0.0241 |
| 201 | 7.1988 | 0.0241 |
| 202 | 7.2228 | 0.0240 |
| 203 | 7.2468 | 0.0240 |
| 204 | 7.2707 | 0.0239 |
| 205 | 7.2947 | 0.0239 |
| 206 | 7.3185 | 0.0239 |
| 207 | 7.3423 | 0.0238 |
| 208 | 7.3661 | 0.0238 |
| 209 | 7.3899 | 0.0238 |
| 210 | 7.4136 | 0.0237 |
| 211 | 7.4373 | 0.0237 |
| 212 | 7.4609 | 0.0236 |
| 213 | 7.4845 | 0.0236 |
| 214 | 7.5081 | 0.0236 |
| 215 | 7.5317 | 0.0235 |
| 216 | 7.5551 | 0.0235 |
| 217 | 7.5786 | 0.0235 |
| 218 | 7.6020 | 0.0234 |
| 219 | 7.6254 | 0.0234 |

| | | |
|---|---|---|
| 220 | 7.6488 | 0.0234 |
| 221 | 7.6721 | 0.0233 |
| 222 | 7.6954 | 0.0233 |
| 223 | 7.7187 | 0.0233 |
| 224 | 7.7419 | 0.0232 |
| 225 | 7.7651 | 0.0232 |
| 226 | 7.7882 | 0.0232 |
| 227 | 7.8113 | 0.0231 |
| 228 | 7.8344 | 0.0231 |
| 229 | 7.8575 | 0.0231 |
| 230 | 7.8805 | 0.0230 |
| 231 | 7.9035 | 0.0230 |
| 232 | 7.9264 | 0.0230 |
| 233 | 7.9493 | 0.0229 |
| 234 | 7.9722 | 0.0229 |
| 235 | 7.9951 | 0.0229 |
| 236 | 8.0179 | 0.0228 |
| 237 | 8.0407 | 0.0228 |
| 238 | 8.0634 | 0.0228 |
| 239 | 8.0862 | 0.0227 |
| 240 | 8.1089 | 0.0227 |
| 241 | 8.1315 | 0.0227 |
| 242 | 8.1542 | 0.0226 |
| 243 | 8.1768 | 0.0226 |
| 244 | 8.1994 | 0.0226 |
| 245 | 8.2219 | 0.0225 |
| 246 | 8.2444 | 0.0225 |
| 247 | 8.2669 | 0.0225 |
| 248 | 8.2893 | 0.0225 |
| 249 | 8.3118 | 0.0224 |
| 250 | 8.3342 | 0.0224 |
| 251 | 8.3565 | 0.0224 |
| 252 | 8.3789 | 0.0223 |
| 253 | 8.4012 | 0.0223 |
| 254 | 8.4234 | 0.0223 |
| 255 | 8.4457 | 0.0222 |
| 256 | 8.4679 | 0.0222 |
| 257 | 8.4901 | 0.0222 |
| 258 | 8.5123 | 0.0222 |
| 259 | 8.5344 | 0.0221 |
| 260 | 8.5565 | 0.0221 |
| 261 | 8.5786 | 0.0221 |
| 262 | 8.6006 | 0.0221 |
| 263 | 8.6227 | 0.0220 |
| 264 | 8.6447 | 0.0220 |
| 265 | 8.6666 | 0.0220 |
| 266 | 8.6886 | 0.0219 |
| 267 | 8.7105 | 0.0219 |
| 268 | 8.7324 | 0.0219 |
| 269 | 8.7542 | 0.0219 |
| 270 | 8.7761 | 0.0218 |
| 271 | 8.7979 | 0.0218 |
| 272 | 8.8196 | 0.0218 |
| 273 | 8.8414 | 0.0218 |
| 274 | 8.8631 | 0.0217 |
| 275 | 8.8848 | 0.0217 |
| 276 | 8.9065 | 0.0217 |
| 277 | 8.9282 | 0.0217 |
| 278 | 8.9498 | 0.0216 |
| 279 | 8.9714 | 0.0216 |
| 280 | 8.9930 | 0.0216 |
| 281 | 9.0145 | 0.0215 |
| 282 | 9.0360 | 0.0215 |
| 283 | 9.0575 | 0.0215 |
| 284 | 9.0790 | 0.0215 |
| 285 | 9.1004 | 0.0214 |
| 286 | 9.1219 | 0.0214 |
| 287 | 9.1433 | 0.0214 |
| 288 | 9.1646 | 0.0214 |

| Unit | Unit | Unit | Effective |
|---|---|---|---|

| Period (number) | Rainfall (In) | Soil-Loss (In) | Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0072 | 0.0142 |
| 2 | 0.0214 | 0.0072 | 0.0142 |
| 3 | 0.0214 | 0.0072 | 0.0143 |
| 4 | 0.0215 | 0.0072 | 0.0143 |
| 5 | 0.0215 | 0.0072 | 0.0143 |
| 6 | 0.0215 | 0.0072 | 0.0143 |
| 7 | 0.0216 | 0.0072 | 0.0144 |
| 8 | 0.0216 | 0.0073 | 0.0144 |
| 9 | 0.0217 | 0.0073 | 0.0144 |
| 10 | 0.0217 | 0.0073 | 0.0144 |
| 11 | 0.0218 | 0.0073 | 0.0145 |
| 12 | 0.0218 | 0.0073 | 0.0145 |
| 13 | 0.0218 | 0.0073 | 0.0145 |
| 14 | 0.0219 | 0.0073 | 0.0145 |
| 15 | 0.0219 | 0.0073 | 0.0146 |
| 16 | 0.0219 | 0.0074 | 0.0146 |
| 17 | 0.0220 | 0.0074 | 0.0146 |
| 18 | 0.0220 | 0.0074 | 0.0146 |
| 19 | 0.0221 | 0.0074 | 0.0147 |
| 20 | 0.0221 | 0.0074 | 0.0147 |
| 21 | 0.0222 | 0.0074 | 0.0147 |
| 22 | 0.0222 | 0.0074 | 0.0147 |
| 23 | 0.0222 | 0.0075 | 0.0148 |
| 24 | 0.0223 | 0.0075 | 0.0148 |
| 25 | 0.0223 | 0.0075 | 0.0148 |
| 26 | 0.0224 | 0.0075 | 0.0149 |
| 27 | 0.0224 | 0.0075 | 0.0149 |
| 28 | 0.0225 | 0.0075 | 0.0149 |
| 29 | 0.0225 | 0.0075 | 0.0150 |
| 30 | 0.0225 | 0.0076 | 0.0150 |
| 31 | 0.0226 | 0.0076 | 0.0150 |
| 32 | 0.0226 | 0.0076 | 0.0150 |
| 33 | 0.0227 | 0.0076 | 0.0151 |
| 34 | 0.0227 | 0.0076 | 0.0151 |
| 35 | 0.0228 | 0.0076 | 0.0151 |
| 36 | 0.0228 | 0.0077 | 0.0152 |
| 37 | 0.0229 | 0.0077 | 0.0152 |
| 38 | 0.0229 | 0.0077 | 0.0152 |
| 39 | 0.0230 | 0.0077 | 0.0153 |
| 40 | 0.0230 | 0.0077 | 0.0153 |
| 41 | 0.0231 | 0.0077 | 0.0153 |
| 42 | 0.0231 | 0.0078 | 0.0154 |
| 43 | 0.0232 | 0.0078 | 0.0154 |
| 44 | 0.0232 | 0.0078 | 0.0154 |
| 45 | 0.0233 | 0.0078 | 0.0155 |
| 46 | 0.0233 | 0.0078 | 0.0155 |
| 47 | 0.0234 | 0.0078 | 0.0155 |
| 48 | 0.0234 | 0.0079 | 0.0156 |
| 49 | 0.0235 | 0.0079 | 0.0156 |
| 50 | 0.0235 | 0.0079 | 0.0156 |
| 51 | 0.0236 | 0.0079 | 0.0157 |
| 52 | 0.0236 | 0.0079 | 0.0157 |
| 53 | 0.0237 | 0.0080 | 0.0158 |
| 54 | 0.0238 | 0.0080 | 0.0158 |
| 55 | 0.0238 | 0.0080 | 0.0158 |
| 56 | 0.0239 | 0.0080 | 0.0159 |
| 57 | 0.0239 | 0.0080 | 0.0159 |
| 58 | 0.0240 | 0.0080 | 0.0159 |
| 59 | 0.0241 | 0.0081 | 0.0160 |
| 60 | 0.0241 | 0.0081 | 0.0160 |
| 61 | 0.0242 | 0.0081 | 0.0161 |
| 62 | 0.0242 | 0.0081 | 0.0161 |
| 63 | 0.0243 | 0.0081 | 0.0162 |
| 64 | 0.0243 | 0.0082 | 0.0162 |
| 65 | 0.0244 | 0.0082 | 0.0162 |
| 66 | 0.0245 | 0.0082 | 0.0163 |
| 67 | 0.0246 | 0.0082 | 0.0163 |
| 68 | 0.0246 | 0.0082 | 0.0163 |

| | | | |
|---|---|---|---|
| 69 | 0.0247 | 0.0083 | 0.0164 |
| 70 | 0.0247 | 0.0083 | 0.0164 |
| 71 | 0.0248 | 0.0083 | 0.0165 |
| 72 | 0.0249 | 0.0083 | 0.0165 |
| 73 | 0.0250 | 0.0084 | 0.0166 |
| 74 | 0.0250 | 0.0084 | 0.0166 |
| 75 | 0.0251 | 0.0084 | 0.0167 |
| 76 | 0.0251 | 0.0084 | 0.0167 |
| 77 | 0.0252 | 0.0085 | 0.0168 |
| 78 | 0.0253 | 0.0085 | 0.0168 |
| 79 | 0.0254 | 0.0085 | 0.0169 |
| 80 | 0.0254 | 0.0085 | 0.0169 |
| 81 | 0.0255 | 0.0086 | 0.0170 |
| 82 | 0.0256 | 0.0086 | 0.0170 |
| 83 | 0.0257 | 0.0086 | 0.0171 |
| 84 | 0.0257 | 0.0086 | 0.0171 |
| 85 | 0.0258 | 0.0087 | 0.0172 |
| 86 | 0.0259 | 0.0087 | 0.0172 |
| 87 | 0.0260 | 0.0087 | 0.0173 |
| 88 | 0.0260 | 0.0087 | 0.0173 |
| 89 | 0.0262 | 0.0088 | 0.0174 |
| 90 | 0.0262 | 0.0088 | 0.0174 |
| 91 | 0.0263 | 0.0088 | 0.0175 |
| 92 | 0.0264 | 0.0088 | 0.0175 |
| 93 | 0.0265 | 0.0089 | 0.0176 |
| 94 | 0.0266 | 0.0089 | 0.0177 |
| 95 | 0.0267 | 0.0089 | 0.0177 |
| 96 | 0.0267 | 0.0090 | 0.0178 |
| 97 | 0.0269 | 0.0090 | 0.0179 |
| 98 | 0.0269 | 0.0090 | 0.0179 |
| 99 | 0.0270 | 0.0091 | 0.0180 |
| 100 | 0.0271 | 0.0091 | 0.0180 |
| 101 | 0.0272 | 0.0091 | 0.0181 |
| 102 | 0.0273 | 0.0092 | 0.0181 |
| 103 | 0.0274 | 0.0092 | 0.0182 |
| 104 | 0.0275 | 0.0092 | 0.0183 |
| 105 | 0.0276 | 0.0093 | 0.0184 |
| 106 | 0.0277 | 0.0093 | 0.0184 |
| 107 | 0.0279 | 0.0093 | 0.0185 |
| 108 | 0.0279 | 0.0094 | 0.0186 |
| 109 | 0.0281 | 0.0094 | 0.0187 |
| 110 | 0.0281 | 0.0094 | 0.0187 |
| 111 | 0.0283 | 0.0095 | 0.0188 |
| 112 | 0.0284 | 0.0095 | 0.0189 |
| 113 | 0.0285 | 0.0096 | 0.0190 |
| 114 | 0.0286 | 0.0096 | 0.0190 |
| 115 | 0.0288 | 0.0096 | 0.0191 |
| 116 | 0.0288 | 0.0097 | 0.0192 |
| 117 | 0.0290 | 0.0097 | 0.0193 |
| 118 | 0.0291 | 0.0098 | 0.0193 |
| 119 | 0.0293 | 0.0098 | 0.0195 |
| 120 | 0.0294 | 0.0098 | 0.0195 |
| 121 | 0.0295 | 0.0099 | 0.0196 |
| 122 | 0.0296 | 0.0099 | 0.0197 |
| 123 | 0.0298 | 0.0100 | 0.0198 |
| 124 | 0.0299 | 0.0100 | 0.0199 |
| 125 | 0.0301 | 0.0101 | 0.0200 |
| 126 | 0.0302 | 0.0101 | 0.0201 |
| 127 | 0.0304 | 0.0102 | 0.0202 |
| 128 | 0.0305 | 0.0102 | 0.0203 |
| 129 | 0.0307 | 0.0103 | 0.0204 |
| 130 | 0.0308 | 0.0103 | 0.0205 |
| 131 | 0.0310 | 0.0104 | 0.0206 |
| 132 | 0.0311 | 0.0104 | 0.0207 |
| 133 | 0.0314 | 0.0105 | 0.0208 |
| 134 | 0.0315 | 0.0106 | 0.0209 |
| 135 | 0.0317 | 0.0106 | 0.0211 |
| 136 | 0.0318 | 0.0107 | 0.0212 |
| 137 | 0.0321 | 0.0108 | 0.0213 |
| 138 | 0.0322 | 0.0108 | 0.0214 |
| 139 | 0.0325 | 0.0109 | 0.0216 |

| | | | |
|---|---|---|---|
| 140 | 0.0326 | 0.0109 | 0.0217 |
| 141 | 0.0329 | 0.0110 | 0.0219 |
| 142 | 0.0330 | 0.0111 | 0.0220 |
| 143 | 0.0333 | 0.0112 | 0.0221 |
| 144 | 0.0335 | 0.0112 | 0.0222 |
| 145 | 0.0310 | 0.0104 | 0.0206 |
| 146 | 0.0312 | 0.0105 | 0.0207 |
| 147 | 0.0315 | 0.0106 | 0.0209 |
| 148 | 0.0317 | 0.0106 | 0.0211 |
| 149 | 0.0321 | 0.0108 | 0.0213 |
| 150 | 0.0322 | 0.0108 | 0.0214 |
| 151 | 0.0326 | 0.0109 | 0.0217 |
| 152 | 0.0328 | 0.0110 | 0.0218 |
| 153 | 0.0333 | 0.0112 | 0.0221 |
| 154 | 0.0335 | 0.0112 | 0.0223 |
| 155 | 0.0339 | 0.0114 | 0.0226 |
| 156 | 0.0342 | 0.0115 | 0.0227 |
| 157 | 0.0346 | 0.0116 | 0.0230 |
| 158 | 0.0349 | 0.0117 | 0.0232 |
| 159 | 0.0354 | 0.0119 | 0.0235 |
| 160 | 0.0357 | 0.0120 | 0.0237 |
| 161 | 0.0363 | 0.0122 | 0.0241 |
| 162 | 0.0366 | 0.0123 | 0.0243 |
| 163 | 0.0372 | 0.0125 | 0.0247 |
| 164 | 0.0375 | 0.0126 | 0.0249 |
| 165 | 0.0382 | 0.0128 | 0.0254 |
| 166 | 0.0386 | 0.0129 | 0.0256 |
| 167 | 0.0393 | 0.0132 | 0.0261 |
| 168 | 0.0397 | 0.0133 | 0.0264 |
| 169 | 0.0406 | 0.0136 | 0.0270 |
| 170 | 0.0411 | 0.0138 | 0.0273 |
| 171 | 0.0420 | 0.0141 | 0.0279 |
| 172 | 0.0425 | 0.0143 | 0.0283 |
| 173 | 0.0436 | 0.0146 | 0.0290 |
| 174 | 0.0442 | 0.0148 | 0.0294 |
| 175 | 0.0455 | 0.0152 | 0.0302 |
| 176 | 0.0461 | 0.0155 | 0.0307 |
| 177 | 0.0476 | 0.0160 | 0.0316 |
| 178 | 0.0484 | 0.0162 | 0.0322 |
| 179 | 0.0502 | 0.0168 | 0.0333 |
| 180 | 0.0511 | 0.0171 | 0.0340 |
| 181 | 0.0533 | 0.0179 | 0.0354 |
| 182 | 0.0545 | 0.0183 | 0.0362 |
| 183 | 0.0573 | 0.0192 | 0.0381 |
| 184 | 0.0589 | 0.0197 | 0.0391 |
| 185 | 0.0308 | 0.0103 | 0.0205 |
| 186 | 0.0329 | 0.0110 | 0.0218 |
| 187 | 0.0381 | 0.0128 | 0.0253 |
| 188 | 0.0416 | 0.0140 | 0.0277 |
| 189 | 0.0517 | 0.0174 | 0.0344 |
| 190 | 0.0596 | 0.0200 | 0.0396 |
| 191 | 0.0904 | 0.0303 | 0.0601 |
| 192 | 0.1313 | 0.0379 | 0.0934 |
| 193 | 0.5679 | 0.0379 | 0.5301 |
| 194 | 0.0712 | 0.0239 | 0.0473 |
| 195 | 0.0460 | 0.0154 | 0.0306 |
| 196 | 0.0353 | 0.0118 | 0.0234 |
| 197 | 0.0606 | 0.0203 | 0.0403 |
| 198 | 0.0558 | 0.0187 | 0.0371 |
| 199 | 0.0522 | 0.0175 | 0.0347 |
| 200 | 0.0492 | 0.0165 | 0.0327 |
| 201 | 0.0468 | 0.0157 | 0.0311 |
| 202 | 0.0448 | 0.0150 | 0.0298 |
| 203 | 0.0431 | 0.0144 | 0.0286 |
| 204 | 0.0416 | 0.0139 | 0.0276 |
| 205 | 0.0401 | 0.0135 | 0.0267 |
| 206 | 0.0389 | 0.0131 | 0.0259 |
| 207 | 0.0379 | 0.0127 | 0.0252 |
| 208 | 0.0369 | 0.0124 | 0.0245 |
| 209 | 0.0360 | 0.0121 | 0.0239 |
| 210 | 0.0352 | 0.0118 | 0.0234 |

| | | | |
|---|---|---|---|
| 211 | 0.0344 | 0.0115 | 0.0229 |
| 212 | 0.0337 | 0.0113 | 0.0224 |
| 213 | 0.0331 | 0.0111 | 0.0220 |
| 214 | 0.0324 | 0.0109 | 0.0216 |
| 215 | 0.0319 | 0.0107 | 0.0212 |
| 216 | 0.0313 | 0.0105 | 0.0208 |
| 217 | 0.0336 | 0.0113 | 0.0223 |
| 218 | 0.0332 | 0.0111 | 0.0220 |
| 219 | 0.0327 | 0.0110 | 0.0218 |
| 220 | 0.0323 | 0.0108 | 0.0215 |
| 221 | 0.0320 | 0.0107 | 0.0212 |
| 222 | 0.0316 | 0.0106 | 0.0210 |
| 223 | 0.0313 | 0.0105 | 0.0208 |
| 224 | 0.0309 | 0.0104 | 0.0206 |
| 225 | 0.0306 | 0.0103 | 0.0203 |
| 226 | 0.0303 | 0.0102 | 0.0201 |
| 227 | 0.0300 | 0.0101 | 0.0199 |
| 228 | 0.0297 | 0.0100 | 0.0198 |
| 229 | 0.0294 | 0.0099 | 0.0196 |
| 230 | 0.0292 | 0.0098 | 0.0194 |
| 231 | 0.0289 | 0.0097 | 0.0192 |
| 232 | 0.0287 | 0.0096 | 0.0191 |
| 233 | 0.0284 | 0.0095 | 0.0189 |
| 234 | 0.0282 | 0.0095 | 0.0188 |
| 235 | 0.0280 | 0.0094 | 0.0186 |
| 236 | 0.0278 | 0.0093 | 0.0185 |
| 237 | 0.0276 | 0.0092 | 0.0183 |
| 238 | 0.0274 | 0.0092 | 0.0182 |
| 239 | 0.0272 | 0.0091 | 0.0181 |
| 240 | 0.0270 | 0.0090 | 0.0179 |
| 241 | 0.0268 | 0.0090 | 0.0178 |
| 242 | 0.0266 | 0.0089 | 0.0177 |
| 243 | 0.0264 | 0.0089 | 0.0176 |
| 244 | 0.0263 | 0.0088 | 0.0175 |
| 245 | 0.0261 | 0.0088 | 0.0174 |
| 246 | 0.0259 | 0.0087 | 0.0172 |
| 247 | 0.0258 | 0.0086 | 0.0171 |
| 248 | 0.0256 | 0.0086 | 0.0170 |
| 249 | 0.0255 | 0.0085 | 0.0169 |
| 250 | 0.0253 | 0.0085 | 0.0168 |
| 251 | 0.0252 | 0.0084 | 0.0167 |
| 252 | 0.0250 | 0.0084 | 0.0166 |
| 253 | 0.0249 | 0.0084 | 0.0166 |
| 254 | 0.0248 | 0.0083 | 0.0165 |
| 255 | 0.0246 | 0.0083 | 0.0164 |
| 256 | 0.0245 | 0.0082 | 0.0163 |
| 257 | 0.0244 | 0.0082 | 0.0162 |
| 258 | 0.0243 | 0.0081 | 0.0161 |
| 259 | 0.0241 | 0.0081 | 0.0160 |
| 260 | 0.0240 | 0.0081 | 0.0160 |
| 261 | 0.0239 | 0.0080 | 0.0159 |
| 262 | 0.0238 | 0.0080 | 0.0158 |
| 263 | 0.0237 | 0.0079 | 0.0157 |
| 264 | 0.0236 | 0.0079 | 0.0157 |
| 265 | 0.0235 | 0.0079 | 0.0156 |
| 266 | 0.0234 | 0.0078 | 0.0155 |
| 267 | 0.0233 | 0.0078 | 0.0155 |
| 268 | 0.0232 | 0.0078 | 0.0154 |
| 269 | 0.0231 | 0.0077 | 0.0153 |
| 270 | 0.0230 | 0.0077 | 0.0153 |
| 271 | 0.0229 | 0.0077 | 0.0152 |
| 272 | 0.0228 | 0.0076 | 0.0151 |
| 273 | 0.0227 | 0.0076 | 0.0151 |
| 274 | 0.0226 | 0.0076 | 0.0150 |
| 275 | 0.0225 | 0.0075 | 0.0149 |
| 276 | 0.0224 | 0.0075 | 0.0149 |
| 277 | 0.0223 | 0.0075 | 0.0148 |
| 278 | 0.0222 | 0.0075 | 0.0148 |
| 279 | 0.0221 | 0.0074 | 0.0147 |
| 280 | 0.0221 | 0.0074 | 0.0147 |
| 281 | 0.0220 | 0.0074 | 0.0146 |

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      282              0.0219           0.0073              0.0145
      283              0.0218           0.0073              0.0145
      284              0.0217           0.0073              0.0144
      285              0.0217           0.0073              0.0144
      286              0.0216           0.0072              0.0143
      287              0.0215           0.0072              0.0143
      288              0.0214           0.0072              0.0142
      ------------------------------------------------------------------
      ------------------------------------------------------------------
      Total soil rain loss =      2.91(In)
      Total effective rainfall =      6.25(In)
      Peak flow rate in flood hydrograph =     80.07(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       22.5      45.0      67.5      90.0
----------------------------------------------------------------------
  0+ 5       0.0012      0.17  Q         |         |         |         |
  0+10       0.0064      0.76  Q         |         |         |         |
  0+15       0.0218      2.25  Q         |         |         |         |
  0+20       0.0492      3.97  VQ        |         |         |         |
  0+25       0.0815      4.68  V Q       |         |         |         |
  0+30       0.1170      5.15  V Q       |         |         |         |
  0+35       0.1548      5.49  V Q       |         |         |         |
  0+40       0.1943      5.74  V Q       |         |         |         |
  0+45       0.2352      5.94  V Q       |         |         |         |
  0+50       0.2771      6.08  V Q       |         |         |         |
  0+55       0.3196      6.18  V Q       |         |         |         |
  1+ 0       0.3627      6.25  V Q       |         |         |         |
  1+ 5       0.4060      6.29  V Q       |         |         |         |
  1+10       0.4496      6.33  V Q       |         |         |         |
  1+15       0.4934      6.35  |VQ       |         |         |         |
  1+20       0.5373      6.38  |VQ       |         |         |         |
  1+25       0.5814      6.41  |VQ       |         |         |         |
  1+30       0.6257      6.43  |VQ       |         |         |         |
  1+35       0.6702      6.45  |VQ       |         |         |         |
  1+40       0.7148      6.47  |VQ       |         |         |         |
  1+45       0.7594      6.48  |VQ       |         |         |         |
  1+50       0.8041      6.50  |VQ       |         |         |         |
  1+55       0.8490      6.51  |VQ       |         |         |         |
  2+ 0       0.8939      6.52  |VQ       |         |         |         |
  2+ 5       0.9389      6.53  |VQ       |         |         |         |
  2+10       0.9839      6.55  | Q       |         |         |         |
  2+15       1.0291      6.56  | Q       |         |         |         |
  2+20       1.0743      6.57  | Q       |         |         |         |
  2+25       1.1197      6.58  | Q       |         |         |         |
  2+30       1.1651      6.60  | Q       |         |         |         |
  2+35       1.2106      6.61  | Q       |         |         |         |
  2+40       1.2562      6.62  | Q       |         |         |         |
  2+45       1.3019      6.64  | Q       |         |         |         |
  2+50       1.3477      6.65  | Q       |         |         |         |
  2+55       1.3936      6.66  | Q       |         |         |         |
  3+ 0       1.4396      6.68  | QV      |         |         |         |
  3+ 5       1.4857      6.69  | QV      |         |         |         |
  3+10       1.5319      6.70  | QV      |         |         |         |
  3+15       1.5781      6.72  | QV      |         |         |         |
  3+20       1.6245      6.73  | QV      |         |         |         |
  3+25       1.6709      6.75  | QV      |         |         |         |
  3+30       1.7175      6.76  |  Q      |         |         |         |
  3+35       1.7642      6.77  |  Q      |         |         |         |
  3+40       1.8109      6.79  |  Q      |         |         |         |
  3+45       1.8578      6.80  |  Q      |         |         |         |
  3+50       1.9047      6.82  |  Q      |         |         |         |
  3+55       1.9518      6.83  |  QV     |         |         |         |
  4+ 0       1.9990      6.85  |  QV     |         |         |         |
  4+ 5       2.0463      6.86  |  QV     |         |         |         |
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 4+10      2.0936      6.88  |  QV     |         |         |         |
 4+15      2.1411      6.90  |  QV     |         |         |         |
 4+20      2.1887      6.91  |  QV     |         |         |         |
 4+25      2.2364      6.93  |  QV     |         |         |         |
 4+30      2.2842      6.94  |  QV     |         |         |         |
 4+35      2.3322      6.96  |  QV     |         |         |         |
 4+40      2.3802      6.97  |  QV     |         |         |         |
 4+45      2.4283      6.99  |  Q V    |         |         |         |
 4+50      2.4766      7.01  |  Q V    |         |         |         |
 4+55      2.5250      7.02  |  Q V    |         |         |         |
 5+ 0      2.5735      7.04  |  Q V    |         |         |         |
 5+ 5      2.6221      7.06  |  Q V    |         |         |         |
 5+10      2.6708      7.08  |  Q V    |         |         |         |
 5+15      2.7197      7.09  |  Q V    |         |         |         |
 5+20      2.7686      7.11  |  Q V    |         |         |         |
 5+25      2.8177      7.13  |  Q V    |         |         |         |
 5+30      2.8669      7.15  |  Q  V   |         |         |         |
 5+35      2.9163      7.16  |  Q  V   |         |         |         |
 5+40      2.9658      7.18  |  Q  V   |         |         |         |
 5+45      3.0154      7.20  |  Q  V   |         |         |         |
 5+50      3.0651      7.22  |  Q  V   |         |         |         |
 5+55      3.1149      7.24  |  Q  V   |         |         |         |
 6+ 0      3.1649      7.26  |  Q  V   |         |         |         |
 6+ 5      3.2150      7.28  |  Q  V   |         |         |         |
 6+10      3.2653      7.30  |  Q  V   |         |         |         |
 6+15      3.3157      7.32  |  Q  V   |         |         |         |
 6+20      3.3662      7.34  |  Q   V  |         |         |         |
 6+25      3.4168      7.36  |  Q   V  |         |         |         |
 6+30      3.4676      7.38  |  Q   V  |         |         |         |
 6+35      3.5186      7.40  |  Q   V  |         |         |         |
 6+40      3.5697      7.42  |  Q   V  |         |         |         |
 6+45      3.6209      7.44  |  Q   V  |         |         |         |
 6+50      3.6723      7.46  |  Q   V  |         |         |         |
 6+55      3.7238      7.48  |  Q   V  |         |         |         |
 7+ 0      3.7755      7.50  |  Q   V  |         |         |         |
 7+ 5      3.8273      7.53  |  Q    V |         |         |         |
 7+10      3.8793      7.55  |  Q    V |         |         |         |
 7+15      3.9314      7.57  |  Q    V |         |         |         |
 7+20      3.9837      7.59  |  Q    V |         |         |         |
 7+25      4.0362      7.62  |  Q    V |         |         |         |
 7+30      4.0888      7.64  |  Q    V |         |         |         |
 7+35      4.1416      7.66  |  Q    V |         |         |         |
 7+40      4.1945      7.69  |  Q    V |         |         |         |
 7+45      4.2476      7.71  |  Q    V |         |         |         |
 7+50      4.3009      7.74  |  Q     V|         |         |         |
 7+55      4.3544      7.76  |  Q     V|         |         |         |
 8+ 0      4.4080      7.79  |  Q     V|         |         |         |
 8+ 5      4.4618      7.81  |  Q     V|         |         |         |
 8+10      4.5158      7.84  |  Q     V|         |         |         |
 8+15      4.5700      7.86  |  Q     V|         |         |         |
 8+20      4.6243      7.89  |  Q     V|         |         |         |
 8+25      4.6788      7.92  |  Q     V|         |         |         |
 8+30      4.7336      7.95  |  Q     V|         |         |         |
 8+35      4.7885      7.97  |  Q      V         |         |         |
 8+40      4.8436      8.00  |  Q      V         |         |         |
 8+45      4.8989      8.03  |  Q      V         |         |         |
 8+50      4.9544      8.06  |  Q      V         |         |         |
 8+55      5.0101      8.09  |  Q      V         |         |         |
 9+ 0      5.0660      8.12  |  Q      V         |         |         |
 9+ 5      5.1222      8.15  |  Q      V         |         |         |
 9+10      5.1785      8.18  |  Q      V         |         |         |
 9+15      5.2351      8.21  |  Q      V         |         |         |
 9+20      5.2918      8.24  |  Q      |V        |         |         |
 9+25      5.3488      8.28  |  Q      |V        |         |         |
 9+30      5.4061      8.31  |  Q      |V        |         |         |
 9+35      5.4635      8.34  |  Q      |V        |         |         |
 9+40      5.5212      8.38  |  Q      |V        |         |         |
 9+45      5.5791      8.41  |  Q      |V        |         |         |
 9+50      5.6373      8.45  |  Q      |V        |         |         |
 9+55      5.6957      8.48  |  Q      |V        |         |         |
10+ 0      5.7544      8.52  |  Q      | V       |         |         |
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10+ 5       5.8133      8.55  |  Q      | V       |         |         |
10+10       5.8725      8.59  |  Q      | V       |         |         |
10+15       5.9319      8.63  |  Q      | V       |         |         |
10+20       5.9916      8.67  |  Q      | V       |         |         |
10+25       6.0516      8.71  |  Q      | V       |         |         |
10+30       6.1119      8.75  |  Q      | V       |         |         |
10+35       6.1724      8.79  |  Q      | V       |         |         |
10+40       6.2332      8.83  |  Q      |  V      |         |         |
10+45       6.2944      8.88  |  Q      |  V      |         |         |
10+50       6.3558      8.92  |  Q      |  V      |         |         |
10+55       6.4175      8.96  |  Q      |  V      |         |         |
11+ 0       6.4796      9.01  |   Q     |  V      |         |         |
11+ 5       6.5419      9.06  |   Q     |  V      |         |         |
11+10       6.6046      9.10  |   Q     |  V      |         |         |
11+15       6.6677      9.15  |   Q     |  V      |         |         |
11+20       6.7310      9.20  |   Q     |   V     |         |         |
11+25       6.7947      9.25  |   Q     |   V     |         |         |
11+30       6.8588      9.30  |   Q     |   V     |         |         |
11+35       6.9233      9.36  |   Q     |   V     |         |         |
11+40       6.9881      9.41  |   Q     |   V     |         |         |
11+45       7.0533      9.47  |   Q     |   V     |         |         |
11+50       7.1189      9.52  |   Q     |   V     |         |         |
11+55       7.1848      9.58  |   Q     |    V    |         |         |
12+ 0       7.2512      9.64  |   Q     |    V    |         |         |
12+ 5       7.3179      9.68  |   Q     |    V    |         |         |
12+10       7.3845      9.67  |   Q     |    V    |         |         |
12+15       7.4502      9.54  |   Q     |    V    |         |         |
12+20       7.5148      9.38  |   Q     |    V    |         |         |
12+25       7.5793      9.36  |   Q     |    V    |         |         |
12+30       7.6439      9.38  |   Q     |     V   |         |         |
12+35       7.7087      9.41  |   Q     |     V   |         |         |
12+40       7.7738      9.46  |   Q     |     V   |         |         |
12+45       7.8394      9.52  |   Q     |     V   |         |         |
12+50       7.9054      9.59  |   Q     |     V   |         |         |
12+55       7.9719      9.66  |   Q     |     V   |         |         |
13+ 0       8.0391      9.74  |   Q     |     V   |         |         |
13+ 5       8.1068      9.83  |   Q     |     V   |         |         |
13+10       8.1752      9.93  |   Q     |      V  |         |         |
13+15       8.2442     10.03  |   Q     |      V  |         |         |
13+20       8.3140     10.13  |   Q     |      V  |         |         |
13+25       8.3845     10.24  |   Q     |      V  |         |         |
13+30       8.4558     10.35  |   Q     |      V  |         |         |
13+35       8.5279     10.47  |   Q     |      V  |         |         |
13+40       8.6008     10.59  |   Q     |       V |         |         |
13+45       8.6746     10.72  |   Q     |       V |         |         |
13+50       8.7494     10.85  |   Q     |       V |         |         |
13+55       8.8251     10.99  |   Q     |       V |         |         |
14+ 0       8.9018     11.14  |   Q     |       V |         |         |
14+ 5       8.9796     11.30  |    Q    |       V |         |         |
14+10       9.0586     11.46  |    Q    |       V |         |         |
14+15       9.1387     11.64  |    Q    |        V|         |         |
14+20       9.2202     11.83  |    Q    |        V|         |         |
14+25       9.3030     12.02  |    Q    |        V|         |         |
14+30       9.3873     12.23  |    Q    |        V|         |         |
14+35       9.4730     12.45  |    Q    |        V|         |         |
14+40       9.5603     12.68  |    Q    |         V         |         |
14+45       9.6494     12.93  |    Q    |         V         |         |
14+50       9.7403     13.20  |    Q    |         V         |         |
14+55       9.8332     13.49  |    Q    |         V         |         |
15+ 0       9.9283     13.81  |     Q   |         V         |         |
15+ 5      10.0258     14.15  |     Q   |         |V        |         |
15+10      10.1259     14.53  |     Q   |         |V        |         |
15+15      10.2288     14.94  |     Q   |         |V        |         |
15+20      10.3349     15.41  |     Q   |         |V        |         |
15+25      10.4429     15.68  |     Q   |         |V        |         |
15+30      10.5490     15.41  |     Q   |         | V       |         |
15+35      10.6446     13.88  |     Q   |         | V       |         |
15+40      10.7281     12.12  |    Q    |         | V       |         |
15+45      10.8109     12.03  |    Q    |         | V       |         |
15+50      10.8977     12.60  |    Q    |         | V       |         |
15+55      10.9934     13.90  |     Q   |         |  V      |         |
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16+ 0      11.1070     16.50  |      Q  |          |  V      |          |
16+ 5      11.2871     26.14  |         |Q         |  V      |          |
16+10      11.5966     44.94  |         |          Q|   V     |          |
16+15      12.1189     75.83  |         |           |    V    |  Q       |
16+20      12.6703     80.07  |         |           |     V   |    Q     |
16+25      12.9664     43.00  |         |          Q|      V  |          |
16+30      13.1889     32.30  |         |    Q      |      V  |          |
16+35      13.3793     27.65  |         |  Q        |       V |          |
16+40      13.5543     25.41  |         |Q          |       V |          |
16+45      13.7104     22.66  |         Q           |       V |          |
16+50      13.8495     20.20  |       Q |           |        V|          |
16+55      13.9741     18.09  |       Q |           |        V|          |
17+ 0      14.0854     16.16  |      Q  |           |        V|          |
17+ 5      14.1862     14.64  |     Q   |           |        V|          |
17+10      14.2826     14.00  |     Q   |           |        V|          |
17+15      14.3749     13.39  |    Q    |           |         V          |
17+20      14.4633     12.84  |    Q    |           |         V          |
17+25      14.5496     12.53  |    Q    |           |         V          |
17+30      14.6321     11.99  |    Q    |           |         V          |
17+35      14.7112     11.49  |    Q    |           |         V          |
17+40      14.7876     11.09  |   Q     |           |         V          |
17+45      14.8609     10.64  |   Q     |           |         |V         |
17+50      14.9324     10.39  |   Q     |           |         |V         |
17+55      15.0024     10.16  |   Q     |           |         |V         |
18+ 0      15.0710      9.96  |   Q     |           |         |V         |
18+ 5      15.1383      9.78  |   Q     |           |         |V         |
18+10      15.2049      9.67  |   Q     |           |         |V         |
18+15      15.2717      9.69  |   Q     |           |         | V        |
18+20      15.3389      9.76  |   Q     |           |         | V        |
18+25      15.4058      9.71  |   Q     |           |         | V        |
18+30      15.4721      9.63  |   Q     |           |         | V        |
18+35      15.5378      9.54  |   Q     |           |         | V        |
18+40      15.6029      9.45  |   Q     |           |         | V        |
18+45      15.6674      9.36  |   Q     |           |         | V        |
18+50      15.7313      9.27  |   Q     |           |         | V        |
18+55      15.7945      9.18  |   Q     |           |         |  V       |
19+ 0      15.8571      9.09  |   Q     |           |         |  V       |
19+ 5      15.9191      9.00  |  Q      |           |         |  V       |
19+10      15.9804      8.91  |  Q      |           |         |  V       |
19+15      16.0412      8.83  |  Q      |           |         |  V       |
19+20      16.1014      8.74  |  Q      |           |         |  V       |
19+25      16.1611      8.67  |  Q      |           |         |  V       |
19+30      16.2203      8.59  |  Q      |           |         |  V       |
19+35      16.2789      8.52  |  Q      |           |         |   V      |
19+40      16.3371      8.44  |  Q      |           |         |   V      |
19+45      16.3947      8.37  |  Q      |           |         |   V      |
19+50      16.4520      8.31  |  Q      |           |         |   V      |
19+55      16.5087      8.24  |  Q      |           |         |   V      |
20+ 0      16.5650      8.18  |  Q      |           |         |   V      |
20+ 5      16.6209      8.12  |  Q      |           |         |   V      |
20+10      16.6764      8.06  |  Q      |           |         |   V      |
20+15      16.7315      8.00  |  Q      |           |         |    V     |
20+20      16.7862      7.94  |  Q      |           |         |    V     |
20+25      16.8406      7.89  |  Q      |           |         |    V     |
20+30      16.8945      7.84  |  Q      |           |         |    V     |
20+35      16.9482      7.78  |  Q      |           |         |    V     |
20+40      17.0014      7.73  |  Q      |           |         |    V     |
20+45      17.0543      7.69  |  Q      |           |         |    V     |
20+50      17.1069      7.64  |  Q      |           |         |    V     |
20+55      17.1592      7.59  |  Q      |           |         |    V     |
21+ 0      17.2112      7.55  |  Q      |           |         |     V    |
21+ 5      17.2628      7.50  |  Q      |           |         |     V    |
21+10      17.3142      7.46  |  Q      |           |         |     V    |
21+15      17.3653      7.42  |  Q      |           |         |     V    |
21+20      17.4161      7.37  |  Q      |           |         |     V    |
21+25      17.4666      7.33  |  Q      |           |         |     V    |
21+30      17.5168      7.29  |  Q      |           |         |     V    |
21+35      17.5668      7.26  |  Q      |           |         |     V    |
21+40      17.6165      7.22  |  Q      |           |         |     V    |
21+45      17.6659      7.18  |  Q      |           |         |      V   |
21+50      17.7151      7.14  |  Q      |           |         |      V   |
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  21+55      17.7641      7.11  |  Q      |         |         |      V  |
  22+ 0      17.8128      7.07  |  Q      |         |         |      V  |
  22+ 5      17.8613      7.04  |  Q      |         |         |      V  |
  22+10      17.9095      7.01  |  Q      |         |         |      V  |
  22+15      17.9575      6.97  |  Q      |         |         |      V  |
  22+20      18.0053      6.94  |  Q      |         |         |      V  |
  22+25      18.0529      6.91  |  Q      |         |         |      V  |
  22+30      18.1003      6.88  |  Q      |         |         |      V  |
  22+35      18.1474      6.85  |  Q      |         |         |       V |
  22+40      18.1944      6.82  |  Q      |         |         |       V |
  22+45      18.2411      6.79  |  Q      |         |         |       V |
  22+50      18.2877      6.76  |  Q      |         |         |       V |
  22+55      18.3340      6.73  | Q       |         |         |       V |
  23+ 0      18.3802      6.70  | Q       |         |         |       V |
  23+ 5      18.4261      6.67  | Q       |         |         |       V |
  23+10      18.4719      6.65  | Q       |         |         |       V |
  23+15      18.5175      6.62  | Q       |         |         |       V |
  23+20      18.5629      6.59  | Q       |         |         |       V |
  23+25      18.6081      6.57  | Q       |         |         |        V|
  23+30      18.6532      6.54  | Q       |         |         |        V|
  23+35      18.6981      6.52  | Q       |         |         |        V|
  23+40      18.7428      6.49  | Q       |         |         |        V|
  23+45      18.7874      6.47  | Q       |         |         |        V|
  23+50      18.8318      6.45  | Q       |         |         |        V|
  23+55      18.8760      6.42  | Q       |         |         |        V|
  24+ 0      18.9200      6.40  | Q       |         |         |        V|
  24+ 5      18.9628      6.21  | Q       |         |         |        V|
  24+10      19.0013      5.60  | Q       |         |         |        V|
  24+15      19.0295      4.09  |Q        |         |         |        V|
  24+20      19.0457      2.35  |Q        |         |         |        V|
  24+25      19.0570      1.64  Q         |         |         |        V|
  24+30      19.0652      1.18  Q         |         |         |        V|
  24+35      19.0710      0.85  Q         |         |         |        V|
  24+40      19.0751      0.60  Q         |         |         |        V|
  24+45      19.0780      0.41  Q         |         |         |        V|
  24+50      19.0799      0.28  Q         |         |         |        V|
  24+55      19.0812      0.19  Q         |         |         |        V|
  25+ 0      19.0821      0.13  Q         |         |         |        V|
  25+ 5      19.0828      0.10  Q         |         |         |        V|
  25+10      19.0833      0.08  Q         |         |         |        V|
  25+15      19.0837      0.06  Q         |         |         |        V|
  25+20      19.0840      0.04  Q         |         |         |        V|
  25+25      19.0842      0.03  Q         |         |         |        V|
  25+30      19.0843      0.01  Q         |         |         |        V|
  25+35      19.0843      0.01  Q         |         |         |        V|
----------------------------------------------------------------------
```

Area ‘E’ – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/17/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'E'
100 YEAR 24 HOUR STORM
DECEMBER 17, 2024
----------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            36.66            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            36.66            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            36.66           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            36.66            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            36.66            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            36.66           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 74.9      90.9         36.66      1.000     0.175    1.000    0.175

Area-averaged adjusted loss rate Fm (In/Hr) =  0.175

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 36.66 | 1.000 | 74.9 | 90.9 | 1.00 | 0.907 |

Area-averaged catchment yield fraction, Y = 0.907
Area-averaged low loss fraction, Yb = 0.093
User entry of time of concentration = 0.293 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 36.66(Ac.)
Catchment Lag time = 0.234 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 35.5518
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.175(In/Hr)
Average low loss rate fraction (Yb) = 0.093 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 36.66(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.711(In)
30-minute factor = 0.998 Adjusted rainfall = 1.216(In)
1-hour factor = 0.998 Adjusted rainfall = 1.497(In)
3-hour factor = 1.000 Adjusted rainfall = 2.941(In)
6-hour factor = 1.000 Adjusted rainfall = 4.499(In)
24-hour factor = 1.000 Adjusted rainfall = 11.999(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 443.36 (CFS)) | |
| 1 | 2.675 | 11.860 |
| 2 | 12.024 | 41.451 |
| 3 | 35.644 | 104.718 |
| 4 | 63.026 | 121.402 |
| 5 | 74.204 | 49.558 |
| 6 | 81.479 | 32.252 |
| 7 | 86.684 | 23.079 |
| 8 | 90.577 | 17.258 |
| 9 | 93.485 | 12.896 |
| 10 | 95.602 | 9.386 |
| 11 | 97.088 | 6.587 |
| 12 | 97.988 | 3.990 |
| 13 | 98.429 | 1.953 |
| 14 | 98.799 | 1.644 |
| 15 | 99.093 | 1.300 |
| 16 | 99.316 | 0.991 |
| 17 | 99.592 | 1.221 |
| 18 | 99.789 | 0.873 |
| 19 | 99.913 | 0.549 |
| 20 | 100.000 | 0.388 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7105 | 0.7105 |
| 2 | 0.8748 | 0.1642 |
| 3 | 0.9879 | 0.1132 |
| 4 | 1.0770 | 0.0891 |
| 5 | 1.1515 | 0.0746 |
| 6 | 1.2163 | 0.0647 |

| | | |
|---|---|---|
| 7 | 1.2739 | 0.0576 |
| 8 | 1.3259 | 0.0521 |
| 9 | 1.3736 | 0.0477 |
| 10 | 1.4177 | 0.0441 |
| 11 | 1.4588 | 0.0411 |
| 12 | 1.4974 | 0.0386 |
| 13 | 1.5729 | 0.0755 |
| 14 | 1.6462 | 0.0733 |
| 15 | 1.7175 | 0.0713 |
| 16 | 1.7870 | 0.0695 |
| 17 | 1.8548 | 0.0678 |
| 18 | 1.9211 | 0.0663 |
| 19 | 1.9860 | 0.0649 |
| 20 | 2.0496 | 0.0636 |
| 21 | 2.1120 | 0.0624 |
| 22 | 2.1733 | 0.0612 |
| 23 | 2.2334 | 0.0602 |
| 24 | 2.2926 | 0.0592 |
| 25 | 2.3509 | 0.0582 |
| 26 | 2.4082 | 0.0573 |
| 27 | 2.4647 | 0.0565 |
| 28 | 2.5204 | 0.0557 |
| 29 | 2.5754 | 0.0549 |
| 30 | 2.6296 | 0.0542 |
| 31 | 2.6831 | 0.0535 |
| 32 | 2.7360 | 0.0529 |
| 33 | 2.7882 | 0.0522 |
| 34 | 2.8398 | 0.0516 |
| 35 | 2.8908 | 0.0510 |
| 36 | 2.9413 | 0.0505 |
| 37 | 2.9912 | 0.0498 |
| 38 | 3.0405 | 0.0493 |
| 39 | 3.0893 | 0.0488 |
| 40 | 3.1377 | 0.0483 |
| 41 | 3.1855 | 0.0479 |
| 42 | 3.2330 | 0.0474 |
| 43 | 3.2800 | 0.0470 |
| 44 | 3.3265 | 0.0466 |
| 45 | 3.3727 | 0.0462 |
| 46 | 3.4185 | 0.0458 |
| 47 | 3.4639 | 0.0454 |
| 48 | 3.5089 | 0.0450 |
| 49 | 3.5535 | 0.0447 |
| 50 | 3.5978 | 0.0443 |
| 51 | 3.6418 | 0.0440 |
| 52 | 3.6854 | 0.0436 |
| 53 | 3.7287 | 0.0433 |
| 54 | 3.7717 | 0.0430 |
| 55 | 3.8144 | 0.0427 |
| 56 | 3.8568 | 0.0424 |
| 57 | 3.8989 | 0.0421 |
| 58 | 3.9407 | 0.0418 |
| 59 | 3.9822 | 0.0415 |
| 60 | 4.0235 | 0.0413 |
| 61 | 4.0645 | 0.0410 |
| 62 | 4.1052 | 0.0407 |
| 63 | 4.1457 | 0.0405 |
| 64 | 4.1859 | 0.0402 |
| 65 | 4.2259 | 0.0400 |
| 66 | 4.2657 | 0.0398 |
| 67 | 4.3052 | 0.0395 |
| 68 | 4.3445 | 0.0393 |
| 69 | 4.3836 | 0.0391 |
| 70 | 4.4224 | 0.0389 |
| 71 | 4.4611 | 0.0386 |
| 72 | 4.4995 | 0.0384 |
| 73 | 4.5436 | 0.0441 |
| 74 | 4.5876 | 0.0440 |
| 75 | 4.6313 | 0.0438 |
| 76 | 4.6750 | 0.0436 |
| 77 | 4.7184 | 0.0434 |

| | | |
|---|---|---|
| 78 | 4.7617 | 0.0433 |
| 79 | 4.8048 | 0.0431 |
| 80 | 4.8477 | 0.0430 |
| 81 | 4.8905 | 0.0428 |
| 82 | 4.9332 | 0.0426 |
| 83 | 4.9757 | 0.0425 |
| 84 | 5.0180 | 0.0423 |
| 85 | 5.0602 | 0.0422 |
| 86 | 5.1023 | 0.0421 |
| 87 | 5.1442 | 0.0419 |
| 88 | 5.1859 | 0.0418 |
| 89 | 5.2276 | 0.0416 |
| 90 | 5.2691 | 0.0415 |
| 91 | 5.3104 | 0.0414 |
| 92 | 5.3516 | 0.0412 |
| 93 | 5.3927 | 0.0411 |
| 94 | 5.4337 | 0.0410 |
| 95 | 5.4745 | 0.0408 |
| 96 | 5.5153 | 0.0407 |
| 97 | 5.5558 | 0.0406 |
| 98 | 5.5963 | 0.0405 |
| 99 | 5.6367 | 0.0403 |
| 100 | 5.6769 | 0.0402 |
| 101 | 5.7170 | 0.0401 |
| 102 | 5.7570 | 0.0400 |
| 103 | 5.7969 | 0.0399 |
| 104 | 5.8366 | 0.0398 |
| 105 | 5.8763 | 0.0397 |
| 106 | 5.9158 | 0.0395 |
| 107 | 5.9553 | 0.0394 |
| 108 | 5.9946 | 0.0393 |
| 109 | 6.0338 | 0.0392 |
| 110 | 6.0729 | 0.0391 |
| 111 | 6.1119 | 0.0390 |
| 112 | 6.1508 | 0.0389 |
| 113 | 6.1897 | 0.0388 |
| 114 | 6.2284 | 0.0387 |
| 115 | 6.2670 | 0.0386 |
| 116 | 6.3055 | 0.0385 |
| 117 | 6.3439 | 0.0384 |
| 118 | 6.3822 | 0.0383 |
| 119 | 6.4204 | 0.0382 |
| 120 | 6.4586 | 0.0381 |
| 121 | 6.4966 | 0.0380 |
| 122 | 6.5345 | 0.0379 |
| 123 | 6.5724 | 0.0379 |
| 124 | 6.6102 | 0.0378 |
| 125 | 6.6478 | 0.0377 |
| 126 | 6.6854 | 0.0376 |
| 127 | 6.7229 | 0.0375 |
| 128 | 6.7603 | 0.0374 |
| 129 | 6.7977 | 0.0373 |
| 130 | 6.8349 | 0.0372 |
| 131 | 6.8721 | 0.0372 |
| 132 | 6.9091 | 0.0371 |
| 133 | 6.9461 | 0.0370 |
| 134 | 6.9830 | 0.0369 |
| 135 | 7.0199 | 0.0368 |
| 136 | 7.0566 | 0.0368 |
| 137 | 7.0933 | 0.0367 |
| 138 | 7.1299 | 0.0366 |
| 139 | 7.1664 | 0.0365 |
| 140 | 7.2029 | 0.0364 |
| 141 | 7.2392 | 0.0364 |
| 142 | 7.2755 | 0.0363 |
| 143 | 7.3117 | 0.0362 |
| 144 | 7.3479 | 0.0361 |
| 145 | 7.3839 | 0.0361 |
| 146 | 7.4199 | 0.0360 |
| 147 | 7.4559 | 0.0359 |
| 148 | 7.4917 | 0.0359 |

| | | |
|---|---|---|
| 149 | 7.5275 | 0.0358 |
| 150 | 7.5632 | 0.0357 |
| 151 | 7.5989 | 0.0356 |
| 152 | 7.6344 | 0.0356 |
| 153 | 7.6699 | 0.0355 |
| 154 | 7.7054 | 0.0354 |
| 155 | 7.7407 | 0.0354 |
| 156 | 7.7760 | 0.0353 |
| 157 | 7.8113 | 0.0352 |
| 158 | 7.8465 | 0.0352 |
| 159 | 7.8816 | 0.0351 |
| 160 | 7.9166 | 0.0350 |
| 161 | 7.9516 | 0.0350 |
| 162 | 7.9865 | 0.0349 |
| 163 | 8.0213 | 0.0349 |
| 164 | 8.0561 | 0.0348 |
| 165 | 8.0909 | 0.0347 |
| 166 | 8.1255 | 0.0347 |
| 167 | 8.1601 | 0.0346 |
| 168 | 8.1947 | 0.0345 |
| 169 | 8.2292 | 0.0345 |
| 170 | 8.2636 | 0.0344 |
| 171 | 8.2979 | 0.0344 |
| 172 | 8.3322 | 0.0343 |
| 173 | 8.3665 | 0.0342 |
| 174 | 8.4007 | 0.0342 |
| 175 | 8.4348 | 0.0341 |
| 176 | 8.4689 | 0.0341 |
| 177 | 8.5029 | 0.0340 |
| 178 | 8.5369 | 0.0340 |
| 179 | 8.5708 | 0.0339 |
| 180 | 8.6046 | 0.0339 |
| 181 | 8.6384 | 0.0338 |
| 182 | 8.6722 | 0.0337 |
| 183 | 8.7059 | 0.0337 |
| 184 | 8.7395 | 0.0336 |
| 185 | 8.7731 | 0.0336 |
| 186 | 8.8066 | 0.0335 |
| 187 | 8.8401 | 0.0335 |
| 188 | 8.8735 | 0.0334 |
| 189 | 8.9069 | 0.0334 |
| 190 | 8.9402 | 0.0333 |
| 191 | 8.9735 | 0.0333 |
| 192 | 9.0067 | 0.0332 |
| 193 | 9.0398 | 0.0332 |
| 194 | 9.0730 | 0.0331 |
| 195 | 9.1060 | 0.0331 |
| 196 | 9.1390 | 0.0330 |
| 197 | 9.1720 | 0.0330 |
| 198 | 9.2049 | 0.0329 |
| 199 | 9.2378 | 0.0329 |
| 200 | 9.2706 | 0.0328 |
| 201 | 9.3034 | 0.0328 |
| 202 | 9.3361 | 0.0327 |
| 203 | 9.3688 | 0.0327 |
| 204 | 9.4014 | 0.0326 |
| 205 | 9.4340 | 0.0326 |
| 206 | 9.4666 | 0.0325 |
| 207 | 9.4991 | 0.0325 |
| 208 | 9.5315 | 0.0324 |
| 209 | 9.5639 | 0.0324 |
| 210 | 9.5963 | 0.0324 |
| 211 | 9.6286 | 0.0323 |
| 212 | 9.6608 | 0.0323 |
| 213 | 9.6931 | 0.0322 |
| 214 | 9.7252 | 0.0322 |
| 215 | 9.7574 | 0.0321 |
| 216 | 9.7895 | 0.0321 |
| 217 | 9.8215 | 0.0320 |
| 218 | 9.8535 | 0.0320 |
| 219 | 9.8855 | 0.0320 |

| | | |
|---|---|---|
| 220 | 9.9174 | 0.0319 |
| 221 | 9.9493 | 0.0319 |
| 222 | 9.9811 | 0.0318 |
| 223 | 10.0129 | 0.0318 |
| 224 | 10.0446 | 0.0317 |
| 225 | 10.0763 | 0.0317 |
| 226 | 10.1080 | 0.0317 |
| 227 | 10.1396 | 0.0316 |
| 228 | 10.1712 | 0.0316 |
| 229 | 10.2028 | 0.0315 |
| 230 | 10.2343 | 0.0315 |
| 231 | 10.2657 | 0.0315 |
| 232 | 10.2972 | 0.0314 |
| 233 | 10.3285 | 0.0314 |
| 234 | 10.3599 | 0.0313 |
| 235 | 10.3912 | 0.0313 |
| 236 | 10.4225 | 0.0313 |
| 237 | 10.4537 | 0.0312 |
| 238 | 10.4849 | 0.0312 |
| 239 | 10.5160 | 0.0312 |
| 240 | 10.5472 | 0.0311 |
| 241 | 10.5782 | 0.0311 |
| 242 | 10.6093 | 0.0310 |
| 243 | 10.6403 | 0.0310 |
| 244 | 10.6712 | 0.0310 |
| 245 | 10.7022 | 0.0309 |
| 246 | 10.7330 | 0.0309 |
| 247 | 10.7639 | 0.0309 |
| 248 | 10.7947 | 0.0308 |
| 249 | 10.8255 | 0.0308 |
| 250 | 10.8562 | 0.0307 |
| 251 | 10.8870 | 0.0307 |
| 252 | 10.9176 | 0.0307 |
| 253 | 10.9483 | 0.0306 |
| 254 | 10.9789 | 0.0306 |
| 255 | 11.0094 | 0.0306 |
| 256 | 11.0400 | 0.0305 |
| 257 | 11.0705 | 0.0305 |
| 258 | 11.1009 | 0.0305 |
| 259 | 11.1313 | 0.0304 |
| 260 | 11.1617 | 0.0304 |
| 261 | 11.1921 | 0.0304 |
| 262 | 11.2224 | 0.0303 |
| 263 | 11.2527 | 0.0303 |
| 264 | 11.2830 | 0.0303 |
| 265 | 11.3132 | 0.0302 |
| 266 | 11.3434 | 0.0302 |
| 267 | 11.3735 | 0.0302 |
| 268 | 11.4037 | 0.0301 |
| 269 | 11.4338 | 0.0301 |
| 270 | 11.4638 | 0.0301 |
| 271 | 11.4938 | 0.0300 |
| 272 | 11.5238 | 0.0300 |
| 273 | 11.5538 | 0.0300 |
| 274 | 11.5837 | 0.0299 |
| 275 | 11.6136 | 0.0299 |
| 276 | 11.6435 | 0.0299 |
| 277 | 11.6733 | 0.0298 |
| 278 | 11.7031 | 0.0298 |
| 279 | 11.7329 | 0.0298 |
| 280 | 11.7626 | 0.0297 |
| 281 | 11.7923 | 0.0297 |
| 282 | 11.8220 | 0.0297 |
| 283 | 11.8517 | 0.0296 |
| 284 | 11.8813 | 0.0296 |
| 285 | 11.9109 | 0.0296 |
| 286 | 11.9404 | 0.0296 |
| 287 | 11.9700 | 0.0295 |
| 288 | 11.9995 | 0.0295 |

| Unit | Unit | Unit | Effective |
|---|---|---|---|

| Period (number) | Rainfall (In) | Soil-Loss (In) | Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0028 | 0.0267 |
| 2 | 0.0295 | 0.0028 | 0.0268 |
| 3 | 0.0296 | 0.0028 | 0.0268 |
| 4 | 0.0296 | 0.0028 | 0.0269 |
| 5 | 0.0297 | 0.0028 | 0.0269 |
| 6 | 0.0297 | 0.0028 | 0.0269 |
| 7 | 0.0298 | 0.0028 | 0.0270 |
| 8 | 0.0298 | 0.0028 | 0.0270 |
| 9 | 0.0299 | 0.0028 | 0.0271 |
| 10 | 0.0299 | 0.0028 | 0.0271 |
| 11 | 0.0300 | 0.0028 | 0.0272 |
| 12 | 0.0300 | 0.0028 | 0.0272 |
| 13 | 0.0301 | 0.0028 | 0.0273 |
| 14 | 0.0301 | 0.0028 | 0.0273 |
| 15 | 0.0302 | 0.0028 | 0.0273 |
| 16 | 0.0302 | 0.0028 | 0.0274 |
| 17 | 0.0303 | 0.0028 | 0.0274 |
| 18 | 0.0303 | 0.0028 | 0.0275 |
| 19 | 0.0304 | 0.0028 | 0.0275 |
| 20 | 0.0304 | 0.0028 | 0.0276 |
| 21 | 0.0305 | 0.0028 | 0.0276 |
| 22 | 0.0305 | 0.0028 | 0.0276 |
| 23 | 0.0306 | 0.0029 | 0.0277 |
| 24 | 0.0306 | 0.0029 | 0.0277 |
| 25 | 0.0307 | 0.0029 | 0.0278 |
| 26 | 0.0307 | 0.0029 | 0.0278 |
| 27 | 0.0308 | 0.0029 | 0.0279 |
| 28 | 0.0308 | 0.0029 | 0.0279 |
| 29 | 0.0309 | 0.0029 | 0.0280 |
| 30 | 0.0309 | 0.0029 | 0.0280 |
| 31 | 0.0310 | 0.0029 | 0.0281 |
| 32 | 0.0310 | 0.0029 | 0.0281 |
| 33 | 0.0311 | 0.0029 | 0.0282 |
| 34 | 0.0312 | 0.0029 | 0.0282 |
| 35 | 0.0312 | 0.0029 | 0.0283 |
| 36 | 0.0313 | 0.0029 | 0.0283 |
| 37 | 0.0313 | 0.0029 | 0.0284 |
| 38 | 0.0314 | 0.0029 | 0.0285 |
| 39 | 0.0315 | 0.0029 | 0.0285 |
| 40 | 0.0315 | 0.0029 | 0.0286 |
| 41 | 0.0316 | 0.0029 | 0.0286 |
| 42 | 0.0316 | 0.0030 | 0.0287 |
| 43 | 0.0317 | 0.0030 | 0.0287 |
| 44 | 0.0317 | 0.0030 | 0.0288 |
| 45 | 0.0318 | 0.0030 | 0.0289 |
| 46 | 0.0319 | 0.0030 | 0.0289 |
| 47 | 0.0320 | 0.0030 | 0.0290 |
| 48 | 0.0320 | 0.0030 | 0.0290 |
| 49 | 0.0321 | 0.0030 | 0.0291 |
| 50 | 0.0321 | 0.0030 | 0.0291 |
| 51 | 0.0322 | 0.0030 | 0.0292 |
| 52 | 0.0323 | 0.0030 | 0.0293 |
| 53 | 0.0324 | 0.0030 | 0.0293 |
| 54 | 0.0324 | 0.0030 | 0.0294 |
| 55 | 0.0325 | 0.0030 | 0.0295 |
| 56 | 0.0325 | 0.0030 | 0.0295 |
| 57 | 0.0326 | 0.0030 | 0.0296 |
| 58 | 0.0327 | 0.0031 | 0.0296 |
| 59 | 0.0328 | 0.0031 | 0.0297 |
| 60 | 0.0328 | 0.0031 | 0.0298 |
| 61 | 0.0329 | 0.0031 | 0.0298 |
| 62 | 0.0330 | 0.0031 | 0.0299 |
| 63 | 0.0331 | 0.0031 | 0.0300 |
| 64 | 0.0331 | 0.0031 | 0.0300 |
| 65 | 0.0332 | 0.0031 | 0.0301 |
| 66 | 0.0333 | 0.0031 | 0.0302 |
| 67 | 0.0334 | 0.0031 | 0.0303 |
| 68 | 0.0334 | 0.0031 | 0.0303 |

| | | | |
|---|---|---|---|
| 69 | 0.0335 | 0.0031 | 0.0304 |
| 70 | 0.0336 | 0.0031 | 0.0304 |
| 71 | 0.0337 | 0.0031 | 0.0305 |
| 72 | 0.0337 | 0.0032 | 0.0306 |
| 73 | 0.0339 | 0.0032 | 0.0307 |
| 74 | 0.0339 | 0.0032 | 0.0307 |
| 75 | 0.0340 | 0.0032 | 0.0308 |
| 76 | 0.0341 | 0.0032 | 0.0309 |
| 77 | 0.0342 | 0.0032 | 0.0310 |
| 78 | 0.0342 | 0.0032 | 0.0311 |
| 79 | 0.0344 | 0.0032 | 0.0312 |
| 80 | 0.0344 | 0.0032 | 0.0312 |
| 81 | 0.0345 | 0.0032 | 0.0313 |
| 82 | 0.0346 | 0.0032 | 0.0314 |
| 83 | 0.0347 | 0.0032 | 0.0315 |
| 84 | 0.0348 | 0.0032 | 0.0315 |
| 85 | 0.0349 | 0.0033 | 0.0317 |
| 86 | 0.0350 | 0.0033 | 0.0317 |
| 87 | 0.0351 | 0.0033 | 0.0318 |
| 88 | 0.0352 | 0.0033 | 0.0319 |
| 89 | 0.0353 | 0.0033 | 0.0320 |
| 90 | 0.0354 | 0.0033 | 0.0321 |
| 91 | 0.0355 | 0.0033 | 0.0322 |
| 92 | 0.0356 | 0.0033 | 0.0323 |
| 93 | 0.0357 | 0.0033 | 0.0324 |
| 94 | 0.0358 | 0.0033 | 0.0324 |
| 95 | 0.0359 | 0.0034 | 0.0326 |
| 96 | 0.0360 | 0.0034 | 0.0326 |
| 97 | 0.0361 | 0.0034 | 0.0328 |
| 98 | 0.0362 | 0.0034 | 0.0328 |
| 99 | 0.0364 | 0.0034 | 0.0330 |
| 100 | 0.0364 | 0.0034 | 0.0330 |
| 101 | 0.0366 | 0.0034 | 0.0332 |
| 102 | 0.0367 | 0.0034 | 0.0332 |
| 103 | 0.0368 | 0.0034 | 0.0334 |
| 104 | 0.0369 | 0.0034 | 0.0335 |
| 105 | 0.0371 | 0.0035 | 0.0336 |
| 106 | 0.0372 | 0.0035 | 0.0337 |
| 107 | 0.0373 | 0.0035 | 0.0338 |
| 108 | 0.0374 | 0.0035 | 0.0339 |
| 109 | 0.0376 | 0.0035 | 0.0341 |
| 110 | 0.0377 | 0.0035 | 0.0342 |
| 111 | 0.0379 | 0.0035 | 0.0343 |
| 112 | 0.0379 | 0.0035 | 0.0344 |
| 113 | 0.0381 | 0.0036 | 0.0346 |
| 114 | 0.0382 | 0.0036 | 0.0347 |
| 115 | 0.0384 | 0.0036 | 0.0348 |
| 116 | 0.0385 | 0.0036 | 0.0349 |
| 117 | 0.0387 | 0.0036 | 0.0351 |
| 118 | 0.0388 | 0.0036 | 0.0352 |
| 119 | 0.0390 | 0.0036 | 0.0354 |
| 120 | 0.0391 | 0.0037 | 0.0355 |
| 121 | 0.0393 | 0.0037 | 0.0357 |
| 122 | 0.0394 | 0.0037 | 0.0358 |
| 123 | 0.0397 | 0.0037 | 0.0360 |
| 124 | 0.0398 | 0.0037 | 0.0361 |
| 125 | 0.0400 | 0.0037 | 0.0363 |
| 126 | 0.0401 | 0.0037 | 0.0364 |
| 127 | 0.0403 | 0.0038 | 0.0366 |
| 128 | 0.0405 | 0.0038 | 0.0367 |
| 129 | 0.0407 | 0.0038 | 0.0369 |
| 130 | 0.0408 | 0.0038 | 0.0370 |
| 131 | 0.0411 | 0.0038 | 0.0373 |
| 132 | 0.0412 | 0.0038 | 0.0374 |
| 133 | 0.0415 | 0.0039 | 0.0376 |
| 134 | 0.0416 | 0.0039 | 0.0377 |
| 135 | 0.0419 | 0.0039 | 0.0380 |
| 136 | 0.0421 | 0.0039 | 0.0381 |
| 137 | 0.0423 | 0.0040 | 0.0384 |
| 138 | 0.0425 | 0.0040 | 0.0385 |
| 139 | 0.0428 | 0.0040 | 0.0388 |

| | | | |
|---|---|---|---|
| 140 | 0.0430 | 0.0040 | 0.0389 |
| 141 | 0.0433 | 0.0040 | 0.0392 |
| 142 | 0.0434 | 0.0041 | 0.0394 |
| 143 | 0.0438 | 0.0041 | 0.0397 |
| 144 | 0.0440 | 0.0041 | 0.0398 |
| 145 | 0.0384 | 0.0036 | 0.0348 |
| 146 | 0.0386 | 0.0036 | 0.0350 |
| 147 | 0.0391 | 0.0036 | 0.0354 |
| 148 | 0.0393 | 0.0037 | 0.0356 |
| 149 | 0.0398 | 0.0037 | 0.0360 |
| 150 | 0.0400 | 0.0037 | 0.0363 |
| 151 | 0.0405 | 0.0038 | 0.0367 |
| 152 | 0.0407 | 0.0038 | 0.0369 |
| 153 | 0.0413 | 0.0039 | 0.0374 |
| 154 | 0.0415 | 0.0039 | 0.0377 |
| 155 | 0.0421 | 0.0039 | 0.0382 |
| 156 | 0.0424 | 0.0040 | 0.0384 |
| 157 | 0.0430 | 0.0040 | 0.0390 |
| 158 | 0.0433 | 0.0040 | 0.0393 |
| 159 | 0.0440 | 0.0041 | 0.0399 |
| 160 | 0.0443 | 0.0041 | 0.0402 |
| 161 | 0.0450 | 0.0042 | 0.0408 |
| 162 | 0.0454 | 0.0042 | 0.0411 |
| 163 | 0.0462 | 0.0043 | 0.0419 |
| 164 | 0.0466 | 0.0043 | 0.0422 |
| 165 | 0.0474 | 0.0044 | 0.0430 |
| 166 | 0.0479 | 0.0045 | 0.0434 |
| 167 | 0.0488 | 0.0046 | 0.0443 |
| 168 | 0.0493 | 0.0046 | 0.0447 |
| 169 | 0.0505 | 0.0047 | 0.0458 |
| 170 | 0.0510 | 0.0048 | 0.0463 |
| 171 | 0.0522 | 0.0049 | 0.0474 |
| 172 | 0.0529 | 0.0049 | 0.0479 |
| 173 | 0.0542 | 0.0051 | 0.0492 |
| 174 | 0.0549 | 0.0051 | 0.0498 |
| 175 | 0.0565 | 0.0053 | 0.0512 |
| 176 | 0.0573 | 0.0054 | 0.0520 |
| 177 | 0.0592 | 0.0055 | 0.0537 |
| 178 | 0.0602 | 0.0056 | 0.0546 |
| 179 | 0.0624 | 0.0058 | 0.0566 |
| 180 | 0.0636 | 0.0059 | 0.0577 |
| 181 | 0.0663 | 0.0062 | 0.0601 |
| 182 | 0.0678 | 0.0063 | 0.0615 |
| 183 | 0.0713 | 0.0067 | 0.0646 |
| 184 | 0.0733 | 0.0068 | 0.0664 |
| 185 | 0.0386 | 0.0036 | 0.0350 |
| 186 | 0.0411 | 0.0038 | 0.0373 |
| 187 | 0.0477 | 0.0045 | 0.0432 |
| 188 | 0.0521 | 0.0049 | 0.0472 |
| 189 | 0.0647 | 0.0060 | 0.0587 |
| 190 | 0.0746 | 0.0070 | 0.0676 |
| 191 | 0.1132 | 0.0106 | 0.1026 |
| 192 | 0.1642 | 0.0146 | 0.1496 |
| 193 | 0.7105 | 0.0146 | 0.6959 |
| 194 | 0.0891 | 0.0083 | 0.0807 |
| 195 | 0.0576 | 0.0054 | 0.0522 |
| 196 | 0.0441 | 0.0041 | 0.0400 |
| 197 | 0.0755 | 0.0070 | 0.0684 |
| 198 | 0.0695 | 0.0065 | 0.0630 |
| 199 | 0.0649 | 0.0061 | 0.0588 |
| 200 | 0.0612 | 0.0057 | 0.0555 |
| 201 | 0.0582 | 0.0054 | 0.0528 |
| 202 | 0.0557 | 0.0052 | 0.0505 |
| 203 | 0.0535 | 0.0050 | 0.0485 |
| 204 | 0.0516 | 0.0048 | 0.0468 |
| 205 | 0.0498 | 0.0047 | 0.0452 |
| 206 | 0.0483 | 0.0045 | 0.0438 |
| 207 | 0.0470 | 0.0044 | 0.0426 |
| 208 | 0.0458 | 0.0043 | 0.0415 |
| 209 | 0.0447 | 0.0042 | 0.0405 |
| 210 | 0.0436 | 0.0041 | 0.0396 |

| | | | |
|---|---|---|---|
| 211 | 0.0427 | 0.0040 | 0.0387 |
| 212 | 0.0418 | 0.0039 | 0.0379 |
| 213 | 0.0410 | 0.0038 | 0.0372 |
| 214 | 0.0402 | 0.0038 | 0.0365 |
| 215 | 0.0395 | 0.0037 | 0.0358 |
| 216 | 0.0389 | 0.0036 | 0.0352 |
| 217 | 0.0441 | 0.0041 | 0.0400 |
| 218 | 0.0436 | 0.0041 | 0.0395 |
| 219 | 0.0431 | 0.0040 | 0.0391 |
| 220 | 0.0426 | 0.0040 | 0.0387 |
| 221 | 0.0422 | 0.0039 | 0.0383 |
| 222 | 0.0418 | 0.0039 | 0.0379 |
| 223 | 0.0414 | 0.0039 | 0.0375 |
| 224 | 0.0410 | 0.0038 | 0.0371 |
| 225 | 0.0406 | 0.0038 | 0.0368 |
| 226 | 0.0402 | 0.0038 | 0.0365 |
| 227 | 0.0399 | 0.0037 | 0.0362 |
| 228 | 0.0395 | 0.0037 | 0.0359 |
| 229 | 0.0392 | 0.0037 | 0.0356 |
| 230 | 0.0389 | 0.0036 | 0.0353 |
| 231 | 0.0386 | 0.0036 | 0.0350 |
| 232 | 0.0383 | 0.0036 | 0.0347 |
| 233 | 0.0380 | 0.0036 | 0.0345 |
| 234 | 0.0378 | 0.0035 | 0.0342 |
| 235 | 0.0375 | 0.0035 | 0.0340 |
| 236 | 0.0372 | 0.0035 | 0.0338 |
| 237 | 0.0370 | 0.0035 | 0.0335 |
| 238 | 0.0368 | 0.0034 | 0.0333 |
| 239 | 0.0365 | 0.0034 | 0.0331 |
| 240 | 0.0363 | 0.0034 | 0.0329 |
| 241 | 0.0361 | 0.0034 | 0.0327 |
| 242 | 0.0359 | 0.0033 | 0.0325 |
| 243 | 0.0356 | 0.0033 | 0.0323 |
| 244 | 0.0354 | 0.0033 | 0.0321 |
| 245 | 0.0352 | 0.0033 | 0.0319 |
| 246 | 0.0350 | 0.0033 | 0.0318 |
| 247 | 0.0349 | 0.0033 | 0.0316 |
| 248 | 0.0347 | 0.0032 | 0.0314 |
| 249 | 0.0345 | 0.0032 | 0.0313 |
| 250 | 0.0343 | 0.0032 | 0.0311 |
| 251 | 0.0341 | 0.0032 | 0.0309 |
| 252 | 0.0340 | 0.0032 | 0.0308 |
| 253 | 0.0338 | 0.0032 | 0.0306 |
| 254 | 0.0336 | 0.0031 | 0.0305 |
| 255 | 0.0335 | 0.0031 | 0.0303 |
| 256 | 0.0333 | 0.0031 | 0.0302 |
| 257 | 0.0332 | 0.0031 | 0.0301 |
| 258 | 0.0330 | 0.0031 | 0.0299 |
| 259 | 0.0329 | 0.0031 | 0.0298 |
| 260 | 0.0327 | 0.0031 | 0.0297 |
| 261 | 0.0326 | 0.0030 | 0.0295 |
| 262 | 0.0324 | 0.0030 | 0.0294 |
| 263 | 0.0323 | 0.0030 | 0.0293 |
| 264 | 0.0322 | 0.0030 | 0.0292 |
| 265 | 0.0320 | 0.0030 | 0.0291 |
| 266 | 0.0319 | 0.0030 | 0.0289 |
| 267 | 0.0318 | 0.0030 | 0.0288 |
| 268 | 0.0317 | 0.0030 | 0.0287 |
| 269 | 0.0315 | 0.0029 | 0.0286 |
| 270 | 0.0314 | 0.0029 | 0.0285 |
| 271 | 0.0313 | 0.0029 | 0.0284 |
| 272 | 0.0312 | 0.0029 | 0.0283 |
| 273 | 0.0311 | 0.0029 | 0.0282 |
| 274 | 0.0310 | 0.0029 | 0.0281 |
| 275 | 0.0309 | 0.0029 | 0.0280 |
| 276 | 0.0307 | 0.0029 | 0.0279 |
| 277 | 0.0306 | 0.0029 | 0.0278 |
| 278 | 0.0305 | 0.0029 | 0.0277 |
| 279 | 0.0304 | 0.0028 | 0.0276 |
| 280 | 0.0303 | 0.0028 | 0.0275 |
| 281 | 0.0302 | 0.0028 | 0.0274 |

```
      282              0.0301           0.0028              0.0273
      283              0.0300           0.0028              0.0272
      284              0.0299           0.0028              0.0271
      285              0.0298           0.0028              0.0270
      286              0.0297           0.0028              0.0270
      287              0.0296           0.0028              0.0269
      288              0.0296           0.0028              0.0268
      ------------------------------------------------------------------
      ------------------------------------------------------------------
      Total soil rain loss =      1.07(In)
      Total effective rainfall =     10.93(In)
      Peak flow rate in flood hydrograph =    110.82(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
-------------------------------------------------------------------------
  0+ 5       0.0022      0.32  Q         |         |         |         |
  0+10       0.0120      1.43  Q         |         |         |         |
  0+15       0.0411      4.23  Q         |         |         |         |
  0+20       0.0926      7.48  VQ        |         |         |         |
  0+25       0.1534      8.82  VQ        |         |         |         |
  0+30       0.2201      9.69  VQ        |         |         |         |
  0+35       0.2912     10.32  V Q       |         |         |         |
  0+40       0.3656     10.80  V Q       |         |         |         |
  0+45       0.4425     11.16  V Q       |         |         |         |
  0+50       0.5212     11.43  V Q       |         |         |         |
  0+55       0.6013     11.63  V Q       |         |         |         |
  1+ 0       0.6822     11.75  V Q       |         |         |         |
  1+ 5       0.7636     11.82  V Q       |         |         |         |
  1+10       0.8455     11.88  |VQ       |         |         |         |
  1+15       0.9277     11.94  |VQ       |         |         |         |
  1+20       1.0102     11.98  |VQ       |         |         |         |
  1+25       1.0931     12.04  |VQ       |         |         |         |
  1+30       1.1763     12.08  |VQ       |         |         |         |
  1+35       1.2597     12.11  |VQ       |         |         |         |
  1+40       1.3434     12.14  |VQ       |         |         |         |
  1+45       1.4272     12.16  |VQ       |         |         |         |
  1+50       1.5111     12.18  |VQ       |         |         |         |
  1+55       1.5951     12.21  |VQ       |         |         |         |
  2+ 0       1.6793     12.23  | Q       |         |         |         |
  2+ 5       1.7637     12.25  | Q       |         |         |         |
  2+10       1.8482     12.27  | Q       |         |         |         |
  2+15       1.9328     12.29  | Q       |         |         |         |
  2+20       2.0176     12.31  | Q       |         |         |         |
  2+25       2.1025     12.33  | Q       |         |         |         |
  2+30       2.1876     12.35  | Q       |         |         |         |
  2+35       2.2728     12.37  | Q       |         |         |         |
  2+40       2.3582     12.40  | Q       |         |         |         |
  2+45       2.4437     12.42  | Q       |         |         |         |
  2+50       2.5294     12.44  | QV      |         |         |         |
  2+55       2.6152     12.46  | QV      |         |         |         |
  3+ 0       2.7012     12.49  | QV      |         |         |         |
  3+ 5       2.7874     12.51  | QV      |         |         |         |
  3+10       2.8737     12.53  | QV      |         |         |         |
  3+15       2.9602     12.56  | QV      |         |         |         |
  3+20       3.0468     12.58  | QV      |         |         |         |
  3+25       3.1336     12.60  | QV      |         |         |         |
  3+30       3.2205     12.63  | QV      |         |         |         |
  3+35       3.3077     12.65  | QV      |         |         |         |
  3+40       3.3950     12.67  | Q V     |         |         |         |
  3+45       3.4824     12.70  | Q V     |         |         |         |
  3+50       3.5700     12.72  | Q V     |         |         |         |
  3+55       3.6578     12.75  | Q V     |         |         |         |
  4+ 0       3.7458     12.77  | Q V     |         |         |         |
  4+ 5       3.8340     12.80  | Q V     |         |         |         |
```

```
 4+10       3.9223     12.82  | Q V     |         |         |         |
 4+15       4.0108     12.85  | Q V     |         |         |         |
 4+20       4.0995     12.88  | Q V     |         |         |         |
 4+25       4.1883     12.90  | Q  V    |         |         |         |
 4+30       4.2773     12.93  | Q  V    |         |         |         |
 4+35       4.3666     12.95  | Q  V    |         |         |         |
 4+40       4.4560     12.98  | Q  V    |         |         |         |
 4+45       4.5456     13.01  | Q  V    |         |         |         |
 4+50       4.6354     13.04  | Q  V    |         |         |         |
 4+55       4.7253     13.06  | Q  V    |         |         |         |
 5+ 0       4.8155     13.09  | Q  V    |         |         |         |
 5+ 5       4.9059     13.12  | Q  V    |         |         |         |
 5+10       4.9964     13.15  | Q  V    |         |         |         |
 5+15       5.0872     13.18  | Q   V   |         |         |         |
 5+20       5.1781     13.21  | Q   V   |         |         |         |
 5+25       5.2693     13.24  | Q   V   |         |         |         |
 5+30       5.3606     13.27  | Q   V   |         |         |         |
 5+35       5.4522     13.29  | Q   V   |         |         |         |
 5+40       5.5440     13.33  | Q   V   |         |         |         |
 5+45       5.6359     13.36  | Q   V   |         |         |         |
 5+50       5.7281     13.39  | Q   V   |         |         |         |
 5+55       5.8205     13.42  | Q   V   |         |         |         |
 6+ 0       5.9132     13.45  | Q    V  |         |         |         |
 6+ 5       6.0060     13.48  | Q    V  |         |         |         |
 6+10       6.0991     13.51  | Q    V  |         |         |         |
 6+15       6.1924     13.55  | Q    V  |         |         |         |
 6+20       6.2859     13.58  | Q    V  |         |         |         |
 6+25       6.3796     13.61  | Q    V  |         |         |         |
 6+30       6.4736     13.64  | Q    V  |         |         |         |
 6+35       6.5678     13.68  | Q    V  |         |         |         |
 6+40       6.6622     13.71  | Q    V  |         |         |         |
 6+45       6.7569     13.75  | Q     V |         |         |         |
 6+50       6.8518     13.78  | Q     V |         |         |         |
 6+55       6.9470     13.82  | Q     V |         |         |         |
 7+ 0       7.0424     13.85  | Q     V |         |         |         |
 7+ 5       7.1381     13.89  | Q     V |         |         |         |
 7+10       7.2340     13.93  | Q     V |         |         |         |
 7+15       7.3301     13.96  | Q     V |         |         |         |
 7+20       7.4266     14.00  | Q     V |         |         |         |
 7+25       7.5233     14.04  | Q      V|         |         |         |
 7+30       7.6202     14.08  | Q      V|         |         |         |
 7+35       7.7174     14.12  | Q      V|         |         |         |
 7+40       7.8149     14.16  | Q      V|         |         |         |
 7+45       7.9127     14.20  | Q      V|         |         |         |
 7+50       8.0107     14.24  | Q      V|         |         |         |
 7+55       8.1091     14.28  | Q      V|         |         |         |
 8+ 0       8.2077     14.32  | Q      V|         |         |         |
 8+ 5       8.3066     14.36  | Q      V|         |         |         |
 8+10       8.4058     14.40  | Q       V         |         |         |
 8+15       8.5052     14.45  | Q       V         |         |         |
 8+20       8.6050     14.49  | Q       V         |         |         |
 8+25       8.7051     14.53  | Q       V         |         |         |
 8+30       8.8055     14.58  | Q       V         |         |         |
 8+35       8.9062     14.62  | Q       V         |         |         |
 8+40       9.0073     14.67  | Q       V         |         |         |
 8+45       9.1086     14.72  | Q       V         |         |         |
 8+50       9.2103     14.76  | Q       |V        |         |         |
 8+55       9.3123     14.81  | Q       |V        |         |         |
 9+ 0       9.4147     14.86  | Q       |V        |         |         |
 9+ 5       9.5174     14.91  | Q       |V        |         |         |
 9+10       9.6204     14.96  | Q       |V        |         |         |
 9+15       9.7238     15.01  |  Q      |V        |         |         |
 9+20       9.8275     15.06  |  Q      |V        |         |         |
 9+25       9.9316     15.12  |  Q      |V        |         |         |
 9+30      10.0361     15.17  |  Q      | V       |         |         |
 9+35      10.1409     15.22  |  Q      | V       |         |         |
 9+40      10.2462     15.28  |  Q      | V       |         |         |
 9+45      10.3518     15.33  |  Q      | V       |         |         |
 9+50      10.4578     15.39  |  Q      | V       |         |         |
 9+55      10.5642     15.45  |  Q      | V       |         |         |
10+ 0      10.6710     15.51  |  Q      | V       |         |         |
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10+ 5      10.7782     15.57  |  Q      | V       |         |         |
10+10      10.8858     15.63  |  Q      |  V      |         |         |
10+15      10.9939     15.69  |  Q      |  V      |         |         |
10+20      11.1024     15.75  |  Q      |  V      |         |         |
10+25      11.2113     15.82  |  Q      |  V      |         |         |
10+30      11.3207     15.88  |  Q      |  V      |         |         |
10+35      11.4305     15.95  |  Q      |  V      |         |         |
10+40      11.5409     16.02  |  Q      |  V      |         |         |
10+45      11.6516     16.09  |  Q      |  V      |         |         |
10+50      11.7629     16.16  |  Q      |   V     |         |         |
10+55      11.8747     16.23  |  Q      |   V     |         |         |
11+ 0      11.9870     16.30  |  Q      |   V     |         |         |
11+ 5      12.0997     16.38  |  Q      |   V     |         |         |
11+10      12.2131     16.45  |  Q      |   V     |         |         |
11+15      12.3269     16.53  |  Q      |   V     |         |         |
11+20      12.4413     16.61  |  Q      |   V     |         |         |
11+25      12.5563     16.69  |  Q      |    V    |         |         |
11+30      12.6718     16.78  |  Q      |    V    |         |         |
11+35      12.7879     16.86  |  Q      |    V    |         |         |
11+40      12.9046     16.95  |  Q      |    V    |         |         |
11+45      13.0219     17.03  |  Q      |    V    |         |         |
11+50      13.1399     17.13  |  Q      |    V    |         |         |
11+55      13.2585     17.22  |  Q      |    V    |         |         |
12+ 0      13.3777     17.32  |  Q      |     V   |         |         |
12+ 5      13.4972     17.35  |  Q      |     V   |         |         |
12+10      13.6159     17.23  |  Q      |     V   |         |         |
12+15      13.7314     16.77  |  Q      |     V   |         |         |
12+20      13.8432     16.24  |  Q      |     V   |         |         |
12+25      13.9541     16.09  |  Q      |     V   |         |         |
12+30      14.0646     16.05  |  Q      |     V   |         |         |
12+35      14.1751     16.05  |  Q      |     V   |         |         |
12+40      14.2860     16.10  |  Q      |      V  |         |         |
12+45      14.3973     16.16  |  Q      |      V  |         |         |
12+50      14.5093     16.26  |  Q      |      V  |         |         |
12+55      14.6220     16.37  |  Q      |      V  |         |         |
13+ 0      14.7357     16.51  |  Q      |      V  |         |         |
13+ 5      14.8504     16.66  |  Q      |      V  |         |         |
13+10      14.9662     16.81  |  Q      |      V  |         |         |
13+15      15.0832     16.98  |  Q      |       V |         |         |
13+20      15.2013     17.15  |  Q      |       V |         |         |
13+25      15.3206     17.33  |  Q      |       V |         |         |
13+30      15.4413     17.52  |  Q      |       V |         |         |
13+35      15.5633     17.72  |  Q      |       V |         |         |
13+40      15.6868     17.93  |  Q      |       V |         |         |
13+45      15.8118     18.14  |  Q      |       V |         |         |
13+50      15.9383     18.38  |  Q      |        V|         |         |
13+55      16.0665     18.61  |  Q      |        V|         |         |
14+ 0      16.1965     18.87  |  Q      |        V|         |         |
14+ 5      16.3282     19.13  |  Q      |        V|         |         |
14+10      16.4620     19.42  |  Q      |        V|         |         |
14+15      16.5977     19.72  |  Q      |        V|         |         |
14+20      16.7358     20.04  |   Q     |         V         |         |
14+25      16.8761     20.37  |   Q     |         V         |         |
14+30      17.0188     20.73  |   Q     |         V         |         |
14+35      17.1641     21.10  |   Q     |         V         |         |
14+40      17.3122     21.50  |   Q     |         V         |         |
14+45      17.4631     21.92  |   Q     |         V         |         |
14+50      17.6173     22.38  |   Q     |         |V        |         |
14+55      17.7748     22.88  |   Q     |         |V        |         |
15+ 0      17.9361     23.42  |   Q     |         |V        |         |
15+ 5      18.1014     24.00  |   Q     |         |V        |         |
15+10      18.2712     24.65  |   Q     |         |V        |         |
15+15      18.4458     25.36  |    Q    |         | V       |         |
15+20      18.6260     26.16  |    Q    |         | V       |         |
15+25      18.8093     26.62  |    Q    |         | V       |         |
15+30      18.9896     26.17  |    Q    |         | V       |         |
15+35      19.1520     23.59  |   Q     |         | V       |         |
15+40      19.2941     20.63  |   Q     |         |  V      |         |
15+45      19.4353     20.49  |   Q     |         |  V      |         |
15+50      19.5832     21.48  |   Q     |         |  V      |         |
15+55      19.7464     23.70  |   Q     |         |  V      |         |
```

```
 16+ 0      19.9394     28.02  |    Q     |          |  V       |          |
 16+ 5      20.2268     41.72  |        Q |          |    V     |          |
 16+10      20.6883     67.02  |          |  Q       |    V     |          |
 16+15      21.4210    106.37  |          |          |Q   V     |          |
 16+20      22.1842    110.82  |          |          | Q   V    |          |
 16+25      22.6161     62.72  |          | Q        |       V  |          |
 16+30      22.9477     48.15  |          Q|         |       V  |          |
 16+35      23.2380     42.14  |        Q |          |       V  |          |
 16+40      23.5104     39.56  |       Q  |          |        V |          |
 16+45      23.7569     35.79  |       Q  |          |        V |          |
 16+50      23.9796     32.34  |      Q   |          |        V |          |
 16+55      24.1816     29.33  |     Q    |          |        V |          |
 17+ 0      24.3648     26.60  |     Q    |          |         V|          |
 17+ 5      24.5330     24.42  |    Q     |          |         V|          |
 17+10      24.6941     23.39  |    Q     |          |         V|          |
 17+15      24.8485     22.43  |    Q     |          |         V|          |
 17+20      24.9969     21.54  |    Q     |          |         V|          |
 17+25      25.1414     20.97  |    Q     |          |          V          |
 17+30      25.2800     20.13  |    Q     |          |          V          |
 17+35      25.4132     19.34  |  Q       |          |          V          |
 17+40      25.5420     18.70  |  Q       |          |          V          |
 17+45      25.6660     18.01  |  Q       |          |          V          |
 17+50      25.7871     17.59  |  Q       |          |          V          |
 17+55      25.9056     17.20  |  Q       |          |          |V         |
 18+ 0      26.0216     16.85  |  Q       |          |          |V         |
 18+ 5      26.1357     16.57  |  Q       |          |          |V         |
 18+10      26.2492     16.48  |  Q       |          |          |V         |
 18+15      26.3646     16.75  |  Q       |          |          |V         |
 18+20      26.4826     17.14  |  Q       |          |          |V         |
 18+25      26.6008     17.16  |  Q       |          |          |V         |
 18+30      26.7186     17.11  |  Q       |          |          | V        |
 18+35      26.8359     17.03  |  Q       |          |          | V        |
 18+40      26.9524     16.92  |  Q       |          |          | V        |
 18+45      27.0681     16.81  |  Q       |          |          | V        |
 18+50      27.1830     16.68  |  Q       |          |          | V        |
 18+55      27.2970     16.55  |  Q       |          |          | V        |
 19+ 0      27.4100     16.41  |  Q       |          |          | V        |
 19+ 5      27.5220     16.27  |  Q       |          |          | V        |
 19+10      27.6331     16.13  |  Q       |          |          |  V       |
 19+15      27.7433     16.00  |  Q       |          |          |  V       |
 19+20      27.8525     15.87  |  Q       |          |          |  V       |
 19+25      27.9610     15.74  |  Q       |          |          |  V       |
 19+30      28.0685     15.62  |  Q       |          |          |  V       |
 19+35      28.1753     15.50  |  Q       |          |          |  V       |
 19+40      28.2813     15.39  |  Q       |          |          |  V       |
 19+45      28.3865     15.28  |  Q       |          |          |   V      |
 19+50      28.4910     15.17  |  Q       |          |          |   V      |
 19+55      28.5947     15.06  |  Q       |          |          |   V      |
 20+ 0      28.6977     14.96  | Q        |          |          |   V      |
 20+ 5      28.8000     14.86  | Q        |          |          |   V      |
 20+10      28.9017     14.76  | Q        |          |          |   V      |
 20+15      29.0027     14.67  | Q        |          |          |   V      |
 20+20      29.1030     14.57  | Q        |          |          |   V      |
 20+25      29.2028     14.49  | Q        |          |          |   V      |
 20+30      29.3020     14.40  | Q        |          |          |    V     |
 20+35      29.4005     14.31  | Q        |          |          |    V     |
 20+40      29.4986     14.23  | Q        |          |          |    V     |
 20+45      29.5960     14.15  | Q        |          |          |    V     |
 20+50      29.6929     14.07  | Q        |          |          |    V     |
 20+55      29.7893     14.00  | Q        |          |          |    V     |
 21+ 0      29.8852     13.92  | Q        |          |          |    V     |
 21+ 5      29.9806     13.85  | Q        |          |          |    V     |
 21+10      30.0755     13.78  | Q        |          |          |     V    |
 21+15      30.1699     13.71  | Q        |          |          |     V    |
 21+20      30.2638     13.64  | Q        |          |          |     V    |
 21+25      30.3573     13.57  | Q        |          |          |     V    |
 21+30      30.4504     13.51  | Q        |          |          |     V    |
 21+35      30.5429     13.44  | Q        |          |          |     V    |
 21+40      30.6351     13.38  | Q        |          |          |     V    |
 21+45      30.7269     13.32  | Q        |          |          |     V    |
 21+50      30.8182     13.26  | Q        |          |          |     V    |
```

```
  21+55      30.9091     13.20  | Q       |         |         |      V  |
  22+ 0      30.9996     13.14  | Q       |         |         |      V  |
  22+ 5      31.0898     13.09  | Q       |         |         |      V  |
  22+10      31.1795     13.03  | Q       |         |         |      V  |
  22+15      31.2689     12.98  | Q       |         |         |      V  |
  22+20      31.3579     12.92  | Q       |         |         |      V  |
  22+25      31.4466     12.87  | Q       |         |         |      V  |
  22+30      31.5349     12.82  | Q       |         |         |      V  |
  22+35      31.6228     12.77  | Q       |         |         |      V  |
  22+40      31.7104     12.72  | Q       |         |         |       V |
  22+45      31.7977     12.67  | Q       |         |         |       V |
  22+50      31.8846     12.62  | Q       |         |         |       V |
  22+55      31.9712     12.58  | Q       |         |         |       V |
  23+ 0      32.0575     12.53  | Q       |         |         |       V |
  23+ 5      32.1435     12.48  | Q       |         |         |       V |
  23+10      32.2291     12.44  | Q       |         |         |       V |
  23+15      32.3145     12.39  | Q       |         |         |       V |
  23+20      32.3995     12.35  | Q       |         |         |       V |
  23+25      32.4843     12.31  | Q       |         |         |       V |
  23+30      32.5687     12.26  | Q       |         |         |        V|
  23+35      32.6529     12.22  | Q       |         |         |        V|
  23+40      32.7368     12.18  | Q       |         |         |        V|
  23+45      32.8204     12.14  | Q       |         |         |        V|
  23+50      32.9038     12.10  | Q       |         |         |        V|
  23+55      32.9868     12.06  | Q       |         |         |        V|
  24+ 0      33.0696     12.02  | Q       |         |         |        V|
  24+ 5      33.1500     11.67  | Q       |         |         |        V|
  24+10      33.2225     10.52  | Q       |         |         |        V|
  24+15      33.2754      7.69  |Q        |         |         |        V|
  24+20      33.3059      4.43  Q         |         |         |        V|
  24+25      33.3272      3.09  Q         |         |         |        V|
  24+30      33.3425      2.22  Q         |         |         |        V|
  24+35      33.3534      1.59  Q         |         |         |        V|
  24+40      33.3612      1.13  Q         |         |         |        V|
  24+45      33.3666      0.78  Q         |         |         |        V|
  24+50      33.3702      0.53  Q         |         |         |        V|
  24+55      33.3726      0.35  Q         |         |         |        V|
  25+ 0      33.3742      0.24  Q         |         |         |        V|
  25+ 5      33.3755      0.19  Q         |         |         |        V|
  25+10      33.3765      0.14  Q         |         |         |        V|
  25+15      33.3773      0.11  Q         |         |         |        V|
  25+20      33.3778      0.08  Q         |         |         |        V|
  25+25      33.3782      0.05  Q         |         |         |        V|
  25+30      33.3783      0.03  Q         |         |         |        V|
  25+35      33.3784      0.01  Q         |         |         |         V
--------------------------------------------------------------------------
```

Area 'F' – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

              Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'F'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

       Storm Event Year = 2

       Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
            6.71           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            6.71           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            6.71          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            6.71           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            6.71           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            6.71          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6          6.71      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.71 | 1.000 | 78.0 | 60.6 | 6.50 | 0.198 |

Area-averaged catchment yield fraction, Y = 0.198
Area-averaged low loss fraction, Yb = 0.802
User entry of time of concentration = 0.162 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.71(Ac.)
Catchment Lag time = 0.130 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 64.3004
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.802 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.71(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.309(In)
30-minute factor = 1.000 Adjusted rainfall = 0.528(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)

U n i t H y d r o g r a p h

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 81.15 (CFS)) | |
| 1 | 6.228 | 5.054 |
| 2 | 42.193 | 29.185 |
| 3 | 74.058 | 25.858 |
| 4 | 85.789 | 9.519 |
| 5 | 92.451 | 5.407 |
| 6 | 96.283 | 3.110 |
| 7 | 98.090 | 1.467 |
| 8 | 98.816 | 0.589 |
| 9 | 99.292 | 0.386 |
| 10 | 99.729 | 0.355 |
| 11 | 100.000 | 0.220 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3086 | 0.3086 |
| 2 | 0.3799 | 0.0713 |
| 3 | 0.4290 | 0.0491 |
| 4 | 0.4677 | 0.0387 |
| 5 | 0.5001 | 0.0324 |
| 6 | 0.5282 | 0.0281 |
| 7 | 0.5532 | 0.0250 |
| 8 | 0.5758 | 0.0226 |
| 9 | 0.5965 | 0.0207 |
| 10 | 0.6157 | 0.0192 |
| 11 | 0.6336 | 0.0179 |
| 12 | 0.6503 | 0.0168 |
| 13 | 0.6838 | 0.0335 |
| 14 | 0.7163 | 0.0325 |
| 15 | 0.7480 | 0.0317 |

| | | |
|---|---|---|
| 16 | 0.7789 | 0.0309 |
| 17 | 0.8091 | 0.0302 |
| 18 | 0.8386 | 0.0295 |
| 19 | 0.8675 | 0.0289 |
| 20 | 0.8959 | 0.0284 |
| 21 | 0.9237 | 0.0278 |
| 22 | 0.9510 | 0.0273 |
| 23 | 0.9779 | 0.0269 |
| 24 | 1.0044 | 0.0265 |
| 25 | 1.0304 | 0.0260 |
| 26 | 1.0561 | 0.0257 |
| 27 | 1.0814 | 0.0253 |
| 28 | 1.1063 | 0.0249 |
| 29 | 1.1309 | 0.0246 |
| 30 | 1.1552 | 0.0243 |
| 31 | 1.1792 | 0.0240 |
| 32 | 1.2029 | 0.0237 |
| 33 | 1.2264 | 0.0234 |
| 34 | 1.2495 | 0.0232 |
| 35 | 1.2725 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3176 | 0.0224 |
| 38 | 1.3398 | 0.0222 |
| 39 | 1.3618 | 0.0220 |
| 40 | 1.3836 | 0.0218 |
| 41 | 1.4051 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4477 | 0.0212 |
| 44 | 1.4687 | 0.0210 |
| 45 | 1.4896 | 0.0208 |
| 46 | 1.5103 | 0.0207 |
| 47 | 1.5307 | 0.0205 |
| 48 | 1.5511 | 0.0203 |
| 49 | 1.5713 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6112 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6893 | 0.0193 |
| 56 | 1.7085 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7653 | 0.0188 |
| 60 | 1.7840 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8394 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8758 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9296 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9650 | 0.0176 |
| 71 | 1.9825 | 0.0175 |
| 72 | 2.0000 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0548 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1213 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |
| 84 | 2.1602 | 0.0129 |
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1858 | 0.0127 |

| | | |
|---|---|---|
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2236 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2852 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3094 | 0.0121 |
| 97 | 2.3214 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3452 | 0.0119 |
| 100 | 2.3570 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3921 | 0.0116 |
| 104 | 2.4037 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4267 | 0.0115 |
| 107 | 2.4381 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4608 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5166 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5495 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5712 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6034 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6874 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7080 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7386 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7988 | 0.0099 |
| 142 | 2.8087 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8480 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8771 | 0.0097 |
| 150 | 2.8867 | 0.0096 |
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9439 | 0.0095 |
| 157 | 2.9533 | 0.0094 |

| | | |
|---|---|---|
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9721 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 3.0000 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0368 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0822 | 0.0090 |
| 172 | 3.0912 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1358 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1798 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2059 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2914 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3250 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3665 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4075 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4641 | 0.0080 |
| 217 | 3.4721 | 0.0080 |
| 218 | 3.4801 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5512 | 0.0078 |
| 228 | 3.5590 | 0.0078 |

| | | |
|---|---|---|
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5746 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5901 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6286 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6818 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7786 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8005 | 0.0073 |
| 261 | 3.8079 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8297 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8442 | 0.0072 |
| 267 | 3.8514 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8658 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8873 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9370 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9511 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9861 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 4.0000 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0056 | 0.0014 |
| 2 | 0.0070 | 0.0056 | 0.0014 |
| 3 | 0.0070 | 0.0056 | 0.0014 |
| 4 | 0.0070 | 0.0056 | 0.0014 |
| 5 | 0.0070 | 0.0056 | 0.0014 |
| 6 | 0.0070 | 0.0056 | 0.0014 |

| | | | |
|---|---|---|---|
| 7 | 0.0071 | 0.0057 | 0.0014 |
| 8 | 0.0071 | 0.0057 | 0.0014 |
| 9 | 0.0071 | 0.0057 | 0.0014 |
| 10 | 0.0071 | 0.0057 | 0.0014 |
| 11 | 0.0071 | 0.0057 | 0.0014 |
| 12 | 0.0072 | 0.0057 | 0.0014 |
| 13 | 0.0072 | 0.0058 | 0.0014 |
| 14 | 0.0072 | 0.0058 | 0.0014 |
| 15 | 0.0072 | 0.0058 | 0.0014 |
| 16 | 0.0072 | 0.0058 | 0.0014 |
| 17 | 0.0073 | 0.0058 | 0.0014 |
| 18 | 0.0073 | 0.0058 | 0.0014 |
| 19 | 0.0073 | 0.0059 | 0.0014 |
| 20 | 0.0073 | 0.0059 | 0.0014 |
| 21 | 0.0073 | 0.0059 | 0.0015 |
| 22 | 0.0074 | 0.0059 | 0.0015 |
| 23 | 0.0074 | 0.0059 | 0.0015 |
| 24 | 0.0074 | 0.0059 | 0.0015 |
| 25 | 0.0074 | 0.0060 | 0.0015 |
| 26 | 0.0074 | 0.0060 | 0.0015 |
| 27 | 0.0075 | 0.0060 | 0.0015 |
| 28 | 0.0075 | 0.0060 | 0.0015 |
| 29 | 0.0075 | 0.0060 | 0.0015 |
| 30 | 0.0075 | 0.0060 | 0.0015 |
| 31 | 0.0076 | 0.0061 | 0.0015 |
| 32 | 0.0076 | 0.0061 | 0.0015 |
| 33 | 0.0076 | 0.0061 | 0.0015 |
| 34 | 0.0076 | 0.0061 | 0.0015 |
| 35 | 0.0077 | 0.0061 | 0.0015 |
| 36 | 0.0077 | 0.0062 | 0.0015 |
| 37 | 0.0077 | 0.0062 | 0.0015 |
| 38 | 0.0077 | 0.0062 | 0.0015 |
| 39 | 0.0078 | 0.0062 | 0.0015 |
| 40 | 0.0078 | 0.0062 | 0.0015 |
| 41 | 0.0078 | 0.0063 | 0.0015 |
| 42 | 0.0078 | 0.0063 | 0.0016 |
| 43 | 0.0079 | 0.0063 | 0.0016 |
| 44 | 0.0079 | 0.0063 | 0.0016 |
| 45 | 0.0079 | 0.0064 | 0.0016 |
| 46 | 0.0079 | 0.0064 | 0.0016 |
| 47 | 0.0080 | 0.0064 | 0.0016 |
| 48 | 0.0080 | 0.0064 | 0.0016 |
| 49 | 0.0080 | 0.0064 | 0.0016 |
| 50 | 0.0080 | 0.0065 | 0.0016 |
| 51 | 0.0081 | 0.0065 | 0.0016 |
| 52 | 0.0081 | 0.0065 | 0.0016 |
| 53 | 0.0081 | 0.0065 | 0.0016 |
| 54 | 0.0082 | 0.0065 | 0.0016 |
| 55 | 0.0082 | 0.0066 | 0.0016 |
| 56 | 0.0082 | 0.0066 | 0.0016 |
| 57 | 0.0083 | 0.0066 | 0.0016 |
| 58 | 0.0083 | 0.0066 | 0.0016 |
| 59 | 0.0083 | 0.0067 | 0.0016 |
| 60 | 0.0083 | 0.0067 | 0.0017 |
| 61 | 0.0084 | 0.0067 | 0.0017 |
| 62 | 0.0084 | 0.0067 | 0.0017 |
| 63 | 0.0085 | 0.0068 | 0.0017 |
| 64 | 0.0085 | 0.0068 | 0.0017 |
| 65 | 0.0085 | 0.0068 | 0.0017 |
| 66 | 0.0085 | 0.0068 | 0.0017 |
| 67 | 0.0086 | 0.0069 | 0.0017 |
| 68 | 0.0086 | 0.0069 | 0.0017 |
| 69 | 0.0087 | 0.0069 | 0.0017 |
| 70 | 0.0087 | 0.0070 | 0.0017 |
| 71 | 0.0087 | 0.0070 | 0.0017 |
| 72 | 0.0087 | 0.0070 | 0.0017 |
| 73 | 0.0088 | 0.0071 | 0.0017 |
| 74 | 0.0088 | 0.0071 | 0.0017 |
| 75 | 0.0089 | 0.0071 | 0.0018 |
| 76 | 0.0089 | 0.0071 | 0.0018 |
| 77 | 0.0089 | 0.0072 | 0.0018 |

| | | | |
|---|---|---|---|
| 78 | 0.0090 | 0.0072 | 0.0018 |
| 79 | 0.0090 | 0.0072 | 0.0018 |
| 80 | 0.0091 | 0.0073 | 0.0018 |
| 81 | 0.0091 | 0.0073 | 0.0018 |
| 82 | 0.0091 | 0.0073 | 0.0018 |
| 83 | 0.0092 | 0.0074 | 0.0018 |
| 84 | 0.0092 | 0.0074 | 0.0018 |
| 85 | 0.0093 | 0.0074 | 0.0018 |
| 86 | 0.0093 | 0.0075 | 0.0018 |
| 87 | 0.0094 | 0.0075 | 0.0019 |
| 88 | 0.0094 | 0.0075 | 0.0019 |
| 89 | 0.0095 | 0.0076 | 0.0019 |
| 90 | 0.0095 | 0.0076 | 0.0019 |
| 91 | 0.0095 | 0.0077 | 0.0019 |
| 92 | 0.0096 | 0.0077 | 0.0019 |
| 93 | 0.0096 | 0.0077 | 0.0019 |
| 94 | 0.0097 | 0.0078 | 0.0019 |
| 95 | 0.0097 | 0.0078 | 0.0019 |
| 96 | 0.0098 | 0.0078 | 0.0019 |
| 97 | 0.0098 | 0.0079 | 0.0019 |
| 98 | 0.0099 | 0.0079 | 0.0020 |
| 99 | 0.0099 | 0.0080 | 0.0020 |
| 100 | 0.0100 | 0.0080 | 0.0020 |
| 101 | 0.0101 | 0.0081 | 0.0020 |
| 102 | 0.0101 | 0.0081 | 0.0020 |
| 103 | 0.0102 | 0.0081 | 0.0020 |
| 104 | 0.0102 | 0.0082 | 0.0020 |
| 105 | 0.0103 | 0.0082 | 0.0020 |
| 106 | 0.0103 | 0.0083 | 0.0020 |
| 107 | 0.0104 | 0.0083 | 0.0021 |
| 108 | 0.0104 | 0.0084 | 0.0021 |
| 109 | 0.0105 | 0.0084 | 0.0021 |
| 110 | 0.0106 | 0.0085 | 0.0021 |
| 111 | 0.0106 | 0.0085 | 0.0021 |
| 112 | 0.0107 | 0.0086 | 0.0021 |
| 113 | 0.0108 | 0.0086 | 0.0021 |
| 114 | 0.0108 | 0.0087 | 0.0021 |
| 115 | 0.0109 | 0.0088 | 0.0022 |
| 116 | 0.0110 | 0.0088 | 0.0022 |
| 117 | 0.0111 | 0.0089 | 0.0022 |
| 118 | 0.0111 | 0.0089 | 0.0022 |
| 119 | 0.0112 | 0.0090 | 0.0022 |
| 120 | 0.0113 | 0.0090 | 0.0022 |
| 121 | 0.0114 | 0.0091 | 0.0023 |
| 122 | 0.0114 | 0.0092 | 0.0023 |
| 123 | 0.0115 | 0.0092 | 0.0023 |
| 124 | 0.0116 | 0.0093 | 0.0023 |
| 125 | 0.0117 | 0.0094 | 0.0023 |
| 126 | 0.0118 | 0.0094 | 0.0023 |
| 127 | 0.0119 | 0.0095 | 0.0024 |
| 128 | 0.0119 | 0.0096 | 0.0024 |
| 129 | 0.0121 | 0.0097 | 0.0024 |
| 130 | 0.0121 | 0.0097 | 0.0024 |
| 131 | 0.0123 | 0.0098 | 0.0024 |
| 132 | 0.0123 | 0.0099 | 0.0024 |
| 133 | 0.0125 | 0.0100 | 0.0025 |
| 134 | 0.0125 | 0.0100 | 0.0025 |
| 135 | 0.0127 | 0.0102 | 0.0025 |
| 136 | 0.0127 | 0.0102 | 0.0025 |
| 137 | 0.0129 | 0.0103 | 0.0026 |
| 138 | 0.0130 | 0.0104 | 0.0026 |
| 139 | 0.0131 | 0.0105 | 0.0026 |
| 140 | 0.0132 | 0.0106 | 0.0026 |
| 141 | 0.0134 | 0.0107 | 0.0027 |
| 142 | 0.0135 | 0.0108 | 0.0027 |
| 143 | 0.0137 | 0.0110 | 0.0027 |
| 144 | 0.0137 | 0.0110 | 0.0027 |
| 145 | 0.0175 | 0.0140 | 0.0035 |
| 146 | 0.0175 | 0.0141 | 0.0035 |
| 147 | 0.0177 | 0.0142 | 0.0035 |
| 148 | 0.0178 | 0.0143 | 0.0035 |

| | | | |
|---|---|---|---|
| 149 | 0.0180 | 0.0145 | 0.0036 |
| 150 | 0.0181 | 0.0145 | 0.0036 |
| 151 | 0.0184 | 0.0147 | 0.0036 |
| 152 | 0.0185 | 0.0148 | 0.0037 |
| 153 | 0.0187 | 0.0150 | 0.0037 |
| 154 | 0.0188 | 0.0151 | 0.0037 |
| 155 | 0.0191 | 0.0153 | 0.0038 |
| 156 | 0.0192 | 0.0154 | 0.0038 |
| 157 | 0.0195 | 0.0156 | 0.0039 |
| 158 | 0.0196 | 0.0157 | 0.0039 |
| 159 | 0.0199 | 0.0159 | 0.0039 |
| 160 | 0.0200 | 0.0161 | 0.0040 |
| 161 | 0.0203 | 0.0163 | 0.0040 |
| 162 | 0.0205 | 0.0164 | 0.0041 |
| 163 | 0.0208 | 0.0167 | 0.0041 |
| 164 | 0.0210 | 0.0169 | 0.0042 |
| 165 | 0.0214 | 0.0172 | 0.0042 |
| 166 | 0.0216 | 0.0173 | 0.0043 |
| 167 | 0.0220 | 0.0176 | 0.0044 |
| 168 | 0.0222 | 0.0178 | 0.0044 |
| 169 | 0.0227 | 0.0182 | 0.0045 |
| 170 | 0.0229 | 0.0184 | 0.0045 |
| 171 | 0.0234 | 0.0188 | 0.0046 |
| 172 | 0.0237 | 0.0190 | 0.0047 |
| 173 | 0.0243 | 0.0195 | 0.0048 |
| 174 | 0.0246 | 0.0197 | 0.0049 |
| 175 | 0.0253 | 0.0203 | 0.0050 |
| 176 | 0.0257 | 0.0206 | 0.0051 |
| 177 | 0.0265 | 0.0212 | 0.0052 |
| 178 | 0.0269 | 0.0216 | 0.0053 |
| 179 | 0.0278 | 0.0223 | 0.0055 |
| 180 | 0.0284 | 0.0227 | 0.0056 |
| 181 | 0.0295 | 0.0237 | 0.0058 |
| 182 | 0.0302 | 0.0242 | 0.0060 |
| 183 | 0.0317 | 0.0254 | 0.0063 |
| 184 | 0.0325 | 0.0261 | 0.0064 |
| 185 | 0.0168 | 0.0134 | 0.0033 |
| 186 | 0.0179 | 0.0143 | 0.0035 |
| 187 | 0.0207 | 0.0166 | 0.0041 |
| 188 | 0.0226 | 0.0181 | 0.0045 |
| 189 | 0.0281 | 0.0225 | 0.0056 |
| 190 | 0.0324 | 0.0260 | 0.0064 |
| 191 | 0.0491 | 0.0394 | 0.0097 |
| 192 | 0.0713 | 0.0559 | 0.0154 |
| 193 | 0.3086 | 0.0559 | 0.2526 |
| 194 | 0.0387 | 0.0310 | 0.0077 |
| 195 | 0.0250 | 0.0201 | 0.0050 |
| 196 | 0.0192 | 0.0154 | 0.0038 |
| 197 | 0.0335 | 0.0268 | 0.0066 |
| 198 | 0.0309 | 0.0248 | 0.0061 |
| 199 | 0.0289 | 0.0232 | 0.0057 |
| 200 | 0.0273 | 0.0219 | 0.0054 |
| 201 | 0.0260 | 0.0209 | 0.0052 |
| 202 | 0.0249 | 0.0200 | 0.0049 |
| 203 | 0.0240 | 0.0192 | 0.0048 |
| 204 | 0.0232 | 0.0186 | 0.0046 |
| 205 | 0.0224 | 0.0180 | 0.0044 |
| 206 | 0.0218 | 0.0175 | 0.0043 |
| 207 | 0.0212 | 0.0170 | 0.0042 |
| 208 | 0.0207 | 0.0166 | 0.0041 |
| 209 | 0.0202 | 0.0162 | 0.0040 |
| 210 | 0.0197 | 0.0158 | 0.0039 |
| 211 | 0.0193 | 0.0155 | 0.0038 |
| 212 | 0.0189 | 0.0152 | 0.0037 |
| 213 | 0.0186 | 0.0149 | 0.0037 |
| 214 | 0.0182 | 0.0146 | 0.0036 |
| 215 | 0.0179 | 0.0144 | 0.0036 |
| 216 | 0.0176 | 0.0141 | 0.0035 |
| 217 | 0.0138 | 0.0111 | 0.0027 |
| 218 | 0.0136 | 0.0109 | 0.0027 |
| 219 | 0.0133 | 0.0107 | 0.0026 |

| | | | |
|---|---|---|---|
| 220 | 0.0131 | 0.0105 | 0.0026 |
| 221 | 0.0128 | 0.0103 | 0.0025 |
| 222 | 0.0126 | 0.0101 | 0.0025 |
| 223 | 0.0124 | 0.0099 | 0.0025 |
| 224 | 0.0122 | 0.0098 | 0.0024 |
| 225 | 0.0120 | 0.0096 | 0.0024 |
| 226 | 0.0118 | 0.0095 | 0.0023 |
| 227 | 0.0116 | 0.0093 | 0.0023 |
| 228 | 0.0115 | 0.0092 | 0.0023 |
| 229 | 0.0113 | 0.0091 | 0.0022 |
| 230 | 0.0112 | 0.0090 | 0.0022 |
| 231 | 0.0110 | 0.0088 | 0.0022 |
| 232 | 0.0109 | 0.0087 | 0.0022 |
| 233 | 0.0107 | 0.0086 | 0.0021 |
| 234 | 0.0106 | 0.0085 | 0.0021 |
| 235 | 0.0105 | 0.0084 | 0.0021 |
| 236 | 0.0104 | 0.0083 | 0.0021 |
| 237 | 0.0102 | 0.0082 | 0.0020 |
| 238 | 0.0101 | 0.0081 | 0.0020 |
| 239 | 0.0100 | 0.0080 | 0.0020 |
| 240 | 0.0099 | 0.0079 | 0.0020 |
| 241 | 0.0098 | 0.0079 | 0.0019 |
| 242 | 0.0097 | 0.0078 | 0.0019 |
| 243 | 0.0096 | 0.0077 | 0.0019 |
| 244 | 0.0095 | 0.0076 | 0.0019 |
| 245 | 0.0094 | 0.0076 | 0.0019 |
| 246 | 0.0093 | 0.0075 | 0.0018 |
| 247 | 0.0092 | 0.0074 | 0.0018 |
| 248 | 0.0092 | 0.0073 | 0.0018 |
| 249 | 0.0091 | 0.0073 | 0.0018 |
| 250 | 0.0090 | 0.0072 | 0.0018 |
| 251 | 0.0089 | 0.0072 | 0.0018 |
| 252 | 0.0088 | 0.0071 | 0.0018 |
| 253 | 0.0088 | 0.0070 | 0.0017 |
| 254 | 0.0087 | 0.0070 | 0.0017 |
| 255 | 0.0086 | 0.0069 | 0.0017 |
| 256 | 0.0086 | 0.0069 | 0.0017 |
| 257 | 0.0085 | 0.0068 | 0.0017 |
| 258 | 0.0084 | 0.0068 | 0.0017 |
| 259 | 0.0084 | 0.0067 | 0.0017 |
| 260 | 0.0083 | 0.0067 | 0.0016 |
| 261 | 0.0082 | 0.0066 | 0.0016 |
| 262 | 0.0082 | 0.0066 | 0.0016 |
| 263 | 0.0081 | 0.0065 | 0.0016 |
| 264 | 0.0081 | 0.0065 | 0.0016 |
| 265 | 0.0080 | 0.0064 | 0.0016 |
| 266 | 0.0080 | 0.0064 | 0.0016 |
| 267 | 0.0079 | 0.0063 | 0.0016 |
| 268 | 0.0078 | 0.0063 | 0.0016 |
| 269 | 0.0078 | 0.0063 | 0.0015 |
| 270 | 0.0077 | 0.0062 | 0.0015 |
| 271 | 0.0077 | 0.0062 | 0.0015 |
| 272 | 0.0076 | 0.0061 | 0.0015 |
| 273 | 0.0076 | 0.0061 | 0.0015 |
| 274 | 0.0076 | 0.0061 | 0.0015 |
| 275 | 0.0075 | 0.0060 | 0.0015 |
| 276 | 0.0075 | 0.0060 | 0.0015 |
| 277 | 0.0074 | 0.0059 | 0.0015 |
| 278 | 0.0074 | 0.0059 | 0.0015 |
| 279 | 0.0073 | 0.0059 | 0.0015 |
| 280 | 0.0073 | 0.0058 | 0.0014 |
| 281 | 0.0072 | 0.0058 | 0.0014 |
| 282 | 0.0072 | 0.0058 | 0.0014 |
| 283 | 0.0072 | 0.0057 | 0.0014 |
| 284 | 0.0071 | 0.0057 | 0.0014 |
| 285 | 0.0071 | 0.0057 | 0.0014 |
| 286 | 0.0070 | 0.0057 | 0.0014 |
| 287 | 0.0070 | 0.0056 | 0.0014 |
| 288 | 0.0070 | 0.0056 | 0.0014 |

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      Total soil rain loss =      3.02(In)
      Total effective rainfall =      0.98(In)
      Peak flow rate in flood hydrograph =      7.97(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
-------------------------------------------------------------------------
  0+ 5       0.0000      0.01  Q          |         |         |         |
  0+10       0.0004      0.05  Q          |         |         |         |
  0+15       0.0009      0.08  Q          |         |         |         |
  0+20       0.0016      0.10  Q          |         |         |         |
  0+25       0.0023      0.10  Q          |         |         |         |
  0+30       0.0031      0.11  Q          |         |         |         |
  0+35       0.0038      0.11  Q          |         |         |         |
  0+40       0.0046      0.11  Q          |         |         |         |
  0+45       0.0054      0.11  Q          |         |         |         |
  0+50       0.0062      0.11  Q          |         |         |         |
  0+55       0.0069      0.11  Q          |         |         |         |
  1+ 0       0.0077      0.11  Q          |         |         |         |
  1+ 5       0.0085      0.11  Q          |         |         |         |
  1+10       0.0093      0.11  Q          |         |         |         |
  1+15       0.0101      0.12  Q          |         |         |         |
  1+20       0.0109      0.12  Q          |         |         |         |
  1+25       0.0117      0.12  Q          |         |         |         |
  1+30       0.0125      0.12  Q          |         |         |         |
  1+35       0.0133      0.12  Q          |         |         |         |
  1+40       0.0141      0.12  QV         |         |         |         |
  1+45       0.0149      0.12  QV         |         |         |         |
  1+50       0.0157      0.12  QV         |         |         |         |
  1+55       0.0165      0.12  QV         |         |         |         |
  2+ 0       0.0174      0.12  QV         |         |         |         |
  2+ 5       0.0182      0.12  QV         |         |         |         |
  2+10       0.0190      0.12  QV         |         |         |         |
  2+15       0.0198      0.12  QV         |         |         |         |
  2+20       0.0206      0.12  QV         |         |         |         |
  2+25       0.0215      0.12  QV         |         |         |         |
  2+30       0.0223      0.12  QV         |         |         |         |
  2+35       0.0231      0.12  QV         |         |         |         |
  2+40       0.0240      0.12  QV         |         |         |         |
  2+45       0.0248      0.12  QV         |         |         |         |
  2+50       0.0256      0.12  QV         |         |         |         |
  2+55       0.0265      0.12  QV         |         |         |         |
  3+ 0       0.0273      0.12  QV         |         |         |         |
  3+ 5       0.0282      0.12  Q V        |         |         |         |
  3+10       0.0290      0.12  Q V        |         |         |         |
  3+15       0.0299      0.12  Q V        |         |         |         |
  3+20       0.0307      0.12  Q V        |         |         |         |
  3+25       0.0316      0.12  Q V        |         |         |         |
  3+30       0.0324      0.13  Q V        |         |         |         |
  3+35       0.0333      0.13  Q V        |         |         |         |
  3+40       0.0342      0.13  Q V        |         |         |         |
  3+45       0.0350      0.13  Q V        |         |         |         |
  3+50       0.0359      0.13  Q V        |         |         |         |
  3+55       0.0368      0.13  Q V        |         |         |         |
  4+ 0       0.0377      0.13  Q V        |         |         |         |
  4+ 5       0.0386      0.13  Q V        |         |         |         |
  4+10       0.0394      0.13  Q V        |         |         |         |
  4+15       0.0403      0.13  Q V        |         |         |         |
  4+20       0.0412      0.13  Q V        |         |         |         |
  4+25       0.0421      0.13  Q  V       |         |         |         |
  4+30       0.0430      0.13  Q  V       |         |         |         |
  4+35       0.0439      0.13  Q  V       |         |         |         |
  4+40       0.0448      0.13  Q  V       |         |         |         |
  4+45       0.0457      0.13  Q  V       |         |         |         |
  4+50       0.0466      0.13  Q  V       |         |         |         |
```

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4+55 | 0.0475 | 0.13 | Q | V | | | | |
| 5+ 0 | 0.0485 | 0.13 | Q | V | | | | |
| 5+ 5 | 0.0494 | 0.13 | Q | V | | | | |
| 5+10 | 0.0503 | 0.13 | Q | V | | | | |
| 5+15 | 0.0512 | 0.13 | Q | V | | | | |
| 5+20 | 0.0522 | 0.14 | Q | V | | | | |
| 5+25 | 0.0531 | 0.14 | Q | V | | | | |
| 5+30 | 0.0540 | 0.14 | Q | V | | | | |
| 5+35 | 0.0550 | 0.14 | Q | V | | | | |
| 5+40 | 0.0559 | 0.14 | Q | V | | | | |
| 5+45 | 0.0569 | 0.14 | Q | V | | | | |
| 5+50 | 0.0578 | 0.14 | Q | V | | | | |
| 5+55 | 0.0588 | 0.14 | Q | V | | | | |
| 6+ 0 | 0.0597 | 0.14 | Q | V | | | | |
| 6+ 5 | 0.0607 | 0.14 | Q | V | | | | |
| 6+10 | 0.0617 | 0.14 | Q | V | | | | |
| 6+15 | 0.0626 | 0.14 | Q | V | | | | |
| 6+20 | 0.0636 | 0.14 | Q | V | | | | |
| 6+25 | 0.0646 | 0.14 | Q | V | | | | |
| 6+30 | 0.0656 | 0.14 | Q | V | | | | |
| 6+35 | 0.0666 | 0.14 | Q | V | | | | |
| 6+40 | 0.0676 | 0.14 | Q | V | | | | |
| 6+45 | 0.0686 | 0.14 | Q | V | | | | |
| 6+50 | 0.0696 | 0.15 | Q | V | | | | |
| 6+55 | 0.0706 | 0.15 | Q | V | | | | |
| 7+ 0 | 0.0716 | 0.15 | Q | V | | | | |
| 7+ 5 | 0.0726 | 0.15 | Q | V | | | | |
| 7+10 | 0.0736 | 0.15 | Q | V | | | | |
| 7+15 | 0.0747 | 0.15 | Q | V | | | | |
| 7+20 | 0.0757 | 0.15 | Q | V | | | | |
| 7+25 | 0.0767 | 0.15 | Q | V | | | | |
| 7+30 | 0.0778 | 0.15 | Q | V | | | | |
| 7+35 | 0.0788 | 0.15 | Q | V | | | | |
| 7+40 | 0.0799 | 0.15 | Q | V | | | | |
| 7+45 | 0.0809 | 0.15 | Q | V | | | | |
| 7+50 | 0.0820 | 0.15 | Q | V | | | | |
| 7+55 | 0.0830 | 0.15 | Q | V | | | | |
| 8+ 0 | 0.0841 | 0.16 | Q | V | | | | |
| 8+ 5 | 0.0852 | 0.16 | Q | V | | | | |
| 8+10 | 0.0863 | 0.16 | Q | V | | | | |
| 8+15 | 0.0874 | 0.16 | Q | V | | | | |
| 8+20 | 0.0884 | 0.16 | Q | V | | | | |
| 8+25 | 0.0895 | 0.16 | Q | V | | | | |
| 8+30 | 0.0906 | 0.16 | Q | V | | | | |
| 8+35 | 0.0918 | 0.16 | Q | V | | | | |
| 8+40 | 0.0929 | 0.16 | Q | V | | | | |
| 8+45 | 0.0940 | 0.16 | Q | V | | | | |
| 8+50 | 0.0951 | 0.16 | Q | V | | | | |
| 8+55 | 0.0963 | 0.16 | Q | V | | | | |
| 9+ 0 | 0.0974 | 0.17 | Q | V | | | | |
| 9+ 5 | 0.0986 | 0.17 | Q | V | | | | |
| 9+10 | 0.0997 | 0.17 | Q | V | | | | |
| 9+15 | 0.1009 | 0.17 | Q | V | | | | |
| 9+20 | 0.1020 | 0.17 | Q | V | | | | |
| 9+25 | 0.1032 | 0.17 | Q | V | | | | |
| 9+30 | 0.1044 | 0.17 | Q | V | | | | |
| 9+35 | 0.1056 | 0.17 | Q | V | | | | |
| 9+40 | 0.1068 | 0.17 | Q | V | | | | |
| 9+45 | 0.1080 | 0.18 | Q | V | | | | |
| 9+50 | 0.1092 | 0.18 | Q | V | | | | |
| 9+55 | 0.1104 | 0.18 | Q | V | | | | |
| 10+ 0 | 0.1117 | 0.18 | Q | V | | | | |
| 10+ 5 | 0.1129 | 0.18 | Q | V | | | | |
| 10+10 | 0.1142 | 0.18 | Q | V | | | | |
| 10+15 | 0.1154 | 0.18 | Q | V | | | | |
| 10+20 | 0.1167 | 0.18 | Q | V | | | | |
| 10+25 | 0.1180 | 0.18 | Q | V | | | | |
| 10+30 | 0.1192 | 0.19 | Q | V | | | | |
| 10+35 | 0.1205 | 0.19 | Q | V | | | | |
| 10+40 | 0.1218 | 0.19 | Q | V | | | | |
| 10+45 | 0.1231 | 0.19 | Q | V | | | | |

```
10+50       0.1245      0.19  Q        V|         |          |         |
10+55       0.1258      0.19  Q        V|         |          |         |
11+ 0       0.1271      0.20  Q        V|         |          |         |
11+ 5       0.1285      0.20  Q        V|         |          |         |
11+10       0.1299      0.20  Q        V|         |          |         |
11+15       0.1312      0.20  Q        V|         |          |         |
11+20       0.1326      0.20  Q        V|         |          |         |
11+25       0.1340      0.20  Q        V|         |          |         |
11+30       0.1354      0.21  Q        V|         |          |         |
11+35       0.1369      0.21  Q        V|         |          |         |
11+40       0.1383      0.21  Q         V         |          |         |
11+45       0.1397      0.21  Q         V         |          |         |
11+50       0.1412      0.21  Q         V         |          |         |
11+55       0.1427      0.21  Q         V         |          |         |
12+ 0       0.1442      0.22  Q         V         |          |         |
12+ 5       0.1457      0.22  Q         V         |          |         |
12+10       0.1474      0.25  Q         V         |          |         |
12+15       0.1492      0.27  |Q        V         |          |         |
12+20       0.1511      0.27  |Q        V         |          |         |
12+25       0.1530      0.28  |Q         |V        |          |         |
12+30       0.1550      0.28  |Q         |V        |          |         |
12+35       0.1570      0.29  |Q         |V        |          |         |
12+40       0.1590      0.29  |Q         |V        |          |         |
12+45       0.1610      0.29  |Q         |V        |          |         |
12+50       0.1631      0.30  |Q         |V        |          |         |
12+55       0.1651      0.30  |Q         | V       |          |         |
13+ 0       0.1672      0.30  |Q         | V       |          |         |
13+ 5       0.1693      0.31  |Q         | V       |          |         |
13+10       0.1715      0.31  |Q         | V       |          |         |
13+15       0.1736      0.31  |Q         | V       |          |         |
13+20       0.1758      0.32  |Q         | V       |          |         |
13+25       0.1780      0.32  |Q         | V       |          |         |
13+30       0.1802      0.32  |Q         |  V      |          |         |
13+35       0.1824      0.33  |Q         |  V      |          |         |
13+40       0.1847      0.33  |Q         |  V      |          |         |
13+45       0.1870      0.33  |Q         |  V      |          |         |
13+50       0.1893      0.34  |Q         |  V      |          |         |
13+55       0.1917      0.34  |Q         |  V      |          |         |
14+ 0       0.1941      0.35  |Q         |   V     |          |         |
14+ 5       0.1965      0.35  |Q         |   V     |          |         |
14+10       0.1990      0.36  |Q         |   V     |          |         |
14+15       0.2015      0.36  |Q         |   V     |          |         |
14+20       0.2040      0.37  |Q         |   V     |          |         |
14+25       0.2066      0.38  |Q         |    V    |          |         |
14+30       0.2092      0.38  |Q         |    V    |          |         |
14+35       0.2119      0.39  |Q         |    V    |          |         |
14+40       0.2147      0.40  |Q         |    V    |          |         |
14+45       0.2175      0.41  |Q         |    V    |          |         |
14+50       0.2203      0.41  |Q         |     V   |          |         |
14+55       0.2232      0.42  |Q         |     V   |          |         |
15+ 0       0.2262      0.43  |Q         |     V   |          |         |
15+ 5       0.2293      0.45  |Q         |     V   |          |         |
15+10       0.2324      0.46  |Q         |     V   |          |         |
15+15       0.2357      0.47  |Q         |      V  |          |         |
15+20       0.2391      0.49  |Q         |      V  |          |         |
15+25       0.2424      0.49  |Q         |      V  |          |         |
15+30       0.2452      0.41  |Q         |      V  |          |         |
15+35       0.2476      0.34  |Q         |      V  |          |         |
15+40       0.2499      0.34  |Q         |       V |          |         |
15+45       0.2523      0.35  |Q         |       V |          |         |
15+50       0.2551      0.40  |Q         |       V |          |         |
15+55       0.2583      0.47  |Q         |       V |          |         |
16+ 0       0.2627      0.63  | Q       |         V|          |         |
16+ 5       0.2771      2.10  |       Q |          V          |         |
16+10       0.3320      7.97  |         |          |   V      |Q        |
16+15       0.3803      7.01  |         |          |      VQ  |         |
16+20       0.4002      2.90  |         |Q         |        V|         |
16+25       0.4125      1.78  |      Q  |          |        V|         |
16+30       0.4210      1.23  |   Q     |          |         V         |
16+35       0.4268      0.85  |  Q      |          |          |V        |
16+40       0.4311      0.62  | Q       |          |          |V        |
```

```
16+45       0.4350      0.55  | Q       |         |         |V        |
16+50       0.4386      0.53  | Q       |         |         |V        |
16+55       0.4419      0.48  |Q        |         |         | V       |
17+ 0       0.4446      0.40  |Q        |         |         | V       |
17+ 5       0.4473      0.39  |Q        |         |         | V       |
17+10       0.4499      0.37  |Q        |         |         | V       |
17+15       0.4524      0.36  |Q        |         |         | V       |
17+20       0.4548      0.35  |Q        |         |         |  V      |
17+25       0.4572      0.34  |Q        |         |         |  V      |
17+30       0.4595      0.33  |Q        |         |         |  V      |
17+35       0.4617      0.33  |Q        |         |         |  V      |
17+40       0.4639      0.32  |Q        |         |         |  V      |
17+45       0.4661      0.31  |Q        |         |         |  V      |
17+50       0.4682      0.31  |Q        |         |         |   V     |
17+55       0.4702      0.30  |Q        |         |         |   V     |
18+ 0       0.4723      0.29  |Q        |         |         |   V     |
18+ 5       0.4742      0.29  |Q        |         |         |   V     |
18+10       0.4760      0.26  |Q        |         |         |   V     |
18+15       0.4777      0.24  Q         |         |         |   V     |
18+20       0.4792      0.23  Q         |         |         |   V     |
18+25       0.4807      0.22  Q         |         |         |   V     |
18+30       0.4822      0.21  Q         |         |         |    V    |
18+35       0.4836      0.21  Q         |         |         |    V    |
18+40       0.4850      0.20  Q         |         |         |    V    |
18+45       0.4864      0.20  Q         |         |         |    V    |
18+50       0.4877      0.20  Q         |         |         |    V    |
18+55       0.4891      0.19  Q         |         |         |    V    |
19+ 0       0.4904      0.19  Q         |         |         |    V    |
19+ 5       0.4917      0.19  Q         |         |         |    V    |
19+10       0.4929      0.18  Q         |         |         |    V    |
19+15       0.4942      0.18  Q         |         |         |    V    |
19+20       0.4954      0.18  Q         |         |         |     V   |
19+25       0.4967      0.18  Q         |         |         |     V   |
19+30       0.4979      0.17  Q         |         |         |     V   |
19+35       0.4991      0.17  Q         |         |         |     V   |
19+40       0.5002      0.17  Q         |         |         |     V   |
19+45       0.5014      0.17  Q         |         |         |     V   |
19+50       0.5025      0.17  Q         |         |         |     V   |
19+55       0.5037      0.16  Q         |         |         |     V   |
20+ 0       0.5048      0.16  Q         |         |         |     V   |
20+ 5       0.5059      0.16  Q         |         |         |     V   |
20+10       0.5070      0.16  Q         |         |         |     V   |
20+15       0.5081      0.16  Q         |         |         |     V   |
20+20       0.5092      0.16  Q         |         |         |      V  |
20+25       0.5102      0.15  Q         |         |         |      V  |
20+30       0.5113      0.15  Q         |         |         |      V  |
20+35       0.5123      0.15  Q         |         |         |      V  |
20+40       0.5134      0.15  Q         |         |         |      V  |
20+45       0.5144      0.15  Q         |         |         |      V  |
20+50       0.5154      0.15  Q         |         |         |      V  |
20+55       0.5164      0.15  Q         |         |         |      V  |
21+ 0       0.5174      0.14  Q         |         |         |      V  |
21+ 5       0.5184      0.14  Q         |         |         |      V  |
21+10       0.5194      0.14  Q         |         |         |      V  |
21+15       0.5203      0.14  Q         |         |         |      V  |
21+20       0.5213      0.14  Q         |         |         |      V  |
21+25       0.5223      0.14  Q         |         |         |      V  |
21+30       0.5232      0.14  Q         |         |         |       V |
21+35       0.5241      0.14  Q         |         |         |       V |
21+40       0.5251      0.14  Q         |         |         |       V |
21+45       0.5260      0.13  Q         |         |         |       V |
21+50       0.5269      0.13  Q         |         |         |       V |
21+55       0.5278      0.13  Q         |         |         |       V |
22+ 0       0.5287      0.13  Q         |         |         |       V |
22+ 5       0.5296      0.13  Q         |         |         |       V |
22+10       0.5305      0.13  Q         |         |         |       V |
22+15       0.5314      0.13  Q         |         |         |       V |
22+20       0.5323      0.13  Q         |         |         |       V |
22+25       0.5332      0.13  Q         |         |         |       V |
22+30       0.5340      0.13  Q         |         |         |       V |
22+35       0.5349      0.13  Q         |         |         |       V |
```

```
   22+40       0.5358      0.12  Q          |          |          |       V |
   22+45       0.5366      0.12  Q          |          |          |       V |
   22+50       0.5375      0.12  Q          |          |          |        V|
   22+55       0.5383      0.12  Q          |          |          |        V|
   23+ 0       0.5391      0.12  Q          |          |          |        V|
   23+ 5       0.5400      0.12  Q          |          |          |        V|
   23+10       0.5408      0.12  Q          |          |          |        V|
   23+15       0.5416      0.12  Q          |          |          |        V|
   23+20       0.5424      0.12  Q          |          |          |        V|
   23+25       0.5433      0.12  Q          |          |          |        V|
   23+30       0.5441      0.12  Q          |          |          |        V|
   23+35       0.5449      0.12  Q          |          |          |        V|
   23+40       0.5457      0.12  Q          |          |          |        V|
   23+45       0.5465      0.12  Q          |          |          |        V|
   23+50       0.5472      0.11  Q          |          |          |        V|
   23+55       0.5480      0.11  Q          |          |          |        V|
   24+ 0       0.5488      0.11  Q          |          |          |        V|
   24+ 5       0.5495      0.11  Q          |          |          |        V|
   24+10       0.5500      0.07  Q          |          |          |        V|
   24+15       0.5502      0.03  Q          |          |          |        V|
   24+20       0.5503      0.02  Q          |          |          |        V|
   24+25       0.5504      0.01  Q          |          |          |        V|
   24+30       0.5504      0.00  Q          |          |          |        V|
   24+35       0.5504      0.00  Q          |          |          |        V|
   24+40       0.5504      0.00  Q          |          |          |        V|
   24+45       0.5504      0.00  Q          |          |          |        V|
   24+50       0.5504      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area 'F' – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'F'
5 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.71           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.71           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.71          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.71           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.71           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.71          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6          6.71      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.71 | 1.000 | 78.0 | 60.6 | 6.50 | 0.322 |

Area-averaged catchment yield fraction, Y = 0.322
Area-averaged low loss fraction, Yb = 0.678
User entry of time of concentration = 0.162 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.71(Ac.)
Catchment Lag time = 0.130 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 64.3004
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.678 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 6.71(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.690(In)
1-hour factor = 1.000 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.586(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 81.15 (CFS)) | |
| 1 | 6.228 | 5.054 |
| 2 | 42.193 | 29.185 |
| 3 | 74.058 | 25.858 |
| 4 | 85.789 | 9.519 |
| 5 | 92.451 | 5.407 |
| 6 | 96.283 | 3.110 |
| 7 | 98.090 | 1.467 |
| 8 | 98.816 | 0.589 |
| 9 | 99.292 | 0.386 |
| 10 | 99.729 | 0.355 |
| 11 | 100.000 | 0.220 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4030 | 0.4030 |
| 2 | 0.4961 | 0.0931 |
| 3 | 0.5603 | 0.0642 |
| 4 | 0.6108 | 0.0505 |
| 5 | 0.6531 | 0.0423 |
| 6 | 0.6898 | 0.0367 |
| 7 | 0.7224 | 0.0326 |
| 8 | 0.7520 | 0.0295 |
| 9 | 0.7790 | 0.0270 |
| 10 | 0.8040 | 0.0250 |
| 11 | 0.8273 | 0.0233 |
| 12 | 0.8492 | 0.0219 |
| 13 | 0.8925 | 0.0433 |
| 14 | 0.9346 | 0.0421 |
| 15 | 0.9755 | 0.0409 |

| | | |
|---|---|---|
| 16 | 1.0155 | 0.0399 |
| 17 | 1.0545 | 0.0390 |
| 18 | 1.0926 | 0.0381 |
| 19 | 1.1299 | 0.0373 |
| 20 | 1.1665 | 0.0366 |
| 21 | 1.2024 | 0.0359 |
| 22 | 1.2377 | 0.0353 |
| 23 | 1.2724 | 0.0347 |
| 24 | 1.3065 | 0.0341 |
| 25 | 1.3400 | 0.0336 |
| 26 | 1.3731 | 0.0331 |
| 27 | 1.4057 | 0.0326 |
| 28 | 1.4378 | 0.0321 |
| 29 | 1.4695 | 0.0317 |
| 30 | 1.5008 | 0.0313 |
| 31 | 1.5317 | 0.0309 |
| 32 | 1.5622 | 0.0305 |
| 33 | 1.5924 | 0.0302 |
| 34 | 1.6222 | 0.0298 |
| 35 | 1.6517 | 0.0295 |
| 36 | 1.6809 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7383 | 0.0286 |
| 39 | 1.7666 | 0.0283 |
| 40 | 1.7946 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8498 | 0.0275 |
| 43 | 1.8770 | 0.0272 |
| 44 | 1.9040 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9573 | 0.0265 |
| 47 | 1.9837 | 0.0263 |
| 48 | 2.0098 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1123 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1624 | 0.0250 |
| 55 | 2.1872 | 0.0248 |
| 56 | 2.2118 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2847 | 0.0241 |
| 60 | 2.3086 | 0.0240 |
| 61 | 2.3325 | 0.0238 |
| 62 | 2.3561 | 0.0237 |
| 63 | 2.3797 | 0.0235 |
| 64 | 2.4031 | 0.0234 |
| 65 | 2.4263 | 0.0233 |
| 66 | 2.4495 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5180 | 0.0227 |
| 70 | 2.5407 | 0.0226 |
| 71 | 2.5631 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6278 | 0.0211 |
| 75 | 2.6487 | 0.0210 |
| 76 | 2.6696 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7110 | 0.0206 |
| 79 | 2.7315 | 0.0205 |
| 80 | 2.7519 | 0.0204 |
| 81 | 2.7722 | 0.0203 |
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |
| 84 | 2.8325 | 0.0200 |
| 85 | 2.8524 | 0.0199 |
| 86 | 2.8722 | 0.0198 |

| | | |
|---|---|---|
| 87 | 2.8920 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9311 | 0.0195 |
| 90 | 2.9506 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0465 | 0.0190 |
| 96 | 3.0655 | 0.0189 |
| 97 | 3.0843 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1218 | 0.0187 |
| 100 | 3.1405 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1775 | 0.0185 |
| 103 | 3.1959 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2325 | 0.0183 |
| 106 | 3.2507 | 0.0182 |
| 107 | 3.2688 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3406 | 0.0178 |
| 112 | 3.3583 | 0.0178 |
| 113 | 3.3761 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4288 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4811 | 0.0173 |
| 120 | 3.4983 | 0.0173 |
| 121 | 3.5156 | 0.0172 |
| 122 | 3.5327 | 0.0172 |
| 123 | 3.5498 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6008 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6346 | 0.0168 |
| 129 | 3.6513 | 0.0168 |
| 130 | 3.6681 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7014 | 0.0166 |
| 133 | 3.7179 | 0.0166 |
| 134 | 3.7345 | 0.0165 |
| 135 | 3.7509 | 0.0165 |
| 136 | 3.7674 | 0.0164 |
| 137 | 3.7837 | 0.0164 |
| 138 | 3.8001 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8326 | 0.0162 |
| 141 | 3.8487 | 0.0162 |
| 142 | 3.8649 | 0.0161 |
| 143 | 3.8810 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9449 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9765 | 0.0158 |
| 150 | 3.9923 | 0.0158 |
| 151 | 4.0080 | 0.0157 |
| 152 | 4.0237 | 0.0157 |
| 153 | 4.0394 | 0.0156 |
| 154 | 4.0550 | 0.0156 |
| 155 | 4.0706 | 0.0156 |
| 156 | 4.0861 | 0.0155 |
| 157 | 4.1016 | 0.0155 |

| | | |
|---|---|---|
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1478 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1784 | 0.0153 |
| 163 | 4.1936 | 0.0152 |
| 164 | 4.2088 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2542 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2843 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3143 | 0.0150 |
| 172 | 4.3292 | 0.0149 |
| 173 | 4.3441 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4032 | 0.0147 |
| 178 | 4.4179 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4473 | 0.0146 |
| 181 | 4.4619 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4910 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5200 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5488 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5776 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6062 | 0.0143 |
| 192 | 4.6204 | 0.0143 |
| 193 | 4.6347 | 0.0142 |
| 194 | 4.6489 | 0.0142 |
| 195 | 4.6630 | 0.0142 |
| 196 | 4.6772 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7054 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7474 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7893 | 0.0139 |
| 205 | 4.8031 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8721 | 0.0137 |
| 211 | 4.8859 | 0.0137 |
| 212 | 4.8996 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9269 | 0.0136 |
| 215 | 4.9405 | 0.0136 |
| 216 | 4.9541 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9812 | 0.0135 |
| 219 | 4.9947 | 0.0135 |
| 220 | 5.0082 | 0.0135 |
| 221 | 5.0216 | 0.0135 |
| 222 | 5.0351 | 0.0134 |
| 223 | 5.0485 | 0.0134 |
| 224 | 5.0619 | 0.0134 |
| 225 | 5.0752 | 0.0134 |
| 226 | 5.0886 | 0.0133 |
| 227 | 5.1019 | 0.0133 |
| 228 | 5.1152 | 0.0133 |

| | | |
|---|---|---|
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1417 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1813 | 0.0132 |
| 234 | 5.1944 | 0.0132 |
| 235 | 5.2076 | 0.0131 |
| 236 | 5.2207 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2729 | 0.0130 |
| 241 | 5.2859 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3118 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3634 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4274 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5035 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5413 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5664 | 0.0125 |
| 264 | 5.5789 | 0.0125 |
| 265 | 5.5914 | 0.0125 |
| 266 | 5.6039 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6288 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6660 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7522 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8132 | 0.0122 |
| 284 | 5.8253 | 0.0121 |
| 285 | 5.8375 | 0.0121 |
| 286 | 5.8496 | 0.0121 |
| 287 | 5.8617 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0082 | 0.0039 |
| 2 | 0.0121 | 0.0082 | 0.0039 |
| 3 | 0.0121 | 0.0082 | 0.0039 |
| 4 | 0.0121 | 0.0082 | 0.0039 |
| 5 | 0.0122 | 0.0083 | 0.0039 |
| 6 | 0.0122 | 0.0083 | 0.0039 |

| | | | |
|---|---|---|---|
| 7 | 0.0122 | 0.0083 | 0.0039 |
| 8 | 0.0123 | 0.0083 | 0.0039 |
| 9 | 0.0123 | 0.0083 | 0.0040 |
| 10 | 0.0123 | 0.0084 | 0.0040 |
| 11 | 0.0123 | 0.0084 | 0.0040 |
| 12 | 0.0124 | 0.0084 | 0.0040 |
| 13 | 0.0124 | 0.0084 | 0.0040 |
| 14 | 0.0124 | 0.0084 | 0.0040 |
| 15 | 0.0125 | 0.0085 | 0.0040 |
| 16 | 0.0125 | 0.0085 | 0.0040 |
| 17 | 0.0125 | 0.0085 | 0.0040 |
| 18 | 0.0125 | 0.0085 | 0.0040 |
| 19 | 0.0126 | 0.0085 | 0.0040 |
| 20 | 0.0126 | 0.0085 | 0.0041 |
| 21 | 0.0126 | 0.0086 | 0.0041 |
| 22 | 0.0127 | 0.0086 | 0.0041 |
| 23 | 0.0127 | 0.0086 | 0.0041 |
| 24 | 0.0127 | 0.0086 | 0.0041 |
| 25 | 0.0128 | 0.0087 | 0.0041 |
| 26 | 0.0128 | 0.0087 | 0.0041 |
| 27 | 0.0128 | 0.0087 | 0.0041 |
| 28 | 0.0128 | 0.0087 | 0.0041 |
| 29 | 0.0129 | 0.0087 | 0.0041 |
| 30 | 0.0129 | 0.0088 | 0.0041 |
| 31 | 0.0129 | 0.0088 | 0.0042 |
| 32 | 0.0130 | 0.0088 | 0.0042 |
| 33 | 0.0130 | 0.0088 | 0.0042 |
| 34 | 0.0130 | 0.0088 | 0.0042 |
| 35 | 0.0131 | 0.0089 | 0.0042 |
| 36 | 0.0131 | 0.0089 | 0.0042 |
| 37 | 0.0132 | 0.0089 | 0.0042 |
| 38 | 0.0132 | 0.0089 | 0.0042 |
| 39 | 0.0132 | 0.0090 | 0.0043 |
| 40 | 0.0132 | 0.0090 | 0.0043 |
| 41 | 0.0133 | 0.0090 | 0.0043 |
| 42 | 0.0133 | 0.0090 | 0.0043 |
| 43 | 0.0134 | 0.0091 | 0.0043 |
| 44 | 0.0134 | 0.0091 | 0.0043 |
| 45 | 0.0134 | 0.0091 | 0.0043 |
| 46 | 0.0135 | 0.0091 | 0.0043 |
| 47 | 0.0135 | 0.0092 | 0.0043 |
| 48 | 0.0135 | 0.0092 | 0.0044 |
| 49 | 0.0136 | 0.0092 | 0.0044 |
| 50 | 0.0136 | 0.0092 | 0.0044 |
| 51 | 0.0137 | 0.0093 | 0.0044 |
| 52 | 0.0137 | 0.0093 | 0.0044 |
| 53 | 0.0137 | 0.0093 | 0.0044 |
| 54 | 0.0138 | 0.0093 | 0.0044 |
| 55 | 0.0138 | 0.0094 | 0.0044 |
| 56 | 0.0139 | 0.0094 | 0.0045 |
| 57 | 0.0139 | 0.0094 | 0.0045 |
| 58 | 0.0139 | 0.0095 | 0.0045 |
| 59 | 0.0140 | 0.0095 | 0.0045 |
| 60 | 0.0140 | 0.0095 | 0.0045 |
| 61 | 0.0141 | 0.0096 | 0.0045 |
| 62 | 0.0141 | 0.0096 | 0.0045 |
| 63 | 0.0142 | 0.0096 | 0.0046 |
| 64 | 0.0142 | 0.0096 | 0.0046 |
| 65 | 0.0143 | 0.0097 | 0.0046 |
| 66 | 0.0143 | 0.0097 | 0.0046 |
| 67 | 0.0144 | 0.0097 | 0.0046 |
| 68 | 0.0144 | 0.0098 | 0.0046 |
| 69 | 0.0144 | 0.0098 | 0.0046 |
| 70 | 0.0145 | 0.0098 | 0.0047 |
| 71 | 0.0145 | 0.0099 | 0.0047 |
| 72 | 0.0146 | 0.0099 | 0.0047 |
| 73 | 0.0146 | 0.0099 | 0.0047 |
| 74 | 0.0147 | 0.0100 | 0.0047 |
| 75 | 0.0147 | 0.0100 | 0.0047 |
| 76 | 0.0148 | 0.0100 | 0.0048 |
| 77 | 0.0148 | 0.0101 | 0.0048 |

| | | | |
|---|---|---|---|
| 78 | 0.0149 | 0.0101 | 0.0048 |
| 79 | 0.0150 | 0.0101 | 0.0048 |
| 80 | 0.0150 | 0.0102 | 0.0048 |
| 81 | 0.0151 | 0.0102 | 0.0048 |
| 82 | 0.0151 | 0.0102 | 0.0049 |
| 83 | 0.0152 | 0.0103 | 0.0049 |
| 84 | 0.0152 | 0.0103 | 0.0049 |
| 85 | 0.0153 | 0.0104 | 0.0049 |
| 86 | 0.0153 | 0.0104 | 0.0049 |
| 87 | 0.0154 | 0.0105 | 0.0050 |
| 88 | 0.0154 | 0.0105 | 0.0050 |
| 89 | 0.0155 | 0.0105 | 0.0050 |
| 90 | 0.0156 | 0.0106 | 0.0050 |
| 91 | 0.0156 | 0.0106 | 0.0050 |
| 92 | 0.0157 | 0.0106 | 0.0050 |
| 93 | 0.0158 | 0.0107 | 0.0051 |
| 94 | 0.0158 | 0.0107 | 0.0051 |
| 95 | 0.0159 | 0.0108 | 0.0051 |
| 96 | 0.0160 | 0.0108 | 0.0051 |
| 97 | 0.0160 | 0.0109 | 0.0052 |
| 98 | 0.0161 | 0.0109 | 0.0052 |
| 99 | 0.0162 | 0.0110 | 0.0052 |
| 100 | 0.0162 | 0.0110 | 0.0052 |
| 101 | 0.0163 | 0.0111 | 0.0052 |
| 102 | 0.0164 | 0.0111 | 0.0053 |
| 103 | 0.0165 | 0.0112 | 0.0053 |
| 104 | 0.0165 | 0.0112 | 0.0053 |
| 105 | 0.0166 | 0.0113 | 0.0053 |
| 106 | 0.0167 | 0.0113 | 0.0054 |
| 107 | 0.0168 | 0.0114 | 0.0054 |
| 108 | 0.0168 | 0.0114 | 0.0054 |
| 109 | 0.0169 | 0.0115 | 0.0054 |
| 110 | 0.0170 | 0.0115 | 0.0055 |
| 111 | 0.0171 | 0.0116 | 0.0055 |
| 112 | 0.0172 | 0.0116 | 0.0055 |
| 113 | 0.0173 | 0.0117 | 0.0056 |
| 114 | 0.0173 | 0.0118 | 0.0056 |
| 115 | 0.0175 | 0.0118 | 0.0056 |
| 116 | 0.0175 | 0.0119 | 0.0056 |
| 117 | 0.0177 | 0.0120 | 0.0057 |
| 118 | 0.0177 | 0.0120 | 0.0057 |
| 119 | 0.0178 | 0.0121 | 0.0057 |
| 120 | 0.0179 | 0.0122 | 0.0058 |
| 121 | 0.0180 | 0.0122 | 0.0058 |
| 122 | 0.0181 | 0.0123 | 0.0058 |
| 123 | 0.0183 | 0.0124 | 0.0059 |
| 124 | 0.0183 | 0.0124 | 0.0059 |
| 125 | 0.0185 | 0.0125 | 0.0059 |
| 126 | 0.0186 | 0.0126 | 0.0060 |
| 127 | 0.0187 | 0.0127 | 0.0060 |
| 128 | 0.0188 | 0.0127 | 0.0060 |
| 129 | 0.0189 | 0.0129 | 0.0061 |
| 130 | 0.0190 | 0.0129 | 0.0061 |
| 131 | 0.0192 | 0.0130 | 0.0062 |
| 132 | 0.0193 | 0.0131 | 0.0062 |
| 133 | 0.0194 | 0.0132 | 0.0063 |
| 134 | 0.0195 | 0.0133 | 0.0063 |
| 135 | 0.0197 | 0.0134 | 0.0063 |
| 136 | 0.0198 | 0.0134 | 0.0064 |
| 137 | 0.0200 | 0.0136 | 0.0064 |
| 138 | 0.0201 | 0.0136 | 0.0065 |
| 139 | 0.0203 | 0.0138 | 0.0065 |
| 140 | 0.0204 | 0.0138 | 0.0066 |
| 141 | 0.0206 | 0.0140 | 0.0066 |
| 142 | 0.0207 | 0.0141 | 0.0067 |
| 143 | 0.0210 | 0.0142 | 0.0067 |
| 144 | 0.0211 | 0.0143 | 0.0068 |
| 145 | 0.0224 | 0.0152 | 0.0072 |
| 146 | 0.0225 | 0.0153 | 0.0072 |
| 147 | 0.0227 | 0.0154 | 0.0073 |
| 148 | 0.0229 | 0.0155 | 0.0074 |

| | | | |
|---|---|---|---|
| 149 | 0.0231 | 0.0157 | 0.0074 |
| 150 | 0.0233 | 0.0158 | 0.0075 |
| 151 | 0.0235 | 0.0160 | 0.0076 |
| 152 | 0.0237 | 0.0161 | 0.0076 |
| 153 | 0.0240 | 0.0163 | 0.0077 |
| 154 | 0.0241 | 0.0164 | 0.0078 |
| 155 | 0.0245 | 0.0166 | 0.0079 |
| 156 | 0.0246 | 0.0167 | 0.0079 |
| 157 | 0.0250 | 0.0169 | 0.0080 |
| 158 | 0.0251 | 0.0171 | 0.0081 |
| 159 | 0.0255 | 0.0173 | 0.0082 |
| 160 | 0.0257 | 0.0174 | 0.0083 |
| 161 | 0.0261 | 0.0177 | 0.0084 |
| 162 | 0.0263 | 0.0179 | 0.0085 |
| 163 | 0.0268 | 0.0182 | 0.0086 |
| 164 | 0.0270 | 0.0183 | 0.0087 |
| 165 | 0.0275 | 0.0186 | 0.0088 |
| 166 | 0.0277 | 0.0188 | 0.0089 |
| 167 | 0.0283 | 0.0192 | 0.0091 |
| 168 | 0.0286 | 0.0194 | 0.0092 |
| 169 | 0.0292 | 0.0198 | 0.0094 |
| 170 | 0.0295 | 0.0200 | 0.0095 |
| 171 | 0.0302 | 0.0205 | 0.0097 |
| 172 | 0.0305 | 0.0207 | 0.0098 |
| 173 | 0.0313 | 0.0212 | 0.0101 |
| 174 | 0.0317 | 0.0215 | 0.0102 |
| 175 | 0.0326 | 0.0221 | 0.0105 |
| 176 | 0.0331 | 0.0224 | 0.0106 |
| 177 | 0.0341 | 0.0231 | 0.0110 |
| 178 | 0.0347 | 0.0235 | 0.0111 |
| 179 | 0.0359 | 0.0244 | 0.0115 |
| 180 | 0.0366 | 0.0248 | 0.0118 |
| 181 | 0.0381 | 0.0259 | 0.0123 |
| 182 | 0.0390 | 0.0265 | 0.0125 |
| 183 | 0.0409 | 0.0278 | 0.0132 |
| 184 | 0.0421 | 0.0285 | 0.0135 |
| 185 | 0.0219 | 0.0148 | 0.0070 |
| 186 | 0.0233 | 0.0158 | 0.0075 |
| 187 | 0.0270 | 0.0183 | 0.0087 |
| 188 | 0.0295 | 0.0200 | 0.0095 |
| 189 | 0.0367 | 0.0249 | 0.0118 |
| 190 | 0.0423 | 0.0287 | 0.0136 |
| 191 | 0.0642 | 0.0435 | 0.0206 |
| 192 | 0.0931 | 0.0559 | 0.0372 |
| 193 | 0.4030 | 0.0559 | 0.3470 |
| 194 | 0.0505 | 0.0343 | 0.0162 |
| 195 | 0.0326 | 0.0222 | 0.0105 |
| 196 | 0.0250 | 0.0170 | 0.0080 |
| 197 | 0.0433 | 0.0294 | 0.0139 |
| 198 | 0.0399 | 0.0271 | 0.0128 |
| 199 | 0.0373 | 0.0253 | 0.0120 |
| 200 | 0.0353 | 0.0239 | 0.0113 |
| 201 | 0.0336 | 0.0228 | 0.0108 |
| 202 | 0.0321 | 0.0218 | 0.0103 |
| 203 | 0.0309 | 0.0210 | 0.0099 |
| 204 | 0.0298 | 0.0202 | 0.0096 |
| 205 | 0.0289 | 0.0196 | 0.0093 |
| 206 | 0.0280 | 0.0190 | 0.0090 |
| 207 | 0.0272 | 0.0185 | 0.0088 |
| 208 | 0.0265 | 0.0180 | 0.0085 |
| 209 | 0.0259 | 0.0176 | 0.0083 |
| 210 | 0.0253 | 0.0172 | 0.0081 |
| 211 | 0.0248 | 0.0168 | 0.0080 |
| 212 | 0.0243 | 0.0165 | 0.0078 |
| 213 | 0.0238 | 0.0162 | 0.0077 |
| 214 | 0.0234 | 0.0159 | 0.0075 |
| 215 | 0.0230 | 0.0156 | 0.0074 |
| 216 | 0.0226 | 0.0153 | 0.0073 |
| 217 | 0.0212 | 0.0144 | 0.0068 |
| 218 | 0.0208 | 0.0141 | 0.0067 |
| 219 | 0.0205 | 0.0139 | 0.0066 |

| | | | |
|---|---|---|---|
| 220 | 0.0202 | 0.0137 | 0.0065 |
| 221 | 0.0199 | 0.0135 | 0.0064 |
| 222 | 0.0196 | 0.0133 | 0.0063 |
| 223 | 0.0194 | 0.0131 | 0.0062 |
| 224 | 0.0191 | 0.0130 | 0.0061 |
| 225 | 0.0189 | 0.0128 | 0.0061 |
| 226 | 0.0186 | 0.0126 | 0.0060 |
| 227 | 0.0184 | 0.0125 | 0.0059 |
| 228 | 0.0182 | 0.0123 | 0.0058 |
| 229 | 0.0180 | 0.0122 | 0.0058 |
| 230 | 0.0178 | 0.0121 | 0.0057 |
| 231 | 0.0176 | 0.0119 | 0.0057 |
| 232 | 0.0174 | 0.0118 | 0.0056 |
| 233 | 0.0172 | 0.0117 | 0.0055 |
| 234 | 0.0171 | 0.0116 | 0.0055 |
| 235 | 0.0169 | 0.0115 | 0.0054 |
| 236 | 0.0167 | 0.0113 | 0.0054 |
| 237 | 0.0166 | 0.0112 | 0.0053 |
| 238 | 0.0164 | 0.0111 | 0.0053 |
| 239 | 0.0163 | 0.0110 | 0.0052 |
| 240 | 0.0161 | 0.0109 | 0.0052 |
| 241 | 0.0160 | 0.0109 | 0.0051 |
| 242 | 0.0159 | 0.0108 | 0.0051 |
| 243 | 0.0157 | 0.0107 | 0.0051 |
| 244 | 0.0156 | 0.0106 | 0.0050 |
| 245 | 0.0155 | 0.0105 | 0.0050 |
| 246 | 0.0154 | 0.0104 | 0.0049 |
| 247 | 0.0152 | 0.0103 | 0.0049 |
| 248 | 0.0151 | 0.0103 | 0.0049 |
| 249 | 0.0150 | 0.0102 | 0.0048 |
| 250 | 0.0149 | 0.0101 | 0.0048 |
| 251 | 0.0148 | 0.0100 | 0.0048 |
| 252 | 0.0147 | 0.0100 | 0.0047 |
| 253 | 0.0146 | 0.0099 | 0.0047 |
| 254 | 0.0145 | 0.0098 | 0.0047 |
| 255 | 0.0144 | 0.0098 | 0.0046 |
| 256 | 0.0143 | 0.0097 | 0.0046 |
| 257 | 0.0142 | 0.0097 | 0.0046 |
| 258 | 0.0141 | 0.0096 | 0.0045 |
| 259 | 0.0141 | 0.0095 | 0.0045 |
| 260 | 0.0140 | 0.0095 | 0.0045 |
| 261 | 0.0139 | 0.0094 | 0.0045 |
| 262 | 0.0138 | 0.0094 | 0.0044 |
| 263 | 0.0137 | 0.0093 | 0.0044 |
| 264 | 0.0136 | 0.0093 | 0.0044 |
| 265 | 0.0136 | 0.0092 | 0.0044 |
| 266 | 0.0135 | 0.0092 | 0.0043 |
| 267 | 0.0134 | 0.0091 | 0.0043 |
| 268 | 0.0133 | 0.0091 | 0.0043 |
| 269 | 0.0133 | 0.0090 | 0.0043 |
| 270 | 0.0132 | 0.0090 | 0.0042 |
| 271 | 0.0131 | 0.0089 | 0.0042 |
| 272 | 0.0131 | 0.0089 | 0.0042 |
| 273 | 0.0130 | 0.0088 | 0.0042 |
| 274 | 0.0129 | 0.0088 | 0.0042 |
| 275 | 0.0129 | 0.0087 | 0.0041 |
| 276 | 0.0128 | 0.0087 | 0.0041 |
| 277 | 0.0127 | 0.0086 | 0.0041 |
| 278 | 0.0127 | 0.0086 | 0.0041 |
| 279 | 0.0126 | 0.0086 | 0.0041 |
| 280 | 0.0126 | 0.0085 | 0.0040 |
| 281 | 0.0125 | 0.0085 | 0.0040 |
| 282 | 0.0124 | 0.0084 | 0.0040 |
| 283 | 0.0124 | 0.0084 | 0.0040 |
| 284 | 0.0123 | 0.0084 | 0.0040 |
| 285 | 0.0123 | 0.0083 | 0.0039 |
| 286 | 0.0122 | 0.0083 | 0.0039 |
| 287 | 0.0122 | 0.0083 | 0.0039 |
| 288 | 0.0121 | 0.0082 | 0.0039 |

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      Total soil rain loss =      3.76(In)
      Total effective rainfall =      2.11(In)
      Peak flow rate in flood hydrograph =     11.51(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
------------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0011      0.13  Q         |         |         |         |
  0+15       0.0027      0.23  Q         |         |         |         |
  0+20       0.0045      0.27  Q         |         |         |         |
  0+25       0.0065      0.29  Q         |         |         |         |
  0+30       0.0086      0.31  Q         |         |         |         |
  0+35       0.0108      0.31  Q         |         |         |         |
  0+40       0.0130      0.31  Q         |         |         |         |
  0+45       0.0151      0.32  Q         |         |         |         |
  0+50       0.0173      0.32  Q         |         |         |         |
  0+55       0.0196      0.32  Q         |         |         |         |
  1+ 0       0.0218      0.32  Q         |         |         |         |
  1+ 5       0.0240      0.32  Q         |         |         |         |
  1+10       0.0262      0.32  Q         |         |         |         |
  1+15       0.0284      0.32  Q         |         |         |         |
  1+20       0.0307      0.32  QV        |         |         |         |
  1+25       0.0329      0.32  QV        |         |         |         |
  1+30       0.0351      0.33  QV        |         |         |         |
  1+35       0.0374      0.33  QV        |         |         |         |
  1+40       0.0396      0.33  QV        |         |         |         |
  1+45       0.0419      0.33  QV        |         |         |         |
  1+50       0.0442      0.33  QV        |         |         |         |
  1+55       0.0464      0.33  QV        |         |         |         |
  2+ 0       0.0487      0.33  QV        |         |         |         |
  2+ 5       0.0510      0.33  QV        |         |         |         |
  2+10       0.0533      0.33  QV        |         |         |         |
  2+15       0.0556      0.33  QV        |         |         |         |
  2+20       0.0579      0.33  QV        |         |         |         |
  2+25       0.0602      0.33  Q V       |         |         |         |
  2+30       0.0625      0.34  Q V       |         |         |         |
  2+35       0.0648      0.34  Q V       |         |         |         |
  2+40       0.0671      0.34  Q V       |         |         |         |
  2+45       0.0694      0.34  Q V       |         |         |         |
  2+50       0.0718      0.34  Q V       |         |         |         |
  2+55       0.0741      0.34  Q V       |         |         |         |
  3+ 0       0.0765      0.34  Q V       |         |         |         |
  3+ 5       0.0788      0.34  Q V       |         |         |         |
  3+10       0.0812      0.34  Q V       |         |         |         |
  3+15       0.0835      0.34  Q V       |         |         |         |
  3+20       0.0859      0.34  Q V       |         |         |         |
  3+25       0.0883      0.34  Q V       |         |         |         |
  3+30       0.0906      0.35  Q  V      |         |         |         |
  3+35       0.0930      0.35  Q  V      |         |         |         |
  3+40       0.0954      0.35  Q  V      |         |         |         |
  3+45       0.0978      0.35  Q  V      |         |         |         |
  3+50       0.1002      0.35  Q  V      |         |         |         |
  3+55       0.1026      0.35  Q  V      |         |         |         |
  4+ 0       0.1051      0.35  Q  V      |         |         |         |
  4+ 5       0.1075      0.35  Q  V      |         |         |         |
  4+10       0.1099      0.35  Q  V      |         |         |         |
  4+15       0.1124      0.35  Q  V      |         |         |         |
  4+20       0.1148      0.36  Q  V      |         |         |         |
  4+25       0.1173      0.36  Q  V      |         |         |         |
  4+30       0.1197      0.36  Q   V     |         |         |         |
  4+35       0.1222      0.36  Q   V     |         |         |         |
  4+40       0.1247      0.36  Q   V     |         |         |         |
  4+45       0.1272      0.36  Q   V     |         |         |         |
  4+50       0.1296      0.36  Q   V     |         |         |         |
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 4+55      0.1321      0.36  Q   V     |          |          |          |
 5+ 0      0.1346      0.36  Q   V     |          |          |          |
 5+ 5      0.1372      0.36  Q   V     |          |          |          |
 5+10      0.1397      0.37  Q   V     |          |          |          |
 5+15      0.1422      0.37  Q   V     |          |          |          |
 5+20      0.1447      0.37  Q   V     |          |          |          |
 5+25      0.1473      0.37  Q   V     |          |          |          |
 5+30      0.1498      0.37  Q    V    |          |          |          |
 5+35      0.1524      0.37  Q    V    |          |          |          |
 5+40      0.1550      0.37  Q    V    |          |          |          |
 5+45      0.1575      0.37  Q    V    |          |          |          |
 5+50      0.1601      0.38  Q    V    |          |          |          |
 5+55      0.1627      0.38  Q    V    |          |          |          |
 6+ 0      0.1653      0.38  Q    V    |          |          |          |
 6+ 5      0.1679      0.38  Q    V    |          |          |          |
 6+10      0.1706      0.38  Q    V    |          |          |          |
 6+15      0.1732      0.38  Q    V    |          |          |          |
 6+20      0.1758      0.38  Q    V    |          |          |          |
 6+25      0.1785      0.38  Q     V   |          |          |          |
 6+30      0.1811      0.39  Q     V   |          |          |          |
 6+35      0.1838      0.39  Q     V   |          |          |          |
 6+40      0.1865      0.39  Q     V   |          |          |          |
 6+45      0.1892      0.39  Q     V   |          |          |          |
 6+50      0.1919      0.39  Q     V   |          |          |          |
 6+55      0.1946      0.39  Q     V   |          |          |          |
 7+ 0      0.1973      0.39  Q     V   |          |          |          |
 7+ 5      0.2000      0.40  Q     V   |          |          |          |
 7+10      0.2027      0.40  Q     V   |          |          |          |
 7+15      0.2055      0.40  Q     V   |          |          |          |
 7+20      0.2082      0.40  Q      V  |          |          |          |
 7+25      0.2110      0.40  Q      V  |          |          |          |
 7+30      0.2138      0.40  Q      V  |          |          |          |
 7+35      0.2166      0.40  Q      V  |          |          |          |
 7+40      0.2194      0.41  Q      V  |          |          |          |
 7+45      0.2222      0.41  Q      V  |          |          |          |
 7+50      0.2250      0.41  Q      V  |          |          |          |
 7+55      0.2278      0.41  Q      V  |          |          |          |
 8+ 0      0.2307      0.41  Q      V  |          |          |          |
 8+ 5      0.2335      0.41  Q      V  |          |          |          |
 8+10      0.2364      0.42  Q       V |          |          |          |
 8+15      0.2393      0.42  Q       V |          |          |          |
 8+20      0.2422      0.42  Q       V |          |          |          |
 8+25      0.2451      0.42  Q       V |          |          |          |
 8+30      0.2480      0.42  Q       V |          |          |          |
 8+35      0.2509      0.43  Q       V |          |          |          |
 8+40      0.2539      0.43  Q       V |          |          |          |
 8+45      0.2568      0.43  Q       V |          |          |          |
 8+50      0.2598      0.43  Q       V |          |          |          |
 8+55      0.2628      0.43  Q       V |          |          |          |
 9+ 0      0.2658      0.44  Q        V|          |          |          |
 9+ 5      0.2688      0.44  Q        V|          |          |          |
 9+10      0.2718      0.44  Q        V|          |          |          |
 9+15      0.2748      0.44  Q        V|          |          |          |
 9+20      0.2779      0.44  Q        V|          |          |          |
 9+25      0.2810      0.45  Q        V|          |          |          |
 9+30      0.2841      0.45  Q        V|          |          |          |
 9+35      0.2872      0.45  Q        V|          |          |          |
 9+40      0.2903      0.45  Q        V|          |          |          |
 9+45      0.2934      0.46  Q        V|          |          |          |
 9+50      0.2966      0.46  Q         V          |          |          |
 9+55      0.2997      0.46  Q         V          |          |          |
10+ 0      0.3029      0.46  Q         V          |          |          |
10+ 5      0.3061      0.47  Q         V          |          |          |
10+10      0.3093      0.47  Q         V          |          |          |
10+15      0.3126      0.47  Q         V          |          |          |
10+20      0.3158      0.47  Q         V          |          |          |
10+25      0.3191      0.48  Q         V          |          |          |
10+30      0.3224      0.48  Q         V          |          |          |
10+35      0.3257      0.48  Q         |V         |          |          |
10+40      0.3291      0.48  Q         |V         |          |          |
10+45      0.3324      0.49  Q         |V         |          |          |
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10+50       0.3358      0.49  Q          |V         |          |          |
10+55       0.3392      0.49  Q          |V         |          |          |
11+ 0       0.3426      0.50  Q          |V         |          |          |
11+ 5       0.3461      0.50  Q          |V         |          |          |
11+10       0.3495      0.50  |Q         |V         |          |          |
11+15       0.3530      0.51  |Q         |V         |          |          |
11+20       0.3565      0.51  |Q         | V        |          |          |
11+25       0.3601      0.51  |Q         | V        |          |          |
11+30       0.3636      0.52  |Q         | V        |          |          |
11+35       0.3672      0.52  |Q         | V        |          |          |
11+40       0.3708      0.53  |Q         | V        |          |          |
11+45       0.3745      0.53  |Q         | V        |          |          |
11+50       0.3782      0.53  |Q         | V        |          |          |
11+55       0.3819      0.54  |Q         | V        |          |          |
12+ 0       0.3856      0.54  |Q         |  V       |          |          |
12+ 5       0.3894      0.55  |Q         |  V       |          |          |
12+10       0.3932      0.56  |Q         |  V       |          |          |
12+15       0.3972      0.58  |Q         |  V       |          |          |
12+20       0.4012      0.58  |Q         |  V       |          |          |
12+25       0.4053      0.59  |Q         |  V       |          |          |
12+30       0.4094      0.60  |Q         |  V       |          |          |
12+35       0.4135      0.60  |Q         |   V      |          |          |
12+40       0.4177      0.61  |Q         |   V      |          |          |
12+45       0.4219      0.61  |Q         |   V      |          |          |
12+50       0.4262      0.62  |Q         |   V      |          |          |
12+55       0.4305      0.62  |Q         |   V      |          |          |
13+ 0       0.4348      0.63  |Q         |   V      |          |          |
13+ 5       0.4392      0.64  |Q         |   V      |          |          |
13+10       0.4437      0.64  |Q         |    V     |          |          |
13+15       0.4481      0.65  |Q         |    V     |          |          |
13+20       0.4527      0.66  |Q         |    V     |          |          |
13+25       0.4572      0.66  |Q         |    V     |          |          |
13+30       0.4619      0.67  |Q         |    V     |          |          |
13+35       0.4665      0.68  |Q         |    V     |          |          |
13+40       0.4713      0.69  |Q         |    V     |          |          |
13+45       0.4761      0.70  |Q         |     V    |          |          |
13+50       0.4809      0.71  |Q         |     V    |          |          |
13+55       0.4859      0.72  |Q         |     V    |          |          |
14+ 0       0.4909      0.73  |Q         |     V    |          |          |
14+ 5       0.4959      0.74  |Q         |     V    |          |          |
14+10       0.5011      0.75  |Q         |     V    |          |          |
14+15       0.5063      0.76  |Q         |      V   |          |          |
14+20       0.5116      0.77  |Q         |      V   |          |          |
14+25       0.5170      0.78  |Q         |      V   |          |          |
14+30       0.5225      0.80  |Q         |      V   |          |          |
14+35       0.5281      0.81  |Q         |      V   |          |          |
14+40       0.5338      0.83  |Q         |       V  |          |          |
14+45       0.5397      0.85  |Q         |       V  |          |          |
14+50       0.5456      0.87  |Q         |       V  |          |          |
14+55       0.5518      0.89  |Q         |       V  |          |          |
15+ 0       0.5580      0.91  |Q         |       V  |          |          |
15+ 5       0.5644      0.93  |Q         |        V |          |          |
15+10       0.5711      0.96  |Q         |        V |          |          |
15+15       0.5779      0.99  |Q         |        V |          |          |
15+20       0.5849      1.03  | Q        |        V |          |          |
15+25       0.5920      1.03  | Q        |         V|          |          |
15+30       0.5979      0.86  |Q         |         V|          |          |
15+35       0.6029      0.72  |Q         |         V|          |          |
15+40       0.6078      0.71  |Q         |         V|          |          |
15+45       0.6130      0.75  |Q         |         V|          |          |
15+50       0.6188      0.84  |Q         |         V|          |          |
15+55       0.6257      1.00  |Q         |         |V         |          |
16+ 0       0.6350      1.36  | Q        |         |V         |          |
16+ 5       0.6600      3.62  |      Q   |         | V        |          |
16+10       0.7392     11.51  |          |         |  Q V     |          |
16+15       0.8084     10.04  |          |         Q      V   |          |
16+20       0.8385      4.37  |        Q |         |       V  |          |
16+25       0.8575      2.77  |    Q     |         |        V |          |
16+30       0.8715      2.02  |   Q      |         |        V |          |
16+35       0.8820      1.53  |  Q       |         |        V |          |
16+40       0.8903      1.20  | Q        |         |         V|          |
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16+45       0.8978      1.10  | Q       |         |         V         |
16+50       0.9050      1.04  | Q       |         |         V         |
16+55       0.9116      0.95  |Q        |         |         V         |
17+ 0       0.9174      0.84  |Q        |         |         |V        |
17+ 5       0.9230      0.81  |Q        |         |         |V        |
17+10       0.9284      0.78  |Q        |         |         |V        |
17+15       0.9336      0.76  |Q        |         |         |V        |
17+20       0.9387      0.74  |Q        |         |         |V        |
17+25       0.9436      0.71  |Q        |         |         |V        |
17+30       0.9484      0.70  |Q        |         |         | V       |
17+35       0.9530      0.68  |Q        |         |         | V       |
17+40       0.9576      0.66  |Q        |         |         | V       |
17+45       0.9621      0.65  |Q        |         |         | V       |
17+50       0.9665      0.64  |Q        |         |         | V       |
17+55       0.9708      0.62  |Q        |         |         | V       |
18+ 0       0.9750      0.61  |Q        |         |         |  V      |
18+ 5       0.9791      0.60  |Q        |         |         |  V      |
18+10       0.9831      0.58  |Q        |         |         |  V      |
18+15       0.9870      0.56  |Q        |         |         |  V      |
18+20       0.9907      0.55  |Q        |         |         |  V      |
18+25       0.9945      0.54  |Q        |         |         |  V      |
18+30       0.9981      0.53  |Q        |         |         |  V      |
18+35       1.0017      0.52  |Q        |         |         |  V      |
18+40       1.0052      0.51  |Q        |         |         |   V     |
18+45       1.0087      0.51  |Q        |         |         |   V     |
18+50       1.0122      0.50  Q         |         |         |   V     |
18+55       1.0155      0.49  Q         |         |         |   V     |
19+ 0       1.0189      0.49  Q         |         |         |   V     |
19+ 5       1.0222      0.48  Q         |         |         |   V     |
19+10       1.0255      0.48  Q         |         |         |   V     |
19+15       1.0287      0.47  Q         |         |         |   V     |
19+20       1.0319      0.46  Q         |         |         |   V     |
19+25       1.0351      0.46  Q         |         |         |    V    |
19+30       1.0382      0.45  Q         |         |         |    V    |
19+35       1.0413      0.45  Q         |         |         |    V    |
19+40       1.0444      0.45  Q         |         |         |    V    |
19+45       1.0474      0.44  Q         |         |         |    V    |
19+50       1.0504      0.44  Q         |         |         |    V    |
19+55       1.0534      0.43  Q         |         |         |    V    |
20+ 0       1.0564      0.43  Q         |         |         |    V    |
20+ 5       1.0593      0.43  Q         |         |         |    V    |
20+10       1.0622      0.42  Q         |         |         |    V    |
20+15       1.0651      0.42  Q         |         |         |     V   |
20+20       1.0679      0.41  Q         |         |         |     V   |
20+25       1.0708      0.41  Q         |         |         |     V   |
20+30       1.0736      0.41  Q         |         |         |     V   |
20+35       1.0763      0.40  Q         |         |         |     V   |
20+40       1.0791      0.40  Q         |         |         |     V   |
20+45       1.0819      0.40  Q         |         |         |     V   |
20+50       1.0846      0.40  Q         |         |         |     V   |
20+55       1.0873      0.39  Q         |         |         |     V   |
21+ 0       1.0900      0.39  Q         |         |         |     V   |
21+ 5       1.0926      0.39  Q         |         |         |      V  |
21+10       1.0953      0.38  Q         |         |         |      V  |
21+15       1.0979      0.38  Q         |         |         |      V  |
21+20       1.1005      0.38  Q         |         |         |      V  |
21+25       1.1031      0.38  Q         |         |         |      V  |
21+30       1.1057      0.37  Q         |         |         |      V  |
21+35       1.1082      0.37  Q         |         |         |      V  |
21+40       1.1108      0.37  Q         |         |         |      V  |
21+45       1.1133      0.37  Q         |         |         |      V  |
21+50       1.1158      0.36  Q         |         |         |      V  |
21+55       1.1183      0.36  Q         |         |         |      V  |
22+ 0       1.1208      0.36  Q         |         |         |      V  |
22+ 5       1.1233      0.36  Q         |         |         |       V |
22+10       1.1257      0.36  Q         |         |         |       V |
22+15       1.1281      0.35  Q         |         |         |       V |
22+20       1.1306      0.35  Q         |         |         |       V |
22+25       1.1330      0.35  Q         |         |         |       V |
22+30       1.1354      0.35  Q         |         |         |       V |
22+35       1.1378      0.35  Q         |         |         |       V |
```

```
   22+40       1.1401      0.34  Q          |          |          |        V |
   22+45       1.1425      0.34  Q          |          |          |        V |
   22+50       1.1448      0.34  Q          |          |          |        V |
   22+55       1.1472      0.34  Q          |          |          |        V |
   23+ 0       1.1495      0.34  Q          |          |          |        V |
   23+ 5       1.1518      0.34  Q          |          |          |         V|
   23+10       1.1541      0.33  Q          |          |          |         V|
   23+15       1.1564      0.33  Q          |          |          |         V|
   23+20       1.1587      0.33  Q          |          |          |         V|
   23+25       1.1610      0.33  Q          |          |          |         V|
   23+30       1.1632      0.33  Q          |          |          |         V|
   23+35       1.1655      0.33  Q          |          |          |         V|
   23+40       1.1677      0.32  Q          |          |          |         V|
   23+45       1.1699      0.32  Q          |          |          |         V|
   23+50       1.1721      0.32  Q          |          |          |         V|
   23+55       1.1743      0.32  Q          |          |          |         V|
   24+ 0       1.1765      0.32  Q          |          |          |         V|
   24+ 5       1.1786      0.30  Q          |          |          |         V|
   24+10       1.1799      0.18  Q          |          |          |         V|
   24+15       1.1804      0.08  Q          |          |          |         V|
   24+20       1.1807      0.05  Q          |          |          |         V|
   24+25       1.1809      0.02  Q          |          |          |         V|
   24+30       1.1810      0.01  Q          |          |          |         V|
   24+35       1.1810      0.01  Q          |          |          |         V|
   24+40       1.1811      0.00  Q          |          |          |         V|
   24+45       1.1811      0.00  Q          |          |          |         V|
   24+50       1.1811      0.00  Q          |          |          |          V
-------------------------------------------------------------------------
```

Area 'F' – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'F'
10 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.71           1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.71           6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.71          24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             6.71           1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.71           6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.71          24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0          6.71      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.71 | 1.000 | 78.0 | 78.0 | 2.82 | 0.650 |

Area-averaged catchment yield fraction, Y = 0.650
Area-averaged low loss fraction, Yb = 0.350
User entry of time of concentration = 0.162 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.71(Ac.)
Catchment Lag time = 0.130 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 64.3004
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.350 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 6.71(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.474(In)
30-minute factor = 1.000 Adjusted rainfall = 0.812(In)
1-hour factor = 1.000 Adjusted rainfall = 1.000(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 81.15 (CFS)) | |
| 1 | 6.228 | 5.054 |
| 2 | 42.193 | 29.185 |
| 3 | 74.058 | 25.858 |
| 4 | 85.789 | 9.519 |
| 5 | 92.451 | 5.407 |
| 6 | 96.283 | 3.110 |
| 7 | 98.090 | 1.467 |
| 8 | 98.816 | 0.589 |
| 9 | 99.292 | 0.386 |
| 10 | 99.729 | 0.355 |
| 11 | 100.000 | 0.220 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4744 | 0.4744 |
| 2 | 0.5840 | 0.1096 |
| 3 | 0.6595 | 0.0755 |
| 4 | 0.7190 | 0.0595 |
| 5 | 0.7688 | 0.0498 |
| 6 | 0.8120 | 0.0432 |
| 7 | 0.8504 | 0.0384 |
| 8 | 0.8852 | 0.0348 |
| 9 | 0.9170 | 0.0318 |
| 10 | 0.9465 | 0.0294 |
| 11 | 0.9739 | 0.0275 |
| 12 | 0.9997 | 0.0258 |
| 13 | 1.0504 | 0.0508 |
| 14 | 1.0997 | 0.0493 |
| 15 | 1.1477 | 0.0480 |

| | | |
|---|---|---|
| 16 | 1.1944 | 0.0468 |
| 17 | 1.2401 | 0.0457 |
| 18 | 1.2847 | 0.0446 |
| 19 | 1.3284 | 0.0437 |
| 20 | 1.3712 | 0.0428 |
| 21 | 1.4133 | 0.0420 |
| 22 | 1.4545 | 0.0413 |
| 23 | 1.4951 | 0.0406 |
| 24 | 1.5350 | 0.0399 |
| 25 | 1.5742 | 0.0393 |
| 26 | 1.6129 | 0.0387 |
| 27 | 1.6510 | 0.0381 |
| 28 | 1.6886 | 0.0376 |
| 29 | 1.7256 | 0.0371 |
| 30 | 1.7622 | 0.0366 |
| 31 | 1.7983 | 0.0361 |
| 32 | 1.8340 | 0.0357 |
| 33 | 1.8693 | 0.0352 |
| 34 | 1.9041 | 0.0348 |
| 35 | 1.9386 | 0.0345 |
| 36 | 1.9726 | 0.0341 |
| 37 | 2.0064 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0727 | 0.0330 |
| 40 | 2.1055 | 0.0327 |
| 41 | 2.1379 | 0.0324 |
| 42 | 2.1700 | 0.0321 |
| 43 | 2.2018 | 0.0318 |
| 44 | 2.2333 | 0.0315 |
| 45 | 2.2646 | 0.0313 |
| 46 | 2.2955 | 0.0310 |
| 47 | 2.3263 | 0.0307 |
| 48 | 2.3568 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4170 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4764 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5349 | 0.0291 |
| 55 | 2.5638 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6210 | 0.0285 |
| 58 | 2.6494 | 0.0283 |
| 59 | 2.6775 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7609 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8157 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8698 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9233 | 0.0267 |
| 69 | 2.9498 | 0.0265 |
| 70 | 2.9762 | 0.0264 |
| 71 | 3.0024 | 0.0262 |
| 72 | 3.0285 | 0.0261 |
| 73 | 3.0550 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1078 | 0.0263 |
| 76 | 3.1340 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1861 | 0.0259 |
| 79 | 3.2119 | 0.0258 |
| 80 | 3.2376 | 0.0257 |
| 81 | 3.2632 | 0.0256 |
| 82 | 3.2887 | 0.0255 |
| 83 | 3.3140 | 0.0254 |
| 84 | 3.3393 | 0.0253 |
| 85 | 3.3644 | 0.0251 |
| 86 | 3.3894 | 0.0250 |

| | | |
|---|---|---|
| 87 | 3.4144 | 0.0249 |
| 88 | 3.4392 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5130 | 0.0245 |
| 92 | 3.5375 | 0.0244 |
| 93 | 3.5618 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6101 | 0.0241 |
| 96 | 3.6342 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6820 | 0.0239 |
| 99 | 3.7057 | 0.0238 |
| 100 | 3.7294 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7765 | 0.0235 |
| 103 | 3.8000 | 0.0234 |
| 104 | 3.8233 | 0.0233 |
| 105 | 3.8466 | 0.0233 |
| 106 | 3.8697 | 0.0232 |
| 107 | 3.8928 | 0.0231 |
| 108 | 3.9158 | 0.0230 |
| 109 | 3.9388 | 0.0229 |
| 110 | 3.9617 | 0.0229 |
| 111 | 3.9844 | 0.0228 |
| 112 | 4.0072 | 0.0227 |
| 113 | 4.0298 | 0.0226 |
| 114 | 4.0524 | 0.0226 |
| 115 | 4.0749 | 0.0225 |
| 116 | 4.0973 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1863 | 0.0221 |
| 121 | 4.2083 | 0.0221 |
| 122 | 4.2303 | 0.0220 |
| 123 | 4.2523 | 0.0219 |
| 124 | 4.2742 | 0.0219 |
| 125 | 4.2960 | 0.0218 |
| 126 | 4.3177 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3610 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4255 | 0.0214 |
| 132 | 4.4469 | 0.0214 |
| 133 | 4.4683 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5319 | 0.0211 |
| 137 | 4.5530 | 0.0211 |
| 138 | 4.5740 | 0.0210 |
| 139 | 4.5950 | 0.0210 |
| 140 | 4.6159 | 0.0209 |
| 141 | 4.6368 | 0.0209 |
| 142 | 4.6576 | 0.0208 |
| 143 | 4.6783 | 0.0208 |
| 144 | 4.6991 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7609 | 0.0206 |
| 148 | 4.7814 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |
| 151 | 4.8426 | 0.0204 |
| 152 | 4.8629 | 0.0203 |
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |
| 155 | 4.9235 | 0.0202 |
| 156 | 4.9436 | 0.0201 |
| 157 | 4.9636 | 0.0201 |

| | | |
|---|---|---|
| 158 | 4.9837 | 0.0200 |
| 159 | 5.0036 | 0.0200 |
| 160 | 5.0236 | 0.0199 |
| 161 | 5.0434 | 0.0199 |
| 162 | 5.0633 | 0.0198 |
| 163 | 5.0830 | 0.0198 |
| 164 | 5.1028 | 0.0197 |
| 165 | 5.1225 | 0.0197 |
| 166 | 5.1421 | 0.0197 |
| 167 | 5.1618 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2008 | 0.0195 |
| 170 | 5.2203 | 0.0195 |
| 171 | 5.2398 | 0.0194 |
| 172 | 5.2592 | 0.0194 |
| 173 | 5.2785 | 0.0194 |
| 174 | 5.2978 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3364 | 0.0192 |
| 177 | 5.3556 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3938 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4319 | 0.0190 |
| 182 | 5.4509 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4888 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5266 | 0.0189 |
| 187 | 5.5454 | 0.0188 |
| 188 | 5.5642 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6203 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6761 | 0.0186 |
| 195 | 5.6946 | 0.0185 |
| 196 | 5.7131 | 0.0185 |
| 197 | 5.7315 | 0.0185 |
| 198 | 5.7500 | 0.0184 |
| 199 | 5.7683 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8416 | 0.0183 |
| 204 | 5.8598 | 0.0182 |
| 205 | 5.8780 | 0.0182 |
| 206 | 5.8961 | 0.0182 |
| 207 | 5.9143 | 0.0181 |
| 208 | 5.9323 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9684 | 0.0180 |
| 211 | 5.9864 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0223 | 0.0179 |
| 214 | 6.0402 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0760 | 0.0178 |
| 217 | 6.0938 | 0.0178 |
| 218 | 6.1116 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1470 | 0.0177 |
| 221 | 6.1647 | 0.0177 |
| 222 | 6.1824 | 0.0177 |
| 223 | 6.2000 | 0.0176 |
| 224 | 6.2176 | 0.0176 |
| 225 | 6.2352 | 0.0176 |
| 226 | 6.2528 | 0.0175 |
| 227 | 6.2703 | 0.0175 |
| 228 | 6.2878 | 0.0175 |

| | | |
|---|---|---|
| 229 | 6.3052 | 0.0175 |
| 230 | 6.3227 | 0.0174 |
| 231 | 6.3401 | 0.0174 |
| 232 | 6.3575 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3921 | 0.0173 |
| 235 | 6.4094 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4440 | 0.0172 |
| 238 | 6.4612 | 0.0172 |
| 239 | 6.4784 | 0.0172 |
| 240 | 6.4955 | 0.0172 |
| 241 | 6.5127 | 0.0171 |
| 242 | 6.5298 | 0.0171 |
| 243 | 6.5469 | 0.0171 |
| 244 | 6.5639 | 0.0171 |
| 245 | 6.5810 | 0.0170 |
| 246 | 6.5980 | 0.0170 |
| 247 | 6.6150 | 0.0170 |
| 248 | 6.6319 | 0.0170 |
| 249 | 6.6489 | 0.0169 |
| 250 | 6.6658 | 0.0169 |
| 251 | 6.6827 | 0.0169 |
| 252 | 6.6995 | 0.0169 |
| 253 | 6.7164 | 0.0168 |
| 254 | 6.7332 | 0.0168 |
| 255 | 6.7500 | 0.0168 |
| 256 | 6.7667 | 0.0168 |
| 257 | 6.7835 | 0.0167 |
| 258 | 6.8002 | 0.0167 |
| 259 | 6.8169 | 0.0167 |
| 260 | 6.8336 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8668 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9166 | 0.0166 |
| 266 | 6.9331 | 0.0165 |
| 267 | 6.9496 | 0.0165 |
| 268 | 6.9661 | 0.0165 |
| 269 | 6.9825 | 0.0165 |
| 270 | 6.9990 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0482 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0809 | 0.0163 |
| 276 | 7.0972 | 0.0163 |
| 277 | 7.1134 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1460 | 0.0162 |
| 280 | 7.1622 | 0.0162 |
| 281 | 7.1784 | 0.0162 |
| 282 | 7.1946 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2269 | 0.0161 |
| 285 | 7.2430 | 0.0161 |
| 286 | 7.2591 | 0.0161 |
| 287 | 7.2751 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0056 | 0.0104 |
| 2 | 0.0161 | 0.0056 | 0.0105 |
| 3 | 0.0161 | 0.0056 | 0.0105 |
| 4 | 0.0161 | 0.0056 | 0.0105 |
| 5 | 0.0162 | 0.0057 | 0.0105 |
| 6 | 0.0162 | 0.0057 | 0.0105 |

| | | | |
|---|---|---|---|
| 7 | 0.0162 | 0.0057 | 0.0106 |
| 8 | 0.0163 | 0.0057 | 0.0106 |
| 9 | 0.0163 | 0.0057 | 0.0106 |
| 10 | 0.0163 | 0.0057 | 0.0106 |
| 11 | 0.0164 | 0.0057 | 0.0106 |
| 12 | 0.0164 | 0.0057 | 0.0107 |
| 13 | 0.0164 | 0.0058 | 0.0107 |
| 14 | 0.0165 | 0.0058 | 0.0107 |
| 15 | 0.0165 | 0.0058 | 0.0107 |
| 16 | 0.0165 | 0.0058 | 0.0107 |
| 17 | 0.0166 | 0.0058 | 0.0108 |
| 18 | 0.0166 | 0.0058 | 0.0108 |
| 19 | 0.0166 | 0.0058 | 0.0108 |
| 20 | 0.0167 | 0.0058 | 0.0108 |
| 21 | 0.0167 | 0.0058 | 0.0109 |
| 22 | 0.0167 | 0.0059 | 0.0109 |
| 23 | 0.0168 | 0.0059 | 0.0109 |
| 24 | 0.0168 | 0.0059 | 0.0109 |
| 25 | 0.0169 | 0.0059 | 0.0110 |
| 26 | 0.0169 | 0.0059 | 0.0110 |
| 27 | 0.0169 | 0.0059 | 0.0110 |
| 28 | 0.0170 | 0.0059 | 0.0110 |
| 29 | 0.0170 | 0.0060 | 0.0111 |
| 30 | 0.0170 | 0.0060 | 0.0111 |
| 31 | 0.0171 | 0.0060 | 0.0111 |
| 32 | 0.0171 | 0.0060 | 0.0111 |
| 33 | 0.0172 | 0.0060 | 0.0112 |
| 34 | 0.0172 | 0.0060 | 0.0112 |
| 35 | 0.0172 | 0.0060 | 0.0112 |
| 36 | 0.0173 | 0.0060 | 0.0112 |
| 37 | 0.0173 | 0.0061 | 0.0113 |
| 38 | 0.0174 | 0.0061 | 0.0113 |
| 39 | 0.0174 | 0.0061 | 0.0113 |
| 40 | 0.0174 | 0.0061 | 0.0113 |
| 41 | 0.0175 | 0.0061 | 0.0114 |
| 42 | 0.0175 | 0.0061 | 0.0114 |
| 43 | 0.0176 | 0.0062 | 0.0114 |
| 44 | 0.0176 | 0.0062 | 0.0114 |
| 45 | 0.0177 | 0.0062 | 0.0115 |
| 46 | 0.0177 | 0.0062 | 0.0115 |
| 47 | 0.0178 | 0.0062 | 0.0115 |
| 48 | 0.0178 | 0.0062 | 0.0116 |
| 49 | 0.0178 | 0.0062 | 0.0116 |
| 50 | 0.0179 | 0.0063 | 0.0116 |
| 51 | 0.0179 | 0.0063 | 0.0117 |
| 52 | 0.0180 | 0.0063 | 0.0117 |
| 53 | 0.0180 | 0.0063 | 0.0117 |
| 54 | 0.0181 | 0.0063 | 0.0117 |
| 55 | 0.0181 | 0.0063 | 0.0118 |
| 56 | 0.0182 | 0.0064 | 0.0118 |
| 57 | 0.0182 | 0.0064 | 0.0118 |
| 58 | 0.0183 | 0.0064 | 0.0119 |
| 59 | 0.0183 | 0.0064 | 0.0119 |
| 60 | 0.0184 | 0.0064 | 0.0119 |
| 61 | 0.0184 | 0.0064 | 0.0120 |
| 62 | 0.0185 | 0.0065 | 0.0120 |
| 63 | 0.0185 | 0.0065 | 0.0120 |
| 64 | 0.0186 | 0.0065 | 0.0121 |
| 65 | 0.0186 | 0.0065 | 0.0121 |
| 66 | 0.0187 | 0.0065 | 0.0121 |
| 67 | 0.0187 | 0.0066 | 0.0122 |
| 68 | 0.0188 | 0.0066 | 0.0122 |
| 69 | 0.0189 | 0.0066 | 0.0123 |
| 70 | 0.0189 | 0.0066 | 0.0123 |
| 71 | 0.0190 | 0.0066 | 0.0123 |
| 72 | 0.0190 | 0.0066 | 0.0124 |
| 73 | 0.0191 | 0.0067 | 0.0124 |
| 74 | 0.0191 | 0.0067 | 0.0124 |
| 75 | 0.0192 | 0.0067 | 0.0125 |
| 76 | 0.0192 | 0.0067 | 0.0125 |
| 77 | 0.0193 | 0.0068 | 0.0126 |

| | | | |
|---|---|---|---|
| 78 | 0.0194 | 0.0068 | 0.0126 |
| 79 | 0.0194 | 0.0068 | 0.0126 |
| 80 | 0.0195 | 0.0068 | 0.0127 |
| 81 | 0.0196 | 0.0068 | 0.0127 |
| 82 | 0.0196 | 0.0069 | 0.0127 |
| 83 | 0.0197 | 0.0069 | 0.0128 |
| 84 | 0.0197 | 0.0069 | 0.0128 |
| 85 | 0.0198 | 0.0069 | 0.0129 |
| 86 | 0.0199 | 0.0070 | 0.0129 |
| 87 | 0.0200 | 0.0070 | 0.0130 |
| 88 | 0.0200 | 0.0070 | 0.0130 |
| 89 | 0.0201 | 0.0070 | 0.0131 |
| 90 | 0.0202 | 0.0071 | 0.0131 |
| 91 | 0.0203 | 0.0071 | 0.0132 |
| 92 | 0.0203 | 0.0071 | 0.0132 |
| 93 | 0.0204 | 0.0071 | 0.0133 |
| 94 | 0.0205 | 0.0072 | 0.0133 |
| 95 | 0.0206 | 0.0072 | 0.0134 |
| 96 | 0.0206 | 0.0072 | 0.0134 |
| 97 | 0.0207 | 0.0072 | 0.0135 |
| 98 | 0.0208 | 0.0073 | 0.0135 |
| 99 | 0.0209 | 0.0073 | 0.0136 |
| 100 | 0.0209 | 0.0073 | 0.0136 |
| 101 | 0.0210 | 0.0074 | 0.0137 |
| 102 | 0.0211 | 0.0074 | 0.0137 |
| 103 | 0.0212 | 0.0074 | 0.0138 |
| 104 | 0.0213 | 0.0074 | 0.0138 |
| 105 | 0.0214 | 0.0075 | 0.0139 |
| 106 | 0.0214 | 0.0075 | 0.0139 |
| 107 | 0.0216 | 0.0075 | 0.0140 |
| 108 | 0.0216 | 0.0076 | 0.0141 |
| 109 | 0.0218 | 0.0076 | 0.0141 |
| 110 | 0.0218 | 0.0076 | 0.0142 |
| 111 | 0.0219 | 0.0077 | 0.0143 |
| 112 | 0.0220 | 0.0077 | 0.0143 |
| 113 | 0.0221 | 0.0077 | 0.0144 |
| 114 | 0.0222 | 0.0078 | 0.0144 |
| 115 | 0.0224 | 0.0078 | 0.0145 |
| 116 | 0.0224 | 0.0078 | 0.0146 |
| 117 | 0.0226 | 0.0079 | 0.0147 |
| 118 | 0.0226 | 0.0079 | 0.0147 |
| 119 | 0.0228 | 0.0080 | 0.0148 |
| 120 | 0.0229 | 0.0080 | 0.0149 |
| 121 | 0.0230 | 0.0081 | 0.0150 |
| 122 | 0.0231 | 0.0081 | 0.0150 |
| 123 | 0.0233 | 0.0081 | 0.0151 |
| 124 | 0.0233 | 0.0082 | 0.0152 |
| 125 | 0.0235 | 0.0082 | 0.0153 |
| 126 | 0.0236 | 0.0083 | 0.0153 |
| 127 | 0.0238 | 0.0083 | 0.0155 |
| 128 | 0.0239 | 0.0083 | 0.0155 |
| 129 | 0.0240 | 0.0084 | 0.0156 |
| 130 | 0.0241 | 0.0084 | 0.0157 |
| 131 | 0.0243 | 0.0085 | 0.0158 |
| 132 | 0.0244 | 0.0085 | 0.0159 |
| 133 | 0.0246 | 0.0086 | 0.0160 |
| 134 | 0.0247 | 0.0086 | 0.0161 |
| 135 | 0.0249 | 0.0087 | 0.0162 |
| 136 | 0.0250 | 0.0088 | 0.0163 |
| 137 | 0.0253 | 0.0088 | 0.0164 |
| 138 | 0.0254 | 0.0089 | 0.0165 |
| 139 | 0.0256 | 0.0090 | 0.0166 |
| 140 | 0.0257 | 0.0090 | 0.0167 |
| 141 | 0.0259 | 0.0091 | 0.0169 |
| 142 | 0.0261 | 0.0091 | 0.0169 |
| 143 | 0.0263 | 0.0092 | 0.0171 |
| 144 | 0.0265 | 0.0093 | 0.0172 |
| 145 | 0.0261 | 0.0091 | 0.0170 |
| 146 | 0.0262 | 0.0092 | 0.0170 |
| 147 | 0.0265 | 0.0093 | 0.0172 |
| 148 | 0.0267 | 0.0093 | 0.0173 |

| | | | |
|---|---|---|---|
| 149 | 0.0270 | 0.0094 | 0.0175 |
| 150 | 0.0271 | 0.0095 | 0.0176 |
| 151 | 0.0275 | 0.0096 | 0.0178 |
| 152 | 0.0276 | 0.0097 | 0.0180 |
| 153 | 0.0280 | 0.0098 | 0.0182 |
| 154 | 0.0282 | 0.0099 | 0.0183 |
| 155 | 0.0285 | 0.0100 | 0.0185 |
| 156 | 0.0287 | 0.0101 | 0.0187 |
| 157 | 0.0291 | 0.0102 | 0.0189 |
| 158 | 0.0293 | 0.0103 | 0.0191 |
| 159 | 0.0298 | 0.0104 | 0.0194 |
| 160 | 0.0300 | 0.0105 | 0.0195 |
| 161 | 0.0305 | 0.0107 | 0.0198 |
| 162 | 0.0307 | 0.0108 | 0.0200 |
| 163 | 0.0313 | 0.0109 | 0.0203 |
| 164 | 0.0315 | 0.0110 | 0.0205 |
| 165 | 0.0321 | 0.0112 | 0.0209 |
| 166 | 0.0324 | 0.0113 | 0.0211 |
| 167 | 0.0330 | 0.0116 | 0.0215 |
| 168 | 0.0334 | 0.0117 | 0.0217 |
| 169 | 0.0341 | 0.0119 | 0.0222 |
| 170 | 0.0345 | 0.0121 | 0.0224 |
| 171 | 0.0352 | 0.0123 | 0.0229 |
| 172 | 0.0357 | 0.0125 | 0.0232 |
| 173 | 0.0366 | 0.0128 | 0.0238 |
| 174 | 0.0371 | 0.0130 | 0.0241 |
| 175 | 0.0381 | 0.0133 | 0.0248 |
| 176 | 0.0387 | 0.0135 | 0.0251 |
| 177 | 0.0399 | 0.0140 | 0.0259 |
| 178 | 0.0406 | 0.0142 | 0.0264 |
| 179 | 0.0420 | 0.0147 | 0.0273 |
| 180 | 0.0428 | 0.0150 | 0.0278 |
| 181 | 0.0446 | 0.0156 | 0.0290 |
| 182 | 0.0457 | 0.0160 | 0.0297 |
| 183 | 0.0480 | 0.0168 | 0.0312 |
| 184 | 0.0493 | 0.0172 | 0.0320 |
| 185 | 0.0258 | 0.0090 | 0.0167 |
| 186 | 0.0275 | 0.0096 | 0.0178 |
| 187 | 0.0318 | 0.0111 | 0.0207 |
| 188 | 0.0348 | 0.0122 | 0.0226 |
| 189 | 0.0432 | 0.0151 | 0.0281 |
| 190 | 0.0498 | 0.0174 | 0.0324 |
| 191 | 0.0755 | 0.0264 | 0.0491 |
| 192 | 0.1096 | 0.0336 | 0.0760 |
| 193 | 0.4744 | 0.0336 | 0.4407 |
| 194 | 0.0595 | 0.0208 | 0.0386 |
| 195 | 0.0384 | 0.0134 | 0.0250 |
| 196 | 0.0294 | 0.0103 | 0.0191 |
| 197 | 0.0508 | 0.0178 | 0.0330 |
| 198 | 0.0468 | 0.0164 | 0.0304 |
| 199 | 0.0437 | 0.0153 | 0.0284 |
| 200 | 0.0413 | 0.0144 | 0.0268 |
| 201 | 0.0393 | 0.0137 | 0.0255 |
| 202 | 0.0376 | 0.0131 | 0.0244 |
| 203 | 0.0361 | 0.0126 | 0.0235 |
| 204 | 0.0348 | 0.0122 | 0.0227 |
| 205 | 0.0337 | 0.0118 | 0.0219 |
| 206 | 0.0327 | 0.0114 | 0.0213 |
| 207 | 0.0318 | 0.0111 | 0.0207 |
| 208 | 0.0310 | 0.0108 | 0.0201 |
| 209 | 0.0302 | 0.0106 | 0.0197 |
| 210 | 0.0296 | 0.0103 | 0.0192 |
| 211 | 0.0289 | 0.0101 | 0.0188 |
| 212 | 0.0283 | 0.0099 | 0.0184 |
| 213 | 0.0278 | 0.0097 | 0.0181 |
| 214 | 0.0273 | 0.0095 | 0.0177 |
| 215 | 0.0268 | 0.0094 | 0.0174 |
| 216 | 0.0264 | 0.0092 | 0.0171 |
| 217 | 0.0266 | 0.0093 | 0.0173 |
| 218 | 0.0262 | 0.0092 | 0.0170 |
| 219 | 0.0258 | 0.0090 | 0.0168 |

| | | | |
|---|---|---|---|
| 220 | 0.0255 | 0.0089 | 0.0166 |
| 221 | 0.0251 | 0.0088 | 0.0163 |
| 222 | 0.0248 | 0.0087 | 0.0161 |
| 223 | 0.0245 | 0.0086 | 0.0159 |
| 224 | 0.0242 | 0.0085 | 0.0157 |
| 225 | 0.0239 | 0.0084 | 0.0156 |
| 226 | 0.0237 | 0.0083 | 0.0154 |
| 227 | 0.0234 | 0.0082 | 0.0152 |
| 228 | 0.0232 | 0.0081 | 0.0151 |
| 229 | 0.0229 | 0.0080 | 0.0149 |
| 230 | 0.0227 | 0.0079 | 0.0148 |
| 231 | 0.0225 | 0.0079 | 0.0146 |
| 232 | 0.0223 | 0.0078 | 0.0145 |
| 233 | 0.0221 | 0.0077 | 0.0144 |
| 234 | 0.0219 | 0.0077 | 0.0142 |
| 235 | 0.0217 | 0.0076 | 0.0141 |
| 236 | 0.0215 | 0.0075 | 0.0140 |
| 237 | 0.0213 | 0.0075 | 0.0139 |
| 238 | 0.0211 | 0.0074 | 0.0137 |
| 239 | 0.0210 | 0.0073 | 0.0136 |
| 240 | 0.0208 | 0.0073 | 0.0135 |
| 241 | 0.0207 | 0.0072 | 0.0134 |
| 242 | 0.0205 | 0.0072 | 0.0133 |
| 243 | 0.0204 | 0.0071 | 0.0132 |
| 244 | 0.0202 | 0.0071 | 0.0131 |
| 245 | 0.0201 | 0.0070 | 0.0130 |
| 246 | 0.0199 | 0.0070 | 0.0130 |
| 247 | 0.0198 | 0.0069 | 0.0129 |
| 248 | 0.0197 | 0.0069 | 0.0128 |
| 249 | 0.0195 | 0.0068 | 0.0127 |
| 250 | 0.0194 | 0.0068 | 0.0126 |
| 251 | 0.0193 | 0.0067 | 0.0125 |
| 252 | 0.0192 | 0.0067 | 0.0125 |
| 253 | 0.0190 | 0.0067 | 0.0124 |
| 254 | 0.0189 | 0.0066 | 0.0123 |
| 255 | 0.0188 | 0.0066 | 0.0122 |
| 256 | 0.0187 | 0.0065 | 0.0122 |
| 257 | 0.0186 | 0.0065 | 0.0121 |
| 258 | 0.0185 | 0.0065 | 0.0120 |
| 259 | 0.0184 | 0.0064 | 0.0120 |
| 260 | 0.0183 | 0.0064 | 0.0119 |
| 261 | 0.0182 | 0.0064 | 0.0118 |
| 262 | 0.0181 | 0.0063 | 0.0118 |
| 263 | 0.0180 | 0.0063 | 0.0117 |
| 264 | 0.0179 | 0.0063 | 0.0116 |
| 265 | 0.0178 | 0.0062 | 0.0116 |
| 266 | 0.0177 | 0.0062 | 0.0115 |
| 267 | 0.0176 | 0.0062 | 0.0115 |
| 268 | 0.0175 | 0.0061 | 0.0114 |
| 269 | 0.0175 | 0.0061 | 0.0114 |
| 270 | 0.0174 | 0.0061 | 0.0113 |
| 271 | 0.0173 | 0.0061 | 0.0112 |
| 272 | 0.0172 | 0.0060 | 0.0112 |
| 273 | 0.0171 | 0.0060 | 0.0111 |
| 274 | 0.0171 | 0.0060 | 0.0111 |
| 275 | 0.0170 | 0.0059 | 0.0110 |
| 276 | 0.0169 | 0.0059 | 0.0110 |
| 277 | 0.0168 | 0.0059 | 0.0109 |
| 278 | 0.0168 | 0.0059 | 0.0109 |
| 279 | 0.0167 | 0.0058 | 0.0109 |
| 280 | 0.0166 | 0.0058 | 0.0108 |
| 281 | 0.0166 | 0.0058 | 0.0108 |
| 282 | 0.0165 | 0.0058 | 0.0107 |
| 283 | 0.0164 | 0.0057 | 0.0107 |
| 284 | 0.0164 | 0.0057 | 0.0106 |
| 285 | 0.0163 | 0.0057 | 0.0106 |
| 286 | 0.0162 | 0.0057 | 0.0105 |
| 287 | 0.0162 | 0.0057 | 0.0105 |
| 288 | 0.0161 | 0.0056 | 0.0105 |

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      Total soil rain loss =      2.41(In)
      Total effective rainfall =      4.88(In)
      Peak flow rate in flood hydrograph =     15.82(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
 ------------------------------------------------------------------------
   0+ 5       0.0004      0.05  Q         |         |         |         |
   0+10       0.0028      0.36  Q         |         |         |         |
   0+15       0.0071      0.63  VQ        |         |         |         |
   0+20       0.0122      0.73  VQ        |         |         |         |
   0+25       0.0176      0.79  VQ        |         |         |         |
   0+30       0.0232      0.82  VQ        |         |         |         |
   0+35       0.0290      0.84  VQ        |         |         |         |
   0+40       0.0348      0.84  VQ        |         |         |         |
   0+45       0.0407      0.85  VQ        |         |         |         |
   0+50       0.0466      0.86  VQ        |         |         |         |
   0+55       0.0525      0.86  VQ        |         |         |         |
   1+ 0       0.0584      0.86  VQ        |         |         |         |
   1+ 5       0.0644      0.86  VQ        |         |         |         |
   1+10       0.0703      0.87  |Q        |         |         |         |
   1+15       0.0763      0.87  |Q        |         |         |         |
   1+20       0.0823      0.87  |Q        |         |         |         |
   1+25       0.0883      0.87  |Q        |         |         |         |
   1+30       0.0943      0.87  |Q        |         |         |         |
   1+35       0.1003      0.87  |Q        |         |         |         |
   1+40       0.1063      0.88  |Q        |         |         |         |
   1+45       0.1124      0.88  |Q        |         |         |         |
   1+50       0.1184      0.88  |Q        |         |         |         |
   1+55       0.1245      0.88  |Q        |         |         |         |
   2+ 0       0.1306      0.88  |Q        |         |         |         |
   2+ 5       0.1367      0.89  |QV       |         |         |         |
   2+10       0.1428      0.89  |QV       |         |         |         |
   2+15       0.1489      0.89  |QV       |         |         |         |
   2+20       0.1551      0.89  |QV       |         |         |         |
   2+25       0.1612      0.89  |QV       |         |         |         |
   2+30       0.1674      0.89  |QV       |         |         |         |
   2+35       0.1735      0.90  |QV       |         |         |         |
   2+40       0.1797      0.90  |QV       |         |         |         |
   2+45       0.1859      0.90  |QV       |         |         |         |
   2+50       0.1922      0.90  |QV       |         |         |         |
   2+55       0.1984      0.91  |QV       |         |         |         |
   3+ 0       0.2046      0.91  |Q V      |         |         |         |
   3+ 5       0.2109      0.91  |Q V      |         |         |         |
   3+10       0.2172      0.91  |Q V      |         |         |         |
   3+15       0.2235      0.91  |Q V      |         |         |         |
   3+20       0.2298      0.92  |Q V      |         |         |         |
   3+25       0.2361      0.92  |Q V      |         |         |         |
   3+30       0.2424      0.92  |Q V      |         |         |         |
   3+35       0.2488      0.92  |Q V      |         |         |         |
   3+40       0.2552      0.92  |Q V      |         |         |         |
   3+45       0.2615      0.93  |Q V      |         |         |         |
   3+50       0.2679      0.93  |Q V      |         |         |         |
   3+55       0.2744      0.93  |Q  V     |         |         |         |
   4+ 0       0.2808      0.93  |Q  V     |         |         |         |
   4+ 5       0.2872      0.94  |Q  V     |         |         |         |
   4+10       0.2937      0.94  |Q  V     |         |         |         |
   4+15       0.3002      0.94  |Q  V     |         |         |         |
   4+20       0.3067      0.94  |Q  V     |         |         |         |
   4+25       0.3132      0.95  |Q  V     |         |         |         |
   4+30       0.3197      0.95  |Q  V     |         |         |         |
   4+35       0.3263      0.95  |Q  V     |         |         |         |
   4+40       0.3328      0.95  |Q  V     |         |         |         |
   4+45       0.3394      0.96  |Q  V     |         |         |         |
   4+50       0.3460      0.96  |Q   V    |         |         |         |
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 4+55      0.3526      0.96  |Q   V    |          |          |          |
 5+ 0      0.3592      0.96  |Q   V    |          |          |          |
 5+ 5      0.3659      0.97  |Q   V    |          |          |          |
 5+10      0.3726      0.97  |Q   V    |          |          |          |
 5+15      0.3793      0.97  |Q   V    |          |          |          |
 5+20      0.3860      0.97  |Q   V    |          |          |          |
 5+25      0.3927      0.98  |Q   V    |          |          |          |
 5+30      0.3994      0.98  |Q   V    |          |          |          |
 5+35      0.4062      0.98  |Q   V    |          |          |          |
 5+40      0.4130      0.99  |Q    V   |          |          |          |
 5+45      0.4198      0.99  |Q    V   |          |          |          |
 5+50      0.4266      0.99  |Q    V   |          |          |          |
 5+55      0.4335      0.99  |Q    V   |          |          |          |
 6+ 0      0.4403      1.00  |Q    V   |          |          |          |
 6+ 5      0.4472      1.00  |Q    V   |          |          |          |
 6+10      0.4541      1.00  | Q   V   |          |          |          |
 6+15      0.4610      1.01  | Q   V   |          |          |          |
 6+20      0.4680      1.01  | Q   V   |          |          |          |
 6+25      0.4750      1.01  | Q   V   |          |          |          |
 6+30      0.4819      1.02  | Q    V  |          |          |          |
 6+35      0.4890      1.02  | Q    V  |          |          |          |
 6+40      0.4960      1.02  | Q    V  |          |          |          |
 6+45      0.5031      1.02  | Q    V  |          |          |          |
 6+50      0.5101      1.03  | Q    V  |          |          |          |
 6+55      0.5172      1.03  | Q    V  |          |          |          |
 7+ 0      0.5244      1.03  | Q    V  |          |          |          |
 7+ 5      0.5315      1.04  | Q    V  |          |          |          |
 7+10      0.5387      1.04  | Q    V  |          |          |          |
 7+15      0.5459      1.05  | Q     V |          |          |          |
 7+20      0.5531      1.05  | Q     V |          |          |          |
 7+25      0.5604      1.05  | Q     V |          |          |          |
 7+30      0.5676      1.06  | Q     V |          |          |          |
 7+35      0.5749      1.06  | Q     V |          |          |          |
 7+40      0.5823      1.06  | Q     V |          |          |          |
 7+45      0.5896      1.07  | Q     V |          |          |          |
 7+50      0.5970      1.07  | Q     V |          |          |          |
 7+55      0.6044      1.08  | Q     V |          |          |          |
 8+ 0      0.6118      1.08  | Q     V |          |          |          |
 8+ 5      0.6193      1.08  | Q      V|          |          |          |
 8+10      0.6268      1.09  | Q      V|          |          |          |
 8+15      0.6343      1.09  | Q      V|          |          |          |
 8+20      0.6418      1.10  | Q      V|          |          |          |
 8+25      0.6494      1.10  | Q      V|          |          |          |
 8+30      0.6570      1.10  | Q      V|          |          |          |
 8+35      0.6647      1.11  | Q      V|          |          |          |
 8+40      0.6723      1.11  | Q      V|          |          |          |
 8+45      0.6800      1.12  | Q      V|          |          |          |
 8+50      0.6878      1.12  | Q       V          |          |          |
 8+55      0.6955      1.13  | Q       V          |          |          |
 9+ 0      0.7033      1.13  | Q       V          |          |          |
 9+ 5      0.7111      1.14  | Q       V          |          |          |
 9+10      0.7190      1.14  | Q       V          |          |          |
 9+15      0.7269      1.15  | Q       V          |          |          |
 9+20      0.7348      1.15  | Q       V          |          |          |
 9+25      0.7428      1.16  | Q       V          |          |          |
 9+30      0.7508      1.16  | Q        |V         |          |          |
 9+35      0.7588      1.17  | Q        |V         |          |          |
 9+40      0.7669      1.17  | Q        |V         |          |          |
 9+45      0.7750      1.18  | Q        |V         |          |          |
 9+50      0.7832      1.18  | Q        |V         |          |          |
 9+55      0.7913      1.19  | Q        |V         |          |          |
10+ 0      0.7996      1.20  | Q        |V         |          |          |
10+ 5      0.8078      1.20  | Q        |V         |          |          |
10+10      0.8162      1.21  | Q        |V         |          |          |
10+15      0.8245      1.21  | Q        | V        |          |          |
10+20      0.8329      1.22  | Q        | V        |          |          |
10+25      0.8414      1.23  | Q        | V        |          |          |
10+30      0.8498      1.23  | Q        | V        |          |          |
10+35      0.8584      1.24  | Q        | V        |          |          |
10+40      0.8669      1.25  | Q        | V        |          |          |
10+45      0.8756      1.25  | Q        | V        |          |          |
```

```
10+50       0.8842      1.26  | Q       | V       |         |         |
10+55       0.8930      1.27  | Q       |  V      |         |         |
11+ 0       0.9017      1.27  | Q       |  V      |         |         |
11+ 5       0.9106      1.28  | Q       |  V      |         |         |
11+10       0.9194      1.29  | Q       |  V      |         |         |
11+15       0.9284      1.30  | Q       |  V      |         |         |
11+20       0.9374      1.31  | Q       |  V      |         |         |
11+25       0.9464      1.31  | Q       |  V      |         |         |
11+30       0.9555      1.32  | Q       |   V     |         |         |
11+35       0.9647      1.33  | Q       |   V     |         |         |
11+40       0.9739      1.34  | Q       |   V     |         |         |
11+45       0.9832      1.35  | Q       |   V     |         |         |
11+50       0.9925      1.36  | Q       |   V     |         |         |
11+55       1.0019      1.37  | Q       |   V     |         |         |
12+ 0       1.0114      1.38  | Q       |   V     |         |         |
12+ 5       1.0210      1.38  | Q       |   V     |         |         |
12+10       1.0305      1.38  | Q       |    V    |         |         |
12+15       1.0400      1.38  | Q       |    V    |         |         |
12+20       1.0496      1.39  | Q       |    V    |         |         |
12+25       1.0592      1.40  | Q       |    V    |         |         |
12+30       1.0689      1.41  | Q       |    V    |         |         |
12+35       1.0787      1.42  | Q       |    V    |         |         |
12+40       1.0886      1.43  | Q       |    V    |         |         |
12+45       1.0985      1.45  | Q       |     V   |         |         |
12+50       1.1086      1.46  | Q       |     V   |         |         |
12+55       1.1187      1.47  | Q       |     V   |         |         |
13+ 0       1.1290      1.49  | Q       |     V   |         |         |
13+ 5       1.1393      1.50  |  Q      |     V   |         |         |
13+10       1.1498      1.52  |  Q      |     V   |         |         |
13+15       1.1603      1.53  |  Q      |      V  |         |         |
13+20       1.1710      1.55  |  Q      |      V  |         |         |
13+25       1.1818      1.57  |  Q      |      V  |         |         |
13+30       1.1927      1.59  |  Q      |      V  |         |         |
13+35       1.2038      1.60  |  Q      |      V  |         |         |
13+40       1.2150      1.62  |  Q      |      V  |         |         |
13+45       1.2263      1.64  |  Q      |      V  |         |         |
13+50       1.2378      1.67  |  Q      |       V |         |         |
13+55       1.2494      1.69  |  Q      |       V |         |         |
14+ 0       1.2612      1.71  |  Q      |       V |         |         |
14+ 5       1.2732      1.74  |  Q      |       V |         |         |
14+10       1.2853      1.76  |  Q      |       V |         |         |
14+15       1.2977      1.79  |  Q      |        V|         |         |
14+20       1.3102      1.82  |  Q      |        V|         |         |
14+25       1.3230      1.85  |  Q      |        V|         |         |
14+30       1.3360      1.89  |  Q      |        V|         |         |
14+35       1.3492      1.92  |  Q      |        V|         |         |
14+40       1.3628      1.96  |  Q      |        V|         |         |
14+45       1.3765      2.00  |   Q     |         V         |         |
14+50       1.3907      2.05  |   Q     |         V         |         |
14+55       1.4051      2.10  |   Q     |         V         |         |
15+ 0       1.4199      2.15  |   Q     |         V         |         |
15+ 5       1.4351      2.21  |   Q     |         |V        |         |
15+10       1.4508      2.27  |   Q     |         |V        |         |
15+15       1.4669      2.34  |   Q     |         |V        |         |
15+20       1.4837      2.43  |   Q     |         |V        |         |
15+25       1.5004      2.43  |   Q     |         | V       |         |
15+30       1.5144      2.04  |   Q     |         | V       |         |
15+35       1.5262      1.71  |  Q      |         | V       |         |
15+40       1.5379      1.70  |  Q      |         | V       |         |
15+45       1.5502      1.79  |  Q      |         | V       |         |
15+50       1.5640      2.01  |   Q     |         | V       |         |
15+55       1.5804      2.37  |   Q     |         |  V      |         |
16+ 0       1.6022      3.17  |     Q   |         |  V      |         |
16+ 5       1.6457      6.31  |         | Q       |   V     |         |
16+10       1.7546     15.82  |         |         |    V    |Q        |
16+15       1.8498     13.81  |         |         |      Q  |         |
16+20       1.8957      6.67  |         |  Q      |      V  |         |
16+25       1.9265      4.47  |       Q |         |       V |         |
16+30       1.9513      3.60  |      Q  |         |       V |         |
16+35       1.9723      3.05  |     Q   |         |       V |         |
16+40       1.9903      2.62  |    Q    |         |        V|         |
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16+45       2.0071      2.44  |   Q     |         |        V|         |
16+50       2.0231      2.33  |   Q     |         |        V|         |
16+55       2.0381      2.17  |   Q     |         |        V|         |
17+ 0       2.0519      2.00  |  Q      |         |         V         |
17+ 5       2.0651      1.92  |  Q      |         |         V         |
17+10       2.0778      1.85  |  Q      |         |         V         |
17+15       2.0902      1.79  |  Q      |         |         V         |
17+20       2.1021      1.74  |  Q      |         |         V         |
17+25       2.1138      1.69  |  Q      |         |         |V        |
17+30       2.1251      1.64  |  Q      |         |         |V        |
17+35       2.1361      1.60  |  Q      |         |         |V        |
17+40       2.1469      1.57  |  Q      |         |         |V        |
17+45       2.1574      1.53  |  Q      |         |         |V        |
17+50       2.1678      1.50  |  Q      |         |         |V        |
17+55       2.1779      1.47  | Q       |         |         |V        |
18+ 0       2.1879      1.44  | Q       |         |         | V       |
18+ 5       2.1976      1.42  | Q       |         |         | V       |
18+10       2.2073      1.41  | Q       |         |         | V       |
18+15       2.2170      1.40  | Q       |         |         | V       |
18+20       2.2265      1.38  | Q       |         |         | V       |
18+25       2.2358      1.36  | Q       |         |         | V       |
18+30       2.2451      1.35  | Q       |         |         | V       |
18+35       2.2543      1.33  | Q       |         |         |  V      |
18+40       2.2633      1.31  | Q       |         |         |  V      |
18+45       2.2722      1.30  | Q       |         |         |  V      |
18+50       2.2810      1.28  | Q       |         |         |  V      |
18+55       2.2897      1.27  | Q       |         |         |  V      |
19+ 0       2.2983      1.25  | Q       |         |         |  V      |
19+ 5       2.3069      1.24  | Q       |         |         |  V      |
19+10       2.3153      1.22  | Q       |         |         |  V      |
19+15       2.3236      1.21  | Q       |         |         |   V     |
19+20       2.3319      1.20  | Q       |         |         |   V     |
19+25       2.3401      1.19  | Q       |         |         |   V     |
19+30       2.3482      1.18  | Q       |         |         |   V     |
19+35       2.3562      1.17  | Q       |         |         |   V     |
19+40       2.3642      1.16  | Q       |         |         |   V     |
19+45       2.3721      1.15  | Q       |         |         |   V     |
19+50       2.3799      1.14  | Q       |         |         |   V     |
19+55       2.3876      1.13  | Q       |         |         |    V    |
20+ 0       2.3953      1.12  | Q       |         |         |    V    |
20+ 5       2.4030      1.11  | Q       |         |         |    V    |
20+10       2.4105      1.10  | Q       |         |         |    V    |
20+15       2.4180      1.09  | Q       |         |         |    V    |
20+20       2.4255      1.08  | Q       |         |         |    V    |
20+25       2.4329      1.07  | Q       |         |         |    V    |
20+30       2.4402      1.07  | Q       |         |         |    V    |
20+35       2.4475      1.06  | Q       |         |         |    V    |
20+40       2.4548      1.05  | Q       |         |         |     V   |
20+45       2.4620      1.04  | Q       |         |         |     V   |
20+50       2.4691      1.04  | Q       |         |         |     V   |
20+55       2.4762      1.03  | Q       |         |         |     V   |
21+ 0       2.4833      1.02  | Q       |         |         |     V   |
21+ 5       2.4903      1.02  | Q       |         |         |     V   |
21+10       2.4972      1.01  | Q       |         |         |     V   |
21+15       2.5042      1.01  | Q       |         |         |     V   |
21+20       2.5110      1.00  |Q        |         |         |     V   |
21+25       2.5179      0.99  |Q        |         |         |     V   |
21+30       2.5247      0.99  |Q        |         |         |      V  |
21+35       2.5314      0.98  |Q        |         |         |      V  |
21+40       2.5382      0.98  |Q        |         |         |      V  |
21+45       2.5448      0.97  |Q        |         |         |      V  |
21+50       2.5515      0.97  |Q        |         |         |      V  |
21+55       2.5581      0.96  |Q        |         |         |      V  |
22+ 0       2.5647      0.95  |Q        |         |         |      V  |
22+ 5       2.5712      0.95  |Q        |         |         |      V  |
22+10       2.5777      0.94  |Q        |         |         |      V  |
22+15       2.5842      0.94  |Q        |         |         |      V  |
22+20       2.5906      0.94  |Q        |         |         |       V |
22+25       2.5971      0.93  |Q        |         |         |       V |
22+30       2.6034      0.93  |Q        |         |         |       V |
22+35       2.6098      0.92  |Q        |         |         |       V |
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   22+40       2.6161      0.92  |Q        |         |         |       V |
   22+45       2.6224      0.91  |Q        |         |         |       V |
   22+50       2.6286      0.91  |Q        |         |         |       V |
   22+55       2.6349      0.90  |Q        |         |         |       V |
   23+ 0       2.6411      0.90  |Q        |         |         |       V |
   23+ 5       2.6472      0.90  |Q        |         |         |       V |
   23+10       2.6534      0.89  |Q        |         |         |       V |
   23+15       2.6595      0.89  |Q        |         |         |        V|
   23+20       2.6656      0.88  |Q        |         |         |        V|
   23+25       2.6717      0.88  |Q        |         |         |        V|
   23+30       2.6777      0.88  |Q        |         |         |        V|
   23+35       2.6837      0.87  |Q        |         |         |        V|
   23+40       2.6897      0.87  |Q        |         |         |        V|
   23+45       2.6957      0.87  |Q        |         |         |        V|
   23+50       2.7016      0.86  |Q        |         |         |        V|
   23+55       2.7076      0.86  |Q        |         |         |        V|
   24+ 0       2.7134      0.86  |Q        |         |         |        V|
   24+ 5       2.7190      0.80  |Q        |         |         |        V|
   24+10       2.7224      0.49  Q         |         |         |        V|
   24+15       2.7239      0.22  Q         |         |         |        V|
   24+20       2.7247      0.12  Q         |         |         |        V|
   24+25       2.7252      0.06  Q         |         |         |        V|
   24+30       2.7254      0.03  Q         |         |         |        V|
   24+35       2.7255      0.02  Q         |         |         |        V|
   24+40       2.7256      0.01  Q         |         |         |        V|
   24+45       2.7256      0.01  Q         |         |         |        V|
   24+50       2.7256      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area ‘F’ – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'F'
25 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.71           1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.71           6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
             6.71          24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
             6.71           1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.71           6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
             6.71          24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0          6.71      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.71 | 1.000 | 78.0 | 78.0 | 2.82 | 0.707 |

Area-averaged catchment yield fraction, Y = 0.707
Area-averaged low loss fraction, Yb = 0.293
User entry of time of concentration = 0.162 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.71(Ac.)
Catchment Lag time = 0.130 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 64.3004
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.293 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 6.71(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.569(In)
30-minute factor = 1.000 Adjusted rainfall = 0.974(In)
1-hour factor = 1.000 Adjusted rainfall = 1.199(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 81.15 (CFS)) | |
| 1 | 6.228 | 5.054 |
| 2 | 42.193 | 29.185 |
| 3 | 74.058 | 25.858 |
| 4 | 85.789 | 9.519 |
| 5 | 92.451 | 5.407 |
| 6 | 96.283 | 3.110 |
| 7 | 98.090 | 1.467 |
| 8 | 98.816 | 0.589 |
| 9 | 99.292 | 0.386 |
| 10 | 99.729 | 0.355 |
| 11 | 100.000 | 0.220 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5687 | 0.5687 |
| 2 | 0.7002 | 0.1315 |
| 3 | 0.7908 | 0.0906 |
| 4 | 0.8621 | 0.0713 |
| 5 | 0.9217 | 0.0597 |
| 6 | 0.9736 | 0.0518 |
| 7 | 1.0196 | 0.0461 |
| 8 | 1.0613 | 0.0417 |
| 9 | 1.0995 | 0.0382 |
| 10 | 1.1348 | 0.0353 |
| 11 | 1.1677 | 0.0329 |
| 12 | 1.1986 | 0.0309 |
| 13 | 1.2592 | 0.0606 |
| 14 | 1.3180 | 0.0588 |
| 15 | 1.3752 | 0.0572 |

| | | |
|---|---|---|
| 16 | 1.4310 | 0.0558 |
| 17 | 1.4855 | 0.0545 |
| 18 | 1.5387 | 0.0532 |
| 19 | 1.5908 | 0.0521 |
| 20 | 1.6419 | 0.0511 |
| 21 | 1.6920 | 0.0501 |
| 22 | 1.7412 | 0.0492 |
| 23 | 1.7895 | 0.0483 |
| 24 | 1.8371 | 0.0475 |
| 25 | 1.8838 | 0.0468 |
| 26 | 1.9299 | 0.0461 |
| 27 | 1.9753 | 0.0454 |
| 28 | 2.0201 | 0.0448 |
| 29 | 2.0642 | 0.0441 |
| 30 | 2.1078 | 0.0436 |
| 31 | 2.1508 | 0.0430 |
| 32 | 2.1933 | 0.0425 |
| 33 | 2.2352 | 0.0420 |
| 34 | 2.2767 | 0.0415 |
| 35 | 2.3178 | 0.0410 |
| 36 | 2.3583 | 0.0406 |
| 37 | 2.3985 | 0.0401 |
| 38 | 2.4382 | 0.0397 |
| 39 | 2.4775 | 0.0393 |
| 40 | 2.5164 | 0.0389 |
| 41 | 2.5550 | 0.0386 |
| 42 | 2.5932 | 0.0382 |
| 43 | 2.6310 | 0.0379 |
| 44 | 2.6685 | 0.0375 |
| 45 | 2.7057 | 0.0372 |
| 46 | 2.7426 | 0.0369 |
| 47 | 2.7792 | 0.0366 |
| 48 | 2.8154 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8871 | 0.0357 |
| 51 | 2.9225 | 0.0354 |
| 52 | 2.9577 | 0.0352 |
| 53 | 2.9926 | 0.0349 |
| 54 | 3.0272 | 0.0346 |
| 55 | 3.0616 | 0.0344 |
| 56 | 3.0958 | 0.0342 |
| 57 | 3.1297 | 0.0339 |
| 58 | 3.1634 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2302 | 0.0333 |
| 61 | 3.2632 | 0.0330 |
| 62 | 3.2961 | 0.0328 |
| 63 | 3.3287 | 0.0326 |
| 64 | 3.3611 | 0.0324 |
| 65 | 3.3934 | 0.0322 |
| 66 | 3.4254 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4890 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5518 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6140 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6811 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7476 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8135 | 0.0329 |
| 79 | 3.8462 | 0.0328 |
| 80 | 3.8789 | 0.0326 |
| 81 | 3.9113 | 0.0325 |
| 82 | 3.9437 | 0.0323 |
| 83 | 3.9759 | 0.0322 |
| 84 | 4.0080 | 0.0321 |
| 85 | 4.0400 | 0.0320 |
| 86 | 4.0718 | 0.0318 |

| | | |
|---|---|---|
| 87 | 4.1035 | 0.0317 |
| 88 | 4.1351 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1980 | 0.0314 |
| 91 | 4.2292 | 0.0313 |
| 92 | 4.2604 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3223 | 0.0309 |
| 95 | 4.3531 | 0.0308 |
| 96 | 4.3839 | 0.0307 |
| 97 | 4.4145 | 0.0306 |
| 98 | 4.4450 | 0.0305 |
| 99 | 4.4753 | 0.0304 |
| 100 | 4.5056 | 0.0303 |
| 101 | 4.5358 | 0.0302 |
| 102 | 4.5659 | 0.0301 |
| 103 | 4.5959 | 0.0300 |
| 104 | 4.6258 | 0.0299 |
| 105 | 4.6557 | 0.0298 |
| 106 | 4.6854 | 0.0297 |
| 107 | 4.7150 | 0.0296 |
| 108 | 4.7445 | 0.0295 |
| 109 | 4.7740 | 0.0294 |
| 110 | 4.8033 | 0.0294 |
| 111 | 4.8326 | 0.0293 |
| 112 | 4.8618 | 0.0292 |
| 113 | 4.8909 | 0.0291 |
| 114 | 4.9199 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9777 | 0.0288 |
| 117 | 5.0064 | 0.0288 |
| 118 | 5.0351 | 0.0287 |
| 119 | 5.0637 | 0.0286 |
| 120 | 5.0922 | 0.0285 |
| 121 | 5.1207 | 0.0284 |
| 122 | 5.1491 | 0.0284 |
| 123 | 5.1773 | 0.0283 |
| 124 | 5.2056 | 0.0282 |
| 125 | 5.2337 | 0.0281 |
| 126 | 5.2618 | 0.0281 |
| 127 | 5.2898 | 0.0280 |
| 128 | 5.3177 | 0.0279 |
| 129 | 5.3455 | 0.0279 |
| 130 | 5.3733 | 0.0278 |
| 131 | 5.4010 | 0.0277 |
| 132 | 5.4287 | 0.0276 |
| 133 | 5.4562 | 0.0276 |
| 134 | 5.4838 | 0.0275 |
| 135 | 5.5112 | 0.0274 |
| 136 | 5.5386 | 0.0274 |
| 137 | 5.5659 | 0.0273 |
| 138 | 5.5931 | 0.0272 |
| 139 | 5.6203 | 0.0272 |
| 140 | 5.6474 | 0.0271 |
| 141 | 5.6744 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7283 | 0.0269 |
| 144 | 5.7552 | 0.0269 |
| 145 | 5.7820 | 0.0268 |
| 146 | 5.8087 | 0.0267 |
| 147 | 5.8354 | 0.0267 |
| 148 | 5.8620 | 0.0266 |
| 149 | 5.8886 | 0.0266 |
| 150 | 5.9151 | 0.0265 |
| 151 | 5.9415 | 0.0264 |
| 152 | 5.9679 | 0.0264 |
| 153 | 5.9942 | 0.0263 |
| 154 | 6.0205 | 0.0263 |
| 155 | 6.0467 | 0.0262 |
| 156 | 6.0729 | 0.0262 |
| 157 | 6.0990 | 0.0261 |

| | | |
|---|---|---|
| 158 | 6.1250 | 0.0260 |
| 159 | 6.1510 | 0.0260 |
| 160 | 6.1770 | 0.0259 |
| 161 | 6.2029 | 0.0259 |
| 162 | 6.2287 | 0.0258 |
| 163 | 6.2545 | 0.0258 |
| 164 | 6.2802 | 0.0257 |
| 165 | 6.3059 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3571 | 0.0256 |
| 168 | 6.3826 | 0.0255 |
| 169 | 6.4081 | 0.0255 |
| 170 | 6.4335 | 0.0254 |
| 171 | 6.4589 | 0.0254 |
| 172 | 6.4842 | 0.0253 |
| 173 | 6.5095 | 0.0253 |
| 174 | 6.5348 | 0.0252 |
| 175 | 6.5599 | 0.0252 |
| 176 | 6.5851 | 0.0251 |
| 177 | 6.6102 | 0.0251 |
| 178 | 6.6352 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6852 | 0.0250 |
| 181 | 6.7101 | 0.0249 |
| 182 | 6.7349 | 0.0249 |
| 183 | 6.7598 | 0.0248 |
| 184 | 6.7845 | 0.0248 |
| 185 | 6.8093 | 0.0247 |
| 186 | 6.8339 | 0.0247 |
| 187 | 6.8586 | 0.0246 |
| 188 | 6.8832 | 0.0246 |
| 189 | 6.9077 | 0.0246 |
| 190 | 6.9323 | 0.0245 |
| 191 | 6.9567 | 0.0245 |
| 192 | 6.9812 | 0.0244 |
| 193 | 7.0055 | 0.0244 |
| 194 | 7.0299 | 0.0243 |
| 195 | 7.0542 | 0.0243 |
| 196 | 7.0785 | 0.0243 |
| 197 | 7.1027 | 0.0242 |
| 198 | 7.1269 | 0.0242 |
| 199 | 7.1510 | 0.0241 |
| 200 | 7.1751 | 0.0241 |
| 201 | 7.1992 | 0.0241 |
| 202 | 7.2232 | 0.0240 |
| 203 | 7.2472 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2950 | 0.0239 |
| 206 | 7.3189 | 0.0239 |
| 207 | 7.3427 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3903 | 0.0238 |
| 210 | 7.4140 | 0.0237 |
| 211 | 7.4377 | 0.0237 |
| 212 | 7.4613 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5085 | 0.0236 |
| 215 | 7.5320 | 0.0235 |
| 216 | 7.5555 | 0.0235 |
| 217 | 7.5790 | 0.0235 |
| 218 | 7.6024 | 0.0234 |
| 219 | 7.6258 | 0.0234 |
| 220 | 7.6492 | 0.0234 |
| 221 | 7.6725 | 0.0233 |
| 222 | 7.6958 | 0.0233 |
| 223 | 7.7190 | 0.0233 |
| 224 | 7.7422 | 0.0232 |
| 225 | 7.7654 | 0.0232 |
| 226 | 7.7886 | 0.0232 |
| 227 | 7.8117 | 0.0231 |
| 228 | 7.8348 | 0.0231 |

| | | |
|---|---|---|
| 229 | 7.8578 | 0.0231 |
| 230 | 7.8808 | 0.0230 |
| 231 | 7.9038 | 0.0230 |
| 232 | 7.9268 | 0.0230 |
| 233 | 7.9497 | 0.0229 |
| 234 | 7.9726 | 0.0229 |
| 235 | 7.9954 | 0.0229 |
| 236 | 8.0183 | 0.0228 |
| 237 | 8.0411 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0865 | 0.0227 |
| 240 | 8.1092 | 0.0227 |
| 241 | 8.1319 | 0.0227 |
| 242 | 8.1545 | 0.0226 |
| 243 | 8.1771 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2223 | 0.0225 |
| 246 | 8.2448 | 0.0225 |
| 247 | 8.2673 | 0.0225 |
| 248 | 8.2897 | 0.0225 |
| 249 | 8.3121 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3569 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4015 | 0.0223 |
| 254 | 8.4238 | 0.0223 |
| 255 | 8.4460 | 0.0222 |
| 256 | 8.4683 | 0.0222 |
| 257 | 8.4905 | 0.0222 |
| 258 | 8.5126 | 0.0222 |
| 259 | 8.5348 | 0.0221 |
| 260 | 8.5569 | 0.0221 |
| 261 | 8.5789 | 0.0221 |
| 262 | 8.6010 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6670 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7108 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7546 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8200 | 0.0218 |
| 273 | 8.8417 | 0.0218 |
| 274 | 8.8635 | 0.0217 |
| 275 | 8.8852 | 0.0217 |
| 276 | 8.9069 | 0.0217 |
| 277 | 8.9285 | 0.0216 |
| 278 | 8.9501 | 0.0216 |
| 279 | 8.9717 | 0.0216 |
| 280 | 8.9933 | 0.0216 |
| 281 | 9.0148 | 0.0215 |
| 282 | 9.0364 | 0.0215 |
| 283 | 9.0579 | 0.0215 |
| 284 | 9.0793 | 0.0215 |
| 285 | 9.1008 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1650 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0063 | 0.0151 |
| 2 | 0.0214 | 0.0063 | 0.0151 |
| 3 | 0.0214 | 0.0063 | 0.0152 |
| 4 | 0.0215 | 0.0063 | 0.0152 |
| 5 | 0.0215 | 0.0063 | 0.0152 |
| 6 | 0.0215 | 0.0063 | 0.0152 |

| | | | |
|---|---|---|---|
| 7 | 0.0216 | 0.0063 | 0.0153 |
| 8 | 0.0216 | 0.0063 | 0.0153 |
| 9 | 0.0217 | 0.0064 | 0.0153 |
| 10 | 0.0217 | 0.0064 | 0.0153 |
| 11 | 0.0218 | 0.0064 | 0.0154 |
| 12 | 0.0218 | 0.0064 | 0.0154 |
| 13 | 0.0218 | 0.0064 | 0.0154 |
| 14 | 0.0219 | 0.0064 | 0.0154 |
| 15 | 0.0219 | 0.0064 | 0.0155 |
| 16 | 0.0219 | 0.0064 | 0.0155 |
| 17 | 0.0220 | 0.0065 | 0.0155 |
| 18 | 0.0220 | 0.0065 | 0.0156 |
| 19 | 0.0221 | 0.0065 | 0.0156 |
| 20 | 0.0221 | 0.0065 | 0.0156 |
| 21 | 0.0222 | 0.0065 | 0.0157 |
| 22 | 0.0222 | 0.0065 | 0.0157 |
| 23 | 0.0222 | 0.0065 | 0.0157 |
| 24 | 0.0223 | 0.0065 | 0.0157 |
| 25 | 0.0223 | 0.0066 | 0.0158 |
| 26 | 0.0224 | 0.0066 | 0.0158 |
| 27 | 0.0224 | 0.0066 | 0.0158 |
| 28 | 0.0225 | 0.0066 | 0.0159 |
| 29 | 0.0225 | 0.0066 | 0.0159 |
| 30 | 0.0225 | 0.0066 | 0.0159 |
| 31 | 0.0226 | 0.0066 | 0.0160 |
| 32 | 0.0226 | 0.0066 | 0.0160 |
| 33 | 0.0227 | 0.0067 | 0.0160 |
| 34 | 0.0227 | 0.0067 | 0.0161 |
| 35 | 0.0228 | 0.0067 | 0.0161 |
| 36 | 0.0228 | 0.0067 | 0.0161 |
| 37 | 0.0229 | 0.0067 | 0.0162 |
| 38 | 0.0229 | 0.0067 | 0.0162 |
| 39 | 0.0230 | 0.0067 | 0.0162 |
| 40 | 0.0230 | 0.0068 | 0.0163 |
| 41 | 0.0231 | 0.0068 | 0.0163 |
| 42 | 0.0231 | 0.0068 | 0.0163 |
| 43 | 0.0232 | 0.0068 | 0.0164 |
| 44 | 0.0232 | 0.0068 | 0.0164 |
| 45 | 0.0233 | 0.0068 | 0.0165 |
| 46 | 0.0233 | 0.0068 | 0.0165 |
| 47 | 0.0234 | 0.0069 | 0.0165 |
| 48 | 0.0234 | 0.0069 | 0.0166 |
| 49 | 0.0235 | 0.0069 | 0.0166 |
| 50 | 0.0235 | 0.0069 | 0.0166 |
| 51 | 0.0236 | 0.0069 | 0.0167 |
| 52 | 0.0236 | 0.0069 | 0.0167 |
| 53 | 0.0237 | 0.0070 | 0.0168 |
| 54 | 0.0238 | 0.0070 | 0.0168 |
| 55 | 0.0238 | 0.0070 | 0.0168 |
| 56 | 0.0239 | 0.0070 | 0.0169 |
| 57 | 0.0239 | 0.0070 | 0.0169 |
| 58 | 0.0240 | 0.0070 | 0.0169 |
| 59 | 0.0241 | 0.0071 | 0.0170 |
| 60 | 0.0241 | 0.0071 | 0.0170 |
| 61 | 0.0242 | 0.0071 | 0.0171 |
| 62 | 0.0242 | 0.0071 | 0.0171 |
| 63 | 0.0243 | 0.0071 | 0.0172 |
| 64 | 0.0243 | 0.0071 | 0.0172 |
| 65 | 0.0244 | 0.0072 | 0.0173 |
| 66 | 0.0245 | 0.0072 | 0.0173 |
| 67 | 0.0246 | 0.0072 | 0.0174 |
| 68 | 0.0246 | 0.0072 | 0.0174 |
| 69 | 0.0247 | 0.0072 | 0.0174 |
| 70 | 0.0247 | 0.0073 | 0.0175 |
| 71 | 0.0248 | 0.0073 | 0.0175 |
| 72 | 0.0249 | 0.0073 | 0.0176 |
| 73 | 0.0250 | 0.0073 | 0.0176 |
| 74 | 0.0250 | 0.0073 | 0.0177 |
| 75 | 0.0251 | 0.0074 | 0.0177 |
| 76 | 0.0251 | 0.0074 | 0.0178 |
| 77 | 0.0252 | 0.0074 | 0.0178 |

| | | | |
|---|---|---|---|
| 78 | 0.0253 | 0.0074 | 0.0179 |
| 79 | 0.0254 | 0.0074 | 0.0179 |
| 80 | 0.0254 | 0.0075 | 0.0180 |
| 81 | 0.0255 | 0.0075 | 0.0180 |
| 82 | 0.0256 | 0.0075 | 0.0181 |
| 83 | 0.0257 | 0.0075 | 0.0181 |
| 84 | 0.0257 | 0.0075 | 0.0182 |
| 85 | 0.0258 | 0.0076 | 0.0183 |
| 86 | 0.0259 | 0.0076 | 0.0183 |
| 87 | 0.0260 | 0.0076 | 0.0184 |
| 88 | 0.0260 | 0.0076 | 0.0184 |
| 89 | 0.0262 | 0.0077 | 0.0185 |
| 90 | 0.0262 | 0.0077 | 0.0185 |
| 91 | 0.0263 | 0.0077 | 0.0186 |
| 92 | 0.0264 | 0.0077 | 0.0186 |
| 93 | 0.0265 | 0.0078 | 0.0187 |
| 94 | 0.0266 | 0.0078 | 0.0188 |
| 95 | 0.0267 | 0.0078 | 0.0189 |
| 96 | 0.0267 | 0.0078 | 0.0189 |
| 97 | 0.0269 | 0.0079 | 0.0190 |
| 98 | 0.0269 | 0.0079 | 0.0190 |
| 99 | 0.0270 | 0.0079 | 0.0191 |
| 100 | 0.0271 | 0.0080 | 0.0192 |
| 101 | 0.0272 | 0.0080 | 0.0192 |
| 102 | 0.0273 | 0.0080 | 0.0193 |
| 103 | 0.0274 | 0.0080 | 0.0194 |
| 104 | 0.0275 | 0.0081 | 0.0194 |
| 105 | 0.0276 | 0.0081 | 0.0195 |
| 106 | 0.0277 | 0.0081 | 0.0196 |
| 107 | 0.0279 | 0.0082 | 0.0197 |
| 108 | 0.0279 | 0.0082 | 0.0197 |
| 109 | 0.0281 | 0.0082 | 0.0198 |
| 110 | 0.0281 | 0.0083 | 0.0199 |
| 111 | 0.0283 | 0.0083 | 0.0200 |
| 112 | 0.0284 | 0.0083 | 0.0200 |
| 113 | 0.0285 | 0.0084 | 0.0202 |
| 114 | 0.0286 | 0.0084 | 0.0202 |
| 115 | 0.0288 | 0.0084 | 0.0203 |
| 116 | 0.0288 | 0.0085 | 0.0204 |
| 117 | 0.0290 | 0.0085 | 0.0205 |
| 118 | 0.0291 | 0.0085 | 0.0206 |
| 119 | 0.0293 | 0.0086 | 0.0207 |
| 120 | 0.0294 | 0.0086 | 0.0207 |
| 121 | 0.0295 | 0.0087 | 0.0209 |
| 122 | 0.0296 | 0.0087 | 0.0209 |
| 123 | 0.0298 | 0.0087 | 0.0211 |
| 124 | 0.0299 | 0.0088 | 0.0211 |
| 125 | 0.0301 | 0.0088 | 0.0213 |
| 126 | 0.0302 | 0.0089 | 0.0213 |
| 127 | 0.0304 | 0.0089 | 0.0215 |
| 128 | 0.0305 | 0.0089 | 0.0216 |
| 129 | 0.0307 | 0.0090 | 0.0217 |
| 130 | 0.0308 | 0.0090 | 0.0218 |
| 131 | 0.0310 | 0.0091 | 0.0219 |
| 132 | 0.0311 | 0.0091 | 0.0220 |
| 133 | 0.0314 | 0.0092 | 0.0222 |
| 134 | 0.0315 | 0.0092 | 0.0223 |
| 135 | 0.0317 | 0.0093 | 0.0224 |
| 136 | 0.0318 | 0.0093 | 0.0225 |
| 137 | 0.0321 | 0.0094 | 0.0227 |
| 138 | 0.0322 | 0.0094 | 0.0228 |
| 139 | 0.0325 | 0.0095 | 0.0230 |
| 140 | 0.0326 | 0.0096 | 0.0230 |
| 141 | 0.0329 | 0.0096 | 0.0232 |
| 142 | 0.0330 | 0.0097 | 0.0233 |
| 143 | 0.0333 | 0.0098 | 0.0235 |
| 144 | 0.0335 | 0.0098 | 0.0237 |
| 145 | 0.0310 | 0.0091 | 0.0219 |
| 146 | 0.0312 | 0.0091 | 0.0220 |
| 147 | 0.0315 | 0.0092 | 0.0223 |
| 148 | 0.0317 | 0.0093 | 0.0224 |

| | | | |
|---|---|---|---|
| 149 | 0.0321 | 0.0094 | 0.0227 |
| 150 | 0.0322 | 0.0095 | 0.0228 |
| 151 | 0.0326 | 0.0096 | 0.0231 |
| 152 | 0.0328 | 0.0096 | 0.0232 |
| 153 | 0.0333 | 0.0098 | 0.0235 |
| 154 | 0.0335 | 0.0098 | 0.0237 |
| 155 | 0.0339 | 0.0100 | 0.0240 |
| 156 | 0.0342 | 0.0100 | 0.0241 |
| 157 | 0.0346 | 0.0102 | 0.0245 |
| 158 | 0.0349 | 0.0102 | 0.0247 |
| 159 | 0.0354 | 0.0104 | 0.0250 |
| 160 | 0.0357 | 0.0105 | 0.0252 |
| 161 | 0.0363 | 0.0106 | 0.0256 |
| 162 | 0.0366 | 0.0107 | 0.0258 |
| 163 | 0.0372 | 0.0109 | 0.0263 |
| 164 | 0.0375 | 0.0110 | 0.0265 |
| 165 | 0.0382 | 0.0112 | 0.0270 |
| 166 | 0.0386 | 0.0113 | 0.0272 |
| 167 | 0.0393 | 0.0115 | 0.0278 |
| 168 | 0.0397 | 0.0116 | 0.0281 |
| 169 | 0.0406 | 0.0119 | 0.0287 |
| 170 | 0.0410 | 0.0120 | 0.0290 |
| 171 | 0.0420 | 0.0123 | 0.0297 |
| 172 | 0.0425 | 0.0125 | 0.0300 |
| 173 | 0.0436 | 0.0128 | 0.0308 |
| 174 | 0.0441 | 0.0129 | 0.0312 |
| 175 | 0.0454 | 0.0133 | 0.0321 |
| 176 | 0.0461 | 0.0135 | 0.0326 |
| 177 | 0.0475 | 0.0139 | 0.0336 |
| 178 | 0.0483 | 0.0142 | 0.0342 |
| 179 | 0.0501 | 0.0147 | 0.0354 |
| 180 | 0.0511 | 0.0150 | 0.0361 |
| 181 | 0.0532 | 0.0156 | 0.0376 |
| 182 | 0.0545 | 0.0160 | 0.0385 |
| 183 | 0.0572 | 0.0168 | 0.0404 |
| 184 | 0.0588 | 0.0173 | 0.0416 |
| 185 | 0.0309 | 0.0091 | 0.0218 |
| 186 | 0.0329 | 0.0097 | 0.0233 |
| 187 | 0.0382 | 0.0112 | 0.0270 |
| 188 | 0.0417 | 0.0122 | 0.0295 |
| 189 | 0.0518 | 0.0152 | 0.0366 |
| 190 | 0.0597 | 0.0175 | 0.0422 |
| 191 | 0.0906 | 0.0266 | 0.0640 |
| 192 | 0.1315 | 0.0336 | 0.0978 |
| 193 | 0.5687 | 0.0336 | 0.5351 |
| 194 | 0.0713 | 0.0209 | 0.0504 |
| 195 | 0.0461 | 0.0135 | 0.0326 |
| 196 | 0.0353 | 0.0104 | 0.0250 |
| 197 | 0.0606 | 0.0178 | 0.0428 |
| 198 | 0.0558 | 0.0164 | 0.0394 |
| 199 | 0.0521 | 0.0153 | 0.0368 |
| 200 | 0.0492 | 0.0144 | 0.0348 |
| 201 | 0.0468 | 0.0137 | 0.0331 |
| 202 | 0.0448 | 0.0131 | 0.0316 |
| 203 | 0.0430 | 0.0126 | 0.0304 |
| 204 | 0.0415 | 0.0122 | 0.0293 |
| 205 | 0.0401 | 0.0118 | 0.0284 |
| 206 | 0.0389 | 0.0114 | 0.0275 |
| 207 | 0.0379 | 0.0111 | 0.0267 |
| 208 | 0.0369 | 0.0108 | 0.0261 |
| 209 | 0.0360 | 0.0106 | 0.0254 |
| 210 | 0.0352 | 0.0103 | 0.0248 |
| 211 | 0.0344 | 0.0101 | 0.0243 |
| 212 | 0.0337 | 0.0099 | 0.0238 |
| 213 | 0.0330 | 0.0097 | 0.0234 |
| 214 | 0.0324 | 0.0095 | 0.0229 |
| 215 | 0.0319 | 0.0093 | 0.0225 |
| 216 | 0.0313 | 0.0092 | 0.0221 |
| 217 | 0.0336 | 0.0099 | 0.0238 |
| 218 | 0.0332 | 0.0097 | 0.0234 |
| 219 | 0.0328 | 0.0096 | 0.0231 |

| | | | |
|---|---|---|---|
| 220 | 0.0323 | 0.0095 | 0.0229 |
| 221 | 0.0320 | 0.0094 | 0.0226 |
| 222 | 0.0316 | 0.0093 | 0.0223 |
| 223 | 0.0313 | 0.0092 | 0.0221 |
| 224 | 0.0309 | 0.0091 | 0.0219 |
| 225 | 0.0306 | 0.0090 | 0.0216 |
| 226 | 0.0303 | 0.0089 | 0.0214 |
| 227 | 0.0300 | 0.0088 | 0.0212 |
| 228 | 0.0297 | 0.0087 | 0.0210 |
| 229 | 0.0294 | 0.0086 | 0.0208 |
| 230 | 0.0292 | 0.0086 | 0.0206 |
| 231 | 0.0289 | 0.0085 | 0.0204 |
| 232 | 0.0287 | 0.0084 | 0.0203 |
| 233 | 0.0284 | 0.0083 | 0.0201 |
| 234 | 0.0282 | 0.0083 | 0.0199 |
| 235 | 0.0280 | 0.0082 | 0.0198 |
| 236 | 0.0278 | 0.0081 | 0.0196 |
| 237 | 0.0276 | 0.0081 | 0.0195 |
| 238 | 0.0274 | 0.0080 | 0.0193 |
| 239 | 0.0272 | 0.0080 | 0.0192 |
| 240 | 0.0270 | 0.0079 | 0.0191 |
| 241 | 0.0268 | 0.0079 | 0.0189 |
| 242 | 0.0266 | 0.0078 | 0.0188 |
| 243 | 0.0264 | 0.0078 | 0.0187 |
| 244 | 0.0263 | 0.0077 | 0.0186 |
| 245 | 0.0261 | 0.0077 | 0.0184 |
| 246 | 0.0259 | 0.0076 | 0.0183 |
| 247 | 0.0258 | 0.0076 | 0.0182 |
| 248 | 0.0256 | 0.0075 | 0.0181 |
| 249 | 0.0255 | 0.0075 | 0.0180 |
| 250 | 0.0253 | 0.0074 | 0.0179 |
| 251 | 0.0252 | 0.0074 | 0.0178 |
| 252 | 0.0250 | 0.0073 | 0.0177 |
| 253 | 0.0249 | 0.0073 | 0.0176 |
| 254 | 0.0248 | 0.0073 | 0.0175 |
| 255 | 0.0246 | 0.0072 | 0.0174 |
| 256 | 0.0245 | 0.0072 | 0.0173 |
| 257 | 0.0244 | 0.0072 | 0.0172 |
| 258 | 0.0243 | 0.0071 | 0.0171 |
| 259 | 0.0241 | 0.0071 | 0.0171 |
| 260 | 0.0240 | 0.0070 | 0.0170 |
| 261 | 0.0239 | 0.0070 | 0.0169 |
| 262 | 0.0238 | 0.0070 | 0.0168 |
| 263 | 0.0237 | 0.0069 | 0.0167 |
| 264 | 0.0236 | 0.0069 | 0.0167 |
| 265 | 0.0235 | 0.0069 | 0.0166 |
| 266 | 0.0234 | 0.0069 | 0.0165 |
| 267 | 0.0233 | 0.0068 | 0.0164 |
| 268 | 0.0232 | 0.0068 | 0.0164 |
| 269 | 0.0231 | 0.0068 | 0.0163 |
| 270 | 0.0230 | 0.0067 | 0.0162 |
| 271 | 0.0229 | 0.0067 | 0.0162 |
| 272 | 0.0228 | 0.0067 | 0.0161 |
| 273 | 0.0227 | 0.0066 | 0.0160 |
| 274 | 0.0226 | 0.0066 | 0.0160 |
| 275 | 0.0225 | 0.0066 | 0.0159 |
| 276 | 0.0224 | 0.0066 | 0.0158 |
| 277 | 0.0223 | 0.0065 | 0.0158 |
| 278 | 0.0222 | 0.0065 | 0.0157 |
| 279 | 0.0221 | 0.0065 | 0.0156 |
| 280 | 0.0221 | 0.0065 | 0.0156 |
| 281 | 0.0220 | 0.0064 | 0.0155 |
| 282 | 0.0219 | 0.0064 | 0.0155 |
| 283 | 0.0218 | 0.0064 | 0.0154 |
| 284 | 0.0217 | 0.0064 | 0.0154 |
| 285 | 0.0216 | 0.0063 | 0.0153 |
| 286 | 0.0216 | 0.0063 | 0.0152 |
| 287 | 0.0215 | 0.0063 | 0.0152 |
| 288 | 0.0214 | 0.0063 | 0.0151 |

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      Total soil rain loss =      2.55(In)
      Total effective rainfall =      6.62(In)
      Peak flow rate in flood hydrograph =     19.44(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
-------------------------------------------------------------------------
  0+ 5       0.0005      0.08  Q         |         |         |         |
  0+10       0.0041      0.52  VQ        |         |         |         |
  0+15       0.0103      0.91  VQ        |         |         |         |
  0+20       0.0176      1.05  V Q       |         |         |         |
  0+25       0.0254      1.14  V Q       |         |         |         |
  0+30       0.0336      1.19  V Q       |         |         |         |
  0+35       0.0419      1.21  V Q       |         |         |         |
  0+40       0.0504      1.22  V Q       |         |         |         |
  0+45       0.0588      1.23  V Q       |         |         |         |
  0+50       0.0673      1.24  V Q       |         |         |         |
  0+55       0.0759      1.24  V Q       |         |         |         |
  1+ 0       0.0845      1.24  V Q       |         |         |         |
  1+ 5       0.0931      1.25  |VQ       |         |         |         |
  1+10       0.1017      1.25  |VQ       |         |         |         |
  1+15       0.1103      1.25  |VQ       |         |         |         |
  1+20       0.1189      1.25  |VQ       |         |         |         |
  1+25       0.1276      1.26  |VQ       |         |         |         |
  1+30       0.1362      1.26  |VQ       |         |         |         |
  1+35       0.1449      1.26  |VQ       |         |         |         |
  1+40       0.1536      1.26  |VQ       |         |         |         |
  1+45       0.1623      1.27  |VQ       |         |         |         |
  1+50       0.1711      1.27  |VQ       |         |         |         |
  1+55       0.1798      1.27  |VQ       |         |         |         |
  2+ 0       0.1886      1.27  | Q       |         |         |         |
  2+ 5       0.1974      1.28  | Q       |         |         |         |
  2+10       0.2062      1.28  | Q       |         |         |         |
  2+15       0.2150      1.28  | Q       |         |         |         |
  2+20       0.2238      1.28  | Q       |         |         |         |
  2+25       0.2327      1.29  | Q       |         |         |         |
  2+30       0.2415      1.29  | Q       |         |         |         |
  2+35       0.2504      1.29  | Q       |         |         |         |
  2+40       0.2593      1.29  | Q       |         |         |         |
  2+45       0.2683      1.30  | Q       |         |         |         |
  2+50       0.2772      1.30  | Q       |         |         |         |
  2+55       0.2862      1.30  | QV      |         |         |         |
  3+ 0       0.2951      1.30  | QV      |         |         |         |
  3+ 5       0.3041      1.31  | QV      |         |         |         |
  3+10       0.3132      1.31  | QV      |         |         |         |
  3+15       0.3222      1.31  | QV      |         |         |         |
  3+20       0.3312      1.31  | QV      |         |         |         |
  3+25       0.3403      1.32  | QV      |         |         |         |
  3+30       0.3494      1.32  | QV      |         |         |         |
  3+35       0.3585      1.32  | QV      |         |         |         |
  3+40       0.3677      1.33  | QV      |         |         |         |
  3+45       0.3768      1.33  | Q V     |         |         |         |
  3+50       0.3860      1.33  | Q V     |         |         |         |
  3+55       0.3952      1.33  | Q V     |         |         |         |
  4+ 0       0.4044      1.34  | Q V     |         |         |         |
  4+ 5       0.4136      1.34  | Q V     |         |         |         |
  4+10       0.4229      1.34  | Q V     |         |         |         |
  4+15       0.4322      1.35  | Q V     |         |         |         |
  4+20       0.4414      1.35  | Q V     |         |         |         |
  4+25       0.4508      1.35  | Q V     |         |         |         |
  4+30       0.4601      1.36  | Q V     |         |         |         |
  4+35       0.4695      1.36  | Q  V    |         |         |         |
  4+40       0.4789      1.36  | Q  V    |         |         |         |
  4+45       0.4883      1.37  | Q  V    |         |         |         |
  4+50       0.4977      1.37  | Q  V    |         |         |         |
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 4+55      0.5071     1.37  | Q  V    |         |         |         |
 5+ 0      0.5166     1.38  | Q  V    |         |         |         |
 5+ 5      0.5261     1.38  | Q  V    |         |         |         |
 5+10      0.5356     1.38  | Q  V    |         |         |         |
 5+15      0.5452     1.39  | Q  V    |         |         |         |
 5+20      0.5548     1.39  | Q   V   |         |         |         |
 5+25      0.5643     1.39  | Q   V   |         |         |         |
 5+30      0.5740     1.40  | Q   V   |         |         |         |
 5+35      0.5836     1.40  | Q   V   |         |         |         |
 5+40      0.5933     1.40  | Q   V   |         |         |         |
 5+45      0.6030     1.41  | Q   V   |         |         |         |
 5+50      0.6127     1.41  | Q   V   |         |         |         |
 5+55      0.6224     1.41  | Q   V   |         |         |         |
 6+ 0      0.6322     1.42  | Q   V   |         |         |         |
 6+ 5      0.6420     1.42  | Q   V   |         |         |         |
 6+10      0.6518     1.43  | Q    V  |         |         |         |
 6+15      0.6617     1.43  | Q    V  |         |         |         |
 6+20      0.6715     1.43  | Q    V  |         |         |         |
 6+25      0.6814     1.44  | Q    V  |         |         |         |
 6+30      0.6914     1.44  | Q    V  |         |         |         |
 6+35      0.7013     1.45  | Q    V  |         |         |         |
 6+40      0.7113     1.45  | Q    V  |         |         |         |
 6+45      0.7213     1.45  | Q    V  |         |         |         |
 6+50      0.7314     1.46  | Q    V  |         |         |         |
 6+55      0.7415     1.46  | Q     V |         |         |         |
 7+ 0      0.7516     1.47  | Q     V |         |         |         |
 7+ 5      0.7617     1.47  | Q     V |         |         |         |
 7+10      0.7719     1.48  | Q     V |         |         |         |
 7+15      0.7821     1.48  | Q     V |         |         |         |
 7+20      0.7923     1.49  | Q     V |         |         |         |
 7+25      0.8026     1.49  | Q     V |         |         |         |
 7+30      0.8129     1.49  | Q     V |         |         |         |
 7+35      0.8232     1.50  | Q     V |         |         |         |
 7+40      0.8335     1.50  |  Q     V|         |         |         |
 7+45      0.8439     1.51  |  Q     V|         |         |         |
 7+50      0.8544     1.51  |  Q     V|         |         |         |
 7+55      0.8648     1.52  |  Q     V|         |         |         |
 8+ 0      0.8753     1.52  |  Q     V|         |         |         |
 8+ 5      0.8858     1.53  |  Q     V|         |         |         |
 8+10      0.8964     1.53  |  Q     V|         |         |         |
 8+15      0.9070     1.54  |  Q     V|         |         |         |
 8+20      0.9176     1.54  |  Q     V|         |         |         |
 8+25      0.9283     1.55  |  Q      V         |         |         |
 8+30      0.9390     1.56  |  Q      V         |         |         |
 8+35      0.9498     1.56  |  Q      V         |         |         |
 8+40      0.9606     1.57  |  Q      V         |         |         |
 8+45      0.9714     1.57  |  Q      V         |         |         |
 8+50      0.9823     1.58  |  Q      V         |         |         |
 8+55      0.9932     1.58  |  Q      V         |         |         |
 9+ 0      1.0041     1.59  |  Q      V         |         |         |
 9+ 5      1.0151     1.60  |  Q      V         |         |         |
 9+10      1.0261     1.60  |  Q       |V       |         |         |
 9+15      1.0372     1.61  |  Q       |V       |         |         |
 9+20      1.0483     1.61  |  Q       |V       |         |         |
 9+25      1.0595     1.62  |  Q       |V       |         |         |
 9+30      1.0707     1.63  |  Q       |V       |         |         |
 9+35      1.0820     1.63  |  Q       |V       |         |         |
 9+40      1.0933     1.64  |  Q       |V       |         |         |
 9+45      1.1046     1.65  |  Q       |V       |         |         |
 9+50      1.1160     1.66  |  Q       | V      |         |         |
 9+55      1.1275     1.66  |  Q       | V      |         |         |
10+ 0      1.1390     1.67  |  Q       | V      |         |         |
10+ 5      1.1505     1.68  |  Q       | V      |         |         |
10+10      1.1621     1.68  |  Q       | V      |         |         |
10+15      1.1738     1.69  |  Q       | V      |         |         |
10+20      1.1855     1.70  |  Q       | V      |         |         |
10+25      1.1972     1.71  |  Q       | V      |         |         |
10+30      1.2090     1.72  |  Q       |  V     |         |         |
10+35      1.2209     1.72  |  Q       |  V     |         |         |
10+40      1.2329     1.73  |  Q       |  V     |         |         |
10+45      1.2448     1.74  |  Q       |  V     |         |         |
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10+50      1.2569     1.75  |  Q      |  V      |         |         |
10+55      1.2690     1.76  |  Q      |  V      |         |         |
11+ 0      1.2812     1.77  |  Q      |  V      |         |         |
11+ 5      1.2934     1.78  |  Q      |  V      |         |         |
11+10      1.3057     1.79  |  Q      |   V     |         |         |
11+15      1.3181     1.80  |  Q      |   V     |         |         |
11+20      1.3306     1.81  |  Q      |   V     |         |         |
11+25      1.3431     1.82  |  Q      |   V     |         |         |
11+30      1.3557     1.83  |  Q      |   V     |         |         |
11+35      1.3683     1.84  |  Q      |   V     |         |         |
11+40      1.3811     1.85  |  Q      |   V     |         |         |
11+45      1.3939     1.86  |  Q      |    V    |         |         |
11+50      1.4068     1.87  |  Q      |    V    |         |         |
11+55      1.4197     1.88  |  Q      |    V    |         |         |
12+ 0      1.4328     1.90  |  Q      |    V    |         |         |
12+ 5      1.4459     1.90  |  Q      |    V    |         |         |
12+10      1.4586     1.85  |  Q      |    V    |         |         |
12+15      1.4711     1.82  |  Q      |    V    |         |         |
12+20      1.4836     1.81  |  Q      |     V   |         |         |
12+25      1.4961     1.82  |  Q      |     V   |         |         |
12+30      1.5087     1.83  |  Q      |     V   |         |         |
12+35      1.5214     1.84  |  Q      |     V   |         |         |
12+40      1.5341     1.85  |  Q      |     V   |         |         |
12+45      1.5470     1.87  |  Q      |     V   |         |         |
12+50      1.5600     1.89  |  Q      |     V   |         |         |
12+55      1.5731     1.90  |  Q      |      V  |         |         |
13+ 0      1.5863     1.92  |  Q      |      V  |         |         |
13+ 5      1.5997     1.94  |  Q      |      V  |         |         |
13+10      1.6132     1.96  |  Q      |      V  |         |         |
13+15      1.6269     1.98  |  Q      |      V  |         |         |
13+20      1.6407     2.00  |   Q     |      V  |         |         |
13+25      1.6546     2.03  |   Q     |      V  |         |         |
13+30      1.6688     2.05  |   Q     |       V |         |         |
13+35      1.6831     2.07  |   Q     |       V |         |         |
13+40      1.6975     2.10  |   Q     |       V |         |         |
13+45      1.7122     2.13  |   Q     |       V |         |         |
13+50      1.7270     2.16  |   Q     |       V |         |         |
13+55      1.7421     2.18  |   Q     |       V |         |         |
14+ 0      1.7573     2.22  |   Q     |        V|         |         |
14+ 5      1.7728     2.25  |   Q     |        V|         |         |
14+10      1.7885     2.28  |   Q     |        V|         |         |
14+15      1.8045     2.32  |   Q     |        V|         |         |
14+20      1.8208     2.36  |   Q     |        V|         |         |
14+25      1.8373     2.40  |   Q     |        V|         |         |
14+30      1.8541     2.44  |   Q     |         V         |         |
14+35      1.8713     2.49  |   Q     |         V         |         |
14+40      1.8888     2.54  |    Q    |         V         |         |
14+45      1.9067     2.59  |    Q    |         V         |         |
14+50      1.9249     2.65  |    Q    |         V         |         |
14+55      1.9436     2.72  |    Q    |         |V        |         |
15+ 0      1.9628     2.79  |    Q    |         |V        |         |
15+ 5      1.9825     2.86  |    Q    |         |V        |         |
15+10      2.0028     2.95  |    Q    |         |V        |         |
15+15      2.0238     3.04  |     Q   |         |V        |         |
15+20      2.0455     3.15  |     Q   |         | V       |         |
15+25      2.0672     3.15  |     Q   |         | V       |         |
15+30      2.0854     2.65  |    Q    |         | V       |         |
15+35      2.1007     2.22  |   Q     |         | V       |         |
15+40      2.1159     2.21  |   Q     |         | V       |         |
15+45      2.1320     2.33  |   Q     |         |  V      |         |
15+50      2.1500     2.61  |    Q    |         |  V      |         |
15+55      2.1713     3.09  |     Q   |         |  V      |         |
16+ 0      2.1997     4.13  |       Q |         |  V      |         |
16+ 5      2.2548     7.99  |         |    Q    |   V     |         |
16+10      2.3886    19.44  |         |         |    V    |        Q|
16+15      2.5056    16.98  |         |         |     V   |  Q      |
16+20      2.5628     8.31  |         |     Q   |      V  |         |
16+25      2.6014     5.61  |         |Q        |       V |         |
16+30      2.6328     4.56  |       Q |         |       V |         |
16+35      2.6597     3.90  |      Q  |         |       V |         |
16+40      2.6829     3.37  |     Q   |         |        V|         |
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16+45       2.7046      3.15  |     Q    |          |         V|          |
16+50       2.7254      3.01  |     Q    |          |         V|          |
16+55       2.7447      2.81  |    Q     |          |         V|          |
17+ 0       2.7625      2.59  |    Q     |          |         V|          |
17+ 5       2.7796      2.48  |   Q      |          |          V          |
17+10       2.7961      2.40  |   Q      |          |          V          |
17+15       2.8121      2.32  |   Q      |          |          V          |
17+20       2.8276      2.25  |   Q      |          |          V          |
17+25       2.8426      2.18  |   Q      |          |          V          |
17+30       2.8573      2.13  |   Q      |          |          V          |
17+35       2.8715      2.07  |   Q      |          |          |V         |
17+40       2.8855      2.02  |   Q      |          |          |V         |
17+45       2.8991      1.98  |  Q       |          |          |V         |
17+50       2.9125      1.94  |  Q       |          |          |V         |
17+55       2.9256      1.90  |  Q       |          |          |V         |
18+ 0       2.9384      1.87  |  Q       |          |          |V         |
18+ 5       2.9511      1.84  |  Q       |          |          |V         |
18+10       2.9640      1.87  |  Q       |          |          | V        |
18+15       2.9770      1.89  |  Q       |          |          | V        |
18+20       2.9900      1.88  |  Q       |          |          | V        |
18+25       3.0029      1.87  |  Q       |          |          | V        |
18+30       3.0156      1.85  |  Q       |          |          | V        |
18+35       3.0282      1.83  |  Q       |          |          | V        |
18+40       3.0407      1.81  |  Q       |          |          | V        |
18+45       3.0531      1.79  |  Q       |          |          |  V       |
18+50       3.0653      1.78  |  Q       |          |          |  V       |
18+55       3.0774      1.76  |  Q       |          |          |  V       |
19+ 0       3.0894      1.74  |  Q       |          |          |  V       |
19+ 5       3.1012      1.72  |  Q       |          |          |  V       |
19+10       3.1130      1.71  |  Q       |          |          |  V       |
19+15       3.1246      1.69  |  Q       |          |          |  V       |
19+20       3.1362      1.68  |  Q       |          |          |  V       |
19+25       3.1476      1.66  |  Q       |          |          |   V      |
19+30       3.1590      1.65  |  Q       |          |          |   V      |
19+35       3.1702      1.63  |  Q       |          |          |   V      |
19+40       3.1814      1.62  |  Q       |          |          |   V      |
19+45       3.1924      1.61  |  Q       |          |          |   V      |
19+50       3.2034      1.59  |  Q       |          |          |   V      |
19+55       3.2143      1.58  |  Q       |          |          |   V      |
20+ 0       3.2251      1.57  |  Q       |          |          |   V      |
20+ 5       3.2359      1.56  |  Q       |          |          |    V     |
20+10       3.2465      1.55  |  Q       |          |          |    V     |
20+15       3.2571      1.54  |  Q       |          |          |    V     |
20+20       3.2676      1.53  |  Q       |          |          |    V     |
20+25       3.2781      1.52  |  Q       |          |          |    V     |
20+30       3.2885      1.51  |  Q       |          |          |    V     |
20+35       3.2988      1.50  | Q        |          |          |    V     |
20+40       3.3090      1.49  | Q        |          |          |    V     |
20+45       3.3192      1.48  | Q        |          |          |    V     |
20+50       3.3294      1.47  | Q        |          |          |     V    |
20+55       3.3394      1.46  | Q        |          |          |     V    |
21+ 0       3.3494      1.45  | Q        |          |          |     V    |
21+ 5       3.3594      1.45  | Q        |          |          |     V    |
21+10       3.3693      1.44  | Q        |          |          |     V    |
21+15       3.3791      1.43  | Q        |          |          |     V    |
21+20       3.3889      1.42  | Q        |          |          |     V    |
21+25       3.3987      1.41  | Q        |          |          |     V    |
21+30       3.4083      1.41  | Q        |          |          |     V    |
21+35       3.4180      1.40  | Q        |          |          |     V    |
21+40       3.4276      1.39  | Q        |          |          |      V   |
21+45       3.4371      1.39  | Q        |          |          |      V   |
21+50       3.4466      1.38  | Q        |          |          |      V   |
21+55       3.4560      1.37  | Q        |          |          |      V   |
22+ 0       3.4654      1.37  | Q        |          |          |      V   |
22+ 5       3.4748      1.36  | Q        |          |          |      V   |
22+10       3.4841      1.35  | Q        |          |          |      V   |
22+15       3.4934      1.35  | Q        |          |          |      V   |
22+20       3.5026      1.34  | Q        |          |          |      V   |
22+25       3.5118      1.33  | Q        |          |          |      V   |
22+30       3.5209      1.33  | Q        |          |          |       V  |
22+35       3.5301      1.32  | Q        |          |          |       V  |
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   22+40       3.5391      1.32  | Q       |         |         |       V |
   22+45       3.5482      1.31  | Q       |         |         |       V |
   22+50       3.5571      1.31  | Q       |         |         |       V |
   22+55       3.5661      1.30  | Q       |         |         |       V |
   23+ 0       3.5750      1.30  | Q       |         |         |       V |
   23+ 5       3.5839      1.29  | Q       |         |         |       V |
   23+10       3.5928      1.28  | Q       |         |         |       V |
   23+15       3.6016      1.28  | Q       |         |         |       V |
   23+20       3.6103      1.27  | Q       |         |         |        V|
   23+25       3.6191      1.27  | Q       |         |         |        V|
   23+30       3.6278      1.26  | Q       |         |         |        V|
   23+35       3.6365      1.26  | Q       |         |         |        V|
   23+40       3.6451      1.26  | Q       |         |         |        V|
   23+45       3.6537      1.25  | Q       |         |         |        V|
   23+50       3.6623      1.25  | Q       |         |         |        V|
   23+55       3.6709      1.24  | Q       |         |         |        V|
   24+ 0       3.6794      1.24  | Q       |         |         |        V|
   24+ 5       3.6874      1.16  | Q       |         |         |        V|
   24+10       3.6923      0.71  |Q        |         |         |        V|
   24+15       3.6945      0.32  Q         |         |         |        V|
   24+20       3.6957      0.18  Q         |         |         |        V|
   24+25       3.6963      0.09  Q         |         |         |        V|
   24+30       3.6966      0.05  Q         |         |         |        V|
   24+35       3.6968      0.02  Q         |         |         |        V|
   24+40       3.6969      0.01  Q         |         |         |        V|
   24+45       3.6970      0.01  Q         |         |         |        V|
   24+50       3.6970      0.00  Q         |         |         |        V|
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Area 'F' – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

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        U n i t   H y d r o g r a p h   A n a l y s i s

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               Study date  11/11/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

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TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'F'
100 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
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        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.71           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.71           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.71          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.71           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.71           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.71          24          12.00
----------------------------------------------------------------------
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******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      92.8          6.71      1.000     0.140    1.000    0.140

Area-averaged adjusted loss rate Fm (In/Hr) =  0.140

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 6.71 | 1.000 | 78.0 | 92.8 | 0.78 | 0.926 |

Area-averaged catchment yield fraction, Y = 0.926
Area-averaged low loss fraction, Yb = 0.074
User entry of time of concentration = 0.162 (hours)
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Watershed area = 6.71(Ac.)
Catchment Lag time = 0.130 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 64.3004
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.140(In/Hr)
Average low loss rate fraction (Yb) = 0.074 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.71(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.712(In)
30-minute factor = 1.000 Adjusted rainfall = 1.218(In)
1-hour factor = 1.000 Adjusted rainfall = 1.500(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 81.15 (CFS)) | |
| 1 | 6.228 | 5.054 |
| 2 | 42.193 | 29.185 |
| 3 | 74.058 | 25.858 |
| 4 | 85.789 | 9.519 |
| 5 | 92.451 | 5.407 |
| 6 | 96.283 | 3.110 |
| 7 | 98.090 | 1.467 |
| 8 | 98.816 | 0.589 |
| 9 | 99.292 | 0.386 |
| 10 | 99.729 | 0.355 |
| 11 | 100.000 | 0.220 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7115 | 0.7115 |
| 2 | 0.8760 | 0.1645 |
| 3 | 0.9893 | 0.1133 |
| 4 | 1.0785 | 0.0892 |
| 5 | 1.1532 | 0.0747 |
| 6 | 1.2180 | 0.0648 |
| 7 | 1.2756 | 0.0576 |
| 8 | 1.3278 | 0.0521 |
| 9 | 1.3755 | 0.0478 |
| 10 | 1.4197 | 0.0442 |
| 11 | 1.4609 | 0.0412 |
| 12 | 1.4995 | 0.0386 |
| 13 | 1.5750 | 0.0755 |
| 14 | 1.6482 | 0.0732 |
| 15 | 1.7195 | 0.0713 |

| | | |
|---|---|---|
| 16 | 1.7889 | 0.0694 |
| 17 | 1.8567 | 0.0678 |
| 18 | 1.9230 | 0.0663 |
| 19 | 1.9878 | 0.0648 |
| 20 | 2.0513 | 0.0635 |
| 21 | 2.1137 | 0.0623 |
| 22 | 2.1748 | 0.0612 |
| 23 | 2.2350 | 0.0601 |
| 24 | 2.2941 | 0.0591 |
| 25 | 2.3522 | 0.0582 |
| 26 | 2.4095 | 0.0573 |
| 27 | 2.4659 | 0.0564 |
| 28 | 2.5216 | 0.0556 |
| 29 | 2.5764 | 0.0549 |
| 30 | 2.6306 | 0.0541 |
| 31 | 2.6840 | 0.0534 |
| 32 | 2.7368 | 0.0528 |
| 33 | 2.7889 | 0.0521 |
| 34 | 2.8405 | 0.0515 |
| 35 | 2.8914 | 0.0510 |
| 36 | 2.9418 | 0.0504 |
| 37 | 2.9917 | 0.0498 |
| 38 | 3.0410 | 0.0493 |
| 39 | 3.0898 | 0.0488 |
| 40 | 3.1382 | 0.0483 |
| 41 | 3.1860 | 0.0479 |
| 42 | 3.2335 | 0.0474 |
| 43 | 3.2805 | 0.0470 |
| 44 | 3.3270 | 0.0466 |
| 45 | 3.3732 | 0.0462 |
| 46 | 3.4190 | 0.0458 |
| 47 | 3.4644 | 0.0454 |
| 48 | 3.5094 | 0.0450 |
| 49 | 3.5540 | 0.0447 |
| 50 | 3.5983 | 0.0443 |
| 51 | 3.6423 | 0.0440 |
| 52 | 3.6859 | 0.0436 |
| 53 | 3.7292 | 0.0433 |
| 54 | 3.7722 | 0.0430 |
| 55 | 3.8149 | 0.0427 |
| 56 | 3.8573 | 0.0424 |
| 57 | 3.8993 | 0.0421 |
| 58 | 3.9412 | 0.0418 |
| 59 | 3.9827 | 0.0415 |
| 60 | 4.0239 | 0.0413 |
| 61 | 4.0649 | 0.0410 |
| 62 | 4.1057 | 0.0407 |
| 63 | 4.1461 | 0.0405 |
| 64 | 4.1864 | 0.0402 |
| 65 | 4.2264 | 0.0400 |
| 66 | 4.2661 | 0.0398 |
| 67 | 4.3056 | 0.0395 |
| 68 | 4.3449 | 0.0393 |
| 69 | 4.3840 | 0.0391 |
| 70 | 4.4228 | 0.0389 |
| 71 | 4.4615 | 0.0386 |
| 72 | 4.4999 | 0.0384 |
| 73 | 4.5440 | 0.0441 |
| 74 | 4.5880 | 0.0440 |
| 75 | 4.6318 | 0.0438 |
| 76 | 4.6754 | 0.0436 |
| 77 | 4.7188 | 0.0434 |
| 78 | 4.7621 | 0.0433 |
| 79 | 4.8052 | 0.0431 |
| 80 | 4.8482 | 0.0430 |
| 81 | 4.8910 | 0.0428 |
| 82 | 4.9336 | 0.0426 |
| 83 | 4.9761 | 0.0425 |
| 84 | 5.0185 | 0.0423 |
| 85 | 5.0607 | 0.0422 |
| 86 | 5.1027 | 0.0421 |

| | | |
|---|---|---|
| 87 | 5.1446 | 0.0419 |
| 88 | 5.1864 | 0.0418 |
| 89 | 5.2280 | 0.0416 |
| 90 | 5.2695 | 0.0415 |
| 91 | 5.3109 | 0.0414 |
| 92 | 5.3521 | 0.0412 |
| 93 | 5.3932 | 0.0411 |
| 94 | 5.4342 | 0.0410 |
| 95 | 5.4750 | 0.0408 |
| 96 | 5.5157 | 0.0407 |
| 97 | 5.5563 | 0.0406 |
| 98 | 5.5968 | 0.0405 |
| 99 | 5.6371 | 0.0403 |
| 100 | 5.6773 | 0.0402 |
| 101 | 5.7174 | 0.0401 |
| 102 | 5.7574 | 0.0400 |
| 103 | 5.7973 | 0.0399 |
| 104 | 5.8371 | 0.0398 |
| 105 | 5.8767 | 0.0397 |
| 106 | 5.9163 | 0.0395 |
| 107 | 5.9557 | 0.0394 |
| 108 | 5.9951 | 0.0393 |
| 109 | 6.0343 | 0.0392 |
| 110 | 6.0734 | 0.0391 |
| 111 | 6.1124 | 0.0390 |
| 112 | 6.1513 | 0.0389 |
| 113 | 6.1901 | 0.0388 |
| 114 | 6.2288 | 0.0387 |
| 115 | 6.2674 | 0.0386 |
| 116 | 6.3059 | 0.0385 |
| 117 | 6.3444 | 0.0384 |
| 118 | 6.3827 | 0.0383 |
| 119 | 6.4209 | 0.0382 |
| 120 | 6.4590 | 0.0381 |
| 121 | 6.4971 | 0.0380 |
| 122 | 6.5350 | 0.0379 |
| 123 | 6.5729 | 0.0379 |
| 124 | 6.6106 | 0.0378 |
| 125 | 6.6483 | 0.0377 |
| 126 | 6.6859 | 0.0376 |
| 127 | 6.7234 | 0.0375 |
| 128 | 6.7608 | 0.0374 |
| 129 | 6.7981 | 0.0373 |
| 130 | 6.8354 | 0.0372 |
| 131 | 6.8725 | 0.0372 |
| 132 | 6.9096 | 0.0371 |
| 133 | 6.9466 | 0.0370 |
| 134 | 6.9835 | 0.0369 |
| 135 | 7.0204 | 0.0368 |
| 136 | 7.0571 | 0.0368 |
| 137 | 7.0938 | 0.0367 |
| 138 | 7.1304 | 0.0366 |
| 139 | 7.1669 | 0.0365 |
| 140 | 7.2033 | 0.0364 |
| 141 | 7.2397 | 0.0364 |
| 142 | 7.2760 | 0.0363 |
| 143 | 7.3122 | 0.0362 |
| 144 | 7.3484 | 0.0361 |
| 145 | 7.3844 | 0.0361 |
| 146 | 7.4204 | 0.0360 |
| 147 | 7.4564 | 0.0359 |
| 148 | 7.4922 | 0.0359 |
| 149 | 7.5280 | 0.0358 |
| 150 | 7.5637 | 0.0357 |
| 151 | 7.5993 | 0.0356 |
| 152 | 7.6349 | 0.0356 |
| 153 | 7.6704 | 0.0355 |
| 154 | 7.7059 | 0.0354 |
| 155 | 7.7412 | 0.0354 |
| 156 | 7.7765 | 0.0353 |
| 157 | 7.8118 | 0.0352 |

| | | |
|---|---|---|
| 158 | 7.8469 | 0.0352 |
| 159 | 7.8820 | 0.0351 |
| 160 | 7.9171 | 0.0350 |
| 161 | 7.9521 | 0.0350 |
| 162 | 7.9870 | 0.0349 |
| 163 | 8.0218 | 0.0349 |
| 164 | 8.0566 | 0.0348 |
| 165 | 8.0913 | 0.0347 |
| 166 | 8.1260 | 0.0347 |
| 167 | 8.1606 | 0.0346 |
| 168 | 8.1952 | 0.0345 |
| 169 | 8.2296 | 0.0345 |
| 170 | 8.2641 | 0.0344 |
| 171 | 8.2984 | 0.0344 |
| 172 | 8.3327 | 0.0343 |
| 173 | 8.3670 | 0.0342 |
| 174 | 8.4012 | 0.0342 |
| 175 | 8.4353 | 0.0341 |
| 176 | 8.4694 | 0.0341 |
| 177 | 8.5034 | 0.0340 |
| 178 | 8.5374 | 0.0340 |
| 179 | 8.5713 | 0.0339 |
| 180 | 8.6051 | 0.0339 |
| 181 | 8.6389 | 0.0338 |
| 182 | 8.6727 | 0.0337 |
| 183 | 8.7063 | 0.0337 |
| 184 | 8.7400 | 0.0336 |
| 185 | 8.7736 | 0.0336 |
| 186 | 8.8071 | 0.0335 |
| 187 | 8.8406 | 0.0335 |
| 188 | 8.8740 | 0.0334 |
| 189 | 8.9074 | 0.0334 |
| 190 | 8.9407 | 0.0333 |
| 191 | 8.9739 | 0.0333 |
| 192 | 9.0072 | 0.0332 |
| 193 | 9.0403 | 0.0332 |
| 194 | 9.0734 | 0.0331 |
| 195 | 9.1065 | 0.0331 |
| 196 | 9.1395 | 0.0330 |
| 197 | 9.1725 | 0.0330 |
| 198 | 9.2054 | 0.0329 |
| 199 | 9.2383 | 0.0329 |
| 200 | 9.2711 | 0.0328 |
| 201 | 9.3039 | 0.0328 |
| 202 | 9.3366 | 0.0327 |
| 203 | 9.3693 | 0.0327 |
| 204 | 9.4019 | 0.0326 |
| 205 | 9.4345 | 0.0326 |
| 206 | 9.4670 | 0.0325 |
| 207 | 9.4995 | 0.0325 |
| 208 | 9.5320 | 0.0324 |
| 209 | 9.5644 | 0.0324 |
| 210 | 9.5967 | 0.0324 |
| 211 | 9.6291 | 0.0323 |
| 212 | 9.6613 | 0.0323 |
| 213 | 9.6935 | 0.0322 |
| 214 | 9.7257 | 0.0322 |
| 215 | 9.7578 | 0.0321 |
| 216 | 9.7899 | 0.0321 |
| 217 | 9.8220 | 0.0320 |
| 218 | 9.8540 | 0.0320 |
| 219 | 9.8859 | 0.0320 |
| 220 | 9.9179 | 0.0319 |
| 221 | 9.9497 | 0.0319 |
| 222 | 9.9816 | 0.0318 |
| 223 | 10.0134 | 0.0318 |
| 224 | 10.0451 | 0.0317 |
| 225 | 10.0768 | 0.0317 |
| 226 | 10.1085 | 0.0317 |
| 227 | 10.1401 | 0.0316 |
| 228 | 10.1717 | 0.0316 |

| | | |
|---|---|---|
| 229 | 10.2032 | 0.0315 |
| 230 | 10.2347 | 0.0315 |
| 231 | 10.2662 | 0.0315 |
| 232 | 10.2976 | 0.0314 |
| 233 | 10.3290 | 0.0314 |
| 234 | 10.3604 | 0.0313 |
| 235 | 10.3917 | 0.0313 |
| 236 | 10.4229 | 0.0313 |
| 237 | 10.4542 | 0.0312 |
| 238 | 10.4854 | 0.0312 |
| 239 | 10.5165 | 0.0312 |
| 240 | 10.5476 | 0.0311 |
| 241 | 10.5787 | 0.0311 |
| 242 | 10.6097 | 0.0310 |
| 243 | 10.6407 | 0.0310 |
| 244 | 10.6717 | 0.0310 |
| 245 | 10.7026 | 0.0309 |
| 246 | 10.7335 | 0.0309 |
| 247 | 10.7644 | 0.0309 |
| 248 | 10.7952 | 0.0308 |
| 249 | 10.8260 | 0.0308 |
| 250 | 10.8567 | 0.0307 |
| 251 | 10.8874 | 0.0307 |
| 252 | 10.9181 | 0.0307 |
| 253 | 10.9487 | 0.0306 |
| 254 | 10.9793 | 0.0306 |
| 255 | 11.0099 | 0.0306 |
| 256 | 11.0404 | 0.0305 |
| 257 | 11.0709 | 0.0305 |
| 258 | 11.1014 | 0.0305 |
| 259 | 11.1318 | 0.0304 |
| 260 | 11.1622 | 0.0304 |
| 261 | 11.1926 | 0.0304 |
| 262 | 11.2229 | 0.0303 |
| 263 | 11.2532 | 0.0303 |
| 264 | 11.2834 | 0.0303 |
| 265 | 11.3137 | 0.0302 |
| 266 | 11.3438 | 0.0302 |
| 267 | 11.3740 | 0.0302 |
| 268 | 11.4041 | 0.0301 |
| 269 | 11.4342 | 0.0301 |
| 270 | 11.4643 | 0.0301 |
| 271 | 11.4943 | 0.0300 |
| 272 | 11.5243 | 0.0300 |
| 273 | 11.5543 | 0.0300 |
| 274 | 11.5842 | 0.0299 |
| 275 | 11.6141 | 0.0299 |
| 276 | 11.6439 | 0.0299 |
| 277 | 11.6738 | 0.0298 |
| 278 | 11.7036 | 0.0298 |
| 279 | 11.7333 | 0.0298 |
| 280 | 11.7631 | 0.0297 |
| 281 | 11.7928 | 0.0297 |
| 282 | 11.8225 | 0.0297 |
| 283 | 11.8521 | 0.0296 |
| 284 | 11.8817 | 0.0296 |
| 285 | 11.9113 | 0.0296 |
| 286 | 11.9409 | 0.0296 |
| 287 | 11.9704 | 0.0295 |
| 288 | 11.9999 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0022 | 0.0273 |
| 2 | 0.0295 | 0.0022 | 0.0274 |
| 3 | 0.0296 | 0.0022 | 0.0274 |
| 4 | 0.0296 | 0.0022 | 0.0274 |
| 5 | 0.0297 | 0.0022 | 0.0275 |
| 6 | 0.0297 | 0.0022 | 0.0275 |

| | | | |
|---|---|---|---|
| 7 | 0.0298 | 0.0022 | 0.0276 |
| 8 | 0.0298 | 0.0022 | 0.0276 |
| 9 | 0.0299 | 0.0022 | 0.0277 |
| 10 | 0.0299 | 0.0022 | 0.0277 |
| 11 | 0.0300 | 0.0022 | 0.0278 |
| 12 | 0.0300 | 0.0022 | 0.0278 |
| 13 | 0.0301 | 0.0022 | 0.0278 |
| 14 | 0.0301 | 0.0022 | 0.0279 |
| 15 | 0.0302 | 0.0022 | 0.0279 |
| 16 | 0.0302 | 0.0022 | 0.0280 |
| 17 | 0.0303 | 0.0022 | 0.0280 |
| 18 | 0.0303 | 0.0022 | 0.0281 |
| 19 | 0.0304 | 0.0022 | 0.0281 |
| 20 | 0.0304 | 0.0022 | 0.0282 |
| 21 | 0.0305 | 0.0022 | 0.0282 |
| 22 | 0.0305 | 0.0022 | 0.0283 |
| 23 | 0.0306 | 0.0022 | 0.0283 |
| 24 | 0.0306 | 0.0023 | 0.0283 |
| 25 | 0.0307 | 0.0023 | 0.0284 |
| 26 | 0.0307 | 0.0023 | 0.0284 |
| 27 | 0.0308 | 0.0023 | 0.0285 |
| 28 | 0.0308 | 0.0023 | 0.0285 |
| 29 | 0.0309 | 0.0023 | 0.0286 |
| 30 | 0.0309 | 0.0023 | 0.0286 |
| 31 | 0.0310 | 0.0023 | 0.0287 |
| 32 | 0.0310 | 0.0023 | 0.0288 |
| 33 | 0.0311 | 0.0023 | 0.0288 |
| 34 | 0.0312 | 0.0023 | 0.0289 |
| 35 | 0.0312 | 0.0023 | 0.0289 |
| 36 | 0.0313 | 0.0023 | 0.0290 |
| 37 | 0.0313 | 0.0023 | 0.0290 |
| 38 | 0.0314 | 0.0023 | 0.0291 |
| 39 | 0.0315 | 0.0023 | 0.0291 |
| 40 | 0.0315 | 0.0023 | 0.0292 |
| 41 | 0.0316 | 0.0023 | 0.0293 |
| 42 | 0.0316 | 0.0023 | 0.0293 |
| 43 | 0.0317 | 0.0023 | 0.0294 |
| 44 | 0.0317 | 0.0023 | 0.0294 |
| 45 | 0.0318 | 0.0023 | 0.0295 |
| 46 | 0.0319 | 0.0023 | 0.0295 |
| 47 | 0.0320 | 0.0024 | 0.0296 |
| 48 | 0.0320 | 0.0024 | 0.0296 |
| 49 | 0.0321 | 0.0024 | 0.0297 |
| 50 | 0.0321 | 0.0024 | 0.0298 |
| 51 | 0.0322 | 0.0024 | 0.0298 |
| 52 | 0.0323 | 0.0024 | 0.0299 |
| 53 | 0.0324 | 0.0024 | 0.0300 |
| 54 | 0.0324 | 0.0024 | 0.0300 |
| 55 | 0.0325 | 0.0024 | 0.0301 |
| 56 | 0.0325 | 0.0024 | 0.0301 |
| 57 | 0.0326 | 0.0024 | 0.0302 |
| 58 | 0.0327 | 0.0024 | 0.0303 |
| 59 | 0.0328 | 0.0024 | 0.0304 |
| 60 | 0.0328 | 0.0024 | 0.0304 |
| 61 | 0.0329 | 0.0024 | 0.0305 |
| 62 | 0.0330 | 0.0024 | 0.0305 |
| 63 | 0.0331 | 0.0024 | 0.0306 |
| 64 | 0.0331 | 0.0024 | 0.0307 |
| 65 | 0.0332 | 0.0024 | 0.0308 |
| 66 | 0.0333 | 0.0024 | 0.0308 |
| 67 | 0.0334 | 0.0025 | 0.0309 |
| 68 | 0.0334 | 0.0025 | 0.0310 |
| 69 | 0.0335 | 0.0025 | 0.0311 |
| 70 | 0.0336 | 0.0025 | 0.0311 |
| 71 | 0.0337 | 0.0025 | 0.0312 |
| 72 | 0.0337 | 0.0025 | 0.0313 |
| 73 | 0.0339 | 0.0025 | 0.0314 |
| 74 | 0.0339 | 0.0025 | 0.0314 |
| 75 | 0.0340 | 0.0025 | 0.0315 |
| 76 | 0.0341 | 0.0025 | 0.0316 |
| 77 | 0.0342 | 0.0025 | 0.0317 |

| | | | |
|---|---|---|---|
| 78 | 0.0342 | 0.0025 | 0.0317 |
| 79 | 0.0344 | 0.0025 | 0.0318 |
| 80 | 0.0344 | 0.0025 | 0.0319 |
| 81 | 0.0345 | 0.0025 | 0.0320 |
| 82 | 0.0346 | 0.0025 | 0.0321 |
| 83 | 0.0347 | 0.0026 | 0.0322 |
| 84 | 0.0348 | 0.0026 | 0.0322 |
| 85 | 0.0349 | 0.0026 | 0.0323 |
| 86 | 0.0350 | 0.0026 | 0.0324 |
| 87 | 0.0351 | 0.0026 | 0.0325 |
| 88 | 0.0352 | 0.0026 | 0.0326 |
| 89 | 0.0353 | 0.0026 | 0.0327 |
| 90 | 0.0354 | 0.0026 | 0.0328 |
| 91 | 0.0355 | 0.0026 | 0.0329 |
| 92 | 0.0356 | 0.0026 | 0.0330 |
| 93 | 0.0357 | 0.0026 | 0.0331 |
| 94 | 0.0358 | 0.0026 | 0.0331 |
| 95 | 0.0359 | 0.0026 | 0.0333 |
| 96 | 0.0360 | 0.0026 | 0.0333 |
| 97 | 0.0361 | 0.0027 | 0.0335 |
| 98 | 0.0362 | 0.0027 | 0.0336 |
| 99 | 0.0364 | 0.0027 | 0.0337 |
| 100 | 0.0364 | 0.0027 | 0.0338 |
| 101 | 0.0366 | 0.0027 | 0.0339 |
| 102 | 0.0367 | 0.0027 | 0.0340 |
| 103 | 0.0368 | 0.0027 | 0.0341 |
| 104 | 0.0369 | 0.0027 | 0.0342 |
| 105 | 0.0371 | 0.0027 | 0.0343 |
| 106 | 0.0372 | 0.0027 | 0.0344 |
| 107 | 0.0373 | 0.0027 | 0.0346 |
| 108 | 0.0374 | 0.0028 | 0.0347 |
| 109 | 0.0376 | 0.0028 | 0.0348 |
| 110 | 0.0377 | 0.0028 | 0.0349 |
| 111 | 0.0379 | 0.0028 | 0.0351 |
| 112 | 0.0379 | 0.0028 | 0.0352 |
| 113 | 0.0381 | 0.0028 | 0.0353 |
| 114 | 0.0382 | 0.0028 | 0.0354 |
| 115 | 0.0384 | 0.0028 | 0.0356 |
| 116 | 0.0385 | 0.0028 | 0.0357 |
| 117 | 0.0387 | 0.0028 | 0.0359 |
| 118 | 0.0388 | 0.0029 | 0.0360 |
| 119 | 0.0390 | 0.0029 | 0.0361 |
| 120 | 0.0391 | 0.0029 | 0.0362 |
| 121 | 0.0393 | 0.0029 | 0.0364 |
| 122 | 0.0394 | 0.0029 | 0.0365 |
| 123 | 0.0397 | 0.0029 | 0.0367 |
| 124 | 0.0398 | 0.0029 | 0.0368 |
| 125 | 0.0400 | 0.0029 | 0.0371 |
| 126 | 0.0401 | 0.0030 | 0.0372 |
| 127 | 0.0403 | 0.0030 | 0.0374 |
| 128 | 0.0405 | 0.0030 | 0.0375 |
| 129 | 0.0407 | 0.0030 | 0.0377 |
| 130 | 0.0408 | 0.0030 | 0.0378 |
| 131 | 0.0411 | 0.0030 | 0.0381 |
| 132 | 0.0412 | 0.0030 | 0.0382 |
| 133 | 0.0415 | 0.0031 | 0.0384 |
| 134 | 0.0416 | 0.0031 | 0.0386 |
| 135 | 0.0419 | 0.0031 | 0.0388 |
| 136 | 0.0421 | 0.0031 | 0.0390 |
| 137 | 0.0423 | 0.0031 | 0.0392 |
| 138 | 0.0425 | 0.0031 | 0.0394 |
| 139 | 0.0428 | 0.0032 | 0.0396 |
| 140 | 0.0430 | 0.0032 | 0.0398 |
| 141 | 0.0433 | 0.0032 | 0.0401 |
| 142 | 0.0434 | 0.0032 | 0.0402 |
| 143 | 0.0438 | 0.0032 | 0.0406 |
| 144 | 0.0440 | 0.0032 | 0.0407 |
| 145 | 0.0384 | 0.0028 | 0.0356 |
| 146 | 0.0386 | 0.0028 | 0.0358 |
| 147 | 0.0391 | 0.0029 | 0.0362 |
| 148 | 0.0393 | 0.0029 | 0.0364 |

| | | | |
|---|---|---|---|
| 149 | 0.0398 | 0.0029 | 0.0368 |
| 150 | 0.0400 | 0.0029 | 0.0370 |
| 151 | 0.0405 | 0.0030 | 0.0375 |
| 152 | 0.0407 | 0.0030 | 0.0377 |
| 153 | 0.0413 | 0.0030 | 0.0382 |
| 154 | 0.0415 | 0.0031 | 0.0385 |
| 155 | 0.0421 | 0.0031 | 0.0390 |
| 156 | 0.0424 | 0.0031 | 0.0393 |
| 157 | 0.0430 | 0.0032 | 0.0398 |
| 158 | 0.0433 | 0.0032 | 0.0401 |
| 159 | 0.0440 | 0.0032 | 0.0407 |
| 160 | 0.0443 | 0.0033 | 0.0410 |
| 161 | 0.0450 | 0.0033 | 0.0417 |
| 162 | 0.0454 | 0.0033 | 0.0420 |
| 163 | 0.0462 | 0.0034 | 0.0428 |
| 164 | 0.0466 | 0.0034 | 0.0431 |
| 165 | 0.0474 | 0.0035 | 0.0439 |
| 166 | 0.0479 | 0.0035 | 0.0444 |
| 167 | 0.0488 | 0.0036 | 0.0452 |
| 168 | 0.0493 | 0.0036 | 0.0457 |
| 169 | 0.0504 | 0.0037 | 0.0467 |
| 170 | 0.0510 | 0.0038 | 0.0472 |
| 171 | 0.0521 | 0.0038 | 0.0483 |
| 172 | 0.0528 | 0.0039 | 0.0489 |
| 173 | 0.0541 | 0.0040 | 0.0502 |
| 174 | 0.0549 | 0.0040 | 0.0508 |
| 175 | 0.0564 | 0.0042 | 0.0523 |
| 176 | 0.0573 | 0.0042 | 0.0531 |
| 177 | 0.0591 | 0.0044 | 0.0548 |
| 178 | 0.0601 | 0.0044 | 0.0557 |
| 179 | 0.0623 | 0.0046 | 0.0577 |
| 180 | 0.0635 | 0.0047 | 0.0589 |
| 181 | 0.0663 | 0.0049 | 0.0614 |
| 182 | 0.0678 | 0.0050 | 0.0628 |
| 183 | 0.0713 | 0.0052 | 0.0660 |
| 184 | 0.0732 | 0.0054 | 0.0679 |
| 185 | 0.0386 | 0.0028 | 0.0358 |
| 186 | 0.0412 | 0.0030 | 0.0381 |
| 187 | 0.0478 | 0.0035 | 0.0442 |
| 188 | 0.0521 | 0.0038 | 0.0483 |
| 189 | 0.0648 | 0.0048 | 0.0601 |
| 190 | 0.0747 | 0.0055 | 0.0692 |
| 191 | 0.1133 | 0.0083 | 0.1050 |
| 192 | 0.1645 | 0.0117 | 0.1528 |
| 193 | 0.7115 | 0.0117 | 0.6999 |
| 194 | 0.0892 | 0.0066 | 0.0826 |
| 195 | 0.0576 | 0.0042 | 0.0534 |
| 196 | 0.0442 | 0.0033 | 0.0409 |
| 197 | 0.0755 | 0.0056 | 0.0699 |
| 198 | 0.0694 | 0.0051 | 0.0643 |
| 199 | 0.0648 | 0.0048 | 0.0601 |
| 200 | 0.0612 | 0.0045 | 0.0567 |
| 201 | 0.0582 | 0.0043 | 0.0539 |
| 202 | 0.0556 | 0.0041 | 0.0515 |
| 203 | 0.0534 | 0.0039 | 0.0495 |
| 204 | 0.0515 | 0.0038 | 0.0477 |
| 205 | 0.0498 | 0.0037 | 0.0462 |
| 206 | 0.0483 | 0.0036 | 0.0448 |
| 207 | 0.0470 | 0.0035 | 0.0435 |
| 208 | 0.0458 | 0.0034 | 0.0424 |
| 209 | 0.0447 | 0.0033 | 0.0414 |
| 210 | 0.0436 | 0.0032 | 0.0404 |
| 211 | 0.0427 | 0.0031 | 0.0395 |
| 212 | 0.0418 | 0.0031 | 0.0387 |
| 213 | 0.0410 | 0.0030 | 0.0380 |
| 214 | 0.0402 | 0.0030 | 0.0373 |
| 215 | 0.0395 | 0.0029 | 0.0366 |
| 216 | 0.0389 | 0.0029 | 0.0360 |
| 217 | 0.0441 | 0.0032 | 0.0409 |
| 218 | 0.0436 | 0.0032 | 0.0404 |
| 219 | 0.0431 | 0.0032 | 0.0399 |

| | | | |
|---|---|---|---|
| 220 | 0.0426 | 0.0031 | 0.0395 |
| 221 | 0.0422 | 0.0031 | 0.0391 |
| 222 | 0.0418 | 0.0031 | 0.0387 |
| 223 | 0.0414 | 0.0030 | 0.0383 |
| 224 | 0.0410 | 0.0030 | 0.0380 |
| 225 | 0.0406 | 0.0030 | 0.0376 |
| 226 | 0.0402 | 0.0030 | 0.0373 |
| 227 | 0.0399 | 0.0029 | 0.0369 |
| 228 | 0.0395 | 0.0029 | 0.0366 |
| 229 | 0.0392 | 0.0029 | 0.0363 |
| 230 | 0.0389 | 0.0029 | 0.0360 |
| 231 | 0.0386 | 0.0028 | 0.0358 |
| 232 | 0.0383 | 0.0028 | 0.0355 |
| 233 | 0.0380 | 0.0028 | 0.0352 |
| 234 | 0.0378 | 0.0028 | 0.0350 |
| 235 | 0.0375 | 0.0028 | 0.0347 |
| 236 | 0.0372 | 0.0027 | 0.0345 |
| 237 | 0.0370 | 0.0027 | 0.0343 |
| 238 | 0.0368 | 0.0027 | 0.0340 |
| 239 | 0.0365 | 0.0027 | 0.0338 |
| 240 | 0.0363 | 0.0027 | 0.0336 |
| 241 | 0.0361 | 0.0027 | 0.0334 |
| 242 | 0.0359 | 0.0026 | 0.0332 |
| 243 | 0.0356 | 0.0026 | 0.0330 |
| 244 | 0.0354 | 0.0026 | 0.0328 |
| 245 | 0.0352 | 0.0026 | 0.0326 |
| 246 | 0.0350 | 0.0026 | 0.0325 |
| 247 | 0.0349 | 0.0026 | 0.0323 |
| 248 | 0.0347 | 0.0026 | 0.0321 |
| 249 | 0.0345 | 0.0025 | 0.0319 |
| 250 | 0.0343 | 0.0025 | 0.0318 |
| 251 | 0.0341 | 0.0025 | 0.0316 |
| 252 | 0.0340 | 0.0025 | 0.0315 |
| 253 | 0.0338 | 0.0025 | 0.0313 |
| 254 | 0.0336 | 0.0025 | 0.0312 |
| 255 | 0.0335 | 0.0025 | 0.0310 |
| 256 | 0.0333 | 0.0025 | 0.0309 |
| 257 | 0.0332 | 0.0024 | 0.0307 |
| 258 | 0.0330 | 0.0024 | 0.0306 |
| 259 | 0.0329 | 0.0024 | 0.0305 |
| 260 | 0.0327 | 0.0024 | 0.0303 |
| 261 | 0.0326 | 0.0024 | 0.0302 |
| 262 | 0.0324 | 0.0024 | 0.0301 |
| 263 | 0.0323 | 0.0024 | 0.0299 |
| 264 | 0.0322 | 0.0024 | 0.0298 |
| 265 | 0.0320 | 0.0024 | 0.0297 |
| 266 | 0.0319 | 0.0023 | 0.0296 |
| 267 | 0.0318 | 0.0023 | 0.0295 |
| 268 | 0.0317 | 0.0023 | 0.0293 |
| 269 | 0.0315 | 0.0023 | 0.0292 |
| 270 | 0.0314 | 0.0023 | 0.0291 |
| 271 | 0.0313 | 0.0023 | 0.0290 |
| 272 | 0.0312 | 0.0023 | 0.0289 |
| 273 | 0.0311 | 0.0023 | 0.0288 |
| 274 | 0.0310 | 0.0023 | 0.0287 |
| 275 | 0.0309 | 0.0023 | 0.0286 |
| 276 | 0.0307 | 0.0023 | 0.0285 |
| 277 | 0.0306 | 0.0023 | 0.0284 |
| 278 | 0.0305 | 0.0022 | 0.0283 |
| 279 | 0.0304 | 0.0022 | 0.0282 |
| 280 | 0.0303 | 0.0022 | 0.0281 |
| 281 | 0.0302 | 0.0022 | 0.0280 |
| 282 | 0.0301 | 0.0022 | 0.0279 |
| 283 | 0.0300 | 0.0022 | 0.0278 |
| 284 | 0.0299 | 0.0022 | 0.0277 |
| 285 | 0.0298 | 0.0022 | 0.0276 |
| 286 | 0.0297 | 0.0022 | 0.0276 |
| 287 | 0.0296 | 0.0022 | 0.0275 |
| 288 | 0.0296 | 0.0022 | 0.0274 |

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      Total soil rain loss =      0.84(In)
      Total effective rainfall =     11.16(In)
      Peak flow rate in flood hydrograph =     26.49(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
-----------------------------------------------------------------------------
  0+ 5       0.0010      0.14  Q         |         |         |         |
  0+10       0.0074      0.94  VQ        |         |         |         |
  0+15       0.0187      1.64  V Q       |         |         |         |
  0+20       0.0318      1.91  V Q       |         |         |         |
  0+25       0.0460      2.06  V Q       |         |         |         |
  0+30       0.0608      2.14  V Q       |         |         |         |
  0+35       0.0758      2.19  V Q       |         |         |         |
  0+40       0.0910      2.21  V Q       |         |         |         |
  0+45       0.1063      2.22  V Q       |         |         |         |
  0+50       0.1217      2.23  V Q       |         |         |         |
  0+55       0.1372      2.24  V Q       |         |         |         |
  1+ 0       0.1527      2.25  V Q       |         |         |         |
  1+ 5       0.1682      2.25  |V Q       |         |         |         |
  1+10       0.1837      2.26  |V Q       |         |         |         |
  1+15       0.1993      2.26  |V Q       |         |         |         |
  1+20       0.2149      2.26  |V Q       |         |         |         |
  1+25       0.2305      2.27  |V Q       |         |         |         |
  1+30       0.2461      2.27  |V Q       |         |         |         |
  1+35       0.2617      2.27  |V Q       |         |         |         |
  1+40       0.2774      2.28  |V Q       |         |         |         |
  1+45       0.2931      2.28  |V Q       |         |         |         |
  1+50       0.3089      2.29  |V Q       |         |         |         |
  1+55       0.3246      2.29  | VQ       |         |         |         |
  2+ 0       0.3404      2.29  | VQ       |         |         |         |
  2+ 5       0.3563      2.30  | VQ       |         |         |         |
  2+10       0.3721      2.30  | VQ       |         |         |         |
  2+15       0.3880      2.30  | VQ       |         |         |         |
  2+20       0.4039      2.31  | VQ       |         |         |         |
  2+25       0.4198      2.31  | VQ       |         |         |         |
  2+30       0.4358      2.32  | VQ       |         |         |         |
  2+35       0.4518      2.32  | VQ       |         |         |         |
  2+40       0.4678      2.33  |  Q       |         |         |         |
  2+45       0.4838      2.33  |  Q       |         |         |         |
  2+50       0.4999      2.33  |  Q       |         |         |         |
  2+55       0.5160      2.34  |  Q       |         |         |         |
  3+ 0       0.5321      2.34  |  Q       |         |         |         |
  3+ 5       0.5483      2.35  |  Q       |         |         |         |
  3+10       0.5645      2.35  |  Q       |         |         |         |
  3+15       0.5807      2.36  |  Q       |         |         |         |
  3+20       0.5969      2.36  |  Q       |         |         |         |
  3+25       0.6132      2.36  |  Q       |         |         |         |
  3+30       0.6295      2.37  |  QV      |         |         |         |
  3+35       0.6459      2.37  |  QV      |         |         |         |
  3+40       0.6623      2.38  |  QV      |         |         |         |
  3+45       0.6787      2.38  |  QV      |         |         |         |
  3+50       0.6951      2.39  |  QV      |         |         |         |
  3+55       0.7116      2.39  |  QV      |         |         |         |
  4+ 0       0.7281      2.40  |  QV      |         |         |         |
  4+ 5       0.7446      2.40  |  QV      |         |         |         |
  4+10       0.7612      2.41  |  QV      |         |         |         |
  4+15       0.7778      2.41  |  QV      |         |         |         |
  4+20       0.7945      2.42  |  Q V     |         |         |         |
  4+25       0.8111      2.42  |  Q V     |         |         |         |
  4+30       0.8278      2.43  |  Q V     |         |         |         |
  4+35       0.8446      2.43  |  Q V     |         |         |         |
  4+40       0.8614      2.44  |  Q V     |         |         |         |
  4+45       0.8782      2.44  |  Q V     |         |         |         |
  4+50       0.8950      2.45  |  Q V     |         |         |         |
```

```
 4+55      0.9119      2.45  |  Q V    |         |         |         |
 5+ 0      0.9288      2.46  |  Q V    |         |         |         |
 5+ 5      0.9458      2.46  |  Q  V   |         |         |         |
 5+10      0.9628      2.47  |  Q  V   |         |         |         |
 5+15      0.9798      2.47  |  Q  V   |         |         |         |
 5+20      0.9969      2.48  |  Q  V   |         |         |         |
 5+25      1.0140      2.48  |  Q  V   |         |         |         |
 5+30      1.0312      2.49  |  Q  V   |         |         |         |
 5+35      1.0484      2.50  |  Q  V   |         |         |         |
 5+40      1.0656      2.50  |  Q  V   |         |         |         |
 5+45      1.0828      2.51  |  Q  V   |         |         |         |
 5+50      1.1002      2.51  |  Q   V  |         |         |         |
 5+55      1.1175      2.52  |  Q   V  |         |         |         |
 6+ 0      1.1349      2.53  |  Q   V  |         |         |         |
 6+ 5      1.1523      2.53  |  Q   V  |         |         |         |
 6+10      1.1698      2.54  |  Q   V  |         |         |         |
 6+15      1.1873      2.54  |  Q   V  |         |         |         |
 6+20      1.2049      2.55  |  Q   V  |         |         |         |
 6+25      1.2225      2.56  |  Q   V  |         |         |         |
 6+30      1.2401      2.56  |  Q   V  |         |         |         |
 6+35      1.2578      2.57  |  Q    V |         |         |         |
 6+40      1.2756      2.58  |  Q    V |         |         |         |
 6+45      1.2933      2.58  |  Q    V |         |         |         |
 6+50      1.3112      2.59  |  Q    V |         |         |         |
 6+55      1.3290      2.60  |  Q    V |         |         |         |
 7+ 0      1.3470      2.60  |  Q    V |         |         |         |
 7+ 5      1.3649      2.61  |  Q    V |         |         |         |
 7+10      1.3829      2.62  |  Q    V |         |         |         |
 7+15      1.4010      2.62  |  Q    V |         |         |         |
 7+20      1.4191      2.63  |  Q     V|         |         |         |
 7+25      1.4373      2.64  |  Q     V|         |         |         |
 7+30      1.4555      2.64  |  Q     V|         |         |         |
 7+35      1.4738      2.65  |  Q     V|         |         |         |
 7+40      1.4921      2.66  |  Q     V|         |         |         |
 7+45      1.5105      2.67  |  Q     V|         |         |         |
 7+50      1.5289      2.68  |  Q     V|         |         |         |
 7+55      1.5474      2.68  |  Q     V|         |         |         |
 8+ 0      1.5659      2.69  |  Q      V         |         |         |
 8+ 5      1.5845      2.70  |  Q      V         |         |         |
 8+10      1.6031      2.71  |  Q      V         |         |         |
 8+15      1.6218      2.72  |  Q      V         |         |         |
 8+20      1.6406      2.72  |  Q      V         |         |         |
 8+25      1.6594      2.73  |  Q      V         |         |         |
 8+30      1.6783      2.74  |  Q      V         |         |         |
 8+35      1.6972      2.75  |  Q      V         |         |         |
 8+40      1.7162      2.76  |  Q       |V       |         |         |
 8+45      1.7353      2.77  |  Q       |V       |         |         |
 8+50      1.7544      2.78  |  Q       |V       |         |         |
 8+55      1.7736      2.79  |  Q       |V       |         |         |
 9+ 0      1.7928      2.79  |  Q       |V       |         |         |
 9+ 5      1.8121      2.80  |  Q       |V       |         |         |
 9+10      1.8315      2.81  |  Q       |V       |         |         |
 9+15      1.8509      2.82  |  Q       |V       |         |         |
 9+20      1.8705      2.83  |  Q       |V       |         |         |
 9+25      1.8900      2.84  |  Q       | V      |         |         |
 9+30      1.9097      2.85  |  Q       | V      |         |         |
 9+35      1.9294      2.86  |  Q       | V      |         |         |
 9+40      1.9492      2.87  |  Q       | V      |         |         |
 9+45      1.9691      2.89  |  Q       | V      |         |         |
 9+50      1.9890      2.90  |  Q       | V      |         |         |
 9+55      2.0091      2.91  |  Q       | V      |         |         |
10+ 0      2.0292      2.92  |  Q       |  V     |         |         |
10+ 5      2.0493      2.93  |  Q       |  V     |         |         |
10+10      2.0696      2.94  |  Q       |  V     |         |         |
10+15      2.0899      2.95  |  Q       |  V     |         |         |
10+20      2.1104      2.97  |  Q       |  V     |         |         |
10+25      2.1309      2.98  |  Q       |  V     |         |         |
10+30      2.1515      2.99  |  Q       |  V     |         |         |
10+35      2.1722      3.00  |   Q      |  V     |         |         |
10+40      2.1929      3.02  |   Q      |   V    |         |         |
10+45      2.2138      3.03  |   Q      |   V    |         |         |
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10+50       2.2348      3.04  |   Q     |   V     |         |         |
10+55       2.2558      3.06  |   Q     |   V     |         |         |
11+ 0       2.2770      3.07  |   Q     |   V     |         |         |
11+ 5       2.2982      3.09  |   Q     |   V     |         |         |
11+10       2.3196      3.10  |   Q     |   V     |         |         |
11+15       2.3411      3.12  |   Q     |    V    |         |         |
11+20       2.3626      3.13  |   Q     |    V    |         |         |
11+25       2.3843      3.15  |   Q     |    V    |         |         |
11+30       2.4061      3.16  |   Q     |    V    |         |         |
11+35       2.4280      3.18  |   Q     |    V    |         |         |
11+40       2.4500      3.20  |   Q     |    V    |         |         |
11+45       2.4721      3.21  |   Q     |    V    |         |         |
11+50       2.4944      3.23  |   Q     |     V   |         |         |
11+55       2.5168      3.25  |   Q     |     V   |         |         |
12+ 0       2.5393      3.27  |   Q     |     V   |         |         |
12+ 5       2.5617      3.26  |   Q     |     V   |         |         |
12+10       2.5832      3.12  |   Q     |     V   |         |         |
12+15       2.6039      3.00  |   Q     |     V   |         |         |
12+20       2.6244      2.97  |  Q      |     V   |         |         |
12+25       2.6448      2.97  |  Q      |     V   |         |         |
12+30       2.6653      2.97  |  Q      |      V  |         |         |
12+35       2.6859      2.99  |  Q      |      V  |         |         |
12+40       2.7066      3.02  |   Q     |      V  |         |         |
12+45       2.7276      3.04  |   Q     |      V  |         |         |
12+50       2.7487      3.07  |   Q     |      V  |         |         |
12+55       2.7700      3.10  |   Q     |      V  |         |         |
13+ 0       2.7915      3.13  |   Q     |      V  |         |         |
13+ 5       2.8133      3.16  |   Q     |       V |         |         |
13+10       2.8353      3.19  |   Q     |       V |         |         |
13+15       2.8575      3.22  |   Q     |       V |         |         |
13+20       2.8799      3.26  |   Q     |       V |         |         |
13+25       2.9026      3.30  |   Q     |       V |         |         |
13+30       2.9256      3.34  |   Q     |       V |         |         |
13+35       2.9489      3.38  |   Q     |       V |         |         |
13+40       2.9724      3.42  |   Q     |        V|         |         |
13+45       2.9962      3.46  |   Q     |        V|         |         |
13+50       3.0204      3.51  |   Q     |        V|         |         |
13+55       3.0449      3.56  |   Q     |        V|         |         |
14+ 0       3.0697      3.61  |   Q     |        V|         |         |
14+ 5       3.0949      3.66  |   Q     |        V|         |         |
14+10       3.1206      3.72  |   Q     |         V         |         |
14+15       3.1466      3.78  |    Q    |         V         |         |
14+20       3.1730      3.84  |    Q    |         V         |         |
14+25       3.1999      3.91  |    Q    |         V         |         |
14+30       3.2274      3.98  |    Q    |         V         |         |
14+35       3.2553      4.06  |    Q    |         V         |         |
14+40       3.2838      4.14  |    Q    |         |V        |         |
14+45       3.3129      4.23  |    Q    |         |V        |         |
14+50       3.3427      4.33  |    Q    |         |V        |         |
14+55       3.3732      4.43  |    Q    |         |V        |         |
15+ 0       3.4045      4.54  |     Q   |         |V        |         |
15+ 5       3.4366      4.67  |     Q   |         | V       |         |
15+10       3.4697      4.81  |     Q   |         | V       |         |
15+15       3.5039      4.96  |     Q   |         | V       |         |
15+20       3.5393      5.14  |     Q   |         | V       |         |
15+25       3.5748      5.15  |     Q   |         | V       |         |
15+30       3.6045      4.32  |    Q    |         |  V      |         |
15+35       3.6296      3.64  |   Q     |         |  V      |         |
15+40       3.6545      3.62  |   Q     |         |  V      |         |
15+45       3.6808      3.82  |    Q    |         |  V      |         |
15+50       3.7103      4.29  |    Q    |         |  V      |         |
15+55       3.7453      5.07  |     Q   |         |   V     |         |
16+ 0       3.7916      6.74  |       Q |         |   V     |         |
16+ 5       3.8742     11.98  |         |    Q    |   V     |         |
16+10       4.0566     26.49  |         |         |     V   |    Q    |
16+15       4.2162     23.17  |         |         |      V  Q         |
16+20       4.2982     11.90  |         |    Q    |      V  |         |
16+25       4.3548      8.22  |         Q         |      V  |         |
16+30       4.4023      6.90  |        Q|         |       V |         |
16+35       4.4444      6.12  |       Q |         |       V |         |
16+40       4.4816      5.40  |      Q  |         |       V |         |
```

```
16+45      4.5165     5.07  |     Q    |          |       V  |          |
16+50      4.5499     4.84  |     Q    |          |        V |          |
16+55      4.5812     4.54  |     Q    |          |        V |          |
17+ 0      4.6102     4.21  |    Q     |          |        V |          |
17+ 5      4.6380     4.04  |    Q     |          |        V |          |
17+10      4.6649     3.90  |    Q     |          |        V |          |
17+15      4.6909     3.78  |    Q     |          |         V          |
17+20      4.7161     3.66  |   Q      |          |         V          |
17+25      4.7406     3.55  |   Q      |          |         V          |
17+30      4.7644     3.46  |   Q      |          |         V          |
17+35      4.7876     3.37  |   Q      |          |         V          |
17+40      4.8103     3.29  |   Q      |          |         V          |
17+45      4.8325     3.22  |   Q      |          |         V          |
17+50      4.8542     3.15  |   Q      |          |          |V        |
17+55      4.8755     3.09  |   Q      |          |          |V        |
18+ 0      4.8964     3.03  |   Q      |          |          |V        |
18+ 5      4.9171     3.01  |   Q      |          |          |V        |
18+10      4.9386     3.12  |   Q      |          |          |V        |
18+15      4.9607     3.21  |   Q      |          |          |V        |
18+20      4.9829     3.22  |   Q      |          |          |V        |
18+25      5.0050     3.21  |   Q      |          |          | V       |
18+30      5.0270     3.19  |   Q      |          |          | V       |
18+35      5.0488     3.17  |   Q      |          |          | V       |
18+40      5.0705     3.14  |   Q      |          |          | V       |
18+45      5.0919     3.11  |   Q      |          |          | V       |
18+50      5.1131     3.08  |   Q      |          |          | V       |
18+55      5.1341     3.05  |   Q      |          |          | V       |
19+ 0      5.1550     3.03  |   Q      |          |          |  V      |
19+ 5      5.1757     3.00  |   Q      |          |          |  V      |
19+10      5.1961     2.98  |  Q       |          |          |  V      |
19+15      5.2165     2.95  |  Q       |          |          |  V      |
19+20      5.2366     2.93  |  Q       |          |          |  V      |
19+25      5.2566     2.90  |  Q       |          |          |  V      |
19+30      5.2765     2.88  |  Q       |          |          |  V      |
19+35      5.2962     2.86  |  Q       |          |          |  V      |
19+40      5.3158     2.84  |  Q       |          |          |   V     |
19+45      5.3352     2.82  |  Q       |          |          |   V     |
19+50      5.3545     2.80  |  Q       |          |          |   V     |
19+55      5.3737     2.78  |  Q       |          |          |   V     |
20+ 0      5.3927     2.76  |  Q       |          |          |   V     |
20+ 5      5.4116     2.75  |  Q       |          |          |   V     |
20+10      5.4304     2.73  |  Q       |          |          |   V     |
20+15      5.4491     2.71  |  Q       |          |          |   V     |
20+20      5.4677     2.70  |  Q       |          |          |    V    |
20+25      5.4862     2.68  |  Q       |          |          |    V    |
20+30      5.5045     2.67  |  Q       |          |          |    V    |
20+35      5.5228     2.65  |  Q       |          |          |    V    |
20+40      5.5409     2.64  |  Q       |          |          |    V    |
20+45      5.5590     2.62  |  Q       |          |          |    V    |
20+50      5.5769     2.61  |  Q       |          |          |    V    |
20+55      5.5948     2.59  |  Q       |          |          |    V    |
21+ 0      5.6126     2.58  |  Q       |          |          |     V   |
21+ 5      5.6302     2.57  |  Q       |          |          |     V   |
21+10      5.6478     2.55  |  Q       |          |          |     V   |
21+15      5.6653     2.54  |  Q       |          |          |     V   |
21+20      5.6828     2.53  |  Q       |          |          |     V   |
21+25      5.7001     2.52  |  Q       |          |          |     V   |
21+30      5.7174     2.51  |  Q       |          |          |     V   |
21+35      5.7345     2.49  |  Q       |          |          |     V   |
21+40      5.7516     2.48  |  Q       |          |          |     V   |
21+45      5.7687     2.47  |  Q       |          |          |      V  |
21+50      5.7856     2.46  |  Q       |          |          |      V  |
21+55      5.8025     2.45  |  Q       |          |          |      V  |
22+ 0      5.8193     2.44  |  Q       |          |          |      V  |
22+ 5      5.8360     2.43  |  Q       |          |          |      V  |
22+10      5.8527     2.42  |  Q       |          |          |      V  |
22+15      5.8693     2.41  |  Q       |          |          |      V  |
22+20      5.8858     2.40  |  Q       |          |          |      V  |
22+25      5.9023     2.39  |  Q       |          |          |      V  |
22+30      5.9187     2.38  |  Q       |          |          |      V  |
22+35      5.9350     2.37  |  Q       |          |          |       V |
```

```
   22+40       5.9513      2.36  |  Q      |         |         |       V |
   22+45       5.9675      2.35  |  Q      |         |         |       V |
   22+50       5.9837      2.35  |  Q      |         |         |       V |
   22+55       5.9998      2.34  |  Q      |         |         |       V |
   23+ 0       6.0158      2.33  |  Q      |         |         |       V |
   23+ 5       6.0318      2.32  |  Q      |         |         |       V |
   23+10       6.0477      2.31  |  Q      |         |         |       V |
   23+15       6.0636      2.30  |  Q      |         |         |       V |
   23+20       6.0794      2.30  |  Q      |         |         |       V |
   23+25       6.0951      2.29  |  Q      |         |         |        V|
   23+30       6.1109      2.28  |  Q      |         |         |        V|
   23+35       6.1265      2.27  |  Q      |         |         |        V|
   23+40       6.1421      2.27  |  Q      |         |         |        V|
   23+45       6.1577      2.26  |  Q      |         |         |        V|
   23+50       6.1732      2.25  |  Q      |         |         |        V|
   23+55       6.1886      2.24  | Q       |         |         |        V|
   24+ 0       6.2040      2.24  | Q       |         |         |        V|
   24+ 5       6.2184      2.09  | Q       |         |         |        V|
   24+10       6.2273      1.29  |Q        |         |         |        V|
   24+15       6.2313      0.58  Q         |         |         |        V|
   24+20       6.2334      0.32  Q         |         |         |        V|
   24+25       6.2346      0.17  Q         |         |         |        V|
   24+30       6.2352      0.08  Q         |         |         |        V|
   24+35       6.2355      0.04  Q         |         |         |        V|
   24+40       6.2357      0.03  Q         |         |         |        V|
   24+45       6.2358      0.02  Q         |         |         |        V|
   24+50       6.2358      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area ‘G’ – 2 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'G'
2 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            25.42            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      47.4         25.42      1.000     0.840    1.000    0.840

Area-averaged adjusted loss rate Fm (In/Hr) =  0.840

********* Area-Averaged low loss rate fraction, Yb **********
```

```
Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC1)           Yield Fr
    25.42   1.000         67.0      47.4      11.10     0.062

Area-averaged catchment yield fraction, Y =  0.062
Area-averaged low loss fraction, Yb =  0.938
User entry of time of concentration  =   0.228 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      25.42(Ac.)
Catchment Lag time =   0.182 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 45.6871
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.840(In/Hr)
Average low loss rate fraction (Yb) = 0.938 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall =  0.309(In)
Computed peak 30-minute rainfall =  0.528(In)
Specified peak 1-hour rainfall =  0.651(In)
Computed peak 3-hour rainfall =  1.295(In)
Specified peak 6-hour rainfall =  2.000(In)
Specified peak 24-hour rainfall =  4.000(In)


Rainfall depth area reduction factors:
Using a total area of      25.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.308(In)
30-minute factor = 0.999    Adjusted rainfall =  0.528(In)
1-hour factor = 0.999       Adjusted rainfall =  0.650(In)
3-hour factor = 1.000       Adjusted rainfall =  1.295(In)
6-hour factor = 1.000       Adjusted rainfall =  2.000(In)
24-hour factor = 1.000      Adjusted rainfall =  4.000(In)
------------------------------------------------------------------------

                      U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
------------------------------------------------------------------------
               (K =       307.42 (CFS))

  1                3.770                  11.590
  2               19.507                  48.379
  3               57.188                 115.840
  4               74.099                  51.988
  5               83.072                  27.584
  6               89.001                  18.226
  7               93.088                  12.567
  8               95.822                   8.402
  9               97.540                   5.282
 10               98.307                   2.360
 11               98.797                   1.505
 12               99.152                   1.093
 13               99.469                   0.973
 14               99.765                   0.912
 15               99.923                   0.483
 16              100.000                   0.238
------------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.3083              0.3083
  2              0.3796              0.0713
  3              0.4287              0.0491
  4              0.4673              0.0386
  5              0.4997              0.0324
  6              0.5278              0.0281
  7              0.5527              0.0250
  8              0.5753              0.0226
  9              0.5960              0.0207
 10              0.6152              0.0191
```

| | | |
|---|---|---|
| 11 | 0.6330 | 0.0178 |
| 12 | 0.6497 | 0.0167 |
| 13 | 0.6832 | 0.0335 |
| 14 | 0.7158 | 0.0325 |
| 15 | 0.7474 | 0.0317 |
| 16 | 0.7783 | 0.0309 |
| 17 | 0.8085 | 0.0302 |
| 18 | 0.8381 | 0.0295 |
| 19 | 0.8670 | 0.0289 |
| 20 | 0.8954 | 0.0284 |
| 21 | 0.9232 | 0.0278 |
| 22 | 0.9506 | 0.0274 |
| 23 | 0.9775 | 0.0269 |
| 24 | 1.0040 | 0.0265 |
| 25 | 1.0300 | 0.0261 |
| 26 | 1.0557 | 0.0257 |
| 27 | 1.0810 | 0.0253 |
| 28 | 1.1060 | 0.0250 |
| 29 | 1.1306 | 0.0246 |
| 30 | 1.1549 | 0.0243 |
| 31 | 1.1790 | 0.0240 |
| 32 | 1.2027 | 0.0237 |
| 33 | 1.2262 | 0.0235 |
| 34 | 1.2494 | 0.0232 |
| 35 | 1.2723 | 0.0229 |
| 36 | 1.2950 | 0.0227 |
| 37 | 1.3174 | 0.0224 |
| 38 | 1.3396 | 0.0222 |
| 39 | 1.3616 | 0.0220 |
| 40 | 1.3834 | 0.0218 |
| 41 | 1.4050 | 0.0216 |
| 42 | 1.4264 | 0.0214 |
| 43 | 1.4476 | 0.0212 |
| 44 | 1.4686 | 0.0210 |
| 45 | 1.4894 | 0.0208 |
| 46 | 1.5101 | 0.0207 |
| 47 | 1.5306 | 0.0205 |
| 48 | 1.5509 | 0.0203 |
| 49 | 1.5711 | 0.0202 |
| 50 | 1.5912 | 0.0200 |
| 51 | 1.6110 | 0.0199 |
| 52 | 1.6308 | 0.0197 |
| 53 | 1.6504 | 0.0196 |
| 54 | 1.6698 | 0.0195 |
| 55 | 1.6891 | 0.0193 |
| 56 | 1.7083 | 0.0192 |
| 57 | 1.7274 | 0.0191 |
| 58 | 1.7463 | 0.0189 |
| 59 | 1.7651 | 0.0188 |
| 60 | 1.7838 | 0.0187 |
| 61 | 1.8024 | 0.0186 |
| 62 | 1.8209 | 0.0185 |
| 63 | 1.8392 | 0.0184 |
| 64 | 1.8575 | 0.0182 |
| 65 | 1.8756 | 0.0181 |
| 66 | 1.8937 | 0.0180 |
| 67 | 1.9116 | 0.0179 |
| 68 | 1.9294 | 0.0178 |
| 69 | 1.9472 | 0.0177 |
| 70 | 1.9648 | 0.0176 |
| 71 | 1.9824 | 0.0176 |
| 72 | 1.9998 | 0.0175 |
| 73 | 2.0137 | 0.0138 |
| 74 | 2.0274 | 0.0137 |
| 75 | 2.0411 | 0.0137 |
| 76 | 2.0546 | 0.0136 |
| 77 | 2.0681 | 0.0135 |
| 78 | 2.0815 | 0.0134 |
| 79 | 2.0948 | 0.0133 |
| 80 | 2.1080 | 0.0132 |
| 81 | 2.1212 | 0.0131 |

| | | |
|---|---|---|
| 82 | 2.1342 | 0.0131 |
| 83 | 2.1472 | 0.0130 |
| 84 | 2.1601 | 0.0129 |
| 85 | 2.1729 | 0.0128 |
| 86 | 2.1857 | 0.0127 |
| 87 | 2.1983 | 0.0127 |
| 88 | 2.2109 | 0.0126 |
| 89 | 2.2235 | 0.0125 |
| 90 | 2.2359 | 0.0125 |
| 91 | 2.2483 | 0.0124 |
| 92 | 2.2606 | 0.0123 |
| 93 | 2.2729 | 0.0123 |
| 94 | 2.2851 | 0.0122 |
| 95 | 2.2972 | 0.0121 |
| 96 | 2.3092 | 0.0121 |
| 97 | 2.3212 | 0.0120 |
| 98 | 2.3332 | 0.0119 |
| 99 | 2.3450 | 0.0119 |
| 100 | 2.3569 | 0.0118 |
| 101 | 2.3686 | 0.0118 |
| 102 | 2.3803 | 0.0117 |
| 103 | 2.3920 | 0.0116 |
| 104 | 2.4035 | 0.0116 |
| 105 | 2.4151 | 0.0115 |
| 106 | 2.4265 | 0.0115 |
| 107 | 2.4380 | 0.0114 |
| 108 | 2.4493 | 0.0114 |
| 109 | 2.4606 | 0.0113 |
| 110 | 2.4719 | 0.0113 |
| 111 | 2.4831 | 0.0112 |
| 112 | 2.4943 | 0.0112 |
| 113 | 2.5054 | 0.0111 |
| 114 | 2.5165 | 0.0111 |
| 115 | 2.5275 | 0.0110 |
| 116 | 2.5384 | 0.0110 |
| 117 | 2.5493 | 0.0109 |
| 118 | 2.5602 | 0.0109 |
| 119 | 2.5710 | 0.0108 |
| 120 | 2.5818 | 0.0108 |
| 121 | 2.5926 | 0.0107 |
| 122 | 2.6033 | 0.0107 |
| 123 | 2.6139 | 0.0106 |
| 124 | 2.6245 | 0.0106 |
| 125 | 2.6351 | 0.0106 |
| 126 | 2.6456 | 0.0105 |
| 127 | 2.6561 | 0.0105 |
| 128 | 2.6665 | 0.0104 |
| 129 | 2.6769 | 0.0104 |
| 130 | 2.6873 | 0.0104 |
| 131 | 2.6976 | 0.0103 |
| 132 | 2.7079 | 0.0103 |
| 133 | 2.7181 | 0.0102 |
| 134 | 2.7283 | 0.0102 |
| 135 | 2.7385 | 0.0102 |
| 136 | 2.7486 | 0.0101 |
| 137 | 2.7587 | 0.0101 |
| 138 | 2.7687 | 0.0101 |
| 139 | 2.7787 | 0.0100 |
| 140 | 2.7887 | 0.0100 |
| 141 | 2.7987 | 0.0099 |
| 142 | 2.8086 | 0.0099 |
| 143 | 2.8184 | 0.0099 |
| 144 | 2.8283 | 0.0098 |
| 145 | 2.8381 | 0.0098 |
| 146 | 2.8478 | 0.0098 |
| 147 | 2.8576 | 0.0097 |
| 148 | 2.8673 | 0.0097 |
| 149 | 2.8770 | 0.0097 |
| 150 | 2.8866 | 0.0096 |
| 151 | 2.8962 | 0.0096 |
| 152 | 2.9058 | 0.0096 |

| | | |
|---|---|---|
| 153 | 2.9153 | 0.0095 |
| 154 | 2.9248 | 0.0095 |
| 155 | 2.9343 | 0.0095 |
| 156 | 2.9438 | 0.0095 |
| 157 | 2.9532 | 0.0094 |
| 158 | 2.9626 | 0.0094 |
| 159 | 2.9719 | 0.0094 |
| 160 | 2.9813 | 0.0093 |
| 161 | 2.9906 | 0.0093 |
| 162 | 2.9998 | 0.0093 |
| 163 | 3.0091 | 0.0092 |
| 164 | 3.0183 | 0.0092 |
| 165 | 3.0275 | 0.0092 |
| 166 | 3.0367 | 0.0092 |
| 167 | 3.0458 | 0.0091 |
| 168 | 3.0549 | 0.0091 |
| 169 | 3.0640 | 0.0091 |
| 170 | 3.0730 | 0.0091 |
| 171 | 3.0821 | 0.0090 |
| 172 | 3.0911 | 0.0090 |
| 173 | 3.1000 | 0.0090 |
| 174 | 3.1090 | 0.0089 |
| 175 | 3.1179 | 0.0089 |
| 176 | 3.1268 | 0.0089 |
| 177 | 3.1357 | 0.0089 |
| 178 | 3.1445 | 0.0088 |
| 179 | 3.1533 | 0.0088 |
| 180 | 3.1621 | 0.0088 |
| 181 | 3.1709 | 0.0088 |
| 182 | 3.1796 | 0.0087 |
| 183 | 3.1884 | 0.0087 |
| 184 | 3.1971 | 0.0087 |
| 185 | 3.2057 | 0.0087 |
| 186 | 3.2144 | 0.0087 |
| 187 | 3.2230 | 0.0086 |
| 188 | 3.2316 | 0.0086 |
| 189 | 3.2402 | 0.0086 |
| 190 | 3.2488 | 0.0086 |
| 191 | 3.2573 | 0.0085 |
| 192 | 3.2658 | 0.0085 |
| 193 | 3.2743 | 0.0085 |
| 194 | 3.2828 | 0.0085 |
| 195 | 3.2913 | 0.0085 |
| 196 | 3.2997 | 0.0084 |
| 197 | 3.3081 | 0.0084 |
| 198 | 3.3165 | 0.0084 |
| 199 | 3.3248 | 0.0084 |
| 200 | 3.3332 | 0.0083 |
| 201 | 3.3415 | 0.0083 |
| 202 | 3.3498 | 0.0083 |
| 203 | 3.3581 | 0.0083 |
| 204 | 3.3664 | 0.0083 |
| 205 | 3.3746 | 0.0082 |
| 206 | 3.3828 | 0.0082 |
| 207 | 3.3910 | 0.0082 |
| 208 | 3.3992 | 0.0082 |
| 209 | 3.4074 | 0.0082 |
| 210 | 3.4155 | 0.0081 |
| 211 | 3.4236 | 0.0081 |
| 212 | 3.4317 | 0.0081 |
| 213 | 3.4398 | 0.0081 |
| 214 | 3.4479 | 0.0081 |
| 215 | 3.4559 | 0.0080 |
| 216 | 3.4640 | 0.0080 |
| 217 | 3.4720 | 0.0080 |
| 218 | 3.4800 | 0.0080 |
| 219 | 3.4879 | 0.0080 |
| 220 | 3.4959 | 0.0080 |
| 221 | 3.5038 | 0.0079 |
| 222 | 3.5117 | 0.0079 |
| 223 | 3.5196 | 0.0079 |

| | | |
|---|---|---|
| 224 | 3.5275 | 0.0079 |
| 225 | 3.5354 | 0.0079 |
| 226 | 3.5432 | 0.0078 |
| 227 | 3.5511 | 0.0078 |
| 228 | 3.5589 | 0.0078 |
| 229 | 3.5667 | 0.0078 |
| 230 | 3.5745 | 0.0078 |
| 231 | 3.5822 | 0.0078 |
| 232 | 3.5900 | 0.0077 |
| 233 | 3.5977 | 0.0077 |
| 234 | 3.6054 | 0.0077 |
| 235 | 3.6131 | 0.0077 |
| 236 | 3.6208 | 0.0077 |
| 237 | 3.6285 | 0.0077 |
| 238 | 3.6361 | 0.0076 |
| 239 | 3.6437 | 0.0076 |
| 240 | 3.6513 | 0.0076 |
| 241 | 3.6589 | 0.0076 |
| 242 | 3.6665 | 0.0076 |
| 243 | 3.6741 | 0.0076 |
| 244 | 3.6816 | 0.0076 |
| 245 | 3.6892 | 0.0075 |
| 246 | 3.6967 | 0.0075 |
| 247 | 3.7042 | 0.0075 |
| 248 | 3.7117 | 0.0075 |
| 249 | 3.7192 | 0.0075 |
| 250 | 3.7266 | 0.0075 |
| 251 | 3.7341 | 0.0074 |
| 252 | 3.7415 | 0.0074 |
| 253 | 3.7489 | 0.0074 |
| 254 | 3.7563 | 0.0074 |
| 255 | 3.7637 | 0.0074 |
| 256 | 3.7711 | 0.0074 |
| 257 | 3.7785 | 0.0074 |
| 258 | 3.7858 | 0.0073 |
| 259 | 3.7931 | 0.0073 |
| 260 | 3.8005 | 0.0073 |
| 261 | 3.8078 | 0.0073 |
| 262 | 3.8150 | 0.0073 |
| 263 | 3.8223 | 0.0073 |
| 264 | 3.8296 | 0.0073 |
| 265 | 3.8368 | 0.0072 |
| 266 | 3.8441 | 0.0072 |
| 267 | 3.8513 | 0.0072 |
| 268 | 3.8585 | 0.0072 |
| 269 | 3.8657 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8800 | 0.0072 |
| 272 | 3.8872 | 0.0072 |
| 273 | 3.8943 | 0.0071 |
| 274 | 3.9014 | 0.0071 |
| 275 | 3.9085 | 0.0071 |
| 276 | 3.9156 | 0.0071 |
| 277 | 3.9227 | 0.0071 |
| 278 | 3.9298 | 0.0071 |
| 279 | 3.9369 | 0.0071 |
| 280 | 3.9439 | 0.0070 |
| 281 | 3.9510 | 0.0070 |
| 282 | 3.9580 | 0.0070 |
| 283 | 3.9650 | 0.0070 |
| 284 | 3.9720 | 0.0070 |
| 285 | 3.9790 | 0.0070 |
| 286 | 3.9860 | 0.0070 |
| 287 | 3.9929 | 0.0070 |
| 288 | 3.9999 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0065 | 0.0004 |

| | | | |
|---|---|---|---|
| 2 | 0.0070 | 0.0065 | 0.0004 |
| 3 | 0.0070 | 0.0066 | 0.0004 |
| 4 | 0.0070 | 0.0066 | 0.0004 |
| 5 | 0.0070 | 0.0066 | 0.0004 |
| 6 | 0.0070 | 0.0066 | 0.0004 |
| 7 | 0.0071 | 0.0066 | 0.0004 |
| 8 | 0.0071 | 0.0066 | 0.0004 |
| 9 | 0.0071 | 0.0067 | 0.0004 |
| 10 | 0.0071 | 0.0067 | 0.0004 |
| 11 | 0.0071 | 0.0067 | 0.0004 |
| 12 | 0.0072 | 0.0067 | 0.0004 |
| 13 | 0.0072 | 0.0067 | 0.0004 |
| 14 | 0.0072 | 0.0067 | 0.0004 |
| 15 | 0.0072 | 0.0068 | 0.0004 |
| 16 | 0.0072 | 0.0068 | 0.0004 |
| 17 | 0.0073 | 0.0068 | 0.0004 |
| 18 | 0.0073 | 0.0068 | 0.0004 |
| 19 | 0.0073 | 0.0069 | 0.0004 |
| 20 | 0.0073 | 0.0069 | 0.0005 |
| 21 | 0.0073 | 0.0069 | 0.0005 |
| 22 | 0.0074 | 0.0069 | 0.0005 |
| 23 | 0.0074 | 0.0069 | 0.0005 |
| 24 | 0.0074 | 0.0069 | 0.0005 |
| 25 | 0.0074 | 0.0070 | 0.0005 |
| 26 | 0.0074 | 0.0070 | 0.0005 |
| 27 | 0.0075 | 0.0070 | 0.0005 |
| 28 | 0.0075 | 0.0070 | 0.0005 |
| 29 | 0.0075 | 0.0071 | 0.0005 |
| 30 | 0.0075 | 0.0071 | 0.0005 |
| 31 | 0.0076 | 0.0071 | 0.0005 |
| 32 | 0.0076 | 0.0071 | 0.0005 |
| 33 | 0.0076 | 0.0071 | 0.0005 |
| 34 | 0.0076 | 0.0072 | 0.0005 |
| 35 | 0.0077 | 0.0072 | 0.0005 |
| 36 | 0.0077 | 0.0072 | 0.0005 |
| 37 | 0.0077 | 0.0072 | 0.0005 |
| 38 | 0.0077 | 0.0073 | 0.0005 |
| 39 | 0.0078 | 0.0073 | 0.0005 |
| 40 | 0.0078 | 0.0073 | 0.0005 |
| 41 | 0.0078 | 0.0073 | 0.0005 |
| 42 | 0.0078 | 0.0073 | 0.0005 |
| 43 | 0.0079 | 0.0074 | 0.0005 |
| 44 | 0.0079 | 0.0074 | 0.0005 |
| 45 | 0.0079 | 0.0074 | 0.0005 |
| 46 | 0.0079 | 0.0074 | 0.0005 |
| 47 | 0.0080 | 0.0075 | 0.0005 |
| 48 | 0.0080 | 0.0075 | 0.0005 |
| 49 | 0.0080 | 0.0075 | 0.0005 |
| 50 | 0.0080 | 0.0076 | 0.0005 |
| 51 | 0.0081 | 0.0076 | 0.0005 |
| 52 | 0.0081 | 0.0076 | 0.0005 |
| 53 | 0.0081 | 0.0076 | 0.0005 |
| 54 | 0.0082 | 0.0077 | 0.0005 |
| 55 | 0.0082 | 0.0077 | 0.0005 |
| 56 | 0.0082 | 0.0077 | 0.0005 |
| 57 | 0.0083 | 0.0078 | 0.0005 |
| 58 | 0.0083 | 0.0078 | 0.0005 |
| 59 | 0.0083 | 0.0078 | 0.0005 |
| 60 | 0.0083 | 0.0078 | 0.0005 |
| 61 | 0.0084 | 0.0079 | 0.0005 |
| 62 | 0.0084 | 0.0079 | 0.0005 |
| 63 | 0.0085 | 0.0079 | 0.0005 |
| 64 | 0.0085 | 0.0080 | 0.0005 |
| 65 | 0.0085 | 0.0080 | 0.0005 |
| 66 | 0.0085 | 0.0080 | 0.0005 |
| 67 | 0.0086 | 0.0081 | 0.0005 |
| 68 | 0.0086 | 0.0081 | 0.0005 |
| 69 | 0.0087 | 0.0081 | 0.0005 |
| 70 | 0.0087 | 0.0081 | 0.0005 |
| 71 | 0.0087 | 0.0082 | 0.0005 |
| 72 | 0.0087 | 0.0082 | 0.0005 |

| | | | |
|---|---|---|---|
| 73 | 0.0088 | 0.0083 | 0.0005 |
| 74 | 0.0088 | 0.0083 | 0.0005 |
| 75 | 0.0089 | 0.0083 | 0.0005 |
| 76 | 0.0089 | 0.0083 | 0.0005 |
| 77 | 0.0089 | 0.0084 | 0.0006 |
| 78 | 0.0090 | 0.0084 | 0.0006 |
| 79 | 0.0090 | 0.0085 | 0.0006 |
| 80 | 0.0091 | 0.0085 | 0.0006 |
| 81 | 0.0091 | 0.0085 | 0.0006 |
| 82 | 0.0091 | 0.0086 | 0.0006 |
| 83 | 0.0092 | 0.0086 | 0.0006 |
| 84 | 0.0092 | 0.0086 | 0.0006 |
| 85 | 0.0093 | 0.0087 | 0.0006 |
| 86 | 0.0093 | 0.0087 | 0.0006 |
| 87 | 0.0094 | 0.0088 | 0.0006 |
| 88 | 0.0094 | 0.0088 | 0.0006 |
| 89 | 0.0095 | 0.0089 | 0.0006 |
| 90 | 0.0095 | 0.0089 | 0.0006 |
| 91 | 0.0095 | 0.0090 | 0.0006 |
| 92 | 0.0096 | 0.0090 | 0.0006 |
| 93 | 0.0096 | 0.0090 | 0.0006 |
| 94 | 0.0097 | 0.0091 | 0.0006 |
| 95 | 0.0097 | 0.0091 | 0.0006 |
| 96 | 0.0098 | 0.0092 | 0.0006 |
| 97 | 0.0098 | 0.0092 | 0.0006 |
| 98 | 0.0099 | 0.0093 | 0.0006 |
| 99 | 0.0099 | 0.0093 | 0.0006 |
| 100 | 0.0100 | 0.0094 | 0.0006 |
| 101 | 0.0101 | 0.0094 | 0.0006 |
| 102 | 0.0101 | 0.0095 | 0.0006 |
| 103 | 0.0102 | 0.0095 | 0.0006 |
| 104 | 0.0102 | 0.0096 | 0.0006 |
| 105 | 0.0103 | 0.0096 | 0.0006 |
| 106 | 0.0103 | 0.0097 | 0.0006 |
| 107 | 0.0104 | 0.0098 | 0.0006 |
| 108 | 0.0104 | 0.0098 | 0.0006 |
| 109 | 0.0105 | 0.0099 | 0.0006 |
| 110 | 0.0106 | 0.0099 | 0.0007 |
| 111 | 0.0106 | 0.0100 | 0.0007 |
| 112 | 0.0107 | 0.0100 | 0.0007 |
| 113 | 0.0108 | 0.0101 | 0.0007 |
| 114 | 0.0108 | 0.0102 | 0.0007 |
| 115 | 0.0109 | 0.0102 | 0.0007 |
| 116 | 0.0110 | 0.0103 | 0.0007 |
| 117 | 0.0111 | 0.0104 | 0.0007 |
| 118 | 0.0111 | 0.0104 | 0.0007 |
| 119 | 0.0112 | 0.0105 | 0.0007 |
| 120 | 0.0113 | 0.0106 | 0.0007 |
| 121 | 0.0114 | 0.0107 | 0.0007 |
| 122 | 0.0114 | 0.0107 | 0.0007 |
| 123 | 0.0115 | 0.0108 | 0.0007 |
| 124 | 0.0116 | 0.0109 | 0.0007 |
| 125 | 0.0117 | 0.0110 | 0.0007 |
| 126 | 0.0118 | 0.0110 | 0.0007 |
| 127 | 0.0119 | 0.0111 | 0.0007 |
| 128 | 0.0119 | 0.0112 | 0.0007 |
| 129 | 0.0121 | 0.0113 | 0.0007 |
| 130 | 0.0121 | 0.0114 | 0.0007 |
| 131 | 0.0123 | 0.0115 | 0.0008 |
| 132 | 0.0123 | 0.0116 | 0.0008 |
| 133 | 0.0125 | 0.0117 | 0.0008 |
| 134 | 0.0125 | 0.0118 | 0.0008 |
| 135 | 0.0127 | 0.0119 | 0.0008 |
| 136 | 0.0127 | 0.0120 | 0.0008 |
| 137 | 0.0129 | 0.0121 | 0.0008 |
| 138 | 0.0130 | 0.0122 | 0.0008 |
| 139 | 0.0131 | 0.0123 | 0.0008 |
| 140 | 0.0132 | 0.0124 | 0.0008 |
| 141 | 0.0134 | 0.0126 | 0.0008 |
| 142 | 0.0135 | 0.0126 | 0.0008 |
| 143 | 0.0137 | 0.0128 | 0.0008 |

| | | | |
|---|---|---|---|
| 144 | 0.0137 | 0.0129 | 0.0008 |
| 145 | 0.0175 | 0.0164 | 0.0011 |
| 146 | 0.0176 | 0.0165 | 0.0011 |
| 147 | 0.0177 | 0.0166 | 0.0011 |
| 148 | 0.0178 | 0.0167 | 0.0011 |
| 149 | 0.0180 | 0.0169 | 0.0011 |
| 150 | 0.0181 | 0.0170 | 0.0011 |
| 151 | 0.0184 | 0.0172 | 0.0011 |
| 152 | 0.0185 | 0.0173 | 0.0011 |
| 153 | 0.0187 | 0.0175 | 0.0012 |
| 154 | 0.0188 | 0.0177 | 0.0012 |
| 155 | 0.0191 | 0.0179 | 0.0012 |
| 156 | 0.0192 | 0.0180 | 0.0012 |
| 157 | 0.0195 | 0.0183 | 0.0012 |
| 158 | 0.0196 | 0.0184 | 0.0012 |
| 159 | 0.0199 | 0.0187 | 0.0012 |
| 160 | 0.0200 | 0.0188 | 0.0012 |
| 161 | 0.0203 | 0.0191 | 0.0013 |
| 162 | 0.0205 | 0.0192 | 0.0013 |
| 163 | 0.0208 | 0.0196 | 0.0013 |
| 164 | 0.0210 | 0.0197 | 0.0013 |
| 165 | 0.0214 | 0.0201 | 0.0013 |
| 166 | 0.0216 | 0.0203 | 0.0013 |
| 167 | 0.0220 | 0.0206 | 0.0014 |
| 168 | 0.0222 | 0.0208 | 0.0014 |
| 169 | 0.0227 | 0.0213 | 0.0014 |
| 170 | 0.0229 | 0.0215 | 0.0014 |
| 171 | 0.0235 | 0.0220 | 0.0014 |
| 172 | 0.0237 | 0.0223 | 0.0015 |
| 173 | 0.0243 | 0.0228 | 0.0015 |
| 174 | 0.0246 | 0.0231 | 0.0015 |
| 175 | 0.0253 | 0.0238 | 0.0016 |
| 176 | 0.0257 | 0.0241 | 0.0016 |
| 177 | 0.0265 | 0.0248 | 0.0016 |
| 178 | 0.0269 | 0.0252 | 0.0017 |
| 179 | 0.0278 | 0.0261 | 0.0017 |
| 180 | 0.0284 | 0.0266 | 0.0017 |
| 181 | 0.0295 | 0.0277 | 0.0018 |
| 182 | 0.0302 | 0.0283 | 0.0019 |
| 183 | 0.0317 | 0.0297 | 0.0020 |
| 184 | 0.0325 | 0.0305 | 0.0020 |
| 185 | 0.0167 | 0.0157 | 0.0010 |
| 186 | 0.0178 | 0.0167 | 0.0011 |
| 187 | 0.0207 | 0.0194 | 0.0013 |
| 188 | 0.0226 | 0.0212 | 0.0014 |
| 189 | 0.0281 | 0.0264 | 0.0017 |
| 190 | 0.0324 | 0.0304 | 0.0020 |
| 191 | 0.0491 | 0.0461 | 0.0030 |
| 192 | 0.0713 | 0.0669 | 0.0044 |
| 193 | 0.3083 | 0.0700 | 0.2383 |
| 194 | 0.0386 | 0.0363 | 0.0024 |
| 195 | 0.0250 | 0.0234 | 0.0015 |
| 196 | 0.0191 | 0.0180 | 0.0012 |
| 197 | 0.0335 | 0.0314 | 0.0021 |
| 198 | 0.0309 | 0.0290 | 0.0019 |
| 199 | 0.0289 | 0.0272 | 0.0018 |
| 200 | 0.0274 | 0.0257 | 0.0017 |
| 201 | 0.0261 | 0.0245 | 0.0016 |
| 202 | 0.0250 | 0.0234 | 0.0015 |
| 203 | 0.0240 | 0.0225 | 0.0015 |
| 204 | 0.0232 | 0.0218 | 0.0014 |
| 205 | 0.0224 | 0.0211 | 0.0014 |
| 206 | 0.0218 | 0.0204 | 0.0013 |
| 207 | 0.0212 | 0.0199 | 0.0013 |
| 208 | 0.0207 | 0.0194 | 0.0013 |
| 209 | 0.0202 | 0.0189 | 0.0012 |
| 210 | 0.0197 | 0.0185 | 0.0012 |
| 211 | 0.0193 | 0.0181 | 0.0012 |
| 212 | 0.0189 | 0.0178 | 0.0012 |
| 213 | 0.0186 | 0.0174 | 0.0011 |
| 214 | 0.0182 | 0.0171 | 0.0011 |

| | | | |
|---|---|---|---|
| 215 | 0.0179 | 0.0168 | 0.0011 |
| 216 | 0.0176 | 0.0166 | 0.0011 |
| 217 | 0.0138 | 0.0130 | 0.0009 |
| 218 | 0.0136 | 0.0127 | 0.0008 |
| 219 | 0.0133 | 0.0125 | 0.0008 |
| 220 | 0.0131 | 0.0123 | 0.0008 |
| 221 | 0.0128 | 0.0120 | 0.0008 |
| 222 | 0.0126 | 0.0118 | 0.0008 |
| 223 | 0.0124 | 0.0116 | 0.0008 |
| 224 | 0.0122 | 0.0114 | 0.0008 |
| 225 | 0.0120 | 0.0113 | 0.0007 |
| 226 | 0.0118 | 0.0111 | 0.0007 |
| 227 | 0.0116 | 0.0109 | 0.0007 |
| 228 | 0.0115 | 0.0108 | 0.0007 |
| 229 | 0.0113 | 0.0106 | 0.0007 |
| 230 | 0.0112 | 0.0105 | 0.0007 |
| 231 | 0.0110 | 0.0103 | 0.0007 |
| 232 | 0.0109 | 0.0102 | 0.0007 |
| 233 | 0.0107 | 0.0101 | 0.0007 |
| 234 | 0.0106 | 0.0100 | 0.0007 |
| 235 | 0.0105 | 0.0098 | 0.0006 |
| 236 | 0.0104 | 0.0097 | 0.0006 |
| 237 | 0.0102 | 0.0096 | 0.0006 |
| 238 | 0.0101 | 0.0095 | 0.0006 |
| 239 | 0.0100 | 0.0094 | 0.0006 |
| 240 | 0.0099 | 0.0093 | 0.0006 |
| 241 | 0.0098 | 0.0092 | 0.0006 |
| 242 | 0.0097 | 0.0091 | 0.0006 |
| 243 | 0.0096 | 0.0090 | 0.0006 |
| 244 | 0.0095 | 0.0089 | 0.0006 |
| 245 | 0.0094 | 0.0088 | 0.0006 |
| 246 | 0.0093 | 0.0088 | 0.0006 |
| 247 | 0.0092 | 0.0087 | 0.0006 |
| 248 | 0.0092 | 0.0086 | 0.0006 |
| 249 | 0.0091 | 0.0085 | 0.0006 |
| 250 | 0.0090 | 0.0084 | 0.0006 |
| 251 | 0.0089 | 0.0084 | 0.0005 |
| 252 | 0.0088 | 0.0083 | 0.0005 |
| 253 | 0.0088 | 0.0082 | 0.0005 |
| 254 | 0.0087 | 0.0082 | 0.0005 |
| 255 | 0.0086 | 0.0081 | 0.0005 |
| 256 | 0.0086 | 0.0080 | 0.0005 |
| 257 | 0.0085 | 0.0080 | 0.0005 |
| 258 | 0.0084 | 0.0079 | 0.0005 |
| 259 | 0.0084 | 0.0079 | 0.0005 |
| 260 | 0.0083 | 0.0078 | 0.0005 |
| 261 | 0.0082 | 0.0077 | 0.0005 |
| 262 | 0.0082 | 0.0077 | 0.0005 |
| 263 | 0.0081 | 0.0076 | 0.0005 |
| 264 | 0.0081 | 0.0076 | 0.0005 |
| 265 | 0.0080 | 0.0075 | 0.0005 |
| 266 | 0.0080 | 0.0075 | 0.0005 |
| 267 | 0.0079 | 0.0074 | 0.0005 |
| 268 | 0.0078 | 0.0074 | 0.0005 |
| 269 | 0.0078 | 0.0073 | 0.0005 |
| 270 | 0.0077 | 0.0073 | 0.0005 |
| 271 | 0.0077 | 0.0072 | 0.0005 |
| 272 | 0.0076 | 0.0072 | 0.0005 |
| 273 | 0.0076 | 0.0071 | 0.0005 |
| 274 | 0.0076 | 0.0071 | 0.0005 |
| 275 | 0.0075 | 0.0070 | 0.0005 |
| 276 | 0.0075 | 0.0070 | 0.0005 |
| 277 | 0.0074 | 0.0070 | 0.0005 |
| 278 | 0.0074 | 0.0069 | 0.0005 |
| 279 | 0.0073 | 0.0069 | 0.0005 |
| 280 | 0.0073 | 0.0068 | 0.0004 |
| 281 | 0.0072 | 0.0068 | 0.0004 |
| 282 | 0.0072 | 0.0068 | 0.0004 |
| 283 | 0.0072 | 0.0067 | 0.0004 |
| 284 | 0.0071 | 0.0067 | 0.0004 |
| 285 | 0.0071 | 0.0067 | 0.0004 |

```
      286              0.0070           0.0066              0.0004
      287              0.0070           0.0066              0.0004
      288              0.0070           0.0065              0.0004
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.53(In)
      Total effective rainfall =      0.47(In)
      Peak flow rate in flood hydrograph =     28.14(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
---------------------------------------------------------------------------
  0+ 5       0.0000      0.00  Q         |          |          |          |
  0+10       0.0002      0.03  Q         |          |          |          |
  0+15       0.0007      0.08  Q         |          |          |          |
  0+20       0.0014      0.10  Q         |          |          |          |
  0+25       0.0022      0.11  Q         |          |          |          |
  0+30       0.0030      0.12  Q         |          |          |          |
  0+35       0.0038      0.12  Q         |          |          |          |
  0+40       0.0047      0.13  Q         |          |          |          |
  0+45       0.0056      0.13  Q         |          |          |          |
  0+50       0.0065      0.13  Q         |          |          |          |
  0+55       0.0074      0.13  Q         |          |          |          |
  1+ 0       0.0083      0.13  Q         |          |          |          |
  1+ 5       0.0093      0.13  Q         |          |          |          |
  1+10       0.0102      0.13  Q         |          |          |          |
  1+15       0.0111      0.14  Q         |          |          |          |
  1+20       0.0120      0.14  Q         |          |          |          |
  1+25       0.0130      0.14  Q         |          |          |          |
  1+30       0.0139      0.14  Q         |          |          |          |
  1+35       0.0149      0.14  Q         |          |          |          |
  1+40       0.0158      0.14  Q         |          |          |          |
  1+45       0.0168      0.14  Q         |          |          |          |
  1+50       0.0177      0.14  Q         |          |          |          |
  1+55       0.0187      0.14  Q         |          |          |          |
  2+ 0       0.0196      0.14  Q         |          |          |          |
  2+ 5       0.0206      0.14  Q         |          |          |          |
  2+10       0.0215      0.14  Q         |          |          |          |
  2+15       0.0225      0.14  Q         |          |          |          |
  2+20       0.0235      0.14  Q         |          |          |          |
  2+25       0.0245      0.14  Q         |          |          |          |
  2+30       0.0254      0.14  QV        |          |          |          |
  2+35       0.0264      0.14  QV        |          |          |          |
  2+40       0.0274      0.14  QV        |          |          |          |
  2+45       0.0284      0.14  QV        |          |          |          |
  2+50       0.0294      0.14  QV        |          |          |          |
  2+55       0.0303      0.14  QV        |          |          |          |
  3+ 0       0.0313      0.14  QV        |          |          |          |
  3+ 5       0.0323      0.14  QV        |          |          |          |
  3+10       0.0333      0.14  QV        |          |          |          |
  3+15       0.0343      0.15  QV        |          |          |          |
  3+20       0.0353      0.15  QV        |          |          |          |
  3+25       0.0363      0.15  QV        |          |          |          |
  3+30       0.0374      0.15  QV        |          |          |          |
  3+35       0.0384      0.15  QV        |          |          |          |
  3+40       0.0394      0.15  QV        |          |          |          |
  3+45       0.0404      0.15  QV        |          |          |          |
  3+50       0.0414      0.15  QV        |          |          |          |
  3+55       0.0425      0.15  QV        |          |          |          |
  4+ 0       0.0435      0.15  QV        |          |          |          |
  4+ 5       0.0445      0.15  QV        |          |          |          |
  4+10       0.0456      0.15  QV        |          |          |          |
  4+15       0.0466      0.15  QV        |          |          |          |
  4+20       0.0477      0.15  QV        |          |          |          |
  4+25       0.0487      0.15  QV        |          |          |          |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4+30 | 0.0498 | 0.15 | Q V | \| | \| | \| | \| |
| 4+35 | 0.0508 | 0.15 | Q V | \| | \| | \| | \| |
| 4+40 | 0.0519 | 0.15 | Q V | \| | \| | \| | \| |
| 4+45 | 0.0529 | 0.15 | Q V | \| | \| | \| | \| |
| 4+50 | 0.0540 | 0.16 | Q V | \| | \| | \| | \| |
| 4+55 | 0.0551 | 0.16 | Q V | \| | \| | \| | \| |
| 5+ 0 | 0.0562 | 0.16 | Q V | \| | \| | \| | \| |
| 5+ 5 | 0.0572 | 0.16 | Q V | \| | \| | \| | \| |
| 5+10 | 0.0583 | 0.16 | Q V | \| | \| | \| | \| |
| 5+15 | 0.0594 | 0.16 | Q V | \| | \| | \| | \| |
| 5+20 | 0.0605 | 0.16 | Q V | \| | \| | \| | \| |
| 5+25 | 0.0616 | 0.16 | Q V | \| | \| | \| | \| |
| 5+30 | 0.0627 | 0.16 | Q V | \| | \| | \| | \| |
| 5+35 | 0.0638 | 0.16 | Q V | \| | \| | \| | \| |
| 5+40 | 0.0649 | 0.16 | Q V | \| | \| | \| | \| |
| 5+45 | 0.0660 | 0.16 | Q V | \| | \| | \| | \| |
| 5+50 | 0.0671 | 0.16 | Q V | \| | \| | \| | \| |
| 5+55 | 0.0683 | 0.16 | Q V | \| | \| | \| | \| |
| 6+ 0 | 0.0694 | 0.16 | Q V | \| | \| | \| | \| |
| 6+ 5 | 0.0705 | 0.16 | Q V | \| | \| | \| | \| |
| 6+10 | 0.0717 | 0.17 | Q V | \| | \| | \| | \| |
| 6+15 | 0.0728 | 0.17 | Q V | \| | \| | \| | \| |
| 6+20 | 0.0740 | 0.17 | Q V | \| | \| | \| | \| |
| 6+25 | 0.0751 | 0.17 | Q V | \| | \| | \| | \| |
| 6+30 | 0.0763 | 0.17 | Q V | \| | \| | \| | \| |
| 6+35 | 0.0774 | 0.17 | Q V | \| | \| | \| | \| |
| 6+40 | 0.0786 | 0.17 | Q V | \| | \| | \| | \| |
| 6+45 | 0.0798 | 0.17 | Q V | \| | \| | \| | \| |
| 6+50 | 0.0809 | 0.17 | Q V | \| | \| | \| | \| |
| 6+55 | 0.0821 | 0.17 | Q V | \| | \| | \| | \| |
| 7+ 0 | 0.0833 | 0.17 | Q V | \| | \| | \| | \| |
| 7+ 5 | 0.0845 | 0.17 | Q V | \| | \| | \| | \| |
| 7+10 | 0.0857 | 0.17 | Q V | \| | \| | \| | \| |
| 7+15 | 0.0869 | 0.17 | Q V | \| | \| | \| | \| |
| 7+20 | 0.0881 | 0.18 | Q V | \| | \| | \| | \| |
| 7+25 | 0.0893 | 0.18 | Q V | \| | \| | \| | \| |
| 7+30 | 0.0905 | 0.18 | Q V | \| | \| | \| | \| |
| 7+35 | 0.0918 | 0.18 | Q V | \| | \| | \| | \| |
| 7+40 | 0.0930 | 0.18 | Q V | \| | \| | \| | \| |
| 7+45 | 0.0942 | 0.18 | Q V | \| | \| | \| | \| |
| 7+50 | 0.0955 | 0.18 | Q V | \| | \| | \| | \| |
| 7+55 | 0.0967 | 0.18 | Q V | \| | \| | \| | \| |
| 8+ 0 | 0.0980 | 0.18 | Q V | \| | \| | \| | \| |
| 8+ 5 | 0.0992 | 0.18 | Q V | \| | \| | \| | \| |
| 8+10 | 0.1005 | 0.18 | Q V | \| | \| | \| | \| |
| 8+15 | 0.1018 | 0.19 | Q V | \| | \| | \| | \| |
| 8+20 | 0.1031 | 0.19 | Q V | \| | \| | \| | \| |
| 8+25 | 0.1044 | 0.19 | Q V | \| | \| | \| | \| |
| 8+30 | 0.1057 | 0.19 | Q V | \| | \| | \| | \| |
| 8+35 | 0.1070 | 0.19 | Q V | \| | \| | \| | \| |
| 8+40 | 0.1083 | 0.19 | Q V | \| | \| | \| | \| |
| 8+45 | 0.1096 | 0.19 | Q V | \| | \| | \| | \| |
| 8+50 | 0.1109 | 0.19 | Q V | \| | \| | \| | \| |
| 8+55 | 0.1122 | 0.19 | Q V | \| | \| | \| | \| |
| 9+ 0 | 0.1136 | 0.19 | Q V | \| | \| | \| | \| |
| 9+ 5 | 0.1149 | 0.20 | Q V | \| | \| | \| | \| |
| 9+10 | 0.1163 | 0.20 | Q V | \| | \| | \| | \| |
| 9+15 | 0.1176 | 0.20 | Q V | \| | \| | \| | \| |
| 9+20 | 0.1190 | 0.20 | Q V | \| | \| | \| | \| |
| 9+25 | 0.1204 | 0.20 | Q V | \| | \| | \| | \| |
| 9+30 | 0.1218 | 0.20 | Q V | \| | \| | \| | \| |
| 9+35 | 0.1232 | 0.20 | Q V | \| | \| | \| | \| |
| 9+40 | 0.1246 | 0.20 | Q V | \| | \| | \| | \| |
| 9+45 | 0.1260 | 0.21 | Q V | \| | \| | \| | \| |
| 9+50 | 0.1274 | 0.21 | Q V | \| | \| | \| | \| |
| 9+55 | 0.1288 | 0.21 | Q V | \| | \| | \| | \| |
| 10+ 0 | 0.1303 | 0.21 | Q V | \| | \| | \| | \| |
| 10+ 5 | 0.1317 | 0.21 | Q V | \| | \| | \| | \| |
| 10+10 | 0.1332 | 0.21 | Q V | \| | \| | \| | \| |
| 10+15 | 0.1347 | 0.21 | Q V | \| | \| | \| | \| |
| 10+20 | 0.1361 | 0.21 | Q V | \| | \| | \| | \| |

```
10+25       0.1376      0.22  Q    V    |          |          |          |
10+30       0.1391      0.22  Q    V    |          |          |          |
10+35       0.1407      0.22  Q    V    |          |          |          |
10+40       0.1422      0.22  Q    V    |          |          |          |
10+45       0.1437      0.22  Q    V    |          |          |          |
10+50       0.1453      0.22  Q    V    |          |          |          |
10+55       0.1468      0.23  Q    V    |          |          |          |
11+ 0       0.1484      0.23  Q     V   |          |          |          |
11+ 5       0.1500      0.23  Q     V   |          |          |          |
11+10       0.1516      0.23  Q     V   |          |          |          |
11+15       0.1532      0.23  Q     V   |          |          |          |
11+20       0.1548      0.24  Q     V   |          |          |          |
11+25       0.1564      0.24  Q     V   |          |          |          |
11+30       0.1581      0.24  Q     V   |          |          |          |
11+35       0.1598      0.24  Q     V   |          |          |          |
11+40       0.1614      0.24  Q     V   |          |          |          |
11+45       0.1631      0.25  Q     V   |          |          |          |
11+50       0.1648      0.25  Q     V   |          |          |          |
11+55       0.1666      0.25  Q     V   |          |          |          |
12+ 0       0.1683      0.25  Q     V   |          |          |          |
12+ 5       0.1701      0.26  Q     V   |          |          |          |
12+10       0.1720      0.27  Q     V   |          |          |          |
12+15       0.1740      0.30  Q      V  |          |          |          |
12+20       0.1762      0.31  Q      V  |          |          |          |
12+25       0.1784      0.32  Q      V  |          |          |          |
12+30       0.1807      0.33  Q      V  |          |          |          |
12+35       0.1830      0.33  Q      V  |          |          |          |
12+40       0.1853      0.34  Q      V  |          |          |          |
12+45       0.1876      0.34  Q      V  |          |          |          |
12+50       0.1900      0.35  Q      V  |          |          |          |
12+55       0.1924      0.35  Q      V  |          |          |          |
13+ 0       0.1949      0.35  Q      V  |          |          |          |
13+ 5       0.1973      0.36  Q       V |          |          |          |
13+10       0.1998      0.36  Q       V |          |          |          |
13+15       0.2023      0.36  Q       V |          |          |          |
13+20       0.2049      0.37  Q       V |          |          |          |
13+25       0.2074      0.37  Q       V |          |          |          |
13+30       0.2100      0.38  Q       V |          |          |          |
13+35       0.2126      0.38  Q       V |          |          |          |
13+40       0.2153      0.38  Q       V |          |          |          |
13+45       0.2180      0.39  Q       V |          |          |          |
13+50       0.2207      0.39  Q       V |          |          |          |
13+55       0.2234      0.40  Q        V|          |          |          |
14+ 0       0.2262      0.40  Q        V|          |          |          |
14+ 5       0.2290      0.41  Q        V|          |          |          |
14+10       0.2319      0.42  Q        V|          |          |          |
14+15       0.2348      0.42  Q        V|          |          |          |
14+20       0.2378      0.43  Q        V|          |          |          |
14+25       0.2408      0.44  Q        V|          |          |          |
14+30       0.2438      0.44  Q        V|          |          |          |
14+35       0.2470      0.45  Q         V          |          |          |
14+40       0.2501      0.46  Q         V          |          |          |
14+45       0.2534      0.47  Q         V          |          |          |
14+50       0.2567      0.48  Q         V          |          |          |
14+55       0.2600      0.49  Q         V          |          |          |
15+ 0       0.2635      0.50  Q         V          |          |          |
15+ 5       0.2670      0.51  Q         V          |          |          |
15+10       0.2707      0.53  Q         V          |          |          |
15+15       0.2744      0.54  Q         |V         |          |          |
15+20       0.2783      0.56  Q         |V         |          |          |
15+25       0.2822      0.57  Q         |V         |          |          |
15+30       0.2859      0.54  Q         |V         |          |          |
15+35       0.2889      0.44  Q         |V         |          |          |
15+40       0.2918      0.41  Q         |V         |          |          |
15+45       0.2946      0.42  Q         |V         |          |          |
15+50       0.2977      0.45  Q         | V        |          |          |
15+55       0.3013      0.51  Q         | V        |          |          |
16+ 0       0.3056      0.63  Q         | V        |          |          |
16+ 5       0.3300      3.55  |   Q     |  V       |          |          |
16+10       0.4151     12.36  |         |     Q    |          |          |
16+15       0.6089     28.14  |         |          |   V      |      Q   |
```

```
16+20       0.6983     12.99  |          |      Q   |        V |          |
16+25       0.7473      7.11  |          Q|          |          V          |
16+30       0.7807      4.85  |      Q    |          |          |V         |
16+35       0.8052      3.56  |    Q      |          |          | V        |
16+40       0.8228      2.56  |  Q        |          |          |  V       |
16+45       0.8353      1.80  | Q         |          |          |  V       |
16+50       0.8428      1.09  |Q          |          |          |   V      |
16+55       0.8487      0.87  |Q          |          |          |   V      |
17+ 0       0.8539      0.75  |Q          |          |          |   V      |
17+ 5       0.8588      0.71  Q           |          |          |   V      |
17+10       0.8634      0.67  Q           |          |          |    V     |
17+15       0.8672      0.56  Q           |          |          |    V     |
17+20       0.8706      0.48  Q           |          |          |    V     |
17+25       0.8734      0.41  Q           |          |          |    V     |
17+30       0.8762      0.40  Q           |          |          |    V     |
17+35       0.8789      0.39  Q           |          |          |    V     |
17+40       0.8815      0.38  Q           |          |          |    V     |
17+45       0.8841      0.37  Q           |          |          |    V     |
17+50       0.8866      0.37  Q           |          |          |    V     |
17+55       0.8891      0.36  Q           |          |          |     V    |
18+ 0       0.8915      0.35  Q           |          |          |     V    |
18+ 5       0.8939      0.34  Q           |          |          |     V    |
18+10       0.8962      0.33  Q           |          |          |     V    |
18+15       0.8982      0.30  Q           |          |          |     V    |
18+20       0.9001      0.28  Q           |          |          |     V    |
18+25       0.9020      0.27  Q           |          |          |     V    |
18+30       0.9038      0.26  Q           |          |          |     V    |
18+35       0.9055      0.25  Q           |          |          |     V    |
18+40       0.9072      0.25  Q           |          |          |     V    |
18+45       0.9088      0.24  Q           |          |          |     V    |
18+50       0.9105      0.24  Q           |          |          |     V    |
18+55       0.9121      0.23  Q           |          |          |      V   |
19+ 0       0.9136      0.23  Q           |          |          |      V   |
19+ 5       0.9152      0.22  Q           |          |          |      V   |
19+10       0.9167      0.22  Q           |          |          |      V   |
19+15       0.9182      0.22  Q           |          |          |      V   |
19+20       0.9197      0.21  Q           |          |          |      V   |
19+25       0.9211      0.21  Q           |          |          |      V   |
19+30       0.9225      0.21  Q           |          |          |      V   |
19+35       0.9240      0.21  Q           |          |          |      V   |
19+40       0.9254      0.20  Q           |          |          |      V   |
19+45       0.9267      0.20  Q           |          |          |      V   |
19+50       0.9281      0.20  Q           |          |          |      V   |
19+55       0.9295      0.20  Q           |          |          |      V   |
20+ 0       0.9308      0.19  Q           |          |          |      V   |
20+ 5       0.9321      0.19  Q           |          |          |      V   |
20+10       0.9334      0.19  Q           |          |          |      V   |
20+15       0.9347      0.19  Q           |          |          |      V   |
20+20       0.9360      0.19  Q           |          |          |      V   |
20+25       0.9373      0.18  Q           |          |          |       V  |
20+30       0.9385      0.18  Q           |          |          |       V  |
20+35       0.9397      0.18  Q           |          |          |       V  |
20+40       0.9410      0.18  Q           |          |          |       V  |
20+45       0.9422      0.18  Q           |          |          |       V  |
20+50       0.9434      0.17  Q           |          |          |       V  |
20+55       0.9446      0.17  Q           |          |          |       V  |
21+ 0       0.9458      0.17  Q           |          |          |       V  |
21+ 5       0.9469      0.17  Q           |          |          |       V  |
21+10       0.9481      0.17  Q           |          |          |       V  |
21+15       0.9493      0.17  Q           |          |          |       V  |
21+20       0.9504      0.17  Q           |          |          |       V  |
21+25       0.9515      0.16  Q           |          |          |       V  |
21+30       0.9527      0.16  Q           |          |          |       V  |
21+35       0.9538      0.16  Q           |          |          |       V  |
21+40       0.9549      0.16  Q           |          |          |       V  |
21+45       0.9560      0.16  Q           |          |          |       V  |
21+50       0.9571      0.16  Q           |          |          |       V  |
21+55       0.9581      0.16  Q           |          |          |       V  |
22+ 0       0.9592      0.16  Q           |          |          |       V  |
22+ 5       0.9603      0.15  Q           |          |          |       V  |
22+10       0.9613      0.15  Q           |          |          |        V |
```

```
  22+15      0.9624      0.15  Q         |         |         |         V|
  22+20      0.9634      0.15  Q         |         |         |         V|
  22+25      0.9645      0.15  Q         |         |         |         V|
  22+30      0.9655      0.15  Q         |         |         |         V|
  22+35      0.9665      0.15  Q         |         |         |         V|
  22+40      0.9675      0.15  Q         |         |         |         V|
  22+45      0.9686      0.15  Q         |         |         |         V|
  22+50      0.9696      0.15  Q         |         |         |         V|
  22+55      0.9706      0.14  Q         |         |         |         V|
  23+ 0      0.9715      0.14  Q         |         |         |         V|
  23+ 5      0.9725      0.14  Q         |         |         |         V|
  23+10      0.9735      0.14  Q         |         |         |         V|
  23+15      0.9745      0.14  Q         |         |         |         V|
  23+20      0.9754      0.14  Q         |         |         |         V|
  23+25      0.9764      0.14  Q         |         |         |         V|
  23+30      0.9774      0.14  Q         |         |         |         V|
  23+35      0.9783      0.14  Q         |         |         |         V|
  23+40      0.9793      0.14  Q         |         |         |         V|
  23+45      0.9802      0.14  Q         |         |         |         V|
  23+50      0.9811      0.14  Q         |         |         |         V|
  23+55      0.9821      0.13  Q         |         |         |         V|
  24+ 0      0.9830      0.13  Q         |         |         |         V|
  24+ 5      0.9839      0.13  Q         |         |         |         V|
  24+10      0.9846      0.11  Q         |         |         |         V|
  24+15      0.9850      0.06  Q         |         |         |         V|
  24+20      0.9852      0.03  Q         |         |         |         V|
  24+25      0.9854      0.02  Q         |         |         |         V|
  24+30      0.9855      0.01  Q         |         |         |         V|
  24+35      0.9855      0.01  Q         |         |         |         V|
  24+40      0.9856      0.01  Q         |         |         |         V|
  24+45      0.9856      0.00  Q         |         |         |         V|
  24+50      0.9856      0.00  Q         |         |         |         V|
  24+55      0.9856      0.00  Q         |         |         |         V|
  25+ 0      0.9856      0.00  Q         |         |         |         V|
  25+ 5      0.9856      0.00  Q         |         |         |         V|
  25+10      0.9856      0.00  Q         |         |         |         V|
  25+15      0.9857      0.00  Q         |         |         |         V|
-------------------------------------------------------------------------
```

Area ‘G’ – 5 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'G'
5 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            25.42            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      47.4         25.42      1.000     0.840    1.000    0.840

Area-averaged adjusted loss rate Fm (In/Hr) =  0.840

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 25.42 | 1.000 | 67.0 | 47.4 | 11.10 | 0.154 |

Area-averaged catchment yield fraction, Y = 0.154
Area-averaged low loss fraction, Yb = 0.846
User entry of time of concentration = 0.228 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 25.42(Ac.)
Catchment Lag time = 0.182 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 45.6871
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.840(In/Hr)
Average low loss rate fraction (Yb) = 0.846 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 25.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.403(In)
30-minute factor = 0.999 Adjusted rainfall = 0.689(In)
1-hour factor = 0.999 Adjusted rainfall = 0.848(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 307.42 (CFS)) | |
| 1 | 3.770 | 11.590 |
| 2 | 19.507 | 48.379 |
| 3 | 57.188 | 115.840 |
| 4 | 74.099 | 51.988 |
| 5 | 83.072 | 27.584 |
| 6 | 89.001 | 18.226 |
| 7 | 93.088 | 12.567 |
| 8 | 95.822 | 8.402 |
| 9 | 97.540 | 5.282 |
| 10 | 98.307 | 2.360 |
| 11 | 98.797 | 1.505 |
| 12 | 99.152 | 1.093 |
| 13 | 99.469 | 0.973 |
| 14 | 99.765 | 0.912 |
| 15 | 99.923 | 0.483 |
| 16 | 100.000 | 0.238 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4026 | 0.4026 |
| 2 | 0.4957 | 0.0931 |
| 3 | 0.5598 | 0.0641 |
| 4 | 0.6102 | 0.0505 |
| 5 | 0.6525 | 0.0422 |
| 6 | 0.6892 | 0.0367 |
| 7 | 0.7218 | 0.0326 |
| 8 | 0.7513 | 0.0295 |
| 9 | 0.7783 | 0.0270 |
| 10 | 0.8033 | 0.0250 |

| | | |
|---|---|---|
| 11 | 0.8266 | 0.0233 |
| 12 | 0.8485 | 0.0219 |
| 13 | 0.8918 | 0.0433 |
| 14 | 0.9339 | 0.0421 |
| 15 | 0.9748 | 0.0410 |
| 16 | 1.0148 | 0.0399 |
| 17 | 1.0538 | 0.0390 |
| 18 | 1.0919 | 0.0381 |
| 19 | 1.1293 | 0.0374 |
| 20 | 1.1659 | 0.0366 |
| 21 | 1.2018 | 0.0359 |
| 22 | 1.2371 | 0.0353 |
| 23 | 1.2718 | 0.0347 |
| 24 | 1.3060 | 0.0341 |
| 25 | 1.3395 | 0.0336 |
| 26 | 1.3726 | 0.0331 |
| 27 | 1.4052 | 0.0326 |
| 28 | 1.4374 | 0.0322 |
| 29 | 1.4691 | 0.0317 |
| 30 | 1.5004 | 0.0313 |
| 31 | 1.5314 | 0.0309 |
| 32 | 1.5619 | 0.0305 |
| 33 | 1.5921 | 0.0302 |
| 34 | 1.6220 | 0.0298 |
| 35 | 1.6515 | 0.0295 |
| 36 | 1.6807 | 0.0292 |
| 37 | 1.7095 | 0.0289 |
| 38 | 1.7381 | 0.0286 |
| 39 | 1.7664 | 0.0283 |
| 40 | 1.7944 | 0.0280 |
| 41 | 1.8221 | 0.0277 |
| 42 | 1.8496 | 0.0275 |
| 43 | 1.8768 | 0.0272 |
| 44 | 1.9039 | 0.0270 |
| 45 | 1.9306 | 0.0268 |
| 46 | 1.9572 | 0.0265 |
| 47 | 1.9835 | 0.0263 |
| 48 | 2.0096 | 0.0261 |
| 49 | 2.0355 | 0.0259 |
| 50 | 2.0612 | 0.0257 |
| 51 | 2.0867 | 0.0255 |
| 52 | 2.1121 | 0.0253 |
| 53 | 2.1372 | 0.0251 |
| 54 | 2.1622 | 0.0250 |
| 55 | 2.1870 | 0.0248 |
| 56 | 2.2116 | 0.0246 |
| 57 | 2.2361 | 0.0245 |
| 58 | 2.2603 | 0.0243 |
| 59 | 2.2845 | 0.0241 |
| 60 | 2.3085 | 0.0240 |
| 61 | 2.3323 | 0.0238 |
| 62 | 2.3560 | 0.0237 |
| 63 | 2.3795 | 0.0235 |
| 64 | 2.4029 | 0.0234 |
| 65 | 2.4262 | 0.0233 |
| 66 | 2.4493 | 0.0231 |
| 67 | 2.4723 | 0.0230 |
| 68 | 2.4952 | 0.0229 |
| 69 | 2.5179 | 0.0227 |
| 70 | 2.5405 | 0.0226 |
| 71 | 2.5630 | 0.0225 |
| 72 | 2.5854 | 0.0224 |
| 73 | 2.6066 | 0.0212 |
| 74 | 2.6276 | 0.0211 |
| 75 | 2.6486 | 0.0210 |
| 76 | 2.6694 | 0.0208 |
| 77 | 2.6902 | 0.0207 |
| 78 | 2.7108 | 0.0206 |
| 79 | 2.7313 | 0.0205 |
| 80 | 2.7517 | 0.0204 |
| 81 | 2.7720 | 0.0203 |

| | | |
|---|---|---|
| 82 | 2.7922 | 0.0202 |
| 83 | 2.8124 | 0.0201 |
| 84 | 2.8324 | 0.0200 |
| 85 | 2.8523 | 0.0199 |
| 86 | 2.8721 | 0.0198 |
| 87 | 2.8918 | 0.0197 |
| 88 | 2.9114 | 0.0196 |
| 89 | 2.9310 | 0.0195 |
| 90 | 2.9504 | 0.0194 |
| 91 | 2.9698 | 0.0194 |
| 92 | 2.9891 | 0.0193 |
| 93 | 3.0083 | 0.0192 |
| 94 | 3.0274 | 0.0191 |
| 95 | 3.0464 | 0.0190 |
| 96 | 3.0653 | 0.0189 |
| 97 | 3.0842 | 0.0189 |
| 98 | 3.1030 | 0.0188 |
| 99 | 3.1217 | 0.0187 |
| 100 | 3.1403 | 0.0186 |
| 101 | 3.1589 | 0.0186 |
| 102 | 3.1773 | 0.0185 |
| 103 | 3.1957 | 0.0184 |
| 104 | 3.2141 | 0.0183 |
| 105 | 3.2323 | 0.0183 |
| 106 | 3.2505 | 0.0182 |
| 107 | 3.2686 | 0.0181 |
| 108 | 3.2867 | 0.0180 |
| 109 | 3.3046 | 0.0180 |
| 110 | 3.3226 | 0.0179 |
| 111 | 3.3404 | 0.0178 |
| 112 | 3.3582 | 0.0178 |
| 113 | 3.3759 | 0.0177 |
| 114 | 3.3936 | 0.0177 |
| 115 | 3.4111 | 0.0176 |
| 116 | 3.4287 | 0.0175 |
| 117 | 3.4461 | 0.0175 |
| 118 | 3.4635 | 0.0174 |
| 119 | 3.4809 | 0.0173 |
| 120 | 3.4982 | 0.0173 |
| 121 | 3.5154 | 0.0172 |
| 122 | 3.5326 | 0.0172 |
| 123 | 3.5497 | 0.0171 |
| 124 | 3.5667 | 0.0171 |
| 125 | 3.5837 | 0.0170 |
| 126 | 3.6007 | 0.0169 |
| 127 | 3.6176 | 0.0169 |
| 128 | 3.6344 | 0.0168 |
| 129 | 3.6512 | 0.0168 |
| 130 | 3.6679 | 0.0167 |
| 131 | 3.6846 | 0.0167 |
| 132 | 3.7012 | 0.0166 |
| 133 | 3.7178 | 0.0166 |
| 134 | 3.7343 | 0.0165 |
| 135 | 3.7508 | 0.0165 |
| 136 | 3.7672 | 0.0164 |
| 137 | 3.7836 | 0.0164 |
| 138 | 3.7999 | 0.0163 |
| 139 | 3.8162 | 0.0163 |
| 140 | 3.8324 | 0.0162 |
| 141 | 3.8486 | 0.0162 |
| 142 | 3.8647 | 0.0161 |
| 143 | 3.8808 | 0.0161 |
| 144 | 3.8968 | 0.0160 |
| 145 | 3.9128 | 0.0160 |
| 146 | 3.9288 | 0.0160 |
| 147 | 3.9447 | 0.0159 |
| 148 | 3.9606 | 0.0159 |
| 149 | 3.9764 | 0.0158 |
| 150 | 3.9922 | 0.0158 |
| 151 | 4.0079 | 0.0157 |
| 152 | 4.0236 | 0.0157 |

| | | |
|---|---|---|
| 153 | 4.0392 | 0.0156 |
| 154 | 4.0548 | 0.0156 |
| 155 | 4.0704 | 0.0156 |
| 156 | 4.0859 | 0.0155 |
| 157 | 4.1014 | 0.0155 |
| 158 | 4.1168 | 0.0154 |
| 159 | 4.1323 | 0.0154 |
| 160 | 4.1476 | 0.0154 |
| 161 | 4.1629 | 0.0153 |
| 162 | 4.1782 | 0.0153 |
| 163 | 4.1935 | 0.0152 |
| 164 | 4.2087 | 0.0152 |
| 165 | 4.2239 | 0.0152 |
| 166 | 4.2390 | 0.0151 |
| 167 | 4.2541 | 0.0151 |
| 168 | 4.2691 | 0.0151 |
| 169 | 4.2842 | 0.0150 |
| 170 | 4.2992 | 0.0150 |
| 171 | 4.3141 | 0.0150 |
| 172 | 4.3290 | 0.0149 |
| 173 | 4.3439 | 0.0149 |
| 174 | 4.3588 | 0.0148 |
| 175 | 4.3736 | 0.0148 |
| 176 | 4.3883 | 0.0148 |
| 177 | 4.4031 | 0.0147 |
| 178 | 4.4178 | 0.0147 |
| 179 | 4.4325 | 0.0147 |
| 180 | 4.4471 | 0.0146 |
| 181 | 4.4617 | 0.0146 |
| 182 | 4.4763 | 0.0146 |
| 183 | 4.4908 | 0.0145 |
| 184 | 4.5053 | 0.0145 |
| 185 | 4.5198 | 0.0145 |
| 186 | 4.5343 | 0.0144 |
| 187 | 4.5487 | 0.0144 |
| 188 | 4.5631 | 0.0144 |
| 189 | 4.5774 | 0.0144 |
| 190 | 4.5917 | 0.0143 |
| 191 | 4.6060 | 0.0143 |
| 192 | 4.6203 | 0.0143 |
| 193 | 4.6345 | 0.0142 |
| 194 | 4.6487 | 0.0142 |
| 195 | 4.6629 | 0.0142 |
| 196 | 4.6770 | 0.0141 |
| 197 | 4.6911 | 0.0141 |
| 198 | 4.7052 | 0.0141 |
| 199 | 4.7193 | 0.0141 |
| 200 | 4.7333 | 0.0140 |
| 201 | 4.7473 | 0.0140 |
| 202 | 4.7613 | 0.0140 |
| 203 | 4.7752 | 0.0139 |
| 204 | 4.7891 | 0.0139 |
| 205 | 4.8030 | 0.0139 |
| 206 | 4.8168 | 0.0139 |
| 207 | 4.8307 | 0.0138 |
| 208 | 4.8445 | 0.0138 |
| 209 | 4.8582 | 0.0138 |
| 210 | 4.8720 | 0.0137 |
| 211 | 4.8857 | 0.0137 |
| 212 | 4.8994 | 0.0137 |
| 213 | 4.9131 | 0.0137 |
| 214 | 4.9267 | 0.0136 |
| 215 | 4.9403 | 0.0136 |
| 216 | 4.9539 | 0.0136 |
| 217 | 4.9675 | 0.0136 |
| 218 | 4.9810 | 0.0135 |
| 219 | 4.9945 | 0.0135 |
| 220 | 5.0080 | 0.0135 |
| 221 | 5.0215 | 0.0135 |
| 222 | 5.0349 | 0.0134 |
| 223 | 5.0483 | 0.0134 |

| | | |
|---|---|---|
| 224 | 5.0617 | 0.0134 |
| 225 | 5.0751 | 0.0134 |
| 226 | 5.0884 | 0.0133 |
| 227 | 5.1017 | 0.0133 |
| 228 | 5.1150 | 0.0133 |
| 229 | 5.1283 | 0.0133 |
| 230 | 5.1415 | 0.0132 |
| 231 | 5.1548 | 0.0132 |
| 232 | 5.1680 | 0.0132 |
| 233 | 5.1811 | 0.0132 |
| 234 | 5.1943 | 0.0132 |
| 235 | 5.2074 | 0.0131 |
| 236 | 5.2205 | 0.0131 |
| 237 | 5.2336 | 0.0131 |
| 238 | 5.2467 | 0.0131 |
| 239 | 5.2597 | 0.0130 |
| 240 | 5.2727 | 0.0130 |
| 241 | 5.2857 | 0.0130 |
| 242 | 5.2987 | 0.0130 |
| 243 | 5.3116 | 0.0129 |
| 244 | 5.3246 | 0.0129 |
| 245 | 5.3375 | 0.0129 |
| 246 | 5.3503 | 0.0129 |
| 247 | 5.3632 | 0.0129 |
| 248 | 5.3761 | 0.0128 |
| 249 | 5.3889 | 0.0128 |
| 250 | 5.4017 | 0.0128 |
| 251 | 5.4145 | 0.0128 |
| 252 | 5.4272 | 0.0128 |
| 253 | 5.4400 | 0.0127 |
| 254 | 5.4527 | 0.0127 |
| 255 | 5.4654 | 0.0127 |
| 256 | 5.4780 | 0.0127 |
| 257 | 5.4907 | 0.0127 |
| 258 | 5.5033 | 0.0126 |
| 259 | 5.5160 | 0.0126 |
| 260 | 5.5286 | 0.0126 |
| 261 | 5.5411 | 0.0126 |
| 262 | 5.5537 | 0.0126 |
| 263 | 5.5662 | 0.0125 |
| 264 | 5.5787 | 0.0125 |
| 265 | 5.5912 | 0.0125 |
| 266 | 5.6037 | 0.0125 |
| 267 | 5.6162 | 0.0125 |
| 268 | 5.6286 | 0.0124 |
| 269 | 5.6410 | 0.0124 |
| 270 | 5.6534 | 0.0124 |
| 271 | 5.6658 | 0.0124 |
| 272 | 5.6782 | 0.0124 |
| 273 | 5.6905 | 0.0123 |
| 274 | 5.7029 | 0.0123 |
| 275 | 5.7152 | 0.0123 |
| 276 | 5.7275 | 0.0123 |
| 277 | 5.7398 | 0.0123 |
| 278 | 5.7520 | 0.0123 |
| 279 | 5.7643 | 0.0122 |
| 280 | 5.7765 | 0.0122 |
| 281 | 5.7887 | 0.0122 |
| 282 | 5.8009 | 0.0122 |
| 283 | 5.8130 | 0.0122 |
| 284 | 5.8252 | 0.0122 |
| 285 | 5.8373 | 0.0121 |
| 286 | 5.8494 | 0.0121 |
| 287 | 5.8615 | 0.0121 |
| 288 | 5.8736 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0102 | 0.0019 |

| | | | |
|---|---|---|---|
| 2 | 0.0121 | 0.0102 | 0.0019 |
| 3 | 0.0121 | 0.0103 | 0.0019 |
| 4 | 0.0122 | 0.0103 | 0.0019 |
| 5 | 0.0122 | 0.0103 | 0.0019 |
| 6 | 0.0122 | 0.0103 | 0.0019 |
| 7 | 0.0122 | 0.0104 | 0.0019 |
| 8 | 0.0123 | 0.0104 | 0.0019 |
| 9 | 0.0123 | 0.0104 | 0.0019 |
| 10 | 0.0123 | 0.0104 | 0.0019 |
| 11 | 0.0123 | 0.0104 | 0.0019 |
| 12 | 0.0124 | 0.0105 | 0.0019 |
| 13 | 0.0124 | 0.0105 | 0.0019 |
| 14 | 0.0124 | 0.0105 | 0.0019 |
| 15 | 0.0125 | 0.0105 | 0.0019 |
| 16 | 0.0125 | 0.0106 | 0.0019 |
| 17 | 0.0125 | 0.0106 | 0.0019 |
| 18 | 0.0125 | 0.0106 | 0.0019 |
| 19 | 0.0126 | 0.0106 | 0.0019 |
| 20 | 0.0126 | 0.0107 | 0.0019 |
| 21 | 0.0126 | 0.0107 | 0.0019 |
| 22 | 0.0127 | 0.0107 | 0.0020 |
| 23 | 0.0127 | 0.0107 | 0.0020 |
| 24 | 0.0127 | 0.0108 | 0.0020 |
| 25 | 0.0128 | 0.0108 | 0.0020 |
| 26 | 0.0128 | 0.0108 | 0.0020 |
| 27 | 0.0128 | 0.0108 | 0.0020 |
| 28 | 0.0128 | 0.0109 | 0.0020 |
| 29 | 0.0129 | 0.0109 | 0.0020 |
| 30 | 0.0129 | 0.0109 | 0.0020 |
| 31 | 0.0129 | 0.0110 | 0.0020 |
| 32 | 0.0130 | 0.0110 | 0.0020 |
| 33 | 0.0130 | 0.0110 | 0.0020 |
| 34 | 0.0130 | 0.0110 | 0.0020 |
| 35 | 0.0131 | 0.0111 | 0.0020 |
| 36 | 0.0131 | 0.0111 | 0.0020 |
| 37 | 0.0132 | 0.0111 | 0.0020 |
| 38 | 0.0132 | 0.0111 | 0.0020 |
| 39 | 0.0132 | 0.0112 | 0.0020 |
| 40 | 0.0132 | 0.0112 | 0.0020 |
| 41 | 0.0133 | 0.0112 | 0.0020 |
| 42 | 0.0133 | 0.0113 | 0.0021 |
| 43 | 0.0134 | 0.0113 | 0.0021 |
| 44 | 0.0134 | 0.0113 | 0.0021 |
| 45 | 0.0134 | 0.0114 | 0.0021 |
| 46 | 0.0135 | 0.0114 | 0.0021 |
| 47 | 0.0135 | 0.0114 | 0.0021 |
| 48 | 0.0135 | 0.0115 | 0.0021 |
| 49 | 0.0136 | 0.0115 | 0.0021 |
| 50 | 0.0136 | 0.0115 | 0.0021 |
| 51 | 0.0137 | 0.0116 | 0.0021 |
| 52 | 0.0137 | 0.0116 | 0.0021 |
| 53 | 0.0137 | 0.0116 | 0.0021 |
| 54 | 0.0138 | 0.0117 | 0.0021 |
| 55 | 0.0138 | 0.0117 | 0.0021 |
| 56 | 0.0139 | 0.0117 | 0.0021 |
| 57 | 0.0139 | 0.0118 | 0.0021 |
| 58 | 0.0139 | 0.0118 | 0.0021 |
| 59 | 0.0140 | 0.0118 | 0.0022 |
| 60 | 0.0140 | 0.0119 | 0.0022 |
| 61 | 0.0141 | 0.0119 | 0.0022 |
| 62 | 0.0141 | 0.0119 | 0.0022 |
| 63 | 0.0142 | 0.0120 | 0.0022 |
| 64 | 0.0142 | 0.0120 | 0.0022 |
| 65 | 0.0143 | 0.0121 | 0.0022 |
| 66 | 0.0143 | 0.0121 | 0.0022 |
| 67 | 0.0144 | 0.0121 | 0.0022 |
| 68 | 0.0144 | 0.0122 | 0.0022 |
| 69 | 0.0144 | 0.0122 | 0.0022 |
| 70 | 0.0145 | 0.0122 | 0.0022 |
| 71 | 0.0145 | 0.0123 | 0.0022 |
| 72 | 0.0146 | 0.0123 | 0.0022 |

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|---|---|---|---|
| 73 | 0.0146 | 0.0124 | 0.0023 |
| 74 | 0.0147 | 0.0124 | 0.0023 |
| 75 | 0.0147 | 0.0125 | 0.0023 |
| 76 | 0.0148 | 0.0125 | 0.0023 |
| 77 | 0.0148 | 0.0126 | 0.0023 |
| 78 | 0.0149 | 0.0126 | 0.0023 |
| 79 | 0.0150 | 0.0126 | 0.0023 |
| 80 | 0.0150 | 0.0127 | 0.0023 |
| 81 | 0.0151 | 0.0127 | 0.0023 |
| 82 | 0.0151 | 0.0128 | 0.0023 |
| 83 | 0.0152 | 0.0128 | 0.0023 |
| 84 | 0.0152 | 0.0129 | 0.0023 |
| 85 | 0.0153 | 0.0129 | 0.0024 |
| 86 | 0.0153 | 0.0130 | 0.0024 |
| 87 | 0.0154 | 0.0130 | 0.0024 |
| 88 | 0.0154 | 0.0131 | 0.0024 |
| 89 | 0.0155 | 0.0131 | 0.0024 |
| 90 | 0.0156 | 0.0132 | 0.0024 |
| 91 | 0.0156 | 0.0132 | 0.0024 |
| 92 | 0.0157 | 0.0133 | 0.0024 |
| 93 | 0.0158 | 0.0133 | 0.0024 |
| 94 | 0.0158 | 0.0134 | 0.0024 |
| 95 | 0.0159 | 0.0135 | 0.0025 |
| 96 | 0.0160 | 0.0135 | 0.0025 |
| 97 | 0.0160 | 0.0136 | 0.0025 |
| 98 | 0.0161 | 0.0136 | 0.0025 |
| 99 | 0.0162 | 0.0137 | 0.0025 |
| 100 | 0.0162 | 0.0137 | 0.0025 |
| 101 | 0.0163 | 0.0138 | 0.0025 |
| 102 | 0.0164 | 0.0138 | 0.0025 |
| 103 | 0.0165 | 0.0139 | 0.0025 |
| 104 | 0.0165 | 0.0140 | 0.0025 |
| 105 | 0.0166 | 0.0141 | 0.0026 |
| 106 | 0.0167 | 0.0141 | 0.0026 |
| 107 | 0.0168 | 0.0142 | 0.0026 |
| 108 | 0.0168 | 0.0142 | 0.0026 |
| 109 | 0.0169 | 0.0143 | 0.0026 |
| 110 | 0.0170 | 0.0144 | 0.0026 |
| 111 | 0.0171 | 0.0145 | 0.0026 |
| 112 | 0.0172 | 0.0145 | 0.0026 |
| 113 | 0.0173 | 0.0146 | 0.0027 |
| 114 | 0.0173 | 0.0147 | 0.0027 |
| 115 | 0.0175 | 0.0148 | 0.0027 |
| 116 | 0.0175 | 0.0148 | 0.0027 |
| 117 | 0.0177 | 0.0149 | 0.0027 |
| 118 | 0.0177 | 0.0150 | 0.0027 |
| 119 | 0.0178 | 0.0151 | 0.0028 |
| 120 | 0.0179 | 0.0152 | 0.0028 |
| 121 | 0.0180 | 0.0153 | 0.0028 |
| 122 | 0.0181 | 0.0153 | 0.0028 |
| 123 | 0.0183 | 0.0154 | 0.0028 |
| 124 | 0.0183 | 0.0155 | 0.0028 |
| 125 | 0.0185 | 0.0156 | 0.0028 |
| 126 | 0.0186 | 0.0157 | 0.0029 |
| 127 | 0.0187 | 0.0158 | 0.0029 |
| 128 | 0.0188 | 0.0159 | 0.0029 |
| 129 | 0.0189 | 0.0160 | 0.0029 |
| 130 | 0.0190 | 0.0161 | 0.0029 |
| 131 | 0.0192 | 0.0162 | 0.0030 |
| 132 | 0.0193 | 0.0163 | 0.0030 |
| 133 | 0.0194 | 0.0165 | 0.0030 |
| 134 | 0.0195 | 0.0165 | 0.0030 |
| 135 | 0.0197 | 0.0167 | 0.0030 |
| 136 | 0.0198 | 0.0168 | 0.0031 |
| 137 | 0.0200 | 0.0169 | 0.0031 |
| 138 | 0.0201 | 0.0170 | 0.0031 |
| 139 | 0.0203 | 0.0172 | 0.0031 |
| 140 | 0.0204 | 0.0173 | 0.0031 |
| 141 | 0.0206 | 0.0174 | 0.0032 |
| 142 | 0.0207 | 0.0175 | 0.0032 |
| 143 | 0.0210 | 0.0177 | 0.0032 |

| | | | |
|---|---|---|---|
| 144 | 0.0211 | 0.0178 | 0.0032 |
| 145 | 0.0224 | 0.0189 | 0.0034 |
| 146 | 0.0225 | 0.0190 | 0.0035 |
| 147 | 0.0227 | 0.0192 | 0.0035 |
| 148 | 0.0229 | 0.0193 | 0.0035 |
| 149 | 0.0231 | 0.0196 | 0.0036 |
| 150 | 0.0233 | 0.0197 | 0.0036 |
| 151 | 0.0235 | 0.0199 | 0.0036 |
| 152 | 0.0237 | 0.0200 | 0.0037 |
| 153 | 0.0240 | 0.0203 | 0.0037 |
| 154 | 0.0241 | 0.0204 | 0.0037 |
| 155 | 0.0245 | 0.0207 | 0.0038 |
| 156 | 0.0246 | 0.0208 | 0.0038 |
| 157 | 0.0250 | 0.0211 | 0.0038 |
| 158 | 0.0251 | 0.0213 | 0.0039 |
| 159 | 0.0255 | 0.0216 | 0.0039 |
| 160 | 0.0257 | 0.0217 | 0.0040 |
| 161 | 0.0261 | 0.0221 | 0.0040 |
| 162 | 0.0263 | 0.0223 | 0.0041 |
| 163 | 0.0268 | 0.0226 | 0.0041 |
| 164 | 0.0270 | 0.0228 | 0.0042 |
| 165 | 0.0275 | 0.0233 | 0.0042 |
| 166 | 0.0277 | 0.0235 | 0.0043 |
| 167 | 0.0283 | 0.0239 | 0.0044 |
| 168 | 0.0286 | 0.0242 | 0.0044 |
| 169 | 0.0292 | 0.0247 | 0.0045 |
| 170 | 0.0295 | 0.0250 | 0.0045 |
| 171 | 0.0302 | 0.0255 | 0.0047 |
| 172 | 0.0305 | 0.0258 | 0.0047 |
| 173 | 0.0313 | 0.0265 | 0.0048 |
| 174 | 0.0317 | 0.0268 | 0.0049 |
| 175 | 0.0326 | 0.0276 | 0.0050 |
| 176 | 0.0331 | 0.0280 | 0.0051 |
| 177 | 0.0341 | 0.0289 | 0.0053 |
| 178 | 0.0347 | 0.0293 | 0.0053 |
| 179 | 0.0359 | 0.0304 | 0.0055 |
| 180 | 0.0366 | 0.0310 | 0.0056 |
| 181 | 0.0381 | 0.0323 | 0.0059 |
| 182 | 0.0390 | 0.0330 | 0.0060 |
| 183 | 0.0410 | 0.0346 | 0.0063 |
| 184 | 0.0421 | 0.0356 | 0.0065 |
| 185 | 0.0219 | 0.0185 | 0.0034 |
| 186 | 0.0233 | 0.0197 | 0.0036 |
| 187 | 0.0270 | 0.0229 | 0.0042 |
| 188 | 0.0295 | 0.0250 | 0.0045 |
| 189 | 0.0367 | 0.0310 | 0.0057 |
| 190 | 0.0422 | 0.0357 | 0.0065 |
| 191 | 0.0641 | 0.0542 | 0.0099 |
| 192 | 0.0931 | 0.0700 | 0.0231 |
| 193 | 0.4026 | 0.0700 | 0.3326 |
| 194 | 0.0505 | 0.0427 | 0.0078 |
| 195 | 0.0326 | 0.0276 | 0.0050 |
| 196 | 0.0250 | 0.0211 | 0.0039 |
| 197 | 0.0433 | 0.0366 | 0.0067 |
| 198 | 0.0399 | 0.0338 | 0.0062 |
| 199 | 0.0374 | 0.0316 | 0.0058 |
| 200 | 0.0353 | 0.0299 | 0.0054 |
| 201 | 0.0336 | 0.0284 | 0.0052 |
| 202 | 0.0322 | 0.0272 | 0.0050 |
| 203 | 0.0309 | 0.0262 | 0.0048 |
| 204 | 0.0298 | 0.0252 | 0.0046 |
| 205 | 0.0289 | 0.0244 | 0.0044 |
| 206 | 0.0280 | 0.0237 | 0.0043 |
| 207 | 0.0272 | 0.0230 | 0.0042 |
| 208 | 0.0265 | 0.0225 | 0.0041 |
| 209 | 0.0259 | 0.0219 | 0.0040 |
| 210 | 0.0253 | 0.0214 | 0.0039 |
| 211 | 0.0248 | 0.0210 | 0.0038 |
| 212 | 0.0243 | 0.0205 | 0.0037 |
| 213 | 0.0238 | 0.0202 | 0.0037 |
| 214 | 0.0234 | 0.0198 | 0.0036 |

| | | | |
|---|---|---|---|
| 215 | 0.0230 | 0.0194 | 0.0035 |
| 216 | 0.0226 | 0.0191 | 0.0035 |
| 217 | 0.0212 | 0.0179 | 0.0033 |
| 218 | 0.0208 | 0.0176 | 0.0032 |
| 219 | 0.0205 | 0.0174 | 0.0032 |
| 220 | 0.0202 | 0.0171 | 0.0031 |
| 221 | 0.0199 | 0.0168 | 0.0031 |
| 222 | 0.0196 | 0.0166 | 0.0030 |
| 223 | 0.0194 | 0.0164 | 0.0030 |
| 224 | 0.0191 | 0.0162 | 0.0029 |
| 225 | 0.0189 | 0.0160 | 0.0029 |
| 226 | 0.0186 | 0.0158 | 0.0029 |
| 227 | 0.0184 | 0.0156 | 0.0028 |
| 228 | 0.0182 | 0.0154 | 0.0028 |
| 229 | 0.0180 | 0.0152 | 0.0028 |
| 230 | 0.0178 | 0.0150 | 0.0027 |
| 231 | 0.0176 | 0.0149 | 0.0027 |
| 232 | 0.0174 | 0.0147 | 0.0027 |
| 233 | 0.0172 | 0.0146 | 0.0027 |
| 234 | 0.0171 | 0.0144 | 0.0026 |
| 235 | 0.0169 | 0.0143 | 0.0026 |
| 236 | 0.0167 | 0.0141 | 0.0026 |
| 237 | 0.0166 | 0.0140 | 0.0026 |
| 238 | 0.0164 | 0.0139 | 0.0025 |
| 239 | 0.0163 | 0.0138 | 0.0025 |
| 240 | 0.0161 | 0.0136 | 0.0025 |
| 241 | 0.0160 | 0.0135 | 0.0025 |
| 242 | 0.0159 | 0.0134 | 0.0024 |
| 243 | 0.0157 | 0.0133 | 0.0024 |
| 244 | 0.0156 | 0.0132 | 0.0024 |
| 245 | 0.0155 | 0.0131 | 0.0024 |
| 246 | 0.0154 | 0.0130 | 0.0024 |
| 247 | 0.0152 | 0.0129 | 0.0024 |
| 248 | 0.0151 | 0.0128 | 0.0023 |
| 249 | 0.0150 | 0.0127 | 0.0023 |
| 250 | 0.0149 | 0.0126 | 0.0023 |
| 251 | 0.0148 | 0.0125 | 0.0023 |
| 252 | 0.0147 | 0.0124 | 0.0023 |
| 253 | 0.0146 | 0.0124 | 0.0023 |
| 254 | 0.0145 | 0.0123 | 0.0022 |
| 255 | 0.0144 | 0.0122 | 0.0022 |
| 256 | 0.0143 | 0.0121 | 0.0022 |
| 257 | 0.0142 | 0.0120 | 0.0022 |
| 258 | 0.0141 | 0.0120 | 0.0022 |
| 259 | 0.0141 | 0.0119 | 0.0022 |
| 260 | 0.0140 | 0.0118 | 0.0022 |
| 261 | 0.0139 | 0.0117 | 0.0021 |
| 262 | 0.0138 | 0.0117 | 0.0021 |
| 263 | 0.0137 | 0.0116 | 0.0021 |
| 264 | 0.0136 | 0.0115 | 0.0021 |
| 265 | 0.0136 | 0.0115 | 0.0021 |
| 266 | 0.0135 | 0.0114 | 0.0021 |
| 267 | 0.0134 | 0.0113 | 0.0021 |
| 268 | 0.0133 | 0.0113 | 0.0021 |
| 269 | 0.0133 | 0.0112 | 0.0020 |
| 270 | 0.0132 | 0.0112 | 0.0020 |
| 271 | 0.0131 | 0.0111 | 0.0020 |
| 272 | 0.0131 | 0.0110 | 0.0020 |
| 273 | 0.0130 | 0.0110 | 0.0020 |
| 274 | 0.0129 | 0.0109 | 0.0020 |
| 275 | 0.0129 | 0.0109 | 0.0020 |
| 276 | 0.0128 | 0.0108 | 0.0020 |
| 277 | 0.0127 | 0.0108 | 0.0020 |
| 278 | 0.0127 | 0.0107 | 0.0020 |
| 279 | 0.0126 | 0.0107 | 0.0019 |
| 280 | 0.0126 | 0.0106 | 0.0019 |
| 281 | 0.0125 | 0.0106 | 0.0019 |
| 282 | 0.0124 | 0.0105 | 0.0019 |
| 283 | 0.0124 | 0.0105 | 0.0019 |
| 284 | 0.0123 | 0.0104 | 0.0019 |
| 285 | 0.0123 | 0.0104 | 0.0019 |

```
      286              0.0122           0.0103              0.0019
      287              0.0122           0.0103              0.0019
      288              0.0121           0.0102              0.0019
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      4.69(In)
      Total effective rainfall =      1.18(In)
      Peak flow rate in flood hydrograph =     40.72(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
----------------------------------------------------------------------------
  0+ 5       0.0001      0.02  Q         |         |         |         |
  0+10       0.0009      0.11  Q         |         |         |         |
  0+15       0.0032      0.33  Q         |         |         |         |
  0+20       0.0061      0.42  Q         |         |         |         |
  0+25       0.0094      0.48  Q         |         |         |         |
  0+30       0.0129      0.51  Q         |         |         |         |
  0+35       0.0166      0.54  Q         |         |         |         |
  0+40       0.0204      0.55  Q         |         |         |         |
  0+45       0.0243      0.56  Q         |         |         |         |
  0+50       0.0282      0.57  Q         |         |         |         |
  0+55       0.0322      0.57  Q         |         |         |         |
  1+ 0       0.0362      0.58  Q         |         |         |         |
  1+ 5       0.0402      0.58  Q         |         |         |         |
  1+10       0.0442      0.58  Q         |         |         |         |
  1+15       0.0482      0.59  Q         |         |         |         |
  1+20       0.0523      0.59  Q         |         |         |         |
  1+25       0.0563      0.59  Q         |         |         |         |
  1+30       0.0604      0.59  Q         |         |         |         |
  1+35       0.0645      0.59  QV        |         |         |         |
  1+40       0.0686      0.59  QV        |         |         |         |
  1+45       0.0726      0.59  QV        |         |         |         |
  1+50       0.0768      0.60  QV        |         |         |         |
  1+55       0.0809      0.60  QV        |         |         |         |
  2+ 0       0.0850      0.60  QV        |         |         |         |
  2+ 5       0.0891      0.60  QV        |         |         |         |
  2+10       0.0933      0.60  QV        |         |         |         |
  2+15       0.0974      0.60  QV        |         |         |         |
  2+20       0.1016      0.60  QV        |         |         |         |
  2+25       0.1058      0.61  QV        |         |         |         |
  2+30       0.1099      0.61  QV        |         |         |         |
  2+35       0.1141      0.61  QV        |         |         |         |
  2+40       0.1183      0.61  QV        |         |         |         |
  2+45       0.1225      0.61  QV        |         |         |         |
  2+50       0.1268      0.61  Q V       |         |         |         |
  2+55       0.1310      0.62  Q V       |         |         |         |
  3+ 0       0.1353      0.62  Q V       |         |         |         |
  3+ 5       0.1395      0.62  Q V       |         |         |         |
  3+10       0.1438      0.62  Q V       |         |         |         |
  3+15       0.1481      0.62  Q V       |         |         |         |
  3+20       0.1524      0.62  Q V       |         |         |         |
  3+25       0.1567      0.62  Q V       |         |         |         |
  3+30       0.1610      0.63  Q V       |         |         |         |
  3+35       0.1653      0.63  Q V       |         |         |         |
  3+40       0.1696      0.63  Q V       |         |         |         |
  3+45       0.1740      0.63  Q V       |         |         |         |
  3+50       0.1783      0.63  Q V       |         |         |         |
  3+55       0.1827      0.63  Q V       |         |         |         |
  4+ 0       0.1871      0.64  Q V       |         |         |         |
  4+ 5       0.1915      0.64  Q  V      |         |         |         |
  4+10       0.1959      0.64  Q  V      |         |         |         |
  4+15       0.2003      0.64  Q  V      |         |         |         |
  4+20       0.2048      0.64  Q  V      |         |         |         |
  4+25       0.2092      0.65  Q  V      |         |         |         |
```

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4+30 | 0.2137 | 0.65 | Q | V | | | | |
| 4+35 | 0.2181 | 0.65 | Q | V | | | | |
| 4+40 | 0.2226 | 0.65 | Q | V | | | | |
| 4+45 | 0.2271 | 0.65 | Q | V | | | | |
| 4+50 | 0.2316 | 0.66 | Q | V | | | | |
| 4+55 | 0.2361 | 0.66 | Q | V | | | | |
| 5+ 0 | 0.2407 | 0.66 | Q | V | | | | |
| 5+ 5 | 0.2452 | 0.66 | Q | V | | | | |
| 5+10 | 0.2498 | 0.66 | Q | V | | | | |
| 5+15 | 0.2544 | 0.67 | Q | V | | | | |
| 5+20 | 0.2590 | 0.67 | Q | V | | | | |
| 5+25 | 0.2636 | 0.67 | Q | V | | | | |
| 5+30 | 0.2682 | 0.67 | Q | V | | | | |
| 5+35 | 0.2728 | 0.67 | Q | V | | | | |
| 5+40 | 0.2775 | 0.68 | Q | V | | | | |
| 5+45 | 0.2822 | 0.68 | Q | V | | | | |
| 5+50 | 0.2869 | 0.68 | Q | V | | | | |
| 5+55 | 0.2915 | 0.68 | Q | V | | | | |
| 6+ 0 | 0.2963 | 0.68 | Q | V | | | | |
| 6+ 5 | 0.3010 | 0.69 | Q | V | | | | |
| 6+10 | 0.3057 | 0.69 | Q | V | | | | |
| 6+15 | 0.3105 | 0.69 | Q | V | | | | |
| 6+20 | 0.3153 | 0.69 | Q | V | | | | |
| 6+25 | 0.3201 | 0.70 | Q | V | | | | |
| 6+30 | 0.3249 | 0.70 | Q | V | | | | |
| 6+35 | 0.3297 | 0.70 | Q | V | | | | |
| 6+40 | 0.3345 | 0.70 | Q | V | | | | |
| 6+45 | 0.3394 | 0.71 | Q | V | | | | |
| 6+50 | 0.3443 | 0.71 | Q | V | | | | |
| 6+55 | 0.3492 | 0.71 | Q | V | | | | |
| 7+ 0 | 0.3541 | 0.71 | Q | V | | | | |
| 7+ 5 | 0.3590 | 0.72 | Q | V | | | | |
| 7+10 | 0.3640 | 0.72 | Q | V | | | | |
| 7+15 | 0.3689 | 0.72 | Q | V | | | | |
| 7+20 | 0.3739 | 0.72 | Q | V | | | | |
| 7+25 | 0.3789 | 0.73 | Q | V | | | | |
| 7+30 | 0.3840 | 0.73 | Q | V | | | | |
| 7+35 | 0.3890 | 0.73 | Q | V | | | | |
| 7+40 | 0.3941 | 0.74 | Q | V | | | | |
| 7+45 | 0.3992 | 0.74 | Q | V | | | | |
| 7+50 | 0.4043 | 0.74 | Q | V | | | | |
| 7+55 | 0.4094 | 0.74 | Q | V | | | | |
| 8+ 0 | 0.4145 | 0.75 | Q | V | | | | |
| 8+ 5 | 0.4197 | 0.75 | Q | V | | | | |
| 8+10 | 0.4249 | 0.75 | Q | V | | | | |
| 8+15 | 0.4301 | 0.76 | Q | V | | | | |
| 8+20 | 0.4353 | 0.76 | Q | V | | | | |
| 8+25 | 0.4406 | 0.76 | Q | V | | | | |
| 8+30 | 0.4459 | 0.77 | Q | V | | | | |
| 8+35 | 0.4512 | 0.77 | Q | V | | | | |
| 8+40 | 0.4565 | 0.77 | Q | V | | | | |
| 8+45 | 0.4619 | 0.78 | Q | V | | | | |
| 8+50 | 0.4672 | 0.78 | Q | V | | | | |
| 8+55 | 0.4726 | 0.78 | Q | V | | | | |
| 9+ 0 | 0.4780 | 0.79 | Q | V | | | | |
| 9+ 5 | 0.4835 | 0.79 | Q | V | | | | |
| 9+10 | 0.4890 | 0.79 | Q | V | | | | |
| 9+15 | 0.4945 | 0.80 | Q | V | | | | |
| 9+20 | 0.5000 | 0.80 | Q | V | | | | |
| 9+25 | 0.5056 | 0.81 | Q | V | | | | |
| 9+30 | 0.5111 | 0.81 | Q | V | | | | |
| 9+35 | 0.5167 | 0.81 | Q | V | | | | |
| 9+40 | 0.5224 | 0.82 | Q | V | | | | |
| 9+45 | 0.5281 | 0.82 | Q | V | | | | |
| 9+50 | 0.5338 | 0.83 | Q | V | | | | |
| 9+55 | 0.5395 | 0.83 | Q | V | | | | |
| 10+ 0 | 0.5452 | 0.84 | Q | V | | | | |
| 10+ 5 | 0.5510 | 0.84 | Q | V | | | | |
| 10+10 | 0.5569 | 0.85 | Q | V | | | | |
| 10+15 | 0.5627 | 0.85 | Q | V | | | | |
| 10+20 | 0.5686 | 0.85 | Q | V | | | | |

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10+25       0.5745      0.86  Q        V|         |          |          |
10+30       0.5805      0.86  Q        V|         |          |          |
10+35       0.5865      0.87  Q        V|         |          |          |
10+40       0.5925      0.88  Q        V|         |          |          |
10+45       0.5986      0.88  Q        V|         |          |          |
10+50       0.6047      0.89  Q        V|         |          |          |
10+55       0.6108      0.89  Q        V|         |          |          |
11+ 0       0.6170      0.90  Q        V|         |          |          |
11+ 5       0.6232      0.90  Q        V|         |          |          |
11+10       0.6295      0.91  Q         V         |          |          |
11+15       0.6358      0.92  Q         V         |          |          |
11+20       0.6421      0.92  Q         V         |          |          |
11+25       0.6485      0.93  Q         V         |          |          |
11+30       0.6549      0.93  Q         V         |          |          |
11+35       0.6614      0.94  Q         V         |          |          |
11+40       0.6679      0.95  Q         V         |          |          |
11+45       0.6745      0.96  Q         V         |          |          |
11+50       0.6811      0.96  Q         V         |          |          |
11+55       0.6878      0.97  Q         V         |          |          |
12+ 0       0.6946      0.98  Q         |V        |          |          |
12+ 5       0.7013      0.99  Q         |V        |          |          |
12+10       0.7083      1.00  Q         |V        |          |          |
12+15       0.7153      1.03  Q         |V        |          |          |
12+20       0.7226      1.05  Q         |V        |          |          |
12+25       0.7299      1.06  Q         |V        |          |          |
12+30       0.7372      1.07  Q         |V        |          |          |
12+35       0.7447      1.08  Q         |V        |          |          |
12+40       0.7522      1.09  Q         |V        |          |          |
12+45       0.7598      1.10  Q         | V       |          |          |
12+50       0.7675      1.11  Q         | V       |          |          |
12+55       0.7752      1.13  Q         | V       |          |          |
13+ 0       0.7831      1.14  Q         | V       |          |          |
13+ 5       0.7910      1.15  Q         | V       |          |          |
13+10       0.7989      1.16  Q         | V       |          |          |
13+15       0.8070      1.17  Q         | V       |          |          |
13+20       0.8152      1.18  Q         |  V      |          |          |
13+25       0.8234      1.20  Q         |  V      |          |          |
13+30       0.8317      1.21  Q         |  V      |          |          |
13+35       0.8401      1.22  Q         |  V      |          |          |
13+40       0.8487      1.24  Q         |  V      |          |          |
13+45       0.8573      1.25  |Q        |  V      |          |          |
13+50       0.8660      1.27  |Q        |  V      |          |          |
13+55       0.8749      1.29  |Q        |  V      |          |          |
14+ 0       0.8838      1.30  |Q        |   V     |          |          |
14+ 5       0.8930      1.32  |Q        |   V     |          |          |
14+10       0.9022      1.34  |Q        |   V     |          |          |
14+15       0.9116      1.36  |Q        |   V     |          |          |
14+20       0.9211      1.38  |Q        |   V     |          |          |
14+25       0.9308      1.41  |Q        |   V     |          |          |
14+30       0.9406      1.43  |Q        |    V    |          |          |
14+35       0.9507      1.46  |Q        |    V    |          |          |
14+40       0.9609      1.48  |Q        |    V    |          |          |
14+45       0.9713      1.52  |Q        |    V    |          |          |
14+50       0.9820      1.55  |Q        |    V    |          |          |
14+55       0.9929      1.58  |Q        |    V    |          |          |
15+ 0       1.0041      1.62  |Q        |     V   |          |          |
15+ 5       1.0155      1.66  |Q        |     V   |          |          |
15+10       1.0273      1.71  |Q        |     V   |          |          |
15+15       1.0394      1.76  |Q        |     V   |          |          |
15+20       1.0519      1.81  |Q        |     V   |          |          |
15+25       1.0646      1.84  |Q        |     V   |          |          |
15+30       1.0766      1.74  |Q        |      V  |          |          |
15+35       1.0864      1.42  |Q        |      V  |          |          |
15+40       1.0955      1.33  |Q        |      V  |          |          |
15+45       1.1050      1.37  |Q        |      V  |          |          |
15+50       1.1150      1.46  |Q        |      V  |          |          |
15+55       1.1266      1.67  |Q        |      V  |          |          |
16+ 0       1.1413      2.15  |Q        |       V |          |          |
16+ 5       1.1885      6.84  |    Q    |       V |          |          |
16+10       1.3248     19.80  |         |    Q    |V         |          |
16+15       1.6053     40.72  |         |         |    V     | Q        |
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16+20      1.7395    19.49  |          |    Q     |      V  |          |
16+25      1.8159    11.09  |        Q |          |       V |          |
16+30      1.8697     7.82  |     Q    |          |         V|          |
16+35      1.9116     6.08  |   Q      |          |          V          |
16+40      1.9438     4.66  |  Q       |          |           |V         |
16+45      1.9681     3.54  | Q        |          |           |V         |
16+50      1.9854     2.51  | Q        |          |           |V         |
16+55      2.0002     2.15  |Q         |          |           |V         |
17+ 0      2.0137     1.96  |Q         |          |           | V        |
17+ 5      2.0265     1.86  |Q         |          |           | V        |
17+10      2.0388     1.78  |Q         |          |           | V        |
17+15      2.0497     1.58  |Q         |          |           | V        |
17+20      2.0597     1.45  |Q         |          |           | V        |
17+25      2.0689     1.33  |Q         |          |           | V        |
17+30      2.0778     1.30  |Q         |          |           |  V       |
17+35      2.0865     1.26  |Q         |          |           |  V       |
17+40      2.0950     1.23  Q          |          |           |  V       |
17+45      2.1033     1.20  Q          |          |           |  V       |
17+50      2.1114     1.18  Q          |          |           |  V       |
17+55      2.1193     1.15  Q          |          |           |  V       |
18+ 0      2.1271     1.13  Q          |          |           |  V       |
18+ 5      2.1348     1.11  Q          |          |           |   V      |
18+10      2.1422     1.08  Q          |          |           |   V      |
18+15      2.1494     1.04  Q          |          |           |   V      |
18+20      2.1564     1.02  Q          |          |           |   V      |
18+25      2.1633     1.00  Q          |          |           |   V      |
18+30      2.1700     0.98  Q          |          |           |   V      |
18+35      2.1766     0.96  Q          |          |           |   V      |
18+40      2.1831     0.95  Q          |          |           |   V      |
18+45      2.1896     0.93  Q          |          |           |   V      |
18+50      2.1959     0.92  Q          |          |           |    V     |
18+55      2.2021     0.91  Q          |          |           |    V     |
19+ 0      2.2083     0.89  Q          |          |           |    V     |
19+ 5      2.2144     0.88  Q          |          |           |    V     |
19+10      2.2204     0.87  Q          |          |           |    V     |
19+15      2.2263     0.86  Q          |          |           |    V     |
19+20      2.2322     0.85  Q          |          |           |    V     |
19+25      2.2380     0.84  Q          |          |           |    V     |
19+30      2.2437     0.83  Q          |          |           |    V     |
19+35      2.2494     0.82  Q          |          |           |    V     |
19+40      2.2550     0.82  Q          |          |           |    V     |
19+45      2.2606     0.81  Q          |          |           |     V    |
19+50      2.2661     0.80  Q          |          |           |     V    |
19+55      2.2716     0.79  Q          |          |           |     V    |
20+ 0      2.2770     0.79  Q          |          |           |     V    |
20+ 5      2.2823     0.78  Q          |          |           |     V    |
20+10      2.2876     0.77  Q          |          |           |     V    |
20+15      2.2929     0.76  Q          |          |           |     V    |
20+20      2.2981     0.76  Q          |          |           |     V    |
20+25      2.3033     0.75  Q          |          |           |     V    |
20+30      2.3084     0.75  Q          |          |           |     V    |
20+35      2.3135     0.74  Q          |          |           |     V    |
20+40      2.3186     0.73  Q          |          |           |     V    |
20+45      2.3236     0.73  Q          |          |           |      V   |
20+50      2.3286     0.72  Q          |          |           |      V   |
20+55      2.3335     0.72  Q          |          |           |      V   |
21+ 0      2.3384     0.71  Q          |          |           |      V   |
21+ 5      2.3433     0.71  Q          |          |           |      V   |
21+10      2.3481     0.70  Q          |          |           |      V   |
21+15      2.3529     0.70  Q          |          |           |      V   |
21+20      2.3577     0.69  Q          |          |           |      V   |
21+25      2.3624     0.69  Q          |          |           |      V   |
21+30      2.3671     0.68  Q          |          |           |      V   |
21+35      2.3718     0.68  Q          |          |           |      V   |
21+40      2.3764     0.67  Q          |          |           |      V   |
21+45      2.3810     0.67  Q          |          |           |      V   |
21+50      2.3856     0.67  Q          |          |           |       V  |
21+55      2.3902     0.66  Q          |          |           |       V  |
22+ 0      2.3947     0.66  Q          |          |           |       V  |
22+ 5      2.3992     0.65  Q          |          |           |       V  |
22+10      2.4037     0.65  Q          |          |           |       V  |
```

```
  22+15       2.4081      0.65  Q          |          |          |       V |
  22+20       2.4126      0.64  Q          |          |          |       V |
  22+25       2.4170      0.64  Q          |          |          |       V |
  22+30       2.4213      0.64  Q          |          |          |       V |
  22+35       2.4257      0.63  Q          |          |          |       V |
  22+40       2.4300      0.63  Q          |          |          |       V |
  22+45       2.4343      0.63  Q          |          |          |       V |
  22+50       2.4386      0.62  Q          |          |          |       V |
  22+55       2.4429      0.62  Q          |          |          |       V |
  23+ 0       2.4471      0.62  Q          |          |          |        V|
  23+ 5       2.4513      0.61  Q          |          |          |        V|
  23+10       2.4555      0.61  Q          |          |          |        V|
  23+15       2.4597      0.61  Q          |          |          |        V|
  23+20       2.4638      0.60  Q          |          |          |        V|
  23+25       2.4680      0.60  Q          |          |          |        V|
  23+30       2.4721      0.60  Q          |          |          |        V|
  23+35       2.4762      0.59  Q          |          |          |        V|
  23+40       2.4803      0.59  Q          |          |          |        V|
  23+45       2.4843      0.59  Q          |          |          |        V|
  23+50       2.4884      0.59  Q          |          |          |        V|
  23+55       2.4924      0.58  Q          |          |          |        V|
  24+ 0       2.4964      0.58  Q          |          |          |        V|
  24+ 5       2.5002      0.56  Q          |          |          |        V|
  24+10       2.5034      0.46  Q          |          |          |        V|
  24+15       2.5051      0.25  Q          |          |          |        V|
  24+20       2.5062      0.15  Q          |          |          |        V|
  24+25       2.5069      0.10  Q          |          |          |        V|
  24+30       2.5073      0.06  Q          |          |          |        V|
  24+35       2.5076      0.04  Q          |          |          |        V|
  24+40       2.5077      0.02  Q          |          |          |        V|
  24+45       2.5078      0.01  Q          |          |          |        V|
  24+50       2.5079      0.01  Q          |          |          |        V|
  24+55       2.5079      0.01  Q          |          |          |        V|
  25+ 0       2.5080      0.00  Q          |          |          |        V|
  25+ 5       2.5080      0.00  Q          |          |          |        V|
  25+10       2.5080      0.00  Q          |          |          |        V|
  25+15       2.5080      0.00  Q          |          |          |        V|
-------------------------------------------------------------------------
```

Area ‘G’ – 10 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'G'
10 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            25.42            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      67.0         25.42      1.000     0.578    1.000    0.578

Area-averaged adjusted loss rate Fm (In/Hr) =  0.578

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 25.42 | 1.000 | 67.0 | 67.0 | 4.93 | 0.486 |

Area-averaged catchment yield fraction, Y = 0.486
Area-averaged low loss fraction, Yb = 0.514
User entry of time of concentration = 0.228 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 25.42(Ac.)
Catchment Lag time = 0.182 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 45.6871
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.578(In/Hr)
Average low loss rate fraction (Yb) = 0.514 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 25.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.474(In)
30-minute factor = 0.999 Adjusted rainfall = 0.811(In)
1-hour factor = 0.999 Adjusted rainfall = 0.999(In)
3-hour factor = 1.000 Adjusted rainfall = 1.972(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 307.42 (CFS)) | |
| 1 | 3.770 | 11.590 |
| 2 | 19.507 | 48.379 |
| 3 | 57.188 | 115.840 |
| 4 | 74.099 | 51.988 |
| 5 | 83.072 | 27.584 |
| 6 | 89.001 | 18.226 |
| 7 | 93.088 | 12.567 |
| 8 | 95.822 | 8.402 |
| 9 | 97.540 | 5.282 |
| 10 | 98.307 | 2.360 |
| 11 | 98.797 | 1.505 |
| 12 | 99.152 | 1.093 |
| 13 | 99.469 | 0.973 |
| 14 | 99.765 | 0.912 |
| 15 | 99.923 | 0.483 |
| 16 | 100.000 | 0.238 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4739 | 0.4739 |
| 2 | 0.5835 | 0.1095 |
| 3 | 0.6590 | 0.0755 |
| 4 | 0.7184 | 0.0594 |
| 5 | 0.7681 | 0.0497 |
| 6 | 0.8113 | 0.0432 |
| 7 | 0.8497 | 0.0384 |
| 8 | 0.8844 | 0.0347 |
| 9 | 0.9162 | 0.0318 |
| 10 | 0.9456 | 0.0294 |

| | | |
|---|---|---|
| 11 | 0.9731 | 0.0274 |
| 12 | 0.9988 | 0.0257 |
| 13 | 1.0496 | 0.0508 |
| 14 | 1.0989 | 0.0493 |
| 15 | 1.1468 | 0.0480 |
| 16 | 1.1936 | 0.0468 |
| 17 | 1.2393 | 0.0457 |
| 18 | 1.2840 | 0.0447 |
| 19 | 1.3277 | 0.0437 |
| 20 | 1.3705 | 0.0429 |
| 21 | 1.4126 | 0.0420 |
| 22 | 1.4539 | 0.0413 |
| 23 | 1.4945 | 0.0406 |
| 24 | 1.5344 | 0.0399 |
| 25 | 1.5737 | 0.0393 |
| 26 | 1.6124 | 0.0387 |
| 27 | 1.6505 | 0.0381 |
| 28 | 1.6881 | 0.0376 |
| 29 | 1.7252 | 0.0371 |
| 30 | 1.7618 | 0.0366 |
| 31 | 1.7979 | 0.0361 |
| 32 | 1.8337 | 0.0357 |
| 33 | 1.8689 | 0.0353 |
| 34 | 1.9038 | 0.0349 |
| 35 | 1.9383 | 0.0345 |
| 36 | 1.9724 | 0.0341 |
| 37 | 2.0061 | 0.0337 |
| 38 | 2.0395 | 0.0334 |
| 39 | 2.0725 | 0.0330 |
| 40 | 2.1052 | 0.0327 |
| 41 | 2.1376 | 0.0324 |
| 42 | 2.1697 | 0.0321 |
| 43 | 2.2016 | 0.0318 |
| 44 | 2.2331 | 0.0315 |
| 45 | 2.2643 | 0.0313 |
| 46 | 2.2953 | 0.0310 |
| 47 | 2.3261 | 0.0307 |
| 48 | 2.3566 | 0.0305 |
| 49 | 2.3868 | 0.0302 |
| 50 | 2.4168 | 0.0300 |
| 51 | 2.4466 | 0.0298 |
| 52 | 2.4762 | 0.0296 |
| 53 | 2.5055 | 0.0293 |
| 54 | 2.5346 | 0.0291 |
| 55 | 2.5636 | 0.0289 |
| 56 | 2.5923 | 0.0287 |
| 57 | 2.6208 | 0.0285 |
| 58 | 2.6492 | 0.0283 |
| 59 | 2.6773 | 0.0282 |
| 60 | 2.7053 | 0.0280 |
| 61 | 2.7331 | 0.0278 |
| 62 | 2.7608 | 0.0276 |
| 63 | 2.7882 | 0.0275 |
| 64 | 2.8155 | 0.0273 |
| 65 | 2.8426 | 0.0271 |
| 66 | 2.8696 | 0.0270 |
| 67 | 2.8964 | 0.0268 |
| 68 | 2.9231 | 0.0267 |
| 69 | 2.9496 | 0.0265 |
| 70 | 2.9760 | 0.0264 |
| 71 | 3.0022 | 0.0262 |
| 72 | 3.0283 | 0.0261 |
| 73 | 3.0549 | 0.0266 |
| 74 | 3.0813 | 0.0265 |
| 75 | 3.1077 | 0.0263 |
| 76 | 3.1339 | 0.0262 |
| 77 | 3.1599 | 0.0261 |
| 78 | 3.1859 | 0.0259 |
| 79 | 3.2117 | 0.0258 |
| 80 | 3.2374 | 0.0257 |
| 81 | 3.2630 | 0.0256 |

| | | |
|---|---|---|
| 82 | 3.2885 | 0.0255 |
| 83 | 3.3138 | 0.0254 |
| 84 | 3.3391 | 0.0252 |
| 85 | 3.3642 | 0.0251 |
| 86 | 3.3893 | 0.0250 |
| 87 | 3.4142 | 0.0249 |
| 88 | 3.4390 | 0.0248 |
| 89 | 3.4637 | 0.0247 |
| 90 | 3.4883 | 0.0246 |
| 91 | 3.5129 | 0.0245 |
| 92 | 3.5373 | 0.0244 |
| 93 | 3.5616 | 0.0243 |
| 94 | 3.5858 | 0.0242 |
| 95 | 3.6100 | 0.0241 |
| 96 | 3.6340 | 0.0240 |
| 97 | 3.6579 | 0.0239 |
| 98 | 3.6818 | 0.0239 |
| 99 | 3.7056 | 0.0238 |
| 100 | 3.7292 | 0.0237 |
| 101 | 3.7528 | 0.0236 |
| 102 | 3.7763 | 0.0235 |
| 103 | 3.7998 | 0.0234 |
| 104 | 3.8231 | 0.0233 |
| 105 | 3.8464 | 0.0233 |
| 106 | 3.8695 | 0.0232 |
| 107 | 3.8926 | 0.0231 |
| 108 | 3.9157 | 0.0230 |
| 109 | 3.9386 | 0.0229 |
| 110 | 3.9615 | 0.0229 |
| 111 | 3.9843 | 0.0228 |
| 112 | 4.0070 | 0.0227 |
| 113 | 4.0296 | 0.0226 |
| 114 | 4.0522 | 0.0226 |
| 115 | 4.0747 | 0.0225 |
| 116 | 4.0971 | 0.0224 |
| 117 | 4.1194 | 0.0224 |
| 118 | 4.1417 | 0.0223 |
| 119 | 4.1639 | 0.0222 |
| 120 | 4.1861 | 0.0221 |
| 121 | 4.2081 | 0.0221 |
| 122 | 4.2302 | 0.0220 |
| 123 | 4.2521 | 0.0219 |
| 124 | 4.2740 | 0.0219 |
| 125 | 4.2958 | 0.0218 |
| 126 | 4.3175 | 0.0218 |
| 127 | 4.3392 | 0.0217 |
| 128 | 4.3609 | 0.0216 |
| 129 | 4.3824 | 0.0216 |
| 130 | 4.4039 | 0.0215 |
| 131 | 4.4254 | 0.0214 |
| 132 | 4.4467 | 0.0214 |
| 133 | 4.4681 | 0.0213 |
| 134 | 4.4893 | 0.0213 |
| 135 | 4.5105 | 0.0212 |
| 136 | 4.5317 | 0.0211 |
| 137 | 4.5528 | 0.0211 |
| 138 | 4.5738 | 0.0210 |
| 139 | 4.5948 | 0.0210 |
| 140 | 4.6157 | 0.0209 |
| 141 | 4.6366 | 0.0209 |
| 142 | 4.6574 | 0.0208 |
| 143 | 4.6782 | 0.0208 |
| 144 | 4.6989 | 0.0207 |
| 145 | 4.7195 | 0.0207 |
| 146 | 4.7401 | 0.0206 |
| 147 | 4.7607 | 0.0206 |
| 148 | 4.7812 | 0.0205 |
| 149 | 4.8016 | 0.0205 |
| 150 | 4.8220 | 0.0204 |
| 151 | 4.8424 | 0.0204 |
| 152 | 4.8627 | 0.0203 |

| | | |
|---|---|---|
| 153 | 4.8829 | 0.0203 |
| 154 | 4.9031 | 0.0202 |
| 155 | 4.9233 | 0.0202 |
| 156 | 4.9434 | 0.0201 |
| 157 | 4.9635 | 0.0201 |
| 158 | 4.9835 | 0.0200 |
| 159 | 5.0034 | 0.0200 |
| 160 | 5.0234 | 0.0199 |
| 161 | 5.0432 | 0.0199 |
| 162 | 5.0631 | 0.0198 |
| 163 | 5.0829 | 0.0198 |
| 164 | 5.1026 | 0.0197 |
| 165 | 5.1223 | 0.0197 |
| 166 | 5.1419 | 0.0197 |
| 167 | 5.1616 | 0.0196 |
| 168 | 5.1811 | 0.0196 |
| 169 | 5.2007 | 0.0195 |
| 170 | 5.2201 | 0.0195 |
| 171 | 5.2396 | 0.0194 |
| 172 | 5.2590 | 0.0194 |
| 173 | 5.2783 | 0.0194 |
| 174 | 5.2977 | 0.0193 |
| 175 | 5.3169 | 0.0193 |
| 176 | 5.3362 | 0.0192 |
| 177 | 5.3554 | 0.0192 |
| 178 | 5.3745 | 0.0192 |
| 179 | 5.3936 | 0.0191 |
| 180 | 5.4127 | 0.0191 |
| 181 | 5.4318 | 0.0190 |
| 182 | 5.4508 | 0.0190 |
| 183 | 5.4697 | 0.0190 |
| 184 | 5.4886 | 0.0189 |
| 185 | 5.5075 | 0.0189 |
| 186 | 5.5264 | 0.0189 |
| 187 | 5.5452 | 0.0188 |
| 188 | 5.5640 | 0.0188 |
| 189 | 5.5827 | 0.0187 |
| 190 | 5.6014 | 0.0187 |
| 191 | 5.6201 | 0.0187 |
| 192 | 5.6387 | 0.0186 |
| 193 | 5.6573 | 0.0186 |
| 194 | 5.6759 | 0.0186 |
| 195 | 5.6944 | 0.0185 |
| 196 | 5.7129 | 0.0185 |
| 197 | 5.7313 | 0.0185 |
| 198 | 5.7498 | 0.0184 |
| 199 | 5.7682 | 0.0184 |
| 200 | 5.7865 | 0.0184 |
| 201 | 5.8048 | 0.0183 |
| 202 | 5.8231 | 0.0183 |
| 203 | 5.8414 | 0.0183 |
| 204 | 5.8596 | 0.0182 |
| 205 | 5.8778 | 0.0182 |
| 206 | 5.8959 | 0.0182 |
| 207 | 5.9141 | 0.0181 |
| 208 | 5.9322 | 0.0181 |
| 209 | 5.9502 | 0.0181 |
| 210 | 5.9682 | 0.0180 |
| 211 | 5.9862 | 0.0180 |
| 212 | 6.0042 | 0.0180 |
| 213 | 6.0221 | 0.0179 |
| 214 | 6.0401 | 0.0179 |
| 215 | 6.0579 | 0.0179 |
| 216 | 6.0758 | 0.0178 |
| 217 | 6.0936 | 0.0178 |
| 218 | 6.1114 | 0.0178 |
| 219 | 6.1291 | 0.0178 |
| 220 | 6.1468 | 0.0177 |
| 221 | 6.1645 | 0.0177 |
| 222 | 6.1822 | 0.0177 |
| 223 | 6.1998 | 0.0176 |

| | | |
|---|---|---|
| 224 | 6.2174 | 0.0176 |
| 225 | 6.2350 | 0.0176 |
| 226 | 6.2526 | 0.0175 |
| 227 | 6.2701 | 0.0175 |
| 228 | 6.2876 | 0.0175 |
| 229 | 6.3051 | 0.0175 |
| 230 | 6.3225 | 0.0174 |
| 231 | 6.3399 | 0.0174 |
| 232 | 6.3573 | 0.0174 |
| 233 | 6.3746 | 0.0174 |
| 234 | 6.3920 | 0.0173 |
| 235 | 6.4093 | 0.0173 |
| 236 | 6.4265 | 0.0173 |
| 237 | 6.4438 | 0.0172 |
| 238 | 6.4610 | 0.0172 |
| 239 | 6.4782 | 0.0172 |
| 240 | 6.4954 | 0.0172 |
| 241 | 6.5125 | 0.0171 |
| 242 | 6.5296 | 0.0171 |
| 243 | 6.5467 | 0.0171 |
| 244 | 6.5638 | 0.0171 |
| 245 | 6.5808 | 0.0170 |
| 246 | 6.5978 | 0.0170 |
| 247 | 6.6148 | 0.0170 |
| 248 | 6.6318 | 0.0170 |
| 249 | 6.6487 | 0.0169 |
| 250 | 6.6656 | 0.0169 |
| 251 | 6.6825 | 0.0169 |
| 252 | 6.6994 | 0.0169 |
| 253 | 6.7162 | 0.0168 |
| 254 | 6.7330 | 0.0168 |
| 255 | 6.7498 | 0.0168 |
| 256 | 6.7666 | 0.0168 |
| 257 | 6.7833 | 0.0167 |
| 258 | 6.8000 | 0.0167 |
| 259 | 6.8167 | 0.0167 |
| 260 | 6.8334 | 0.0167 |
| 261 | 6.8500 | 0.0166 |
| 262 | 6.8667 | 0.0166 |
| 263 | 6.8833 | 0.0166 |
| 264 | 6.8998 | 0.0166 |
| 265 | 6.9164 | 0.0166 |
| 266 | 6.9329 | 0.0165 |
| 267 | 6.9494 | 0.0165 |
| 268 | 6.9659 | 0.0165 |
| 269 | 6.9824 | 0.0165 |
| 270 | 6.9988 | 0.0164 |
| 271 | 7.0152 | 0.0164 |
| 272 | 7.0316 | 0.0164 |
| 273 | 7.0480 | 0.0164 |
| 274 | 7.0643 | 0.0164 |
| 275 | 7.0807 | 0.0163 |
| 276 | 7.0970 | 0.0163 |
| 277 | 7.1133 | 0.0163 |
| 278 | 7.1295 | 0.0163 |
| 279 | 7.1458 | 0.0162 |
| 280 | 7.1620 | 0.0162 |
| 281 | 7.1782 | 0.0162 |
| 282 | 7.1944 | 0.0162 |
| 283 | 7.2105 | 0.0162 |
| 284 | 7.2267 | 0.0161 |
| 285 | 7.2428 | 0.0161 |
| 286 | 7.2589 | 0.0161 |
| 287 | 7.2750 | 0.0161 |
| 288 | 7.2910 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0083 | 0.0078 |

| | | | |
|---|---|---|---|
| 2 | 0.0161 | 0.0083 | 0.0078 |
| 3 | 0.0161 | 0.0083 | 0.0078 |
| 4 | 0.0161 | 0.0083 | 0.0078 |
| 5 | 0.0162 | 0.0083 | 0.0079 |
| 6 | 0.0162 | 0.0083 | 0.0079 |
| 7 | 0.0162 | 0.0084 | 0.0079 |
| 8 | 0.0163 | 0.0084 | 0.0079 |
| 9 | 0.0163 | 0.0084 | 0.0079 |
| 10 | 0.0163 | 0.0084 | 0.0079 |
| 11 | 0.0164 | 0.0084 | 0.0080 |
| 12 | 0.0164 | 0.0084 | 0.0080 |
| 13 | 0.0164 | 0.0085 | 0.0080 |
| 14 | 0.0165 | 0.0085 | 0.0080 |
| 15 | 0.0165 | 0.0085 | 0.0080 |
| 16 | 0.0165 | 0.0085 | 0.0080 |
| 17 | 0.0166 | 0.0085 | 0.0080 |
| 18 | 0.0166 | 0.0085 | 0.0081 |
| 19 | 0.0166 | 0.0086 | 0.0081 |
| 20 | 0.0167 | 0.0086 | 0.0081 |
| 21 | 0.0167 | 0.0086 | 0.0081 |
| 22 | 0.0167 | 0.0086 | 0.0081 |
| 23 | 0.0168 | 0.0086 | 0.0082 |
| 24 | 0.0168 | 0.0086 | 0.0082 |
| 25 | 0.0169 | 0.0087 | 0.0082 |
| 26 | 0.0169 | 0.0087 | 0.0082 |
| 27 | 0.0169 | 0.0087 | 0.0082 |
| 28 | 0.0170 | 0.0087 | 0.0082 |
| 29 | 0.0170 | 0.0088 | 0.0083 |
| 30 | 0.0170 | 0.0088 | 0.0083 |
| 31 | 0.0171 | 0.0088 | 0.0083 |
| 32 | 0.0171 | 0.0088 | 0.0083 |
| 33 | 0.0172 | 0.0088 | 0.0083 |
| 34 | 0.0172 | 0.0088 | 0.0083 |
| 35 | 0.0172 | 0.0089 | 0.0084 |
| 36 | 0.0173 | 0.0089 | 0.0084 |
| 37 | 0.0173 | 0.0089 | 0.0084 |
| 38 | 0.0174 | 0.0089 | 0.0084 |
| 39 | 0.0174 | 0.0090 | 0.0085 |
| 40 | 0.0174 | 0.0090 | 0.0085 |
| 41 | 0.0175 | 0.0090 | 0.0085 |
| 42 | 0.0175 | 0.0090 | 0.0085 |
| 43 | 0.0176 | 0.0090 | 0.0085 |
| 44 | 0.0176 | 0.0091 | 0.0086 |
| 45 | 0.0177 | 0.0091 | 0.0086 |
| 46 | 0.0177 | 0.0091 | 0.0086 |
| 47 | 0.0178 | 0.0091 | 0.0086 |
| 48 | 0.0178 | 0.0091 | 0.0086 |
| 49 | 0.0178 | 0.0092 | 0.0087 |
| 50 | 0.0179 | 0.0092 | 0.0087 |
| 51 | 0.0179 | 0.0092 | 0.0087 |
| 52 | 0.0180 | 0.0092 | 0.0087 |
| 53 | 0.0180 | 0.0093 | 0.0088 |
| 54 | 0.0181 | 0.0093 | 0.0088 |
| 55 | 0.0181 | 0.0093 | 0.0088 |
| 56 | 0.0182 | 0.0093 | 0.0088 |
| 57 | 0.0182 | 0.0094 | 0.0088 |
| 58 | 0.0183 | 0.0094 | 0.0089 |
| 59 | 0.0183 | 0.0094 | 0.0089 |
| 60 | 0.0184 | 0.0094 | 0.0089 |
| 61 | 0.0184 | 0.0095 | 0.0089 |
| 62 | 0.0185 | 0.0095 | 0.0090 |
| 63 | 0.0185 | 0.0095 | 0.0090 |
| 64 | 0.0186 | 0.0095 | 0.0090 |
| 65 | 0.0186 | 0.0096 | 0.0090 |
| 66 | 0.0187 | 0.0096 | 0.0091 |
| 67 | 0.0187 | 0.0096 | 0.0091 |
| 68 | 0.0188 | 0.0097 | 0.0091 |
| 69 | 0.0189 | 0.0097 | 0.0092 |
| 70 | 0.0189 | 0.0097 | 0.0092 |
| 71 | 0.0190 | 0.0098 | 0.0092 |
| 72 | 0.0190 | 0.0098 | 0.0092 |

| | | | |
|---|---|---|---|
| 73 | 0.0191 | 0.0098 | 0.0093 |
| 74 | 0.0191 | 0.0098 | 0.0093 |
| 75 | 0.0192 | 0.0099 | 0.0093 |
| 76 | 0.0192 | 0.0099 | 0.0093 |
| 77 | 0.0193 | 0.0099 | 0.0094 |
| 78 | 0.0194 | 0.0100 | 0.0094 |
| 79 | 0.0194 | 0.0100 | 0.0094 |
| 80 | 0.0195 | 0.0100 | 0.0095 |
| 81 | 0.0196 | 0.0101 | 0.0095 |
| 82 | 0.0196 | 0.0101 | 0.0095 |
| 83 | 0.0197 | 0.0101 | 0.0096 |
| 84 | 0.0197 | 0.0102 | 0.0096 |
| 85 | 0.0198 | 0.0102 | 0.0096 |
| 86 | 0.0199 | 0.0102 | 0.0097 |
| 87 | 0.0200 | 0.0103 | 0.0097 |
| 88 | 0.0200 | 0.0103 | 0.0097 |
| 89 | 0.0201 | 0.0103 | 0.0098 |
| 90 | 0.0202 | 0.0104 | 0.0098 |
| 91 | 0.0203 | 0.0104 | 0.0098 |
| 92 | 0.0203 | 0.0104 | 0.0099 |
| 93 | 0.0204 | 0.0105 | 0.0099 |
| 94 | 0.0205 | 0.0105 | 0.0099 |
| 95 | 0.0206 | 0.0106 | 0.0100 |
| 96 | 0.0206 | 0.0106 | 0.0100 |
| 97 | 0.0207 | 0.0107 | 0.0101 |
| 98 | 0.0208 | 0.0107 | 0.0101 |
| 99 | 0.0209 | 0.0107 | 0.0101 |
| 100 | 0.0209 | 0.0108 | 0.0102 |
| 101 | 0.0210 | 0.0108 | 0.0102 |
| 102 | 0.0211 | 0.0108 | 0.0102 |
| 103 | 0.0212 | 0.0109 | 0.0103 |
| 104 | 0.0213 | 0.0109 | 0.0103 |
| 105 | 0.0214 | 0.0110 | 0.0104 |
| 106 | 0.0214 | 0.0110 | 0.0104 |
| 107 | 0.0216 | 0.0111 | 0.0105 |
| 108 | 0.0216 | 0.0111 | 0.0105 |
| 109 | 0.0218 | 0.0112 | 0.0106 |
| 110 | 0.0218 | 0.0112 | 0.0106 |
| 111 | 0.0219 | 0.0113 | 0.0107 |
| 112 | 0.0220 | 0.0113 | 0.0107 |
| 113 | 0.0221 | 0.0114 | 0.0108 |
| 114 | 0.0222 | 0.0114 | 0.0108 |
| 115 | 0.0224 | 0.0115 | 0.0109 |
| 116 | 0.0224 | 0.0115 | 0.0109 |
| 117 | 0.0226 | 0.0116 | 0.0110 |
| 118 | 0.0226 | 0.0116 | 0.0110 |
| 119 | 0.0228 | 0.0117 | 0.0111 |
| 120 | 0.0229 | 0.0118 | 0.0111 |
| 121 | 0.0230 | 0.0118 | 0.0112 |
| 122 | 0.0231 | 0.0119 | 0.0112 |
| 123 | 0.0233 | 0.0120 | 0.0113 |
| 124 | 0.0233 | 0.0120 | 0.0113 |
| 125 | 0.0235 | 0.0121 | 0.0114 |
| 126 | 0.0236 | 0.0121 | 0.0115 |
| 127 | 0.0238 | 0.0122 | 0.0115 |
| 128 | 0.0239 | 0.0123 | 0.0116 |
| 129 | 0.0240 | 0.0124 | 0.0117 |
| 130 | 0.0241 | 0.0124 | 0.0117 |
| 131 | 0.0243 | 0.0125 | 0.0118 |
| 132 | 0.0244 | 0.0126 | 0.0119 |
| 133 | 0.0246 | 0.0127 | 0.0120 |
| 134 | 0.0247 | 0.0127 | 0.0120 |
| 135 | 0.0249 | 0.0128 | 0.0121 |
| 136 | 0.0250 | 0.0129 | 0.0122 |
| 137 | 0.0252 | 0.0130 | 0.0123 |
| 138 | 0.0254 | 0.0130 | 0.0123 |
| 139 | 0.0256 | 0.0132 | 0.0124 |
| 140 | 0.0257 | 0.0132 | 0.0125 |
| 141 | 0.0259 | 0.0133 | 0.0126 |
| 142 | 0.0261 | 0.0134 | 0.0127 |
| 143 | 0.0263 | 0.0135 | 0.0128 |

| | | | |
|---|---|---|---|
| 144 | 0.0265 | 0.0136 | 0.0128 |
| 145 | 0.0261 | 0.0134 | 0.0127 |
| 146 | 0.0262 | 0.0135 | 0.0127 |
| 147 | 0.0265 | 0.0136 | 0.0129 |
| 148 | 0.0267 | 0.0137 | 0.0129 |
| 149 | 0.0270 | 0.0139 | 0.0131 |
| 150 | 0.0271 | 0.0140 | 0.0132 |
| 151 | 0.0275 | 0.0141 | 0.0133 |
| 152 | 0.0276 | 0.0142 | 0.0134 |
| 153 | 0.0280 | 0.0144 | 0.0136 |
| 154 | 0.0282 | 0.0145 | 0.0137 |
| 155 | 0.0285 | 0.0147 | 0.0139 |
| 156 | 0.0287 | 0.0148 | 0.0140 |
| 157 | 0.0291 | 0.0150 | 0.0141 |
| 158 | 0.0293 | 0.0151 | 0.0143 |
| 159 | 0.0298 | 0.0153 | 0.0145 |
| 160 | 0.0300 | 0.0154 | 0.0146 |
| 161 | 0.0305 | 0.0157 | 0.0148 |
| 162 | 0.0307 | 0.0158 | 0.0149 |
| 163 | 0.0313 | 0.0161 | 0.0152 |
| 164 | 0.0315 | 0.0162 | 0.0153 |
| 165 | 0.0321 | 0.0165 | 0.0156 |
| 166 | 0.0324 | 0.0167 | 0.0157 |
| 167 | 0.0330 | 0.0170 | 0.0160 |
| 168 | 0.0334 | 0.0172 | 0.0162 |
| 169 | 0.0341 | 0.0175 | 0.0166 |
| 170 | 0.0345 | 0.0177 | 0.0167 |
| 171 | 0.0353 | 0.0181 | 0.0171 |
| 172 | 0.0357 | 0.0184 | 0.0173 |
| 173 | 0.0366 | 0.0188 | 0.0178 |
| 174 | 0.0371 | 0.0191 | 0.0180 |
| 175 | 0.0381 | 0.0196 | 0.0185 |
| 176 | 0.0387 | 0.0199 | 0.0188 |
| 177 | 0.0399 | 0.0205 | 0.0194 |
| 178 | 0.0406 | 0.0209 | 0.0197 |
| 179 | 0.0420 | 0.0216 | 0.0204 |
| 180 | 0.0429 | 0.0220 | 0.0208 |
| 181 | 0.0447 | 0.0230 | 0.0217 |
| 182 | 0.0457 | 0.0235 | 0.0222 |
| 183 | 0.0480 | 0.0247 | 0.0233 |
| 184 | 0.0493 | 0.0254 | 0.0239 |
| 185 | 0.0257 | 0.0132 | 0.0125 |
| 186 | 0.0274 | 0.0141 | 0.0133 |
| 187 | 0.0318 | 0.0164 | 0.0154 |
| 188 | 0.0347 | 0.0179 | 0.0169 |
| 189 | 0.0432 | 0.0222 | 0.0210 |
| 190 | 0.0497 | 0.0256 | 0.0242 |
| 191 | 0.0755 | 0.0388 | 0.0367 |
| 192 | 0.1095 | 0.0482 | 0.0614 |
| 193 | 0.4739 | 0.0482 | 0.4258 |
| 194 | 0.0594 | 0.0306 | 0.0288 |
| 195 | 0.0384 | 0.0198 | 0.0186 |
| 196 | 0.0294 | 0.0151 | 0.0143 |
| 197 | 0.0508 | 0.0261 | 0.0247 |
| 198 | 0.0468 | 0.0241 | 0.0227 |
| 199 | 0.0437 | 0.0225 | 0.0212 |
| 200 | 0.0413 | 0.0212 | 0.0201 |
| 201 | 0.0393 | 0.0202 | 0.0191 |
| 202 | 0.0376 | 0.0193 | 0.0183 |
| 203 | 0.0361 | 0.0186 | 0.0176 |
| 204 | 0.0349 | 0.0179 | 0.0169 |
| 205 | 0.0337 | 0.0173 | 0.0164 |
| 206 | 0.0327 | 0.0168 | 0.0159 |
| 207 | 0.0318 | 0.0164 | 0.0154 |
| 208 | 0.0310 | 0.0159 | 0.0151 |
| 209 | 0.0302 | 0.0156 | 0.0147 |
| 210 | 0.0296 | 0.0152 | 0.0144 |
| 211 | 0.0289 | 0.0149 | 0.0140 |
| 212 | 0.0283 | 0.0146 | 0.0138 |
| 213 | 0.0278 | 0.0143 | 0.0135 |
| 214 | 0.0273 | 0.0140 | 0.0133 |

| | | | |
|---|---|---|---|
| 215 | 0.0268 | 0.0138 | 0.0130 |
| 216 | 0.0264 | 0.0136 | 0.0128 |
| 217 | 0.0266 | 0.0137 | 0.0129 |
| 218 | 0.0262 | 0.0135 | 0.0127 |
| 219 | 0.0258 | 0.0133 | 0.0125 |
| 220 | 0.0255 | 0.0131 | 0.0124 |
| 221 | 0.0251 | 0.0129 | 0.0122 |
| 222 | 0.0248 | 0.0128 | 0.0121 |
| 223 | 0.0245 | 0.0126 | 0.0119 |
| 224 | 0.0242 | 0.0125 | 0.0118 |
| 225 | 0.0239 | 0.0123 | 0.0116 |
| 226 | 0.0237 | 0.0122 | 0.0115 |
| 227 | 0.0234 | 0.0120 | 0.0114 |
| 228 | 0.0232 | 0.0119 | 0.0113 |
| 229 | 0.0229 | 0.0118 | 0.0111 |
| 230 | 0.0227 | 0.0117 | 0.0110 |
| 231 | 0.0225 | 0.0116 | 0.0109 |
| 232 | 0.0223 | 0.0115 | 0.0108 |
| 233 | 0.0221 | 0.0114 | 0.0107 |
| 234 | 0.0219 | 0.0113 | 0.0106 |
| 235 | 0.0217 | 0.0112 | 0.0105 |
| 236 | 0.0215 | 0.0111 | 0.0104 |
| 237 | 0.0213 | 0.0110 | 0.0104 |
| 238 | 0.0211 | 0.0109 | 0.0103 |
| 239 | 0.0210 | 0.0108 | 0.0102 |
| 240 | 0.0208 | 0.0107 | 0.0101 |
| 241 | 0.0207 | 0.0106 | 0.0100 |
| 242 | 0.0205 | 0.0105 | 0.0100 |
| 243 | 0.0204 | 0.0105 | 0.0099 |
| 244 | 0.0202 | 0.0104 | 0.0098 |
| 245 | 0.0201 | 0.0103 | 0.0097 |
| 246 | 0.0199 | 0.0102 | 0.0097 |
| 247 | 0.0198 | 0.0102 | 0.0096 |
| 248 | 0.0197 | 0.0101 | 0.0095 |
| 249 | 0.0195 | 0.0100 | 0.0095 |
| 250 | 0.0194 | 0.0100 | 0.0094 |
| 251 | 0.0193 | 0.0099 | 0.0094 |
| 252 | 0.0192 | 0.0099 | 0.0093 |
| 253 | 0.0190 | 0.0098 | 0.0092 |
| 254 | 0.0189 | 0.0097 | 0.0092 |
| 255 | 0.0188 | 0.0097 | 0.0091 |
| 256 | 0.0187 | 0.0096 | 0.0091 |
| 257 | 0.0186 | 0.0096 | 0.0090 |
| 258 | 0.0185 | 0.0095 | 0.0090 |
| 259 | 0.0184 | 0.0095 | 0.0089 |
| 260 | 0.0183 | 0.0094 | 0.0089 |
| 261 | 0.0182 | 0.0094 | 0.0088 |
| 262 | 0.0181 | 0.0093 | 0.0088 |
| 263 | 0.0180 | 0.0093 | 0.0087 |
| 264 | 0.0179 | 0.0092 | 0.0087 |
| 265 | 0.0178 | 0.0092 | 0.0087 |
| 266 | 0.0177 | 0.0091 | 0.0086 |
| 267 | 0.0176 | 0.0091 | 0.0086 |
| 268 | 0.0175 | 0.0090 | 0.0085 |
| 269 | 0.0175 | 0.0090 | 0.0085 |
| 270 | 0.0174 | 0.0089 | 0.0084 |
| 271 | 0.0173 | 0.0089 | 0.0084 |
| 272 | 0.0172 | 0.0089 | 0.0084 |
| 273 | 0.0171 | 0.0088 | 0.0083 |
| 274 | 0.0171 | 0.0088 | 0.0083 |
| 275 | 0.0170 | 0.0087 | 0.0082 |
| 276 | 0.0169 | 0.0087 | 0.0082 |
| 277 | 0.0168 | 0.0087 | 0.0082 |
| 278 | 0.0168 | 0.0086 | 0.0081 |
| 279 | 0.0167 | 0.0086 | 0.0081 |
| 280 | 0.0166 | 0.0086 | 0.0081 |
| 281 | 0.0166 | 0.0085 | 0.0080 |
| 282 | 0.0165 | 0.0085 | 0.0080 |
| 283 | 0.0164 | 0.0084 | 0.0080 |
| 284 | 0.0164 | 0.0084 | 0.0079 |
| 285 | 0.0163 | 0.0084 | 0.0079 |

```
      286              0.0162           0.0083              0.0079
      287              0.0162           0.0083              0.0078
      288              0.0161           0.0083              0.0078
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.55(In)
      Total effective rainfall =      3.74(In)
      Peak flow rate in flood hydrograph =     56.19(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       15.0      30.0      45.0      60.0
----------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0038      0.47  Q         |         |         |         |
  0+15       0.0133      1.37  Q         |         |         |         |
  0+20       0.0255      1.78  VQ        |         |         |         |
  0+25       0.0393      2.00  VQ        |         |         |         |
  0+30       0.0541      2.14  VQ        |         |         |         |
  0+35       0.0695      2.25  VQ        |         |         |         |
  0+40       0.0855      2.32  VQ        |         |         |         |
  0+45       0.1017      2.36  VQ        |         |         |         |
  0+50       0.1182      2.38  VQ        |         |         |         |
  0+55       0.1347      2.40  VQ        |         |         |         |
  1+ 0       0.1513      2.41  VQ        |         |         |         |
  1+ 5       0.1680      2.43  VQ        |         |         |         |
  1+10       0.1848      2.44  VQ        |         |         |         |
  1+15       0.2017      2.45  |Q        |         |         |         |
  1+20       0.2186      2.45  |Q        |         |         |         |
  1+25       0.2355      2.46  |Q        |         |         |         |
  1+30       0.2525      2.46  |Q        |         |         |         |
  1+35       0.2695      2.47  |Q        |         |         |         |
  1+40       0.2865      2.47  |Q        |         |         |         |
  1+45       0.3036      2.48  |Q        |         |         |         |
  1+50       0.3207      2.48  |Q        |         |         |         |
  1+55       0.3379      2.49  |Q        |         |         |         |
  2+ 0       0.3551      2.50  |Q        |         |         |         |
  2+ 5       0.3723      2.50  |Q        |         |         |         |
  2+10       0.3895      2.51  |Q        |         |         |         |
  2+15       0.4068      2.51  |QV       |         |         |         |
  2+20       0.4242      2.52  |QV       |         |         |         |
  2+25       0.4415      2.52  |QV       |         |         |         |
  2+30       0.4590      2.53  |QV       |         |         |         |
  2+35       0.4764      2.53  |QV       |         |         |         |
  2+40       0.4939      2.54  |QV       |         |         |         |
  2+45       0.5114      2.55  |QV       |         |         |         |
  2+50       0.5290      2.55  |QV       |         |         |         |
  2+55       0.5466      2.56  |QV       |         |         |         |
  3+ 0       0.5642      2.56  |QV       |         |         |         |
  3+ 5       0.5819      2.57  |QV       |         |         |         |
  3+10       0.5997      2.57  |Q V      |         |         |         |
  3+15       0.6174      2.58  |Q V      |         |         |         |
  3+20       0.6352      2.59  |Q V      |         |         |         |
  3+25       0.6531      2.59  |Q V      |         |         |         |
  3+30       0.6710      2.60  |Q V      |         |         |         |
  3+35       0.6889      2.60  |Q V      |         |         |         |
  3+40       0.7069      2.61  |Q V      |         |         |         |
  3+45       0.7249      2.62  |Q V      |         |         |         |
  3+50       0.7430      2.62  |Q V      |         |         |         |
  3+55       0.7611      2.63  |Q V      |         |         |         |
  4+ 0       0.7793      2.64  |Q V      |         |         |         |
  4+ 5       0.7975      2.64  |Q  V     |         |         |         |
  4+10       0.8157      2.65  |Q  V     |         |         |         |
  4+15       0.8340      2.66  |Q  V     |         |         |         |
  4+20       0.8524      2.66  |Q  V     |         |         |         |
  4+25       0.8708      2.67  |Q  V     |         |         |         |
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 4+30      0.8892     2.68  |Q  V     |         |         |         |
 4+35      0.9077     2.68  |Q  V     |         |         |         |
 4+40      0.9262     2.69  |Q  V     |         |         |         |
 4+45      0.9448     2.70  |Q  V     |         |         |         |
 4+50      0.9634     2.71  |Q  V     |         |         |         |
 4+55      0.9821     2.71  |Q  V     |         |         |         |
 5+ 0      1.0009     2.72  |Q   V    |         |         |         |
 5+ 5      1.0196     2.73  |Q   V    |         |         |         |
 5+10      1.0385     2.73  |Q   V    |         |         |         |
 5+15      1.0574     2.74  |Q   V    |         |         |         |
 5+20      1.0763     2.75  |Q   V    |         |         |         |
 5+25      1.0953     2.76  |Q   V    |         |         |         |
 5+30      1.1143     2.77  |Q   V    |         |         |         |
 5+35      1.1334     2.77  |Q   V    |         |         |         |
 5+40      1.1526     2.78  |Q   V    |         |         |         |
 5+45      1.1718     2.79  |Q   V    |         |         |         |
 5+50      1.1911     2.80  |Q    V   |         |         |         |
 5+55      1.2104     2.81  |Q    V   |         |         |         |
 6+ 0      1.2298     2.81  |Q    V   |         |         |         |
 6+ 5      1.2492     2.82  |Q    V   |         |         |         |
 6+10      1.2687     2.83  |Q    V   |         |         |         |
 6+15      1.2882     2.84  |Q    V   |         |         |         |
 6+20      1.3079     2.85  |Q    V   |         |         |         |
 6+25      1.3275     2.86  |Q    V   |         |         |         |
 6+30      1.3473     2.87  |Q    V   |         |         |         |
 6+35      1.3671     2.87  |Q    V   |         |         |         |
 6+40      1.3869     2.88  |Q    V   |         |         |         |
 6+45      1.4068     2.89  |Q     V  |         |         |         |
 6+50      1.4268     2.90  |Q     V  |         |         |         |
 6+55      1.4469     2.91  |Q     V  |         |         |         |
 7+ 0      1.4670     2.92  |Q     V  |         |         |         |
 7+ 5      1.4872     2.93  |Q     V  |         |         |         |
 7+10      1.5074     2.94  |Q     V  |         |         |         |
 7+15      1.5277     2.95  |Q     V  |         |         |         |
 7+20      1.5481     2.96  |Q     V  |         |         |         |
 7+25      1.5686     2.97  |Q     V  |         |         |         |
 7+30      1.5891     2.98  |Q      V |         |         |         |
 7+35      1.6097     2.99  |Q      V |         |         |         |
 7+40      1.6304     3.00  | Q     V |         |         |         |
 7+45      1.6511     3.01  | Q     V |         |         |         |
 7+50      1.6719     3.02  | Q     V |         |         |         |
 7+55      1.6928     3.03  | Q     V |         |         |         |
 8+ 0      1.7138     3.04  | Q     V |         |         |         |
 8+ 5      1.7348     3.06  | Q     V |         |         |         |
 8+10      1.7560     3.07  | Q     V |         |         |         |
 8+15      1.7772     3.08  | Q     V |         |         |         |
 8+20      1.7985     3.09  | Q      V|         |         |         |
 8+25      1.8198     3.10  | Q      V|         |         |         |
 8+30      1.8413     3.11  | Q      V|         |         |         |
 8+35      1.8628     3.13  | Q      V|         |         |         |
 8+40      1.8844     3.14  | Q      V|         |         |         |
 8+45      1.9062     3.15  | Q      V|         |         |         |
 8+50      1.9280     3.16  | Q      V|         |         |         |
 8+55      1.9498     3.18  | Q      V|         |         |         |
 9+ 0      1.9718     3.19  | Q      V|         |         |         |
 9+ 5      1.9939     3.21  | Q       V         |         |         |
 9+10      2.0161     3.22  | Q       V         |         |         |
 9+15      2.0383     3.23  | Q       V         |         |         |
 9+20      2.0607     3.25  | Q       V         |         |         |
 9+25      2.0831     3.26  | Q       V         |         |         |
 9+30      2.1057     3.27  | Q       V         |         |         |
 9+35      2.1284     3.29  | Q       V         |         |         |
 9+40      2.1511     3.30  | Q       V         |         |         |
 9+45      2.1740     3.32  | Q       V         |         |         |
 9+50      2.1970     3.34  | Q       |V        |         |         |
 9+55      2.2200     3.35  | Q       |V        |         |         |
10+ 0      2.2432     3.37  | Q       |V        |         |         |
10+ 5      2.2666     3.38  | Q       |V        |         |         |
10+10      2.2900     3.40  | Q       |V        |         |         |
10+15      2.3135     3.42  | Q       |V        |         |         |
10+20      2.3372     3.44  | Q       |V        |         |         |
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10+25       2.3610      3.45  | Q       |V        |         |         |
10+30       2.3849      3.47  | Q       | V       |         |         |
10+35       2.4089      3.49  | Q       | V       |         |         |
10+40       2.4331      3.51  | Q       | V       |         |         |
10+45       2.4574      3.53  | Q       | V       |         |         |
10+50       2.4818      3.55  | Q       | V       |         |         |
10+55       2.5064      3.57  | Q       | V       |         |         |
11+ 0       2.5311      3.59  | Q       | V       |         |         |
11+ 5       2.5559      3.61  | Q       | V       |         |         |
11+10       2.5809      3.63  | Q       |  V      |         |         |
11+15       2.6061      3.65  | Q       |  V      |         |         |
11+20       2.6314      3.67  | Q       |  V      |         |         |
11+25       2.6569      3.70  | Q       |  V      |         |         |
11+30       2.6825      3.72  | Q       |  V      |         |         |
11+35       2.7083      3.74  | Q       |  V      |         |         |
11+40       2.7342      3.77  | Q       |  V      |         |         |
11+45       2.7603      3.79  | Q       |  V      |         |         |
11+50       2.7867      3.82  | Q       |   V     |         |         |
11+55       2.8131      3.85  | Q       |   V     |         |         |
12+ 0       2.8398      3.87  | Q       |   V     |         |         |
12+ 5       2.8667      3.90  | Q       |   V     |         |         |
12+10       2.8936      3.91  | Q       |   V     |         |         |
12+15       2.9205      3.91  | Q       |   V     |         |         |
12+20       2.9475      3.92  | Q       |   V     |         |         |
12+25       2.9746      3.94  | Q       |    V    |         |         |
12+30       3.0019      3.97  | Q       |    V    |         |         |
12+35       3.0295      4.00  | Q       |    V    |         |         |
12+40       3.0572      4.03  | Q       |    V    |         |         |
12+45       3.0852      4.07  | Q       |    V    |         |         |
12+50       3.1135      4.10  | Q       |    V    |         |         |
12+55       3.1420      4.14  | Q       |    V    |         |         |
13+ 0       3.1707      4.18  | Q       |    V    |         |         |
13+ 5       3.1998      4.22  | Q       |     V   |         |         |
13+10       3.2291      4.26  | Q       |     V   |         |         |
13+15       3.2588      4.31  | Q       |     V   |         |         |
13+20       3.2887      4.35  | Q       |     V   |         |         |
13+25       3.3190      4.40  | Q       |     V   |         |         |
13+30       3.3496      4.45  | Q       |     V   |         |         |
13+35       3.3806      4.50  | Q       |      V  |         |         |
13+40       3.4120      4.55  |  Q      |      V  |         |         |
13+45       3.4437      4.61  |  Q      |      V  |         |         |
13+50       3.4758      4.67  |  Q      |      V  |         |         |
13+55       3.5084      4.73  |  Q      |      V  |         |         |
14+ 0       3.5414      4.79  |  Q      |      V  |         |         |
14+ 5       3.5749      4.86  |  Q      |       V |         |         |
14+10       3.6089      4.93  |  Q      |       V |         |         |
14+15       3.6434      5.02  |  Q      |       V |         |         |
14+20       3.6785      5.09  |  Q      |       V |         |         |
14+25       3.7142      5.18  |  Q      |       V |         |         |
14+30       3.7505      5.27  |  Q      |       V |         |         |
14+35       3.7875      5.37  |  Q      |        V|         |         |
14+40       3.8251      5.47  |  Q      |        V|         |         |
14+45       3.8636      5.58  |  Q      |        V|         |         |
14+50       3.9028      5.70  |  Q      |        V|         |         |
14+55       3.9430      5.83  |  Q      |        V|         |         |
15+ 0       3.9841      5.97  |  Q      |         V         |         |
15+ 5       4.0263      6.13  |   Q     |         V         |         |
15+10       4.0697      6.29  |   Q     |         V         |         |
15+15       4.1144      6.49  |   Q     |         V         |         |
15+20       4.1605      6.69  |   Q     |         V         |         |
15+25       4.2073      6.79  |   Q     |         |V        |         |
15+30       4.2515      6.43  |   Q     |         |V        |         |
15+35       4.2878      5.26  |  Q      |         |V        |         |
15+40       4.3218      4.94  |  Q      |         |V        |         |
15+45       4.3567      5.07  |  Q      |         |V        |         |
15+50       4.3940      5.42  |  Q      |         | V       |         |
15+55       4.4367      6.21  |   Q     |         | V       |         |
16+ 0       4.4896      7.68  |    Q    |         | V       |         |
16+ 5       4.5918     14.83  |       Q |         |  V      |         |
16+10       4.8091     31.55  |         |         |Q  V     |         |
16+15       5.1961     56.19  |         |         |     V   |     Q   |
```

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16+20       5.4000     29.60  |          |          Q|       V  |          |
16+25       5.5267     18.40  |          |  Q        |       V  |          |
16+30       5.6230     13.98  |          Q|           |        V |          |
16+35       5.7069     12.19  |         Q |           |        V |          |
16+40       5.7782     10.36  |      Q    |           |         V|          |
16+45       5.8386      8.77  |     Q     |           |         V|          |
16+50       5.8890      7.32  |    Q      |           |         V|          |
16+55       5.9353      6.72  |    Q      |           |         V|          |
17+ 0       5.9788      6.32  |    Q      |           |          V          |
17+ 5       6.0206      6.06  |    Q      |           |          V          |
17+10       6.0605      5.81  |   Q       |           |          V          |
17+15       6.0980      5.43  |   Q       |           |          V          |
17+20       6.1335      5.15  |   Q       |           |          V          |
17+25       6.1672      4.91  |   Q       |           |          |V         |
17+30       6.2001      4.77  |   Q       |           |          |V         |
17+35       6.2321      4.65  |   Q       |           |          |V         |
17+40       6.2633      4.53  |   Q       |           |          |V         |
17+45       6.2938      4.43  |  Q        |           |          |V         |
17+50       6.3237      4.33  |  Q        |           |          |V         |
17+55       6.3529      4.24  |  Q        |           |          | V        |
18+ 0       6.3815      4.16  |  Q        |           |          | V        |
18+ 5       6.4097      4.09  |  Q        |           |          | V        |
18+10       6.4374      4.03  |  Q        |           |          | V        |
18+15       6.4649      4.00  |  Q        |           |          | V        |
18+20       6.4921      3.95  |  Q        |           |          | V        |
18+25       6.5190      3.90  |  Q        |           |          | V        |
18+30       6.5455      3.85  |  Q        |           |          |  V       |
18+35       6.5716      3.80  |  Q        |           |          |  V       |
18+40       6.5975      3.75  |  Q        |           |          |  V       |
18+45       6.6230      3.70  |  Q        |           |          |  V       |
18+50       6.6482      3.66  |  Q        |           |          |  V       |
18+55       6.6731      3.62  |  Q        |           |          |  V       |
19+ 0       6.6977      3.58  |  Q        |           |          |  V       |
19+ 5       6.7221      3.54  |  Q        |           |          |  V       |
19+10       6.7462      3.50  |  Q        |           |          |   V      |
19+15       6.7700      3.46  |  Q        |           |          |   V      |
19+20       6.7936      3.43  |  Q        |           |          |   V      |
19+25       6.8169      3.39  |  Q        |           |          |   V      |
19+30       6.8401      3.36  |  Q        |           |          |   V      |
19+35       6.8630      3.33  |  Q        |           |          |   V      |
19+40       6.8857      3.30  |  Q        |           |          |   V      |
19+45       6.9082      3.27  |  Q        |           |          |   V      |
19+50       6.9305      3.24  |  Q        |           |          |   V      |
19+55       6.9526      3.21  |  Q        |           |          |    V     |
20+ 0       6.9745      3.18  |  Q        |           |          |    V     |
20+ 5       6.9962      3.16  |  Q        |           |          |    V     |
20+10       7.0178      3.13  |  Q        |           |          |    V     |
20+15       7.0392      3.11  |  Q        |           |          |    V     |
20+20       7.0604      3.08  |  Q        |           |          |    V     |
20+25       7.0815      3.06  |  Q        |           |          |    V     |
20+30       7.1024      3.04  |  Q        |           |          |    V     |
20+35       7.1232      3.02  |  Q        |           |          |    V     |
20+40       7.1438      2.99  |Q          |           |          |     V    |
20+45       7.1643      2.97  |Q          |           |          |     V    |
20+50       7.1846      2.95  |Q          |           |          |     V    |
20+55       7.2048      2.93  |Q          |           |          |     V    |
21+ 0       7.2249      2.91  |Q          |           |          |     V    |
21+ 5       7.2449      2.90  |Q          |           |          |     V    |
21+10       7.2647      2.88  |Q          |           |          |     V    |
21+15       7.2844      2.86  |Q          |           |          |     V    |
21+20       7.3039      2.84  |Q          |           |          |     V    |
21+25       7.3234      2.82  |Q          |           |          |     V    |
21+30       7.3427      2.81  |Q          |           |          |      V   |
21+35       7.3620      2.79  |Q          |           |          |      V   |
21+40       7.3811      2.78  |Q          |           |          |      V   |
21+45       7.4001      2.76  |Q          |           |          |      V   |
21+50       7.4190      2.74  |Q          |           |          |      V   |
21+55       7.4378      2.73  |Q          |           |          |      V   |
22+ 0       7.4565      2.71  |Q          |           |          |      V   |
22+ 5       7.4751      2.70  |Q          |           |          |      V   |
22+10       7.4936      2.69  |Q          |           |          |      V   |
```

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  22+15       7.5120      2.67  |Q        |         |         |      V  |
  22+20       7.5303      2.66  |Q        |         |         |      V  |
  22+25       7.5485      2.65  |Q        |         |         |       V |
  22+30       7.5666      2.63  |Q        |         |         |       V |
  22+35       7.5847      2.62  |Q        |         |         |       V |
  22+40       7.6026      2.61  |Q        |         |         |       V |
  22+45       7.6205      2.59  |Q        |         |         |       V |
  22+50       7.6383      2.58  |Q        |         |         |       V |
  22+55       7.6560      2.57  |Q        |         |         |       V |
  23+ 0       7.6736      2.56  |Q        |         |         |       V |
  23+ 5       7.6911      2.55  |Q        |         |         |       V |
  23+10       7.7086      2.54  |Q        |         |         |       V |
  23+15       7.7260      2.52  |Q        |         |         |       V |
  23+20       7.7433      2.51  |Q        |         |         |        V|
  23+25       7.7605      2.50  |Q        |         |         |        V|
  23+30       7.7777      2.49  |Q        |         |         |        V|
  23+35       7.7948      2.48  |Q        |         |         |        V|
  23+40       7.8118      2.47  |Q        |         |         |        V|
  23+45       7.8287      2.46  |Q        |         |         |        V|
  23+50       7.8456      2.45  |Q        |         |         |        V|
  23+55       7.8624      2.44  |Q        |         |         |        V|
  24+ 0       7.8792      2.43  |Q        |         |         |        V|
  24+ 5       7.8952      2.33  |Q        |         |         |        V|
  24+10       7.9086      1.95  |Q        |         |         |        V|
  24+15       7.9158      1.04  Q         |         |         |        V|
  24+20       7.9201      0.63  Q         |         |         |        V|
  24+25       7.9229      0.41  Q         |         |         |        V|
  24+30       7.9247      0.27  Q         |         |         |        V|
  24+35       7.9259      0.17  Q         |         |         |        V|
  24+40       7.9266      0.10  Q         |         |         |        V|
  24+45       7.9270      0.06  Q         |         |         |        V|
  24+50       7.9273      0.04  Q         |         |         |        V|
  24+55       7.9275      0.03  Q         |         |         |        V|
  25+ 0       7.9276      0.02  Q         |         |         |        V|
  25+ 5       7.9277      0.01  Q         |         |         |        V|
  25+10       7.9277      0.01  Q         |         |         |        V|
  25+15       7.9277      0.00  Q         |         |         |         V
--------------------------------------------------------------------------
```

Area ‘G’ – 25 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'G'
25 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            25.42            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      67.0         25.42      1.000     0.578    1.000    0.578

Area-averaged adjusted loss rate Fm (In/Hr) =  0.578

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 25.42 | 1.000 | 67.0 | 67.0 | 4.93 | 0.557 |

Area-averaged catchment yield fraction, Y = 0.557
Area-averaged low loss fraction, Yb = 0.443
User entry of time of concentration = 0.228 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 25.42(Ac.)
Catchment Lag time = 0.182 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 45.6871
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.578(In/Hr)
Average low loss rate fraction (Yb) = 0.443 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 25.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.568(In)
30-minute factor = 0.999 Adjusted rainfall = 0.973(In)
1-hour factor = 0.999 Adjusted rainfall = 1.198(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 307.42 (CFS)) | |
| 1 | 3.770 | 11.590 |
| 2 | 19.507 | 48.379 |
| 3 | 57.188 | 115.840 |
| 4 | 74.099 | 51.988 |
| 5 | 83.072 | 27.584 |
| 6 | 89.001 | 18.226 |
| 7 | 93.088 | 12.567 |
| 8 | 95.822 | 8.402 |
| 9 | 97.540 | 5.282 |
| 10 | 98.307 | 2.360 |
| 11 | 98.797 | 1.505 |
| 12 | 99.152 | 1.093 |
| 13 | 99.469 | 0.973 |
| 14 | 99.765 | 0.912 |
| 15 | 99.923 | 0.483 |
| 16 | 100.000 | 0.238 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5682 | 0.5682 |
| 2 | 0.6996 | 0.1313 |
| 3 | 0.7901 | 0.0905 |
| 4 | 0.8613 | 0.0712 |
| 5 | 0.9209 | 0.0596 |
| 6 | 0.9727 | 0.0518 |
| 7 | 1.0187 | 0.0460 |
| 8 | 1.0604 | 0.0416 |
| 9 | 1.0985 | 0.0381 |
| 10 | 1.1338 | 0.0353 |

| | | |
|---|---|---|
| 11 | 1.1667 | 0.0329 |
| 12 | 1.1975 | 0.0309 |
| 13 | 1.2581 | 0.0606 |
| 14 | 1.3170 | 0.0588 |
| 15 | 1.3742 | 0.0572 |
| 16 | 1.4300 | 0.0558 |
| 17 | 1.4845 | 0.0545 |
| 18 | 1.5378 | 0.0533 |
| 19 | 1.5899 | 0.0521 |
| 20 | 1.6410 | 0.0511 |
| 21 | 1.6912 | 0.0501 |
| 22 | 1.7404 | 0.0492 |
| 23 | 1.7888 | 0.0484 |
| 24 | 1.8363 | 0.0476 |
| 25 | 1.8832 | 0.0468 |
| 26 | 1.9293 | 0.0461 |
| 27 | 1.9747 | 0.0454 |
| 28 | 2.0195 | 0.0448 |
| 29 | 2.0637 | 0.0442 |
| 30 | 2.1073 | 0.0436 |
| 31 | 2.1503 | 0.0430 |
| 32 | 2.1928 | 0.0425 |
| 33 | 2.2349 | 0.0420 |
| 34 | 2.2764 | 0.0415 |
| 35 | 2.3175 | 0.0411 |
| 36 | 2.3581 | 0.0406 |
| 37 | 2.3982 | 0.0401 |
| 38 | 2.4379 | 0.0397 |
| 39 | 2.4772 | 0.0393 |
| 40 | 2.5162 | 0.0389 |
| 41 | 2.5547 | 0.0386 |
| 42 | 2.5929 | 0.0382 |
| 43 | 2.6308 | 0.0379 |
| 44 | 2.6683 | 0.0375 |
| 45 | 2.7055 | 0.0372 |
| 46 | 2.7424 | 0.0369 |
| 47 | 2.7789 | 0.0366 |
| 48 | 2.8152 | 0.0363 |
| 49 | 2.8512 | 0.0360 |
| 50 | 2.8869 | 0.0357 |
| 51 | 2.9223 | 0.0354 |
| 52 | 2.9575 | 0.0352 |
| 53 | 2.9924 | 0.0349 |
| 54 | 3.0270 | 0.0346 |
| 55 | 3.0614 | 0.0344 |
| 56 | 3.0956 | 0.0342 |
| 57 | 3.1295 | 0.0339 |
| 58 | 3.1632 | 0.0337 |
| 59 | 3.1967 | 0.0335 |
| 60 | 3.2299 | 0.0333 |
| 61 | 3.2630 | 0.0331 |
| 62 | 3.2958 | 0.0328 |
| 63 | 3.3285 | 0.0326 |
| 64 | 3.3609 | 0.0324 |
| 65 | 3.3932 | 0.0322 |
| 66 | 3.4252 | 0.0321 |
| 67 | 3.4571 | 0.0319 |
| 68 | 3.4888 | 0.0317 |
| 69 | 3.5203 | 0.0315 |
| 70 | 3.5516 | 0.0313 |
| 71 | 3.5828 | 0.0312 |
| 72 | 3.6138 | 0.0310 |
| 73 | 3.6474 | 0.0336 |
| 74 | 3.6809 | 0.0335 |
| 75 | 3.7142 | 0.0333 |
| 76 | 3.7474 | 0.0332 |
| 77 | 3.7804 | 0.0330 |
| 78 | 3.8133 | 0.0329 |
| 79 | 3.8460 | 0.0327 |
| 80 | 3.8786 | 0.0326 |
| 81 | 3.9111 | 0.0325 |

| | | |
|---|---|---|
| 82 | 3.9435 | 0.0323 |
| 83 | 3.9757 | 0.0322 |
| 84 | 4.0078 | 0.0321 |
| 85 | 4.0397 | 0.0320 |
| 86 | 4.0716 | 0.0318 |
| 87 | 4.1033 | 0.0317 |
| 88 | 4.1349 | 0.0316 |
| 89 | 4.1664 | 0.0315 |
| 90 | 4.1978 | 0.0314 |
| 91 | 4.2290 | 0.0313 |
| 92 | 4.2602 | 0.0311 |
| 93 | 4.2912 | 0.0310 |
| 94 | 4.3221 | 0.0309 |
| 95 | 4.3529 | 0.0308 |
| 96 | 4.3836 | 0.0307 |
| 97 | 4.4142 | 0.0306 |
| 98 | 4.4447 | 0.0305 |
| 99 | 4.4751 | 0.0304 |
| 100 | 4.5054 | 0.0303 |
| 101 | 4.5356 | 0.0302 |
| 102 | 4.5657 | 0.0301 |
| 103 | 4.5957 | 0.0300 |
| 104 | 4.6256 | 0.0299 |
| 105 | 4.6554 | 0.0298 |
| 106 | 4.6851 | 0.0297 |
| 107 | 4.7148 | 0.0296 |
| 108 | 4.7443 | 0.0295 |
| 109 | 4.7737 | 0.0294 |
| 110 | 4.8031 | 0.0294 |
| 111 | 4.8324 | 0.0293 |
| 112 | 4.8615 | 0.0292 |
| 113 | 4.8906 | 0.0291 |
| 114 | 4.9197 | 0.0290 |
| 115 | 4.9486 | 0.0289 |
| 116 | 4.9774 | 0.0288 |
| 117 | 5.0062 | 0.0288 |
| 118 | 5.0349 | 0.0287 |
| 119 | 5.0635 | 0.0286 |
| 120 | 5.0920 | 0.0285 |
| 121 | 5.1204 | 0.0284 |
| 122 | 5.1488 | 0.0284 |
| 123 | 5.1771 | 0.0283 |
| 124 | 5.2053 | 0.0282 |
| 125 | 5.2335 | 0.0281 |
| 126 | 5.2615 | 0.0281 |
| 127 | 5.2895 | 0.0280 |
| 128 | 5.3175 | 0.0279 |
| 129 | 5.3453 | 0.0279 |
| 130 | 5.3731 | 0.0278 |
| 131 | 5.4008 | 0.0277 |
| 132 | 5.4284 | 0.0276 |
| 133 | 5.4560 | 0.0276 |
| 134 | 5.4835 | 0.0275 |
| 135 | 5.5110 | 0.0274 |
| 136 | 5.5383 | 0.0274 |
| 137 | 5.5656 | 0.0273 |
| 138 | 5.5929 | 0.0272 |
| 139 | 5.6200 | 0.0272 |
| 140 | 5.6472 | 0.0271 |
| 141 | 5.6742 | 0.0270 |
| 142 | 5.7012 | 0.0270 |
| 143 | 5.7281 | 0.0269 |
| 144 | 5.7550 | 0.0269 |
| 145 | 5.7818 | 0.0268 |
| 146 | 5.8085 | 0.0267 |
| 147 | 5.8352 | 0.0267 |
| 148 | 5.8618 | 0.0266 |
| 149 | 5.8883 | 0.0266 |
| 150 | 5.9148 | 0.0265 |
| 151 | 5.9413 | 0.0264 |
| 152 | 5.9677 | 0.0264 |

| | | |
|---|---|---|
| 153 | 5.9940 | 0.0263 |
| 154 | 6.0203 | 0.0263 |
| 155 | 6.0465 | 0.0262 |
| 156 | 6.0726 | 0.0262 |
| 157 | 6.0987 | 0.0261 |
| 158 | 6.1248 | 0.0260 |
| 159 | 6.1508 | 0.0260 |
| 160 | 6.1767 | 0.0259 |
| 161 | 6.2026 | 0.0259 |
| 162 | 6.2285 | 0.0258 |
| 163 | 6.2542 | 0.0258 |
| 164 | 6.2800 | 0.0257 |
| 165 | 6.3057 | 0.0257 |
| 166 | 6.3313 | 0.0256 |
| 167 | 6.3569 | 0.0256 |
| 168 | 6.3824 | 0.0255 |
| 169 | 6.4079 | 0.0255 |
| 170 | 6.4333 | 0.0254 |
| 171 | 6.4587 | 0.0254 |
| 172 | 6.4840 | 0.0253 |
| 173 | 6.5093 | 0.0253 |
| 174 | 6.5345 | 0.0252 |
| 175 | 6.5597 | 0.0252 |
| 176 | 6.5848 | 0.0251 |
| 177 | 6.6099 | 0.0251 |
| 178 | 6.6350 | 0.0250 |
| 179 | 6.6600 | 0.0250 |
| 180 | 6.6849 | 0.0250 |
| 181 | 6.7098 | 0.0249 |
| 182 | 6.7347 | 0.0249 |
| 183 | 6.7595 | 0.0248 |
| 184 | 6.7843 | 0.0248 |
| 185 | 6.8090 | 0.0247 |
| 186 | 6.8337 | 0.0247 |
| 187 | 6.8584 | 0.0246 |
| 188 | 6.8830 | 0.0246 |
| 189 | 6.9075 | 0.0246 |
| 190 | 6.9320 | 0.0245 |
| 191 | 6.9565 | 0.0245 |
| 192 | 6.9809 | 0.0244 |
| 193 | 7.0053 | 0.0244 |
| 194 | 7.0297 | 0.0243 |
| 195 | 7.0540 | 0.0243 |
| 196 | 7.0782 | 0.0243 |
| 197 | 7.1024 | 0.0242 |
| 198 | 7.1266 | 0.0242 |
| 199 | 7.1508 | 0.0241 |
| 200 | 7.1749 | 0.0241 |
| 201 | 7.1989 | 0.0241 |
| 202 | 7.2230 | 0.0240 |
| 203 | 7.2469 | 0.0240 |
| 204 | 7.2709 | 0.0239 |
| 205 | 7.2948 | 0.0239 |
| 206 | 7.3187 | 0.0239 |
| 207 | 7.3425 | 0.0238 |
| 208 | 7.3663 | 0.0238 |
| 209 | 7.3900 | 0.0238 |
| 210 | 7.4138 | 0.0237 |
| 211 | 7.4374 | 0.0237 |
| 212 | 7.4611 | 0.0236 |
| 213 | 7.4847 | 0.0236 |
| 214 | 7.5083 | 0.0236 |
| 215 | 7.5318 | 0.0235 |
| 216 | 7.5553 | 0.0235 |
| 217 | 7.5788 | 0.0235 |
| 218 | 7.6022 | 0.0234 |
| 219 | 7.6256 | 0.0234 |
| 220 | 7.6489 | 0.0234 |
| 221 | 7.6722 | 0.0233 |
| 222 | 7.6955 | 0.0233 |
| 223 | 7.7188 | 0.0233 |

| | | |
|---|---|---|
| 224 | 7.7420 | 0.0232 |
| 225 | 7.7652 | 0.0232 |
| 226 | 7.7883 | 0.0232 |
| 227 | 7.8115 | 0.0231 |
| 228 | 7.8345 | 0.0231 |
| 229 | 7.8576 | 0.0231 |
| 230 | 7.8806 | 0.0230 |
| 231 | 7.9036 | 0.0230 |
| 232 | 7.9265 | 0.0230 |
| 233 | 7.9495 | 0.0229 |
| 234 | 7.9724 | 0.0229 |
| 235 | 7.9952 | 0.0229 |
| 236 | 8.0180 | 0.0228 |
| 237 | 8.0408 | 0.0228 |
| 238 | 8.0636 | 0.0228 |
| 239 | 8.0863 | 0.0227 |
| 240 | 8.1090 | 0.0227 |
| 241 | 8.1317 | 0.0227 |
| 242 | 8.1543 | 0.0226 |
| 243 | 8.1769 | 0.0226 |
| 244 | 8.1995 | 0.0226 |
| 245 | 8.2220 | 0.0225 |
| 246 | 8.2445 | 0.0225 |
| 247 | 8.2670 | 0.0225 |
| 248 | 8.2895 | 0.0225 |
| 249 | 8.3119 | 0.0224 |
| 250 | 8.3343 | 0.0224 |
| 251 | 8.3567 | 0.0224 |
| 252 | 8.3790 | 0.0223 |
| 253 | 8.4013 | 0.0223 |
| 254 | 8.4236 | 0.0223 |
| 255 | 8.4458 | 0.0222 |
| 256 | 8.4680 | 0.0222 |
| 257 | 8.4902 | 0.0222 |
| 258 | 8.5124 | 0.0222 |
| 259 | 8.5345 | 0.0221 |
| 260 | 8.5566 | 0.0221 |
| 261 | 8.5787 | 0.0221 |
| 262 | 8.6008 | 0.0221 |
| 263 | 8.6228 | 0.0220 |
| 264 | 8.6448 | 0.0220 |
| 265 | 8.6668 | 0.0220 |
| 266 | 8.6887 | 0.0219 |
| 267 | 8.7106 | 0.0219 |
| 268 | 8.7325 | 0.0219 |
| 269 | 8.7544 | 0.0219 |
| 270 | 8.7762 | 0.0218 |
| 271 | 8.7980 | 0.0218 |
| 272 | 8.8198 | 0.0218 |
| 273 | 8.8415 | 0.0218 |
| 274 | 8.8633 | 0.0217 |
| 275 | 8.8850 | 0.0217 |
| 276 | 8.9066 | 0.0217 |
| 277 | 8.9283 | 0.0216 |
| 278 | 8.9499 | 0.0216 |
| 279 | 8.9715 | 0.0216 |
| 280 | 8.9931 | 0.0216 |
| 281 | 9.0146 | 0.0215 |
| 282 | 9.0362 | 0.0215 |
| 283 | 9.0577 | 0.0215 |
| 284 | 9.0791 | 0.0215 |
| 285 | 9.1006 | 0.0214 |
| 286 | 9.1220 | 0.0214 |
| 287 | 9.1434 | 0.0214 |
| 288 | 9.1648 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0095 | 0.0119 |

| | | | |
|---|---|---|---|
| 2 | 0.0214 | 0.0095 | 0.0119 |
| 3 | 0.0214 | 0.0095 | 0.0119 |
| 4 | 0.0215 | 0.0095 | 0.0120 |
| 5 | 0.0215 | 0.0095 | 0.0120 |
| 6 | 0.0215 | 0.0095 | 0.0120 |
| 7 | 0.0216 | 0.0096 | 0.0120 |
| 8 | 0.0216 | 0.0096 | 0.0120 |
| 9 | 0.0217 | 0.0096 | 0.0121 |
| 10 | 0.0217 | 0.0096 | 0.0121 |
| 11 | 0.0218 | 0.0096 | 0.0121 |
| 12 | 0.0218 | 0.0096 | 0.0121 |
| 13 | 0.0218 | 0.0097 | 0.0122 |
| 14 | 0.0219 | 0.0097 | 0.0122 |
| 15 | 0.0219 | 0.0097 | 0.0122 |
| 16 | 0.0219 | 0.0097 | 0.0122 |
| 17 | 0.0220 | 0.0097 | 0.0123 |
| 18 | 0.0220 | 0.0098 | 0.0123 |
| 19 | 0.0221 | 0.0098 | 0.0123 |
| 20 | 0.0221 | 0.0098 | 0.0123 |
| 21 | 0.0222 | 0.0098 | 0.0123 |
| 22 | 0.0222 | 0.0098 | 0.0124 |
| 23 | 0.0222 | 0.0099 | 0.0124 |
| 24 | 0.0223 | 0.0099 | 0.0124 |
| 25 | 0.0223 | 0.0099 | 0.0124 |
| 26 | 0.0224 | 0.0099 | 0.0125 |
| 27 | 0.0224 | 0.0099 | 0.0125 |
| 28 | 0.0225 | 0.0099 | 0.0125 |
| 29 | 0.0225 | 0.0100 | 0.0125 |
| 30 | 0.0225 | 0.0100 | 0.0126 |
| 31 | 0.0226 | 0.0100 | 0.0126 |
| 32 | 0.0226 | 0.0100 | 0.0126 |
| 33 | 0.0227 | 0.0101 | 0.0126 |
| 34 | 0.0227 | 0.0101 | 0.0127 |
| 35 | 0.0228 | 0.0101 | 0.0127 |
| 36 | 0.0228 | 0.0101 | 0.0127 |
| 37 | 0.0229 | 0.0101 | 0.0127 |
| 38 | 0.0229 | 0.0102 | 0.0128 |
| 39 | 0.0230 | 0.0102 | 0.0128 |
| 40 | 0.0230 | 0.0102 | 0.0128 |
| 41 | 0.0231 | 0.0102 | 0.0129 |
| 42 | 0.0231 | 0.0102 | 0.0129 |
| 43 | 0.0232 | 0.0103 | 0.0129 |
| 44 | 0.0232 | 0.0103 | 0.0129 |
| 45 | 0.0233 | 0.0103 | 0.0130 |
| 46 | 0.0233 | 0.0103 | 0.0130 |
| 47 | 0.0234 | 0.0104 | 0.0130 |
| 48 | 0.0234 | 0.0104 | 0.0131 |
| 49 | 0.0235 | 0.0104 | 0.0131 |
| 50 | 0.0235 | 0.0104 | 0.0131 |
| 51 | 0.0236 | 0.0105 | 0.0132 |
| 52 | 0.0236 | 0.0105 | 0.0132 |
| 53 | 0.0237 | 0.0105 | 0.0132 |
| 54 | 0.0238 | 0.0105 | 0.0132 |
| 55 | 0.0238 | 0.0106 | 0.0133 |
| 56 | 0.0239 | 0.0106 | 0.0133 |
| 57 | 0.0239 | 0.0106 | 0.0133 |
| 58 | 0.0240 | 0.0106 | 0.0134 |
| 59 | 0.0241 | 0.0107 | 0.0134 |
| 60 | 0.0241 | 0.0107 | 0.0134 |
| 61 | 0.0242 | 0.0107 | 0.0135 |
| 62 | 0.0242 | 0.0107 | 0.0135 |
| 63 | 0.0243 | 0.0108 | 0.0135 |
| 64 | 0.0243 | 0.0108 | 0.0136 |
| 65 | 0.0244 | 0.0108 | 0.0136 |
| 66 | 0.0245 | 0.0108 | 0.0136 |
| 67 | 0.0246 | 0.0109 | 0.0137 |
| 68 | 0.0246 | 0.0109 | 0.0137 |
| 69 | 0.0247 | 0.0109 | 0.0138 |
| 70 | 0.0247 | 0.0110 | 0.0138 |
| 71 | 0.0248 | 0.0110 | 0.0138 |
| 72 | 0.0249 | 0.0110 | 0.0139 |

| | | | |
|---|---|---|---|
| 73 | 0.0250 | 0.0111 | 0.0139 |
| 74 | 0.0250 | 0.0111 | 0.0139 |
| 75 | 0.0251 | 0.0111 | 0.0140 |
| 76 | 0.0251 | 0.0111 | 0.0140 |
| 77 | 0.0252 | 0.0112 | 0.0141 |
| 78 | 0.0253 | 0.0112 | 0.0141 |
| 79 | 0.0254 | 0.0112 | 0.0141 |
| 80 | 0.0254 | 0.0113 | 0.0142 |
| 81 | 0.0255 | 0.0113 | 0.0142 |
| 82 | 0.0256 | 0.0113 | 0.0142 |
| 83 | 0.0257 | 0.0114 | 0.0143 |
| 84 | 0.0257 | 0.0114 | 0.0143 |
| 85 | 0.0258 | 0.0114 | 0.0144 |
| 86 | 0.0259 | 0.0115 | 0.0144 |
| 87 | 0.0260 | 0.0115 | 0.0145 |
| 88 | 0.0260 | 0.0115 | 0.0145 |
| 89 | 0.0262 | 0.0116 | 0.0146 |
| 90 | 0.0262 | 0.0116 | 0.0146 |
| 91 | 0.0263 | 0.0117 | 0.0147 |
| 92 | 0.0264 | 0.0117 | 0.0147 |
| 93 | 0.0265 | 0.0117 | 0.0148 |
| 94 | 0.0266 | 0.0118 | 0.0148 |
| 95 | 0.0267 | 0.0118 | 0.0149 |
| 96 | 0.0267 | 0.0118 | 0.0149 |
| 97 | 0.0269 | 0.0119 | 0.0150 |
| 98 | 0.0269 | 0.0119 | 0.0150 |
| 99 | 0.0270 | 0.0120 | 0.0151 |
| 100 | 0.0271 | 0.0120 | 0.0151 |
| 101 | 0.0272 | 0.0121 | 0.0152 |
| 102 | 0.0273 | 0.0121 | 0.0152 |
| 103 | 0.0274 | 0.0122 | 0.0153 |
| 104 | 0.0275 | 0.0122 | 0.0153 |
| 105 | 0.0276 | 0.0122 | 0.0154 |
| 106 | 0.0277 | 0.0123 | 0.0154 |
| 107 | 0.0279 | 0.0123 | 0.0155 |
| 108 | 0.0279 | 0.0124 | 0.0156 |
| 109 | 0.0281 | 0.0124 | 0.0156 |
| 110 | 0.0281 | 0.0125 | 0.0157 |
| 111 | 0.0283 | 0.0125 | 0.0158 |
| 112 | 0.0284 | 0.0126 | 0.0158 |
| 113 | 0.0285 | 0.0126 | 0.0159 |
| 114 | 0.0286 | 0.0127 | 0.0159 |
| 115 | 0.0288 | 0.0127 | 0.0160 |
| 116 | 0.0288 | 0.0128 | 0.0161 |
| 117 | 0.0290 | 0.0128 | 0.0162 |
| 118 | 0.0291 | 0.0129 | 0.0162 |
| 119 | 0.0293 | 0.0130 | 0.0163 |
| 120 | 0.0294 | 0.0130 | 0.0164 |
| 121 | 0.0295 | 0.0131 | 0.0165 |
| 122 | 0.0296 | 0.0131 | 0.0165 |
| 123 | 0.0298 | 0.0132 | 0.0166 |
| 124 | 0.0299 | 0.0132 | 0.0167 |
| 125 | 0.0301 | 0.0133 | 0.0168 |
| 126 | 0.0302 | 0.0134 | 0.0168 |
| 127 | 0.0304 | 0.0135 | 0.0169 |
| 128 | 0.0305 | 0.0135 | 0.0170 |
| 129 | 0.0307 | 0.0136 | 0.0171 |
| 130 | 0.0308 | 0.0136 | 0.0172 |
| 131 | 0.0310 | 0.0137 | 0.0173 |
| 132 | 0.0311 | 0.0138 | 0.0173 |
| 133 | 0.0314 | 0.0139 | 0.0175 |
| 134 | 0.0315 | 0.0139 | 0.0175 |
| 135 | 0.0317 | 0.0140 | 0.0177 |
| 136 | 0.0318 | 0.0141 | 0.0177 |
| 137 | 0.0321 | 0.0142 | 0.0179 |
| 138 | 0.0322 | 0.0143 | 0.0179 |
| 139 | 0.0325 | 0.0144 | 0.0181 |
| 140 | 0.0326 | 0.0144 | 0.0182 |
| 141 | 0.0329 | 0.0146 | 0.0183 |
| 142 | 0.0330 | 0.0146 | 0.0184 |
| 143 | 0.0333 | 0.0148 | 0.0186 |

| | | | |
|---|---|---|---|
| 144 | 0.0335 | 0.0148 | 0.0186 |
| 145 | 0.0310 | 0.0137 | 0.0173 |
| 146 | 0.0312 | 0.0138 | 0.0174 |
| 147 | 0.0315 | 0.0140 | 0.0176 |
| 148 | 0.0317 | 0.0140 | 0.0177 |
| 149 | 0.0321 | 0.0142 | 0.0179 |
| 150 | 0.0322 | 0.0143 | 0.0180 |
| 151 | 0.0326 | 0.0145 | 0.0182 |
| 152 | 0.0328 | 0.0145 | 0.0183 |
| 153 | 0.0333 | 0.0147 | 0.0185 |
| 154 | 0.0335 | 0.0148 | 0.0187 |
| 155 | 0.0339 | 0.0150 | 0.0189 |
| 156 | 0.0342 | 0.0151 | 0.0190 |
| 157 | 0.0346 | 0.0153 | 0.0193 |
| 158 | 0.0349 | 0.0155 | 0.0194 |
| 159 | 0.0354 | 0.0157 | 0.0197 |
| 160 | 0.0357 | 0.0158 | 0.0199 |
| 161 | 0.0363 | 0.0161 | 0.0202 |
| 162 | 0.0366 | 0.0162 | 0.0204 |
| 163 | 0.0372 | 0.0165 | 0.0207 |
| 164 | 0.0375 | 0.0166 | 0.0209 |
| 165 | 0.0382 | 0.0169 | 0.0213 |
| 166 | 0.0386 | 0.0171 | 0.0215 |
| 167 | 0.0393 | 0.0174 | 0.0219 |
| 168 | 0.0397 | 0.0176 | 0.0221 |
| 169 | 0.0406 | 0.0180 | 0.0226 |
| 170 | 0.0411 | 0.0182 | 0.0229 |
| 171 | 0.0420 | 0.0186 | 0.0234 |
| 172 | 0.0425 | 0.0188 | 0.0237 |
| 173 | 0.0436 | 0.0193 | 0.0243 |
| 174 | 0.0442 | 0.0196 | 0.0246 |
| 175 | 0.0454 | 0.0201 | 0.0253 |
| 176 | 0.0461 | 0.0204 | 0.0257 |
| 177 | 0.0476 | 0.0211 | 0.0265 |
| 178 | 0.0484 | 0.0214 | 0.0269 |
| 179 | 0.0501 | 0.0222 | 0.0279 |
| 180 | 0.0511 | 0.0226 | 0.0285 |
| 181 | 0.0533 | 0.0236 | 0.0297 |
| 182 | 0.0545 | 0.0241 | 0.0304 |
| 183 | 0.0572 | 0.0254 | 0.0319 |
| 184 | 0.0588 | 0.0261 | 0.0328 |
| 185 | 0.0309 | 0.0137 | 0.0172 |
| 186 | 0.0329 | 0.0146 | 0.0183 |
| 187 | 0.0381 | 0.0169 | 0.0212 |
| 188 | 0.0416 | 0.0184 | 0.0232 |
| 189 | 0.0518 | 0.0229 | 0.0288 |
| 190 | 0.0596 | 0.0264 | 0.0332 |
| 191 | 0.0905 | 0.0401 | 0.0504 |
| 192 | 0.1313 | 0.0482 | 0.0832 |
| 193 | 0.5682 | 0.0482 | 0.5201 |
| 194 | 0.0712 | 0.0315 | 0.0397 |
| 195 | 0.0460 | 0.0204 | 0.0256 |
| 196 | 0.0353 | 0.0156 | 0.0197 |
| 197 | 0.0606 | 0.0268 | 0.0338 |
| 198 | 0.0558 | 0.0247 | 0.0311 |
| 199 | 0.0521 | 0.0231 | 0.0290 |
| 200 | 0.0492 | 0.0218 | 0.0274 |
| 201 | 0.0468 | 0.0207 | 0.0261 |
| 202 | 0.0448 | 0.0198 | 0.0250 |
| 203 | 0.0430 | 0.0191 | 0.0240 |
| 204 | 0.0415 | 0.0184 | 0.0231 |
| 205 | 0.0401 | 0.0178 | 0.0224 |
| 206 | 0.0389 | 0.0172 | 0.0217 |
| 207 | 0.0379 | 0.0168 | 0.0211 |
| 208 | 0.0369 | 0.0163 | 0.0205 |
| 209 | 0.0360 | 0.0159 | 0.0200 |
| 210 | 0.0352 | 0.0156 | 0.0196 |
| 211 | 0.0344 | 0.0152 | 0.0192 |
| 212 | 0.0337 | 0.0149 | 0.0188 |
| 213 | 0.0331 | 0.0146 | 0.0184 |
| 214 | 0.0324 | 0.0144 | 0.0181 |

| | | | |
|---|---|---|---|
| 215 | 0.0319 | 0.0141 | 0.0178 |
| 216 | 0.0313 | 0.0139 | 0.0175 |
| 217 | 0.0336 | 0.0149 | 0.0187 |
| 218 | 0.0332 | 0.0147 | 0.0185 |
| 219 | 0.0327 | 0.0145 | 0.0182 |
| 220 | 0.0323 | 0.0143 | 0.0180 |
| 221 | 0.0320 | 0.0142 | 0.0178 |
| 222 | 0.0316 | 0.0140 | 0.0176 |
| 223 | 0.0313 | 0.0138 | 0.0174 |
| 224 | 0.0309 | 0.0137 | 0.0172 |
| 225 | 0.0306 | 0.0136 | 0.0170 |
| 226 | 0.0303 | 0.0134 | 0.0169 |
| 227 | 0.0300 | 0.0133 | 0.0167 |
| 228 | 0.0297 | 0.0132 | 0.0166 |
| 229 | 0.0294 | 0.0130 | 0.0164 |
| 230 | 0.0292 | 0.0129 | 0.0163 |
| 231 | 0.0289 | 0.0128 | 0.0161 |
| 232 | 0.0287 | 0.0127 | 0.0160 |
| 233 | 0.0284 | 0.0126 | 0.0158 |
| 234 | 0.0282 | 0.0125 | 0.0157 |
| 235 | 0.0280 | 0.0124 | 0.0156 |
| 236 | 0.0278 | 0.0123 | 0.0155 |
| 237 | 0.0276 | 0.0122 | 0.0154 |
| 238 | 0.0274 | 0.0121 | 0.0152 |
| 239 | 0.0272 | 0.0120 | 0.0151 |
| 240 | 0.0270 | 0.0120 | 0.0150 |
| 241 | 0.0268 | 0.0119 | 0.0149 |
| 242 | 0.0266 | 0.0118 | 0.0148 |
| 243 | 0.0264 | 0.0117 | 0.0147 |
| 244 | 0.0263 | 0.0116 | 0.0146 |
| 245 | 0.0261 | 0.0116 | 0.0145 |
| 246 | 0.0259 | 0.0115 | 0.0145 |
| 247 | 0.0258 | 0.0114 | 0.0144 |
| 248 | 0.0256 | 0.0114 | 0.0143 |
| 249 | 0.0255 | 0.0113 | 0.0142 |
| 250 | 0.0253 | 0.0112 | 0.0141 |
| 251 | 0.0252 | 0.0112 | 0.0140 |
| 252 | 0.0250 | 0.0111 | 0.0140 |
| 253 | 0.0249 | 0.0110 | 0.0139 |
| 254 | 0.0248 | 0.0110 | 0.0138 |
| 255 | 0.0246 | 0.0109 | 0.0137 |
| 256 | 0.0245 | 0.0109 | 0.0137 |
| 257 | 0.0244 | 0.0108 | 0.0136 |
| 258 | 0.0243 | 0.0107 | 0.0135 |
| 259 | 0.0241 | 0.0107 | 0.0134 |
| 260 | 0.0240 | 0.0106 | 0.0134 |
| 261 | 0.0239 | 0.0106 | 0.0133 |
| 262 | 0.0238 | 0.0105 | 0.0133 |
| 263 | 0.0237 | 0.0105 | 0.0132 |
| 264 | 0.0236 | 0.0104 | 0.0131 |
| 265 | 0.0235 | 0.0104 | 0.0131 |
| 266 | 0.0234 | 0.0103 | 0.0130 |
| 267 | 0.0233 | 0.0103 | 0.0130 |
| 268 | 0.0232 | 0.0103 | 0.0129 |
| 269 | 0.0231 | 0.0102 | 0.0128 |
| 270 | 0.0230 | 0.0102 | 0.0128 |
| 271 | 0.0229 | 0.0101 | 0.0127 |
| 272 | 0.0228 | 0.0101 | 0.0127 |
| 273 | 0.0227 | 0.0100 | 0.0126 |
| 274 | 0.0226 | 0.0100 | 0.0126 |
| 275 | 0.0225 | 0.0100 | 0.0125 |
| 276 | 0.0224 | 0.0099 | 0.0125 |
| 277 | 0.0223 | 0.0099 | 0.0124 |
| 278 | 0.0222 | 0.0098 | 0.0124 |
| 279 | 0.0221 | 0.0098 | 0.0123 |
| 280 | 0.0221 | 0.0098 | 0.0123 |
| 281 | 0.0220 | 0.0097 | 0.0122 |
| 282 | 0.0219 | 0.0097 | 0.0122 |
| 283 | 0.0218 | 0.0097 | 0.0121 |
| 284 | 0.0217 | 0.0096 | 0.0121 |
| 285 | 0.0216 | 0.0096 | 0.0121 |

```
      286              0.0216           0.0096              0.0120
      287              0.0215           0.0095              0.0120
      288              0.0214           0.0095              0.0119
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.85(In)
      Total effective rainfall =      5.32(In)
      Peak flow rate in flood hydrograph =     69.63(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
----------------------------------------------------------------------------
  0+ 5       0.0010      0.14  Q         |         |         |         |
  0+10       0.0059      0.71  Q         |         |         |         |
  0+15       0.0203      2.09  VQ        |         |         |         |
  0+20       0.0390      2.72  VQ        |         |         |         |
  0+25       0.0600      3.05  VQ        |         |         |         |
  0+30       0.0825      3.27  VQ        |         |         |         |
  0+35       0.1061      3.43  VQ        |         |         |         |
  0+40       0.1305      3.53  V Q       |         |         |         |
  0+45       0.1553      3.60  V Q       |         |         |         |
  0+50       0.1803      3.64  V Q       |         |         |         |
  0+55       0.2056      3.66  V Q       |         |         |         |
  1+ 0       0.2309      3.68  V Q       |         |         |         |
  1+ 5       0.2564      3.70  V Q       |         |         |         |
  1+10       0.2820      3.72  |VQ       |         |         |         |
  1+15       0.3077      3.73  |VQ       |         |         |         |
  1+20       0.3334      3.74  |VQ       |         |         |         |
  1+25       0.3592      3.75  |VQ       |         |         |         |
  1+30       0.3850      3.75  |VQ       |         |         |         |
  1+35       0.4109      3.76  |VQ       |         |         |         |
  1+40       0.4369      3.77  |VQ       |         |         |         |
  1+45       0.4629      3.77  |VQ       |         |         |         |
  1+50       0.4889      3.78  |VQ       |         |         |         |
  1+55       0.5150      3.79  |VQ       |         |         |         |
  2+ 0       0.5411      3.79  |VQ       |         |         |         |
  2+ 5       0.5673      3.80  | Q       |         |         |         |
  2+10       0.5936      3.81  | Q       |         |         |         |
  2+15       0.6198      3.82  | Q       |         |         |         |
  2+20       0.6462      3.82  | Q       |         |         |         |
  2+25       0.6726      3.83  | Q       |         |         |         |
  2+30       0.6990      3.84  | Q       |         |         |         |
  2+35       0.7255      3.85  | Q       |         |         |         |
  2+40       0.7521      3.85  | Q       |         |         |         |
  2+45       0.7787      3.86  | Q       |         |         |         |
  2+50       0.8053      3.87  | Q       |         |         |         |
  2+55       0.8320      3.88  | Q       |         |         |         |
  3+ 0       0.8588      3.89  | QV      |         |         |         |
  3+ 5       0.8856      3.89  | QV      |         |         |         |
  3+10       0.9125      3.90  | QV      |         |         |         |
  3+15       0.9394      3.91  | QV      |         |         |         |
  3+20       0.9664      3.92  | QV      |         |         |         |
  3+25       0.9935      3.93  | QV      |         |         |         |
  3+30       1.0206      3.94  | QV      |         |         |         |
  3+35       1.0478      3.94  | QV      |         |         |         |
  3+40       1.0750      3.95  | QV      |         |         |         |
  3+45       1.1023      3.96  | QV      |         |         |         |
  3+50       1.1296      3.97  | Q V     |         |         |         |
  3+55       1.1570      3.98  | Q V     |         |         |         |
  4+ 0       1.1845      3.99  | Q V     |         |         |         |
  4+ 5       1.2120      4.00  | Q V     |         |         |         |
  4+10       1.2396      4.01  | Q V     |         |         |         |
  4+15       1.2672      4.01  | Q V     |         |         |         |
  4+20       1.2949      4.02  | Q V     |         |         |         |
  4+25       1.3227      4.03  | Q V     |         |         |         |
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 4+30       1.3506      4.04  | Q V     |         |         |         |
 4+35       1.3785      4.05  | Q V     |         |         |         |
 4+40       1.4064      4.06  | Q V     |         |         |         |
 4+45       1.4345      4.07  | Q  V    |         |         |         |
 4+50       1.4626      4.08  | Q  V    |         |         |         |
 4+55       1.4907      4.09  | Q  V    |         |         |         |
 5+ 0       1.5190      4.10  | Q  V    |         |         |         |
 5+ 5       1.5473      4.11  | Q  V    |         |         |         |
 5+10       1.5757      4.12  | Q  V    |         |         |         |
 5+15       1.6041      4.13  | Q  V    |         |         |         |
 5+20       1.6326      4.14  | Q  V    |         |         |         |
 5+25       1.6612      4.15  | Q  V    |         |         |         |
 5+30       1.6899      4.16  | Q   V   |         |         |         |
 5+35       1.7186      4.17  | Q   V   |         |         |         |
 5+40       1.7474      4.18  | Q   V   |         |         |         |
 5+45       1.7763      4.19  | Q   V   |         |         |         |
 5+50       1.8053      4.20  | Q   V   |         |         |         |
 5+55       1.8343      4.22  | Q   V   |         |         |         |
 6+ 0       1.8634      4.23  | Q   V   |         |         |         |
 6+ 5       1.8926      4.24  | Q   V   |         |         |         |
 6+10       1.9219      4.25  | Q   V   |         |         |         |
 6+15       1.9512      4.26  | Q   V   |         |         |         |
 6+20       1.9806      4.27  | Q    V  |         |         |         |
 6+25       2.0102      4.28  | Q    V  |         |         |         |
 6+30       2.0397      4.30  | Q    V  |         |         |         |
 6+35       2.0694      4.31  | Q    V  |         |         |         |
 6+40       2.0992      4.32  | Q    V  |         |         |         |
 6+45       2.1290      4.33  | Q    V  |         |         |         |
 6+50       2.1590      4.35  | Q    V  |         |         |         |
 6+55       2.1890      4.36  | Q    V  |         |         |         |
 7+ 0       2.2191      4.37  | Q    V  |         |         |         |
 7+ 5       2.2493      4.38  | Q    V  |         |         |         |
 7+10       2.2795      4.40  | Q     V |         |         |         |
 7+15       2.3099      4.41  | Q     V |         |         |         |
 7+20       2.3404      4.42  | Q     V |         |         |         |
 7+25       2.3710      4.44  | Q     V |         |         |         |
 7+30       2.4016      4.45  | Q     V |         |         |         |
 7+35       2.4324      4.47  | Q     V |         |         |         |
 7+40       2.4632      4.48  | Q     V |         |         |         |
 7+45       2.4942      4.49  | Q     V |         |         |         |
 7+50       2.5252      4.51  | Q     V |         |         |         |
 7+55       2.5564      4.52  | Q      V|         |         |         |
 8+ 0       2.5876      4.54  | Q      V|         |         |         |
 8+ 5       2.6190      4.55  | Q      V|         |         |         |
 8+10       2.6504      4.57  | Q      V|         |         |         |
 8+15       2.6820      4.58  | Q      V|         |         |         |
 8+20       2.7137      4.60  | Q      V|         |         |         |
 8+25       2.7454      4.62  | Q      V|         |         |         |
 8+30       2.7773      4.63  | Q      V|         |         |         |
 8+35       2.8093      4.65  | Q      V|         |         |         |
 8+40       2.8415      4.66  | Q       V         |         |         |
 8+45       2.8737      4.68  | Q       V         |         |         |
 8+50       2.9061      4.70  | Q       V         |         |         |
 8+55       2.9385      4.72  | Q       V         |         |         |
 9+ 0       2.9711      4.73  | Q       V         |         |         |
 9+ 5       3.0038      4.75  | Q       V         |         |         |
 9+10       3.0367      4.77  | Q       V         |         |         |
 9+15       3.0697      4.79  | Q       V         |         |         |
 9+20       3.1028      4.81  | Q       |V        |         |         |
 9+25       3.1360      4.83  | Q       |V        |         |         |
 9+30       3.1694      4.84  | Q       |V        |         |         |
 9+35       3.2029      4.86  | Q       |V        |         |         |
 9+40       3.2365      4.88  | Q       |V        |         |         |
 9+45       3.2703      4.90  | Q       |V        |         |         |
 9+50       3.3042      4.92  | Q       |V        |         |         |
 9+55       3.3383      4.95  | Q       |V        |         |         |
10+ 0       3.3725      4.97  | Q       |V        |         |         |
10+ 5       3.4068      4.99  | Q       | V       |         |         |
10+10       3.4413      5.01  | Q       | V       |         |         |
10+15       3.4760      5.03  | Q       | V       |         |         |
10+20       3.5108      5.06  | Q       | V       |         |         |
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10+25       3.5458      5.08  | Q       | V       |         |         |
10+30       3.5810      5.10  | Q       | V       |         |         |
10+35       3.6163      5.13  | Q       | V       |         |         |
10+40       3.6518      5.15  | Q       | V       |         |         |
10+45       3.6875      5.18  | Q       |  V      |         |         |
10+50       3.7233      5.20  | Q       |  V      |         |         |
10+55       3.7593      5.23  | Q       |  V      |         |         |
11+ 0       3.7955      5.26  |  Q      |  V      |         |         |
11+ 5       3.8319      5.29  |  Q      |  V      |         |         |
11+10       3.8685      5.31  |  Q      |  V      |         |         |
11+15       3.9053      5.34  |  Q      |  V      |         |         |
11+20       3.9423      5.37  |  Q      |   V     |         |         |
11+25       3.9795      5.40  |  Q      |   V     |         |         |
11+30       4.0169      5.43  |  Q      |   V     |         |         |
11+35       4.0545      5.46  |  Q      |   V     |         |         |
11+40       4.0924      5.49  |  Q      |   V     |         |         |
11+45       4.1305      5.53  |  Q      |   V     |         |         |
11+50       4.1688      5.56  |  Q      |   V     |         |         |
11+55       4.2073      5.60  |  Q      |   V     |         |         |
12+ 0       4.2461      5.63  |  Q      |    V    |         |         |
12+ 5       4.2850      5.65  |  Q      |    V    |         |         |
12+10       4.3236      5.61  |  Q      |    V    |         |         |
12+15       4.3613      5.47  |  Q      |    V    |         |         |
12+20       4.3988      5.43  |  Q      |    V    |         |         |
12+25       4.4362      5.43  |  Q      |    V    |         |         |
12+30       4.4737      5.45  |  Q      |    V    |         |         |
12+35       4.5114      5.48  |  Q      |     V   |         |         |
12+40       4.5493      5.51  |  Q      |     V   |         |         |
12+45       4.5876      5.55  |  Q      |     V   |         |         |
12+50       4.6261      5.60  |  Q      |     V   |         |         |
12+55       4.6650      5.65  |  Q      |     V   |         |         |
13+ 0       4.7043      5.70  |  Q      |     V   |         |         |
13+ 5       4.7439      5.76  |  Q      |     V   |         |         |
13+10       4.7839      5.81  |  Q      |     V   |         |         |
13+15       4.8244      5.87  |  Q      |      V  |         |         |
13+20       4.8652      5.93  |  Q      |      V  |         |         |
13+25       4.9066      6.00  |  Q      |      V  |         |         |
13+30       4.9483      6.07  |  Q      |      V  |         |         |
13+35       4.9906      6.14  |  Q      |      V  |         |         |
13+40       5.0334      6.21  |  Q      |      V  |         |         |
13+45       5.0767      6.29  |  Q      |       V |         |         |
13+50       5.1206      6.37  |  Q      |       V |         |         |
13+55       5.1651      6.46  |  Q      |       V |         |         |
14+ 0       5.2101      6.54  |  Q      |       V |         |         |
14+ 5       5.2558      6.64  |  Q      |       V |         |         |
14+10       5.3022      6.74  |  Q      |       V |         |         |
14+15       5.3494      6.85  |  Q      |        V|         |         |
14+20       5.3973      6.95  |  Q      |        V|         |         |
14+25       5.4460      7.08  |   Q     |        V|         |         |
14+30       5.4956      7.20  |   Q     |        V|         |         |
14+35       5.5461      7.34  |   Q     |        V|         |         |
14+40       5.5976      7.47  |   Q     |        V|         |         |
14+45       5.6502      7.63  |   Q     |         V         |         |
14+50       5.7038      7.79  |   Q     |         V         |         |
14+55       5.7587      7.98  |   Q     |         V         |         |
15+ 0       5.8149      8.16  |   Q     |         V         |         |
15+ 5       5.8727      8.38  |   Q     |         V         |         |
15+10       5.9319      8.61  |   Q     |         |V        |         |
15+15       5.9931      8.88  |    Q    |         |V        |         |
15+20       6.0562      9.16  |    Q    |         |V        |         |
15+25       6.1202      9.30  |    Q    |         |V        |         |
15+30       6.1808      8.80  |    Q    |         |V        |         |
15+35       6.2305      7.22  |   Q     |         | V       |         |
15+40       6.2772      6.78  |  Q      |         | V       |         |
15+45       6.3252      6.96  |  Q      |         | V       |         |
15+50       6.3764      7.44  |   Q     |         | V       |         |
15+55       6.4352      8.54  |   Q     |         | V       |         |
16+ 0       6.5079     10.55  |     Q   |         |  V      |         |
16+ 5       6.6427     19.58  |         |Q        |  V      |         |
16+10       6.9188     40.08  |         |         | Q V     |         |
16+15       7.3984     69.63  |         |         |     V   |        Q|
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16+20      7.6551    37.27  |          |          |Q     V  |          |
16+25      7.8168    23.48  |          |  Q       |      V  |          |
16+30      7.9408    18.00  |          Q          |       V |          |
16+35      8.0503    15.90  |         Q|          |       V |          |
16+40      8.1443    13.65  |       Q  |          |       V |          |
16+45      8.2247    11.67  |     Q    |          |         V|          |
16+50      8.2927     9.86  |    Q     |          |         V|          |
16+55      8.3553     9.09  |    Q     |          |         V|          |
17+ 0      8.4144     8.58  |   Q      |          |         V|          |
17+ 5      8.4710     8.22  |   Q      |          |          V          |
17+10      8.5252     7.88  |   Q      |          |          V          |
17+15      8.5761     7.39  |   Q      |          |          V          |
17+20      8.6245     7.02  |   Q      |          |          V          |
17+25      8.6706     6.70  |  Q       |          |          V          |
17+30      8.7155     6.51  |  Q       |          |          V          |
17+35      8.7592     6.34  |  Q       |          |          |V         |
17+40      8.8018     6.19  |  Q       |          |          |V         |
17+45      8.8434     6.04  |  Q       |          |          |V         |
17+50      8.8841     5.91  |  Q       |          |          |V         |
17+55      8.9240     5.79  |  Q       |          |          |V         |
18+ 0      8.9630     5.67  |  Q       |          |          |V         |
18+ 5      9.0015     5.58  |  Q       |          |          |V         |
18+10      9.0398     5.56  |  Q       |          |          | V        |
18+15      9.0787     5.65  |  Q       |          |          | V        |
18+20      9.1175     5.64  |  Q       |          |          | V        |
18+25      9.1561     5.61  |  Q       |          |          | V        |
18+30      9.1945     5.56  |  Q       |          |          | V        |
18+35      9.2324     5.51  |  Q       |          |          | V        |
18+40      9.2700     5.46  |  Q       |          |          | V        |
18+45      9.3072     5.40  |  Q       |          |          |  V       |
18+50      9.3440     5.35  |  Q       |          |          |  V       |
18+55      9.3805     5.29  |  Q       |          |          |  V       |
19+ 0      9.4165     5.24  | Q        |          |          |  V       |
19+ 5      9.4523     5.19  | Q        |          |          |  V       |
19+10      9.4876     5.14  | Q        |          |          |  V       |
19+15      9.5227     5.09  | Q        |          |          |  V       |
19+20      9.5574     5.04  | Q        |          |          |  V       |
19+25      9.5918     5.00  | Q        |          |          |   V      |
19+30      9.6260     4.95  | Q        |          |          |   V      |
19+35      9.6598     4.91  | Q        |          |          |   V      |
19+40      9.6933     4.87  | Q        |          |          |   V      |
19+45      9.7266     4.83  | Q        |          |          |   V      |
19+50      9.7596     4.79  | Q        |          |          |   V      |
19+55      9.7924     4.76  | Q        |          |          |   V      |
20+ 0      9.8249     4.72  | Q        |          |          |   V      |
20+ 5      9.8572     4.69  | Q        |          |          |    V     |
20+10      9.8892     4.65  | Q        |          |          |    V     |
20+15      9.9211     4.62  | Q        |          |          |    V     |
20+20      9.9527     4.59  | Q        |          |          |    V     |
20+25      9.9841     4.56  | Q        |          |          |    V     |
20+30     10.0152     4.53  | Q        |          |          |    V     |
20+35     10.0462     4.50  | Q        |          |          |    V     |
20+40     10.0770     4.47  | Q        |          |          |    V     |
20+45     10.1076     4.44  | Q        |          |          |    V     |
20+50     10.1380     4.41  | Q        |          |          |     V    |
20+55     10.1682     4.39  | Q        |          |          |     V    |
21+ 0     10.1983     4.36  | Q        |          |          |     V    |
21+ 5     10.2282     4.34  | Q        |          |          |     V    |
21+10     10.2579     4.31  | Q        |          |          |     V    |
21+15     10.2874     4.29  | Q        |          |          |     V    |
21+20     10.3168     4.27  | Q        |          |          |     V    |
21+25     10.3460     4.24  | Q        |          |          |     V    |
21+30     10.3750     4.22  | Q        |          |          |     V    |
21+35     10.4039     4.20  | Q        |          |          |     V    |
21+40     10.4327     4.18  | Q        |          |          |      V   |
21+45     10.4613     4.15  | Q        |          |          |      V   |
21+50     10.4898     4.13  | Q        |          |          |      V   |
21+55     10.5181     4.11  | Q        |          |          |      V   |
22+ 0     10.5463     4.09  | Q        |          |          |      V   |
22+ 5     10.5744     4.07  | Q        |          |          |      V   |
22+10     10.6023     4.05  | Q        |          |          |      V   |
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  22+15      10.6301      4.04  | Q       |         |         |      V  |
  22+20      10.6578      4.02  | Q       |         |         |      V  |
  22+25      10.6853      4.00  | Q       |         |         |      V  |
  22+30      10.7127      3.98  | Q       |         |         |       V |
  22+35      10.7400      3.96  | Q       |         |         |       V |
  22+40      10.7672      3.95  | Q       |         |         |       V |
  22+45      10.7943      3.93  | Q       |         |         |       V |
  22+50      10.8212      3.91  | Q       |         |         |       V |
  22+55      10.8481      3.90  | Q       |         |         |       V |
  23+ 0      10.8748      3.88  | Q       |         |         |       V |
  23+ 5      10.9014      3.87  | Q       |         |         |       V |
  23+10      10.9279      3.85  | Q       |         |         |       V |
  23+15      10.9543      3.83  | Q       |         |         |       V |
  23+20      10.9806      3.82  | Q       |         |         |        V|
  23+25      11.0068      3.80  | Q       |         |         |        V|
  23+30      11.0329      3.79  | Q       |         |         |        V|
  23+35      11.0589      3.78  | Q       |         |         |        V|
  23+40      11.0848      3.76  | Q       |         |         |        V|
  23+45      11.1107      3.75  | Q       |         |         |        V|
  23+50      11.1364      3.73  | Q       |         |         |        V|
  23+55      11.1620      3.72  | Q       |         |         |        V|
  24+ 0      11.1875      3.71  | Q       |         |         |        V|
  24+ 5      11.2120      3.56  | Q       |         |         |        V|
  24+10      11.2325      2.97  |Q        |         |         |        V|
  24+15      11.2433      1.58  Q         |         |         |        V|
  24+20      11.2499      0.96  Q         |         |         |        V|
  24+25      11.2542      0.62  Q         |         |         |        V|
  24+30      11.2570      0.41  Q         |         |         |        V|
  24+35      11.2588      0.26  Q         |         |         |        V|
  24+40      11.2598      0.15  Q         |         |         |        V|
  24+45      11.2605      0.09  Q         |         |         |        V|
  24+50      11.2609      0.06  Q         |         |         |        V|
  24+55      11.2612      0.04  Q         |         |         |        V|
  25+ 0      11.2614      0.03  Q         |         |         |        V|
  25+ 5      11.2616      0.02  Q         |         |         |        V|
  25+10      11.2616      0.01  Q         |         |         |        V|
  25+15      11.2616      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

Area ‘G’ – 100 Year 24 Hour - Existing Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  11/14/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - EXISTING PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'G'
100 YEAR 24 HOUR STORM
NOVEMBER 4, 2024
------------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            25.42            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            25.42           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            25.42           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 67.0      84.6         25.42      1.000     0.290    1.000    0.290

Area-averaged adjusted loss rate Fm (In/Hr) =  0.290

********* Area-Averaged low loss rate fraction, Yb **********
```

```
Area       Area          SCS CN    SCS CN      S     Pervious
 (Ac.)      Fract         (AMC2)    (AMC3)           Yield Fr
    25.42   1.000         67.0      84.6       1.82     0.838

Area-averaged catchment yield fraction, Y =  0.838
Area-averaged low loss fraction, Yb =  0.162
User entry of time of concentration  =   0.228 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area =      25.42(Ac.)
Catchment Lag time =   0.182 hours
Unit interval =   5.000 minutes
Unit interval percentage of lag time = 45.6871
Hydrograph baseflow =     0.00(CFS)
Average maximum watershed loss rate(Fm) =  0.290(In/Hr)
Average low loss rate fraction (Yb) = 0.162 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall =  0.712(In)
Computed peak 30-minute rainfall =  1.218(In)
Specified peak 1-hour rainfall =  1.500(In)
Computed peak 3-hour rainfall =  2.942(In)
Specified peak 6-hour rainfall =  4.500(In)
Specified peak 24-hour rainfall = 12.000(In)


Rainfall depth area reduction factors:
Using a total area of      25.42(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999     Adjusted rainfall =  0.711(In)
30-minute factor = 0.999    Adjusted rainfall =  1.217(In)
1-hour factor = 0.999       Adjusted rainfall =  1.498(In)
3-hour factor = 1.000       Adjusted rainfall =  2.942(In)
6-hour factor = 1.000       Adjusted rainfall =  4.500(In)
24-hour factor = 1.000      Adjusted rainfall = 12.000(In)
--------------------------------------------------------------------------

                      U n i t  H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Interval          'S' Graph          Unit Hydrograph
Number            Mean values             ((CFS))
--------------------------------------------------------------------------
               (K =       307.42 (CFS))

  1                3.770                  11.590
  2               19.507                  48.379
  3               57.188                 115.840
  4               74.099                  51.988
  5               83.072                  27.584
  6               89.001                  18.226
  7               93.088                  12.567
  8               95.822                   8.402
  9               97.540                   5.282
 10               98.307                   2.360
 11               98.797                   1.505
 12               99.152                   1.093
 13               99.469                   0.973
 14               99.765                   0.912
 15               99.923                   0.483
 16              100.000                   0.238
--------------------------------------------------------------------------
Peak Unit   Adjusted mass rainfall  Unit rainfall
Number              (In)                (In)
  1              0.7109              0.7109
  2              0.8752              0.1643
  3              0.9885              0.1132
  4              1.0775              0.0891
  5              1.1522              0.0746
  6              1.2169              0.0648
  7              1.2745              0.0576
  8              1.3266              0.0521
  9              1.3743              0.0477
 10              1.4185              0.0441
```

| | | |
|---|---|---|
| 11 | 1.4596 | 0.0411 |
| 12 | 1.4982 | 0.0386 |
| 13 | 1.5737 | 0.0755 |
| 14 | 1.6470 | 0.0733 |
| 15 | 1.7182 | 0.0713 |
| 16 | 1.7877 | 0.0695 |
| 17 | 1.8555 | 0.0678 |
| 18 | 1.9218 | 0.0663 |
| 19 | 1.9867 | 0.0649 |
| 20 | 2.0503 | 0.0636 |
| 21 | 2.1126 | 0.0624 |
| 22 | 2.1738 | 0.0612 |
| 23 | 2.2340 | 0.0602 |
| 24 | 2.2932 | 0.0592 |
| 25 | 2.3514 | 0.0582 |
| 26 | 2.4087 | 0.0573 |
| 27 | 2.4652 | 0.0565 |
| 28 | 2.5208 | 0.0557 |
| 29 | 2.5758 | 0.0549 |
| 30 | 2.6299 | 0.0542 |
| 31 | 2.6834 | 0.0535 |
| 32 | 2.7363 | 0.0528 |
| 33 | 2.7885 | 0.0522 |
| 34 | 2.8401 | 0.0516 |
| 35 | 2.8911 | 0.0510 |
| 36 | 2.9415 | 0.0504 |
| 37 | 2.9914 | 0.0498 |
| 38 | 3.0407 | 0.0493 |
| 39 | 3.0895 | 0.0488 |
| 40 | 3.1378 | 0.0483 |
| 41 | 3.1857 | 0.0479 |
| 42 | 3.2332 | 0.0474 |
| 43 | 3.2801 | 0.0470 |
| 44 | 3.3267 | 0.0466 |
| 45 | 3.3729 | 0.0462 |
| 46 | 3.4187 | 0.0458 |
| 47 | 3.4640 | 0.0454 |
| 48 | 3.5091 | 0.0450 |
| 49 | 3.5537 | 0.0447 |
| 50 | 3.5980 | 0.0443 |
| 51 | 3.6420 | 0.0440 |
| 52 | 3.6856 | 0.0436 |
| 53 | 3.7289 | 0.0433 |
| 54 | 3.7719 | 0.0430 |
| 55 | 3.8146 | 0.0427 |
| 56 | 3.8570 | 0.0424 |
| 57 | 3.8991 | 0.0421 |
| 58 | 3.9409 | 0.0418 |
| 59 | 3.9824 | 0.0415 |
| 60 | 4.0236 | 0.0413 |
| 61 | 4.0646 | 0.0410 |
| 62 | 4.1054 | 0.0407 |
| 63 | 4.1459 | 0.0405 |
| 64 | 4.1861 | 0.0402 |
| 65 | 4.2261 | 0.0400 |
| 66 | 4.2658 | 0.0398 |
| 67 | 4.3054 | 0.0395 |
| 68 | 4.3447 | 0.0393 |
| 69 | 4.3837 | 0.0391 |
| 70 | 4.4226 | 0.0389 |
| 71 | 4.4612 | 0.0386 |
| 72 | 4.4996 | 0.0384 |
| 73 | 4.5438 | 0.0441 |
| 74 | 4.5877 | 0.0440 |
| 75 | 4.6315 | 0.0438 |
| 76 | 4.6751 | 0.0436 |
| 77 | 4.7186 | 0.0434 |
| 78 | 4.7618 | 0.0433 |
| 79 | 4.8049 | 0.0431 |
| 80 | 4.8479 | 0.0430 |
| 81 | 4.8907 | 0.0428 |

| | | |
|---|---|---|
| 82 | 4.9333 | 0.0426 |
| 83 | 4.9758 | 0.0425 |
| 84 | 5.0182 | 0.0423 |
| 85 | 5.0604 | 0.0422 |
| 86 | 5.1024 | 0.0421 |
| 87 | 5.1443 | 0.0419 |
| 88 | 5.1861 | 0.0418 |
| 89 | 5.2277 | 0.0416 |
| 90 | 5.2692 | 0.0415 |
| 91 | 5.3106 | 0.0414 |
| 92 | 5.3518 | 0.0412 |
| 93 | 5.3929 | 0.0411 |
| 94 | 5.4339 | 0.0410 |
| 95 | 5.4747 | 0.0408 |
| 96 | 5.5154 | 0.0407 |
| 97 | 5.5560 | 0.0406 |
| 98 | 5.5965 | 0.0405 |
| 99 | 5.6368 | 0.0403 |
| 100 | 5.6771 | 0.0402 |
| 101 | 5.7172 | 0.0401 |
| 102 | 5.7572 | 0.0400 |
| 103 | 5.7970 | 0.0399 |
| 104 | 5.8368 | 0.0398 |
| 105 | 5.8765 | 0.0397 |
| 106 | 5.9160 | 0.0395 |
| 107 | 5.9554 | 0.0394 |
| 108 | 5.9948 | 0.0393 |
| 109 | 6.0340 | 0.0392 |
| 110 | 6.0731 | 0.0391 |
| 111 | 6.1121 | 0.0390 |
| 112 | 6.1510 | 0.0389 |
| 113 | 6.1898 | 0.0388 |
| 114 | 6.2285 | 0.0387 |
| 115 | 6.2671 | 0.0386 |
| 116 | 6.3057 | 0.0385 |
| 117 | 6.3441 | 0.0384 |
| 118 | 6.3824 | 0.0383 |
| 119 | 6.4206 | 0.0382 |
| 120 | 6.4587 | 0.0381 |
| 121 | 6.4968 | 0.0380 |
| 122 | 6.5347 | 0.0379 |
| 123 | 6.5726 | 0.0379 |
| 124 | 6.6103 | 0.0378 |
| 125 | 6.6480 | 0.0377 |
| 126 | 6.6856 | 0.0376 |
| 127 | 6.7231 | 0.0375 |
| 128 | 6.7605 | 0.0374 |
| 129 | 6.7978 | 0.0373 |
| 130 | 6.8351 | 0.0372 |
| 131 | 6.8722 | 0.0372 |
| 132 | 6.9093 | 0.0371 |
| 133 | 6.9463 | 0.0370 |
| 134 | 6.9832 | 0.0369 |
| 135 | 7.0201 | 0.0368 |
| 136 | 7.0568 | 0.0368 |
| 137 | 7.0935 | 0.0367 |
| 138 | 7.1301 | 0.0366 |
| 139 | 7.1666 | 0.0365 |
| 140 | 7.2030 | 0.0364 |
| 141 | 7.2394 | 0.0364 |
| 142 | 7.2757 | 0.0363 |
| 143 | 7.3119 | 0.0362 |
| 144 | 7.3481 | 0.0361 |
| 145 | 7.3841 | 0.0361 |
| 146 | 7.4201 | 0.0360 |
| 147 | 7.4560 | 0.0359 |
| 148 | 7.4919 | 0.0359 |
| 149 | 7.5277 | 0.0358 |
| 150 | 7.5634 | 0.0357 |
| 151 | 7.5990 | 0.0356 |
| 152 | 7.6346 | 0.0356 |

| | | |
|---|---|---|
| 153 | 7.6701 | 0.0355 |
| 154 | 7.7056 | 0.0354 |
| 155 | 7.7409 | 0.0354 |
| 156 | 7.7762 | 0.0353 |
| 157 | 7.8115 | 0.0352 |
| 158 | 7.8466 | 0.0352 |
| 159 | 7.8817 | 0.0351 |
| 160 | 7.9168 | 0.0350 |
| 161 | 7.9518 | 0.0350 |
| 162 | 7.9867 | 0.0349 |
| 163 | 8.0215 | 0.0349 |
| 164 | 8.0563 | 0.0348 |
| 165 | 8.0910 | 0.0347 |
| 166 | 8.1257 | 0.0347 |
| 167 | 8.1603 | 0.0346 |
| 168 | 8.1949 | 0.0345 |
| 169 | 8.2293 | 0.0345 |
| 170 | 8.2638 | 0.0344 |
| 171 | 8.2981 | 0.0344 |
| 172 | 8.3324 | 0.0343 |
| 173 | 8.3667 | 0.0342 |
| 174 | 8.4009 | 0.0342 |
| 175 | 8.4350 | 0.0341 |
| 176 | 8.4691 | 0.0341 |
| 177 | 8.5031 | 0.0340 |
| 178 | 8.5371 | 0.0340 |
| 179 | 8.5710 | 0.0339 |
| 180 | 8.6048 | 0.0339 |
| 181 | 8.6386 | 0.0338 |
| 182 | 8.6724 | 0.0337 |
| 183 | 8.7060 | 0.0337 |
| 184 | 8.7397 | 0.0336 |
| 185 | 8.7733 | 0.0336 |
| 186 | 8.8068 | 0.0335 |
| 187 | 8.8403 | 0.0335 |
| 188 | 8.8737 | 0.0334 |
| 189 | 8.9071 | 0.0334 |
| 190 | 8.9404 | 0.0333 |
| 191 | 8.9736 | 0.0333 |
| 192 | 9.0069 | 0.0332 |
| 193 | 9.0400 | 0.0332 |
| 194 | 9.0731 | 0.0331 |
| 195 | 9.1062 | 0.0331 |
| 196 | 9.1392 | 0.0330 |
| 197 | 9.1722 | 0.0330 |
| 198 | 9.2051 | 0.0329 |
| 199 | 9.2380 | 0.0329 |
| 200 | 9.2708 | 0.0328 |
| 201 | 9.3036 | 0.0328 |
| 202 | 9.3363 | 0.0327 |
| 203 | 9.3690 | 0.0327 |
| 204 | 9.4016 | 0.0326 |
| 205 | 9.4342 | 0.0326 |
| 206 | 9.4667 | 0.0325 |
| 207 | 9.4992 | 0.0325 |
| 208 | 9.5317 | 0.0324 |
| 209 | 9.5641 | 0.0324 |
| 210 | 9.5964 | 0.0324 |
| 211 | 9.6288 | 0.0323 |
| 212 | 9.6610 | 0.0323 |
| 213 | 9.6932 | 0.0322 |
| 214 | 9.7254 | 0.0322 |
| 215 | 9.7575 | 0.0321 |
| 216 | 9.7896 | 0.0321 |
| 217 | 9.8217 | 0.0320 |
| 218 | 9.8537 | 0.0320 |
| 219 | 9.8856 | 0.0320 |
| 220 | 9.9176 | 0.0319 |
| 221 | 9.9494 | 0.0319 |
| 222 | 9.9813 | 0.0318 |
| 223 | 10.0131 | 0.0318 |

| | | |
|---|---|---|
| 224 | 10.0448 | 0.0317 |
| 225 | 10.0765 | 0.0317 |
| 226 | 10.1082 | 0.0317 |
| 227 | 10.1398 | 0.0316 |
| 228 | 10.1714 | 0.0316 |
| 229 | 10.2029 | 0.0315 |
| 230 | 10.2345 | 0.0315 |
| 231 | 10.2659 | 0.0315 |
| 232 | 10.2973 | 0.0314 |
| 233 | 10.3287 | 0.0314 |
| 234 | 10.3601 | 0.0313 |
| 235 | 10.3914 | 0.0313 |
| 236 | 10.4226 | 0.0313 |
| 237 | 10.4539 | 0.0312 |
| 238 | 10.4851 | 0.0312 |
| 239 | 10.5162 | 0.0312 |
| 240 | 10.5473 | 0.0311 |
| 241 | 10.5784 | 0.0311 |
| 242 | 10.6094 | 0.0310 |
| 243 | 10.6404 | 0.0310 |
| 244 | 10.6714 | 0.0310 |
| 245 | 10.7023 | 0.0309 |
| 246 | 10.7332 | 0.0309 |
| 247 | 10.7641 | 0.0309 |
| 248 | 10.7949 | 0.0308 |
| 249 | 10.8257 | 0.0308 |
| 250 | 10.8564 | 0.0307 |
| 251 | 10.8871 | 0.0307 |
| 252 | 10.9178 | 0.0307 |
| 253 | 10.9484 | 0.0306 |
| 254 | 10.9790 | 0.0306 |
| 255 | 11.0096 | 0.0306 |
| 256 | 11.0401 | 0.0305 |
| 257 | 11.0706 | 0.0305 |
| 258 | 11.1011 | 0.0305 |
| 259 | 11.1315 | 0.0304 |
| 260 | 11.1619 | 0.0304 |
| 261 | 11.1923 | 0.0304 |
| 262 | 11.2226 | 0.0303 |
| 263 | 11.2529 | 0.0303 |
| 264 | 11.2831 | 0.0303 |
| 265 | 11.3134 | 0.0302 |
| 266 | 11.3436 | 0.0302 |
| 267 | 11.3737 | 0.0302 |
| 268 | 11.4038 | 0.0301 |
| 269 | 11.4339 | 0.0301 |
| 270 | 11.4640 | 0.0301 |
| 271 | 11.4940 | 0.0300 |
| 272 | 11.5240 | 0.0300 |
| 273 | 11.5540 | 0.0300 |
| 274 | 11.5839 | 0.0299 |
| 275 | 11.6138 | 0.0299 |
| 276 | 11.6437 | 0.0299 |
| 277 | 11.6735 | 0.0298 |
| 278 | 11.7033 | 0.0298 |
| 279 | 11.7331 | 0.0298 |
| 280 | 11.7628 | 0.0297 |
| 281 | 11.7925 | 0.0297 |
| 282 | 11.8222 | 0.0297 |
| 283 | 11.8518 | 0.0296 |
| 284 | 11.8815 | 0.0296 |
| 285 | 11.9110 | 0.0296 |
| 286 | 11.9406 | 0.0296 |
| 287 | 11.9701 | 0.0295 |
| 288 | 11.9996 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0048 | 0.0247 |

| | | | |
|---|---|---|---|
| 2 | 0.0295 | 0.0048 | 0.0248 |
| 3 | 0.0296 | 0.0048 | 0.0248 |
| 4 | 0.0296 | 0.0048 | 0.0248 |
| 5 | 0.0297 | 0.0048 | 0.0249 |
| 6 | 0.0297 | 0.0048 | 0.0249 |
| 7 | 0.0298 | 0.0048 | 0.0250 |
| 8 | 0.0298 | 0.0048 | 0.0250 |
| 9 | 0.0299 | 0.0048 | 0.0250 |
| 10 | 0.0299 | 0.0048 | 0.0251 |
| 11 | 0.0300 | 0.0048 | 0.0251 |
| 12 | 0.0300 | 0.0048 | 0.0251 |
| 13 | 0.0301 | 0.0049 | 0.0252 |
| 14 | 0.0301 | 0.0049 | 0.0252 |
| 15 | 0.0302 | 0.0049 | 0.0253 |
| 16 | 0.0302 | 0.0049 | 0.0253 |
| 17 | 0.0303 | 0.0049 | 0.0254 |
| 18 | 0.0303 | 0.0049 | 0.0254 |
| 19 | 0.0304 | 0.0049 | 0.0255 |
| 20 | 0.0304 | 0.0049 | 0.0255 |
| 21 | 0.0305 | 0.0049 | 0.0255 |
| 22 | 0.0305 | 0.0049 | 0.0256 |
| 23 | 0.0306 | 0.0049 | 0.0256 |
| 24 | 0.0306 | 0.0049 | 0.0257 |
| 25 | 0.0307 | 0.0050 | 0.0257 |
| 26 | 0.0307 | 0.0050 | 0.0257 |
| 27 | 0.0308 | 0.0050 | 0.0258 |
| 28 | 0.0308 | 0.0050 | 0.0258 |
| 29 | 0.0309 | 0.0050 | 0.0259 |
| 30 | 0.0309 | 0.0050 | 0.0259 |
| 31 | 0.0310 | 0.0050 | 0.0260 |
| 32 | 0.0310 | 0.0050 | 0.0260 |
| 33 | 0.0311 | 0.0050 | 0.0261 |
| 34 | 0.0312 | 0.0050 | 0.0261 |
| 35 | 0.0312 | 0.0050 | 0.0262 |
| 36 | 0.0313 | 0.0051 | 0.0262 |
| 37 | 0.0313 | 0.0051 | 0.0263 |
| 38 | 0.0314 | 0.0051 | 0.0263 |
| 39 | 0.0315 | 0.0051 | 0.0264 |
| 40 | 0.0315 | 0.0051 | 0.0264 |
| 41 | 0.0316 | 0.0051 | 0.0265 |
| 42 | 0.0316 | 0.0051 | 0.0265 |
| 43 | 0.0317 | 0.0051 | 0.0266 |
| 44 | 0.0317 | 0.0051 | 0.0266 |
| 45 | 0.0318 | 0.0051 | 0.0267 |
| 46 | 0.0319 | 0.0051 | 0.0267 |
| 47 | 0.0320 | 0.0052 | 0.0268 |
| 48 | 0.0320 | 0.0052 | 0.0268 |
| 49 | 0.0321 | 0.0052 | 0.0269 |
| 50 | 0.0321 | 0.0052 | 0.0269 |
| 51 | 0.0322 | 0.0052 | 0.0270 |
| 52 | 0.0323 | 0.0052 | 0.0271 |
| 53 | 0.0324 | 0.0052 | 0.0271 |
| 54 | 0.0324 | 0.0052 | 0.0272 |
| 55 | 0.0325 | 0.0052 | 0.0272 |
| 56 | 0.0325 | 0.0053 | 0.0273 |
| 57 | 0.0326 | 0.0053 | 0.0274 |
| 58 | 0.0327 | 0.0053 | 0.0274 |
| 59 | 0.0328 | 0.0053 | 0.0275 |
| 60 | 0.0328 | 0.0053 | 0.0275 |
| 61 | 0.0329 | 0.0053 | 0.0276 |
| 62 | 0.0330 | 0.0053 | 0.0276 |
| 63 | 0.0331 | 0.0053 | 0.0277 |
| 64 | 0.0331 | 0.0053 | 0.0278 |
| 65 | 0.0332 | 0.0054 | 0.0279 |
| 66 | 0.0333 | 0.0054 | 0.0279 |
| 67 | 0.0334 | 0.0054 | 0.0280 |
| 68 | 0.0334 | 0.0054 | 0.0280 |
| 69 | 0.0335 | 0.0054 | 0.0281 |
| 70 | 0.0336 | 0.0054 | 0.0282 |
| 71 | 0.0337 | 0.0054 | 0.0282 |
| 72 | 0.0337 | 0.0054 | 0.0283 |

| | | | |
|---|---|---|---|
| 73 | 0.0339 | 0.0055 | 0.0284 |
| 74 | 0.0339 | 0.0055 | 0.0284 |
| 75 | 0.0340 | 0.0055 | 0.0285 |
| 76 | 0.0341 | 0.0055 | 0.0286 |
| 77 | 0.0342 | 0.0055 | 0.0287 |
| 78 | 0.0342 | 0.0055 | 0.0287 |
| 79 | 0.0344 | 0.0056 | 0.0288 |
| 80 | 0.0344 | 0.0056 | 0.0289 |
| 81 | 0.0345 | 0.0056 | 0.0290 |
| 82 | 0.0346 | 0.0056 | 0.0290 |
| 83 | 0.0347 | 0.0056 | 0.0291 |
| 84 | 0.0348 | 0.0056 | 0.0292 |
| 85 | 0.0349 | 0.0056 | 0.0293 |
| 86 | 0.0350 | 0.0056 | 0.0293 |
| 87 | 0.0351 | 0.0057 | 0.0294 |
| 88 | 0.0352 | 0.0057 | 0.0295 |
| 89 | 0.0353 | 0.0057 | 0.0296 |
| 90 | 0.0354 | 0.0057 | 0.0297 |
| 91 | 0.0355 | 0.0057 | 0.0298 |
| 92 | 0.0356 | 0.0057 | 0.0298 |
| 93 | 0.0357 | 0.0058 | 0.0299 |
| 94 | 0.0358 | 0.0058 | 0.0300 |
| 95 | 0.0359 | 0.0058 | 0.0301 |
| 96 | 0.0360 | 0.0058 | 0.0302 |
| 97 | 0.0361 | 0.0058 | 0.0303 |
| 98 | 0.0362 | 0.0058 | 0.0304 |
| 99 | 0.0364 | 0.0059 | 0.0305 |
| 100 | 0.0364 | 0.0059 | 0.0306 |
| 101 | 0.0366 | 0.0059 | 0.0307 |
| 102 | 0.0367 | 0.0059 | 0.0308 |
| 103 | 0.0368 | 0.0059 | 0.0309 |
| 104 | 0.0369 | 0.0060 | 0.0310 |
| 105 | 0.0371 | 0.0060 | 0.0311 |
| 106 | 0.0372 | 0.0060 | 0.0312 |
| 107 | 0.0373 | 0.0060 | 0.0313 |
| 108 | 0.0374 | 0.0060 | 0.0314 |
| 109 | 0.0376 | 0.0061 | 0.0315 |
| 110 | 0.0377 | 0.0061 | 0.0316 |
| 111 | 0.0379 | 0.0061 | 0.0317 |
| 112 | 0.0379 | 0.0061 | 0.0318 |
| 113 | 0.0381 | 0.0062 | 0.0320 |
| 114 | 0.0382 | 0.0062 | 0.0320 |
| 115 | 0.0384 | 0.0062 | 0.0322 |
| 116 | 0.0385 | 0.0062 | 0.0323 |
| 117 | 0.0387 | 0.0063 | 0.0325 |
| 118 | 0.0388 | 0.0063 | 0.0325 |
| 119 | 0.0390 | 0.0063 | 0.0327 |
| 120 | 0.0391 | 0.0063 | 0.0328 |
| 121 | 0.0393 | 0.0064 | 0.0330 |
| 122 | 0.0394 | 0.0064 | 0.0331 |
| 123 | 0.0397 | 0.0064 | 0.0332 |
| 124 | 0.0398 | 0.0064 | 0.0333 |
| 125 | 0.0400 | 0.0065 | 0.0335 |
| 126 | 0.0401 | 0.0065 | 0.0336 |
| 127 | 0.0403 | 0.0065 | 0.0338 |
| 128 | 0.0405 | 0.0065 | 0.0339 |
| 129 | 0.0407 | 0.0066 | 0.0341 |
| 130 | 0.0408 | 0.0066 | 0.0342 |
| 131 | 0.0411 | 0.0066 | 0.0345 |
| 132 | 0.0412 | 0.0067 | 0.0346 |
| 133 | 0.0415 | 0.0067 | 0.0348 |
| 134 | 0.0416 | 0.0067 | 0.0349 |
| 135 | 0.0419 | 0.0068 | 0.0351 |
| 136 | 0.0421 | 0.0068 | 0.0353 |
| 137 | 0.0423 | 0.0068 | 0.0355 |
| 138 | 0.0425 | 0.0069 | 0.0356 |
| 139 | 0.0428 | 0.0069 | 0.0359 |
| 140 | 0.0430 | 0.0069 | 0.0360 |
| 141 | 0.0433 | 0.0070 | 0.0363 |
| 142 | 0.0434 | 0.0070 | 0.0364 |
| 143 | 0.0438 | 0.0071 | 0.0367 |

| | | | |
|---|---|---|---|
| 144 | 0.0440 | 0.0071 | 0.0369 |
| 145 | 0.0384 | 0.0062 | 0.0322 |
| 146 | 0.0386 | 0.0062 | 0.0324 |
| 147 | 0.0391 | 0.0063 | 0.0328 |
| 148 | 0.0393 | 0.0063 | 0.0329 |
| 149 | 0.0398 | 0.0064 | 0.0333 |
| 150 | 0.0400 | 0.0065 | 0.0335 |
| 151 | 0.0405 | 0.0065 | 0.0339 |
| 152 | 0.0407 | 0.0066 | 0.0342 |
| 153 | 0.0413 | 0.0067 | 0.0346 |
| 154 | 0.0415 | 0.0067 | 0.0348 |
| 155 | 0.0421 | 0.0068 | 0.0353 |
| 156 | 0.0424 | 0.0068 | 0.0355 |
| 157 | 0.0430 | 0.0069 | 0.0360 |
| 158 | 0.0433 | 0.0070 | 0.0363 |
| 159 | 0.0440 | 0.0071 | 0.0369 |
| 160 | 0.0443 | 0.0072 | 0.0371 |
| 161 | 0.0450 | 0.0073 | 0.0377 |
| 162 | 0.0454 | 0.0073 | 0.0381 |
| 163 | 0.0462 | 0.0075 | 0.0387 |
| 164 | 0.0466 | 0.0075 | 0.0391 |
| 165 | 0.0474 | 0.0077 | 0.0398 |
| 166 | 0.0479 | 0.0077 | 0.0401 |
| 167 | 0.0488 | 0.0079 | 0.0409 |
| 168 | 0.0493 | 0.0080 | 0.0414 |
| 169 | 0.0504 | 0.0081 | 0.0423 |
| 170 | 0.0510 | 0.0082 | 0.0428 |
| 171 | 0.0522 | 0.0084 | 0.0438 |
| 172 | 0.0528 | 0.0085 | 0.0443 |
| 173 | 0.0542 | 0.0088 | 0.0454 |
| 174 | 0.0549 | 0.0089 | 0.0460 |
| 175 | 0.0565 | 0.0091 | 0.0474 |
| 176 | 0.0573 | 0.0093 | 0.0481 |
| 177 | 0.0592 | 0.0096 | 0.0496 |
| 178 | 0.0602 | 0.0097 | 0.0504 |
| 179 | 0.0624 | 0.0101 | 0.0523 |
| 180 | 0.0636 | 0.0103 | 0.0533 |
| 181 | 0.0663 | 0.0107 | 0.0556 |
| 182 | 0.0678 | 0.0110 | 0.0569 |
| 183 | 0.0713 | 0.0115 | 0.0598 |
| 184 | 0.0733 | 0.0118 | 0.0614 |
| 185 | 0.0386 | 0.0062 | 0.0324 |
| 186 | 0.0411 | 0.0066 | 0.0345 |
| 187 | 0.0477 | 0.0077 | 0.0400 |
| 188 | 0.0521 | 0.0084 | 0.0437 |
| 189 | 0.0648 | 0.0105 | 0.0543 |
| 190 | 0.0746 | 0.0120 | 0.0626 |
| 191 | 0.1132 | 0.0183 | 0.0949 |
| 192 | 0.1643 | 0.0242 | 0.1402 |
| 193 | 0.7109 | 0.0242 | 0.6868 |
| 194 | 0.0891 | 0.0144 | 0.0747 |
| 195 | 0.0576 | 0.0093 | 0.0483 |
| 196 | 0.0441 | 0.0071 | 0.0370 |
| 197 | 0.0755 | 0.0122 | 0.0633 |
| 198 | 0.0695 | 0.0112 | 0.0582 |
| 199 | 0.0649 | 0.0105 | 0.0544 |
| 200 | 0.0612 | 0.0099 | 0.0513 |
| 201 | 0.0582 | 0.0094 | 0.0488 |
| 202 | 0.0557 | 0.0090 | 0.0467 |
| 203 | 0.0535 | 0.0086 | 0.0449 |
| 204 | 0.0516 | 0.0083 | 0.0433 |
| 205 | 0.0498 | 0.0081 | 0.0418 |
| 206 | 0.0483 | 0.0078 | 0.0405 |
| 207 | 0.0470 | 0.0076 | 0.0394 |
| 208 | 0.0458 | 0.0074 | 0.0384 |
| 209 | 0.0447 | 0.0072 | 0.0374 |
| 210 | 0.0436 | 0.0070 | 0.0366 |
| 211 | 0.0427 | 0.0069 | 0.0358 |
| 212 | 0.0418 | 0.0068 | 0.0351 |
| 213 | 0.0410 | 0.0066 | 0.0344 |
| 214 | 0.0402 | 0.0065 | 0.0337 |

| | | | |
|---|---|---|---|
| 215 | 0.0395 | 0.0064 | 0.0331 |
| 216 | 0.0389 | 0.0063 | 0.0326 |
| 217 | 0.0441 | 0.0071 | 0.0370 |
| 218 | 0.0436 | 0.0070 | 0.0366 |
| 219 | 0.0431 | 0.0070 | 0.0362 |
| 220 | 0.0426 | 0.0069 | 0.0358 |
| 221 | 0.0422 | 0.0068 | 0.0354 |
| 222 | 0.0418 | 0.0067 | 0.0350 |
| 223 | 0.0414 | 0.0067 | 0.0347 |
| 224 | 0.0410 | 0.0066 | 0.0343 |
| 225 | 0.0406 | 0.0066 | 0.0340 |
| 226 | 0.0402 | 0.0065 | 0.0337 |
| 227 | 0.0399 | 0.0064 | 0.0334 |
| 228 | 0.0395 | 0.0064 | 0.0332 |
| 229 | 0.0392 | 0.0063 | 0.0329 |
| 230 | 0.0389 | 0.0063 | 0.0326 |
| 231 | 0.0386 | 0.0062 | 0.0324 |
| 232 | 0.0383 | 0.0062 | 0.0321 |
| 233 | 0.0380 | 0.0061 | 0.0319 |
| 234 | 0.0378 | 0.0061 | 0.0317 |
| 235 | 0.0375 | 0.0061 | 0.0314 |
| 236 | 0.0372 | 0.0060 | 0.0312 |
| 237 | 0.0370 | 0.0060 | 0.0310 |
| 238 | 0.0368 | 0.0059 | 0.0308 |
| 239 | 0.0365 | 0.0059 | 0.0306 |
| 240 | 0.0363 | 0.0059 | 0.0304 |
| 241 | 0.0361 | 0.0058 | 0.0302 |
| 242 | 0.0359 | 0.0058 | 0.0301 |
| 243 | 0.0356 | 0.0058 | 0.0299 |
| 244 | 0.0354 | 0.0057 | 0.0297 |
| 245 | 0.0352 | 0.0057 | 0.0295 |
| 246 | 0.0350 | 0.0057 | 0.0294 |
| 247 | 0.0349 | 0.0056 | 0.0292 |
| 248 | 0.0347 | 0.0056 | 0.0291 |
| 249 | 0.0345 | 0.0056 | 0.0289 |
| 250 | 0.0343 | 0.0055 | 0.0288 |
| 251 | 0.0341 | 0.0055 | 0.0286 |
| 252 | 0.0340 | 0.0055 | 0.0285 |
| 253 | 0.0338 | 0.0055 | 0.0283 |
| 254 | 0.0336 | 0.0054 | 0.0282 |
| 255 | 0.0335 | 0.0054 | 0.0281 |
| 256 | 0.0333 | 0.0054 | 0.0279 |
| 257 | 0.0332 | 0.0054 | 0.0278 |
| 258 | 0.0330 | 0.0053 | 0.0277 |
| 259 | 0.0329 | 0.0053 | 0.0276 |
| 260 | 0.0327 | 0.0053 | 0.0274 |
| 261 | 0.0326 | 0.0053 | 0.0273 |
| 262 | 0.0324 | 0.0052 | 0.0272 |
| 263 | 0.0323 | 0.0052 | 0.0271 |
| 264 | 0.0322 | 0.0052 | 0.0270 |
| 265 | 0.0320 | 0.0052 | 0.0269 |
| 266 | 0.0319 | 0.0052 | 0.0268 |
| 267 | 0.0318 | 0.0051 | 0.0267 |
| 268 | 0.0317 | 0.0051 | 0.0266 |
| 269 | 0.0315 | 0.0051 | 0.0264 |
| 270 | 0.0314 | 0.0051 | 0.0263 |
| 271 | 0.0313 | 0.0051 | 0.0263 |
| 272 | 0.0312 | 0.0050 | 0.0262 |
| 273 | 0.0311 | 0.0050 | 0.0261 |
| 274 | 0.0310 | 0.0050 | 0.0260 |
| 275 | 0.0309 | 0.0050 | 0.0259 |
| 276 | 0.0307 | 0.0050 | 0.0258 |
| 277 | 0.0306 | 0.0049 | 0.0257 |
| 278 | 0.0305 | 0.0049 | 0.0256 |
| 279 | 0.0304 | 0.0049 | 0.0255 |
| 280 | 0.0303 | 0.0049 | 0.0254 |
| 281 | 0.0302 | 0.0049 | 0.0253 |
| 282 | 0.0301 | 0.0049 | 0.0253 |
| 283 | 0.0300 | 0.0048 | 0.0252 |
| 284 | 0.0299 | 0.0048 | 0.0251 |
| 285 | 0.0298 | 0.0048 | 0.0250 |

```
      286              0.0297           0.0048              0.0249
      287              0.0296           0.0048              0.0249
      288              0.0296           0.0048              0.0248
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      1.85(In)
      Total effective rainfall =     10.15(In)
      Peak flow rate in flood hydrograph =     96.38(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       25.0      50.0      75.0     100.0
----------------------------------------------------------------------------
  0+ 5       0.0020      0.29  Q         |         |         |         |
  0+10       0.0122      1.48  Q         |         |         |         |
  0+15       0.0422      4.35  VQ        |         |         |         |
  0+20       0.0810      5.64  V Q       |         |         |         |
  0+25       0.1246      6.33  V Q       |         |         |         |
  0+30       0.1714      6.79  V Q       |         |         |         |
  0+35       0.2204      7.11  V Q       |         |         |         |
  0+40       0.2709      7.33  V Q       |         |         |         |
  0+45       0.3224      7.48  V Q       |         |         |         |
  0+50       0.3743      7.54  V  Q      |         |         |         |
  0+55       0.4266      7.59  V  Q      |         |         |         |
  1+ 0       0.4792      7.63  V  Q      |         |         |         |
  1+ 5       0.5320      7.67  V  Q      |         |         |         |
  1+10       0.5851      7.70  |V Q       |         |         |         |
  1+15       0.6383      7.73  |V Q       |         |         |         |
  1+20       0.6917      7.75  |V Q       |         |         |         |
  1+25       0.7451      7.76  |V Q       |         |         |         |
  1+30       0.7987      7.77  |V Q       |         |         |         |
  1+35       0.8523      7.79  |V Q       |         |         |         |
  1+40       0.9060      7.80  |V Q       |         |         |         |
  1+45       0.9598      7.81  |V Q       |         |         |         |
  1+50       1.0137      7.82  |V Q       |         |         |         |
  1+55       1.0677      7.84  |V Q       |         |         |         |
  2+ 0       1.1217      7.85  | VQ       |         |         |         |
  2+ 5       1.1759      7.86  | VQ       |         |         |         |
  2+10       1.2301      7.88  | VQ       |         |         |         |
  2+15       1.2845      7.89  | VQ       |         |         |         |
  2+20       1.3389      7.91  | VQ       |         |         |         |
  2+25       1.3935      7.92  | VQ       |         |         |         |
  2+30       1.4481      7.93  | VQ       |         |         |         |
  2+35       1.5029      7.95  | VQ       |         |         |         |
  2+40       1.5577      7.96  | VQ       |         |         |         |
  2+45       1.6126      7.98  |  Q       |         |         |         |
  2+50       1.6676      7.99  |  Q       |         |         |         |
  2+55       1.7228      8.01  |  Q       |         |         |         |
  3+ 0       1.7780      8.02  |  Q       |         |         |         |
  3+ 5       1.8333      8.03  |  Q       |         |         |         |
  3+10       1.8888      8.05  |  Q       |         |         |         |
  3+15       1.9443      8.06  |  Q       |         |         |         |
  3+20       1.9999      8.08  |  Q       |         |         |         |
  3+25       2.0557      8.09  |  Q       |         |         |         |
  3+30       2.1115      8.11  |  Q       |         |         |         |
  3+35       2.1675      8.13  |  QV      |         |         |         |
  3+40       2.2236      8.14  |  QV      |         |         |         |
  3+45       2.2797      8.16  |  QV      |         |         |         |
  3+50       2.3360      8.17  |  QV      |         |         |         |
  3+55       2.3924      8.19  |  QV      |         |         |         |
  4+ 0       2.4489      8.20  |  QV      |         |         |         |
  4+ 5       2.5055      8.22  |  QV      |         |         |         |
  4+10       2.5623      8.24  |  QV      |         |         |         |
  4+15       2.6191      8.25  |  QV      |         |         |         |
  4+20       2.6761      8.27  |  QV      |         |         |         |
  4+25       2.7332      8.29  |  Q V     |         |         |         |
```

```
 4+30      2.7904     8.30  |  Q V    |         |         |         |
 4+35      2.8477     8.32  |  Q V    |         |         |         |
 4+40      2.9051     8.34  |  Q V    |         |         |         |
 4+45      2.9627     8.36  |  Q V    |         |         |         |
 4+50      3.0203     8.37  |  Q V    |         |         |         |
 4+55      3.0781     8.39  |  Q V    |         |         |         |
 5+ 0      3.1361     8.41  |  Q V    |         |         |         |
 5+ 5      3.1941     8.43  |  Q V    |         |         |         |
 5+10      3.2523     8.45  |  Q  V   |         |         |         |
 5+15      3.3106     8.47  |  Q  V   |         |         |         |
 5+20      3.3690     8.48  |  Q  V   |         |         |         |
 5+25      3.4276     8.50  |  Q  V   |         |         |         |
 5+30      3.4863     8.52  |  Q  V   |         |         |         |
 5+35      3.5451     8.54  |  Q  V   |         |         |         |
 5+40      3.6041     8.56  |  Q  V   |         |         |         |
 5+45      3.6632     8.58  |  Q  V   |         |         |         |
 5+50      3.7224     8.60  |  Q  V   |         |         |         |
 5+55      3.7818     8.62  |  Q   V  |         |         |         |
 6+ 0      3.8413     8.64  |  Q   V  |         |         |         |
 6+ 5      3.9009     8.66  |  Q   V  |         |         |         |
 6+10      3.9607     8.68  |  Q   V  |         |         |         |
 6+15      4.0207     8.70  |  Q   V  |         |         |         |
 6+20      4.0808     8.72  |  Q   V  |         |         |         |
 6+25      4.1410     8.75  |  Q   V  |         |         |         |
 6+30      4.2014     8.77  |  Q   V  |         |         |         |
 6+35      4.2619     8.79  |  Q   V  |         |         |         |
 6+40      4.3226     8.81  |  Q    V |         |         |         |
 6+45      4.3835     8.83  |  Q    V |         |         |         |
 6+50      4.4444     8.86  |  Q    V |         |         |         |
 6+55      4.5056     8.88  |  Q    V |         |         |         |
 7+ 0      4.5669     8.90  |  Q    V |         |         |         |
 7+ 5      4.6284     8.93  |  Q    V |         |         |         |
 7+10      4.6900     8.95  |  Q    V |         |         |         |
 7+15      4.7518     8.97  |  Q    V |         |         |         |
 7+20      4.8138     9.00  |  Q    V |         |         |         |
 7+25      4.8760     9.02  |  Q     V|         |         |         |
 7+30      4.9383     9.05  |  Q     V|         |         |         |
 7+35      5.0008     9.07  |  Q     V|         |         |         |
 7+40      5.0634     9.10  |  Q     V|         |         |         |
 7+45      5.1263     9.13  |  Q     V|         |         |         |
 7+50      5.1893     9.15  |  Q     V|         |         |         |
 7+55      5.2525     9.18  |  Q     V|         |         |         |
 8+ 0      5.3159     9.20  |  Q     V|         |         |         |
 8+ 5      5.3795     9.23  |  Q      V         |         |         |
 8+10      5.4432     9.26  |  Q      V         |         |         |
 8+15      5.5072     9.29  |  Q      V         |         |         |
 8+20      5.5713     9.31  |  Q      V         |         |         |
 8+25      5.6357     9.34  |  Q      V         |         |         |
 8+30      5.7002     9.37  |  Q      V         |         |         |
 8+35      5.7650     9.40  |  Q      V         |         |         |
 8+40      5.8299     9.43  |  Q      V         |         |         |
 8+45      5.8951     9.46  |  Q      V         |         |         |
 8+50      5.9605     9.49  |  Q       |V       |         |         |
 8+55      6.0261     9.52  |  Q       |V       |         |         |
 9+ 0      6.0919     9.55  |  Q       |V       |         |         |
 9+ 5      6.1579     9.59  |  Q       |V       |         |         |
 9+10      6.2242     9.62  |  Q       |V       |         |         |
 9+15      6.2907     9.65  |  Q       |V       |         |         |
 9+20      6.3574     9.69  |  Q       |V       |         |         |
 9+25      6.4243     9.72  |  Q       |V       |         |         |
 9+30      6.4915     9.76  |  Q       | V      |         |         |
 9+35      6.5589     9.79  |  Q       | V      |         |         |
 9+40      6.6266     9.83  |  Q       | V      |         |         |
 9+45      6.6946     9.86  |  Q       | V      |         |         |
 9+50      6.7627     9.90  |  Q       | V      |         |         |
 9+55      6.8312     9.94  |  Q       | V      |         |         |
10+ 0      6.8999     9.98  |  Q       | V      |         |         |
10+ 5      6.9689    10.02  |   Q      | V      |         |         |
10+10      7.0381    10.05  |   Q      |  V     |         |         |
10+15      7.1076    10.10  |   Q      |  V     |         |         |
10+20      7.1774    10.13  |   Q      |  V     |         |         |
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10+25       7.2475     10.18  |   Q     |  V      |         |         |
10+30       7.3179     10.22  |   Q     |  V      |         |         |
10+35       7.3886     10.26  |   Q     |  V      |         |         |
10+40       7.4596     10.31  |   Q     |  V      |         |         |
10+45       7.5309     10.35  |   Q     |   V     |         |         |
10+50       7.6025     10.40  |   Q     |   V     |         |         |
10+55       7.6744     10.45  |   Q     |   V     |         |         |
11+ 0       7.7467     10.49  |   Q     |   V     |         |         |
11+ 5       7.8193     10.54  |   Q     |   V     |         |         |
11+10       7.8922     10.59  |   Q     |   V     |         |         |
11+15       7.9655     10.64  |   Q     |   V     |         |         |
11+20       8.0392     10.69  |   Q     |   V     |         |         |
11+25       8.1132     10.75  |   Q     |    V    |         |         |
11+30       8.1876     10.80  |   Q     |    V    |         |         |
11+35       8.2623     10.86  |   Q     |    V    |         |         |
11+40       8.3375     10.91  |   Q     |    V    |         |         |
11+45       8.4131     10.97  |   Q     |    V    |         |         |
11+50       8.4890     11.03  |   Q     |    V    |         |         |
11+55       8.5654     11.09  |   Q     |    V    |         |         |
12+ 0       8.6422     11.15  |   Q     |     V   |         |         |
12+ 5       8.7191     11.16  |   Q     |     V   |         |         |
12+10       8.7948     10.99  |   Q     |     V   |         |         |
12+15       8.8670     10.49  |   Q     |     V   |         |         |
12+20       8.9379     10.30  |   Q     |     V   |         |         |
12+25       9.0085     10.25  |   Q     |     V   |         |         |
12+30       9.0790     10.24  |   Q     |     V   |         |         |
12+35       9.1497     10.27  |   Q     |      V  |         |         |
12+40       9.2207     10.31  |   Q     |      V  |         |         |
12+45       9.2922     10.38  |   Q     |      V  |         |         |
12+50       9.3642     10.46  |   Q     |      V  |         |         |
12+55       9.4369     10.55  |   Q     |      V  |         |         |
13+ 0       9.5102     10.64  |   Q     |      V  |         |         |
13+ 5       9.5843     10.75  |   Q     |      V  |         |         |
13+10       9.6590     10.85  |   Q     |      V  |         |         |
13+15       9.7345     10.97  |   Q     |       V |         |         |
13+20       9.8108     11.08  |   Q     |       V |         |         |
13+25       9.8880     11.21  |   Q     |       V |         |         |
13+30       9.9660     11.33  |   Q     |       V |         |         |
13+35      10.0450     11.47  |   Q     |       V |         |         |
13+40      10.1249     11.60  |   Q     |       V |         |         |
13+45      10.2059     11.75  |   Q     |       V |         |         |
13+50      10.2878     11.90  |   Q     |        V|         |         |
13+55      10.3709     12.07  |   Q     |        V|         |         |
14+ 0      10.4551     12.22  |   Q     |        V|         |         |
14+ 5      10.5406     12.41  |   Q     |        V|         |         |
14+10      10.6273     12.59  |    Q    |        V|         |         |
14+15      10.7154     12.80  |    Q    |        V|         |         |
14+20      10.8050     13.00  |    Q    |         V         |         |
14+25      10.8961     13.23  |    Q    |         V         |         |
14+30      10.9888     13.46  |    Q    |         V         |         |
14+35      11.0833     13.72  |    Q    |         V         |         |
14+40      11.1796     13.98  |    Q    |         V         |         |
14+45      11.2779     14.28  |    Q    |         V         |         |
14+50      11.3783     14.57  |    Q    |         |V        |         |
14+55      11.4811     14.93  |    Q    |         |V        |         |
15+ 0      11.5863     15.27  |     Q   |         |V        |         |
15+ 5      11.6943     15.69  |     Q   |         |V        |         |
15+10      11.8053     16.11  |     Q   |         |V        |         |
15+15      11.9198     16.63  |     Q   |         | V       |         |
15+20      12.0380     17.15  |     Q   |         | V       |         |
15+25      12.1580     17.43  |     Q   |         | V       |         |
15+30      12.2717     16.51  |     Q   |         | V       |         |
15+35      12.3650     13.55  |    Q    |         |  V      |         |
15+40      12.4527     12.74  |    Q    |         |  V      |         |
15+45      12.5429     13.09  |    Q    |         |  V      |         |
15+50      12.6394     14.01  |    Q    |         |  V      |         |
15+55      12.7500     16.07  |     Q   |         |  V      |         |
16+ 0      12.8855     19.67  |      Q  |         |  V      |         |
16+ 5      13.1106     32.68  |         |  Q      |   V     |         |
16+10      13.5199     59.42  |         |         |  Q V    |         |
16+15      14.1836     96.38  |         |         |     V   |       Q |
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16+20      14.5592     54.53  |          |          |Q     V  |          |
16+25      14.8060     35.84  |          |    Q     |      V  |          |
16+30      15.0012     28.35  |          |Q         |      V  |          |
16+35      15.1809     26.08  |          Q          |       V |          |
16+40      15.3399     23.10  |         Q|          |       V |          |
16+45      15.4799     20.32  |        Q |          |       V |          |
16+50      15.6023     17.78  |       Q  |          |        V|          |
16+55      15.7165     16.57  |     Q    |          |        V|          |
17+ 0      15.8248     15.73  |     Q    |          |        V|          |
17+ 5      15.9287     15.09  |     Q    |          |        V|          |
17+10      16.0284     14.47  |    Q     |          |        V|          |
17+15      16.1226     13.68  |    Q     |          |        V|          |
17+20      16.2125     13.06  |    Q     |          |         V          |
17+25      16.2988     12.52  |    Q     |          |         V          |
17+30      16.3826     12.17  |   Q      |          |         V          |
17+35      16.4642     11.85  |   Q      |          |         V          |
17+40      16.5438     11.56  |   Q      |          |         V          |
17+45      16.6216     11.29  |   Q      |          |         V          |
17+50      16.6976     11.03  |   Q      |          |          |V        |
17+55      16.7720     10.80  |   Q      |          |          |V        |
18+ 0      16.8449     10.59  |   Q      |          |          |V        |
18+ 5      16.9168     10.45  |   Q      |          |          |V        |
18+10      16.9892     10.50  |   Q      |          |          |V        |
18+15      17.0642     10.90  |   Q      |          |          |V        |
18+20      17.1401     11.01  |   Q      |          |          |V        |
18+25      17.2158     11.00  |   Q      |          |          | V       |
18+30      17.2913     10.96  |   Q      |          |          | V       |
18+35      17.3663     10.90  |   Q      |          |          | V       |
18+40      17.4409     10.82  |   Q      |          |          | V       |
18+45      17.5148     10.73  |   Q      |          |          | V       |
18+50      17.5880     10.64  |   Q      |          |          | V       |
18+55      17.6607     10.54  |   Q      |          |          | V       |
19+ 0      17.7326     10.45  |   Q      |          |          | V       |
19+ 5      17.8040     10.36  |   Q      |          |          |  V      |
19+10      17.8748     10.28  |   Q      |          |          |  V      |
19+15      17.9450     10.19  |   Q      |          |          |  V      |
19+20      18.0146     10.11  |   Q      |          |          |  V      |
19+25      18.0837     10.03  |   Q      |          |          |  V      |
19+30      18.1522      9.95  |  Q       |          |          |  V      |
19+35      18.2203      9.88  |  Q       |          |          |  V      |
19+40      18.2878      9.80  |  Q       |          |          |   V     |
19+45      18.3548      9.73  |  Q       |          |          |   V     |
19+50      18.4214      9.67  |  Q       |          |          |   V     |
19+55      18.4875      9.60  |  Q       |          |          |   V     |
20+ 0      18.5532      9.54  |  Q       |          |          |   V     |
20+ 5      18.6184      9.47  |  Q       |          |          |   V     |
20+10      18.6832      9.41  |  Q       |          |          |   V     |
20+15      18.7476      9.35  |  Q       |          |          |   V     |
20+20      18.8117      9.30  |  Q       |          |          |   V     |
20+25      18.8753      9.24  |  Q       |          |          |    V    |
20+30      18.9386      9.19  |  Q       |          |          |    V    |
20+35      19.0015      9.13  |  Q       |          |          |    V    |
20+40      19.0640      9.08  |  Q       |          |          |    V    |
20+45      19.1262      9.03  |  Q       |          |          |    V    |
20+50      19.1881      8.98  |  Q       |          |          |    V    |
20+55      19.2496      8.93  |  Q       |          |          |    V    |
21+ 0      19.3108      8.89  |  Q       |          |          |    V    |
21+ 5      19.3717      8.84  |  Q       |          |          |     V   |
21+10      19.4323      8.80  |  Q       |          |          |     V   |
21+15      19.4926      8.75  |  Q       |          |          |     V   |
21+20      19.5526      8.71  |  Q       |          |          |     V   |
21+25      19.6123      8.67  |  Q       |          |          |     V   |
21+30      19.6717      8.63  |  Q       |          |          |     V   |
21+35      19.7308      8.59  |  Q       |          |          |     V   |
21+40      19.7897      8.55  |  Q       |          |          |     V   |
21+45      19.8483      8.51  |  Q       |          |          |     V   |
21+50      19.9067      8.47  |  Q       |          |          |      V  |
21+55      19.9647      8.43  |  Q       |          |          |      V  |
22+ 0      20.0226      8.40  |  Q       |          |          |      V  |
22+ 5      20.0802      8.36  |  Q       |          |          |      V  |
22+10      20.1375      8.33  |  Q       |          |          |      V  |
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  22+15      20.1946      8.29  |  Q      |         |         |      V  |
  22+20      20.2515      8.26  |  Q      |         |         |      V  |
  22+25      20.3082      8.23  |  Q      |         |         |      V  |
  22+30      20.3646      8.19  |  Q      |         |         |      V  |
  22+35      20.4208      8.16  |  Q      |         |         |      V  |
  22+40      20.4768      8.13  |  Q      |         |         |       V |
  22+45      20.5326      8.10  |  Q      |         |         |       V |
  22+50      20.5881      8.07  |  Q      |         |         |       V |
  22+55      20.6435      8.04  |  Q      |         |         |       V |
  23+ 0      20.6987      8.01  |  Q      |         |         |       V |
  23+ 5      20.7536      7.98  |  Q      |         |         |       V |
  23+10      20.8084      7.95  |  Q      |         |         |       V |
  23+15      20.8630      7.92  |  Q      |         |         |       V |
  23+20      20.9173      7.90  |  Q      |         |         |       V |
  23+25      20.9715      7.87  |  Q      |         |         |        V|
  23+30      21.0255      7.84  |  Q      |         |         |        V|
  23+35      21.0794      7.82  |  Q      |         |         |        V|
  23+40      21.1330      7.79  |  Q      |         |         |        V|
  23+45      21.1865      7.76  |  Q      |         |         |        V|
  23+50      21.2398      7.74  |  Q      |         |         |        V|
  23+55      21.2929      7.71  |  Q      |         |         |        V|
  24+ 0      21.3459      7.69  |  Q      |         |         |        V|
  24+ 5      21.3967      7.38  | Q       |         |         |        V|
  24+10      21.4391      6.16  | Q       |         |         |        V|
  24+15      21.4617      3.28  |Q        |         |         |        V|
  24+20      21.4753      1.98  Q         |         |         |        V|
  24+25      21.4843      1.30  Q         |         |         |        V|
  24+30      21.4901      0.84  Q         |         |         |        V|
  24+35      21.4937      0.53  Q         |         |         |        V|
  24+40      21.4959      0.32  Q         |         |         |        V|
  24+45      21.4972      0.19  Q         |         |         |        V|
  24+50      21.4981      0.13  Q         |         |         |        V|
  24+55      21.4987      0.09  Q         |         |         |        V|
  25+ 0      21.4992      0.06  Q         |         |         |        V|
  25+ 5      21.4995      0.04  Q         |         |         |        V|
  25+10      21.4996      0.02  Q         |         |         |        V|
  25+15      21.4996      0.01  Q         |         |         |         V
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# Attachment 3

# Proposed Conditions
# Rational Method Calculations

Area 'A' – 10 Year - Proposed Condition – Rational Method

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                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'A'
10 YEAR STORM
DECEMBER 15, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


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Process from Point/Station      100.000 to Point/Station      101.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.700
Decimal fraction soil group B = 0.300
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 39.20
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.554(In/Hr)
Initial subarea data:
Initial area flow distance =   470.000(Ft.)
Top (of initial area) elevation =  2119.000(Ft.)
Bottom (of initial area) elevation =  2093.900(Ft.)
Difference in elevation =    25.100(Ft.)
Slope =    0.05340  s(%)=       5.34
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.674 min.
Rainfall intensity =      3.872(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.771
Subarea runoff =      5.942(CFS)
Total initial stream area =        1.990(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.554(In/Hr)


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Process from Point/Station      101.000 to Point/Station      102.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2093.900(Ft.)
End of street segment elevation =  2086.000(Ft.)
Length of street segment  =   790.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
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Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      7.700(CFS)
Depth of flow =   0.443(Ft.), Average velocity =   2.936(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  15.797(Ft.)
Flow velocity =   2.94(Ft/s)
Travel time =    4.48 min.     TC =   13.16  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 44.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.526(In/Hr)
Rainfall intensity =      2.892(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.732
Subarea runoff =      3.442(CFS) for    2.440(Ac.)
Total runoff =      9.384(CFS)
Effective area this stream =        4.43(Ac.)
Total Study Area (Main Stream No. 1) =        4.43(Ac.)
Area averaged Fm value =    0.539(In/Hr)
Street flow at end of street =      9.384(CFS)
Half street flow at end of street =      9.384(CFS)
Depth of flow =   0.468(Ft.), Average velocity =   3.081(Ft/s)
Flow width (from curb towards crown)=  17.086(Ft.)


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Process from Point/Station      102.000 to Point/Station      103.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
____________________________________________________________________________
Top of street segment elevation =  2086.000(Ft.)
End of street segment elevation =  2007.000(Ft.)
Length of street segment  =   900.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      9.848(CFS)
Depth of flow =   0.351(Ft.), Average velocity =   7.122(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  11.207(Ft.)
Flow velocity =   7.12(Ft/s)
Travel time =    2.11 min.     TC =   15.26  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.300
Decimal fraction soil group B = 0.700
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 48.80
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.494(In/Hr)
Rainfall intensity =      2.607(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.717
Subarea runoff =      0.839(CFS) for    1.040(Ac.)
Total runoff =     10.223(CFS)
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Effective area this stream =        5.47(Ac.)
Total Study Area (Main Stream No. 1) =        5.47(Ac.)
Area averaged Fm value =    0.530(In/Hr)
Street flow at end of street =     10.223(CFS)
Half street flow at end of street =     10.223(CFS)
Depth of flow =   0.354(Ft.), Average velocity =   7.185(Ft/s)
Flow width (from curb towards crown)=  11.385(Ft.)


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Process from Point/Station      103.000 to Point/Station      104.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2000.000(Ft.)
Downstream point/station elevation =  1999.000(Ft.)
Pipe length  =    94.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.223(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    10.223(CFS)
Normal flow depth in pipe =   13.92(In.)
Flow top width inside pipe =   15.07(In.)
Critical Depth =   14.78(In.)
Pipe flow velocity =      6.97(Ft/s)
Travel time through pipe =    0.22 min.
Time of concentration (TC) =    15.49 min.


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Process from Point/Station      103.000 to Point/Station      104.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.470(Ac.)
Runoff from this stream =     10.223(CFS)
Time of concentration =   15.49 min.
Rainfall intensity =     2.580(In/Hr)
Area averaged loss rate (Fm) =    0.5304(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      105.000 to Point/Station      106.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   580.000(Ft.)
Top (of initial area) elevation =  2116.500(Ft.)
Bottom (of initial area) elevation =  2093.800(Ft.)
Difference in elevation =    22.700(Ft.)
Slope =    0.03914  s(%)=       3.91
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.040 min.
Rainfall intensity =      3.495(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.749
Subarea runoff =      4.790(CFS)
Total initial stream area =        1.830(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      106.000 to Point/Station      107.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
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Top of street segment elevation =  2093.800(Ft.)
End of street segment elevation =  2086.000(Ft.)
Length of street segment  =   755.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      5.017(CFS)
Depth of flow =   0.391(Ft.), Average velocity =   2.682(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  13.206(Ft.)
Flow velocity =   2.68(Ft/s)
Travel time =    4.69 min.     TC =   14.73  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 44.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.526(In/Hr)
Rainfall intensity =      2.673(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.709
Subarea runoff =      0.384(CFS) for    0.900(Ac.)
Total runoff =      5.174(CFS)
Effective area this stream =        2.73(Ac.)
Total Study Area (Main Stream No. 1) =        8.20(Ac.)
Area averaged Fm value =    0.567(In/Hr)
Street flow at end of street =      5.174(CFS)
Half street flow at end of street =      5.174(CFS)
Depth of flow =   0.394(Ft.), Average velocity =   2.702(Ft/s)
Flow width (from curb towards crown)=  13.372(Ft.)


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Process from Point/Station      107.000 to Point/Station      108.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2086.000(Ft.)
End of street segment elevation =  2011.200(Ft.)
Length of street segment  =   760.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      7.667(CFS)
Depth of flow =   0.323(Ft.), Average velocity =   7.026(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   9.821(Ft.)
Flow velocity =   7.03(Ft/s)
Travel time =    1.80 min.     TC =   16.53  min.
 Adding area flow to street
```

```
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.400
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 46.40
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.511(In/Hr)
Rainfall intensity =      2.465(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.704
Subarea runoff =      4.925(CFS) for    3.090(Ac.)
Total runoff =     10.099(CFS)
Effective area this stream =        5.82(Ac.)
Total Study Area (Main Stream No. 1) =       11.29(Ac.)
Area averaged Fm value =    0.537(In/Hr)
Street flow at end of street =     10.099(CFS)
Half street flow at end of street =     10.099(CFS)
Depth of flow =   0.348(Ft.), Average velocity =   7.486(Ft/s)
Flow width (from curb towards crown)=  11.056(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      104.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2003.000(Ft.)
Downstream point/station elevation =  1999.000(Ft.)
Pipe length  =    43.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    10.099(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =    10.099(CFS)
Normal flow depth in pipe =    9.15(In.)
Flow top width inside pipe =   10.21(In.)
Critical depth could not be calculated.
Pipe flow velocity =     15.71(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    16.58 min.


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Process from Point/Station      108.000 to Point/Station      104.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.820(Ac.)
Runoff from this stream =     10.099(CFS)
Time of concentration =   16.58 min.
Rainfall intensity =     2.460(In/Hr)
Area averaged loss rate (Fm) =    0.5370(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     10.22     5.470     15.49    0.530      2.580
2     10.10     5.820     16.58    0.537      2.460
Qmax(1) =
          1.000 *    1.000 *    10.223) +
          1.062 *    0.934 *    10.099) + =      20.247
Qmax(2) =
          0.941 *    1.000 *    10.223) +
          1.000 *    1.000 *    10.099) + =      19.723

Total of 2 streams to confluence:
Flow rates before confluence point:
      10.223      10.099
Maximum flow rates at confluence using above data:
       20.247       19.723
Area of streams before confluence:
```

```
        5.470        5.820
Effective area values after confluence:
       10.907       11.290
Results of confluence:
Total flow rate =     20.247(CFS)
Time of concentration =    15.489 min.
Effective stream area after confluence =     10.907(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.534(In/Hr)
Study area total (this main stream) =      11.29(Ac.)


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Process from Point/Station      104.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1999.000(Ft.)
Downstream point/station elevation =  1996.500(Ft.)
Pipe length  =   230.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    20.247(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    20.247(CFS)
Normal flow depth in pipe =   17.13(In.)
Flow top width inside pipe =   21.69(In.)
Critical Depth =   19.37(In.)
Pipe flow velocity =      8.44(Ft/s)
Travel time through pipe =    0.45 min.
Time of concentration (TC) =    15.94 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      109.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     10.907(Ac.)
Runoff from this stream =     20.247(CFS)
Time of concentration =   15.94 min.
Rainfall intensity =     2.529(In/Hr)
Area averaged loss rate (Fm) =    0.5338(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 2


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Process from Point/Station      110.000 to Point/Station      111.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.600
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 41.60
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.541(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2032.000(Ft.)
Difference in elevation =    62.600(Ft.)
Slope =    0.07825  s(%)=       7.82
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.941 min.
Rainfall intensity =      3.520(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.762
Subarea runoff =     11.072(CFS)
Total initial stream area =        4.130(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.541(In/Hr)
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Process from Point/Station      110.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      4.130(Ac.)
Runoff from this stream =     11.072(CFS)
Time of concentration =    9.94 min.
Rainfall intensity =     3.520(In/Hr)
Area averaged loss rate (Fm) =    0.5409(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      112.000 to Point/Station      113.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.900
Decimal fraction soil group B = 0.100
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 34.40
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.578(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2032.000(Ft.)
Difference in elevation =    62.600(Ft.)
Slope =    0.07825  s(%)=       7.82
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.941 min.
Rainfall intensity =      3.520(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.752
Subarea runoff =     11.042(CFS)
Total initial stream area =        4.170(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.578(In/Hr)


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Process from Point/Station      113.000 to Point/Station      111.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2024.000(Ft.)
Downstream point/station elevation =  2022.000(Ft.)
Pipe length  =    38.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    11.042(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    11.042(CFS)
Normal flow depth in pipe =    9.64(In.)
Flow top width inside pipe =   14.37(In.)
Critical depth could not be calculated.
Pipe flow velocity =     13.23(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =     9.99 min.


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Process from Point/Station      113.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      4.170(Ac.)
Runoff from this stream =     11.042(CFS)
Time of concentration =    9.99 min.
Rainfall intensity =     3.508(In/Hr)
Area averaged loss rate (Fm) =    0.5775(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:
```

```
Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     11.07     4.130      9.94    0.541      3.520
2     11.04     4.170      9.99    0.578      3.508
Qmax(1) =
          1.000 *    1.000 *    11.072) +
          1.004 *    0.995 *    11.042) + =      22.105
Qmax(2) =
          0.996 *    1.000 *    11.072) +
          1.000 *    1.000 *    11.042) + =      22.070

Total of 2 streams to confluence:
Flow rates before confluence point:
      11.072      11.042
Maximum flow rates at confluence using above data:
       22.105       22.070
Area of streams before confluence:
        4.130        4.170
Effective area values after confluence:
        8.280        8.300
Results of confluence:
Total flow rate =     22.105(CFS)
Time of concentration =     9.941 min.
Effective stream area after confluence =      8.280(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.559(In/Hr)
Study area total (this main stream) =       8.30(Ac.)


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Process from Point/Station      111.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2022.000(Ft.)
Downstream point/station elevation =  1996.500(Ft.)
Pipe length  =   244.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    22.105(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    22.105(CFS)
Normal flow depth in pipe =   10.58(In.)
Flow top width inside pipe =   17.72(In.)
Critical depth could not be calculated.
Pipe flow velocity =     20.46(Ft/s)
Travel time through pipe =    0.20 min.
Time of concentration (TC) =    10.14 min.


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Process from Point/Station      111.000 to Point/Station      109.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      8.280(Ac.)
Runoff from this stream =     22.105(CFS)
Time of concentration =   10.14 min.
Rainfall intensity =     3.471(In/Hr)
Area averaged loss rate (Fm) =    0.5593(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     20.25    10.907     15.94    0.534      2.529
2     22.11     8.280     10.14    0.559      3.471
Qmax(1) =
```

```
          1.000 *    1.000 *    20.247) +
          0.676 *    1.000 *    22.105) + =      35.198
Qmax(2) =
          1.472 *    0.636 *    20.247) +
          1.000 *    1.000 *    22.105) + =      41.066

Total of 2 main streams to confluence:
Flow rates before confluence point:
      21.247      23.105
Maximum flow rates at confluence using above data:
       35.198       41.066
Area of streams before confluence:
       10.907        8.280
Effective area values after confluence:
       19.187       15.217


Results of confluence:
Total flow rate =     41.066(CFS)
Time of concentration =    10.140 min.
Effective stream area after confluence  =     15.217(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.545(In/Hr)
Study area total =      19.19(Ac.)


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Process from Point/Station      109.000 to Point/Station      114.100
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1996.500(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =  1288.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    41.066(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    41.066(CFS)
Normal flow depth in pipe =   19.52(In.)
Flow top width inside pipe =   28.60(In.)
Critical Depth =   25.80(In.)
Pipe flow velocity =     12.14(Ft/s)
Travel time through pipe =    1.77 min.
Time of concentration (TC) =    11.91 min.


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Process from Point/Station      109.000 to Point/Station      114.100
**** CONFLUENCE OF MAIN STREAMS ****
------------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     15.217(Ac.)
Runoff from this stream =     41.066(CFS)
Time of concentration =   11.91 min.
Rainfall intensity =     3.102(In/Hr)
Area averaged loss rate (Fm) =    0.5448(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 2


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Process from Point/Station      126.000 to Point/Station      127.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
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```
Initial area flow distance =   500.000(Ft.)
Top (of initial area) elevation =  2031.300(Ft.)
Bottom (of initial area) elevation =  2002.000(Ft.)
Difference in elevation =    29.300(Ft.)
Slope =    0.05860  s(%)=       5.86
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.728 min.
Rainfall intensity =      3.855(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.763
Subarea runoff =      2.648(CFS)
Total initial stream area =        0.900(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      127.000 to Point/Station      128.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2002.000(Ft.)
End of street segment elevation =  1982.000(Ft.)
Length of street segment  =   850.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      3.819(CFS)
Depth of flow =   0.325(Ft.), Average velocity =   3.450(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   9.901(Ft.)
Flow velocity =   3.45(Ft/s)
Travel time =    4.11 min.     TC =   12.83  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Rainfall intensity =      2.943(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.721
Subarea runoff =      2.273(CFS) for    1.420(Ac.)
Total runoff =      4.921(CFS)
Effective area this stream =        2.32(Ac.)
Total Study Area (Main Stream No. 2) =       21.91(Ac.)
Area averaged Fm value =    0.587(In/Hr)
Street flow at end of street =      4.921(CFS)
Half street flow at end of street =      4.921(CFS)
Depth of flow =   0.347(Ft.), Average velocity =   3.657(Ft/s)
Flow width (from curb towards crown)=  11.040(Ft.)


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Process from Point/Station      128.000 to Point/Station      114.200
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1976.000(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     4.921(CFS)
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```
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     4.921(CFS)
Normal flow depth in pipe =    6.54(In.)
Flow top width inside pipe =   11.95(In.)
Critical Depth =   10.95(In.)
Pipe flow velocity =     11.23(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    12.89 min.


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Process from Point/Station      128.000 to Point/Station      114.200
**** CONFLUENCE OF MAIN STREAMS ****
------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      2.320(Ac.)
Runoff from this stream =      4.921(CFS)
Time of concentration =   12.89 min.
Rainfall intensity =     2.935(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 3


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Process from Point/Station      100.000 to Point/Station      129.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   664.000(Ft.)
Top (of initial area) elevation =  2119.000(Ft.)
Bottom (of initial area) elevation =  2044.500(Ft.)
Difference in elevation =    74.500(Ft.)
Slope =    0.11220  s(%)=      11.22
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.586 min.
Rainfall intensity =      3.900(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.765
Subarea runoff =      1.133(CFS)
Total initial stream area =        0.380(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      129.000 to Point/Station      130.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
Top of street segment elevation =  2044.500(Ft.)
End of street segment elevation =  1983.000(Ft.)
Length of street segment  =   726.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
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 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      1.560(CFS)
Depth of flow =   0.215(Ft.), Average velocity =   4.865(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   4.404(Ft.)
Flow velocity =   4.86(Ft/s)
Travel time =    2.49 min.     TC =   11.07  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Rainfall intensity =      3.264(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.738
Subarea runoff =      0.794(CFS) for    0.420(Ac.)
Total runoff =      1.928(CFS)
Effective area this stream =        0.80(Ac.)
Total Study Area (Main Stream No. 3) =       22.71(Ac.)
Area averaged Fm value =    0.587(In/Hr)
Street flow at end of street =      1.928(CFS)
Half street flow at end of street =      1.928(CFS)
Depth of flow =   0.228(Ft.), Average velocity =   5.008(Ft/s)
Flow width (from curb towards crown)=   5.082(Ft.)


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Process from Point/Station      130.000 to Point/Station      131.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1975.300(Ft.)
Downstream point/station elevation =  1974.300(Ft.)
Pipe length  =    36.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     1.928(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     1.928(CFS)
Normal flow depth in pipe =    5.54(In.)
Flow top width inside pipe =    8.75(In.)
Critical Depth =    7.59(In.)
Pipe flow velocity =      6.75(Ft/s)
Travel time through pipe =    0.09 min.
Time of concentration (TC) =    11.16 min.


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Process from Point/Station      130.000 to Point/Station      131.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 3 in normal stream number 1
Stream flow area =      0.800(Ac.)
Runoff from this stream =      1.928(CFS)
Time of concentration =   11.16 min.
Rainfall intensity =     3.246(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      118.000 to Point/Station      132.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
```

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Initial subarea data:
Initial area flow distance =   875.000(Ft.)
Top (of initial area) elevation =  2056.700(Ft.)
Bottom (of initial area) elevation =  2013.000(Ft.)
Difference in elevation =    43.700(Ft.)
Slope =    0.04994  s(%)=       4.99
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.272 min.
Rainfall intensity =      3.223(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.736
Subarea runoff =     10.963(CFS)
Total initial stream area =        4.620(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      132.000 to Point/Station      131.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------
Top of street segment elevation =  2013.000(Ft.)
End of street segment elevation =  1983.000(Ft.)
Length of street segment  =   326.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     10.991(CFS)
Depth of flow =   0.359(Ft.), Average velocity =   7.441(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  11.621(Ft.)
Flow velocity =   7.44(Ft/s)
Travel time =    0.73 min.     TC =   12.00  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
The area added to the existing stream causes a
a lower flow rate of Q =     10.814(CFS)
therefore the upstream flow rate of Q =     10.963(CFS) is being used
Rainfall intensity =      3.085(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.729
Subarea runoff =      0.000(CFS) for    0.190(Ac.)
Total runoff =     10.963(CFS)
Effective area this stream =        4.81(Ac.)
Total Study Area (Main Stream No. 3) =       27.52(Ac.)
Area averaged Fm value =    0.587(In/Hr)
Street flow at end of street =     10.963(CFS)
Half street flow at end of street =     10.963(CFS)
Depth of flow =   0.359(Ft.), Average velocity =   7.437(Ft/s)
Flow width (from curb towards crown)=  11.608(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      132.000 to Point/Station      131.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------
```

```
Along Main Stream number: 3 in normal stream number 2
Stream flow area =      4.810(Ac.)
Runoff from this stream =     10.963(CFS)
Time of concentration =   12.00 min.
Rainfall intensity =     3.085(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1      1.93     0.800     11.16    0.587      3.246
2     10.96     4.810     12.00    0.587      3.085
Qmax(1) =
          1.000 *    1.000 *     1.928) +
          1.064 *    0.930 *    10.963) + =      12.779
Qmax(2) =
          0.939 *    1.000 *     1.928) +
          1.000 *    1.000 *    10.963) + =      12.774

Total of 2 streams to confluence:
Flow rates before confluence point:
       1.928      10.963
Maximum flow rates at confluence using above data:
       12.779       12.774
Area of streams before confluence:
        0.800        4.810
Effective area values after confluence:
        5.273        5.610
Results of confluence:
Total flow rate =     12.779(CFS)
Time of concentration =    11.162 min.
Effective stream area after confluence =      5.273(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.587(In/Hr)
Study area total (this main stream) =       5.61(Ac.)


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Process from Point/Station      131.000 to Point/Station      114.300
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1974.300(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =    38.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.779(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    12.779(CFS)
Normal flow depth in pipe =   15.68(In.)
Flow top width inside pipe =   18.27(In.)
Critical Depth =   15.98(In.)
Pipe flow velocity =      6.63(Ft/s)
Travel time through pipe =    0.10 min.
Time of concentration (TC) =    11.26 min.


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Process from Point/Station      131.000 to Point/Station      114.300
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 3
Stream flow area =      5.273(Ac.)
Runoff from this stream =     12.779(CFS)
Time of concentration =   11.26 min.
Rainfall intensity =     3.226(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 4
```

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Process from Point/Station      112.000 to Point/Station      118.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   909.000(Ft.)
Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2056.700(Ft.)
Difference in elevation =    37.900(Ft.)
Slope =    0.04169  s(%)=       4.17
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.866 min.
Rainfall intensity =      3.109(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.730
Subarea runoff =      7.425(CFS)
Total initial stream area =        3.270(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      118.000 to Point/Station      117.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2048.000(Ft.)
Downstream point/station elevation =  2047.400(Ft.)
Pipe length  =    44.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.425(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     7.425(CFS)
Normal flow depth in pipe =   12.09(In.)
Flow top width inside pipe =   11.86(In.)
Critical Depth =   13.02(In.)
Pipe flow velocity =      7.01(Ft/s)
Travel time through pipe =    0.10 min.
Time of concentration (TC) =    11.97 min.


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Process from Point/Station      118.000 to Point/Station      117.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      3.270(Ac.)
Runoff from this stream =      7.425(CFS)
Time of concentration =   11.97 min.
Rainfall intensity =     3.090(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      115.000 to Point/Station      116.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
```

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Initial subarea data:
Initial area flow distance =   765.000(Ft.)
Top (of initial area) elevation =  2094.200(Ft.)
Bottom (of initial area) elevation =  2056.000(Ft.)
Difference in elevation =    38.200(Ft.)
Slope =    0.04993  s(%)=       4.99
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.683 min.
Rainfall intensity =      3.347(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.742
Subarea runoff =      7.055(CFS)
Total initial stream area =        2.840(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      116.000 to Point/Station      117.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2048.000(Ft.)
Downstream point/station elevation =  2047.400(Ft.)
Pipe length  =    31.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.055(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     7.055(CFS)
Normal flow depth in pipe =   10.01(In.)
Flow top width inside pipe =   14.14(In.)
Critical Depth =   12.76(In.)
Pipe flow velocity =      8.11(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    10.75 min.


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Process from Point/Station      116.000 to Point/Station      117.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      2.840(Ac.)
Runoff from this stream =      7.055(CFS)
Time of concentration =   10.75 min.
Rainfall intensity =     3.333(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1      7.42     3.270     11.97    0.587      3.090
2      7.05     2.840     10.75    0.587      3.333
Qmax(1) =
          1.000 *    1.000 *     7.425) +
          0.912 *    1.000 *     7.055) + =      13.857
Qmax(2) =
          1.097 *    0.898 *     7.425) +
          1.000 *    1.000 *     7.055) + =      14.366

Total of 2 streams to confluence:
Flow rates before confluence point:
       7.425       7.055
Maximum flow rates at confluence using above data:
       13.857       14.366
Area of streams before confluence:
        3.270        2.840
Effective area values after confluence:
        6.110        5.776
Results of confluence:
Total flow rate =     14.366(CFS)
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Time of concentration =    10.746 min.
Effective stream area after confluence =      5.776(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.587(In/Hr)
Study area total (this main stream) =       6.11(Ac.)


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Process from Point/Station      117.000 to Point/Station      119.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2047.400(Ft.)
Downstream point/station elevation =  2036.000(Ft.)
Pipe length  =   477.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    14.366(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    14.366(CFS)
Normal flow depth in pipe =   13.16(In.)
Flow top width inside pipe =   15.96(In.)
Critical Depth =   16.69(In.)
Pipe flow velocity =     10.38(Ft/s)
Travel time through pipe =    0.77 min.
Time of concentration (TC) =    11.51 min.


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Process from Point/Station      117.000 to Point/Station      119.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      5.776(Ac.)
Runoff from this stream =     14.366(CFS)
Time of concentration =   11.51 min.
Rainfall intensity =     3.176(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      105.000 to Point/Station      120.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   586.000(Ft.)
Top (of initial area) elevation =  2116.500(Ft.)
Bottom (of initial area) elevation =  2052.500(Ft.)
Difference in elevation =    64.000(Ft.)
Slope =    0.10922  s(%)=      10.92
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.211 min.
Rainfall intensity =      4.024(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.769
Subarea runoff =      4.362(CFS)
Total initial stream area =        1.410(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      120.000 to Point/Station      119.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2044.500(Ft.)
Downstream point/station elevation =  2036.000(Ft.)
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Pipe length  =    93.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     4.362(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     4.362(CFS)
Normal flow depth in pipe =    6.50(In.)
Flow top width inside pipe =    8.06(In.)
Critical depth could not be calculated.
Pipe flow velocity =     12.76(Ft/s)
Travel time through pipe =    0.12 min.
Time of concentration (TC) =     8.33 min.


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Process from Point/Station      120.000 to Point/Station      119.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      1.410(Ac.)
Runoff from this stream =      4.362(CFS)
Time of concentration =    8.33 min.
Rainfall intensity =     3.983(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     14.37     5.776     11.51    0.587      3.176
2      4.36     1.410      8.33    0.587      3.983
Qmax(1) =
          1.000 *    1.000 *    14.366) +
          0.762 *    1.000 *     4.362) + =      17.691
Qmax(2) =
          1.311 *    0.724 *    14.366) +
          1.000 *    1.000 *     4.362) + =      17.998

Total of 2 streams to confluence:
Flow rates before confluence point:
      14.366       4.362
Maximum flow rates at confluence using above data:
       17.691       17.998
Area of streams before confluence:
        5.776        1.410
Effective area values after confluence:
        7.186        5.590
Results of confluence:
Total flow rate =     17.998(CFS)
Time of concentration =     8.333 min.
Effective stream area after confluence =      5.590(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.587(In/Hr)
Study area total (this main stream) =       7.19(Ac.)


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Process from Point/Station      119.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2036.000(Ft.)
Downstream point/station elevation =  2003.000(Ft.)
Pipe length  =   400.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    17.998(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    17.998(CFS)
Normal flow depth in pipe =   11.91(In.)
Flow top width inside pipe =   12.14(In.)
Critical depth could not be calculated.
Pipe flow velocity =     17.23(Ft/s)
Travel time through pipe =    0.39 min.
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Time of concentration (TC) =     8.72 min.


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Process from Point/Station      119.000 to Point/Station      121.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------------
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      5.590(Ac.)
Runoff from this stream =     17.998(CFS)
Time of concentration =    8.72 min.
Rainfall intensity =     3.858(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      124.000 to Point/Station      125.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   972.000(Ft.)
Top (of initial area) elevation =  2032.500(Ft.)
Bottom (of initial area) elevation =  2013.400(Ft.)
Difference in elevation =    19.100(Ft.)
Slope =    0.01965  s(%)=       1.97
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.167 min.
Rainfall intensity =      2.747(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.708
Subarea runoff =      4.724(CFS)
Total initial stream area =        2.430(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


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Process from Point/Station      125.000 to Point/Station      123.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------------
Upstream point/station elevation =  2005.000(Ft.)
Downstream point/station elevation =  2004.500(Ft.)
Pipe length  =    36.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     4.724(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     4.724(CFS)
Normal flow depth in pipe =    8.55(In.)
Flow top width inside pipe =   14.85(In.)
Critical Depth =   10.58(In.)
Pipe flow velocity =      6.54(Ft/s)
Travel time through pipe =    0.09 min.
Time of concentration (TC) =    14.26 min.


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Process from Point/Station      125.000 to Point/Station      123.000
**** SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
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Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Time of concentration =    14.26 min.
Rainfall intensity =      2.734(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.707
Subarea runoff =      7.530(CFS) for    3.910(Ac.)
Total runoff =     12.254(CFS)
Effective area this stream =        6.34(Ac.)
Total Study Area (Main Stream No. 4) =       41.38(Ac.)
Area averaged Fm value =    0.587(In/Hr)


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Process from Point/Station      123.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2004.500(Ft.)
Downstream point/station elevation =  2003.000(Ft.)
Pipe length  =    82.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.254(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    12.254(CFS)
Normal flow depth in pipe =   12.89(In.)
Flow top width inside pipe =   16.23(In.)
Critical Depth =   15.89(In.)
Pipe flow velocity =      9.04(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =    14.41 min.


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Process from Point/Station      123.000 to Point/Station      121.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      6.340(Ac.)
Runoff from this stream =     12.254(CFS)
Time of concentration =   14.41 min.
Rainfall intensity =     2.714(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     18.00     5.590      8.72    0.587      3.858
2     12.25     6.340     14.41    0.587      2.714
Qmax(1) =
          1.000 *    1.000 *    17.998) +
          1.538 *    0.605 *    12.254) + =      29.399
Qmax(2) =
          0.650 *    1.000 *    17.998) +
          1.000 *    1.000 *    12.254) + =      23.959

Total of 2 streams to confluence:
Flow rates before confluence point:
      17.998      12.254
Maximum flow rates at confluence using above data:
       29.399       23.959
Area of streams before confluence:
        5.590        6.340
Effective area values after confluence:
        9.426       11.930
Results of confluence:
Total flow rate =     29.399(CFS)
Time of concentration =     8.720 min.
Effective stream area after confluence =      9.426(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.587(In/Hr)
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Study area total (this main stream) =      11.93(Ac.)


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Process from Point/Station      121.000 to Point/Station      114.400
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2003.000(Ft.)
Downstream point/station elevation =  1974.600(Ft.)
Pipe length  =   265.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    29.399(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    29.399(CFS)
Normal flow depth in pipe =   12.80(In.)
Flow top width inside pipe =   16.32(In.)
Critical depth could not be calculated.
Pipe flow velocity =     21.86(Ft/s)
Travel time through pipe =    0.20 min.
Time of concentration (TC) =     8.92 min.


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Process from Point/Station      121.000 to Point/Station      114.400
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 4
Stream flow area =      9.426(Ac.)
Runoff from this stream =     29.399(CFS)
Time of concentration =    8.92 min.
Rainfall intensity =     3.797(In/Hr)
Area averaged loss rate (Fm) =    0.5867(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     41.07    15.217     11.91    0.545      3.102
2      4.92     2.320     12.89    0.587      2.935
3     12.78     5.273     11.26    0.587      3.226
4     29.40     9.426      8.92    0.587      3.797
Qmax(1) =
          1.000 *    1.000 *    41.066) +
          1.071 *    0.924 *     4.921) +
          0.953 *    1.000 *    12.779) +
          0.784 *    1.000 *    29.399) + =      81.150
Qmax(2) =
          0.935 *    1.000 *    41.066) +
          1.000 *    1.000 *     4.921) +
          0.890 *    1.000 *    12.779) +
          0.732 *    1.000 *    29.399) + =      76.184
Qmax(3) =
          1.049 *    0.945 *    41.066) +
          1.124 *    0.874 *     4.921) +
          1.000 *    1.000 *    12.779) +
          0.822 *    1.000 *    29.399) + =      82.498
Qmax(4) =
          1.272 *    0.749 *    41.066) +
          1.367 *    0.692 *     4.921) +
          1.216 *    0.793 *    12.779) +
          1.000 *    1.000 *    29.399) + =      85.499

Total of 4 main streams to confluence:
Flow rates before confluence point:
      42.066       5.921      13.779      30.399
Maximum flow rates at confluence using above data:
       81.150       76.184       82.498       85.499
Area of streams before confluence:
       15.217        2.320        5.273        9.426
```

```
Effective area values after confluence:
       32.060       32.236       31.112       26.613


Results of confluence:
Total flow rate =     85.499(CFS)
Time of concentration =     8.922 min.
Effective stream area after confluence  =     26.613(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.567(In/Hr)
Study area total =      32.24(Ac.)


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Process from Point/Station      121.000 to Point/Station      114.400
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.578(In/Hr)
The area added to the existing stream causes a
a lower flow rate of Q =     82.657(CFS)
therefore the upstream flow rate of Q =     85.499(CFS) is being used
Time of concentration =     8.92 min.
Rainfall intensity =      3.797(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.765
Subarea runoff =      0.000(CFS) for    1.830(Ac.)
Total runoff =     85.499(CFS)
Effective area this stream =       28.44(Ac.)
Total Study Area (Main Stream No. 1) =       43.21(Ac.)
Area averaged Fm value =    0.568(In/Hr)
End of computations, Total Study Area =           43.21 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.617
Area averaged SCS curve number =  37.3
```

Area ‘A’ – 100 Year - Proposed Condition – Rational Method

```
              San Bernardino County Rational Hydrology Program

                  (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'A'
100 YEAR STORM
DECEMBER 15, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


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Process from Point/Station      100.000 to Point/Station      101.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.700
Decimal fraction soil group B = 0.300
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 39.20
Adjusted SCS curve number for AMC 3 = 59.20
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.414(In/Hr)
Initial subarea data:
Initial area flow distance =   470.000(Ft.)
Top (of initial area) elevation =  2119.000(Ft.)
Bottom (of initial area) elevation =  2093.900(Ft.)
Difference in elevation =    25.100(Ft.)
Slope =    0.05340  s(%)=       5.34
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.674 min.
Rainfall intensity =      5.808(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.836
Subarea runoff =      9.660(CFS)
Total initial stream area =        1.990(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.414(In/Hr)


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Process from Point/Station      101.000 to Point/Station      102.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2093.900(Ft.)
End of street segment elevation =  2086.000(Ft.)
Length of street segment  =   790.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
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Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     13.035(CFS)
Depth of flow =   0.513(Ft.), Average velocity =   3.394(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    0.64(Ft.)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  18.000(Ft.)
Flow velocity =   3.39(Ft/s)
Travel time =    3.88 min.     TC =   12.55  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 44.00
Adjusted SCS curve number for AMC 3 = 64.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.374(In/Hr)
Rainfall intensity =      4.484(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.821
Subarea runoff =      6.655(CFS) for    2.440(Ac.)
Total runoff =     16.315(CFS)
Effective area this stream =        4.43(Ac.)
Total Study Area (Main Stream No. 1) =        4.43(Ac.)
Area averaged Fm value =    0.392(In/Hr)
Street flow at end of street =     16.315(CFS)
Half street flow at end of street =     16.315(CFS)
Depth of flow =   0.549(Ft.), Average velocity =   3.580(Ft/s)
Warning: depth of flow exceeds top of curb
Note:  depth of flow exceeds top of street crown.
Distance that curb overflow reaches into property =    2.47(Ft.)
Flow width (from curb towards crown)=  18.000(Ft.)


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Process from Point/Station      102.000 to Point/Station      103.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2086.000(Ft.)
End of street segment elevation =  2007.000(Ft.)
Length of street segment  =   900.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     17.282(CFS)
Depth of flow =   0.409(Ft.), Average velocity =   8.137(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  14.132(Ft.)
Flow velocity =   8.14(Ft/s)
Travel time =    1.84 min.     TC =   14.40  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.300
Decimal fraction soil group B = 0.700
Decimal fraction soil group C = 0.000
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Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 48.80
Adjusted SCS curve number for AMC 3 = 68.80
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.331(In/Hr)
Rainfall intensity =      4.074(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.816
Subarea runoff =      1.869(CFS) for    1.040(Ac.)
Total runoff =     18.184(CFS)
Effective area this stream =        5.47(Ac.)
Total Study Area (Main Stream No. 1) =        5.47(Ac.)
Area averaged Fm value =    0.380(In/Hr)
Street flow at end of street =     18.184(CFS)
Half street flow at end of street =     18.184(CFS)
Depth of flow =   0.415(Ft.), Average velocity =   8.237(Ft/s)
Flow width (from curb towards crown)=  14.426(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2000.000(Ft.)
Downstream point/station elevation =  1999.000(Ft.)
Pipe length  =    94.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    18.184(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    18.184(CFS)
Normal flow depth in pipe =   15.94(In.)
Flow top width inside pipe =   22.67(In.)
Critical Depth =   18.43(In.)
Pipe flow velocity =      8.21(Ft/s)
Travel time through pipe =    0.19 min.
Time of concentration (TC) =    14.59 min.


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Process from Point/Station      103.000 to Point/Station      104.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      5.470(Ac.)
Runoff from this stream =     18.184(CFS)
Time of concentration =   14.59 min.
Rainfall intensity =     4.037(In/Hr)
Area averaged loss rate (Fm) =    0.3803(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      105.000 to Point/Station      106.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   580.000(Ft.)
Top (of initial area) elevation =  2116.500(Ft.)
Bottom (of initial area) elevation =  2093.800(Ft.)
Difference in elevation =    22.700(Ft.)
Slope =    0.03914  s(%)=       3.91
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.040 min.
Rainfall intensity =      5.243(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.819
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Subarea runoff =      7.859(CFS)
Total initial stream area =        1.830(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      106.000 to Point/Station      107.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2093.800(Ft.)
End of street segment elevation =  2086.000(Ft.)
Length of street segment  =   755.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      8.497(CFS)
Depth of flow =   0.453(Ft.), Average velocity =   3.045(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  16.322(Ft.)
Flow velocity =   3.04(Ft/s)
Travel time =    4.13 min.     TC =   14.17  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.500
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 44.00
Adjusted SCS curve number for AMC 3 = 64.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.374(In/Hr)
Rainfall intensity =      4.119(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.804
Subarea runoff =      1.182(CFS) for    0.900(Ac.)
Total runoff =      9.041(CFS)
Effective area this stream =        2.73(Ac.)
Total Study Area (Main Stream No. 1) =        8.20(Ac.)
Area averaged Fm value =    0.439(In/Hr)
Street flow at end of street =      9.041(CFS)
Half street flow at end of street =      9.041(CFS)
Depth of flow =   0.461(Ft.), Average velocity =   3.091(Ft/s)
Flow width (from curb towards crown)=  16.729(Ft.)


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Process from Point/Station      107.000 to Point/Station      108.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2086.000(Ft.)
End of street segment elevation =  2011.200(Ft.)
Length of street segment  =   760.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
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Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     13.552(CFS)
Depth of flow =   0.377(Ft.), Average velocity =   8.021(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  12.502(Ft.)
Flow velocity =   8.02(Ft/s)
Travel time =    1.58 min.     TC =   15.75  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.400
Decimal fraction soil group B = 0.600
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 46.40
Adjusted SCS curve number for AMC 3 = 66.40
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.352(In/Hr)
Rainfall intensity =      3.825(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.808
Subarea runoff =      8.936(CFS) for    3.090(Ac.)
Total runoff =     17.978(CFS)
Effective area this stream =        5.82(Ac.)
Total Study Area (Main Stream No. 1) =       11.29(Ac.)
Area averaged Fm value =    0.393(In/Hr)
Street flow at end of street =     17.978(CFS)
Half street flow at end of street =     17.978(CFS)
Depth of flow =   0.407(Ft.), Average velocity =   8.579(Ft/s)
Flow width (from curb towards crown)=  14.031(Ft.)


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Process from Point/Station      108.000 to Point/Station      104.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2003.000(Ft.)
Downstream point/station elevation =  1999.000(Ft.)
Pipe length  =    43.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    17.978(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    17.978(CFS)
Normal flow depth in pipe =   11.25(In.)
Flow top width inside pipe =   12.99(In.)
Critical depth could not be calculated.
Pipe flow velocity =     18.20(Ft/s)
Travel time through pipe =    0.04 min.
Time of concentration (TC) =    15.79 min.


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Process from Point/Station      108.000 to Point/Station      104.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      5.820(Ac.)
Runoff from this stream =     17.978(CFS)
Time of concentration =   15.79 min.
Rainfall intensity =     3.819(In/Hr)
Area averaged loss rate (Fm) =    0.3930(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     18.18     5.470     14.59    0.380      4.037
2     17.98     5.820     15.79    0.393      3.819
Qmax(1) =
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          1.000 *    1.000 *    18.184) +
          1.064 *    0.924 *    17.978) + =      35.847
Qmax(2) =
          0.940 *    1.000 *    18.184) +
          1.000 *    1.000 *    17.978) + =      35.077

Total of 2 streams to confluence:
Flow rates before confluence point:
      18.184      17.978
Maximum flow rates at confluence using above data:
       35.847       35.077
Area of streams before confluence:
        5.470        5.820
Effective area values after confluence:
       10.846       11.290
Results of confluence:
Total flow rate =     35.847(CFS)
Time of concentration =    14.587 min.
Effective stream area after confluence =     10.846(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.387(In/Hr)
Study area total (this main stream) =      11.29(Ac.)


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Process from Point/Station      104.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1999.000(Ft.)
Downstream point/station elevation =  1996.500(Ft.)
Pipe length  =   230.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    35.847(CFS)
Nearest computed pipe diameter  =     30.00(In.)
Calculated individual pipe flow  =    35.847(CFS)
Normal flow depth in pipe =   21.02(In.)
Flow top width inside pipe =   27.47(In.)
Critical Depth =   24.38(In.)
Pipe flow velocity =      9.76(Ft/s)
Travel time through pipe =    0.39 min.
Time of concentration (TC) =    14.98 min.


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Process from Point/Station      104.000 to Point/Station      109.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     10.846(Ac.)
Runoff from this stream =     35.847(CFS)
Time of concentration =   14.98 min.
Rainfall intensity =     3.962(In/Hr)
Area averaged loss rate (Fm) =    0.3869(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 2


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Process from Point/Station      110.000 to Point/Station      111.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.600
Decimal fraction soil group B = 0.400
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 41.60
Adjusted SCS curve number for AMC 3 = 61.60
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.394(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
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Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2032.000(Ft.)
Difference in elevation =    62.600(Ft.)
Slope =    0.07825  s(%)=       7.82
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.941 min.
Rainfall intensity =      5.279(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.833
Subarea runoff =     18.158(CFS)
Total initial stream area =        4.130(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.394(In/Hr)


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Process from Point/Station      110.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 2 in normal stream number 1
Stream flow area =      4.130(Ac.)
Runoff from this stream =     18.158(CFS)
Time of concentration =    9.94 min.
Rainfall intensity =     5.279(In/Hr)
Area averaged loss rate (Fm) =    0.3944(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      112.000 to Point/Station      113.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 0.900
Decimal fraction soil group B = 0.100
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 34.40
Adjusted SCS curve number for AMC 3 = 54.40
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.453(In/Hr)
Initial subarea data:
Initial area flow distance =   800.000(Ft.)
Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2032.000(Ft.)
Difference in elevation =    62.600(Ft.)
Slope =    0.07825  s(%)=       7.82
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.941 min.
Rainfall intensity =      5.279(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.823
Subarea runoff =     18.114(CFS)
Total initial stream area =        4.170(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.453(In/Hr)


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Process from Point/Station      113.000 to Point/Station      111.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2024.000(Ft.)
Downstream point/station elevation =  2022.000(Ft.)
Pipe length  =    38.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    18.114(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    18.114(CFS)
Normal flow depth in pipe =   11.65(In.)
Flow top width inside pipe =   17.20(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.97(Ft/s)
Travel time through pipe =    0.04 min.
Time of concentration (TC) =     9.98 min.
```

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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      113.000 to Point/Station      111.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 2 in normal stream number 2
Stream flow area =      4.170(Ac.)
Runoff from this stream =     18.114(CFS)
Time of concentration =    9.98 min.
Rainfall intensity =     5.264(In/Hr)
Area averaged loss rate (Fm) =    0.4529(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     18.16     4.130      9.94    0.394      5.279
2     18.11     4.170      9.98    0.453      5.264
Qmax(1) =
          1.000 *    1.000 *    18.158) +
          1.003 *    0.996 *    18.114) + =      36.254
Qmax(2) =
          0.997 *    1.000 *    18.158) +
          1.000 *    1.000 *    18.114) + =      36.214

Total of 2 streams to confluence:
Flow rates before confluence point:
      18.158      18.114
Maximum flow rates at confluence using above data:
       36.254       36.214
Area of streams before confluence:
        4.130        4.170
Effective area values after confluence:
        8.282        8.300
Results of confluence:
Total flow rate =     36.254(CFS)
Time of concentration =     9.941 min.
Effective stream area after confluence =      8.282(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.424(In/Hr)
Study area total (this main stream) =       8.30(Ac.)


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Process from Point/Station      111.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2022.000(Ft.)
Downstream point/station elevation =  1996.500(Ft.)
Pipe length  =   244.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    36.254(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    36.254(CFS)
Normal flow depth in pipe =   13.04(In.)
Flow top width inside pipe =   20.37(In.)
Critical depth could not be calculated.
Pipe flow velocity =     23.10(Ft/s)
Travel time through pipe =    0.18 min.
Time of concentration (TC) =    10.12 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      111.000 to Point/Station      109.000
**** CONFLUENCE OF MAIN STREAMS ****
------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      8.282(Ac.)
```

```
Runoff from this stream =     36.254(CFS)
Time of concentration =   10.12 min.
Rainfall intensity =     5.215(In/Hr)
Area averaged loss rate (Fm) =    0.4238(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     35.85    10.846     14.98    0.387      3.962
2     36.25     8.282     10.12    0.424      5.215
Qmax(1) =
          1.000 *    1.000 *    35.847) +
          0.739 *    1.000 *    36.254) + =      62.622
Qmax(2) =
          1.350 *    0.675 *    35.847) +
          1.000 *    1.000 *    36.254) + =      68.948

Total of 2 main streams to confluence:
Flow rates before confluence point:
      36.847      37.254
Maximum flow rates at confluence using above data:
       62.622       68.948
Area of streams before confluence:
       10.846        8.282
Effective area values after confluence:
       19.128       15.607


Results of confluence:
Total flow rate =     68.948(CFS)
Time of concentration =    10.117 min.
Effective stream area after confluence  =     15.607(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.403(In/Hr)
Study area total =      19.13(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      114.100
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1996.500(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =  1288.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    68.948(CFS)
Nearest computed pipe diameter  =     33.00(In.)
Calculated individual pipe flow  =    68.948(CFS)
Normal flow depth in pipe =   26.63(In.)
Flow top width inside pipe =   26.06(In.)
Critical Depth =   30.99(In.)
Pipe flow velocity =     13.42(Ft/s)
Travel time through pipe =    1.60 min.
Time of concentration (TC) =    11.72 min.


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Process from Point/Station      109.000 to Point/Station      114.100
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     15.607(Ac.)
Runoff from this stream =     68.948(CFS)
Time of concentration =   11.72 min.
Rainfall intensity =     4.706(In/Hr)
Area averaged loss rate (Fm) =    0.4028(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 2
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++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      126.000 to Point/Station      127.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   500.000(Ft.)
Top (of initial area) elevation =  2031.300(Ft.)
Bottom (of initial area) elevation =  2002.000(Ft.)
Difference in elevation =    29.300(Ft.)
Slope =    0.05860  s(%)=       5.86
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.728 min.
Rainfall intensity =      5.783(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.827
Subarea runoff =      4.303(CFS)
Total initial stream area =        0.900(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      127.000 to Point/Station      128.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
Top of street segment elevation =  2002.000(Ft.)
End of street segment elevation =  1982.000(Ft.)
Length of street segment  =   850.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      6.437(CFS)
Depth of flow =   0.374(Ft.), Average velocity =   3.895(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  12.353(Ft.)
Flow velocity =   3.90(Ft/s)
Travel time =    3.64 min.     TC =   12.36  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Rainfall intensity =      4.532(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.806
Subarea runoff =      4.176(CFS) for    1.420(Ac.)
Total runoff =      8.479(CFS)
Effective area this stream =        2.32(Ac.)
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Total Study Area (Main Stream No. 2) =       21.91(Ac.)
Area averaged Fm value =    0.471(In/Hr)
Street flow at end of street =      8.479(CFS)
Half street flow at end of street =      8.479(CFS)
Depth of flow =   0.403(Ft.), Average velocity =   4.159(Ft/s)
Flow width (from curb towards crown)=  13.828(Ft.)


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Process from Point/Station      128.000 to Point/Station      114.200
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1976.000(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.479(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     8.479(CFS)
Normal flow depth in pipe =    9.80(In.)
Flow top width inside pipe =    9.29(In.)
Critical depth could not be calculated.
Pipe flow velocity =     12.36(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =    12.41 min.


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Process from Point/Station      128.000 to Point/Station      114.200
**** CONFLUENCE OF MAIN STREAMS ****
------------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      2.320(Ac.)
Runoff from this stream =      8.479(CFS)
Time of concentration =   12.41 min.
Rainfall intensity =     4.520(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 3


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Process from Point/Station      100.000 to Point/Station      129.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   664.000(Ft.)
Top (of initial area) elevation =  2119.000(Ft.)
Bottom (of initial area) elevation =  2044.500(Ft.)
Difference in elevation =    74.500(Ft.)
Slope =    0.11220  s(%)=      11.22
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.586 min.
Rainfall intensity =      5.850(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.828
Subarea runoff =      1.840(CFS)
Total initial stream area =        0.380(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      129.000 to Point/Station      130.000
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**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
Top of street segment elevation =  2044.500(Ft.)
End of street segment elevation =  1983.000(Ft.)
Length of street segment  =   726.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      2.576(CFS)
Depth of flow =   0.247(Ft.), Average velocity =   5.262(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   6.024(Ft.)
Flow velocity =   5.26(Ft/s)
Travel time =    2.30 min.     TC =   10.88  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Rainfall intensity =      4.955(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.814
Subarea runoff =      1.389(CFS) for    0.420(Ac.)
Total runoff =      3.228(CFS)
Effective area this stream =        0.80(Ac.)
Total Study Area (Main Stream No. 3) =       22.71(Ac.)
Area averaged Fm value =    0.471(In/Hr)
Street flow at end of street =      3.228(CFS)
Half street flow at end of street =      3.228(CFS)
Depth of flow =   0.262(Ft.), Average velocity =   5.496(Ft/s)
Flow width (from curb towards crown)=   6.787(Ft.)


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Process from Point/Station      130.000 to Point/Station      131.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  1975.300(Ft.)
Downstream point/station elevation =  1974.300(Ft.)
Pipe length  =    36.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.228(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     3.228(CFS)
Normal flow depth in pipe =    6.30(In.)
Flow top width inside pipe =   11.98(In.)
Critical Depth =    9.23(In.)
Pipe flow velocity =      7.72(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    10.96 min.


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Process from Point/Station      130.000 to Point/Station      131.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 3 in normal stream number 1
Stream flow area =      0.800(Ac.)
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Runoff from this stream =      3.228(CFS)
Time of concentration =   10.96 min.
Rainfall intensity =     4.930(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


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Process from Point/Station      118.000 to Point/Station      132.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   875.000(Ft.)
Top (of initial area) elevation =  2056.700(Ft.)
Bottom (of initial area) elevation =  2013.000(Ft.)
Difference in elevation =    43.700(Ft.)
Slope =    0.04994  s(%)=       4.99
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.272 min.
Rainfall intensity =      4.835(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.812
Subarea runoff =     18.145(CFS)
Total initial stream area =        4.620(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      132.000 to Point/Station      131.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =  2013.000(Ft.)
End of street segment elevation =  1983.000(Ft.)
Length of street segment  =   326.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  18.000(Ft.)
Distance from crown to crossfall grade break  =   5.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [1] side(s) of the street
Distance from curb to property line  =   7.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   2.000(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =     18.192(CFS)
Depth of flow =   0.412(Ft.), Average velocity =   8.387(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =  14.291(Ft.)
Flow velocity =   8.39(Ft/s)
Travel time =    0.65 min.     TC =   11.92  min.
 Adding area flow to street
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
The area added to the existing stream causes a
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a lower flow rate of Q =     18.088(CFS)
therefore the upstream flow rate of Q =     18.145(CFS) is being used
Rainfall intensity =      4.649(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.809
Subarea runoff =      0.000(CFS) for    0.190(Ac.)
Total runoff =     18.145(CFS)
Effective area this stream =        4.81(Ac.)
Total Study Area (Main Stream No. 3) =       27.52(Ac.)
Area averaged Fm value =    0.471(In/Hr)
Street flow at end of street =     18.145(CFS)
Half street flow at end of street =     18.145(CFS)
Depth of flow =   0.412(Ft.), Average velocity =   8.382(Ft/s)
Flow width (from curb towards crown)=  14.277(Ft.)


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Process from Point/Station      132.000 to Point/Station      131.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------------
Along Main Stream number: 3 in normal stream number 2
Stream flow area =      4.810(Ac.)
Runoff from this stream =     18.145(CFS)
Time of concentration =   11.92 min.
Rainfall intensity =     4.649(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1      3.23     0.800     10.96    0.471      4.930
2     18.14     4.810     11.92    0.471      4.649
Qmax(1) =
          1.000 *    1.000 *     3.228) +
          1.067 *    0.920 *    18.145) + =      21.037
Qmax(2) =
          0.937 *    1.000 *     3.228) +
          1.000 *    1.000 *    18.145) + =      21.170

Total of 2 streams to confluence:
Flow rates before confluence point:
       3.228      18.145
Maximum flow rates at confluence using above data:
       21.037       21.170
Area of streams before confluence:
        0.800        4.810
Effective area values after confluence:
        5.224        5.610
Results of confluence:
Total flow rate =     21.170(CFS)
Time of concentration =    11.920 min.
Effective stream area after confluence =      5.610(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.471(In/Hr)
Study area total (this main stream) =       5.61(Ac.)


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Process from Point/Station      131.000 to Point/Station      114.300
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------------
Upstream point/station elevation =  1974.300(Ft.)
Downstream point/station elevation =  1974.000(Ft.)
Pipe length  =    38.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    21.170(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    21.170(CFS)
Normal flow depth in pipe =   17.77(In.)
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Flow top width inside pipe =   25.62(In.)
Critical Depth =   19.32(In.)
Pipe flow velocity =      7.63(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    12.00 min.


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Process from Point/Station      131.000 to Point/Station      114.300
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 3
Stream flow area =      5.610(Ac.)
Runoff from this stream =     21.170(CFS)
Time of concentration =   12.00 min.
Rainfall intensity =     4.627(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Program is now starting with Main Stream No. 4


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      112.000 to Point/Station      118.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   909.000(Ft.)
Top (of initial area) elevation =  2094.600(Ft.)
Bottom (of initial area) elevation =  2056.700(Ft.)
Difference in elevation =    37.900(Ft.)
Slope =    0.04169  s(%)=       4.17
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.866 min.
Rainfall intensity =      4.664(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.809
Subarea runoff =     12.340(CFS)
Total initial stream area =        3.270(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      118.000 to Point/Station      117.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2048.000(Ft.)
Downstream point/station elevation =  2047.400(Ft.)
Pipe length  =    44.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    12.340(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    12.340(CFS)
Normal flow depth in pipe =   12.54(In.)
Flow top width inside pipe =   20.60(In.)
Critical Depth =   15.70(In.)
Pipe flow velocity =      8.24(Ft/s)
Travel time through pipe =    0.09 min.
Time of concentration (TC) =    11.96 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      118.000 to Point/Station      117.000
**** CONFLUENCE OF MINOR STREAMS ****
```

```
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      3.270(Ac.)
Runoff from this stream =     12.340(CFS)
Time of concentration =   11.96 min.
Rainfall intensity =     4.640(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      115.000 to Point/Station      116.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   765.000(Ft.)
Top (of initial area) elevation =  2094.200(Ft.)
Bottom (of initial area) elevation =  2056.000(Ft.)
Difference in elevation =    38.200(Ft.)
Slope =    0.04993  s(%)=       4.99
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.683 min.
Rainfall intensity =      5.020(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.816
Subarea runoff =     11.628(CFS)
Total initial stream area =        2.840(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      116.000 to Point/Station      117.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
----------------------------------------------------------------------
Upstream point/station elevation =  2048.000(Ft.)
Downstream point/station elevation =  2047.400(Ft.)
Pipe length  =    31.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    11.628(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    11.628(CFS)
Normal flow depth in pipe =   12.13(In.)
Flow top width inside pipe =   16.88(In.)
Critical Depth =   15.58(In.)
Pipe flow velocity =      9.18(Ft/s)
Travel time through pipe =    0.06 min.
Time of concentration (TC) =    10.74 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      116.000 to Point/Station      117.000
**** CONFLUENCE OF MINOR STREAMS ****
----------------------------------------------------------------------
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      2.840(Ac.)
Runoff from this stream =     11.628(CFS)
Time of concentration =   10.74 min.
Rainfall intensity =     5.002(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)
```

```
1     12.34     3.270     11.96    0.471      4.640
2     11.63     2.840     10.74    0.471      5.002
Qmax(1) =
          1.000 *    1.000 *    12.340) +
          0.920 *    1.000 *    11.628) + =      23.039
Qmax(2) =
          1.087 *    0.898 *    12.340) +
          1.000 *    1.000 *    11.628) + =      23.675

Total of 2 streams to confluence:
Flow rates before confluence point:
      12.340      11.628
Maximum flow rates at confluence using above data:
       23.039       23.675
Area of streams before confluence:
        3.270        2.840
Effective area values after confluence:
        6.110        5.777
Results of confluence:
Total flow rate =     23.675(CFS)
Time of concentration =    10.739 min.
Effective stream area after confluence =      5.777(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.471(In/Hr)
Study area total (this main stream) =       6.11(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      117.000 to Point/Station      119.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2047.400(Ft.)
Downstream point/station elevation =  2036.000(Ft.)
Pipe length  =   477.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    23.675(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    23.675(CFS)
Normal flow depth in pipe =   16.62(In.)
Flow top width inside pipe =   17.07(In.)
Critical depth could not be calculated.
Pipe flow velocity =     11.60(Ft/s)
Travel time through pipe =    0.69 min.
Time of concentration (TC) =    11.42 min.


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Process from Point/Station      117.000 to Point/Station      119.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      5.777(Ac.)
Runoff from this stream =     23.675(CFS)
Time of concentration =   11.42 min.
Rainfall intensity =     4.790(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      120.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
```

```
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   586.000(Ft.)
Top (of initial area) elevation =  2116.500(Ft.)
Bottom (of initial area) elevation =  2052.500(Ft.)
Difference in elevation =    64.000(Ft.)
Slope =    0.10922  s(%)=      10.92
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.211 min.
Rainfall intensity =      6.036(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.830
Subarea runoff =      7.061(CFS)
Total initial stream area =        1.410(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      120.000 to Point/Station      119.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2044.500(Ft.)
Downstream point/station elevation =  2036.000(Ft.)
Pipe length  =    93.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.061(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     7.061(CFS)
Normal flow depth in pipe =    7.09(In.)
Flow top width inside pipe =   11.80(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.63(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     8.32 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      120.000 to Point/Station      119.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      1.410(Ac.)
Runoff from this stream =      7.061(CFS)
Time of concentration =    8.32 min.
Rainfall intensity =     5.982(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     23.67     5.777     11.42    0.471      4.790
2      7.06     1.410      8.32    0.471      5.982
Qmax(1) =
          1.000 *    1.000 *    23.675) +
          0.784 *    1.000 *     7.061) + =      29.209
Qmax(2) =
          1.276 *    0.728 *    23.675) +
          1.000 *    1.000 *     7.061) + =      29.053

Total of 2 streams to confluence:
Flow rates before confluence point:
      23.675       7.061
Maximum flow rates at confluence using above data:
       29.209       29.053
Area of streams before confluence:
        5.777        1.410
Effective area values after confluence:
        7.187        5.616
Results of confluence:
```

```
Total flow rate =     29.209(CFS)
Time of concentration =    11.424 min.
Effective stream area after confluence =      7.187(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.471(In/Hr)
Study area total (this main stream) =       7.19(Ac.)


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Process from Point/Station      119.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  2036.000(Ft.)
Downstream point/station elevation =  2003.000(Ft.)
Pipe length  =   400.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    29.209(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =    29.209(CFS)
Normal flow depth in pipe =   14.25(In.)
Flow top width inside pipe =   14.62(In.)
Critical depth could not be calculated.
Pipe flow velocity =     19.45(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =    11.77 min.


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Process from Point/Station      119.000 to Point/Station      121.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 4 in normal stream number 1
Stream flow area =      7.187(Ac.)
Runoff from this stream =     29.209(CFS)
Time of concentration =   11.77 min.
Rainfall intensity =     4.692(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      124.000 to Point/Station      125.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   972.000(Ft.)
Top (of initial area) elevation =  2032.500(Ft.)
Bottom (of initial area) elevation =  2013.400(Ft.)
Difference in elevation =    19.100(Ft.)
Slope =    0.01965  s(%)=       1.97
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   14.167 min.
Rainfall intensity =      4.120(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.797
Subarea runoff =      7.980(CFS)
Total initial stream area =        2.430(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


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Process from Point/Station      125.000 to Point/Station      123.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
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```
Upstream point/station elevation =  2005.000(Ft.)
Downstream point/station elevation =  2004.500(Ft.)
Pipe length  =    36.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.980(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     7.980(CFS)
Normal flow depth in pipe =   10.51(In.)
Flow top width inside pipe =   17.74(In.)
Critical Depth =   13.13(In.)
Pipe flow velocity =      7.44(Ft/s)
Travel time through pipe =    0.08 min.
Time of concentration (TC) =    14.25 min.


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Process from Point/Station      125.000 to Point/Station      123.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Time of concentration =    14.25 min.
Rainfall intensity =      4.104(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.797
Subarea runoff =     12.747(CFS) for    3.910(Ac.)
Total runoff =     20.727(CFS)
Effective area this stream =        6.34(Ac.)
Total Study Area (Main Stream No. 4) =       41.38(Ac.)
Area averaged Fm value =    0.471(In/Hr)


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Process from Point/Station      123.000 to Point/Station      121.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  2004.500(Ft.)
Downstream point/station elevation =  2003.000(Ft.)
Pipe length  =    82.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    20.727(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    20.727(CFS)
Normal flow depth in pipe =   16.62(In.)
Flow top width inside pipe =   17.07(In.)
Critical Depth =   19.38(In.)
Pipe flow velocity =     10.15(Ft/s)
Travel time through pipe =    0.13 min.
Time of concentration (TC) =    14.38 min.


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Process from Point/Station      123.000 to Point/Station      121.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 4 in normal stream number 2
Stream flow area =      6.340(Ac.)
Runoff from this stream =     20.727(CFS)
Time of concentration =   14.38 min.
Rainfall intensity =     4.077(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)
```

```
1     29.21     7.187     11.77    0.471      4.692
2     20.73     6.340     14.38    0.471      4.077
Qmax(1) =
          1.000 *    1.000 *    29.209) +
          1.171 *    0.818 *    20.727) + =      49.059
Qmax(2) =
          0.854 *    1.000 *    29.209) +
          1.000 *    1.000 *    20.727) + =      45.680

Total of 2 streams to confluence:
Flow rates before confluence point:
      29.209      20.727
Maximum flow rates at confluence using above data:
       49.059       45.680
Area of streams before confluence:
        7.187        6.340
Effective area values after confluence:
       12.374       13.527
Results of confluence:
Total flow rate =     49.059(CFS)
Time of concentration =    11.767 min.
Effective stream area after confluence =     12.374(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.471(In/Hr)
Study area total (this main stream) =      13.53(Ac.)


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Process from Point/Station      121.000 to Point/Station      114.400
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  2003.000(Ft.)
Downstream point/station elevation =  1974.600(Ft.)
Pipe length  =   265.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    49.059(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    49.059(CFS)
Normal flow depth in pipe =   16.27(In.)
Flow top width inside pipe =   17.55(In.)
Critical depth could not be calculated.
Pipe flow velocity =     24.53(Ft/s)
Travel time through pipe =    0.18 min.
Time of concentration (TC) =    11.95 min.


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Process from Point/Station      121.000 to Point/Station      114.400
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 4
Stream flow area =     12.374(Ac.)
Runoff from this stream =     49.059(CFS)
Time of concentration =   11.95 min.
Rainfall intensity =     4.642(In/Hr)
Area averaged loss rate (Fm) =    0.4711(In/Hr)
Area averaged Pervious ratio (Ap) = 0.6000
Summary of stream data:

Stream Flow rate    Area    TC     Fm       Rainfall Intensity
 No.    (CFS)   (Ac.)       (min) (In/Hr)     (In/Hr)


1     68.95    15.607     11.72    0.403      4.706
2      8.48     2.320     12.41    0.471      4.520
3     21.17     5.610     12.00    0.471      4.627
4     49.06    12.374     11.95    0.471      4.642
Qmax(1) =
          1.000 *    1.000 *    68.948) +
          1.046 *    0.944 *     8.479) +
```

```
          1.019 *    0.976 *    21.170) +
          1.015 *    0.981 *    49.059) + =     147.226
Qmax(2) =
          0.957 *    1.000 *    68.948) +
          1.000 *    1.000 *     8.479) +
          0.974 *    1.000 *    21.170) +
          0.971 *    1.000 *    49.059) + =     142.689
Qmax(3) =
          0.982 *    1.000 *    68.948) +
          1.027 *    0.967 *     8.479) +
          1.000 *    1.000 *    21.170) +
          0.996 *    1.000 *    49.059) + =     146.155
Qmax(4) =
          0.985 *    1.000 *    68.948) +
          1.030 *    0.963 *     8.479) +
          1.004 *    0.995 *    21.170) +
          1.000 *    1.000 *    49.059) + =     146.546

Total of 4 main streams to confluence:
Flow rates before confluence point:
      69.948       9.479      22.170      50.059
Maximum flow rates at confluence using above data:
      147.226      142.689      146.155      146.546
Area of streams before confluence:
       15.607        2.320        5.610       12.374
Effective area values after confluence:
       35.411       35.912       35.835       35.799


Results of confluence:
Total flow rate =    147.226(CFS)
Time of concentration =    11.717 min.
Effective stream area after confluence  =     35.411(Ac.)
Study area average Pervious fraction(Ap) =  0.600
Study area average soil loss rate(Fm) =    0.441(In/Hr)
Study area total =      35.91(Ac.)

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      121.000 to Point/Station      114.400
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 67.00
Adjusted SCS curve number for AMC 3 = 84.60
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.290(In/Hr)
The area added to the existing stream causes a
a lower flow rate of Q =    143.170(CFS)
therefore the upstream flow rate of Q =    147.226(CFS) is being used
Time of concentration =    11.72 min.
Rainfall intensity =      4.706(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.817
Subarea runoff =      0.000(CFS) for    1.830(Ac.)
Total runoff =    147.226(CFS)
Effective area this stream =       37.24(Ac.)
Total Study Area (Main Stream No. 1) =       43.21(Ac.)
Area averaged Fm value =    0.434(In/Hr)
End of computations, Total Study Area =           43.21 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.617
Area averaged SCS curve number =  37.3
```

Area 'B' – 10 Year - Proposed Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/15/24
------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'B'
10 YEAR STORM
DECEMBER 15, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


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Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Initial subarea data:
Initial area flow distance =   995.000(Ft.)
Top (of initial area) elevation =  2405.000(Ft.)
Bottom (of initial area) elevation =  2151.000(Ft.)
Difference in elevation =   254.000(Ft.)
Slope =    0.25528  s(%)=      25.53
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.912 min.
Rainfall intensity =      3.298(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.790
Subarea runoff =     10.731(CFS)
Total initial stream area =        4.120(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.404(In/Hr)


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Process from Point/Station      201.000 to Point/Station      202.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  2151.000(Ft.)
Downstream point elevation =  1081.000(Ft.)
Channel length thru subarea  =   549.000(Ft.)
Channel base width    =   10.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     20.145(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    3.000(Ft.)
Flow(q) thru subarea =     20.145(CFS)
Depth of flow =   0.079(Ft.), Average velocity =  25.253(Ft/s)
Channel flow top width =   10.158(Ft.)
```

```
Flow Velocity =   25.25(Ft/s)
Travel time  =    0.36 min.
Time of concentration =   11.27 min.
Critical depth =      0.492(Ft.)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.404(In/Hr)
Rainfall intensity =      3.223(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.787
Subarea runoff =     18.729(CFS) for    7.490(Ac.)
Total runoff =     29.460(CFS)
Effective area this stream =       11.61(Ac.)
Total Study Area (Main Stream No. 1) =       11.61(Ac.)
Area averaged Fm value =    0.404(In/Hr)
Depth of flow =   0.099(Ft.), Average velocity =  29.334(Ft/s)
Critical depth =      0.633(Ft.)
End of computations, Total Study Area =           11.61 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area 'B' – 100 Year 1 Hour - Proposed Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/15/24
------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'B'
100 YEAR STORM
DECEMBER 15, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Initial subarea data:
Initial area flow distance =   995.000(Ft.)
Top (of initial area) elevation =  2405.000(Ft.)
Bottom (of initial area) elevation =  2151.000(Ft.)
Difference in elevation =   254.000(Ft.)
Slope =    0.25528  s(%)=      25.53
TC = k(0.525)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.912 min.
Rainfall intensity =      4.946(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.875
Subarea runoff =     17.822(CFS)
Total initial stream area =        4.120(Ac.)
Pervious area fraction = 1.000
Initial area Fm value =    0.140(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =  2151.000(Ft.)
Downstream point elevation =  1081.000(Ft.)
Channel length thru subarea  =   549.000(Ft.)
Channel base width    =   10.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =     33.571(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    3.000(Ft.)
Flow(q) thru subarea =     33.571(CFS)
Depth of flow =   0.108(Ft.), Average velocity =  30.880(Ft/s)
Channel flow top width =   10.215(Ft.)
```

```
Flow Velocity =   30.88(Ft/s)
Travel time  =    0.30 min.
Time of concentration =   11.21 min.
Critical depth =      0.688(Ft.)
 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 78.00
Adjusted SCS curve number for AMC 3 = 92.80
Pervious ratio(Ap) = 1.0000     Max loss rate(Fm)=     0.140(In/Hr)
Rainfall intensity =      4.854(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area,(total area with modified
rational method)(Q=KCIA) is C = 0.874
Subarea runoff =     31.439(CFS) for    7.490(Ac.)
Total runoff =     49.260(CFS)
Effective area this stream =       11.61(Ac.)
Total Study Area (Main Stream No. 1) =       11.61(Ac.)
Area averaged Fm value =    0.140(In/Hr)
Depth of flow =   0.135(Ft.), Average velocity =  35.889(Ft/s)
Critical depth =      0.883(Ft.)
End of computations, Total Study Area =           11.61 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged SCS curve number =  78.0
```

Area ‘C’ – 10 Year 1 Hour - Proposed Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'C'
10 YEAR STORM
DECEMBER 17, 2024
------------------------------------------------------------------------


Program License Serial Number 6407

------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------
Rational hydrology study storm event year is    10.0
Computed rainfall intensity:
Storm year =    10.00   1 hour rainfall =     1.000 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.587(In/Hr)
Initial subarea data:
Initial area flow distance =   730.000(Ft.)
Top (of initial area) elevation =  2041.000(Ft.)
Bottom (of initial area) elevation =  1965.000(Ft.)
Difference in elevation =    76.000(Ft.)
Slope =    0.10411  s(%)=      10.41
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.052 min.
Rainfall intensity =      3.758(In/Hr) for a    10.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.760
Subarea runoff =     18.668(CFS)
Total initial stream area =        6.540(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.587(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      301.000 to Point/Station      302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1957.000(Ft.)
Downstream point/station elevation =  1956.000(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    18.668(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =    18.668(CFS)
Normal flow depth in pipe =   12.91(In.)
Flow top width inside pipe =   20.44(In.)
Critical Depth =   18.77(In.)
Pipe flow velocity =     12.04(Ft/s)
Travel time through pipe =    0.05 min.
Time of concentration (TC) =     9.10 min.
```

```
End of computations, Total Study Area =           6.54 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.600
Area averaged SCS curve number =  32.0
```

Area ‘C’ – 100 Year 1 Hour - Proposed Condition – Rational Method

```
                San Bernardino County Rational Hydrology Program

                    (Hydrology Manual Date - August 1986)

 CIVILCADD/CIVILDESIGN  Engineering Software, (c) 1989-2014 Version 9.0
       Rational Hydrology Study        Date: 12/17/24
--------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY RATIONAL
DRAINAGE AREA 'C'
100 YEAR STORM
DECEMBER 17, 2024
--------------------------------------------------------------------------


Program License Serial Number 6407

--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
Computed rainfall intensity:
Storm year =   100.00   1 hour rainfall =     1.500 (In.)
Slope used for rainfall intensity curve b =  0.7000
Soil antecedent moisture condition (AMC) = 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
RESIDENTIAL(3 - 4 dwl/acre)
Decimal fraction soil group A = 1.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
SCS curve number for soil(AMC 2)  = 32.00
Adjusted SCS curve number for AMC 3 = 52.00
Pervious ratio(Ap) = 0.6000     Max loss rate(Fm)=     0.471(In/Hr)
Initial subarea data:
Initial area flow distance =   730.000(Ft.)
Top (of initial area) elevation =  2041.000(Ft.)
Bottom (of initial area) elevation =  1965.000(Ft.)
Difference in elevation =    76.000(Ft.)
Slope =    0.10411  s(%)=      10.41
TC = k(0.412)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    9.052 min.
Rainfall intensity =      5.638(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.825
Subarea runoff =     30.410(CFS)
Total initial stream area =        6.540(Ac.)
Pervious area fraction = 0.600
Initial area Fm value =    0.471(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      301.000 to Point/Station      302.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
__________________________________________________________________________
Upstream point/station elevation =  1957.000(Ft.)
Downstream point/station elevation =  1956.000(Ft.)
Pipe length  =    35.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    30.410(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    30.410(CFS)
Normal flow depth in pipe =   16.17(In.)
Flow top width inside pipe =   22.50(In.)
Critical Depth =   22.41(In.)
Pipe flow velocity =     13.51(Ft/s)
Travel time through pipe =    0.04 min.
Time of concentration (TC) =     9.09 min.
```

```
End of computations, Total Study Area =           6.54 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.
Note: These figures do not consider reduced effective area
effects caused by confluences in the rational equation.

Area averaged pervious area fraction(Ap) = 0.600
Area averaged SCS curve number =  32.0
```

## Area 'D' – 10 Year 1 Hour - Proposed Condition – Rational Method

NO CHANGE FROM EXISTING CONDITION

Area 'D' – 100 Year 1 Hour - Proposed Condition – Rational Method

NO CHANGE FROM EXISTING CONDITION

## Area 'E' – 10 Year 1 Hour - Proposed Condition – Rational Method

NO CHANGE FROM EXISTING CONDITION

Area 'E' – 100 Year 1 Hour - Proposed Condition – Rational Method

NO CHANGE FROM EXISTING CONDITION

Area ‘F’ – 10 Year 1 Hour - Proposed Condition – Rational Method

MERGED WITH PROPOSED CONDITION - AREA ‘B’

Area ‘F’ – 100 Year 1 Hour - Proposed Condition – Rational Method

MERGED WITH PROPOSED CONDITION - AREA ‘B’

Area ‘G’ – 10 Year 1 Hour - Proposed Condition – Rational Method

MERGED WITH PROPOSED CONDITION - AREA ‘A’

Area ‘G’ – 100 Year 1 Hour - Proposed Condition – Rational Method

MERGED WITH PROPOSED CONDITION - AREA ‘A’

# Attachment 4

# Proposed Conditions
# Unit Hydrograph Calculations

Area 'A' – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

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              Study date  12/16/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
2 YEAR 24 HOUR STORM
DECEMBER 16, 2024
----------------------------------------------------------------------

       Storm Event Year = 2

       Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
           43.08           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
           43.08           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
           43.08          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
           43.08           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
           43.08           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
           43.08          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 36.7      20.4         43.08      1.000     1.000    0.610    0.610

Area-averaged adjusted loss rate Fm (In/Hr) =  0.610

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 26.28 | 0.610 | 36.7 | 20.4 | 20.00 | 0.000 |
| 16.80 | 0.390 | 98.0 | 98.0 | 0.20 | 0.941 |

Area-averaged catchment yield fraction, Y = 0.367
Area-averaged low loss fraction, Yb = 0.633
User entry of time of concentration = 0.150 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 43.08(Ac.)
Catchment Lag time = 0.120 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 69.4444
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.610(In/Hr)
Average low loss rate fraction (Yb) = 0.633 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 43.08(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.308(In)
30-minute factor = 0.998 Adjusted rainfall = 0.527(In)
1-hour factor = 0.998 Adjusted rainfall = 0.649(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 521.00 (CFS)) | |
| 1 | 7.065 | 36.808 |
| 2 | 47.670 | 211.553 |
| 3 | 76.988 | 152.744 |
| 4 | 87.984 | 57.293 |
| 5 | 94.086 | 31.790 |
| 6 | 97.295 | 16.719 |
| 7 | 98.498 | 6.265 |
| 8 | 99.120 | 3.241 |
| 9 | 99.604 | 2.523 |
| 10 | 99.910 | 1.595 |
| 11 | 100.000 | 0.467 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3081 | 0.3081 |
| 2 | 0.3793 | 0.0712 |
| 3 | 0.4283 | 0.0491 |
| 4 | 0.4669 | 0.0386 |
| 5 | 0.4992 | 0.0323 |
| 6 | 0.5273 | 0.0281 |
| 7 | 0.5523 | 0.0250 |
| 8 | 0.5748 | 0.0226 |
| 9 | 0.5955 | 0.0207 |
| 10 | 0.6146 | 0.0191 |
| 11 | 0.6325 | 0.0178 |
| 12 | 0.6492 | 0.0167 |
| 13 | 0.6827 | 0.0335 |
| 14 | 0.7152 | 0.0325 |

| | | |
|---|---|---|
| 15 | 0.7469 | 0.0317 |
| 16 | 0.7779 | 0.0309 |
| 17 | 0.8081 | 0.0302 |
| 18 | 0.8376 | 0.0296 |
| 19 | 0.8666 | 0.0289 |
| 20 | 0.8949 | 0.0284 |
| 21 | 0.9228 | 0.0279 |
| 22 | 0.9502 | 0.0274 |
| 23 | 0.9771 | 0.0269 |
| 24 | 1.0036 | 0.0265 |
| 25 | 1.0297 | 0.0261 |
| 26 | 1.0554 | 0.0257 |
| 27 | 1.0807 | 0.0253 |
| 28 | 1.1057 | 0.0250 |
| 29 | 1.1303 | 0.0247 |
| 30 | 1.1547 | 0.0243 |
| 31 | 1.1787 | 0.0240 |
| 32 | 1.2025 | 0.0238 |
| 33 | 1.2260 | 0.0235 |
| 34 | 1.2492 | 0.0232 |
| 35 | 1.2721 | 0.0230 |
| 36 | 1.2949 | 0.0227 |
| 37 | 1.3173 | 0.0224 |
| 38 | 1.3395 | 0.0222 |
| 39 | 1.3615 | 0.0220 |
| 40 | 1.3833 | 0.0218 |
| 41 | 1.4049 | 0.0216 |
| 42 | 1.4263 | 0.0214 |
| 43 | 1.4475 | 0.0212 |
| 44 | 1.4685 | 0.0210 |
| 45 | 1.4893 | 0.0208 |
| 46 | 1.5100 | 0.0207 |
| 47 | 1.5305 | 0.0205 |
| 48 | 1.5508 | 0.0203 |
| 49 | 1.5710 | 0.0202 |
| 50 | 1.5910 | 0.0200 |
| 51 | 1.6109 | 0.0199 |
| 52 | 1.6306 | 0.0197 |
| 53 | 1.6502 | 0.0196 |
| 54 | 1.6697 | 0.0195 |
| 55 | 1.6890 | 0.0193 |
| 56 | 1.7082 | 0.0192 |
| 57 | 1.7273 | 0.0191 |
| 58 | 1.7462 | 0.0189 |
| 59 | 1.7650 | 0.0188 |
| 60 | 1.7837 | 0.0187 |
| 61 | 1.8023 | 0.0186 |
| 62 | 1.8208 | 0.0185 |
| 63 | 1.8391 | 0.0184 |
| 64 | 1.8574 | 0.0183 |
| 65 | 1.8755 | 0.0181 |
| 66 | 1.8936 | 0.0180 |
| 67 | 1.9115 | 0.0179 |
| 68 | 1.9293 | 0.0178 |
| 69 | 1.9471 | 0.0177 |
| 70 | 1.9647 | 0.0176 |
| 71 | 1.9823 | 0.0176 |
| 72 | 1.9997 | 0.0175 |
| 73 | 2.0136 | 0.0138 |
| 74 | 2.0273 | 0.0137 |
| 75 | 2.0410 | 0.0137 |
| 76 | 2.0545 | 0.0136 |
| 77 | 2.0680 | 0.0135 |
| 78 | 2.0814 | 0.0134 |
| 79 | 2.0947 | 0.0133 |
| 80 | 2.1079 | 0.0132 |
| 81 | 2.1210 | 0.0131 |
| 82 | 2.1341 | 0.0131 |
| 83 | 2.1471 | 0.0130 |
| 84 | 2.1600 | 0.0129 |
| 85 | 2.1728 | 0.0128 |

| | | |
|---|---|---|
| 86 | 2.1855 | 0.0127 |
| 87 | 2.1982 | 0.0127 |
| 88 | 2.2108 | 0.0126 |
| 89 | 2.2233 | 0.0125 |
| 90 | 2.2358 | 0.0125 |
| 91 | 2.2482 | 0.0124 |
| 92 | 2.2605 | 0.0123 |
| 93 | 2.2728 | 0.0123 |
| 94 | 2.2849 | 0.0122 |
| 95 | 2.2971 | 0.0121 |
| 96 | 2.3091 | 0.0121 |
| 97 | 2.3211 | 0.0120 |
| 98 | 2.3331 | 0.0119 |
| 99 | 2.3449 | 0.0119 |
| 100 | 2.3568 | 0.0118 |
| 101 | 2.3685 | 0.0118 |
| 102 | 2.3802 | 0.0117 |
| 103 | 2.3918 | 0.0116 |
| 104 | 2.4034 | 0.0116 |
| 105 | 2.4150 | 0.0115 |
| 106 | 2.4264 | 0.0115 |
| 107 | 2.4379 | 0.0114 |
| 108 | 2.4492 | 0.0114 |
| 109 | 2.4605 | 0.0113 |
| 110 | 2.4718 | 0.0113 |
| 111 | 2.4830 | 0.0112 |
| 112 | 2.4942 | 0.0112 |
| 113 | 2.5053 | 0.0111 |
| 114 | 2.5163 | 0.0111 |
| 115 | 2.5274 | 0.0110 |
| 116 | 2.5383 | 0.0110 |
| 117 | 2.5492 | 0.0109 |
| 118 | 2.5601 | 0.0109 |
| 119 | 2.5709 | 0.0108 |
| 120 | 2.5817 | 0.0108 |
| 121 | 2.5925 | 0.0107 |
| 122 | 2.6031 | 0.0107 |
| 123 | 2.6138 | 0.0106 |
| 124 | 2.6244 | 0.0106 |
| 125 | 2.6350 | 0.0106 |
| 126 | 2.6455 | 0.0105 |
| 127 | 2.6560 | 0.0105 |
| 128 | 2.6664 | 0.0104 |
| 129 | 2.6768 | 0.0104 |
| 130 | 2.6871 | 0.0104 |
| 131 | 2.6975 | 0.0103 |
| 132 | 2.7077 | 0.0103 |
| 133 | 2.7180 | 0.0102 |
| 134 | 2.7282 | 0.0102 |
| 135 | 2.7383 | 0.0102 |
| 136 | 2.7485 | 0.0101 |
| 137 | 2.7586 | 0.0101 |
| 138 | 2.7686 | 0.0101 |
| 139 | 2.7786 | 0.0100 |
| 140 | 2.7886 | 0.0100 |
| 141 | 2.7985 | 0.0099 |
| 142 | 2.8084 | 0.0099 |
| 143 | 2.8183 | 0.0099 |
| 144 | 2.8282 | 0.0098 |
| 145 | 2.8380 | 0.0098 |
| 146 | 2.8477 | 0.0098 |
| 147 | 2.8575 | 0.0097 |
| 148 | 2.8672 | 0.0097 |
| 149 | 2.8768 | 0.0097 |
| 150 | 2.8865 | 0.0096 |
| 151 | 2.8961 | 0.0096 |
| 152 | 2.9057 | 0.0096 |
| 153 | 2.9152 | 0.0095 |
| 154 | 2.9247 | 0.0095 |
| 155 | 2.9342 | 0.0095 |
| 156 | 2.9437 | 0.0095 |

| | | |
|---|---|---|
| 157 | 2.9531 | 0.0094 |
| 158 | 2.9625 | 0.0094 |
| 159 | 2.9718 | 0.0094 |
| 160 | 2.9812 | 0.0093 |
| 161 | 2.9905 | 0.0093 |
| 162 | 2.9997 | 0.0093 |
| 163 | 3.0090 | 0.0092 |
| 164 | 3.0182 | 0.0092 |
| 165 | 3.0274 | 0.0092 |
| 166 | 3.0366 | 0.0092 |
| 167 | 3.0457 | 0.0091 |
| 168 | 3.0548 | 0.0091 |
| 169 | 3.0639 | 0.0091 |
| 170 | 3.0729 | 0.0091 |
| 171 | 3.0819 | 0.0090 |
| 172 | 3.0909 | 0.0090 |
| 173 | 3.0999 | 0.0090 |
| 174 | 3.1089 | 0.0089 |
| 175 | 3.1178 | 0.0089 |
| 176 | 3.1267 | 0.0089 |
| 177 | 3.1356 | 0.0089 |
| 178 | 3.1444 | 0.0088 |
| 179 | 3.1532 | 0.0088 |
| 180 | 3.1620 | 0.0088 |
| 181 | 3.1708 | 0.0088 |
| 182 | 3.1795 | 0.0087 |
| 183 | 3.1883 | 0.0087 |
| 184 | 3.1970 | 0.0087 |
| 185 | 3.2056 | 0.0087 |
| 186 | 3.2143 | 0.0087 |
| 187 | 3.2229 | 0.0086 |
| 188 | 3.2315 | 0.0086 |
| 189 | 3.2401 | 0.0086 |
| 190 | 3.2487 | 0.0086 |
| 191 | 3.2572 | 0.0085 |
| 192 | 3.2657 | 0.0085 |
| 193 | 3.2742 | 0.0085 |
| 194 | 3.2827 | 0.0085 |
| 195 | 3.2912 | 0.0085 |
| 196 | 3.2996 | 0.0084 |
| 197 | 3.3080 | 0.0084 |
| 198 | 3.3164 | 0.0084 |
| 199 | 3.3247 | 0.0084 |
| 200 | 3.3331 | 0.0083 |
| 201 | 3.3414 | 0.0083 |
| 202 | 3.3497 | 0.0083 |
| 203 | 3.3580 | 0.0083 |
| 204 | 3.3663 | 0.0083 |
| 205 | 3.3745 | 0.0082 |
| 206 | 3.3827 | 0.0082 |
| 207 | 3.3909 | 0.0082 |
| 208 | 3.3991 | 0.0082 |
| 209 | 3.4073 | 0.0082 |
| 210 | 3.4154 | 0.0081 |
| 211 | 3.4235 | 0.0081 |
| 212 | 3.4316 | 0.0081 |
| 213 | 3.4397 | 0.0081 |
| 214 | 3.4478 | 0.0081 |
| 215 | 3.4558 | 0.0080 |
| 216 | 3.4639 | 0.0080 |
| 217 | 3.4719 | 0.0080 |
| 218 | 3.4799 | 0.0080 |
| 219 | 3.4878 | 0.0080 |
| 220 | 3.4958 | 0.0080 |
| 221 | 3.5037 | 0.0079 |
| 222 | 3.5116 | 0.0079 |
| 223 | 3.5195 | 0.0079 |
| 224 | 3.5274 | 0.0079 |
| 225 | 3.5353 | 0.0079 |
| 226 | 3.5431 | 0.0078 |
| 227 | 3.5510 | 0.0078 |

| | | |
|---|---|---|
| 228 | 3.5588 | 0.0078 |
| 229 | 3.5666 | 0.0078 |
| 230 | 3.5744 | 0.0078 |
| 231 | 3.5821 | 0.0078 |
| 232 | 3.5899 | 0.0077 |
| 233 | 3.5976 | 0.0077 |
| 234 | 3.6053 | 0.0077 |
| 235 | 3.6130 | 0.0077 |
| 236 | 3.6207 | 0.0077 |
| 237 | 3.6284 | 0.0077 |
| 238 | 3.6360 | 0.0076 |
| 239 | 3.6436 | 0.0076 |
| 240 | 3.6512 | 0.0076 |
| 241 | 3.6588 | 0.0076 |
| 242 | 3.6664 | 0.0076 |
| 243 | 3.6740 | 0.0076 |
| 244 | 3.6816 | 0.0076 |
| 245 | 3.6891 | 0.0075 |
| 246 | 3.6966 | 0.0075 |
| 247 | 3.7041 | 0.0075 |
| 248 | 3.7116 | 0.0075 |
| 249 | 3.7191 | 0.0075 |
| 250 | 3.7265 | 0.0075 |
| 251 | 3.7340 | 0.0074 |
| 252 | 3.7414 | 0.0074 |
| 253 | 3.7488 | 0.0074 |
| 254 | 3.7562 | 0.0074 |
| 255 | 3.7636 | 0.0074 |
| 256 | 3.7710 | 0.0074 |
| 257 | 3.7784 | 0.0074 |
| 258 | 3.7857 | 0.0073 |
| 259 | 3.7930 | 0.0073 |
| 260 | 3.8004 | 0.0073 |
| 261 | 3.8077 | 0.0073 |
| 262 | 3.8149 | 0.0073 |
| 263 | 3.8222 | 0.0073 |
| 264 | 3.8295 | 0.0073 |
| 265 | 3.8367 | 0.0072 |
| 266 | 3.8440 | 0.0072 |
| 267 | 3.8512 | 0.0072 |
| 268 | 3.8584 | 0.0072 |
| 269 | 3.8656 | 0.0072 |
| 270 | 3.8728 | 0.0072 |
| 271 | 3.8799 | 0.0072 |
| 272 | 3.8871 | 0.0072 |
| 273 | 3.8942 | 0.0071 |
| 274 | 3.9013 | 0.0071 |
| 275 | 3.9085 | 0.0071 |
| 276 | 3.9156 | 0.0071 |
| 277 | 3.9226 | 0.0071 |
| 278 | 3.9297 | 0.0071 |
| 279 | 3.9368 | 0.0071 |
| 280 | 3.9438 | 0.0070 |
| 281 | 3.9509 | 0.0070 |
| 282 | 3.9579 | 0.0070 |
| 283 | 3.9649 | 0.0070 |
| 284 | 3.9719 | 0.0070 |
| 285 | 3.9789 | 0.0070 |
| 286 | 3.9859 | 0.0070 |
| 287 | 3.9928 | 0.0070 |
| 288 | 3.9998 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0044 | 0.0026 |
| 2 | 0.0070 | 0.0044 | 0.0026 |
| 3 | 0.0070 | 0.0044 | 0.0026 |
| 4 | 0.0070 | 0.0044 | 0.0026 |
| 5 | 0.0070 | 0.0044 | 0.0026 |

| | | | |
|---|---|---|---|
| 6 | 0.0070 | 0.0045 | 0.0026 |
| 7 | 0.0071 | 0.0045 | 0.0026 |
| 8 | 0.0071 | 0.0045 | 0.0026 |
| 9 | 0.0071 | 0.0045 | 0.0026 |
| 10 | 0.0071 | 0.0045 | 0.0026 |
| 11 | 0.0071 | 0.0045 | 0.0026 |
| 12 | 0.0072 | 0.0045 | 0.0026 |
| 13 | 0.0072 | 0.0045 | 0.0026 |
| 14 | 0.0072 | 0.0046 | 0.0026 |
| 15 | 0.0072 | 0.0046 | 0.0027 |
| 16 | 0.0072 | 0.0046 | 0.0027 |
| 17 | 0.0073 | 0.0046 | 0.0027 |
| 18 | 0.0073 | 0.0046 | 0.0027 |
| 19 | 0.0073 | 0.0046 | 0.0027 |
| 20 | 0.0073 | 0.0046 | 0.0027 |
| 21 | 0.0073 | 0.0046 | 0.0027 |
| 22 | 0.0074 | 0.0047 | 0.0027 |
| 23 | 0.0074 | 0.0047 | 0.0027 |
| 24 | 0.0074 | 0.0047 | 0.0027 |
| 25 | 0.0074 | 0.0047 | 0.0027 |
| 26 | 0.0074 | 0.0047 | 0.0027 |
| 27 | 0.0075 | 0.0047 | 0.0027 |
| 28 | 0.0075 | 0.0047 | 0.0028 |
| 29 | 0.0075 | 0.0048 | 0.0028 |
| 30 | 0.0075 | 0.0048 | 0.0028 |
| 31 | 0.0076 | 0.0048 | 0.0028 |
| 32 | 0.0076 | 0.0048 | 0.0028 |
| 33 | 0.0076 | 0.0048 | 0.0028 |
| 34 | 0.0076 | 0.0048 | 0.0028 |
| 35 | 0.0077 | 0.0049 | 0.0028 |
| 36 | 0.0077 | 0.0049 | 0.0028 |
| 37 | 0.0077 | 0.0049 | 0.0028 |
| 38 | 0.0077 | 0.0049 | 0.0028 |
| 39 | 0.0078 | 0.0049 | 0.0028 |
| 40 | 0.0078 | 0.0049 | 0.0029 |
| 41 | 0.0078 | 0.0049 | 0.0029 |
| 42 | 0.0078 | 0.0050 | 0.0029 |
| 43 | 0.0079 | 0.0050 | 0.0029 |
| 44 | 0.0079 | 0.0050 | 0.0029 |
| 45 | 0.0079 | 0.0050 | 0.0029 |
| 46 | 0.0079 | 0.0050 | 0.0029 |
| 47 | 0.0080 | 0.0050 | 0.0029 |
| 48 | 0.0080 | 0.0051 | 0.0029 |
| 49 | 0.0080 | 0.0051 | 0.0029 |
| 50 | 0.0080 | 0.0051 | 0.0030 |
| 51 | 0.0081 | 0.0051 | 0.0030 |
| 52 | 0.0081 | 0.0051 | 0.0030 |
| 53 | 0.0081 | 0.0052 | 0.0030 |
| 54 | 0.0082 | 0.0052 | 0.0030 |
| 55 | 0.0082 | 0.0052 | 0.0030 |
| 56 | 0.0082 | 0.0052 | 0.0030 |
| 57 | 0.0083 | 0.0052 | 0.0030 |
| 58 | 0.0083 | 0.0052 | 0.0030 |
| 59 | 0.0083 | 0.0053 | 0.0031 |
| 60 | 0.0083 | 0.0053 | 0.0031 |
| 61 | 0.0084 | 0.0053 | 0.0031 |
| 62 | 0.0084 | 0.0053 | 0.0031 |
| 63 | 0.0085 | 0.0053 | 0.0031 |
| 64 | 0.0085 | 0.0054 | 0.0031 |
| 65 | 0.0085 | 0.0054 | 0.0031 |
| 66 | 0.0085 | 0.0054 | 0.0031 |
| 67 | 0.0086 | 0.0054 | 0.0032 |
| 68 | 0.0086 | 0.0054 | 0.0032 |
| 69 | 0.0087 | 0.0055 | 0.0032 |
| 70 | 0.0087 | 0.0055 | 0.0032 |
| 71 | 0.0087 | 0.0055 | 0.0032 |
| 72 | 0.0087 | 0.0055 | 0.0032 |
| 73 | 0.0088 | 0.0056 | 0.0032 |
| 74 | 0.0088 | 0.0056 | 0.0032 |
| 75 | 0.0089 | 0.0056 | 0.0033 |
| 76 | 0.0089 | 0.0056 | 0.0033 |

| | | | |
|---|---|---|---|
| 77 | 0.0089 | 0.0057 | 0.0033 |
| 78 | 0.0090 | 0.0057 | 0.0033 |
| 79 | 0.0090 | 0.0057 | 0.0033 |
| 80 | 0.0091 | 0.0057 | 0.0033 |
| 81 | 0.0091 | 0.0058 | 0.0033 |
| 82 | 0.0091 | 0.0058 | 0.0034 |
| 83 | 0.0092 | 0.0058 | 0.0034 |
| 84 | 0.0092 | 0.0058 | 0.0034 |
| 85 | 0.0093 | 0.0059 | 0.0034 |
| 86 | 0.0093 | 0.0059 | 0.0034 |
| 87 | 0.0094 | 0.0059 | 0.0034 |
| 88 | 0.0094 | 0.0059 | 0.0034 |
| 89 | 0.0095 | 0.0060 | 0.0035 |
| 90 | 0.0095 | 0.0060 | 0.0035 |
| 91 | 0.0095 | 0.0060 | 0.0035 |
| 92 | 0.0096 | 0.0061 | 0.0035 |
| 93 | 0.0096 | 0.0061 | 0.0035 |
| 94 | 0.0097 | 0.0061 | 0.0036 |
| 95 | 0.0097 | 0.0062 | 0.0036 |
| 96 | 0.0098 | 0.0062 | 0.0036 |
| 97 | 0.0098 | 0.0062 | 0.0036 |
| 98 | 0.0099 | 0.0062 | 0.0036 |
| 99 | 0.0099 | 0.0063 | 0.0036 |
| 100 | 0.0100 | 0.0063 | 0.0037 |
| 101 | 0.0101 | 0.0064 | 0.0037 |
| 102 | 0.0101 | 0.0064 | 0.0037 |
| 103 | 0.0102 | 0.0064 | 0.0037 |
| 104 | 0.0102 | 0.0065 | 0.0037 |
| 105 | 0.0103 | 0.0065 | 0.0038 |
| 106 | 0.0103 | 0.0065 | 0.0038 |
| 107 | 0.0104 | 0.0066 | 0.0038 |
| 108 | 0.0104 | 0.0066 | 0.0038 |
| 109 | 0.0105 | 0.0067 | 0.0039 |
| 110 | 0.0106 | 0.0067 | 0.0039 |
| 111 | 0.0106 | 0.0067 | 0.0039 |
| 112 | 0.0107 | 0.0068 | 0.0039 |
| 113 | 0.0108 | 0.0068 | 0.0040 |
| 114 | 0.0108 | 0.0069 | 0.0040 |
| 115 | 0.0109 | 0.0069 | 0.0040 |
| 116 | 0.0110 | 0.0069 | 0.0040 |
| 117 | 0.0111 | 0.0070 | 0.0041 |
| 118 | 0.0111 | 0.0070 | 0.0041 |
| 119 | 0.0112 | 0.0071 | 0.0041 |
| 120 | 0.0113 | 0.0071 | 0.0041 |
| 121 | 0.0114 | 0.0072 | 0.0042 |
| 122 | 0.0114 | 0.0072 | 0.0042 |
| 123 | 0.0115 | 0.0073 | 0.0042 |
| 124 | 0.0116 | 0.0073 | 0.0043 |
| 125 | 0.0117 | 0.0074 | 0.0043 |
| 126 | 0.0118 | 0.0074 | 0.0043 |
| 127 | 0.0119 | 0.0075 | 0.0044 |
| 128 | 0.0119 | 0.0076 | 0.0044 |
| 129 | 0.0121 | 0.0076 | 0.0044 |
| 130 | 0.0121 | 0.0077 | 0.0045 |
| 131 | 0.0123 | 0.0078 | 0.0045 |
| 132 | 0.0123 | 0.0078 | 0.0045 |
| 133 | 0.0125 | 0.0079 | 0.0046 |
| 134 | 0.0125 | 0.0079 | 0.0046 |
| 135 | 0.0127 | 0.0080 | 0.0047 |
| 136 | 0.0127 | 0.0081 | 0.0047 |
| 137 | 0.0129 | 0.0082 | 0.0047 |
| 138 | 0.0130 | 0.0082 | 0.0048 |
| 139 | 0.0131 | 0.0083 | 0.0048 |
| 140 | 0.0132 | 0.0084 | 0.0049 |
| 141 | 0.0134 | 0.0085 | 0.0049 |
| 142 | 0.0135 | 0.0085 | 0.0049 |
| 143 | 0.0137 | 0.0086 | 0.0050 |
| 144 | 0.0137 | 0.0087 | 0.0050 |
| 145 | 0.0175 | 0.0111 | 0.0064 |
| 146 | 0.0176 | 0.0111 | 0.0064 |
| 147 | 0.0177 | 0.0112 | 0.0065 |

| | | | |
|---|---|---|---|
| 148 | 0.0178 | 0.0113 | 0.0065 |
| 149 | 0.0180 | 0.0114 | 0.0066 |
| 150 | 0.0181 | 0.0115 | 0.0067 |
| 151 | 0.0184 | 0.0116 | 0.0067 |
| 152 | 0.0185 | 0.0117 | 0.0068 |
| 153 | 0.0187 | 0.0118 | 0.0069 |
| 154 | 0.0188 | 0.0119 | 0.0069 |
| 155 | 0.0191 | 0.0121 | 0.0070 |
| 156 | 0.0192 | 0.0121 | 0.0070 |
| 157 | 0.0195 | 0.0123 | 0.0071 |
| 158 | 0.0196 | 0.0124 | 0.0072 |
| 159 | 0.0199 | 0.0126 | 0.0073 |
| 160 | 0.0200 | 0.0127 | 0.0074 |
| 161 | 0.0203 | 0.0129 | 0.0075 |
| 162 | 0.0205 | 0.0130 | 0.0075 |
| 163 | 0.0208 | 0.0132 | 0.0076 |
| 164 | 0.0210 | 0.0133 | 0.0077 |
| 165 | 0.0214 | 0.0135 | 0.0079 |
| 166 | 0.0216 | 0.0137 | 0.0079 |
| 167 | 0.0220 | 0.0139 | 0.0081 |
| 168 | 0.0222 | 0.0141 | 0.0082 |
| 169 | 0.0227 | 0.0144 | 0.0083 |
| 170 | 0.0230 | 0.0145 | 0.0084 |
| 171 | 0.0235 | 0.0149 | 0.0086 |
| 172 | 0.0238 | 0.0150 | 0.0087 |
| 173 | 0.0243 | 0.0154 | 0.0089 |
| 174 | 0.0247 | 0.0156 | 0.0091 |
| 175 | 0.0253 | 0.0160 | 0.0093 |
| 176 | 0.0257 | 0.0163 | 0.0094 |
| 177 | 0.0265 | 0.0168 | 0.0097 |
| 178 | 0.0269 | 0.0170 | 0.0099 |
| 179 | 0.0279 | 0.0176 | 0.0102 |
| 180 | 0.0284 | 0.0180 | 0.0104 |
| 181 | 0.0296 | 0.0187 | 0.0108 |
| 182 | 0.0302 | 0.0191 | 0.0111 |
| 183 | 0.0317 | 0.0201 | 0.0116 |
| 184 | 0.0325 | 0.0206 | 0.0119 |
| 185 | 0.0167 | 0.0106 | 0.0061 |
| 186 | 0.0178 | 0.0113 | 0.0065 |
| 187 | 0.0207 | 0.0131 | 0.0076 |
| 188 | 0.0226 | 0.0143 | 0.0083 |
| 189 | 0.0281 | 0.0178 | 0.0103 |
| 190 | 0.0323 | 0.0205 | 0.0119 |
| 191 | 0.0491 | 0.0310 | 0.0180 |
| 192 | 0.0712 | 0.0451 | 0.0261 |
| 193 | 0.3081 | 0.0508 | 0.2572 |
| 194 | 0.0386 | 0.0244 | 0.0142 |
| 195 | 0.0250 | 0.0158 | 0.0092 |
| 196 | 0.0191 | 0.0121 | 0.0070 |
| 197 | 0.0335 | 0.0212 | 0.0123 |
| 198 | 0.0309 | 0.0196 | 0.0113 |
| 199 | 0.0289 | 0.0183 | 0.0106 |
| 200 | 0.0274 | 0.0173 | 0.0100 |
| 201 | 0.0261 | 0.0165 | 0.0096 |
| 202 | 0.0250 | 0.0158 | 0.0092 |
| 203 | 0.0240 | 0.0152 | 0.0088 |
| 204 | 0.0232 | 0.0147 | 0.0085 |
| 205 | 0.0224 | 0.0142 | 0.0082 |
| 206 | 0.0218 | 0.0138 | 0.0080 |
| 207 | 0.0212 | 0.0134 | 0.0078 |
| 208 | 0.0207 | 0.0131 | 0.0076 |
| 209 | 0.0202 | 0.0128 | 0.0074 |
| 210 | 0.0197 | 0.0125 | 0.0072 |
| 211 | 0.0193 | 0.0122 | 0.0071 |
| 212 | 0.0189 | 0.0120 | 0.0070 |
| 213 | 0.0186 | 0.0118 | 0.0068 |
| 214 | 0.0183 | 0.0116 | 0.0067 |
| 215 | 0.0179 | 0.0114 | 0.0066 |
| 216 | 0.0176 | 0.0112 | 0.0065 |
| 217 | 0.0138 | 0.0088 | 0.0051 |
| 218 | 0.0136 | 0.0086 | 0.0050 |

| | | | |
|---|---|---|---|
| 219 | 0.0133 | 0.0084 | 0.0049 |
| 220 | 0.0131 | 0.0083 | 0.0048 |
| 221 | 0.0128 | 0.0081 | 0.0047 |
| 222 | 0.0126 | 0.0080 | 0.0046 |
| 223 | 0.0124 | 0.0078 | 0.0045 |
| 224 | 0.0122 | 0.0077 | 0.0045 |
| 225 | 0.0120 | 0.0076 | 0.0044 |
| 226 | 0.0118 | 0.0075 | 0.0043 |
| 227 | 0.0116 | 0.0074 | 0.0043 |
| 228 | 0.0115 | 0.0073 | 0.0042 |
| 229 | 0.0113 | 0.0072 | 0.0042 |
| 230 | 0.0112 | 0.0071 | 0.0041 |
| 231 | 0.0110 | 0.0070 | 0.0040 |
| 232 | 0.0109 | 0.0069 | 0.0040 |
| 233 | 0.0107 | 0.0068 | 0.0039 |
| 234 | 0.0106 | 0.0067 | 0.0039 |
| 235 | 0.0105 | 0.0066 | 0.0038 |
| 236 | 0.0104 | 0.0066 | 0.0038 |
| 237 | 0.0102 | 0.0065 | 0.0038 |
| 238 | 0.0101 | 0.0064 | 0.0037 |
| 239 | 0.0100 | 0.0063 | 0.0037 |
| 240 | 0.0099 | 0.0063 | 0.0036 |
| 241 | 0.0098 | 0.0062 | 0.0036 |
| 242 | 0.0097 | 0.0061 | 0.0036 |
| 243 | 0.0096 | 0.0061 | 0.0035 |
| 244 | 0.0095 | 0.0060 | 0.0035 |
| 245 | 0.0094 | 0.0060 | 0.0035 |
| 246 | 0.0093 | 0.0059 | 0.0034 |
| 247 | 0.0092 | 0.0059 | 0.0034 |
| 248 | 0.0092 | 0.0058 | 0.0034 |
| 249 | 0.0091 | 0.0057 | 0.0033 |
| 250 | 0.0090 | 0.0057 | 0.0033 |
| 251 | 0.0089 | 0.0056 | 0.0033 |
| 252 | 0.0088 | 0.0056 | 0.0032 |
| 253 | 0.0088 | 0.0056 | 0.0032 |
| 254 | 0.0087 | 0.0055 | 0.0032 |
| 255 | 0.0086 | 0.0055 | 0.0032 |
| 256 | 0.0086 | 0.0054 | 0.0031 |
| 257 | 0.0085 | 0.0054 | 0.0031 |
| 258 | 0.0084 | 0.0053 | 0.0031 |
| 259 | 0.0084 | 0.0053 | 0.0031 |
| 260 | 0.0083 | 0.0053 | 0.0030 |
| 261 | 0.0082 | 0.0052 | 0.0030 |
| 262 | 0.0082 | 0.0052 | 0.0030 |
| 263 | 0.0081 | 0.0051 | 0.0030 |
| 264 | 0.0081 | 0.0051 | 0.0030 |
| 265 | 0.0080 | 0.0051 | 0.0029 |
| 266 | 0.0080 | 0.0050 | 0.0029 |
| 267 | 0.0079 | 0.0050 | 0.0029 |
| 268 | 0.0078 | 0.0050 | 0.0029 |
| 269 | 0.0078 | 0.0049 | 0.0029 |
| 270 | 0.0077 | 0.0049 | 0.0028 |
| 271 | 0.0077 | 0.0049 | 0.0028 |
| 272 | 0.0076 | 0.0048 | 0.0028 |
| 273 | 0.0076 | 0.0048 | 0.0028 |
| 274 | 0.0076 | 0.0048 | 0.0028 |
| 275 | 0.0075 | 0.0048 | 0.0028 |
| 276 | 0.0075 | 0.0047 | 0.0027 |
| 277 | 0.0074 | 0.0047 | 0.0027 |
| 278 | 0.0074 | 0.0047 | 0.0027 |
| 279 | 0.0073 | 0.0046 | 0.0027 |
| 280 | 0.0073 | 0.0046 | 0.0027 |
| 281 | 0.0072 | 0.0046 | 0.0027 |
| 282 | 0.0072 | 0.0046 | 0.0026 |
| 283 | 0.0072 | 0.0045 | 0.0026 |
| 284 | 0.0071 | 0.0045 | 0.0026 |
| 285 | 0.0071 | 0.0045 | 0.0026 |
| 286 | 0.0070 | 0.0045 | 0.0026 |
| 287 | 0.0070 | 0.0044 | 0.0026 |
| 288 | 0.0070 | 0.0044 | 0.0026 |

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      ----------------------------------------------------------------------
      Total soil rain loss =      2.39(In)
      Total effective rainfall =      1.61(In)
      Peak flow rate in flood hydrograph =     60.62(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       17.5      35.0      52.5      70.0
----------------------------------------------------------------------------
  0+ 5       0.0006      0.09  Q         |         |         |         |
  0+10       0.0050      0.63  Q         |         |         |         |
  0+15       0.0121      1.02  Q         |         |         |         |
  0+20       0.0202      1.17  Q         |         |         |         |
  0+25       0.0288      1.26  Q         |         |         |         |
  0+30       0.0378      1.30  Q         |         |         |         |
  0+35       0.0469      1.32  Q         |         |         |         |
  0+40       0.0561      1.34  Q         |         |         |         |
  0+45       0.0654      1.35  Q         |         |         |         |
  0+50       0.0747      1.35  Q         |         |         |         |
  0+55       0.0840      1.36  Q         |         |         |         |
  1+ 0       0.0934      1.36  Q         |         |         |         |
  1+ 5       0.1028      1.37  Q         |         |         |         |
  1+10       0.1122      1.37  Q         |         |         |         |
  1+15       0.1217      1.37  Q         |         |         |         |
  1+20       0.1312      1.38  Q         |         |         |         |
  1+25       0.1407      1.38  Q         |         |         |         |
  1+30       0.1502      1.38  QV        |         |         |         |
  1+35       0.1598      1.39  QV        |         |         |         |
  1+40       0.1694      1.39  QV        |         |         |         |
  1+45       0.1790      1.40  QV        |         |         |         |
  1+50       0.1886      1.40  QV        |         |         |         |
  1+55       0.1983      1.40  QV        |         |         |         |
  2+ 0       0.2080      1.41  QV        |         |         |         |
  2+ 5       0.2177      1.41  QV        |         |         |         |
  2+10       0.2275      1.42  QV        |         |         |         |
  2+15       0.2373      1.42  QV        |         |         |         |
  2+20       0.2471      1.43  QV        |         |         |         |
  2+25       0.2569      1.43  QV        |         |         |         |
  2+30       0.2668      1.43  QV        |         |         |         |
  2+35       0.2767      1.44  QV        |         |         |         |
  2+40       0.2867      1.44  QV        |         |         |         |
  2+45       0.2966      1.45  Q V       |         |         |         |
  2+50       0.3066      1.45  Q V       |         |         |         |
  2+55       0.3167      1.46  Q V       |         |         |         |
  3+ 0       0.3267      1.46  Q V       |         |         |         |
  3+ 5       0.3368      1.47  Q V       |         |         |         |
  3+10       0.3469      1.47  Q V       |         |         |         |
  3+15       0.3571      1.47  Q V       |         |         |         |
  3+20       0.3673      1.48  Q V       |         |         |         |
  3+25       0.3775      1.48  Q V       |         |         |         |
  3+30       0.3878      1.49  Q V       |         |         |         |
  3+35       0.3980      1.49  Q V       |         |         |         |
  3+40       0.4084      1.50  Q V       |         |         |         |
  3+45       0.4187      1.50  Q V       |         |         |         |
  3+50       0.4291      1.51  Q V       |         |         |         |
  3+55       0.4396      1.51  Q  V      |         |         |         |
  4+ 0       0.4500      1.52  Q  V      |         |         |         |
  4+ 5       0.4605      1.52  Q  V      |         |         |         |
  4+10       0.4711      1.53  Q  V      |         |         |         |
  4+15       0.4816      1.53  Q  V      |         |         |         |
  4+20       0.4922      1.54  Q  V      |         |         |         |
  4+25       0.5029      1.55  Q  V      |         |         |         |
  4+30       0.5136      1.55  Q  V      |         |         |         |
  4+35       0.5243      1.56  Q  V      |         |         |         |
  4+40       0.5350      1.56  Q  V      |         |         |         |
  4+45       0.5458      1.57  Q  V      |         |         |         |
```

```
 4+50      0.5567     1.57  Q  V      |         |         |         |
 4+55      0.5676     1.58  Q  V      |         |         |         |
 5+ 0      0.5785     1.59  Q  V      |         |         |         |
 5+ 5      0.5894     1.59  Q   V     |         |         |         |
 5+10      0.6004     1.60  Q   V     |         |         |         |
 5+15      0.6115     1.60  Q   V     |         |         |         |
 5+20      0.6226     1.61  Q   V     |         |         |         |
 5+25      0.6337     1.62  Q   V     |         |         |         |
 5+30      0.6449     1.62  Q   V     |         |         |         |
 5+35      0.6561     1.63  Q   V     |         |         |         |
 5+40      0.6674     1.63  Q   V     |         |         |         |
 5+45      0.6787     1.64  Q   V     |         |         |         |
 5+50      0.6900     1.65  Q   V     |         |         |         |
 5+55      0.7014     1.65  Q   V     |         |         |         |
 6+ 0      0.7128     1.66  Q   V     |         |         |         |
 6+ 5      0.7243     1.67  Q    V    |         |         |         |
 6+10      0.7359     1.68  Q    V    |         |         |         |
 6+15      0.7474     1.68  Q    V    |         |         |         |
 6+20      0.7591     1.69  Q    V    |         |         |         |
 6+25      0.7708     1.70  Q    V    |         |         |         |
 6+30      0.7825     1.70  Q    V    |         |         |         |
 6+35      0.7943     1.71  Q    V    |         |         |         |
 6+40      0.8061     1.72  Q    V    |         |         |         |
 6+45      0.8180     1.73  Q    V    |         |         |         |
 6+50      0.8299     1.73  Q    V    |         |         |         |
 6+55      0.8419     1.74  Q    V    |         |         |         |
 7+ 0      0.8540     1.75  Q    V    |         |         |         |
 7+ 5      0.8661     1.76  |Q   V    |         |         |         |
 7+10      0.8782     1.77  |Q    V   |         |         |         |
 7+15      0.8904     1.77  |Q    V   |         |         |         |
 7+20      0.9027     1.78  |Q    V   |         |         |         |
 7+25      0.9150     1.79  |Q    V   |         |         |         |
 7+30      0.9274     1.80  |Q    V   |         |         |         |
 7+35      0.9399     1.81  |Q    V   |         |         |         |
 7+40      0.9524     1.82  |Q    V   |         |         |         |
 7+45      0.9649     1.82  |Q    V   |         |         |         |
 7+50      0.9776     1.83  |Q    V   |         |         |         |
 7+55      0.9902     1.84  |Q    V   |         |         |         |
 8+ 0      1.0030     1.85  |Q    V   |         |         |         |
 8+ 5      1.0158     1.86  |Q     V  |         |         |         |
 8+10      1.0287     1.87  |Q     V  |         |         |         |
 8+15      1.0417     1.88  |Q     V  |         |         |         |
 8+20      1.0547     1.89  |Q     V  |         |         |         |
 8+25      1.0678     1.90  |Q     V  |         |         |         |
 8+30      1.0809     1.91  |Q     V  |         |         |         |
 8+35      1.0942     1.92  |Q     V  |         |         |         |
 8+40      1.1075     1.93  |Q     V  |         |         |         |
 8+45      1.1209     1.94  |Q     V  |         |         |         |
 8+50      1.1343     1.95  |Q     V  |         |         |         |
 8+55      1.1479     1.96  |Q     V  |         |         |         |
 9+ 0      1.1615     1.98  |Q      V |         |         |         |
 9+ 5      1.1752     1.99  |Q      V |         |         |         |
 9+10      1.1889     2.00  |Q      V |         |         |         |
 9+15      1.2028     2.01  |Q      V |         |         |         |
 9+20      1.2167     2.02  |Q      V |         |         |         |
 9+25      1.2307     2.04  |Q      V |         |         |         |
 9+30      1.2448     2.05  |Q      V |         |         |         |
 9+35      1.2590     2.06  |Q      V |         |         |         |
 9+40      1.2733     2.07  |Q      V |         |         |         |
 9+45      1.2877     2.09  |Q      V |         |         |         |
 9+50      1.3022     2.10  |Q       V|         |         |         |
 9+55      1.3167     2.11  |Q       V|         |         |         |
10+ 0      1.3314     2.13  |Q       V|         |         |         |
10+ 5      1.3461     2.14  |Q       V|         |         |         |
10+10      1.3610     2.16  |Q       V|         |         |         |
10+15      1.3760     2.17  |Q       V|         |         |         |
10+20      1.3910     2.19  |Q       V|         |         |         |
10+25      1.4062     2.20  |Q       V|         |         |         |
10+30      1.4215     2.22  |Q       V|         |         |         |
10+35      1.4369     2.24  |Q       V|         |         |         |
10+40      1.4524     2.25  |Q        V         |         |         |
```

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10+45      1.4681     2.27  |Q        V         |         |         |
10+50      1.4838     2.29  |Q        V         |         |         |
10+55      1.4997     2.31  |Q        V         |         |         |
11+ 0      1.5157     2.32  |Q        V         |         |         |
11+ 5      1.5318     2.34  |Q        V         |         |         |
11+10      1.5481     2.36  |Q        V         |         |         |
11+15      1.5645     2.38  |Q        V         |         |         |
11+20      1.5810     2.40  |Q        V         |         |         |
11+25      1.5977     2.42  |Q        |V        |         |         |
11+30      1.6146     2.44  |Q        |V        |         |         |
11+35      1.6315     2.46  |Q        |V        |         |         |
11+40      1.6487     2.49  |Q        |V        |         |         |
11+45      1.6660     2.51  |Q        |V        |         |         |
11+50      1.6834     2.54  |Q        |V        |         |         |
11+55      1.7010     2.56  |Q        |V        |         |         |
12+ 0      1.7188     2.58  |Q        |V        |         |         |
12+ 5      1.7371     2.66  |Q        | V       |         |         |
12+10      1.7575     2.96  |Q        | V       |         |         |
12+15      1.7794     3.18  |Q        | V       |         |         |
12+20      1.8020     3.28  |Q        | V       |         |         |
12+25      1.8251     3.35  |Q        | V       |         |         |
12+30      1.8485     3.40  |Q        | V       |         |         |
12+35      1.8722     3.44  |Q        | V       |         |         |
12+40      1.8961     3.47  |Q        |  V      |         |         |
12+45      1.9203     3.51  | Q       |  V      |         |         |
12+50      1.9447     3.54  | Q       |  V      |         |         |
12+55      1.9693     3.57  | Q       |  V      |         |         |
13+ 0      1.9941     3.61  | Q       |  V      |         |         |
13+ 5      2.0192     3.64  | Q       |  V      |         |         |
13+10      2.0446     3.68  | Q       |   V     |         |         |
13+15      2.0702     3.72  | Q       |   V     |         |         |
13+20      2.0961     3.76  | Q       |   V     |         |         |
13+25      2.1223     3.80  | Q       |   V     |         |         |
13+30      2.1487     3.84  | Q       |   V     |         |         |
13+35      2.1755     3.89  | Q       |    V    |         |         |
13+40      2.2026     3.94  | Q       |    V    |         |         |
13+45      2.2300     3.98  | Q       |    V    |         |         |
13+50      2.2578     4.04  | Q       |    V    |         |         |
13+55      2.2860     4.09  | Q       |    V    |         |         |
14+ 0      2.3145     4.15  | Q       |     V   |         |         |
14+ 5      2.3435     4.20  | Q       |     V   |         |         |
14+10      2.3729     4.27  | Q       |     V   |         |         |
14+15      2.4028     4.34  | Q       |     V   |         |         |
14+20      2.4332     4.41  | Q       |     V   |         |         |
14+25      2.4641     4.49  | Q       |      V  |         |         |
14+30      2.4956     4.57  | Q       |      V  |         |         |
14+35      2.5276     4.65  | Q       |      V  |         |         |
14+40      2.5603     4.75  | Q       |      V  |         |         |
14+45      2.5937     4.84  | Q       |      V  |         |         |
14+50      2.6278     4.95  | Q       |       V |         |         |
14+55      2.6626     5.06  | Q       |       V |         |         |
15+ 0      2.6984     5.19  | Q       |       V |         |         |
15+ 5      2.7351     5.33  |  Q      |       V |         |         |
15+10      2.7729     5.49  |  Q      |        V|         |         |
15+15      2.8118     5.65  |  Q      |        V|         |         |
15+20      2.8522     5.86  |  Q      |        V|         |         |
15+25      2.8923     5.83  |  Q      |        V|         |         |
15+30      2.9247     4.71  | Q       |         V         |         |
15+35      2.9522     3.99  | Q       |         V         |         |
15+40      2.9796     3.99  | Q       |         V         |         |
15+45      3.0087     4.22  | Q       |         V         |         |
15+50      3.0417     4.79  | Q       |         |V        |         |
15+55      3.0810     5.70  |  Q      |         |V        |         |
16+ 0      3.1339     7.68  |   Q     |         |V        |         |
16+ 5      3.2647    19.00  |         Q         | V       |         |
16+10      3.6822    60.62  |         |         |    V    |   Q     |
16+15      3.9923    45.02  |         |         |    Q V  |         |
16+20      4.1326    20.37  |         |Q        |       V |         |
16+25      4.2218    12.96  |       Q |         |         V|         |
16+30      4.2882     9.64  |     Q   |         |         V|         |
16+35      4.3389     7.37  |   Q     |         |         V|         |
```

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16+40       4.3834      6.46  |  Q       |          |          V          |
16+45       4.4251      6.06  |  Q       |          |          V          |
16+50       4.4637      5.61  |  Q       |          |          V          |
16+55       4.4988      5.10  | Q        |          |          |V         |
17+ 0       4.5317      4.78  | Q        |          |          |V         |
17+ 5       4.5634      4.60  | Q        |          |          |V         |
17+10       4.5940      4.44  | Q        |          |          |V         |
17+15       4.6237      4.30  | Q        |          |          |V         |
17+20       4.6524      4.17  | Q        |          |          | V        |
17+25       4.6804      4.06  | Q        |          |          | V        |
17+30       4.7076      3.96  | Q        |          |          | V        |
17+35       4.7342      3.86  | Q        |          |          | V        |
17+40       4.7602      3.78  | Q        |          |          | V        |
17+45       4.7857      3.70  | Q        |          |          |  V       |
17+50       4.8106      3.62  | Q        |          |          |  V       |
17+55       4.8351      3.55  | Q        |          |          |  V       |
18+ 0       4.8591      3.49  |Q         |          |          |  V       |
18+ 5       4.8824      3.38  |Q         |          |          |  V       |
18+10       4.9034      3.05  |Q         |          |          |  V       |
18+15       4.9227      2.80  |Q         |          |          |   V      |
18+20       4.9411      2.67  |Q         |          |          |   V      |
18+25       4.9589      2.58  |Q         |          |          |   V      |
18+30       4.9762      2.51  |Q         |          |          |   V      |
18+35       4.9932      2.46  |Q         |          |          |   V      |
18+40       5.0098      2.41  |Q         |          |          |   V      |
18+45       5.0261      2.37  |Q         |          |          |   V      |
18+50       5.0422      2.33  |Q         |          |          |   V      |
18+55       5.0580      2.29  |Q         |          |          |   V      |
19+ 0       5.0735      2.26  |Q         |          |          |    V     |
19+ 5       5.0889      2.23  |Q         |          |          |    V     |
19+10       5.1040      2.19  |Q         |          |          |    V     |
19+15       5.1189      2.16  |Q         |          |          |    V     |
19+20       5.1336      2.13  |Q         |          |          |    V     |
19+25       5.1481      2.11  |Q         |          |          |    V     |
19+30       5.1624      2.08  |Q         |          |          |    V     |
19+35       5.1765      2.05  |Q         |          |          |    V     |
19+40       5.1905      2.03  |Q         |          |          |    V     |
19+45       5.2043      2.00  |Q         |          |          |    V     |
19+50       5.2179      1.98  |Q         |          |          |     V    |
19+55       5.2314      1.96  |Q         |          |          |     V    |
20+ 0       5.2447      1.94  |Q         |          |          |     V    |
20+ 5       5.2579      1.91  |Q         |          |          |     V    |
20+10       5.2709      1.89  |Q         |          |          |     V    |
20+15       5.2838      1.87  |Q         |          |          |     V    |
20+20       5.2966      1.86  |Q         |          |          |     V    |
20+25       5.3093      1.84  |Q         |          |          |     V    |
20+30       5.3218      1.82  |Q         |          |          |     V    |
20+35       5.3342      1.80  |Q         |          |          |     V    |
20+40       5.3465      1.78  |Q         |          |          |     V    |
20+45       5.3586      1.77  |Q         |          |          |      V   |
20+50       5.3707      1.75  |Q         |          |          |      V   |
20+55       5.3827      1.74  Q          |          |          |      V   |
21+ 0       5.3945      1.72  Q          |          |          |      V   |
21+ 5       5.4063      1.71  Q          |          |          |      V   |
21+10       5.4179      1.69  Q          |          |          |      V   |
21+15       5.4295      1.68  Q          |          |          |      V   |
21+20       5.4409      1.66  Q          |          |          |      V   |
21+25       5.4523      1.65  Q          |          |          |      V   |
21+30       5.4635      1.64  Q          |          |          |      V   |
21+35       5.4747      1.62  Q          |          |          |      V   |
21+40       5.4858      1.61  Q          |          |          |      V   |
21+45       5.4968      1.60  Q          |          |          |       V  |
21+50       5.5078      1.59  Q          |          |          |       V  |
21+55       5.5186      1.58  Q          |          |          |       V  |
22+ 0       5.5294      1.56  Q          |          |          |       V  |
22+ 5       5.5401      1.55  Q          |          |          |       V  |
22+10       5.5507      1.54  Q          |          |          |       V  |
22+15       5.5613      1.53  Q          |          |          |       V  |
22+20       5.5717      1.52  Q          |          |          |       V  |
22+25       5.5821      1.51  Q          |          |          |       V  |
22+30       5.5925      1.50  Q          |          |          |       V  |
```

```
   22+35       5.6027      1.49  Q         |         |         |       V |
   22+40       5.6129      1.48  Q         |         |         |       V |
   22+45       5.6231      1.47  Q         |         |         |       V |
   22+50       5.6331      1.46  Q         |         |         |       V |
   22+55       5.6431      1.45  Q         |         |         |        V|
   23+ 0       5.6531      1.44  Q         |         |         |        V|
   23+ 5       5.6630      1.44  Q         |         |         |        V|
   23+10       5.6728      1.43  Q         |         |         |        V|
   23+15       5.6826      1.42  Q         |         |         |        V|
   23+20       5.6923      1.41  Q         |         |         |        V|
   23+25       5.7019      1.40  Q         |         |         |        V|
   23+30       5.7115      1.39  Q         |         |         |        V|
   23+35       5.7211      1.39  Q         |         |         |        V|
   23+40       5.7305      1.38  Q         |         |         |        V|
   23+45       5.7400      1.37  Q         |         |         |        V|
   23+50       5.7494      1.36  Q         |         |         |        V|
   23+55       5.7587      1.36  Q         |         |         |        V|
   24+ 0       5.7680      1.35  Q         |         |         |        V|
   24+ 5       5.7766      1.25  Q         |         |         |        V|
   24+10       5.7814      0.70  Q         |         |         |        V|
   24+15       5.7835      0.31  Q         |         |         |        V|
   24+20       5.7846      0.16  Q         |         |         |        V|
   24+25       5.7852      0.08  Q         |         |         |        V|
   24+30       5.7854      0.04  Q         |         |         |        V|
   24+35       5.7856      0.02  Q         |         |         |        V|
   24+40       5.7856      0.01  Q         |         |         |        V|
   24+45       5.7857      0.01  Q         |         |         |        V|
   24+50       5.7857      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'A' – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
5 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            43.08           1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            43.08           6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            43.08          24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            43.08           1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            43.08           6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            43.08          24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 36.7      20.4         43.08      1.000     1.000    0.610    0.610

Area-averaged adjusted loss rate Fm (In/Hr) =  0.610

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 26.28 | 0.610 | 36.7 | 20.4 | 29.37 | 0.000 |
| 16.80 | 0.390 | 98.0 | 98.0 | 0.20 | 0.959 |

Area-averaged catchment yield fraction, Y = 0.374
Area-averaged low loss fraction, Yb = 0.626
User entry of time of concentration = 0.150 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 43.08(Ac.)
Catchment Lag time = 0.120 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 69.4444
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.610(In/Hr)
Average low loss rate fraction (Yb) = 0.626 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 43.08(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.402(In)
30-minute factor = 0.998 Adjusted rainfall = 0.689(In)
1-hour factor = 0.998 Adjusted rainfall = 0.848(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.873(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 521.00 (CFS)) | |
| 1 | 7.065 | 36.808 |
| 2 | 47.670 | 211.553 |
| 3 | 76.988 | 152.744 |
| 4 | 87.984 | 57.293 |
| 5 | 94.086 | 31.790 |
| 6 | 97.295 | 16.719 |
| 7 | 98.498 | 6.265 |
| 8 | 99.120 | 3.241 |
| 9 | 99.604 | 2.523 |
| 10 | 99.910 | 1.595 |
| 11 | 100.000 | 0.467 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4023 | 0.4023 |
| 2 | 0.4953 | 0.0930 |
| 3 | 0.5593 | 0.0641 |
| 4 | 0.6097 | 0.0504 |
| 5 | 0.6520 | 0.0422 |
| 6 | 0.6886 | 0.0367 |
| 7 | 0.7212 | 0.0326 |
| 8 | 0.7507 | 0.0295 |
| 9 | 0.7777 | 0.0270 |
| 10 | 0.8026 | 0.0250 |
| 11 | 0.8259 | 0.0233 |
| 12 | 0.8478 | 0.0218 |
| 13 | 0.8911 | 0.0433 |
| 14 | 0.9332 | 0.0421 |

| | | |
|---|---|---|
| 15 | 0.9742 | 0.0410 |
| 16 | 1.0141 | 0.0400 |
| 17 | 1.0532 | 0.0390 |
| 18 | 1.0913 | 0.0382 |
| 19 | 1.1287 | 0.0374 |
| 20 | 1.1653 | 0.0366 |
| 21 | 1.2013 | 0.0360 |
| 22 | 1.2366 | 0.0353 |
| 23 | 1.2713 | 0.0347 |
| 24 | 1.3055 | 0.0341 |
| 25 | 1.3391 | 0.0336 |
| 26 | 1.3722 | 0.0331 |
| 27 | 1.4048 | 0.0326 |
| 28 | 1.4370 | 0.0322 |
| 29 | 1.4688 | 0.0318 |
| 30 | 1.5001 | 0.0313 |
| 31 | 1.5311 | 0.0310 |
| 32 | 1.5616 | 0.0306 |
| 33 | 1.5919 | 0.0302 |
| 34 | 1.6217 | 0.0299 |
| 35 | 1.6513 | 0.0295 |
| 36 | 1.6805 | 0.0292 |
| 37 | 1.7094 | 0.0289 |
| 38 | 1.7379 | 0.0286 |
| 39 | 1.7662 | 0.0283 |
| 40 | 1.7942 | 0.0280 |
| 41 | 1.8219 | 0.0277 |
| 42 | 1.8494 | 0.0275 |
| 43 | 1.8767 | 0.0272 |
| 44 | 1.9037 | 0.0270 |
| 45 | 1.9304 | 0.0268 |
| 46 | 1.9570 | 0.0265 |
| 47 | 1.9833 | 0.0263 |
| 48 | 2.0094 | 0.0261 |
| 49 | 2.0354 | 0.0259 |
| 50 | 2.0611 | 0.0257 |
| 51 | 2.0866 | 0.0255 |
| 52 | 2.1119 | 0.0253 |
| 53 | 2.1371 | 0.0251 |
| 54 | 2.1620 | 0.0250 |
| 55 | 2.1868 | 0.0248 |
| 56 | 2.2114 | 0.0246 |
| 57 | 2.2359 | 0.0245 |
| 58 | 2.2602 | 0.0243 |
| 59 | 2.2843 | 0.0241 |
| 60 | 2.3083 | 0.0240 |
| 61 | 2.3321 | 0.0238 |
| 62 | 2.3558 | 0.0237 |
| 63 | 2.3794 | 0.0235 |
| 64 | 2.4028 | 0.0234 |
| 65 | 2.4260 | 0.0233 |
| 66 | 2.4491 | 0.0231 |
| 67 | 2.4721 | 0.0230 |
| 68 | 2.4950 | 0.0229 |
| 69 | 2.5177 | 0.0227 |
| 70 | 2.5404 | 0.0226 |
| 71 | 2.5628 | 0.0225 |
| 72 | 2.5852 | 0.0224 |
| 73 | 2.6064 | 0.0212 |
| 74 | 2.6275 | 0.0211 |
| 75 | 2.6484 | 0.0210 |
| 76 | 2.6693 | 0.0208 |
| 77 | 2.6900 | 0.0207 |
| 78 | 2.7107 | 0.0206 |
| 79 | 2.7312 | 0.0205 |
| 80 | 2.7516 | 0.0204 |
| 81 | 2.7719 | 0.0203 |
| 82 | 2.7921 | 0.0202 |
| 83 | 2.8122 | 0.0201 |
| 84 | 2.8322 | 0.0200 |
| 85 | 2.8521 | 0.0199 |

| | | |
|---|---|---|
| 86 | 2.8719 | 0.0198 |
| 87 | 2.8917 | 0.0197 |
| 88 | 2.9113 | 0.0196 |
| 89 | 2.9308 | 0.0195 |
| 90 | 2.9503 | 0.0194 |
| 91 | 2.9696 | 0.0194 |
| 92 | 2.9889 | 0.0193 |
| 93 | 3.0081 | 0.0192 |
| 94 | 3.0272 | 0.0191 |
| 95 | 3.0462 | 0.0190 |
| 96 | 3.0652 | 0.0189 |
| 97 | 3.0840 | 0.0189 |
| 98 | 3.1028 | 0.0188 |
| 99 | 3.1215 | 0.0187 |
| 100 | 3.1402 | 0.0186 |
| 101 | 3.1587 | 0.0186 |
| 102 | 3.1772 | 0.0185 |
| 103 | 3.1956 | 0.0184 |
| 104 | 3.2139 | 0.0183 |
| 105 | 3.2322 | 0.0183 |
| 106 | 3.2504 | 0.0182 |
| 107 | 3.2685 | 0.0181 |
| 108 | 3.2865 | 0.0180 |
| 109 | 3.3045 | 0.0180 |
| 110 | 3.3224 | 0.0179 |
| 111 | 3.3403 | 0.0178 |
| 112 | 3.3580 | 0.0178 |
| 113 | 3.3758 | 0.0177 |
| 114 | 3.3934 | 0.0177 |
| 115 | 3.4110 | 0.0176 |
| 116 | 3.4285 | 0.0175 |
| 117 | 3.4460 | 0.0175 |
| 118 | 3.4634 | 0.0174 |
| 119 | 3.4807 | 0.0173 |
| 120 | 3.4980 | 0.0173 |
| 121 | 3.5153 | 0.0172 |
| 122 | 3.5324 | 0.0172 |
| 123 | 3.5495 | 0.0171 |
| 124 | 3.5666 | 0.0171 |
| 125 | 3.5836 | 0.0170 |
| 126 | 3.6005 | 0.0169 |
| 127 | 3.6174 | 0.0169 |
| 128 | 3.6343 | 0.0168 |
| 129 | 3.6510 | 0.0168 |
| 130 | 3.6678 | 0.0167 |
| 131 | 3.6844 | 0.0167 |
| 132 | 3.7011 | 0.0166 |
| 133 | 3.7176 | 0.0166 |
| 134 | 3.7342 | 0.0165 |
| 135 | 3.7506 | 0.0165 |
| 136 | 3.7670 | 0.0164 |
| 137 | 3.7834 | 0.0164 |
| 138 | 3.7997 | 0.0163 |
| 139 | 3.8160 | 0.0163 |
| 140 | 3.8322 | 0.0162 |
| 141 | 3.8484 | 0.0162 |
| 142 | 3.8646 | 0.0161 |
| 143 | 3.8806 | 0.0161 |
| 144 | 3.8967 | 0.0160 |
| 145 | 3.9127 | 0.0160 |
| 146 | 3.9286 | 0.0160 |
| 147 | 3.9445 | 0.0159 |
| 148 | 3.9604 | 0.0159 |
| 149 | 3.9762 | 0.0158 |
| 150 | 3.9920 | 0.0158 |
| 151 | 4.0077 | 0.0157 |
| 152 | 4.0234 | 0.0157 |
| 153 | 4.0391 | 0.0156 |
| 154 | 4.0547 | 0.0156 |
| 155 | 4.0702 | 0.0156 |
| 156 | 4.0858 | 0.0155 |

| | | |
|---|---|---|
| 157 | 4.1013 | 0.0155 |
| 158 | 4.1167 | 0.0154 |
| 159 | 4.1321 | 0.0154 |
| 160 | 4.1475 | 0.0154 |
| 161 | 4.1628 | 0.0153 |
| 162 | 4.1781 | 0.0153 |
| 163 | 4.1933 | 0.0152 |
| 164 | 4.2085 | 0.0152 |
| 165 | 4.2237 | 0.0152 |
| 166 | 4.2388 | 0.0151 |
| 167 | 4.2539 | 0.0151 |
| 168 | 4.2690 | 0.0151 |
| 169 | 4.2840 | 0.0150 |
| 170 | 4.2990 | 0.0150 |
| 171 | 4.3140 | 0.0150 |
| 172 | 4.3289 | 0.0149 |
| 173 | 4.3438 | 0.0149 |
| 174 | 4.3586 | 0.0148 |
| 175 | 4.3734 | 0.0148 |
| 176 | 4.3882 | 0.0148 |
| 177 | 4.4029 | 0.0147 |
| 178 | 4.4176 | 0.0147 |
| 179 | 4.4323 | 0.0147 |
| 180 | 4.4470 | 0.0146 |
| 181 | 4.4616 | 0.0146 |
| 182 | 4.4761 | 0.0146 |
| 183 | 4.4907 | 0.0145 |
| 184 | 4.5052 | 0.0145 |
| 185 | 4.5197 | 0.0145 |
| 186 | 4.5341 | 0.0144 |
| 187 | 4.5485 | 0.0144 |
| 188 | 4.5629 | 0.0144 |
| 189 | 4.5773 | 0.0144 |
| 190 | 4.5916 | 0.0143 |
| 191 | 4.6059 | 0.0143 |
| 192 | 4.6201 | 0.0143 |
| 193 | 4.6344 | 0.0142 |
| 194 | 4.6486 | 0.0142 |
| 195 | 4.6627 | 0.0142 |
| 196 | 4.6769 | 0.0141 |
| 197 | 4.6910 | 0.0141 |
| 198 | 4.7051 | 0.0141 |
| 199 | 4.7191 | 0.0141 |
| 200 | 4.7331 | 0.0140 |
| 201 | 4.7471 | 0.0140 |
| 202 | 4.7611 | 0.0140 |
| 203 | 4.7750 | 0.0139 |
| 204 | 4.7890 | 0.0139 |
| 205 | 4.8028 | 0.0139 |
| 206 | 4.8167 | 0.0139 |
| 207 | 4.8305 | 0.0138 |
| 208 | 4.8443 | 0.0138 |
| 209 | 4.8581 | 0.0138 |
| 210 | 4.8718 | 0.0137 |
| 211 | 4.8856 | 0.0137 |
| 212 | 4.8993 | 0.0137 |
| 213 | 4.9129 | 0.0137 |
| 214 | 4.9266 | 0.0136 |
| 215 | 4.9402 | 0.0136 |
| 216 | 4.9538 | 0.0136 |
| 217 | 4.9673 | 0.0136 |
| 218 | 4.9809 | 0.0135 |
| 219 | 4.9944 | 0.0135 |
| 220 | 5.0079 | 0.0135 |
| 221 | 5.0213 | 0.0135 |
| 222 | 5.0348 | 0.0134 |
| 223 | 5.0482 | 0.0134 |
| 224 | 5.0616 | 0.0134 |
| 225 | 5.0749 | 0.0134 |
| 226 | 5.0883 | 0.0133 |
| 227 | 5.1016 | 0.0133 |

| | | |
|---|---|---|
| 228 | 5.1149 | 0.0133 |
| 229 | 5.1282 | 0.0133 |
| 230 | 5.1414 | 0.0132 |
| 231 | 5.1546 | 0.0132 |
| 232 | 5.1678 | 0.0132 |
| 233 | 5.1810 | 0.0132 |
| 234 | 5.1941 | 0.0132 |
| 235 | 5.2073 | 0.0131 |
| 236 | 5.2204 | 0.0131 |
| 237 | 5.2335 | 0.0131 |
| 238 | 5.2465 | 0.0131 |
| 239 | 5.2596 | 0.0130 |
| 240 | 5.2726 | 0.0130 |
| 241 | 5.2856 | 0.0130 |
| 242 | 5.2985 | 0.0130 |
| 243 | 5.3115 | 0.0130 |
| 244 | 5.3244 | 0.0129 |
| 245 | 5.3373 | 0.0129 |
| 246 | 5.3502 | 0.0129 |
| 247 | 5.3631 | 0.0129 |
| 248 | 5.3759 | 0.0128 |
| 249 | 5.3887 | 0.0128 |
| 250 | 5.4015 | 0.0128 |
| 251 | 5.4143 | 0.0128 |
| 252 | 5.4271 | 0.0128 |
| 253 | 5.4398 | 0.0127 |
| 254 | 5.4525 | 0.0127 |
| 255 | 5.4652 | 0.0127 |
| 256 | 5.4779 | 0.0127 |
| 257 | 5.4906 | 0.0127 |
| 258 | 5.5032 | 0.0126 |
| 259 | 5.5158 | 0.0126 |
| 260 | 5.5284 | 0.0126 |
| 261 | 5.5410 | 0.0126 |
| 262 | 5.5536 | 0.0126 |
| 263 | 5.5661 | 0.0125 |
| 264 | 5.5786 | 0.0125 |
| 265 | 5.5911 | 0.0125 |
| 266 | 5.6036 | 0.0125 |
| 267 | 5.6160 | 0.0125 |
| 268 | 5.6285 | 0.0124 |
| 269 | 5.6409 | 0.0124 |
| 270 | 5.6533 | 0.0124 |
| 271 | 5.6657 | 0.0124 |
| 272 | 5.6781 | 0.0124 |
| 273 | 5.6904 | 0.0123 |
| 274 | 5.7027 | 0.0123 |
| 275 | 5.7151 | 0.0123 |
| 276 | 5.7274 | 0.0123 |
| 277 | 5.7396 | 0.0123 |
| 278 | 5.7519 | 0.0123 |
| 279 | 5.7641 | 0.0122 |
| 280 | 5.7763 | 0.0122 |
| 281 | 5.7885 | 0.0122 |
| 282 | 5.8007 | 0.0122 |
| 283 | 5.8129 | 0.0122 |
| 284 | 5.8250 | 0.0122 |
| 285 | 5.8372 | 0.0121 |
| 286 | 5.8493 | 0.0121 |
| 287 | 5.8614 | 0.0121 |
| 288 | 5.8735 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0076 | 0.0045 |
| 2 | 0.0121 | 0.0076 | 0.0045 |
| 3 | 0.0121 | 0.0076 | 0.0045 |
| 4 | 0.0122 | 0.0076 | 0.0045 |
| 5 | 0.0122 | 0.0076 | 0.0046 |

| | | | |
|---|---|---|---|
| 6 | 0.0122 | 0.0076 | 0.0046 |
| 7 | 0.0122 | 0.0077 | 0.0046 |
| 8 | 0.0123 | 0.0077 | 0.0046 |
| 9 | 0.0123 | 0.0077 | 0.0046 |
| 10 | 0.0123 | 0.0077 | 0.0046 |
| 11 | 0.0123 | 0.0077 | 0.0046 |
| 12 | 0.0124 | 0.0077 | 0.0046 |
| 13 | 0.0124 | 0.0078 | 0.0046 |
| 14 | 0.0124 | 0.0078 | 0.0046 |
| 15 | 0.0125 | 0.0078 | 0.0047 |
| 16 | 0.0125 | 0.0078 | 0.0047 |
| 17 | 0.0125 | 0.0078 | 0.0047 |
| 18 | 0.0125 | 0.0078 | 0.0047 |
| 19 | 0.0126 | 0.0079 | 0.0047 |
| 20 | 0.0126 | 0.0079 | 0.0047 |
| 21 | 0.0126 | 0.0079 | 0.0047 |
| 22 | 0.0127 | 0.0079 | 0.0047 |
| 23 | 0.0127 | 0.0079 | 0.0048 |
| 24 | 0.0127 | 0.0080 | 0.0048 |
| 25 | 0.0128 | 0.0080 | 0.0048 |
| 26 | 0.0128 | 0.0080 | 0.0048 |
| 27 | 0.0128 | 0.0080 | 0.0048 |
| 28 | 0.0128 | 0.0080 | 0.0048 |
| 29 | 0.0129 | 0.0081 | 0.0048 |
| 30 | 0.0129 | 0.0081 | 0.0048 |
| 31 | 0.0130 | 0.0081 | 0.0048 |
| 32 | 0.0130 | 0.0081 | 0.0049 |
| 33 | 0.0130 | 0.0081 | 0.0049 |
| 34 | 0.0130 | 0.0082 | 0.0049 |
| 35 | 0.0131 | 0.0082 | 0.0049 |
| 36 | 0.0131 | 0.0082 | 0.0049 |
| 37 | 0.0132 | 0.0082 | 0.0049 |
| 38 | 0.0132 | 0.0082 | 0.0049 |
| 39 | 0.0132 | 0.0083 | 0.0049 |
| 40 | 0.0132 | 0.0083 | 0.0050 |
| 41 | 0.0133 | 0.0083 | 0.0050 |
| 42 | 0.0133 | 0.0083 | 0.0050 |
| 43 | 0.0134 | 0.0084 | 0.0050 |
| 44 | 0.0134 | 0.0084 | 0.0050 |
| 45 | 0.0134 | 0.0084 | 0.0050 |
| 46 | 0.0135 | 0.0084 | 0.0050 |
| 47 | 0.0135 | 0.0085 | 0.0051 |
| 48 | 0.0135 | 0.0085 | 0.0051 |
| 49 | 0.0136 | 0.0085 | 0.0051 |
| 50 | 0.0136 | 0.0085 | 0.0051 |
| 51 | 0.0137 | 0.0086 | 0.0051 |
| 52 | 0.0137 | 0.0086 | 0.0051 |
| 53 | 0.0137 | 0.0086 | 0.0051 |
| 54 | 0.0138 | 0.0086 | 0.0052 |
| 55 | 0.0138 | 0.0087 | 0.0052 |
| 56 | 0.0139 | 0.0087 | 0.0052 |
| 57 | 0.0139 | 0.0087 | 0.0052 |
| 58 | 0.0139 | 0.0087 | 0.0052 |
| 59 | 0.0140 | 0.0088 | 0.0052 |
| 60 | 0.0140 | 0.0088 | 0.0052 |
| 61 | 0.0141 | 0.0088 | 0.0053 |
| 62 | 0.0141 | 0.0088 | 0.0053 |
| 63 | 0.0142 | 0.0089 | 0.0053 |
| 64 | 0.0142 | 0.0089 | 0.0053 |
| 65 | 0.0143 | 0.0089 | 0.0053 |
| 66 | 0.0143 | 0.0089 | 0.0053 |
| 67 | 0.0144 | 0.0090 | 0.0054 |
| 68 | 0.0144 | 0.0090 | 0.0054 |
| 69 | 0.0144 | 0.0090 | 0.0054 |
| 70 | 0.0145 | 0.0091 | 0.0054 |
| 71 | 0.0145 | 0.0091 | 0.0054 |
| 72 | 0.0146 | 0.0091 | 0.0055 |
| 73 | 0.0146 | 0.0092 | 0.0055 |
| 74 | 0.0147 | 0.0092 | 0.0055 |
| 75 | 0.0147 | 0.0092 | 0.0055 |
| 76 | 0.0148 | 0.0092 | 0.0055 |

| | | | |
|---|---|---|---|
| 77 | 0.0148 | 0.0093 | 0.0056 |
| 78 | 0.0149 | 0.0093 | 0.0056 |
| 79 | 0.0150 | 0.0094 | 0.0056 |
| 80 | 0.0150 | 0.0094 | 0.0056 |
| 81 | 0.0151 | 0.0094 | 0.0056 |
| 82 | 0.0151 | 0.0094 | 0.0056 |
| 83 | 0.0152 | 0.0095 | 0.0057 |
| 84 | 0.0152 | 0.0095 | 0.0057 |
| 85 | 0.0153 | 0.0096 | 0.0057 |
| 86 | 0.0153 | 0.0096 | 0.0057 |
| 87 | 0.0154 | 0.0096 | 0.0058 |
| 88 | 0.0154 | 0.0097 | 0.0058 |
| 89 | 0.0155 | 0.0097 | 0.0058 |
| 90 | 0.0156 | 0.0097 | 0.0058 |
| 91 | 0.0156 | 0.0098 | 0.0059 |
| 92 | 0.0157 | 0.0098 | 0.0059 |
| 93 | 0.0158 | 0.0099 | 0.0059 |
| 94 | 0.0158 | 0.0099 | 0.0059 |
| 95 | 0.0159 | 0.0100 | 0.0060 |
| 96 | 0.0160 | 0.0100 | 0.0060 |
| 97 | 0.0160 | 0.0100 | 0.0060 |
| 98 | 0.0161 | 0.0101 | 0.0060 |
| 99 | 0.0162 | 0.0101 | 0.0061 |
| 100 | 0.0162 | 0.0102 | 0.0061 |
| 101 | 0.0163 | 0.0102 | 0.0061 |
| 102 | 0.0164 | 0.0102 | 0.0061 |
| 103 | 0.0165 | 0.0103 | 0.0062 |
| 104 | 0.0165 | 0.0103 | 0.0062 |
| 105 | 0.0166 | 0.0104 | 0.0062 |
| 106 | 0.0167 | 0.0104 | 0.0062 |
| 107 | 0.0168 | 0.0105 | 0.0063 |
| 108 | 0.0168 | 0.0105 | 0.0063 |
| 109 | 0.0169 | 0.0106 | 0.0063 |
| 110 | 0.0170 | 0.0106 | 0.0064 |
| 111 | 0.0171 | 0.0107 | 0.0064 |
| 112 | 0.0172 | 0.0107 | 0.0064 |
| 113 | 0.0173 | 0.0108 | 0.0065 |
| 114 | 0.0173 | 0.0109 | 0.0065 |
| 115 | 0.0175 | 0.0109 | 0.0065 |
| 116 | 0.0175 | 0.0110 | 0.0066 |
| 117 | 0.0177 | 0.0110 | 0.0066 |
| 118 | 0.0177 | 0.0111 | 0.0066 |
| 119 | 0.0178 | 0.0112 | 0.0067 |
| 120 | 0.0179 | 0.0112 | 0.0067 |
| 121 | 0.0180 | 0.0113 | 0.0068 |
| 122 | 0.0181 | 0.0113 | 0.0068 |
| 123 | 0.0183 | 0.0114 | 0.0068 |
| 124 | 0.0183 | 0.0115 | 0.0069 |
| 125 | 0.0185 | 0.0116 | 0.0069 |
| 126 | 0.0186 | 0.0116 | 0.0069 |
| 127 | 0.0187 | 0.0117 | 0.0070 |
| 128 | 0.0188 | 0.0118 | 0.0070 |
| 129 | 0.0189 | 0.0119 | 0.0071 |
| 130 | 0.0190 | 0.0119 | 0.0071 |
| 131 | 0.0192 | 0.0120 | 0.0072 |
| 132 | 0.0193 | 0.0121 | 0.0072 |
| 133 | 0.0194 | 0.0122 | 0.0073 |
| 134 | 0.0195 | 0.0122 | 0.0073 |
| 135 | 0.0197 | 0.0123 | 0.0074 |
| 136 | 0.0198 | 0.0124 | 0.0074 |
| 137 | 0.0200 | 0.0125 | 0.0075 |
| 138 | 0.0201 | 0.0126 | 0.0075 |
| 139 | 0.0203 | 0.0127 | 0.0076 |
| 140 | 0.0204 | 0.0128 | 0.0076 |
| 141 | 0.0206 | 0.0129 | 0.0077 |
| 142 | 0.0207 | 0.0130 | 0.0078 |
| 143 | 0.0210 | 0.0131 | 0.0078 |
| 144 | 0.0211 | 0.0132 | 0.0079 |
| 145 | 0.0224 | 0.0140 | 0.0084 |
| 146 | 0.0225 | 0.0141 | 0.0084 |
| 147 | 0.0227 | 0.0142 | 0.0085 |

| | | | |
|---|---|---|---|
| 148 | 0.0229 | 0.0143 | 0.0086 |
| 149 | 0.0231 | 0.0145 | 0.0087 |
| 150 | 0.0233 | 0.0146 | 0.0087 |
| 151 | 0.0235 | 0.0147 | 0.0088 |
| 152 | 0.0237 | 0.0148 | 0.0089 |
| 153 | 0.0240 | 0.0150 | 0.0090 |
| 154 | 0.0241 | 0.0151 | 0.0090 |
| 155 | 0.0245 | 0.0153 | 0.0092 |
| 156 | 0.0246 | 0.0154 | 0.0092 |
| 157 | 0.0250 | 0.0156 | 0.0093 |
| 158 | 0.0251 | 0.0157 | 0.0094 |
| 159 | 0.0255 | 0.0160 | 0.0095 |
| 160 | 0.0257 | 0.0161 | 0.0096 |
| 161 | 0.0261 | 0.0163 | 0.0098 |
| 162 | 0.0263 | 0.0165 | 0.0099 |
| 163 | 0.0268 | 0.0168 | 0.0100 |
| 164 | 0.0270 | 0.0169 | 0.0101 |
| 165 | 0.0275 | 0.0172 | 0.0103 |
| 166 | 0.0277 | 0.0174 | 0.0104 |
| 167 | 0.0283 | 0.0177 | 0.0106 |
| 168 | 0.0286 | 0.0179 | 0.0107 |
| 169 | 0.0292 | 0.0183 | 0.0109 |
| 170 | 0.0295 | 0.0185 | 0.0111 |
| 171 | 0.0302 | 0.0189 | 0.0113 |
| 172 | 0.0306 | 0.0191 | 0.0114 |
| 173 | 0.0313 | 0.0196 | 0.0117 |
| 174 | 0.0318 | 0.0199 | 0.0119 |
| 175 | 0.0326 | 0.0204 | 0.0122 |
| 176 | 0.0331 | 0.0207 | 0.0124 |
| 177 | 0.0341 | 0.0214 | 0.0128 |
| 178 | 0.0347 | 0.0217 | 0.0130 |
| 179 | 0.0360 | 0.0225 | 0.0135 |
| 180 | 0.0366 | 0.0229 | 0.0137 |
| 181 | 0.0382 | 0.0239 | 0.0143 |
| 182 | 0.0390 | 0.0244 | 0.0146 |
| 183 | 0.0410 | 0.0256 | 0.0153 |
| 184 | 0.0421 | 0.0263 | 0.0158 |
| 185 | 0.0218 | 0.0137 | 0.0082 |
| 186 | 0.0233 | 0.0146 | 0.0087 |
| 187 | 0.0270 | 0.0169 | 0.0101 |
| 188 | 0.0295 | 0.0184 | 0.0110 |
| 189 | 0.0367 | 0.0229 | 0.0137 |
| 190 | 0.0422 | 0.0264 | 0.0158 |
| 191 | 0.0641 | 0.0401 | 0.0240 |
| 192 | 0.0930 | 0.0508 | 0.0422 |
| 193 | 0.4023 | 0.0508 | 0.3514 |
| 194 | 0.0504 | 0.0316 | 0.0189 |
| 195 | 0.0326 | 0.0204 | 0.0122 |
| 196 | 0.0250 | 0.0156 | 0.0093 |
| 197 | 0.0433 | 0.0271 | 0.0162 |
| 198 | 0.0400 | 0.0250 | 0.0150 |
| 199 | 0.0374 | 0.0234 | 0.0140 |
| 200 | 0.0353 | 0.0221 | 0.0132 |
| 201 | 0.0336 | 0.0210 | 0.0126 |
| 202 | 0.0322 | 0.0201 | 0.0120 |
| 203 | 0.0310 | 0.0194 | 0.0116 |
| 204 | 0.0299 | 0.0187 | 0.0112 |
| 205 | 0.0289 | 0.0181 | 0.0108 |
| 206 | 0.0280 | 0.0175 | 0.0105 |
| 207 | 0.0272 | 0.0170 | 0.0102 |
| 208 | 0.0265 | 0.0166 | 0.0099 |
| 209 | 0.0259 | 0.0162 | 0.0097 |
| 210 | 0.0253 | 0.0159 | 0.0095 |
| 211 | 0.0248 | 0.0155 | 0.0093 |
| 212 | 0.0243 | 0.0152 | 0.0091 |
| 213 | 0.0238 | 0.0149 | 0.0089 |
| 214 | 0.0234 | 0.0146 | 0.0088 |
| 215 | 0.0230 | 0.0144 | 0.0086 |
| 216 | 0.0226 | 0.0142 | 0.0085 |
| 217 | 0.0212 | 0.0133 | 0.0079 |
| 218 | 0.0208 | 0.0130 | 0.0078 |

| | | | |
|---|---|---|---|
| 219 | 0.0205 | 0.0128 | 0.0077 |
| 220 | 0.0202 | 0.0126 | 0.0076 |
| 221 | 0.0199 | 0.0125 | 0.0075 |
| 222 | 0.0196 | 0.0123 | 0.0073 |
| 223 | 0.0194 | 0.0121 | 0.0072 |
| 224 | 0.0191 | 0.0120 | 0.0071 |
| 225 | 0.0189 | 0.0118 | 0.0071 |
| 226 | 0.0186 | 0.0117 | 0.0070 |
| 227 | 0.0184 | 0.0115 | 0.0069 |
| 228 | 0.0182 | 0.0114 | 0.0068 |
| 229 | 0.0180 | 0.0113 | 0.0067 |
| 230 | 0.0178 | 0.0111 | 0.0067 |
| 231 | 0.0176 | 0.0110 | 0.0066 |
| 232 | 0.0174 | 0.0109 | 0.0065 |
| 233 | 0.0172 | 0.0108 | 0.0064 |
| 234 | 0.0171 | 0.0107 | 0.0064 |
| 235 | 0.0169 | 0.0106 | 0.0063 |
| 236 | 0.0167 | 0.0105 | 0.0063 |
| 237 | 0.0166 | 0.0104 | 0.0062 |
| 238 | 0.0164 | 0.0103 | 0.0061 |
| 239 | 0.0163 | 0.0102 | 0.0061 |
| 240 | 0.0161 | 0.0101 | 0.0060 |
| 241 | 0.0160 | 0.0100 | 0.0060 |
| 242 | 0.0159 | 0.0099 | 0.0059 |
| 243 | 0.0157 | 0.0098 | 0.0059 |
| 244 | 0.0156 | 0.0098 | 0.0058 |
| 245 | 0.0155 | 0.0097 | 0.0058 |
| 246 | 0.0154 | 0.0096 | 0.0057 |
| 247 | 0.0152 | 0.0095 | 0.0057 |
| 248 | 0.0151 | 0.0095 | 0.0057 |
| 249 | 0.0150 | 0.0094 | 0.0056 |
| 250 | 0.0149 | 0.0093 | 0.0056 |
| 251 | 0.0148 | 0.0093 | 0.0055 |
| 252 | 0.0147 | 0.0092 | 0.0055 |
| 253 | 0.0146 | 0.0091 | 0.0055 |
| 254 | 0.0145 | 0.0091 | 0.0054 |
| 255 | 0.0144 | 0.0090 | 0.0054 |
| 256 | 0.0143 | 0.0090 | 0.0054 |
| 257 | 0.0142 | 0.0089 | 0.0053 |
| 258 | 0.0141 | 0.0088 | 0.0053 |
| 259 | 0.0141 | 0.0088 | 0.0053 |
| 260 | 0.0140 | 0.0087 | 0.0052 |
| 261 | 0.0139 | 0.0087 | 0.0052 |
| 262 | 0.0138 | 0.0086 | 0.0052 |
| 263 | 0.0137 | 0.0086 | 0.0051 |
| 264 | 0.0136 | 0.0085 | 0.0051 |
| 265 | 0.0136 | 0.0085 | 0.0051 |
| 266 | 0.0135 | 0.0084 | 0.0050 |
| 267 | 0.0134 | 0.0084 | 0.0050 |
| 268 | 0.0133 | 0.0083 | 0.0050 |
| 269 | 0.0133 | 0.0083 | 0.0050 |
| 270 | 0.0132 | 0.0083 | 0.0049 |
| 271 | 0.0131 | 0.0082 | 0.0049 |
| 272 | 0.0131 | 0.0082 | 0.0049 |
| 273 | 0.0130 | 0.0081 | 0.0049 |
| 274 | 0.0129 | 0.0081 | 0.0048 |
| 275 | 0.0129 | 0.0081 | 0.0048 |
| 276 | 0.0128 | 0.0080 | 0.0048 |
| 277 | 0.0127 | 0.0080 | 0.0048 |
| 278 | 0.0127 | 0.0079 | 0.0047 |
| 279 | 0.0126 | 0.0079 | 0.0047 |
| 280 | 0.0126 | 0.0079 | 0.0047 |
| 281 | 0.0125 | 0.0078 | 0.0047 |
| 282 | 0.0124 | 0.0078 | 0.0047 |
| 283 | 0.0124 | 0.0078 | 0.0046 |
| 284 | 0.0123 | 0.0077 | 0.0046 |
| 285 | 0.0123 | 0.0077 | 0.0046 |
| 286 | 0.0122 | 0.0076 | 0.0046 |
| 287 | 0.0122 | 0.0076 | 0.0046 |
| 288 | 0.0121 | 0.0076 | 0.0045 |

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      ------------------------------------------------------------------
      Total soil rain loss =      3.47(In)
      Total effective rainfall =      2.41(In)
      Peak flow rate in flood hydrograph =     83.73(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       22.5      45.0      67.5      90.0
----------------------------------------------------------------------
  0+ 5       0.0011      0.17  Q         |         |         |         |
  0+10       0.0089      1.12  Q         |         |         |         |
  0+15       0.0214      1.82  Q         |         |         |         |
  0+20       0.0357      2.08  Q         |         |         |         |
  0+25       0.0510      2.23  Q         |         |         |         |
  0+30       0.0669      2.31  VQ        |         |         |         |
  0+35       0.0830      2.34  VQ        |         |         |         |
  0+40       0.0993      2.36  VQ        |         |         |         |
  0+45       0.1156      2.38  VQ        |         |         |         |
  0+50       0.1321      2.39  VQ        |         |         |         |
  0+55       0.1486      2.40  VQ        |         |         |         |
  1+ 0       0.1651      2.40  VQ        |         |         |         |
  1+ 5       0.1817      2.41  VQ        |         |         |         |
  1+10       0.1983      2.41  VQ        |         |         |         |
  1+15       0.2150      2.42  VQ        |         |         |         |
  1+20       0.2317      2.42  |Q        |         |         |         |
  1+25       0.2484      2.43  |Q        |         |         |         |
  1+30       0.2652      2.43  |Q        |         |         |         |
  1+35       0.2820      2.44  |Q        |         |         |         |
  1+40       0.2988      2.45  |Q        |         |         |         |
  1+45       0.3157      2.45  |Q        |         |         |         |
  1+50       0.3326      2.46  |Q        |         |         |         |
  1+55       0.3496      2.46  |Q        |         |         |         |
  2+ 0       0.3666      2.47  |Q        |         |         |         |
  2+ 5       0.3836      2.47  |Q        |         |         |         |
  2+10       0.4007      2.48  |Q        |         |         |         |
  2+15       0.4179      2.49  |Q        |         |         |         |
  2+20       0.4350      2.49  |QV       |         |         |         |
  2+25       0.4522      2.50  |QV       |         |         |         |
  2+30       0.4695      2.51  |QV       |         |         |         |
  2+35       0.4868      2.51  |QV       |         |         |         |
  2+40       0.5041      2.52  |QV       |         |         |         |
  2+45       0.5215      2.52  |QV       |         |         |         |
  2+50       0.5389      2.53  |QV       |         |         |         |
  2+55       0.5564      2.54  |QV       |         |         |         |
  3+ 0       0.5739      2.54  |QV       |         |         |         |
  3+ 5       0.5915      2.55  |QV       |         |         |         |
  3+10       0.6091      2.56  |QV       |         |         |         |
  3+15       0.6268      2.56  |QV       |         |         |         |
  3+20       0.6445      2.57  |QV       |         |         |         |
  3+25       0.6622      2.58  |Q V      |         |         |         |
  3+30       0.6800      2.58  |Q V      |         |         |         |
  3+35       0.6978      2.59  |Q V      |         |         |         |
  3+40       0.7157      2.60  |Q V      |         |         |         |
  3+45       0.7337      2.60  |Q V      |         |         |         |
  3+50       0.7517      2.61  |Q V      |         |         |         |
  3+55       0.7697      2.62  |Q V      |         |         |         |
  4+ 0       0.7878      2.63  |Q V      |         |         |         |
  4+ 5       0.8059      2.63  |Q V      |         |         |         |
  4+10       0.8241      2.64  |Q V      |         |         |         |
  4+15       0.8424      2.65  |Q V      |         |         |         |
  4+20       0.8607      2.66  |Q V      |         |         |         |
  4+25       0.8790      2.66  |Q  V     |         |         |         |
  4+30       0.8974      2.67  |Q  V     |         |         |         |
  4+35       0.9159      2.68  |Q  V     |         |         |         |
  4+40       0.9344      2.69  |Q  V     |         |         |         |
  4+45       0.9529      2.70  |Q  V     |         |         |         |
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 4+50       0.9715      2.70  |Q  V     |          |          |          |
 4+55       0.9902      2.71  |Q  V     |          |          |          |
 5+ 0       1.0090      2.72  |Q  V     |          |          |          |
 5+ 5       1.0277      2.73  |Q  V     |          |          |          |
 5+10       1.0466      2.74  |Q  V     |          |          |          |
 5+15       1.0655      2.74  |Q  V     |          |          |          |
 5+20       1.0844      2.75  |Q   V    |          |          |          |
 5+25       1.1035      2.76  |Q   V    |          |          |          |
 5+30       1.1225      2.77  |Q   V    |          |          |          |
 5+35       1.1417      2.78  |Q   V    |          |          |          |
 5+40       1.1609      2.79  |Q   V    |          |          |          |
 5+45       1.1802      2.80  |Q   V    |          |          |          |
 5+50       1.1995      2.81  |Q   V    |          |          |          |
 5+55       1.2189      2.82  |Q   V    |          |          |          |
 6+ 0       1.2383      2.83  |Q   V    |          |          |          |
 6+ 5       1.2579      2.83  |Q   V    |          |          |          |
 6+10       1.2774      2.84  |Q   V    |          |          |          |
 6+15       1.2971      2.85  |Q    V   |          |          |          |
 6+20       1.3168      2.86  |Q    V   |          |          |          |
 6+25       1.3366      2.87  |Q    V   |          |          |          |
 6+30       1.3565      2.88  |Q    V   |          |          |          |
 6+35       1.3764      2.89  |Q    V   |          |          |          |
 6+40       1.3964      2.90  |Q    V   |          |          |          |
 6+45       1.4165      2.91  |Q    V   |          |          |          |
 6+50       1.4366      2.92  |Q    V   |          |          |          |
 6+55       1.4568      2.94  |Q    V   |          |          |          |
 7+ 0       1.4771      2.95  |Q    V   |          |          |          |
 7+ 5       1.4975      2.96  |Q    V   |          |          |          |
 7+10       1.5179      2.97  |Q     V  |          |          |          |
 7+15       1.5384      2.98  |Q     V  |          |          |          |
 7+20       1.5590      2.99  |Q     V  |          |          |          |
 7+25       1.5797      3.00  |Q     V  |          |          |          |
 7+30       1.6005      3.01  |Q     V  |          |          |          |
 7+35       1.6213      3.03  |Q     V  |          |          |          |
 7+40       1.6422      3.04  |Q     V  |          |          |          |
 7+45       1.6632      3.05  |Q     V  |          |          |          |
 7+50       1.6843      3.06  |Q     V  |          |          |          |
 7+55       1.7055      3.07  |Q     V  |          |          |          |
 8+ 0       1.7268      3.09  |Q      V |          |          |          |
 8+ 5       1.7481      3.10  |Q      V |          |          |          |
 8+10       1.7696      3.11  |Q      V |          |          |          |
 8+15       1.7911      3.13  |Q      V |          |          |          |
 8+20       1.8127      3.14  |Q      V |          |          |          |
 8+25       1.8344      3.15  |Q      V |          |          |          |
 8+30       1.8562      3.17  |Q      V |          |          |          |
 8+35       1.8782      3.18  |Q      V |          |          |          |
 8+40       1.9002      3.20  |Q      V |          |          |          |
 8+45       1.9223      3.21  |Q      V |          |          |          |
 8+50       1.9445      3.23  |Q       V|          |          |          |
 8+55       1.9668      3.24  |Q       V|          |          |          |
 9+ 0       1.9892      3.26  |Q       V|          |          |          |
 9+ 5       2.0117      3.27  |Q       V|          |          |          |
 9+10       2.0344      3.29  |Q       V|          |          |          |
 9+15       2.0571      3.30  |Q       V|          |          |          |
 9+20       2.0800      3.32  |Q       V|          |          |          |
 9+25       2.1029      3.33  |Q       V|          |          |          |
 9+30       2.1260      3.35  |Q       V|          |          |          |
 9+35       2.1492      3.37  |Q       V|          |          |          |
 9+40       2.1725      3.39  |Q        V          |          |          |
 9+45       2.1960      3.40  |Q        V          |          |          |
 9+50       2.2195      3.42  |Q        V          |          |          |
 9+55       2.2432      3.44  |Q        V          |          |          |
10+ 0       2.2671      3.46  |Q        V          |          |          |
10+ 5       2.2910      3.48  |Q        V          |          |          |
10+10       2.3151      3.50  |Q        V          |          |          |
10+15       2.3393      3.52  |Q        V          |          |          |
10+20       2.3637      3.54  |Q        V          |          |          |
10+25       2.3882      3.56  |Q        |V         |          |          |
10+30       2.4128      3.58  |Q        |V         |          |          |
10+35       2.4376      3.60  |Q        |V         |          |          |
10+40       2.4626      3.62  |Q        |V         |          |          |
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10+45       2.4877      3.64  |Q        |V        |         |         |
10+50       2.5130      3.67  |Q        |V        |         |         |
10+55       2.5384      3.69  |Q        |V        |         |         |
11+ 0       2.5640      3.72  |Q        |V        |         |         |
11+ 5       2.5897      3.74  |Q        |V        |         |         |
11+10       2.6156      3.77  |Q        | V       |         |         |
11+15       2.6417      3.79  |Q        | V       |         |         |
11+20       2.6680      3.82  |Q        | V       |         |         |
11+25       2.6945      3.84  |Q        | V       |         |         |
11+30       2.7212      3.87  |Q        | V       |         |         |
11+35       2.7480      3.90  |Q        | V       |         |         |
11+40       2.7751      3.93  |Q        | V       |         |         |
11+45       2.8023      3.96  |Q        | V       |         |         |
11+50       2.8298      3.99  |Q        |  V      |         |         |
11+55       2.8575      4.02  |Q        |  V      |         |         |
12+ 0       2.8854      4.05  |Q        |  V      |         |         |
12+ 5       2.9136      4.10  |Q        |  V      |         |         |
12+10       2.9426      4.22  |Q        |  V      |         |         |
12+15       2.9723      4.31  |Q        |  V      |         |         |
12+20       3.0024      4.37  |Q        |  V      |         |         |
12+25       3.0329      4.42  |Q        |   V     |         |         |
12+30       3.0636      4.46  |Q        |   V     |         |         |
12+35       3.0946      4.50  | Q       |   V     |         |         |
12+40       3.1259      4.55  | Q       |   V     |         |         |
12+45       3.1575      4.59  | Q       |   V     |         |         |
12+50       3.1894      4.63  | Q       |   V     |         |         |
12+55       3.2216      4.67  | Q       |   V     |         |         |
13+ 0       3.2541      4.72  | Q       |    V    |         |         |
13+ 5       3.2869      4.76  | Q       |    V    |         |         |
13+10       3.3200      4.82  | Q       |    V    |         |         |
13+15       3.3535      4.86  | Q       |    V    |         |         |
13+20       3.3874      4.92  | Q       |    V    |         |         |
13+25       3.4216      4.97  | Q       |    V    |         |         |
13+30       3.4563      5.03  | Q       |     V   |         |         |
13+35       3.4913      5.09  | Q       |     V   |         |         |
13+40       3.5268      5.15  | Q       |     V   |         |         |
13+45       3.5627      5.22  | Q       |     V   |         |         |
13+50       3.5991      5.29  | Q       |     V   |         |         |
13+55       3.6360      5.35  | Q       |     V   |         |         |
14+ 0       3.6734      5.43  | Q       |      V  |         |         |
14+ 5       3.7114      5.51  | Q       |      V  |         |         |
14+10       3.7500      5.60  | Q       |      V  |         |         |
14+15       3.7892      5.69  | Q       |      V  |         |         |
14+20       3.8290      5.79  | Q       |      V  |         |         |
14+25       3.8696      5.89  | Q       |      V  |         |         |
14+30       3.9109      6.00  | Q       |       V |         |         |
14+35       3.9529      6.11  | Q       |       V |         |         |
14+40       3.9958      6.23  | Q       |       V |         |         |
14+45       4.0396      6.36  | Q       |       V |         |         |
14+50       4.0844      6.51  | Q       |       V |         |         |
14+55       4.1303      6.65  | Q       |        V|         |         |
15+ 0       4.1773      6.83  |  Q      |        V|         |         |
15+ 5       4.2256      7.01  |  Q      |        V|         |         |
15+10       4.2753      7.22  |  Q      |        V|         |         |
15+15       4.3265      7.44  |  Q      |         V         |         |
15+20       4.3797      7.71  |  Q      |         V         |         |
15+25       4.4325      7.68  |  Q      |         V         |         |
15+30       4.4754      6.23  | Q       |         V         |         |
15+35       4.5119      5.29  | Q       |         V         |         |
15+40       4.5484      5.30  | Q       |         |V        |         |
15+45       4.5870      5.61  | Q       |         |V        |         |
15+50       4.6309      6.37  | Q       |         |V        |         |
15+55       4.6832      7.59  |  Q      |         |V        |         |
16+ 0       4.7554     10.49  |   Q     |         | V       |         |
16+ 5       4.9427     27.18  |         | Q       | V       |         |
16+10       5.5193     83.73  |         |         |    V    |      Q  |
16+15       5.9444     61.73  |         |         |     Q   |         |
16+20       6.1364     27.87  |         | Q       |      V  |         |
16+25       6.2580     17.65  |      Q  |         |      V  |         |
16+30       6.3474     12.99  |    Q    |         |       V |         |
16+35       6.4151      9.82  |   Q     |         |       V |         |
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16+40       6.4741      8.57  |  Q       |          |         V|          |
16+45       6.5294      8.03  |  Q       |          |          V          |
16+50       6.5803      7.40  |  Q       |          |          V          |
16+55       6.6265      6.70  | Q        |          |          V          |
17+ 0       6.6697      6.27  | Q        |          |          V          |
17+ 5       6.7113      6.04  | Q        |          |          |V         |
17+10       6.7514      5.83  | Q        |          |          |V         |
17+15       6.7903      5.64  | Q        |          |          |V         |
17+20       6.8280      5.47  | Q        |          |          |V         |
17+25       6.8646      5.32  | Q        |          |          |V         |
17+30       6.9002      5.18  | Q        |          |          |V         |
17+35       6.9351      5.05  | Q        |          |          | V        |
17+40       6.9691      4.94  | Q        |          |          | V        |
17+45       7.0024      4.83  | Q        |          |          | V        |
17+50       7.0350      4.74  | Q        |          |          | V        |
17+55       7.0670      4.65  | Q        |          |          | V        |
18+ 0       7.0984      4.56  | Q        |          |          | V        |
18+ 5       7.1292      4.47  |Q         |          |          |  V       |
18+10       7.1588      4.31  |Q         |          |          |  V       |
18+15       7.1876      4.18  |Q         |          |          |  V       |
18+20       7.2158      4.09  |Q         |          |          |  V       |
18+25       7.2434      4.01  |Q         |          |          |  V       |
18+30       7.2705      3.94  |Q         |          |          |  V       |
18+35       7.2973      3.88  |Q         |          |          |  V       |
18+40       7.3236      3.83  |Q         |          |          |  V       |
18+45       7.3496      3.77  |Q         |          |          |   V      |
18+50       7.3753      3.72  |Q         |          |          |   V      |
18+55       7.4006      3.68  |Q         |          |          |   V      |
19+ 0       7.4256      3.63  |Q         |          |          |   V      |
19+ 5       7.4503      3.59  |Q         |          |          |   V      |
19+10       7.4747      3.54  |Q         |          |          |   V      |
19+15       7.4988      3.50  |Q         |          |          |   V      |
19+20       7.5227      3.46  |Q         |          |          |   V      |
19+25       7.5463      3.43  |Q         |          |          |   V      |
19+30       7.5697      3.39  |Q         |          |          |    V     |
19+35       7.5928      3.36  |Q         |          |          |    V     |
19+40       7.6157      3.32  |Q         |          |          |    V     |
19+45       7.6383      3.29  |Q         |          |          |    V     |
19+50       7.6608      3.26  |Q         |          |          |    V     |
19+55       7.6830      3.23  |Q         |          |          |    V     |
20+ 0       7.7051      3.20  |Q         |          |          |    V     |
20+ 5       7.7269      3.17  |Q         |          |          |    V     |
20+10       7.7486      3.14  |Q         |          |          |    V     |
20+15       7.7700      3.12  |Q         |          |          |    V     |
20+20       7.7913      3.09  |Q         |          |          |     V    |
20+25       7.8124      3.07  |Q         |          |          |     V    |
20+30       7.8334      3.04  |Q         |          |          |     V    |
20+35       7.8542      3.02  |Q         |          |          |     V    |
20+40       7.8748      2.99  |Q         |          |          |     V    |
20+45       7.8952      2.97  |Q         |          |          |     V    |
20+50       7.9156      2.95  |Q         |          |          |     V    |
20+55       7.9357      2.93  |Q         |          |          |     V    |
21+ 0       7.9557      2.91  |Q         |          |          |     V    |
21+ 5       7.9756      2.89  |Q         |          |          |     V    |
21+10       7.9954      2.87  |Q         |          |          |      V   |
21+15       8.0150      2.85  |Q         |          |          |      V   |
21+20       8.0344      2.83  |Q         |          |          |      V   |
21+25       8.0538      2.81  |Q         |          |          |      V   |
21+30       8.0730      2.79  |Q         |          |          |      V   |
21+35       8.0921      2.77  |Q         |          |          |      V   |
21+40       8.1111      2.76  |Q         |          |          |      V   |
21+45       8.1299      2.74  |Q         |          |          |      V   |
21+50       8.1487      2.72  |Q         |          |          |      V   |
21+55       8.1673      2.71  |Q         |          |          |      V   |
22+ 0       8.1858      2.69  |Q         |          |          |      V   |
22+ 5       8.2043      2.67  |Q         |          |          |       V  |
22+10       8.2226      2.66  |Q         |          |          |       V  |
22+15       8.2408      2.64  |Q         |          |          |       V  |
22+20       8.2589      2.63  |Q         |          |          |       V  |
22+25       8.2769      2.61  |Q         |          |          |       V  |
22+30       8.2948      2.60  |Q         |          |          |       V  |
```

```
   22+35       8.3126      2.59  |Q        |          |          |       V |
   22+40       8.3303      2.57  |Q        |          |          |       V |
   22+45       8.3479      2.56  |Q        |          |          |       V |
   22+50       8.3655      2.55  |Q        |          |          |       V |
   22+55       8.3829      2.53  |Q        |          |          |       V |
   23+ 0       8.4003      2.52  |Q        |          |          |       V |
   23+ 5       8.4175      2.51  |Q        |          |          |       V |
   23+10       8.4347      2.49  |Q        |          |          |        V|
   23+15       8.4518      2.48  |Q        |          |          |        V|
   23+20       8.4688      2.47  |Q        |          |          |        V|
   23+25       8.4857      2.46  |Q        |          |          |        V|
   23+30       8.5026      2.45  |Q        |          |          |        V|
   23+35       8.5194      2.44  |Q        |          |          |        V|
   23+40       8.5361      2.42  |Q        |          |          |        V|
   23+45       8.5527      2.41  |Q        |          |          |        V|
   23+50       8.5693      2.40  |Q        |          |          |        V|
   23+55       8.5857      2.39  |Q        |          |          |        V|
   24+ 0       8.6021      2.38  |Q        |          |          |        V|
   24+ 5       8.6173      2.21  Q         |          |          |        V|
   24+10       8.6259      1.24  Q         |          |          |        V|
   24+15       8.6296      0.55  Q         |          |          |        V|
   24+20       8.6316      0.28  Q         |          |          |        V|
   24+25       8.6326      0.14  Q         |          |          |        V|
   24+30       8.6330      0.06  Q         |          |          |        V|
   24+35       8.6332      0.04  Q         |          |          |        V|
   24+40       8.6334      0.02  Q         |          |          |        V|
   24+45       8.6335      0.01  Q         |          |          |        V|
   24+50       8.6335      0.00  Q         |          |          |        V|
-------------------------------------------------------------------------
```

Area 'A' – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
10 YEAR 24 HOUR STORM
DECEMBER 16, 2024
----------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            43.08           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            43.08           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            43.08          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            43.08           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            43.08           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            43.08          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 36.7      36.7         43.08      1.000     0.945    0.610    0.577

Area-averaged adjusted loss rate Fm (In/Hr) =  0.577

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 26.28 | 0.610 | 36.7 | 36.7 | 17.25 | 0.096 |
| 16.80 | 0.390 | 98.0 | 98.0 | 0.20 | 0.967 |

Area-averaged catchment yield fraction, Y = 0.436
Area-averaged low loss fraction, Yb = 0.564
User entry of time of concentration = 0.150 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 43.08(Ac.)
Catchment Lag time = 0.120 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 69.4444
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.577(In/Hr)
Average low loss rate fraction (Yb) = 0.564 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 43.08(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.474(In)
30-minute factor = 0.998 Adjusted rainfall = 0.811(In)
1-hour factor = 0.998 Adjusted rainfall = 0.998(In)
3-hour factor = 1.000 Adjusted rainfall = 1.972(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 521.00 (CFS)) | |
| 1 | 7.065 | 36.808 |
| 2 | 47.670 | 211.553 |
| 3 | 76.988 | 152.744 |
| 4 | 87.984 | 57.293 |
| 5 | 94.086 | 31.790 |
| 6 | 97.295 | 16.719 |
| 7 | 98.498 | 6.265 |
| 8 | 99.120 | 3.241 |
| 9 | 99.604 | 2.523 |
| 10 | 99.910 | 1.595 |
| 11 | 100.000 | 0.467 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4736 | 0.4736 |
| 2 | 0.5830 | 0.1095 |
| 3 | 0.6584 | 0.0754 |
| 4 | 0.7178 | 0.0593 |
| 5 | 0.7675 | 0.0497 |
| 6 | 0.8106 | 0.0431 |
| 7 | 0.8490 | 0.0384 |
| 8 | 0.8837 | 0.0347 |
| 9 | 0.9155 | 0.0318 |
| 10 | 0.9449 | 0.0294 |
| 11 | 0.9723 | 0.0274 |
| 12 | 0.9980 | 0.0257 |
| 13 | 1.0488 | 0.0508 |
| 14 | 1.0981 | 0.0493 |

| | | |
|---|---|---|
| 15 | 1.1461 | 0.0480 |
| 16 | 1.1929 | 0.0468 |
| 17 | 1.2385 | 0.0457 |
| 18 | 1.2832 | 0.0447 |
| 19 | 1.3270 | 0.0437 |
| 20 | 1.3699 | 0.0429 |
| 21 | 1.4119 | 0.0421 |
| 22 | 1.4533 | 0.0413 |
| 23 | 1.4939 | 0.0406 |
| 24 | 1.5338 | 0.0399 |
| 25 | 1.5731 | 0.0393 |
| 26 | 1.6119 | 0.0387 |
| 27 | 1.6500 | 0.0382 |
| 28 | 1.6876 | 0.0376 |
| 29 | 1.7248 | 0.0371 |
| 30 | 1.7614 | 0.0366 |
| 31 | 1.7976 | 0.0362 |
| 32 | 1.8333 | 0.0357 |
| 33 | 1.8686 | 0.0353 |
| 34 | 1.9035 | 0.0349 |
| 35 | 1.9381 | 0.0345 |
| 36 | 1.9722 | 0.0341 |
| 37 | 2.0059 | 0.0337 |
| 38 | 2.0393 | 0.0334 |
| 39 | 2.0723 | 0.0330 |
| 40 | 2.1050 | 0.0327 |
| 41 | 2.1374 | 0.0324 |
| 42 | 2.1695 | 0.0321 |
| 43 | 2.2013 | 0.0318 |
| 44 | 2.2329 | 0.0315 |
| 45 | 2.2641 | 0.0313 |
| 46 | 2.2951 | 0.0310 |
| 47 | 2.3259 | 0.0307 |
| 48 | 2.3564 | 0.0305 |
| 49 | 2.3866 | 0.0302 |
| 50 | 2.4166 | 0.0300 |
| 51 | 2.4464 | 0.0298 |
| 52 | 2.4760 | 0.0296 |
| 53 | 2.5053 | 0.0293 |
| 54 | 2.5345 | 0.0291 |
| 55 | 2.5634 | 0.0289 |
| 56 | 2.5921 | 0.0287 |
| 57 | 2.6207 | 0.0285 |
| 58 | 2.6490 | 0.0283 |
| 59 | 2.6772 | 0.0282 |
| 60 | 2.7051 | 0.0280 |
| 61 | 2.7329 | 0.0278 |
| 62 | 2.7606 | 0.0276 |
| 63 | 2.7880 | 0.0275 |
| 64 | 2.8153 | 0.0273 |
| 65 | 2.8425 | 0.0271 |
| 66 | 2.8694 | 0.0270 |
| 67 | 2.8962 | 0.0268 |
| 68 | 2.9229 | 0.0267 |
| 69 | 2.9494 | 0.0265 |
| 70 | 2.9758 | 0.0264 |
| 71 | 3.0020 | 0.0262 |
| 72 | 3.0281 | 0.0261 |
| 73 | 3.0547 | 0.0266 |
| 74 | 3.0812 | 0.0265 |
| 75 | 3.1075 | 0.0263 |
| 76 | 3.1337 | 0.0262 |
| 77 | 3.1598 | 0.0261 |
| 78 | 3.1857 | 0.0259 |
| 79 | 3.2115 | 0.0258 |
| 80 | 3.2372 | 0.0257 |
| 81 | 3.2628 | 0.0256 |
| 82 | 3.2883 | 0.0255 |
| 83 | 3.3137 | 0.0254 |
| 84 | 3.3389 | 0.0252 |
| 85 | 3.3641 | 0.0251 |

| | | |
|---|---|---|
| 86 | 3.3891 | 0.0250 |
| 87 | 3.4140 | 0.0249 |
| 88 | 3.4388 | 0.0248 |
| 89 | 3.4635 | 0.0247 |
| 90 | 3.4882 | 0.0246 |
| 91 | 3.5127 | 0.0245 |
| 92 | 3.5371 | 0.0244 |
| 93 | 3.5614 | 0.0243 |
| 94 | 3.5856 | 0.0242 |
| 95 | 3.6098 | 0.0241 |
| 96 | 3.6338 | 0.0240 |
| 97 | 3.6578 | 0.0239 |
| 98 | 3.6816 | 0.0239 |
| 99 | 3.7054 | 0.0238 |
| 100 | 3.7291 | 0.0237 |
| 101 | 3.7527 | 0.0236 |
| 102 | 3.7762 | 0.0235 |
| 103 | 3.7996 | 0.0234 |
| 104 | 3.8229 | 0.0233 |
| 105 | 3.8462 | 0.0233 |
| 106 | 3.8694 | 0.0232 |
| 107 | 3.8925 | 0.0231 |
| 108 | 3.9155 | 0.0230 |
| 109 | 3.9384 | 0.0229 |
| 110 | 3.9613 | 0.0229 |
| 111 | 3.9841 | 0.0228 |
| 112 | 4.0068 | 0.0227 |
| 113 | 4.0294 | 0.0226 |
| 114 | 4.0520 | 0.0226 |
| 115 | 4.0745 | 0.0225 |
| 116 | 4.0969 | 0.0224 |
| 117 | 4.1193 | 0.0224 |
| 118 | 4.1415 | 0.0223 |
| 119 | 4.1637 | 0.0222 |
| 120 | 4.1859 | 0.0221 |
| 121 | 4.2080 | 0.0221 |
| 122 | 4.2300 | 0.0220 |
| 123 | 4.2519 | 0.0219 |
| 124 | 4.2738 | 0.0219 |
| 125 | 4.2956 | 0.0218 |
| 126 | 4.3174 | 0.0217 |
| 127 | 4.3390 | 0.0217 |
| 128 | 4.3607 | 0.0216 |
| 129 | 4.3822 | 0.0216 |
| 130 | 4.4037 | 0.0215 |
| 131 | 4.4252 | 0.0214 |
| 132 | 4.4466 | 0.0214 |
| 133 | 4.4679 | 0.0213 |
| 134 | 4.4891 | 0.0213 |
| 135 | 4.5103 | 0.0212 |
| 136 | 4.5315 | 0.0211 |
| 137 | 4.5526 | 0.0211 |
| 138 | 4.5736 | 0.0210 |
| 139 | 4.5946 | 0.0210 |
| 140 | 4.6155 | 0.0209 |
| 141 | 4.6364 | 0.0209 |
| 142 | 4.6572 | 0.0208 |
| 143 | 4.6780 | 0.0208 |
| 144 | 4.6987 | 0.0207 |
| 145 | 4.7193 | 0.0207 |
| 146 | 4.7399 | 0.0206 |
| 147 | 4.7605 | 0.0206 |
| 148 | 4.7810 | 0.0205 |
| 149 | 4.8014 | 0.0205 |
| 150 | 4.8218 | 0.0204 |
| 151 | 4.8422 | 0.0204 |
| 152 | 4.8625 | 0.0203 |
| 153 | 4.8827 | 0.0203 |
| 154 | 4.9029 | 0.0202 |
| 155 | 4.9231 | 0.0202 |
| 156 | 4.9432 | 0.0201 |

| | | |
|---|---|---|
| 157 | 4.9633 | 0.0201 |
| 158 | 4.9833 | 0.0200 |
| 159 | 5.0033 | 0.0200 |
| 160 | 5.0232 | 0.0199 |
| 161 | 5.0431 | 0.0199 |
| 162 | 5.0629 | 0.0198 |
| 163 | 5.0827 | 0.0198 |
| 164 | 5.1024 | 0.0197 |
| 165 | 5.1221 | 0.0197 |
| 166 | 5.1418 | 0.0197 |
| 167 | 5.1614 | 0.0196 |
| 168 | 5.1809 | 0.0196 |
| 169 | 5.2005 | 0.0195 |
| 170 | 5.2200 | 0.0195 |
| 171 | 5.2394 | 0.0194 |
| 172 | 5.2588 | 0.0194 |
| 173 | 5.2782 | 0.0194 |
| 174 | 5.2975 | 0.0193 |
| 175 | 5.3167 | 0.0193 |
| 176 | 5.3360 | 0.0192 |
| 177 | 5.3552 | 0.0192 |
| 178 | 5.3743 | 0.0192 |
| 179 | 5.3935 | 0.0191 |
| 180 | 5.4125 | 0.0191 |
| 181 | 5.4316 | 0.0190 |
| 182 | 5.4506 | 0.0190 |
| 183 | 5.4695 | 0.0190 |
| 184 | 5.4885 | 0.0189 |
| 185 | 5.5074 | 0.0189 |
| 186 | 5.5262 | 0.0189 |
| 187 | 5.5450 | 0.0188 |
| 188 | 5.5638 | 0.0188 |
| 189 | 5.5825 | 0.0187 |
| 190 | 5.6012 | 0.0187 |
| 191 | 5.6199 | 0.0187 |
| 192 | 5.6385 | 0.0186 |
| 193 | 5.6571 | 0.0186 |
| 194 | 5.6757 | 0.0186 |
| 195 | 5.6942 | 0.0185 |
| 196 | 5.7127 | 0.0185 |
| 197 | 5.7312 | 0.0185 |
| 198 | 5.7496 | 0.0184 |
| 199 | 5.7680 | 0.0184 |
| 200 | 5.7863 | 0.0184 |
| 201 | 5.8047 | 0.0183 |
| 202 | 5.8229 | 0.0183 |
| 203 | 5.8412 | 0.0183 |
| 204 | 5.8594 | 0.0182 |
| 205 | 5.8776 | 0.0182 |
| 206 | 5.8958 | 0.0182 |
| 207 | 5.9139 | 0.0181 |
| 208 | 5.9320 | 0.0181 |
| 209 | 5.9500 | 0.0181 |
| 210 | 5.9681 | 0.0180 |
| 211 | 5.9861 | 0.0180 |
| 212 | 6.0040 | 0.0180 |
| 213 | 6.0220 | 0.0179 |
| 214 | 6.0399 | 0.0179 |
| 215 | 6.0578 | 0.0179 |
| 216 | 6.0756 | 0.0178 |
| 217 | 6.0934 | 0.0178 |
| 218 | 6.1112 | 0.0178 |
| 219 | 6.1289 | 0.0178 |
| 220 | 6.1467 | 0.0177 |
| 221 | 6.1644 | 0.0177 |
| 222 | 6.1820 | 0.0177 |
| 223 | 6.1997 | 0.0176 |
| 224 | 6.2173 | 0.0176 |
| 225 | 6.2348 | 0.0176 |
| 226 | 6.2524 | 0.0175 |
| 227 | 6.2699 | 0.0175 |

| | | |
|---|---|---|
| 228 | 6.2874 | 0.0175 |
| 229 | 6.3049 | 0.0175 |
| 230 | 6.3223 | 0.0174 |
| 231 | 6.3397 | 0.0174 |
| 232 | 6.3571 | 0.0174 |
| 233 | 6.3745 | 0.0174 |
| 234 | 6.3918 | 0.0173 |
| 235 | 6.4091 | 0.0173 |
| 236 | 6.4264 | 0.0173 |
| 237 | 6.4436 | 0.0172 |
| 238 | 6.4608 | 0.0172 |
| 239 | 6.4780 | 0.0172 |
| 240 | 6.4952 | 0.0172 |
| 241 | 6.5123 | 0.0171 |
| 242 | 6.5294 | 0.0171 |
| 243 | 6.5465 | 0.0171 |
| 244 | 6.5636 | 0.0171 |
| 245 | 6.5806 | 0.0170 |
| 246 | 6.5976 | 0.0170 |
| 247 | 6.6146 | 0.0170 |
| 248 | 6.6316 | 0.0170 |
| 249 | 6.6485 | 0.0169 |
| 250 | 6.6654 | 0.0169 |
| 251 | 6.6823 | 0.0169 |
| 252 | 6.6992 | 0.0169 |
| 253 | 6.7160 | 0.0168 |
| 254 | 6.7328 | 0.0168 |
| 255 | 6.7496 | 0.0168 |
| 256 | 6.7664 | 0.0168 |
| 257 | 6.7831 | 0.0167 |
| 258 | 6.7999 | 0.0167 |
| 259 | 6.8165 | 0.0167 |
| 260 | 6.8332 | 0.0167 |
| 261 | 6.8499 | 0.0166 |
| 262 | 6.8665 | 0.0166 |
| 263 | 6.8831 | 0.0166 |
| 264 | 6.8997 | 0.0166 |
| 265 | 6.9162 | 0.0166 |
| 266 | 6.9327 | 0.0165 |
| 267 | 6.9493 | 0.0165 |
| 268 | 6.9657 | 0.0165 |
| 269 | 6.9822 | 0.0165 |
| 270 | 6.9986 | 0.0164 |
| 271 | 7.0151 | 0.0164 |
| 272 | 7.0315 | 0.0164 |
| 273 | 7.0478 | 0.0164 |
| 274 | 7.0642 | 0.0164 |
| 275 | 7.0805 | 0.0163 |
| 276 | 7.0968 | 0.0163 |
| 277 | 7.1131 | 0.0163 |
| 278 | 7.1294 | 0.0163 |
| 279 | 7.1456 | 0.0162 |
| 280 | 7.1618 | 0.0162 |
| 281 | 7.1780 | 0.0162 |
| 282 | 7.1942 | 0.0162 |
| 283 | 7.2104 | 0.0162 |
| 284 | 7.2265 | 0.0161 |
| 285 | 7.2426 | 0.0161 |
| 286 | 7.2587 | 0.0161 |
| 287 | 7.2748 | 0.0161 |
| 288 | 7.2909 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0091 | 0.0070 |
| 2 | 0.0161 | 0.0091 | 0.0070 |
| 3 | 0.0161 | 0.0091 | 0.0070 |
| 4 | 0.0161 | 0.0091 | 0.0070 |
| 5 | 0.0162 | 0.0091 | 0.0071 |

| | | | |
|---|---|---|---|
| 6 | 0.0162 | 0.0091 | 0.0071 |
| 7 | 0.0162 | 0.0092 | 0.0071 |
| 8 | 0.0163 | 0.0092 | 0.0071 |
| 9 | 0.0163 | 0.0092 | 0.0071 |
| 10 | 0.0163 | 0.0092 | 0.0071 |
| 11 | 0.0164 | 0.0092 | 0.0071 |
| 12 | 0.0164 | 0.0093 | 0.0071 |
| 13 | 0.0164 | 0.0093 | 0.0072 |
| 14 | 0.0165 | 0.0093 | 0.0072 |
| 15 | 0.0165 | 0.0093 | 0.0072 |
| 16 | 0.0165 | 0.0093 | 0.0072 |
| 17 | 0.0166 | 0.0094 | 0.0072 |
| 18 | 0.0166 | 0.0094 | 0.0072 |
| 19 | 0.0166 | 0.0094 | 0.0073 |
| 20 | 0.0167 | 0.0094 | 0.0073 |
| 21 | 0.0167 | 0.0094 | 0.0073 |
| 22 | 0.0167 | 0.0094 | 0.0073 |
| 23 | 0.0168 | 0.0095 | 0.0073 |
| 24 | 0.0168 | 0.0095 | 0.0073 |
| 25 | 0.0169 | 0.0095 | 0.0073 |
| 26 | 0.0169 | 0.0095 | 0.0074 |
| 27 | 0.0169 | 0.0096 | 0.0074 |
| 28 | 0.0170 | 0.0096 | 0.0074 |
| 29 | 0.0170 | 0.0096 | 0.0074 |
| 30 | 0.0170 | 0.0096 | 0.0074 |
| 31 | 0.0171 | 0.0096 | 0.0074 |
| 32 | 0.0171 | 0.0097 | 0.0075 |
| 33 | 0.0172 | 0.0097 | 0.0075 |
| 34 | 0.0172 | 0.0097 | 0.0075 |
| 35 | 0.0172 | 0.0097 | 0.0075 |
| 36 | 0.0173 | 0.0097 | 0.0075 |
| 37 | 0.0173 | 0.0098 | 0.0076 |
| 38 | 0.0174 | 0.0098 | 0.0076 |
| 39 | 0.0174 | 0.0098 | 0.0076 |
| 40 | 0.0174 | 0.0098 | 0.0076 |
| 41 | 0.0175 | 0.0099 | 0.0076 |
| 42 | 0.0175 | 0.0099 | 0.0076 |
| 43 | 0.0176 | 0.0099 | 0.0077 |
| 44 | 0.0176 | 0.0099 | 0.0077 |
| 45 | 0.0177 | 0.0100 | 0.0077 |
| 46 | 0.0177 | 0.0100 | 0.0077 |
| 47 | 0.0178 | 0.0100 | 0.0077 |
| 48 | 0.0178 | 0.0100 | 0.0077 |
| 49 | 0.0178 | 0.0101 | 0.0078 |
| 50 | 0.0179 | 0.0101 | 0.0078 |
| 51 | 0.0179 | 0.0101 | 0.0078 |
| 52 | 0.0180 | 0.0101 | 0.0078 |
| 53 | 0.0180 | 0.0102 | 0.0079 |
| 54 | 0.0181 | 0.0102 | 0.0079 |
| 55 | 0.0181 | 0.0102 | 0.0079 |
| 56 | 0.0182 | 0.0102 | 0.0079 |
| 57 | 0.0182 | 0.0103 | 0.0079 |
| 58 | 0.0183 | 0.0103 | 0.0080 |
| 59 | 0.0183 | 0.0103 | 0.0080 |
| 60 | 0.0184 | 0.0104 | 0.0080 |
| 61 | 0.0184 | 0.0104 | 0.0080 |
| 62 | 0.0185 | 0.0104 | 0.0080 |
| 63 | 0.0185 | 0.0105 | 0.0081 |
| 64 | 0.0186 | 0.0105 | 0.0081 |
| 65 | 0.0186 | 0.0105 | 0.0081 |
| 66 | 0.0187 | 0.0105 | 0.0081 |
| 67 | 0.0187 | 0.0106 | 0.0082 |
| 68 | 0.0188 | 0.0106 | 0.0082 |
| 69 | 0.0189 | 0.0106 | 0.0082 |
| 70 | 0.0189 | 0.0107 | 0.0082 |
| 71 | 0.0190 | 0.0107 | 0.0083 |
| 72 | 0.0190 | 0.0107 | 0.0083 |
| 73 | 0.0191 | 0.0108 | 0.0083 |
| 74 | 0.0191 | 0.0108 | 0.0083 |
| 75 | 0.0192 | 0.0108 | 0.0084 |
| 76 | 0.0192 | 0.0109 | 0.0084 |

| | | | |
|---|---|---|---|
| 77 | 0.0193 | 0.0109 | 0.0084 |
| 78 | 0.0194 | 0.0109 | 0.0084 |
| 79 | 0.0194 | 0.0110 | 0.0085 |
| 80 | 0.0195 | 0.0110 | 0.0085 |
| 81 | 0.0196 | 0.0110 | 0.0085 |
| 82 | 0.0196 | 0.0111 | 0.0085 |
| 83 | 0.0197 | 0.0111 | 0.0086 |
| 84 | 0.0197 | 0.0111 | 0.0086 |
| 85 | 0.0198 | 0.0112 | 0.0086 |
| 86 | 0.0199 | 0.0112 | 0.0087 |
| 87 | 0.0200 | 0.0113 | 0.0087 |
| 88 | 0.0200 | 0.0113 | 0.0087 |
| 89 | 0.0201 | 0.0113 | 0.0088 |
| 90 | 0.0202 | 0.0114 | 0.0088 |
| 91 | 0.0203 | 0.0114 | 0.0088 |
| 92 | 0.0203 | 0.0115 | 0.0088 |
| 93 | 0.0204 | 0.0115 | 0.0089 |
| 94 | 0.0205 | 0.0115 | 0.0089 |
| 95 | 0.0206 | 0.0116 | 0.0090 |
| 96 | 0.0206 | 0.0116 | 0.0090 |
| 97 | 0.0207 | 0.0117 | 0.0090 |
| 98 | 0.0208 | 0.0117 | 0.0090 |
| 99 | 0.0209 | 0.0118 | 0.0091 |
| 100 | 0.0209 | 0.0118 | 0.0091 |
| 101 | 0.0210 | 0.0119 | 0.0092 |
| 102 | 0.0211 | 0.0119 | 0.0092 |
| 103 | 0.0212 | 0.0120 | 0.0092 |
| 104 | 0.0213 | 0.0120 | 0.0093 |
| 105 | 0.0214 | 0.0121 | 0.0093 |
| 106 | 0.0214 | 0.0121 | 0.0093 |
| 107 | 0.0216 | 0.0122 | 0.0094 |
| 108 | 0.0216 | 0.0122 | 0.0094 |
| 109 | 0.0217 | 0.0123 | 0.0095 |
| 110 | 0.0218 | 0.0123 | 0.0095 |
| 111 | 0.0219 | 0.0124 | 0.0096 |
| 112 | 0.0220 | 0.0124 | 0.0096 |
| 113 | 0.0221 | 0.0125 | 0.0096 |
| 114 | 0.0222 | 0.0125 | 0.0097 |
| 115 | 0.0224 | 0.0126 | 0.0097 |
| 116 | 0.0224 | 0.0127 | 0.0098 |
| 117 | 0.0226 | 0.0127 | 0.0098 |
| 118 | 0.0226 | 0.0128 | 0.0099 |
| 119 | 0.0228 | 0.0129 | 0.0099 |
| 120 | 0.0229 | 0.0129 | 0.0100 |
| 121 | 0.0230 | 0.0130 | 0.0100 |
| 122 | 0.0231 | 0.0130 | 0.0101 |
| 123 | 0.0233 | 0.0131 | 0.0101 |
| 124 | 0.0233 | 0.0132 | 0.0102 |
| 125 | 0.0235 | 0.0133 | 0.0102 |
| 126 | 0.0236 | 0.0133 | 0.0103 |
| 127 | 0.0238 | 0.0134 | 0.0104 |
| 128 | 0.0239 | 0.0135 | 0.0104 |
| 129 | 0.0240 | 0.0136 | 0.0105 |
| 130 | 0.0241 | 0.0136 | 0.0105 |
| 131 | 0.0243 | 0.0137 | 0.0106 |
| 132 | 0.0244 | 0.0138 | 0.0106 |
| 133 | 0.0246 | 0.0139 | 0.0107 |
| 134 | 0.0247 | 0.0139 | 0.0108 |
| 135 | 0.0249 | 0.0141 | 0.0109 |
| 136 | 0.0250 | 0.0141 | 0.0109 |
| 137 | 0.0252 | 0.0142 | 0.0110 |
| 138 | 0.0254 | 0.0143 | 0.0111 |
| 139 | 0.0256 | 0.0144 | 0.0112 |
| 140 | 0.0257 | 0.0145 | 0.0112 |
| 141 | 0.0259 | 0.0146 | 0.0113 |
| 142 | 0.0261 | 0.0147 | 0.0114 |
| 143 | 0.0263 | 0.0149 | 0.0115 |
| 144 | 0.0265 | 0.0149 | 0.0115 |
| 145 | 0.0261 | 0.0147 | 0.0114 |
| 146 | 0.0262 | 0.0148 | 0.0114 |
| 147 | 0.0265 | 0.0150 | 0.0116 |

| | | | |
|---|---|---|---|
| 148 | 0.0267 | 0.0150 | 0.0116 |
| 149 | 0.0270 | 0.0152 | 0.0118 |
| 150 | 0.0271 | 0.0153 | 0.0118 |
| 151 | 0.0275 | 0.0155 | 0.0120 |
| 152 | 0.0276 | 0.0156 | 0.0120 |
| 153 | 0.0280 | 0.0158 | 0.0122 |
| 154 | 0.0282 | 0.0159 | 0.0123 |
| 155 | 0.0285 | 0.0161 | 0.0124 |
| 156 | 0.0287 | 0.0162 | 0.0125 |
| 157 | 0.0291 | 0.0164 | 0.0127 |
| 158 | 0.0293 | 0.0166 | 0.0128 |
| 159 | 0.0298 | 0.0168 | 0.0130 |
| 160 | 0.0300 | 0.0169 | 0.0131 |
| 161 | 0.0305 | 0.0172 | 0.0133 |
| 162 | 0.0307 | 0.0173 | 0.0134 |
| 163 | 0.0313 | 0.0176 | 0.0136 |
| 164 | 0.0315 | 0.0178 | 0.0137 |
| 165 | 0.0321 | 0.0181 | 0.0140 |
| 166 | 0.0324 | 0.0183 | 0.0141 |
| 167 | 0.0330 | 0.0186 | 0.0144 |
| 168 | 0.0334 | 0.0188 | 0.0145 |
| 169 | 0.0341 | 0.0193 | 0.0149 |
| 170 | 0.0345 | 0.0195 | 0.0150 |
| 171 | 0.0353 | 0.0199 | 0.0154 |
| 172 | 0.0357 | 0.0202 | 0.0156 |
| 173 | 0.0366 | 0.0207 | 0.0160 |
| 174 | 0.0371 | 0.0209 | 0.0162 |
| 175 | 0.0382 | 0.0215 | 0.0166 |
| 176 | 0.0387 | 0.0219 | 0.0169 |
| 177 | 0.0399 | 0.0225 | 0.0174 |
| 178 | 0.0406 | 0.0229 | 0.0177 |
| 179 | 0.0421 | 0.0237 | 0.0183 |
| 180 | 0.0429 | 0.0242 | 0.0187 |
| 181 | 0.0447 | 0.0252 | 0.0195 |
| 182 | 0.0457 | 0.0258 | 0.0199 |
| 183 | 0.0480 | 0.0271 | 0.0209 |
| 184 | 0.0493 | 0.0278 | 0.0215 |
| 185 | 0.0257 | 0.0145 | 0.0112 |
| 186 | 0.0274 | 0.0155 | 0.0119 |
| 187 | 0.0318 | 0.0179 | 0.0138 |
| 188 | 0.0347 | 0.0196 | 0.0151 |
| 189 | 0.0431 | 0.0243 | 0.0188 |
| 190 | 0.0497 | 0.0280 | 0.0217 |
| 191 | 0.0754 | 0.0426 | 0.0329 |
| 192 | 0.1095 | 0.0480 | 0.0614 |
| 193 | 0.4736 | 0.0480 | 0.4255 |
| 194 | 0.0593 | 0.0335 | 0.0259 |
| 195 | 0.0384 | 0.0216 | 0.0167 |
| 196 | 0.0294 | 0.0166 | 0.0128 |
| 197 | 0.0508 | 0.0287 | 0.0221 |
| 198 | 0.0468 | 0.0264 | 0.0204 |
| 199 | 0.0437 | 0.0247 | 0.0191 |
| 200 | 0.0413 | 0.0233 | 0.0180 |
| 201 | 0.0393 | 0.0222 | 0.0171 |
| 202 | 0.0376 | 0.0212 | 0.0164 |
| 203 | 0.0362 | 0.0204 | 0.0158 |
| 204 | 0.0349 | 0.0197 | 0.0152 |
| 205 | 0.0337 | 0.0190 | 0.0147 |
| 206 | 0.0327 | 0.0185 | 0.0143 |
| 207 | 0.0318 | 0.0179 | 0.0139 |
| 208 | 0.0310 | 0.0175 | 0.0135 |
| 209 | 0.0302 | 0.0171 | 0.0132 |
| 210 | 0.0296 | 0.0167 | 0.0129 |
| 211 | 0.0289 | 0.0163 | 0.0126 |
| 212 | 0.0283 | 0.0160 | 0.0124 |
| 213 | 0.0278 | 0.0157 | 0.0121 |
| 214 | 0.0273 | 0.0154 | 0.0119 |
| 215 | 0.0268 | 0.0151 | 0.0117 |
| 216 | 0.0264 | 0.0149 | 0.0115 |
| 217 | 0.0266 | 0.0150 | 0.0116 |
| 218 | 0.0262 | 0.0148 | 0.0114 |

| | | | |
|---|---|---|---|
| 219 | 0.0258 | 0.0146 | 0.0113 |
| 220 | 0.0255 | 0.0144 | 0.0111 |
| 221 | 0.0251 | 0.0142 | 0.0110 |
| 222 | 0.0248 | 0.0140 | 0.0108 |
| 223 | 0.0245 | 0.0138 | 0.0107 |
| 224 | 0.0242 | 0.0137 | 0.0106 |
| 225 | 0.0239 | 0.0135 | 0.0104 |
| 226 | 0.0237 | 0.0134 | 0.0103 |
| 227 | 0.0234 | 0.0132 | 0.0102 |
| 228 | 0.0232 | 0.0131 | 0.0101 |
| 229 | 0.0229 | 0.0129 | 0.0100 |
| 230 | 0.0227 | 0.0128 | 0.0099 |
| 231 | 0.0225 | 0.0127 | 0.0098 |
| 232 | 0.0223 | 0.0126 | 0.0097 |
| 233 | 0.0221 | 0.0125 | 0.0096 |
| 234 | 0.0219 | 0.0123 | 0.0095 |
| 235 | 0.0217 | 0.0122 | 0.0094 |
| 236 | 0.0215 | 0.0121 | 0.0094 |
| 237 | 0.0213 | 0.0120 | 0.0093 |
| 238 | 0.0211 | 0.0119 | 0.0092 |
| 239 | 0.0210 | 0.0118 | 0.0091 |
| 240 | 0.0208 | 0.0117 | 0.0091 |
| 241 | 0.0207 | 0.0117 | 0.0090 |
| 242 | 0.0205 | 0.0116 | 0.0089 |
| 243 | 0.0204 | 0.0115 | 0.0089 |
| 244 | 0.0202 | 0.0114 | 0.0088 |
| 245 | 0.0201 | 0.0113 | 0.0087 |
| 246 | 0.0199 | 0.0112 | 0.0087 |
| 247 | 0.0198 | 0.0112 | 0.0086 |
| 248 | 0.0197 | 0.0111 | 0.0086 |
| 249 | 0.0195 | 0.0110 | 0.0085 |
| 250 | 0.0194 | 0.0109 | 0.0085 |
| 251 | 0.0193 | 0.0109 | 0.0084 |
| 252 | 0.0192 | 0.0108 | 0.0083 |
| 253 | 0.0190 | 0.0107 | 0.0083 |
| 254 | 0.0189 | 0.0107 | 0.0082 |
| 255 | 0.0188 | 0.0106 | 0.0082 |
| 256 | 0.0187 | 0.0106 | 0.0082 |
| 257 | 0.0186 | 0.0105 | 0.0081 |
| 258 | 0.0185 | 0.0104 | 0.0081 |
| 259 | 0.0184 | 0.0104 | 0.0080 |
| 260 | 0.0183 | 0.0103 | 0.0080 |
| 261 | 0.0182 | 0.0103 | 0.0079 |
| 262 | 0.0181 | 0.0102 | 0.0079 |
| 263 | 0.0180 | 0.0102 | 0.0078 |
| 264 | 0.0179 | 0.0101 | 0.0078 |
| 265 | 0.0178 | 0.0101 | 0.0078 |
| 266 | 0.0177 | 0.0100 | 0.0077 |
| 267 | 0.0176 | 0.0100 | 0.0077 |
| 268 | 0.0175 | 0.0099 | 0.0076 |
| 269 | 0.0175 | 0.0099 | 0.0076 |
| 270 | 0.0174 | 0.0098 | 0.0076 |
| 271 | 0.0173 | 0.0098 | 0.0075 |
| 272 | 0.0172 | 0.0097 | 0.0075 |
| 273 | 0.0171 | 0.0097 | 0.0075 |
| 274 | 0.0171 | 0.0096 | 0.0074 |
| 275 | 0.0170 | 0.0096 | 0.0074 |
| 276 | 0.0169 | 0.0095 | 0.0074 |
| 277 | 0.0168 | 0.0095 | 0.0073 |
| 278 | 0.0168 | 0.0095 | 0.0073 |
| 279 | 0.0167 | 0.0094 | 0.0073 |
| 280 | 0.0166 | 0.0094 | 0.0072 |
| 281 | 0.0166 | 0.0093 | 0.0072 |
| 282 | 0.0165 | 0.0093 | 0.0072 |
| 283 | 0.0164 | 0.0093 | 0.0072 |
| 284 | 0.0164 | 0.0092 | 0.0071 |
| 285 | 0.0163 | 0.0092 | 0.0071 |
| 286 | 0.0162 | 0.0092 | 0.0071 |
| 287 | 0.0162 | 0.0091 | 0.0070 |
| 288 | 0.0161 | 0.0091 | 0.0070 |

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      ----------------------------------------------------------------------
      Total soil rain loss =      3.88(In)
      Total effective rainfall =      3.41(In)
      Peak flow rate in flood hydrograph =    103.43(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
----------------------------------------------------------------------------
  0+ 5       0.0018      0.26  Q         |         |         |         |
  0+10       0.0137      1.74  Q         |         |         |         |
  0+15       0.0331      2.81  Q         |         |         |         |
  0+20       0.0552      3.22  Q         |         |         |         |
  0+25       0.0790      3.44  Q         |         |         |         |
  0+30       0.1035      3.57  Q         |         |         |         |
  0+35       0.1284      3.62  Q         |         |         |         |
  0+40       0.1536      3.65  Q         |         |         |         |
  0+45       0.1789      3.67  Q         |         |         |         |
  0+50       0.2043      3.69  Q         |         |         |         |
  0+55       0.2298      3.70  Q         |         |         |         |
  1+ 0       0.2553      3.71  Q         |         |         |         |
  1+ 5       0.2809      3.72  Q         |         |         |         |
  1+10       0.3066      3.72  QV        |         |         |         |
  1+15       0.3323      3.73  QV        |         |         |         |
  1+20       0.3580      3.74  QV        |         |         |         |
  1+25       0.3838      3.75  QV        |         |         |         |
  1+30       0.4097      3.76  QV        |         |         |         |
  1+35       0.4356      3.76  QV        |         |         |         |
  1+40       0.4616      3.77  QV        |         |         |         |
  1+45       0.4876      3.78  QV        |         |         |         |
  1+50       0.5137      3.79  QV        |         |         |         |
  1+55       0.5398      3.79  QV        |         |         |         |
  2+ 0       0.5660      3.80  QV        |         |         |         |
  2+ 5       0.5922      3.81  QV        |         |         |         |
  2+10       0.6186      3.82  Q V       |         |         |         |
  2+15       0.6449      3.83  Q V       |         |         |         |
  2+20       0.6713      3.84  Q V       |         |         |         |
  2+25       0.6978      3.84  Q V       |         |         |         |
  2+30       0.7243      3.85  Q V       |         |         |         |
  2+35       0.7509      3.86  Q V       |         |         |         |
  2+40       0.7776      3.87  Q V       |         |         |         |
  2+45       0.8043      3.88  Q V       |         |         |         |
  2+50       0.8311      3.89  Q V       |         |         |         |
  2+55       0.8579      3.90  Q V       |         |         |         |
  3+ 0       0.8848      3.91  Q V       |         |         |         |
  3+ 5       0.9118      3.91  Q V       |         |         |         |
  3+10       0.9388      3.92  Q  V      |         |         |         |
  3+15       0.9659      3.93  Q  V      |         |         |         |
  3+20       0.9930      3.94  Q  V      |         |         |         |
  3+25       1.0202      3.95  Q  V      |         |         |         |
  3+30       1.0475      3.96  Q  V      |         |         |         |
  3+35       1.0749      3.97  Q  V      |         |         |         |
  3+40       1.1023      3.98  Q  V      |         |         |         |
  3+45       1.1298      3.99  Q  V      |         |         |         |
  3+50       1.1573      4.00  Q  V      |         |         |         |
  3+55       1.1849      4.01  Q  V      |         |         |         |
  4+ 0       1.2126      4.02  Q  V      |         |         |         |
  4+ 5       1.2404      4.03  Q   V     |         |         |         |
  4+10       1.2682      4.04  Q   V     |         |         |         |
  4+15       1.2961      4.05  Q   V     |         |         |         |
  4+20       1.3240      4.06  Q   V     |         |         |         |
  4+25       1.3521      4.07  Q   V     |         |         |         |
  4+30       1.3802      4.08  Q   V     |         |         |         |
  4+35       1.4084      4.09  Q   V     |         |         |         |
  4+40       1.4366      4.10  Q   V     |         |         |         |
  4+45       1.4650      4.11  Q   V     |         |         |         |
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 4+50      1.4934     4.13  Q   V     |         |         |         |
 4+55      1.5218     4.14  Q   V     |         |         |         |
 5+ 0      1.5504     4.15  Q    V    |         |         |         |
 5+ 5      1.5790     4.16  Q    V    |         |         |         |
 5+10      1.6078     4.17  Q    V    |         |         |         |
 5+15      1.6366     4.18  Q    V    |         |         |         |
 5+20      1.6654     4.19  Q    V    |         |         |         |
 5+25      1.6944     4.20  Q    V    |         |         |         |
 5+30      1.7234     4.22  Q    V    |         |         |         |
 5+35      1.7526     4.23  Q    V    |         |         |         |
 5+40      1.7818     4.24  Q    V    |         |         |         |
 5+45      1.8111     4.25  Q    V    |         |         |         |
 5+50      1.8405     4.27  Q     V   |         |         |         |
 5+55      1.8699     4.28  Q     V   |         |         |         |
 6+ 0      1.8995     4.29  Q     V   |         |         |         |
 6+ 5      1.9291     4.30  Q     V   |         |         |         |
 6+10      1.9589     4.32  Q     V   |         |         |         |
 6+15      1.9887     4.33  Q     V   |         |         |         |
 6+20      2.0186     4.34  Q     V   |         |         |         |
 6+25      2.0486     4.36  Q     V   |         |         |         |
 6+30      2.0787     4.37  Q     V   |         |         |         |
 6+35      2.1089     4.38  Q     V   |         |         |         |
 6+40      2.1392     4.40  Q     V   |         |         |         |
 6+45      2.1696     4.41  Q      V  |         |         |         |
 6+50      2.2001     4.43  Q      V  |         |         |         |
 6+55      2.2307     4.44  Q      V  |         |         |         |
 7+ 0      2.2613     4.46  Q      V  |         |         |         |
 7+ 5      2.2921     4.47  Q      V  |         |         |         |
 7+10      2.3230     4.49  Q      V  |         |         |         |
 7+15      2.3540     4.50  Q      V  |         |         |         |
 7+20      2.3851     4.52  Q      V  |         |         |         |
 7+25      2.4163     4.53  Q      V  |         |         |         |
 7+30      2.4477     4.55  Q       V |         |         |         |
 7+35      2.4791     4.56  Q       V |         |         |         |
 7+40      2.5106     4.58  Q       V |         |         |         |
 7+45      2.5423     4.60  Q       V |         |         |         |
 7+50      2.5741     4.61  Q       V |         |         |         |
 7+55      2.6060     4.63  Q       V |         |         |         |
 8+ 0      2.6380     4.65  Q       V |         |         |         |
 8+ 5      2.6701     4.66  Q       V |         |         |         |
 8+10      2.7023     4.68  Q       V |         |         |         |
 8+15      2.7347     4.70  Q       V |         |         |         |
 8+20      2.7672     4.72  Q        V|         |         |         |
 8+25      2.7998     4.74  Q        V|         |         |         |
 8+30      2.8326     4.76  Q        V|         |         |         |
 8+35      2.8654     4.77  Q        V|         |         |         |
 8+40      2.8985     4.79  Q        V|         |         |         |
 8+45      2.9316     4.81  Q        V|         |         |         |
 8+50      2.9649     4.83  Q        V|         |         |         |
 8+55      2.9983     4.85  Q        V|         |         |         |
 9+ 0      3.0319     4.87  Q        V|         |         |         |
 9+ 5      3.0656     4.89  Q         V         |         |         |
 9+10      3.0994     4.92  Q         V         |         |         |
 9+15      3.1334     4.94  Q         V         |         |         |
 9+20      3.1676     4.96  Q         V         |         |         |
 9+25      3.2019     4.98  Q         V         |         |         |
 9+30      3.2363     5.00  |Q        V         |         |         |
 9+35      3.2709     5.03  |Q        V         |         |         |
 9+40      3.3057     5.05  |Q        V         |         |         |
 9+45      3.3406     5.07  |Q        V         |         |         |
 9+50      3.3757     5.10  |Q        |V        |         |         |
 9+55      3.4110     5.12  |Q        |V        |         |         |
10+ 0      3.4464     5.15  |Q        |V        |         |         |
10+ 5      3.4821     5.17  |Q        |V        |         |         |
10+10      3.5179     5.20  |Q        |V        |         |         |
10+15      3.5538     5.22  |Q        |V        |         |         |
10+20      3.5900     5.25  |Q        |V        |         |         |
10+25      3.6263     5.28  |Q        |V        |         |         |
10+30      3.6629     5.31  |Q        |V        |         |         |
10+35      3.6996     5.33  |Q        | V       |         |         |
10+40      3.7366     5.36  |Q        | V       |         |         |
```

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10+45      3.7737     5.39  |Q        | V       |         |         |
10+50      3.8111     5.42  |Q        | V       |         |         |
10+55      3.8487     5.45  |Q        | V       |         |         |
11+ 0      3.8864     5.49  |Q        | V       |         |         |
11+ 5      3.9245     5.52  |Q        | V       |         |         |
11+10      3.9627     5.55  |Q        | V       |         |         |
11+15      4.0012     5.59  |Q        |  V      |         |         |
11+20      4.0399     5.62  |Q        |  V      |         |         |
11+25      4.0788     5.66  |Q        |  V      |         |         |
11+30      4.1180     5.69  |Q        |  V      |         |         |
11+35      4.1575     5.73  |Q        |  V      |         |         |
11+40      4.1972     5.77  |Q        |  V      |         |         |
11+45      4.2372     5.81  |Q        |  V      |         |         |
11+50      4.2775     5.85  |Q        |  V      |         |         |
11+55      4.3180     5.89  |Q        |   V     |         |         |
12+ 0      4.3589     5.93  |Q        |   V     |         |         |
12+ 5      4.4000     5.96  |Q        |   V     |         |         |
12+10      4.4409     5.95  |Q        |   V     |         |         |
12+15      4.4819     5.95  |Q        |   V     |         |         |
12+20      4.5232     5.99  |Q        |   V     |         |         |
12+25      4.5647     6.02  |Q        |   V     |         |         |
12+30      4.6065     6.07  |Q        |    V    |         |         |
12+35      4.6486     6.12  |Q        |    V    |         |         |
12+40      4.6912     6.18  |Q        |    V    |         |         |
12+45      4.7341     6.23  |Q        |    V    |         |         |
12+50      4.7774     6.29  |Q        |    V    |         |         |
12+55      4.8211     6.35  |Q        |    V    |         |         |
13+ 0      4.8653     6.41  |Q        |    V    |         |         |
13+ 5      4.9099     6.47  |Q        |     V   |         |         |
13+10      4.9550     6.54  |Q        |     V   |         |         |
13+15      5.0005     6.61  |Q        |     V   |         |         |
13+20      5.0465     6.69  |Q        |     V   |         |         |
13+25      5.0931     6.76  |Q        |     V   |         |         |
13+30      5.1402     6.84  |Q        |     V   |         |         |
13+35      5.1878     6.92  |Q        |     V   |         |         |
13+40      5.2360     7.01  |Q        |      V  |         |         |
13+45      5.2849     7.09  |Q        |      V  |         |         |
13+50      5.3344     7.19  |Q        |      V  |         |         |
13+55      5.3845     7.28  |Q        |      V  |         |         |
14+ 0      5.4354     7.39  |Q        |      V  |         |         |
14+ 5      5.4870     7.49  |Q        |      V  |         |         |
14+10      5.5395     7.62  |Q        |       V |         |         |
14+15      5.5928     7.74  |Q        |       V |         |         |
14+20      5.6471     7.88  |Q        |       V |         |         |
14+25      5.7023     8.01  |Q        |       V |         |         |
14+30      5.7585     8.16  |Q        |       V |         |         |
14+35      5.8157     8.31  |Q        |        V|         |         |
14+40      5.8742     8.49  |Q        |        V|         |         |
14+45      5.9338     8.66  |Q        |        V|         |         |
14+50      5.9948     8.86  |Q        |        V|         |         |
14+55      6.0572     9.06  |Q        |        V|         |         |
15+ 0      6.1213     9.30  |Q        |         V         |         |
15+ 5      6.1871     9.55  |Q        |         V         |         |
15+10      6.2549     9.84  |Q        |         V         |         |
15+15      6.3247    10.14  | Q       |         V         |         |
15+20      6.3971    10.52  | Q       |         V         |         |
15+25      6.4693    10.48  | Q       |         |V        |         |
15+30      6.5279     8.51  |Q        |         |V        |         |
15+35      6.5777     7.24  |Q        |         |V        |         |
15+40      6.6277     7.26  |Q        |         |V        |         |
15+45      6.6807     7.69  |Q        |         |V        |         |
15+50      6.7409     8.74  |Q        |         | V       |         |
15+55      6.8125    10.40  | Q       |         | V       |         |
16+ 0      6.9125    14.52  | Q       |         | V       |         |
16+ 5      7.1601    35.96  |      Q  |         |  V      |         |
16+10      7.8725   103.43  |         |         Q    V    |         |
16+15      8.3975    76.23  |         |    Q    |      V  |         |
16+20      8.6392    35.10  |      Q  |         |       V |         |
16+25      8.7939    22.47  |   Q     |         |       V |         |
16+30      8.9101    16.87  |  Q      |         |        V|         |
16+35      9.0002    13.08  | Q       |         |        V|         |
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16+40      9.0796    11.52  | Q       |         |        V|         |
16+45      9.1540    10.81  | Q       |         |        V|         |
16+50      9.2229    10.00  |Q        |         |         V         |
16+55      9.2856     9.11  |Q        |         |         V         |
17+ 0      9.3444     8.54  |Q        |         |         V         |
17+ 5      9.4010     8.22  |Q        |         |         V         |
17+10      9.4557     7.93  |Q        |         |         V         |
17+15      9.5085     7.67  |Q        |         |         |V        |
17+20      9.5598     7.44  |Q        |         |         |V        |
17+25      9.6096     7.23  |Q        |         |         |V        |
17+30      9.6581     7.04  |Q        |         |         |V        |
17+35      9.7054     6.87  |Q        |         |         |V        |
17+40      9.7516     6.71  |Q        |         |         |V        |
17+45      9.7969     6.57  |Q        |         |         | V       |
17+50      9.8412     6.44  |Q        |         |         | V       |
17+55      9.8846     6.31  |Q        |         |         | V       |
18+ 0      9.9273     6.20  |Q        |         |         | V       |
18+ 5      9.9693     6.10  |Q        |         |         | V       |
18+10     10.0110     6.05  |Q        |         |         | V       |
18+15     10.0523     6.00  |Q        |         |         | V       |
18+20     10.0932     5.93  |Q        |         |         | V       |
18+25     10.1335     5.85  |Q        |         |         |  V      |
18+30     10.1733     5.78  |Q        |         |         |  V      |
18+35     10.2125     5.70  |Q        |         |         |  V      |
18+40     10.2513     5.63  |Q        |         |         |  V      |
18+45     10.2896     5.56  |Q        |         |         |  V      |
18+50     10.3275     5.50  |Q        |         |         |  V      |
18+55     10.3649     5.43  |Q        |         |         |  V      |
19+ 0     10.4019     5.37  |Q        |         |         |   V     |
19+ 5     10.4385     5.32  |Q        |         |         |   V     |
19+10     10.4748     5.26  |Q        |         |         |   V     |
19+15     10.5106     5.21  |Q        |         |         |   V     |
19+20     10.5461     5.15  |Q        |         |         |   V     |
19+25     10.5813     5.10  |Q        |         |         |   V     |
19+30     10.6161     5.06  |Q        |         |         |   V     |
19+35     10.6506     5.01  |Q        |         |         |   V     |
19+40     10.6848     4.96  Q         |         |         |   V     |
19+45     10.7187     4.92  Q         |         |         |    V    |
19+50     10.7523     4.88  Q         |         |         |    V    |
19+55     10.7856     4.84  Q         |         |         |    V    |
20+ 0     10.8187     4.80  Q         |         |         |    V    |
20+ 5     10.8515     4.76  Q         |         |         |    V    |
20+10     10.8840     4.72  Q         |         |         |    V    |
20+15     10.9163     4.69  Q         |         |         |    V    |
20+20     10.9483     4.65  Q         |         |         |    V    |
20+25     10.9801     4.62  Q         |         |         |    V    |
20+30     11.0117     4.58  Q         |         |         |     V   |
20+35     11.0430     4.55  Q         |         |         |     V   |
20+40     11.0742     4.52  Q         |         |         |     V   |
20+45     11.1051     4.49  Q         |         |         |     V   |
20+50     11.1358     4.46  Q         |         |         |     V   |
20+55     11.1663     4.43  Q         |         |         |     V   |
21+ 0     11.1967     4.40  Q         |         |         |     V   |
21+ 5     11.2268     4.37  Q         |         |         |     V   |
21+10     11.2567     4.35  Q         |         |         |     V   |
21+15     11.2865     4.32  Q         |         |         |     V   |
21+20     11.3161     4.29  Q         |         |         |     V   |
21+25     11.3455     4.27  Q         |         |         |      V  |
21+30     11.3747     4.24  Q         |         |         |      V  |
21+35     11.4038     4.22  Q         |         |         |      V  |
21+40     11.4327     4.20  Q         |         |         |      V  |
21+45     11.4614     4.17  Q         |         |         |      V  |
21+50     11.4900     4.15  Q         |         |         |      V  |
21+55     11.5184     4.13  Q         |         |         |      V  |
22+ 0     11.5467     4.11  Q         |         |         |      V  |
22+ 5     11.5748     4.08  Q         |         |         |      V  |
22+10     11.6028     4.06  Q         |         |         |      V  |
22+15     11.6307     4.04  Q         |         |         |       V |
22+20     11.6584     4.02  Q         |         |         |       V |
22+25     11.6859     4.00  Q         |         |         |       V |
22+30     11.7134     3.98  Q         |         |         |       V |
```

```
   22+35      11.7407      3.96  Q          |          |          |       V |
   22+40      11.7678      3.94  Q          |          |          |       V |
   22+45      11.7949      3.93  Q          |          |          |       V |
   22+50      11.8218      3.91  Q          |          |          |       V |
   22+55      11.8486      3.89  Q          |          |          |       V |
   23+ 0      11.8753      3.87  Q          |          |          |       V |
   23+ 5      11.9018      3.86  Q          |          |          |       V |
   23+10      11.9282      3.84  Q          |          |          |       V |
   23+15      11.9546      3.82  Q          |          |          |        V|
   23+20      11.9808      3.80  Q          |          |          |        V|
   23+25      12.0069      3.79  Q          |          |          |        V|
   23+30      12.0328      3.77  Q          |          |          |        V|
   23+35      12.0587      3.76  Q          |          |          |        V|
   23+40      12.0845      3.74  Q          |          |          |        V|
   23+45      12.1101      3.73  Q          |          |          |        V|
   23+50      12.1357      3.71  Q          |          |          |        V|
   23+55      12.1612      3.70  Q          |          |          |        V|
   24+ 0      12.1865      3.68  Q          |          |          |        V|
   24+ 5      12.2100      3.41  Q          |          |          |        V|
   24+10      12.2232      1.92  Q          |          |          |        V|
   24+15      12.2290      0.84  Q          |          |          |        V|
   24+20      12.2321      0.44  Q          |          |          |        V|
   24+25      12.2336      0.22  Q          |          |          |        V|
   24+30      12.2343      0.10  Q          |          |          |        V|
   24+35      12.2346      0.06  Q          |          |          |        V|
   24+40      12.2349      0.03  Q          |          |          |        V|
   24+45      12.2350      0.01  Q          |          |          |        V|
   24+50      12.2350      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area 'A' – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
25 YEAR 24 HOUR STORM
DECEMBER 16, 2024
----------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            43.08           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            43.08           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            43.08          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            43.08           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            43.08           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            43.08          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 36.7      36.7         43.08      1.000     0.945    0.610    0.577

Area-averaged adjusted loss rate Fm (In/Hr) =  0.577

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 26.28 | 0.610 | 36.7 | 36.7 | 17.25 | 0.155 |
| 16.80 | 0.390 | 98.0 | 98.0 | 0.20 | 0.974 |

Area-averaged catchment yield fraction, Y = 0.474
Area-averaged low loss fraction, Yb = 0.526
User entry of time of concentration = 0.150 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 43.08(Ac.)
Catchment Lag time = 0.120 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 69.4444
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.577(In/Hr)
Average low loss rate fraction (Yb) = 0.526 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 43.08(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.568(In)
30-minute factor = 0.998 Adjusted rainfall = 0.972(In)
1-hour factor = 0.998 Adjusted rainfall = 1.197(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 521.00 (CFS)) | |
| 1 | 7.065 | 36.808 |
| 2 | 47.670 | 211.553 |
| 3 | 76.988 | 152.744 |
| 4 | 87.984 | 57.293 |
| 5 | 94.086 | 31.790 |
| 6 | 97.295 | 16.719 |
| 7 | 98.498 | 6.265 |
| 8 | 99.120 | 3.241 |
| 9 | 99.604 | 2.523 |
| 10 | 99.910 | 1.595 |
| 11 | 100.000 | 0.467 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5678 | 0.5678 |
| 2 | 0.6990 | 0.1312 |
| 3 | 0.7894 | 0.0904 |
| 4 | 0.8606 | 0.0712 |
| 5 | 0.9202 | 0.0596 |
| 6 | 0.9719 | 0.0517 |
| 7 | 1.0179 | 0.0460 |
| 8 | 1.0595 | 0.0416 |
| 9 | 1.0976 | 0.0381 |
| 10 | 1.1329 | 0.0352 |
| 11 | 1.1657 | 0.0329 |
| 12 | 1.1965 | 0.0308 |
| 13 | 1.2572 | 0.0606 |
| 14 | 1.3160 | 0.0589 |

| | | |
|---|---|---|
| 15 | 1.3733 | 0.0573 |
| 16 | 1.4291 | 0.0558 |
| 17 | 1.4836 | 0.0545 |
| 18 | 1.5369 | 0.0533 |
| 19 | 1.5891 | 0.0522 |
| 20 | 1.6402 | 0.0511 |
| 21 | 1.6904 | 0.0502 |
| 22 | 1.7396 | 0.0493 |
| 23 | 1.7880 | 0.0484 |
| 24 | 1.8357 | 0.0476 |
| 25 | 1.8825 | 0.0469 |
| 26 | 1.9286 | 0.0461 |
| 27 | 1.9741 | 0.0455 |
| 28 | 2.0189 | 0.0448 |
| 29 | 2.0632 | 0.0442 |
| 30 | 2.1068 | 0.0436 |
| 31 | 2.1499 | 0.0431 |
| 32 | 2.1924 | 0.0426 |
| 33 | 2.2345 | 0.0421 |
| 34 | 2.2761 | 0.0416 |
| 35 | 2.3172 | 0.0411 |
| 36 | 2.3578 | 0.0407 |
| 37 | 2.3980 | 0.0401 |
| 38 | 2.4377 | 0.0397 |
| 39 | 2.4770 | 0.0393 |
| 40 | 2.5159 | 0.0389 |
| 41 | 2.5545 | 0.0386 |
| 42 | 2.5927 | 0.0382 |
| 43 | 2.6305 | 0.0379 |
| 44 | 2.6680 | 0.0375 |
| 45 | 2.7052 | 0.0372 |
| 46 | 2.7421 | 0.0369 |
| 47 | 2.7787 | 0.0366 |
| 48 | 2.8150 | 0.0363 |
| 49 | 2.8509 | 0.0360 |
| 50 | 2.8866 | 0.0357 |
| 51 | 2.9221 | 0.0354 |
| 52 | 2.9572 | 0.0352 |
| 53 | 2.9921 | 0.0349 |
| 54 | 3.0268 | 0.0347 |
| 55 | 3.0612 | 0.0344 |
| 56 | 3.0953 | 0.0342 |
| 57 | 3.1293 | 0.0339 |
| 58 | 3.1630 | 0.0337 |
| 59 | 3.1965 | 0.0335 |
| 60 | 3.2297 | 0.0333 |
| 61 | 3.2628 | 0.0331 |
| 62 | 3.2956 | 0.0328 |
| 63 | 3.3283 | 0.0326 |
| 64 | 3.3607 | 0.0324 |
| 65 | 3.3930 | 0.0322 |
| 66 | 3.4250 | 0.0321 |
| 67 | 3.4569 | 0.0319 |
| 68 | 3.4886 | 0.0317 |
| 69 | 3.5201 | 0.0315 |
| 70 | 3.5514 | 0.0313 |
| 71 | 3.5826 | 0.0312 |
| 72 | 3.6136 | 0.0310 |
| 73 | 3.6472 | 0.0336 |
| 74 | 3.6807 | 0.0335 |
| 75 | 3.7140 | 0.0333 |
| 76 | 3.7472 | 0.0332 |
| 77 | 3.7802 | 0.0330 |
| 78 | 3.8131 | 0.0329 |
| 79 | 3.8458 | 0.0327 |
| 80 | 3.8784 | 0.0326 |
| 81 | 3.9109 | 0.0325 |
| 82 | 3.9433 | 0.0323 |
| 83 | 3.9755 | 0.0322 |
| 84 | 4.0076 | 0.0321 |
| 85 | 4.0395 | 0.0320 |

| | | |
|---|---|---|
| 86 | 4.0714 | 0.0318 |
| 87 | 4.1031 | 0.0317 |
| 88 | 4.1347 | 0.0316 |
| 89 | 4.1662 | 0.0315 |
| 90 | 4.1976 | 0.0314 |
| 91 | 4.2288 | 0.0313 |
| 92 | 4.2600 | 0.0311 |
| 93 | 4.2910 | 0.0310 |
| 94 | 4.3219 | 0.0309 |
| 95 | 4.3527 | 0.0308 |
| 96 | 4.3834 | 0.0307 |
| 97 | 4.4140 | 0.0306 |
| 98 | 4.4445 | 0.0305 |
| 99 | 4.4749 | 0.0304 |
| 100 | 4.5052 | 0.0303 |
| 101 | 4.5354 | 0.0302 |
| 102 | 4.5655 | 0.0301 |
| 103 | 4.5955 | 0.0300 |
| 104 | 4.6254 | 0.0299 |
| 105 | 4.6552 | 0.0298 |
| 106 | 4.6849 | 0.0297 |
| 107 | 4.7145 | 0.0296 |
| 108 | 4.7441 | 0.0295 |
| 109 | 4.7735 | 0.0294 |
| 110 | 4.8029 | 0.0294 |
| 111 | 4.8322 | 0.0293 |
| 112 | 4.8613 | 0.0292 |
| 113 | 4.8904 | 0.0291 |
| 114 | 4.9194 | 0.0290 |
| 115 | 4.9484 | 0.0289 |
| 116 | 4.9772 | 0.0288 |
| 117 | 5.0060 | 0.0288 |
| 118 | 5.0347 | 0.0287 |
| 119 | 5.0633 | 0.0286 |
| 120 | 5.0918 | 0.0285 |
| 121 | 5.1202 | 0.0284 |
| 122 | 5.1486 | 0.0284 |
| 123 | 5.1769 | 0.0283 |
| 124 | 5.2051 | 0.0282 |
| 125 | 5.2333 | 0.0281 |
| 126 | 5.2613 | 0.0281 |
| 127 | 5.2893 | 0.0280 |
| 128 | 5.3172 | 0.0279 |
| 129 | 5.3451 | 0.0279 |
| 130 | 5.3729 | 0.0278 |
| 131 | 5.4006 | 0.0277 |
| 132 | 5.4282 | 0.0276 |
| 133 | 5.4558 | 0.0276 |
| 134 | 5.4833 | 0.0275 |
| 135 | 5.5107 | 0.0274 |
| 136 | 5.5381 | 0.0274 |
| 137 | 5.5654 | 0.0273 |
| 138 | 5.5926 | 0.0272 |
| 139 | 5.6198 | 0.0272 |
| 140 | 5.6469 | 0.0271 |
| 141 | 5.6740 | 0.0270 |
| 142 | 5.7010 | 0.0270 |
| 143 | 5.7279 | 0.0269 |
| 144 | 5.7547 | 0.0269 |
| 145 | 5.7815 | 0.0268 |
| 146 | 5.8083 | 0.0267 |
| 147 | 5.8350 | 0.0267 |
| 148 | 5.8616 | 0.0266 |
| 149 | 5.8881 | 0.0266 |
| 150 | 5.9146 | 0.0265 |
| 151 | 5.9411 | 0.0264 |
| 152 | 5.9675 | 0.0264 |
| 153 | 5.9938 | 0.0263 |
| 154 | 6.0200 | 0.0263 |
| 155 | 6.0463 | 0.0262 |
| 156 | 6.0724 | 0.0262 |

| | | |
|---|---|---|
| 157 | 6.0985 | 0.0261 |
| 158 | 6.1246 | 0.0260 |
| 159 | 6.1506 | 0.0260 |
| 160 | 6.1765 | 0.0259 |
| 161 | 6.2024 | 0.0259 |
| 162 | 6.2282 | 0.0258 |
| 163 | 6.2540 | 0.0258 |
| 164 | 6.2798 | 0.0257 |
| 165 | 6.3054 | 0.0257 |
| 166 | 6.3311 | 0.0256 |
| 167 | 6.3566 | 0.0256 |
| 168 | 6.3822 | 0.0255 |
| 169 | 6.4076 | 0.0255 |
| 170 | 6.4331 | 0.0254 |
| 171 | 6.4585 | 0.0254 |
| 172 | 6.4838 | 0.0253 |
| 173 | 6.5091 | 0.0253 |
| 174 | 6.5343 | 0.0252 |
| 175 | 6.5595 | 0.0252 |
| 176 | 6.5846 | 0.0251 |
| 177 | 6.6097 | 0.0251 |
| 178 | 6.6348 | 0.0250 |
| 179 | 6.6598 | 0.0250 |
| 180 | 6.6847 | 0.0250 |
| 181 | 6.7096 | 0.0249 |
| 182 | 6.7345 | 0.0249 |
| 183 | 6.7593 | 0.0248 |
| 184 | 6.7841 | 0.0248 |
| 185 | 6.8088 | 0.0247 |
| 186 | 6.8335 | 0.0247 |
| 187 | 6.8581 | 0.0246 |
| 188 | 6.8827 | 0.0246 |
| 189 | 6.9073 | 0.0246 |
| 190 | 6.9318 | 0.0245 |
| 191 | 6.9563 | 0.0245 |
| 192 | 6.9807 | 0.0244 |
| 193 | 7.0051 | 0.0244 |
| 194 | 7.0294 | 0.0243 |
| 195 | 7.0537 | 0.0243 |
| 196 | 7.0780 | 0.0243 |
| 197 | 7.1022 | 0.0242 |
| 198 | 7.1264 | 0.0242 |
| 199 | 7.1505 | 0.0241 |
| 200 | 7.1746 | 0.0241 |
| 201 | 7.1987 | 0.0241 |
| 202 | 7.2227 | 0.0240 |
| 203 | 7.2467 | 0.0240 |
| 204 | 7.2707 | 0.0239 |
| 205 | 7.2946 | 0.0239 |
| 206 | 7.3184 | 0.0239 |
| 207 | 7.3423 | 0.0238 |
| 208 | 7.3661 | 0.0238 |
| 209 | 7.3898 | 0.0238 |
| 210 | 7.4135 | 0.0237 |
| 211 | 7.4372 | 0.0237 |
| 212 | 7.4609 | 0.0236 |
| 213 | 7.4845 | 0.0236 |
| 214 | 7.5080 | 0.0236 |
| 215 | 7.5316 | 0.0235 |
| 216 | 7.5551 | 0.0235 |
| 217 | 7.5785 | 0.0235 |
| 218 | 7.6020 | 0.0234 |
| 219 | 7.6254 | 0.0234 |
| 220 | 7.6487 | 0.0234 |
| 221 | 7.6720 | 0.0233 |
| 222 | 7.6953 | 0.0233 |
| 223 | 7.7186 | 0.0233 |
| 224 | 7.7418 | 0.0232 |
| 225 | 7.7650 | 0.0232 |
| 226 | 7.7881 | 0.0232 |
| 227 | 7.8112 | 0.0231 |

| | | |
|---|---|---|
| 228 | 7.8343 | 0.0231 |
| 229 | 7.8574 | 0.0231 |
| 230 | 7.8804 | 0.0230 |
| 231 | 7.9034 | 0.0230 |
| 232 | 7.9263 | 0.0230 |
| 233 | 7.9493 | 0.0229 |
| 234 | 7.9721 | 0.0229 |
| 235 | 7.9950 | 0.0229 |
| 236 | 8.0178 | 0.0228 |
| 237 | 8.0406 | 0.0228 |
| 238 | 8.0634 | 0.0228 |
| 239 | 8.0861 | 0.0227 |
| 240 | 8.1088 | 0.0227 |
| 241 | 8.1315 | 0.0227 |
| 242 | 8.1541 | 0.0226 |
| 243 | 8.1767 | 0.0226 |
| 244 | 8.1993 | 0.0226 |
| 245 | 8.2218 | 0.0225 |
| 246 | 8.2443 | 0.0225 |
| 247 | 8.2668 | 0.0225 |
| 248 | 8.2893 | 0.0225 |
| 249 | 8.3117 | 0.0224 |
| 250 | 8.3341 | 0.0224 |
| 251 | 8.3564 | 0.0224 |
| 252 | 8.3788 | 0.0223 |
| 253 | 8.4011 | 0.0223 |
| 254 | 8.4234 | 0.0223 |
| 255 | 8.4456 | 0.0222 |
| 256 | 8.4678 | 0.0222 |
| 257 | 8.4900 | 0.0222 |
| 258 | 8.5122 | 0.0222 |
| 259 | 8.5343 | 0.0221 |
| 260 | 8.5564 | 0.0221 |
| 261 | 8.5785 | 0.0221 |
| 262 | 8.6006 | 0.0221 |
| 263 | 8.6226 | 0.0220 |
| 264 | 8.6446 | 0.0220 |
| 265 | 8.6665 | 0.0220 |
| 266 | 8.6885 | 0.0219 |
| 267 | 8.7104 | 0.0219 |
| 268 | 8.7323 | 0.0219 |
| 269 | 8.7541 | 0.0219 |
| 270 | 8.7760 | 0.0218 |
| 271 | 8.7978 | 0.0218 |
| 272 | 8.8196 | 0.0218 |
| 273 | 8.8413 | 0.0218 |
| 274 | 8.8631 | 0.0217 |
| 275 | 8.8848 | 0.0217 |
| 276 | 8.9064 | 0.0217 |
| 277 | 8.9281 | 0.0217 |
| 278 | 8.9497 | 0.0216 |
| 279 | 8.9713 | 0.0216 |
| 280 | 8.9929 | 0.0216 |
| 281 | 9.0144 | 0.0215 |
| 282 | 9.0359 | 0.0215 |
| 283 | 9.0574 | 0.0215 |
| 284 | 9.0789 | 0.0215 |
| 285 | 9.1004 | 0.0214 |
| 286 | 9.1218 | 0.0214 |
| 287 | 9.1432 | 0.0214 |
| 288 | 9.1646 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0112 | 0.0101 |
| 2 | 0.0214 | 0.0112 | 0.0102 |
| 3 | 0.0214 | 0.0113 | 0.0102 |
| 4 | 0.0215 | 0.0113 | 0.0102 |
| 5 | 0.0215 | 0.0113 | 0.0102 |

| | | | |
|---|---|---|---|
| 6 | 0.0215 | 0.0113 | 0.0102 |
| 7 | 0.0216 | 0.0114 | 0.0102 |
| 8 | 0.0216 | 0.0114 | 0.0103 |
| 9 | 0.0217 | 0.0114 | 0.0103 |
| 10 | 0.0217 | 0.0114 | 0.0103 |
| 11 | 0.0218 | 0.0114 | 0.0103 |
| 12 | 0.0218 | 0.0114 | 0.0103 |
| 13 | 0.0218 | 0.0115 | 0.0104 |
| 14 | 0.0219 | 0.0115 | 0.0104 |
| 15 | 0.0219 | 0.0115 | 0.0104 |
| 16 | 0.0219 | 0.0115 | 0.0104 |
| 17 | 0.0220 | 0.0116 | 0.0104 |
| 18 | 0.0220 | 0.0116 | 0.0104 |
| 19 | 0.0221 | 0.0116 | 0.0105 |
| 20 | 0.0221 | 0.0116 | 0.0105 |
| 21 | 0.0222 | 0.0116 | 0.0105 |
| 22 | 0.0222 | 0.0117 | 0.0105 |
| 23 | 0.0222 | 0.0117 | 0.0106 |
| 24 | 0.0223 | 0.0117 | 0.0106 |
| 25 | 0.0223 | 0.0117 | 0.0106 |
| 26 | 0.0224 | 0.0118 | 0.0106 |
| 27 | 0.0224 | 0.0118 | 0.0106 |
| 28 | 0.0225 | 0.0118 | 0.0107 |
| 29 | 0.0225 | 0.0118 | 0.0107 |
| 30 | 0.0225 | 0.0118 | 0.0107 |
| 31 | 0.0226 | 0.0119 | 0.0107 |
| 32 | 0.0226 | 0.0119 | 0.0107 |
| 33 | 0.0227 | 0.0119 | 0.0108 |
| 34 | 0.0227 | 0.0119 | 0.0108 |
| 35 | 0.0228 | 0.0120 | 0.0108 |
| 36 | 0.0228 | 0.0120 | 0.0108 |
| 37 | 0.0229 | 0.0120 | 0.0109 |
| 38 | 0.0229 | 0.0120 | 0.0109 |
| 39 | 0.0230 | 0.0121 | 0.0109 |
| 40 | 0.0230 | 0.0121 | 0.0109 |
| 41 | 0.0231 | 0.0121 | 0.0110 |
| 42 | 0.0231 | 0.0121 | 0.0110 |
| 43 | 0.0232 | 0.0122 | 0.0110 |
| 44 | 0.0232 | 0.0122 | 0.0110 |
| 45 | 0.0233 | 0.0122 | 0.0110 |
| 46 | 0.0233 | 0.0123 | 0.0111 |
| 47 | 0.0234 | 0.0123 | 0.0111 |
| 48 | 0.0234 | 0.0123 | 0.0111 |
| 49 | 0.0235 | 0.0123 | 0.0111 |
| 50 | 0.0235 | 0.0124 | 0.0112 |
| 51 | 0.0236 | 0.0124 | 0.0112 |
| 52 | 0.0236 | 0.0124 | 0.0112 |
| 53 | 0.0237 | 0.0125 | 0.0113 |
| 54 | 0.0238 | 0.0125 | 0.0113 |
| 55 | 0.0238 | 0.0125 | 0.0113 |
| 56 | 0.0239 | 0.0125 | 0.0113 |
| 57 | 0.0239 | 0.0126 | 0.0114 |
| 58 | 0.0240 | 0.0126 | 0.0114 |
| 59 | 0.0241 | 0.0126 | 0.0114 |
| 60 | 0.0241 | 0.0127 | 0.0114 |
| 61 | 0.0242 | 0.0127 | 0.0115 |
| 62 | 0.0242 | 0.0127 | 0.0115 |
| 63 | 0.0243 | 0.0128 | 0.0115 |
| 64 | 0.0243 | 0.0128 | 0.0116 |
| 65 | 0.0244 | 0.0128 | 0.0116 |
| 66 | 0.0245 | 0.0129 | 0.0116 |
| 67 | 0.0246 | 0.0129 | 0.0117 |
| 68 | 0.0246 | 0.0129 | 0.0117 |
| 69 | 0.0247 | 0.0130 | 0.0117 |
| 70 | 0.0247 | 0.0130 | 0.0117 |
| 71 | 0.0248 | 0.0130 | 0.0118 |
| 72 | 0.0249 | 0.0131 | 0.0118 |
| 73 | 0.0250 | 0.0131 | 0.0118 |
| 74 | 0.0250 | 0.0131 | 0.0119 |
| 75 | 0.0251 | 0.0132 | 0.0119 |
| 76 | 0.0251 | 0.0132 | 0.0119 |

| | | | |
|---|---|---|---|
| 77 | 0.0252 | 0.0133 | 0.0120 |
| 78 | 0.0253 | 0.0133 | 0.0120 |
| 79 | 0.0254 | 0.0133 | 0.0120 |
| 80 | 0.0254 | 0.0134 | 0.0121 |
| 81 | 0.0255 | 0.0134 | 0.0121 |
| 82 | 0.0256 | 0.0134 | 0.0121 |
| 83 | 0.0257 | 0.0135 | 0.0122 |
| 84 | 0.0257 | 0.0135 | 0.0122 |
| 85 | 0.0258 | 0.0136 | 0.0123 |
| 86 | 0.0259 | 0.0136 | 0.0123 |
| 87 | 0.0260 | 0.0137 | 0.0123 |
| 88 | 0.0260 | 0.0137 | 0.0124 |
| 89 | 0.0262 | 0.0137 | 0.0124 |
| 90 | 0.0262 | 0.0138 | 0.0124 |
| 91 | 0.0263 | 0.0138 | 0.0125 |
| 92 | 0.0264 | 0.0139 | 0.0125 |
| 93 | 0.0265 | 0.0139 | 0.0126 |
| 94 | 0.0266 | 0.0140 | 0.0126 |
| 95 | 0.0267 | 0.0140 | 0.0127 |
| 96 | 0.0267 | 0.0141 | 0.0127 |
| 97 | 0.0269 | 0.0141 | 0.0127 |
| 98 | 0.0269 | 0.0141 | 0.0128 |
| 99 | 0.0270 | 0.0142 | 0.0128 |
| 100 | 0.0271 | 0.0142 | 0.0129 |
| 101 | 0.0272 | 0.0143 | 0.0129 |
| 102 | 0.0273 | 0.0143 | 0.0130 |
| 103 | 0.0274 | 0.0144 | 0.0130 |
| 104 | 0.0275 | 0.0145 | 0.0130 |
| 105 | 0.0276 | 0.0145 | 0.0131 |
| 106 | 0.0277 | 0.0146 | 0.0131 |
| 107 | 0.0279 | 0.0146 | 0.0132 |
| 108 | 0.0279 | 0.0147 | 0.0132 |
| 109 | 0.0281 | 0.0148 | 0.0133 |
| 110 | 0.0281 | 0.0148 | 0.0134 |
| 111 | 0.0283 | 0.0149 | 0.0134 |
| 112 | 0.0284 | 0.0149 | 0.0135 |
| 113 | 0.0285 | 0.0150 | 0.0135 |
| 114 | 0.0286 | 0.0150 | 0.0136 |
| 115 | 0.0288 | 0.0151 | 0.0136 |
| 116 | 0.0288 | 0.0152 | 0.0137 |
| 117 | 0.0290 | 0.0152 | 0.0138 |
| 118 | 0.0291 | 0.0153 | 0.0138 |
| 119 | 0.0293 | 0.0154 | 0.0139 |
| 120 | 0.0294 | 0.0154 | 0.0139 |
| 121 | 0.0295 | 0.0155 | 0.0140 |
| 122 | 0.0296 | 0.0156 | 0.0141 |
| 123 | 0.0298 | 0.0157 | 0.0141 |
| 124 | 0.0299 | 0.0157 | 0.0142 |
| 125 | 0.0301 | 0.0158 | 0.0143 |
| 126 | 0.0302 | 0.0159 | 0.0143 |
| 127 | 0.0304 | 0.0160 | 0.0144 |
| 128 | 0.0305 | 0.0160 | 0.0145 |
| 129 | 0.0307 | 0.0161 | 0.0146 |
| 130 | 0.0308 | 0.0162 | 0.0146 |
| 131 | 0.0310 | 0.0163 | 0.0147 |
| 132 | 0.0311 | 0.0164 | 0.0148 |
| 133 | 0.0314 | 0.0165 | 0.0149 |
| 134 | 0.0315 | 0.0165 | 0.0149 |
| 135 | 0.0317 | 0.0167 | 0.0150 |
| 136 | 0.0318 | 0.0167 | 0.0151 |
| 137 | 0.0321 | 0.0169 | 0.0152 |
| 138 | 0.0322 | 0.0169 | 0.0153 |
| 139 | 0.0325 | 0.0171 | 0.0154 |
| 140 | 0.0326 | 0.0171 | 0.0155 |
| 141 | 0.0329 | 0.0173 | 0.0156 |
| 142 | 0.0330 | 0.0174 | 0.0157 |
| 143 | 0.0333 | 0.0175 | 0.0158 |
| 144 | 0.0335 | 0.0176 | 0.0159 |
| 145 | 0.0310 | 0.0163 | 0.0147 |
| 146 | 0.0312 | 0.0164 | 0.0148 |
| 147 | 0.0315 | 0.0166 | 0.0150 |

| | | | |
|---|---|---|---|
| 148 | 0.0317 | 0.0167 | 0.0150 |
| 149 | 0.0321 | 0.0168 | 0.0152 |
| 150 | 0.0322 | 0.0169 | 0.0153 |
| 151 | 0.0326 | 0.0172 | 0.0155 |
| 152 | 0.0328 | 0.0173 | 0.0156 |
| 153 | 0.0333 | 0.0175 | 0.0158 |
| 154 | 0.0335 | 0.0176 | 0.0159 |
| 155 | 0.0339 | 0.0178 | 0.0161 |
| 156 | 0.0342 | 0.0180 | 0.0162 |
| 157 | 0.0347 | 0.0182 | 0.0164 |
| 158 | 0.0349 | 0.0183 | 0.0166 |
| 159 | 0.0354 | 0.0186 | 0.0168 |
| 160 | 0.0357 | 0.0188 | 0.0169 |
| 161 | 0.0363 | 0.0191 | 0.0172 |
| 162 | 0.0366 | 0.0192 | 0.0173 |
| 163 | 0.0372 | 0.0195 | 0.0176 |
| 164 | 0.0375 | 0.0197 | 0.0178 |
| 165 | 0.0382 | 0.0201 | 0.0181 |
| 166 | 0.0386 | 0.0203 | 0.0183 |
| 167 | 0.0393 | 0.0207 | 0.0187 |
| 168 | 0.0397 | 0.0209 | 0.0188 |
| 169 | 0.0407 | 0.0214 | 0.0193 |
| 170 | 0.0411 | 0.0216 | 0.0195 |
| 171 | 0.0421 | 0.0221 | 0.0200 |
| 172 | 0.0426 | 0.0224 | 0.0202 |
| 173 | 0.0436 | 0.0229 | 0.0207 |
| 174 | 0.0442 | 0.0232 | 0.0210 |
| 175 | 0.0455 | 0.0239 | 0.0216 |
| 176 | 0.0461 | 0.0242 | 0.0219 |
| 177 | 0.0476 | 0.0250 | 0.0226 |
| 178 | 0.0484 | 0.0254 | 0.0230 |
| 179 | 0.0502 | 0.0264 | 0.0238 |
| 180 | 0.0511 | 0.0269 | 0.0243 |
| 181 | 0.0533 | 0.0280 | 0.0253 |
| 182 | 0.0545 | 0.0286 | 0.0259 |
| 183 | 0.0573 | 0.0301 | 0.0272 |
| 184 | 0.0589 | 0.0309 | 0.0279 |
| 185 | 0.0308 | 0.0162 | 0.0146 |
| 186 | 0.0329 | 0.0173 | 0.0156 |
| 187 | 0.0381 | 0.0200 | 0.0181 |
| 188 | 0.0416 | 0.0219 | 0.0197 |
| 189 | 0.0517 | 0.0272 | 0.0245 |
| 190 | 0.0596 | 0.0313 | 0.0283 |
| 191 | 0.0904 | 0.0475 | 0.0429 |
| 192 | 0.1312 | 0.0480 | 0.0832 |
| 193 | 0.5678 | 0.0480 | 0.5197 |
| 194 | 0.0712 | 0.0374 | 0.0338 |
| 195 | 0.0460 | 0.0242 | 0.0218 |
| 196 | 0.0352 | 0.0185 | 0.0167 |
| 197 | 0.0606 | 0.0319 | 0.0288 |
| 198 | 0.0558 | 0.0293 | 0.0265 |
| 199 | 0.0522 | 0.0274 | 0.0248 |
| 200 | 0.0493 | 0.0259 | 0.0234 |
| 201 | 0.0469 | 0.0246 | 0.0222 |
| 202 | 0.0448 | 0.0236 | 0.0213 |
| 203 | 0.0431 | 0.0226 | 0.0204 |
| 204 | 0.0416 | 0.0218 | 0.0197 |
| 205 | 0.0401 | 0.0211 | 0.0190 |
| 206 | 0.0389 | 0.0205 | 0.0185 |
| 207 | 0.0379 | 0.0199 | 0.0180 |
| 208 | 0.0369 | 0.0194 | 0.0175 |
| 209 | 0.0360 | 0.0189 | 0.0171 |
| 210 | 0.0352 | 0.0185 | 0.0167 |
| 211 | 0.0344 | 0.0181 | 0.0163 |
| 212 | 0.0337 | 0.0177 | 0.0160 |
| 213 | 0.0331 | 0.0174 | 0.0157 |
| 214 | 0.0324 | 0.0171 | 0.0154 |
| 215 | 0.0319 | 0.0168 | 0.0151 |
| 216 | 0.0313 | 0.0165 | 0.0149 |
| 217 | 0.0336 | 0.0177 | 0.0159 |
| 218 | 0.0332 | 0.0174 | 0.0157 |

| | | | |
|---|---|---|---|
| 219 | 0.0327 | 0.0172 | 0.0155 |
| 220 | 0.0323 | 0.0170 | 0.0153 |
| 221 | 0.0320 | 0.0168 | 0.0152 |
| 222 | 0.0316 | 0.0166 | 0.0150 |
| 223 | 0.0313 | 0.0164 | 0.0148 |
| 224 | 0.0309 | 0.0162 | 0.0147 |
| 225 | 0.0306 | 0.0161 | 0.0145 |
| 226 | 0.0303 | 0.0159 | 0.0144 |
| 227 | 0.0300 | 0.0158 | 0.0142 |
| 228 | 0.0297 | 0.0156 | 0.0141 |
| 229 | 0.0294 | 0.0155 | 0.0140 |
| 230 | 0.0292 | 0.0153 | 0.0138 |
| 231 | 0.0289 | 0.0152 | 0.0137 |
| 232 | 0.0287 | 0.0151 | 0.0136 |
| 233 | 0.0284 | 0.0149 | 0.0135 |
| 234 | 0.0282 | 0.0148 | 0.0134 |
| 235 | 0.0280 | 0.0147 | 0.0133 |
| 236 | 0.0278 | 0.0146 | 0.0132 |
| 237 | 0.0276 | 0.0145 | 0.0131 |
| 238 | 0.0274 | 0.0144 | 0.0130 |
| 239 | 0.0272 | 0.0143 | 0.0129 |
| 240 | 0.0270 | 0.0142 | 0.0128 |
| 241 | 0.0268 | 0.0141 | 0.0127 |
| 242 | 0.0266 | 0.0140 | 0.0126 |
| 243 | 0.0264 | 0.0139 | 0.0125 |
| 244 | 0.0263 | 0.0138 | 0.0125 |
| 245 | 0.0261 | 0.0137 | 0.0124 |
| 246 | 0.0259 | 0.0136 | 0.0123 |
| 247 | 0.0258 | 0.0136 | 0.0122 |
| 248 | 0.0256 | 0.0135 | 0.0122 |
| 249 | 0.0255 | 0.0134 | 0.0121 |
| 250 | 0.0253 | 0.0133 | 0.0120 |
| 251 | 0.0252 | 0.0132 | 0.0119 |
| 252 | 0.0250 | 0.0132 | 0.0119 |
| 253 | 0.0249 | 0.0131 | 0.0118 |
| 254 | 0.0248 | 0.0130 | 0.0118 |
| 255 | 0.0246 | 0.0130 | 0.0117 |
| 256 | 0.0245 | 0.0129 | 0.0116 |
| 257 | 0.0244 | 0.0128 | 0.0116 |
| 258 | 0.0243 | 0.0128 | 0.0115 |
| 259 | 0.0241 | 0.0127 | 0.0115 |
| 260 | 0.0240 | 0.0126 | 0.0114 |
| 261 | 0.0239 | 0.0126 | 0.0113 |
| 262 | 0.0238 | 0.0125 | 0.0113 |
| 263 | 0.0237 | 0.0124 | 0.0112 |
| 264 | 0.0236 | 0.0124 | 0.0112 |
| 265 | 0.0235 | 0.0123 | 0.0111 |
| 266 | 0.0234 | 0.0123 | 0.0111 |
| 267 | 0.0233 | 0.0122 | 0.0110 |
| 268 | 0.0232 | 0.0122 | 0.0110 |
| 269 | 0.0231 | 0.0121 | 0.0109 |
| 270 | 0.0230 | 0.0121 | 0.0109 |
| 271 | 0.0229 | 0.0120 | 0.0108 |
| 272 | 0.0228 | 0.0120 | 0.0108 |
| 273 | 0.0227 | 0.0119 | 0.0108 |
| 274 | 0.0226 | 0.0119 | 0.0107 |
| 275 | 0.0225 | 0.0118 | 0.0107 |
| 276 | 0.0224 | 0.0118 | 0.0106 |
| 277 | 0.0223 | 0.0117 | 0.0106 |
| 278 | 0.0222 | 0.0117 | 0.0105 |
| 279 | 0.0221 | 0.0116 | 0.0105 |
| 280 | 0.0221 | 0.0116 | 0.0105 |
| 281 | 0.0220 | 0.0115 | 0.0104 |
| 282 | 0.0219 | 0.0115 | 0.0104 |
| 283 | 0.0218 | 0.0115 | 0.0103 |
| 284 | 0.0217 | 0.0114 | 0.0103 |
| 285 | 0.0217 | 0.0114 | 0.0103 |
| 286 | 0.0216 | 0.0113 | 0.0102 |
| 287 | 0.0215 | 0.0113 | 0.0102 |
| 288 | 0.0214 | 0.0113 | 0.0102 |

---

```
      ----------------------------------------------------------------------
      Total soil rain loss =      4.55(In)
      Total effective rainfall =      4.62(In)
      Peak flow rate in flood hydrograph =    127.92(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
----------------------------------------------------------------------------
  0+ 5       0.0026      0.37  Q          |         |         |         |
  0+10       0.0199      2.52  Q          |         |         |         |
  0+15       0.0480      4.07  Q          |         |         |         |
  0+20       0.0801      4.66  Q          |         |         |         |
  0+25       0.1144      4.99  Q          |         |         |         |
  0+30       0.1500      5.17  VQ         |         |         |         |
  0+35       0.1861      5.24  VQ         |         |         |         |
  0+40       0.2225      5.28  VQ         |         |         |         |
  0+45       0.2591      5.32  VQ         |         |         |         |
  0+50       0.2959      5.34  VQ         |         |         |         |
  0+55       0.3328      5.36  VQ         |         |         |         |
  1+ 0       0.3698      5.37  VQ         |         |         |         |
  1+ 5       0.4068      5.38  VQ         |         |         |         |
  1+10       0.4439      5.39  |Q         |         |         |         |
  1+15       0.4810      5.40  |Q         |         |         |         |
  1+20       0.5183      5.41  |Q         |         |         |         |
  1+25       0.5556      5.42  |Q         |         |         |         |
  1+30       0.5929      5.43  |Q         |         |         |         |
  1+35       0.6304      5.44  |Q         |         |         |         |
  1+40       0.6679      5.45  |Q         |         |         |         |
  1+45       0.7055      5.46  |Q         |         |         |         |
  1+50       0.7431      5.47  |Q         |         |         |         |
  1+55       0.7809      5.48  |Q         |         |         |         |
  2+ 0       0.8187      5.49  |Q         |         |         |         |
  2+ 5       0.8565      5.50  |QV        |         |         |         |
  2+10       0.8945      5.51  |QV        |         |         |         |
  2+15       0.9325      5.52  |QV        |         |         |         |
  2+20       0.9706      5.53  |QV        |         |         |         |
  2+25       1.0087      5.54  |QV        |         |         |         |
  2+30       1.0470      5.55  |QV        |         |         |         |
  2+35       1.0853      5.56  |QV        |         |         |         |
  2+40       1.1237      5.58  |QV        |         |         |         |
  2+45       1.1622      5.59  |QV        |         |         |         |
  2+50       1.2007      5.60  |QV        |         |         |         |
  2+55       1.2394      5.61  |QV        |         |         |         |
  3+ 0       1.2781      5.62  |Q V       |         |         |         |
  3+ 5       1.3169      5.63  |Q V       |         |         |         |
  3+10       1.3558      5.64  |Q V       |         |         |         |
  3+15       1.3947      5.66  |Q V       |         |         |         |
  3+20       1.4337      5.67  |Q V       |         |         |         |
  3+25       1.4729      5.68  |Q V       |         |         |         |
  3+30       1.5121      5.69  |Q V       |         |         |         |
  3+35       1.5514      5.70  |Q V       |         |         |         |
  3+40       1.5907      5.72  |Q V       |         |         |         |
  3+45       1.6302      5.73  |Q V       |         |         |         |
  3+50       1.6698      5.74  |Q  V      |         |         |         |
  3+55       1.7094      5.76  |Q  V      |         |         |         |
  4+ 0       1.7491      5.77  |Q  V      |         |         |         |
  4+ 5       1.7889      5.78  |Q  V      |         |         |         |
  4+10       1.8288      5.79  |Q  V      |         |         |         |
  4+15       1.8688      5.81  |Q  V      |         |         |         |
  4+20       1.9089      5.82  |Q  V      |         |         |         |
  4+25       1.9491      5.83  |Q  V      |         |         |         |
  4+30       1.9894      5.85  |Q  V      |         |         |         |
  4+35       2.0298      5.86  |Q  V      |         |         |         |
  4+40       2.0702      5.88  |Q  V      |         |         |         |
  4+45       2.1108      5.89  |Q   V     |         |         |         |
```

```
 4+50       2.1514      5.90  |Q   V    |          |          |          |
 4+55       2.1922      5.92  |Q   V    |          |          |          |
 5+ 0       2.2331      5.93  |Q   V    |          |          |          |
 5+ 5       2.2740      5.95  |Q   V    |          |          |          |
 5+10       2.3151      5.96  |Q   V    |          |          |          |
 5+15       2.3562      5.98  |Q   V    |          |          |          |
 5+20       2.3975      5.99  |Q   V    |          |          |          |
 5+25       2.4389      6.01  |Q   V    |          |          |          |
 5+30       2.4803      6.02  |Q   V    |          |          |          |
 5+35       2.5219      6.04  |Q    V   |          |          |          |
 5+40       2.5636      6.05  |Q    V   |          |          |          |
 5+45       2.6054      6.07  |Q    V   |          |          |          |
 5+50       2.6473      6.08  |Q    V   |          |          |          |
 5+55       2.6893      6.10  |Q    V   |          |          |          |
 6+ 0       2.7314      6.12  |Q    V   |          |          |          |
 6+ 5       2.7737      6.13  |Q    V   |          |          |          |
 6+10       2.8160      6.15  |Q    V   |          |          |          |
 6+15       2.8585      6.17  |Q    V   |          |          |          |
 6+20       2.9011      6.18  |Q     V  |          |          |          |
 6+25       2.9438      6.20  |Q     V  |          |          |          |
 6+30       2.9866      6.22  |Q     V  |          |          |          |
 6+35       3.0296      6.24  |Q     V  |          |          |          |
 6+40       3.0727      6.25  |Q     V  |          |          |          |
 6+45       3.1159      6.27  |Q     V  |          |          |          |
 6+50       3.1592      6.29  |Q     V  |          |          |          |
 6+55       3.2026      6.31  |Q     V  |          |          |          |
 7+ 0       3.2462      6.33  |Q     V  |          |          |          |
 7+ 5       3.2899      6.35  |Q     V  |          |          |          |
 7+10       3.3338      6.37  |Q      V |          |          |          |
 7+15       3.3777      6.38  |Q      V |          |          |          |
 7+20       3.4218      6.40  |Q      V |          |          |          |
 7+25       3.4661      6.42  |Q      V |          |          |          |
 7+30       3.5105      6.44  |Q      V |          |          |          |
 7+35       3.5550      6.46  |Q      V |          |          |          |
 7+40       3.5997      6.49  |Q      V |          |          |          |
 7+45       3.6445      6.51  |Q      V |          |          |          |
 7+50       3.6894      6.53  |Q      V |          |          |          |
 7+55       3.7345      6.55  |Q       V|          |          |          |
 8+ 0       3.7798      6.57  |Q       V|          |          |          |
 8+ 5       3.8252      6.59  |Q       V|          |          |          |
 8+10       3.8707      6.62  |Q       V|          |          |          |
 8+15       3.9164      6.64  |Q       V|          |          |          |
 8+20       3.9623      6.66  |Q       V|          |          |          |
 8+25       4.0083      6.68  |Q       V|          |          |          |
 8+30       4.0545      6.71  |Q       V|          |          |          |
 8+35       4.1009      6.73  |Q       V|          |          |          |
 8+40       4.1474      6.76  |Q        V          |          |          |
 8+45       4.1941      6.78  |Q        V          |          |          |
 8+50       4.2410      6.81  |Q        V          |          |          |
 8+55       4.2880      6.83  |Q        V          |          |          |
 9+ 0       4.3353      6.86  |Q        V          |          |          |
 9+ 5       4.3827      6.88  |Q        V          |          |          |
 9+10       4.4302      6.91  |Q        V          |          |          |
 9+15       4.4780      6.94  |Q        V          |          |          |
 9+20       4.5260      6.96  |Q        V          |          |          |
 9+25       4.5741      6.99  |Q        |V         |          |          |
 9+30       4.6225      7.02  |Q        |V         |          |          |
 9+35       4.6710      7.05  |Q        |V         |          |          |
 9+40       4.7198      7.08  |Q        |V         |          |          |
 9+45       4.7687      7.11  |Q        |V         |          |          |
 9+50       4.8179      7.14  |Q        |V         |          |          |
 9+55       4.8673      7.17  |Q        |V         |          |          |
10+ 0       4.9168      7.20  |Q        |V         |          |          |
10+ 5       4.9667      7.23  |Q        |V         |          |          |
10+10       5.0167      7.27  |Q        | V        |          |          |
10+15       5.0670      7.30  |Q        | V        |          |          |
10+20       5.1175      7.33  |Q        | V        |          |          |
10+25       5.1682      7.37  |Q        | V        |          |          |
10+30       5.2192      7.40  |Q        | V        |          |          |
10+35       5.2704      7.44  |Q        | V        |          |          |
10+40       5.3218      7.47  |Q        | V        |          |          |
```

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10+45      5.3736     7.51  |Q        | V       |         |         |
10+50      5.4256     7.55  |Q        |  V      |         |         |
10+55      5.4778     7.59  |Q        |  V      |         |         |
11+ 0      5.5303     7.63  |Q        |  V      |         |         |
11+ 5      5.5831     7.67  |Q        |  V      |         |         |
11+10      5.6362     7.71  |Q        |  V      |         |         |
11+15      5.6896     7.75  |Q        |  V      |         |         |
11+20      5.7433     7.79  |Q        |  V      |         |         |
11+25      5.7973     7.84  |Q        |  V      |         |         |
11+30      5.8516     7.88  |Q        |   V     |         |         |
11+35      5.9062     7.93  |Q        |   V     |         |         |
11+40      5.9611     7.98  |Q        |   V     |         |         |
11+45      6.0164     8.02  |Q        |   V     |         |         |
11+50      6.0720     8.08  |Q        |   V     |         |         |
11+55      6.1280     8.13  |Q        |   V     |         |         |
12+ 0      6.1843     8.18  |Q        |   V     |         |         |
12+ 5      6.2407     8.18  |Q        |    V    |         |         |
12+10      6.2955     7.96  |Q        |    V    |         |         |
12+15      6.3493     7.82  |Q        |    V    |         |         |
12+20      6.4031     7.81  |Q        |    V    |         |         |
12+25      6.4570     7.83  |Q        |    V    |         |         |
12+30      6.5112     7.87  |Q        |    V    |         |         |
12+35      6.5658     7.93  |Q        |    V    |         |         |
12+40      6.6209     8.00  |Q        |    V    |         |         |
12+45      6.6765     8.07  |Q        |     V   |         |         |
12+50      6.7326     8.14  |Q        |     V   |         |         |
12+55      6.7891     8.22  |Q        |     V   |         |         |
13+ 0      6.8463     8.30  |Q        |     V   |         |         |
13+ 5      6.9040     8.38  |Q        |     V   |         |         |
13+10      6.9624     8.47  |Q        |     V   |         |         |
13+15      7.0213     8.56  |Q        |     V   |         |         |
13+20      7.0810     8.66  |Q        |      V  |         |         |
13+25      7.1412     8.75  |Q        |      V  |         |         |
13+30      7.2022     8.86  |Q        |      V  |         |         |
13+35      7.2639     8.96  |Q        |      V  |         |         |
13+40      7.3264     9.07  |Q        |      V  |         |         |
13+45      7.3897     9.19  |Q        |      V  |         |         |
13+50      7.4538     9.31  |Q        |      V  |         |         |
13+55      7.5188     9.44  |Q        |       V |         |         |
14+ 0      7.5847     9.58  |Q        |       V |         |         |
14+ 5      7.6516     9.71  |Q        |       V |         |         |
14+10      7.7197     9.88  |Q        |       V |         |         |
14+15      7.7888    10.04  | Q       |       V |         |         |
14+20      7.8591    10.21  | Q       |       V |         |         |
14+25      7.9306    10.39  | Q       |        V|         |         |
14+30      8.0035    10.58  | Q       |        V|         |         |
14+35      8.0778    10.78  | Q       |        V|         |         |
14+40      8.1536    11.01  | Q       |        V|         |         |
14+45      8.2309    11.23  | Q       |        V|         |         |
14+50      8.3101    11.50  | Q       |         V         |         |
14+55      8.3911    11.76  | Q       |         V         |         |
15+ 0      8.4743    12.08  | Q       |         V         |         |
15+ 5      8.5596    12.39  | Q       |         V         |         |
15+10      8.6477    12.78  | Q       |         V         |         |
15+15      8.7384    13.17  | Q       |         |V        |         |
15+20      8.8325    13.66  | Q       |         |V        |         |
15+25      8.9262    13.61  | Q       |         |V        |         |
15+30      9.0024    11.07  | Q       |         |V        |         |
15+35      9.0674     9.44  |Q        |         |V        |         |
15+40      9.1326     9.47  |Q        |         | V       |         |
15+45      9.2017    10.03  | Q       |         | V       |         |
15+50      9.2803    11.40  | Q       |         | V       |         |
15+55      9.3738    13.58  | Q       |         | V       |         |
16+ 0      9.5051    19.06  |  Q      |         | V       |         |
16+ 5      9.8237    46.27  |         Q|         |  V      |         |
16+10     10.7047   127.92  |          |         |    Q    |         |
16+15     11.3537    94.23  |          |       Q |      V  |         |
16+20     11.6558    43.87  |        Q |         |       V |         |
16+25     11.8503    28.24  |    Q     |         |       V |         |
16+30     11.9978    21.41  |   Q      |         |       V |         |
16+35     12.1136    16.81  |  Q       |         |        V|         |
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16+40      12.2160     14.87  | Q       |         |        V|         |
16+45      12.3122     13.96  | Q       |         |        V|         |
16+50      12.4012     12.92  | Q       |         |        V|         |
16+55      12.4825     11.80  | Q       |         |         V         |
17+ 0      12.5588     11.08  | Q       |         |         V         |
17+ 5      12.6322     10.66  | Q       |         |         V         |
17+10      12.7030     10.29  | Q       |         |         V         |
17+15      12.7715      9.95  |Q        |         |         V         |
17+20      12.8379      9.64  |Q        |         |         V         |
17+25      12.9025      9.37  |Q        |         |         |V        |
17+30      12.9653      9.12  |Q        |         |         |V        |
17+35      13.0266      8.90  |Q        |         |         |V        |
17+40      13.0864      8.69  |Q        |         |         |V        |
17+45      13.1450      8.51  |Q        |         |         |V        |
17+50      13.2024      8.33  |Q        |         |         |V        |
17+55      13.2587      8.17  |Q        |         |         |V        |
18+ 0      13.3139      8.02  |Q        |         |         | V       |
18+ 5      13.3685      7.93  |Q        |         |         | V       |
18+10      13.4241      8.07  |Q        |         |         | V       |
18+15      13.4802      8.15  |Q        |         |         | V       |
18+20      13.5361      8.12  |Q        |         |         | V       |
18+25      13.5916      8.05  |Q        |         |         | V       |
18+30      13.6465      7.98  |Q        |         |         | V       |
18+35      13.7008      7.89  |Q        |         |         |  V      |
18+40      13.7546      7.80  |Q        |         |         |  V      |
18+45      13.8077      7.72  |Q        |         |         |  V      |
18+50      13.8604      7.64  |Q        |         |         |  V      |
18+55      13.9124      7.56  |Q        |         |         |  V      |
19+ 0      13.9640      7.49  |Q        |         |         |  V      |
19+ 5      14.0150      7.41  |Q        |         |         |  V      |
19+10      14.0656      7.34  |Q        |         |         |  V      |
19+15      14.1157      7.28  |Q        |         |         |   V     |
19+20      14.1654      7.21  |Q        |         |         |   V     |
19+25      14.2146      7.15  |Q        |         |         |   V     |
19+30      14.2634      7.09  |Q        |         |         |   V     |
19+35      14.3118      7.03  |Q        |         |         |   V     |
19+40      14.3598      6.97  |Q        |         |         |   V     |
19+45      14.4075      6.92  |Q        |         |         |   V     |
19+50      14.4548      6.86  |Q        |         |         |   V     |
19+55      14.5017      6.81  |Q        |         |         |   V     |
20+ 0      14.5483      6.76  |Q        |         |         |    V    |
20+ 5      14.5945      6.71  |Q        |         |         |    V    |
20+10      14.6404      6.67  |Q        |         |         |    V    |
20+15      14.6860      6.62  |Q        |         |         |    V    |
20+20      14.7313      6.58  |Q        |         |         |    V    |
20+25      14.7763      6.53  |Q        |         |         |    V    |
20+30      14.8210      6.49  |Q        |         |         |    V    |
20+35      14.8654      6.45  |Q        |         |         |    V    |
20+40      14.9096      6.41  |Q        |         |         |    V    |
20+45      14.9535      6.37  |Q        |         |         |     V   |
20+50      14.9971      6.33  |Q        |         |         |     V   |
20+55      15.0404      6.30  |Q        |         |         |     V   |
21+ 0      15.0836      6.26  |Q        |         |         |     V   |
21+ 5      15.1264      6.22  |Q        |         |         |     V   |
21+10      15.1690      6.19  |Q        |         |         |     V   |
21+15      15.2114      6.16  |Q        |         |         |     V   |
21+20      15.2536      6.12  |Q        |         |         |     V   |
21+25      15.2955      6.09  |Q        |         |         |     V   |
21+30      15.3372      6.06  |Q        |         |         |      V  |
21+35      15.3788      6.03  |Q        |         |         |      V  |
21+40      15.4200      6.00  |Q        |         |         |      V  |
21+45      15.4611      5.97  |Q        |         |         |      V  |
21+50      15.5020      5.94  |Q        |         |         |      V  |
21+55      15.5427      5.91  |Q        |         |         |      V  |
22+ 0      15.5832      5.88  |Q        |         |         |      V  |
22+ 5      15.6235      5.85  |Q        |         |         |      V  |
22+10      15.6636      5.82  |Q        |         |         |      V  |
22+15      15.7035      5.80  |Q        |         |         |      V  |
22+20      15.7433      5.77  |Q        |         |         |      V  |
22+25      15.7829      5.75  |Q        |         |         |       V |
22+30      15.8223      5.72  |Q        |         |         |       V |
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   22+35      15.8615      5.70  |Q        |         |         |       V |
   22+40      15.9006      5.67  |Q        |         |         |       V |
   22+45      15.9395      5.65  |Q        |         |         |       V |
   22+50      15.9782      5.62  |Q        |         |         |       V |
   22+55      16.0168      5.60  |Q        |         |         |       V |
   23+ 0      16.0552      5.58  |Q        |         |         |       V |
   23+ 5      16.0935      5.56  |Q        |         |         |       V |
   23+10      16.1316      5.53  |Q        |         |         |       V |
   23+15      16.1695      5.51  |Q        |         |         |        V|
   23+20      16.2074      5.49  |Q        |         |         |        V|
   23+25      16.2450      5.47  |Q        |         |         |        V|
   23+30      16.2826      5.45  |Q        |         |         |        V|
   23+35      16.3199      5.43  |Q        |         |         |        V|
   23+40      16.3572      5.41  |Q        |         |         |        V|
   23+45      16.3943      5.39  |Q        |         |         |        V|
   23+50      16.4313      5.37  |Q        |         |         |        V|
   23+55      16.4681      5.35  |Q        |         |         |        V|
   24+ 0      16.5049      5.33  |Q        |         |         |        V|
   24+ 5      16.5389      4.94  Q         |         |         |        V|
   24+10      16.5580      2.78  Q         |         |         |        V|
   24+15      16.5664      1.22  Q         |         |         |        V|
   24+20      16.5708      0.64  Q         |         |         |        V|
   24+25      16.5730      0.31  Q         |         |         |        V|
   24+30      16.5740      0.14  Q         |         |         |        V|
   24+35      16.5745      0.08  Q         |         |         |        V|
   24+40      16.5749      0.05  Q         |         |         |        V|
   24+45      16.5750      0.02  Q         |         |         |        V|
   24+50      16.5750      0.00  Q         |         |         |         V
------------------------------------------------------------------------
```

Area 'A' – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

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                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'A'
100 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            43.08            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            43.08            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            43.08           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            43.08            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            43.08            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            43.08           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 36.7      56.7         43.08      1.000     0.725    0.610    0.442

Area-averaged adjusted loss rate Fm (In/Hr) =  0.442

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 26.28 | 0.610 | 36.7 | 56.7 | 7.64 | 0.505 |
| 16.80 | 0.390 | 98.0 | 98.0 | 0.20 | 0.980 |

Area-averaged catchment yield fraction, Y = 0.690
Area-averaged low loss fraction, Yb = 0.310
User entry of time of concentration = 0.195 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 43.08(Ac.)
Catchment Lag time = 0.156 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 53.3367
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.442(In/Hr)
Average low loss rate fraction (Yb) = 0.310 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 43.08(Ac.) (Ref: fig. E-4)

5-minute factor = 0.998 Adjusted rainfall = 0.710(In)
30-minute factor = 0.998 Adjusted rainfall = 1.216(In)
1-hour factor = 0.998 Adjusted rainfall = 1.497(In)
3-hour factor = 1.000 Adjusted rainfall = 2.941(In)
6-hour factor = 1.000 Adjusted rainfall = 4.499(In)
24-hour factor = 1.000 Adjusted rainfall = 11.999(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 521.00 (CFS)) | |
| 1 | 4.695 | 24.462 |
| 2 | 28.880 | 126.002 |
| 3 | 66.048 | 193.644 |
| 4 | 79.773 | 71.506 |
| 5 | 87.709 | 41.347 |
| 6 | 92.798 | 26.514 |
| 7 | 95.996 | 16.665 |
| 8 | 97.794 | 9.363 |
| 9 | 98.523 | 3.803 |
| 10 | 99.025 | 2.614 |
| 11 | 99.385 | 1.877 |
| 12 | 99.747 | 1.883 |
| 13 | 99.932 | 0.962 |
| 14 | 100.000 | 0.357 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7103 | 0.7103 |
| 2 | 0.8745 | 0.1642 |
| 3 | 0.9876 | 0.1131 |
| 4 | 1.0767 | 0.0890 |
| 5 | 1.1512 | 0.0745 |
| 6 | 1.2159 | 0.0647 |
| 7 | 1.2735 | 0.0576 |
| 8 | 1.3255 | 0.0521 |
| 9 | 1.3732 | 0.0477 |
| 10 | 1.4173 | 0.0441 |
| 11 | 1.4584 | 0.0411 |

| | | |
|---|---|---|
| 12 | 1.4970 | 0.0386 |
| 13 | 1.5725 | 0.0755 |
| 14 | 1.6458 | 0.0733 |
| 15 | 1.7171 | 0.0713 |
| 16 | 1.7866 | 0.0695 |
| 17 | 1.8544 | 0.0678 |
| 18 | 1.9207 | 0.0663 |
| 19 | 1.9856 | 0.0649 |
| 20 | 2.0493 | 0.0636 |
| 21 | 2.1117 | 0.0624 |
| 22 | 2.1729 | 0.0613 |
| 23 | 2.2331 | 0.0602 |
| 24 | 2.2923 | 0.0592 |
| 25 | 2.3506 | 0.0583 |
| 26 | 2.4079 | 0.0574 |
| 27 | 2.4644 | 0.0565 |
| 28 | 2.5202 | 0.0557 |
| 29 | 2.5751 | 0.0550 |
| 30 | 2.6294 | 0.0542 |
| 31 | 2.6829 | 0.0535 |
| 32 | 2.7358 | 0.0529 |
| 33 | 2.7880 | 0.0522 |
| 34 | 2.8397 | 0.0516 |
| 35 | 2.8907 | 0.0511 |
| 36 | 2.9412 | 0.0505 |
| 37 | 2.9911 | 0.0498 |
| 38 | 3.0404 | 0.0493 |
| 39 | 3.0892 | 0.0488 |
| 40 | 3.1375 | 0.0483 |
| 41 | 3.1854 | 0.0479 |
| 42 | 3.2329 | 0.0474 |
| 43 | 3.2798 | 0.0470 |
| 44 | 3.3264 | 0.0466 |
| 45 | 3.3726 | 0.0462 |
| 46 | 3.4184 | 0.0458 |
| 47 | 3.4637 | 0.0454 |
| 48 | 3.5088 | 0.0450 |
| 49 | 3.5534 | 0.0447 |
| 50 | 3.5977 | 0.0443 |
| 51 | 3.6417 | 0.0440 |
| 52 | 3.6853 | 0.0436 |
| 53 | 3.7286 | 0.0433 |
| 54 | 3.7716 | 0.0430 |
| 55 | 3.8143 | 0.0427 |
| 56 | 3.8567 | 0.0424 |
| 57 | 3.8988 | 0.0421 |
| 58 | 3.9406 | 0.0418 |
| 59 | 3.9821 | 0.0415 |
| 60 | 4.0234 | 0.0413 |
| 61 | 4.0644 | 0.0410 |
| 62 | 4.1051 | 0.0407 |
| 63 | 4.1456 | 0.0405 |
| 64 | 4.1858 | 0.0402 |
| 65 | 4.2258 | 0.0400 |
| 66 | 4.2656 | 0.0398 |
| 67 | 4.3051 | 0.0395 |
| 68 | 4.3444 | 0.0393 |
| 69 | 4.3835 | 0.0391 |
| 70 | 4.4223 | 0.0389 |
| 71 | 4.4610 | 0.0386 |
| 72 | 4.4994 | 0.0384 |
| 73 | 4.5435 | 0.0441 |
| 74 | 4.5875 | 0.0440 |
| 75 | 4.6313 | 0.0438 |
| 76 | 4.6749 | 0.0436 |
| 77 | 4.7183 | 0.0434 |
| 78 | 4.7616 | 0.0433 |
| 79 | 4.8047 | 0.0431 |
| 80 | 4.8476 | 0.0430 |
| 81 | 4.8904 | 0.0428 |
| 82 | 4.9331 | 0.0426 |

| | | |
|---|---|---|
| 83 | 4.9756 | 0.0425 |
| 84 | 5.0179 | 0.0423 |
| 85 | 5.0601 | 0.0422 |
| 86 | 5.1022 | 0.0421 |
| 87 | 5.1441 | 0.0419 |
| 88 | 5.1858 | 0.0418 |
| 89 | 5.2275 | 0.0416 |
| 90 | 5.2690 | 0.0415 |
| 91 | 5.3103 | 0.0414 |
| 92 | 5.3515 | 0.0412 |
| 93 | 5.3926 | 0.0411 |
| 94 | 5.4336 | 0.0410 |
| 95 | 5.4744 | 0.0408 |
| 96 | 5.5152 | 0.0407 |
| 97 | 5.5557 | 0.0406 |
| 98 | 5.5962 | 0.0405 |
| 99 | 5.6366 | 0.0403 |
| 100 | 5.6768 | 0.0402 |
| 101 | 5.7169 | 0.0401 |
| 102 | 5.7569 | 0.0400 |
| 103 | 5.7968 | 0.0399 |
| 104 | 5.8365 | 0.0398 |
| 105 | 5.8762 | 0.0397 |
| 106 | 5.9157 | 0.0395 |
| 107 | 5.9552 | 0.0394 |
| 108 | 5.9945 | 0.0393 |
| 109 | 6.0337 | 0.0392 |
| 110 | 6.0728 | 0.0391 |
| 111 | 6.1118 | 0.0390 |
| 112 | 6.1507 | 0.0389 |
| 113 | 6.1896 | 0.0388 |
| 114 | 6.2283 | 0.0387 |
| 115 | 6.2669 | 0.0386 |
| 116 | 6.3054 | 0.0385 |
| 117 | 6.3438 | 0.0384 |
| 118 | 6.3821 | 0.0383 |
| 119 | 6.4203 | 0.0382 |
| 120 | 6.4585 | 0.0381 |
| 121 | 6.4965 | 0.0380 |
| 122 | 6.5344 | 0.0379 |
| 123 | 6.5723 | 0.0379 |
| 124 | 6.6101 | 0.0378 |
| 125 | 6.6477 | 0.0377 |
| 126 | 6.6853 | 0.0376 |
| 127 | 6.7228 | 0.0375 |
| 128 | 6.7602 | 0.0374 |
| 129 | 6.7976 | 0.0373 |
| 130 | 6.8348 | 0.0372 |
| 131 | 6.8720 | 0.0372 |
| 132 | 6.9090 | 0.0371 |
| 133 | 6.9460 | 0.0370 |
| 134 | 6.9829 | 0.0369 |
| 135 | 7.0198 | 0.0368 |
| 136 | 7.0565 | 0.0368 |
| 137 | 7.0932 | 0.0367 |
| 138 | 7.1298 | 0.0366 |
| 139 | 7.1663 | 0.0365 |
| 140 | 7.2028 | 0.0364 |
| 141 | 7.2391 | 0.0364 |
| 142 | 7.2754 | 0.0363 |
| 143 | 7.3116 | 0.0362 |
| 144 | 7.3478 | 0.0361 |
| 145 | 7.3838 | 0.0361 |
| 146 | 7.4198 | 0.0360 |
| 147 | 7.4558 | 0.0359 |
| 148 | 7.4916 | 0.0359 |
| 149 | 7.5274 | 0.0358 |
| 150 | 7.5631 | 0.0357 |
| 151 | 7.5988 | 0.0356 |
| 152 | 7.6343 | 0.0356 |
| 153 | 7.6698 | 0.0355 |

| | | |
|---|---|---|
| 154 | 7.7053 | 0.0354 |
| 155 | 7.7406 | 0.0354 |
| 156 | 7.7759 | 0.0353 |
| 157 | 7.8112 | 0.0352 |
| 158 | 7.8463 | 0.0352 |
| 159 | 7.8815 | 0.0351 |
| 160 | 7.9165 | 0.0350 |
| 161 | 7.9515 | 0.0350 |
| 162 | 7.9864 | 0.0349 |
| 163 | 8.0212 | 0.0349 |
| 164 | 8.0560 | 0.0348 |
| 165 | 8.0908 | 0.0347 |
| 166 | 8.1254 | 0.0347 |
| 167 | 8.1600 | 0.0346 |
| 168 | 8.1946 | 0.0345 |
| 169 | 8.2290 | 0.0345 |
| 170 | 8.2635 | 0.0344 |
| 171 | 8.2978 | 0.0344 |
| 172 | 8.3321 | 0.0343 |
| 173 | 8.3664 | 0.0342 |
| 174 | 8.4006 | 0.0342 |
| 175 | 8.4347 | 0.0341 |
| 176 | 8.4688 | 0.0341 |
| 177 | 8.5028 | 0.0340 |
| 178 | 8.5368 | 0.0340 |
| 179 | 8.5707 | 0.0339 |
| 180 | 8.6045 | 0.0339 |
| 181 | 8.6383 | 0.0338 |
| 182 | 8.6721 | 0.0337 |
| 183 | 8.7058 | 0.0337 |
| 184 | 8.7394 | 0.0336 |
| 185 | 8.7730 | 0.0336 |
| 186 | 8.8065 | 0.0335 |
| 187 | 8.8400 | 0.0335 |
| 188 | 8.8734 | 0.0334 |
| 189 | 8.9068 | 0.0334 |
| 190 | 8.9401 | 0.0333 |
| 191 | 8.9734 | 0.0333 |
| 192 | 9.0066 | 0.0332 |
| 193 | 9.0397 | 0.0332 |
| 194 | 9.0729 | 0.0331 |
| 195 | 9.1059 | 0.0331 |
| 196 | 9.1389 | 0.0330 |
| 197 | 9.1719 | 0.0330 |
| 198 | 9.2048 | 0.0329 |
| 199 | 9.2377 | 0.0329 |
| 200 | 9.2705 | 0.0328 |
| 201 | 9.3033 | 0.0328 |
| 202 | 9.3360 | 0.0327 |
| 203 | 9.3687 | 0.0327 |
| 204 | 9.4013 | 0.0326 |
| 205 | 9.4339 | 0.0326 |
| 206 | 9.4665 | 0.0325 |
| 207 | 9.4990 | 0.0325 |
| 208 | 9.5314 | 0.0324 |
| 209 | 9.5638 | 0.0324 |
| 210 | 9.5962 | 0.0324 |
| 211 | 9.6285 | 0.0323 |
| 212 | 9.6607 | 0.0323 |
| 213 | 9.6930 | 0.0322 |
| 214 | 9.7251 | 0.0322 |
| 215 | 9.7573 | 0.0321 |
| 216 | 9.7894 | 0.0321 |
| 217 | 9.8214 | 0.0320 |
| 218 | 9.8534 | 0.0320 |
| 219 | 9.8854 | 0.0320 |
| 220 | 9.9173 | 0.0319 |
| 221 | 9.9492 | 0.0319 |
| 222 | 9.9810 | 0.0318 |
| 223 | 10.0128 | 0.0318 |
| 224 | 10.0445 | 0.0317 |

| | | |
|---|---|---|
| 225 | 10.0762 | 0.0317 |
| 226 | 10.1079 | 0.0317 |
| 227 | 10.1395 | 0.0316 |
| 228 | 10.1711 | 0.0316 |
| 229 | 10.2027 | 0.0315 |
| 230 | 10.2342 | 0.0315 |
| 231 | 10.2656 | 0.0315 |
| 232 | 10.2971 | 0.0314 |
| 233 | 10.3284 | 0.0314 |
| 234 | 10.3598 | 0.0313 |
| 235 | 10.3911 | 0.0313 |
| 236 | 10.4224 | 0.0313 |
| 237 | 10.4536 | 0.0312 |
| 238 | 10.4848 | 0.0312 |
| 239 | 10.5159 | 0.0312 |
| 240 | 10.5471 | 0.0311 |
| 241 | 10.5781 | 0.0311 |
| 242 | 10.6092 | 0.0310 |
| 243 | 10.6402 | 0.0310 |
| 244 | 10.6711 | 0.0310 |
| 245 | 10.7021 | 0.0309 |
| 246 | 10.7329 | 0.0309 |
| 247 | 10.7638 | 0.0309 |
| 248 | 10.7946 | 0.0308 |
| 249 | 10.8254 | 0.0308 |
| 250 | 10.8561 | 0.0307 |
| 251 | 10.8868 | 0.0307 |
| 252 | 10.9175 | 0.0307 |
| 253 | 10.9482 | 0.0306 |
| 254 | 10.9788 | 0.0306 |
| 255 | 11.0093 | 0.0306 |
| 256 | 11.0399 | 0.0305 |
| 257 | 11.0704 | 0.0305 |
| 258 | 11.1008 | 0.0305 |
| 259 | 11.1312 | 0.0304 |
| 260 | 11.1616 | 0.0304 |
| 261 | 11.1920 | 0.0304 |
| 262 | 11.2223 | 0.0303 |
| 263 | 11.2526 | 0.0303 |
| 264 | 11.2829 | 0.0303 |
| 265 | 11.3131 | 0.0302 |
| 266 | 11.3433 | 0.0302 |
| 267 | 11.3734 | 0.0302 |
| 268 | 11.4036 | 0.0301 |
| 269 | 11.4337 | 0.0301 |
| 270 | 11.4637 | 0.0301 |
| 271 | 11.4937 | 0.0300 |
| 272 | 11.5237 | 0.0300 |
| 273 | 11.5537 | 0.0300 |
| 274 | 11.5836 | 0.0299 |
| 275 | 11.6135 | 0.0299 |
| 276 | 11.6434 | 0.0299 |
| 277 | 11.6732 | 0.0298 |
| 278 | 11.7030 | 0.0298 |
| 279 | 11.7328 | 0.0298 |
| 280 | 11.7625 | 0.0297 |
| 281 | 11.7922 | 0.0297 |
| 282 | 11.8219 | 0.0297 |
| 283 | 11.8516 | 0.0296 |
| 284 | 11.8812 | 0.0296 |
| 285 | 11.9108 | 0.0296 |
| 286 | 11.9403 | 0.0296 |
| 287 | 11.9699 | 0.0295 |
| 288 | 11.9994 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0091 | 0.0204 |
| 2 | 0.0295 | 0.0092 | 0.0204 |

| | | | |
|---|---|---|---|
| 3 | 0.0296 | 0.0092 | 0.0204 |
| 4 | 0.0296 | 0.0092 | 0.0204 |
| 5 | 0.0297 | 0.0092 | 0.0205 |
| 6 | 0.0297 | 0.0092 | 0.0205 |
| 7 | 0.0298 | 0.0092 | 0.0205 |
| 8 | 0.0298 | 0.0092 | 0.0206 |
| 9 | 0.0299 | 0.0093 | 0.0206 |
| 10 | 0.0299 | 0.0093 | 0.0206 |
| 11 | 0.0300 | 0.0093 | 0.0207 |
| 12 | 0.0300 | 0.0093 | 0.0207 |
| 13 | 0.0301 | 0.0093 | 0.0207 |
| 14 | 0.0301 | 0.0093 | 0.0208 |
| 15 | 0.0302 | 0.0093 | 0.0208 |
| 16 | 0.0302 | 0.0094 | 0.0208 |
| 17 | 0.0303 | 0.0094 | 0.0209 |
| 18 | 0.0303 | 0.0094 | 0.0209 |
| 19 | 0.0304 | 0.0094 | 0.0209 |
| 20 | 0.0304 | 0.0094 | 0.0210 |
| 21 | 0.0305 | 0.0094 | 0.0210 |
| 22 | 0.0305 | 0.0095 | 0.0210 |
| 23 | 0.0306 | 0.0095 | 0.0211 |
| 24 | 0.0306 | 0.0095 | 0.0211 |
| 25 | 0.0307 | 0.0095 | 0.0212 |
| 26 | 0.0307 | 0.0095 | 0.0212 |
| 27 | 0.0308 | 0.0095 | 0.0212 |
| 28 | 0.0308 | 0.0096 | 0.0213 |
| 29 | 0.0309 | 0.0096 | 0.0213 |
| 30 | 0.0309 | 0.0096 | 0.0213 |
| 31 | 0.0310 | 0.0096 | 0.0214 |
| 32 | 0.0310 | 0.0096 | 0.0214 |
| 33 | 0.0311 | 0.0096 | 0.0215 |
| 34 | 0.0312 | 0.0097 | 0.0215 |
| 35 | 0.0312 | 0.0097 | 0.0215 |
| 36 | 0.0313 | 0.0097 | 0.0216 |
| 37 | 0.0313 | 0.0097 | 0.0216 |
| 38 | 0.0314 | 0.0097 | 0.0217 |
| 39 | 0.0315 | 0.0098 | 0.0217 |
| 40 | 0.0315 | 0.0098 | 0.0217 |
| 41 | 0.0316 | 0.0098 | 0.0218 |
| 42 | 0.0316 | 0.0098 | 0.0218 |
| 43 | 0.0317 | 0.0098 | 0.0219 |
| 44 | 0.0317 | 0.0098 | 0.0219 |
| 45 | 0.0318 | 0.0099 | 0.0220 |
| 46 | 0.0319 | 0.0099 | 0.0220 |
| 47 | 0.0320 | 0.0099 | 0.0221 |
| 48 | 0.0320 | 0.0099 | 0.0221 |
| 49 | 0.0321 | 0.0099 | 0.0221 |
| 50 | 0.0321 | 0.0100 | 0.0222 |
| 51 | 0.0322 | 0.0100 | 0.0222 |
| 52 | 0.0323 | 0.0100 | 0.0223 |
| 53 | 0.0324 | 0.0100 | 0.0223 |
| 54 | 0.0324 | 0.0100 | 0.0224 |
| 55 | 0.0325 | 0.0101 | 0.0224 |
| 56 | 0.0325 | 0.0101 | 0.0225 |
| 57 | 0.0326 | 0.0101 | 0.0225 |
| 58 | 0.0327 | 0.0101 | 0.0225 |
| 59 | 0.0328 | 0.0102 | 0.0226 |
| 60 | 0.0328 | 0.0102 | 0.0226 |
| 61 | 0.0329 | 0.0102 | 0.0227 |
| 62 | 0.0330 | 0.0102 | 0.0227 |
| 63 | 0.0331 | 0.0103 | 0.0228 |
| 64 | 0.0331 | 0.0103 | 0.0229 |
| 65 | 0.0332 | 0.0103 | 0.0229 |
| 66 | 0.0333 | 0.0103 | 0.0230 |
| 67 | 0.0334 | 0.0103 | 0.0230 |
| 68 | 0.0334 | 0.0104 | 0.0231 |
| 69 | 0.0335 | 0.0104 | 0.0231 |
| 70 | 0.0336 | 0.0104 | 0.0232 |
| 71 | 0.0337 | 0.0104 | 0.0232 |
| 72 | 0.0337 | 0.0105 | 0.0233 |
| 73 | 0.0339 | 0.0105 | 0.0234 |

| | | | |
|---|---|---|---|
| 74 | 0.0339 | 0.0105 | 0.0234 |
| 75 | 0.0340 | 0.0105 | 0.0235 |
| 76 | 0.0341 | 0.0106 | 0.0235 |
| 77 | 0.0342 | 0.0106 | 0.0236 |
| 78 | 0.0342 | 0.0106 | 0.0236 |
| 79 | 0.0344 | 0.0107 | 0.0237 |
| 80 | 0.0344 | 0.0107 | 0.0238 |
| 81 | 0.0345 | 0.0107 | 0.0238 |
| 82 | 0.0346 | 0.0107 | 0.0239 |
| 83 | 0.0347 | 0.0108 | 0.0240 |
| 84 | 0.0348 | 0.0108 | 0.0240 |
| 85 | 0.0349 | 0.0108 | 0.0241 |
| 86 | 0.0350 | 0.0108 | 0.0241 |
| 87 | 0.0351 | 0.0109 | 0.0242 |
| 88 | 0.0352 | 0.0109 | 0.0243 |
| 89 | 0.0353 | 0.0109 | 0.0244 |
| 90 | 0.0354 | 0.0110 | 0.0244 |
| 91 | 0.0355 | 0.0110 | 0.0245 |
| 92 | 0.0356 | 0.0110 | 0.0245 |
| 93 | 0.0357 | 0.0111 | 0.0246 |
| 94 | 0.0358 | 0.0111 | 0.0247 |
| 95 | 0.0359 | 0.0111 | 0.0248 |
| 96 | 0.0360 | 0.0112 | 0.0248 |
| 97 | 0.0361 | 0.0112 | 0.0249 |
| 98 | 0.0362 | 0.0112 | 0.0250 |
| 99 | 0.0364 | 0.0113 | 0.0251 |
| 100 | 0.0364 | 0.0113 | 0.0251 |
| 101 | 0.0366 | 0.0113 | 0.0253 |
| 102 | 0.0367 | 0.0114 | 0.0253 |
| 103 | 0.0368 | 0.0114 | 0.0254 |
| 104 | 0.0369 | 0.0114 | 0.0255 |
| 105 | 0.0371 | 0.0115 | 0.0256 |
| 106 | 0.0372 | 0.0115 | 0.0256 |
| 107 | 0.0373 | 0.0116 | 0.0258 |
| 108 | 0.0374 | 0.0116 | 0.0258 |
| 109 | 0.0376 | 0.0117 | 0.0259 |
| 110 | 0.0377 | 0.0117 | 0.0260 |
| 111 | 0.0379 | 0.0117 | 0.0261 |
| 112 | 0.0379 | 0.0118 | 0.0262 |
| 113 | 0.0381 | 0.0118 | 0.0263 |
| 114 | 0.0382 | 0.0118 | 0.0264 |
| 115 | 0.0384 | 0.0119 | 0.0265 |
| 116 | 0.0385 | 0.0119 | 0.0266 |
| 117 | 0.0387 | 0.0120 | 0.0267 |
| 118 | 0.0388 | 0.0120 | 0.0268 |
| 119 | 0.0390 | 0.0121 | 0.0269 |
| 120 | 0.0391 | 0.0121 | 0.0270 |
| 121 | 0.0393 | 0.0122 | 0.0271 |
| 122 | 0.0394 | 0.0122 | 0.0272 |
| 123 | 0.0397 | 0.0123 | 0.0274 |
| 124 | 0.0398 | 0.0123 | 0.0274 |
| 125 | 0.0400 | 0.0124 | 0.0276 |
| 126 | 0.0401 | 0.0124 | 0.0277 |
| 127 | 0.0403 | 0.0125 | 0.0278 |
| 128 | 0.0405 | 0.0125 | 0.0279 |
| 129 | 0.0407 | 0.0126 | 0.0281 |
| 130 | 0.0408 | 0.0127 | 0.0282 |
| 131 | 0.0411 | 0.0127 | 0.0284 |
| 132 | 0.0412 | 0.0128 | 0.0284 |
| 133 | 0.0415 | 0.0129 | 0.0286 |
| 134 | 0.0416 | 0.0129 | 0.0287 |
| 135 | 0.0419 | 0.0130 | 0.0289 |
| 136 | 0.0421 | 0.0130 | 0.0290 |
| 137 | 0.0423 | 0.0131 | 0.0292 |
| 138 | 0.0425 | 0.0132 | 0.0293 |
| 139 | 0.0428 | 0.0133 | 0.0295 |
| 140 | 0.0430 | 0.0133 | 0.0296 |
| 141 | 0.0433 | 0.0134 | 0.0299 |
| 142 | 0.0434 | 0.0135 | 0.0300 |
| 143 | 0.0438 | 0.0136 | 0.0302 |
| 144 | 0.0440 | 0.0136 | 0.0303 |

| | | | |
|---|---|---|---|
| 145 | 0.0384 | 0.0119 | 0.0265 |
| 146 | 0.0386 | 0.0120 | 0.0267 |
| 147 | 0.0391 | 0.0121 | 0.0270 |
| 148 | 0.0393 | 0.0122 | 0.0271 |
| 149 | 0.0398 | 0.0123 | 0.0274 |
| 150 | 0.0400 | 0.0124 | 0.0276 |
| 151 | 0.0405 | 0.0125 | 0.0279 |
| 152 | 0.0407 | 0.0126 | 0.0281 |
| 153 | 0.0413 | 0.0128 | 0.0285 |
| 154 | 0.0415 | 0.0129 | 0.0287 |
| 155 | 0.0421 | 0.0130 | 0.0290 |
| 156 | 0.0424 | 0.0131 | 0.0292 |
| 157 | 0.0430 | 0.0133 | 0.0297 |
| 158 | 0.0433 | 0.0134 | 0.0299 |
| 159 | 0.0440 | 0.0136 | 0.0303 |
| 160 | 0.0443 | 0.0137 | 0.0306 |
| 161 | 0.0450 | 0.0140 | 0.0311 |
| 162 | 0.0454 | 0.0141 | 0.0313 |
| 163 | 0.0462 | 0.0143 | 0.0319 |
| 164 | 0.0466 | 0.0144 | 0.0321 |
| 165 | 0.0474 | 0.0147 | 0.0327 |
| 166 | 0.0479 | 0.0148 | 0.0330 |
| 167 | 0.0488 | 0.0151 | 0.0337 |
| 168 | 0.0493 | 0.0153 | 0.0340 |
| 169 | 0.0505 | 0.0157 | 0.0348 |
| 170 | 0.0511 | 0.0158 | 0.0352 |
| 171 | 0.0522 | 0.0162 | 0.0361 |
| 172 | 0.0529 | 0.0164 | 0.0365 |
| 173 | 0.0542 | 0.0168 | 0.0374 |
| 174 | 0.0550 | 0.0170 | 0.0379 |
| 175 | 0.0565 | 0.0175 | 0.0390 |
| 176 | 0.0574 | 0.0178 | 0.0396 |
| 177 | 0.0592 | 0.0184 | 0.0408 |
| 178 | 0.0602 | 0.0187 | 0.0415 |
| 179 | 0.0624 | 0.0193 | 0.0431 |
| 180 | 0.0636 | 0.0197 | 0.0439 |
| 181 | 0.0663 | 0.0206 | 0.0458 |
| 182 | 0.0678 | 0.0210 | 0.0468 |
| 183 | 0.0713 | 0.0221 | 0.0492 |
| 184 | 0.0733 | 0.0227 | 0.0506 |
| 185 | 0.0386 | 0.0120 | 0.0266 |
| 186 | 0.0411 | 0.0127 | 0.0284 |
| 187 | 0.0477 | 0.0148 | 0.0329 |
| 188 | 0.0521 | 0.0161 | 0.0359 |
| 189 | 0.0647 | 0.0201 | 0.0447 |
| 190 | 0.0745 | 0.0231 | 0.0514 |
| 191 | 0.1131 | 0.0351 | 0.0781 |
| 192 | 0.1642 | 0.0368 | 0.1274 |
| 193 | 0.7103 | 0.0368 | 0.6735 |
| 194 | 0.0890 | 0.0276 | 0.0614 |
| 195 | 0.0576 | 0.0178 | 0.0397 |
| 196 | 0.0441 | 0.0137 | 0.0304 |
| 197 | 0.0755 | 0.0234 | 0.0521 |
| 198 | 0.0695 | 0.0215 | 0.0480 |
| 199 | 0.0649 | 0.0201 | 0.0448 |
| 200 | 0.0613 | 0.0190 | 0.0423 |
| 201 | 0.0583 | 0.0181 | 0.0402 |
| 202 | 0.0557 | 0.0173 | 0.0384 |
| 203 | 0.0535 | 0.0166 | 0.0369 |
| 204 | 0.0516 | 0.0160 | 0.0356 |
| 205 | 0.0498 | 0.0155 | 0.0344 |
| 206 | 0.0483 | 0.0150 | 0.0334 |
| 207 | 0.0470 | 0.0146 | 0.0324 |
| 208 | 0.0458 | 0.0142 | 0.0316 |
| 209 | 0.0447 | 0.0138 | 0.0308 |
| 210 | 0.0436 | 0.0135 | 0.0301 |
| 211 | 0.0427 | 0.0132 | 0.0295 |
| 212 | 0.0418 | 0.0130 | 0.0288 |
| 213 | 0.0410 | 0.0127 | 0.0283 |
| 214 | 0.0402 | 0.0125 | 0.0278 |
| 215 | 0.0395 | 0.0123 | 0.0273 |

| | | | |
|---|---|---|---|
| 216 | 0.0389 | 0.0120 | 0.0268 |
| 217 | 0.0441 | 0.0137 | 0.0304 |
| 218 | 0.0436 | 0.0135 | 0.0301 |
| 219 | 0.0431 | 0.0134 | 0.0297 |
| 220 | 0.0426 | 0.0132 | 0.0294 |
| 221 | 0.0422 | 0.0131 | 0.0291 |
| 222 | 0.0418 | 0.0129 | 0.0288 |
| 223 | 0.0414 | 0.0128 | 0.0285 |
| 224 | 0.0410 | 0.0127 | 0.0283 |
| 225 | 0.0406 | 0.0126 | 0.0280 |
| 226 | 0.0402 | 0.0125 | 0.0278 |
| 227 | 0.0399 | 0.0124 | 0.0275 |
| 228 | 0.0395 | 0.0123 | 0.0273 |
| 229 | 0.0392 | 0.0122 | 0.0271 |
| 230 | 0.0389 | 0.0121 | 0.0268 |
| 231 | 0.0386 | 0.0120 | 0.0266 |
| 232 | 0.0383 | 0.0119 | 0.0264 |
| 233 | 0.0380 | 0.0118 | 0.0262 |
| 234 | 0.0378 | 0.0117 | 0.0261 |
| 235 | 0.0375 | 0.0116 | 0.0259 |
| 236 | 0.0372 | 0.0115 | 0.0257 |
| 237 | 0.0370 | 0.0115 | 0.0255 |
| 238 | 0.0368 | 0.0114 | 0.0254 |
| 239 | 0.0365 | 0.0113 | 0.0252 |
| 240 | 0.0363 | 0.0112 | 0.0250 |
| 241 | 0.0361 | 0.0112 | 0.0249 |
| 242 | 0.0359 | 0.0111 | 0.0247 |
| 243 | 0.0356 | 0.0110 | 0.0246 |
| 244 | 0.0354 | 0.0110 | 0.0245 |
| 245 | 0.0352 | 0.0109 | 0.0243 |
| 246 | 0.0350 | 0.0109 | 0.0242 |
| 247 | 0.0349 | 0.0108 | 0.0240 |
| 248 | 0.0347 | 0.0107 | 0.0239 |
| 249 | 0.0345 | 0.0107 | 0.0238 |
| 250 | 0.0343 | 0.0106 | 0.0237 |
| 251 | 0.0341 | 0.0106 | 0.0236 |
| 252 | 0.0340 | 0.0105 | 0.0234 |
| 253 | 0.0338 | 0.0105 | 0.0233 |
| 254 | 0.0336 | 0.0104 | 0.0232 |
| 255 | 0.0335 | 0.0104 | 0.0231 |
| 256 | 0.0333 | 0.0103 | 0.0230 |
| 257 | 0.0332 | 0.0103 | 0.0229 |
| 258 | 0.0330 | 0.0102 | 0.0228 |
| 259 | 0.0329 | 0.0102 | 0.0227 |
| 260 | 0.0327 | 0.0101 | 0.0226 |
| 261 | 0.0326 | 0.0101 | 0.0225 |
| 262 | 0.0324 | 0.0101 | 0.0224 |
| 263 | 0.0323 | 0.0100 | 0.0223 |
| 264 | 0.0322 | 0.0100 | 0.0222 |
| 265 | 0.0320 | 0.0099 | 0.0221 |
| 266 | 0.0319 | 0.0099 | 0.0220 |
| 267 | 0.0318 | 0.0099 | 0.0219 |
| 268 | 0.0317 | 0.0098 | 0.0219 |
| 269 | 0.0315 | 0.0098 | 0.0218 |
| 270 | 0.0314 | 0.0097 | 0.0217 |
| 271 | 0.0313 | 0.0097 | 0.0216 |
| 272 | 0.0312 | 0.0097 | 0.0215 |
| 273 | 0.0311 | 0.0096 | 0.0214 |
| 274 | 0.0310 | 0.0096 | 0.0214 |
| 275 | 0.0309 | 0.0096 | 0.0213 |
| 276 | 0.0307 | 0.0095 | 0.0212 |
| 277 | 0.0306 | 0.0095 | 0.0211 |
| 278 | 0.0305 | 0.0095 | 0.0211 |
| 279 | 0.0304 | 0.0094 | 0.0210 |
| 280 | 0.0303 | 0.0094 | 0.0209 |
| 281 | 0.0302 | 0.0094 | 0.0209 |
| 282 | 0.0301 | 0.0093 | 0.0208 |
| 283 | 0.0300 | 0.0093 | 0.0207 |
| 284 | 0.0299 | 0.0093 | 0.0207 |
| 285 | 0.0298 | 0.0092 | 0.0206 |
| 286 | 0.0297 | 0.0092 | 0.0205 |

```
      287              0.0296           0.0092              0.0205
      288              0.0296           0.0092              0.0204
      ---------------------------------------------------------------------
      ---------------------------------------------------------------------
      Total soil rain loss =      3.52(In)
      Total effective rainfall =      8.48(In)
      Peak flow rate in flood hydrograph =    154.32(CFS)
      ---------------------------------------------------------------------
      +++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

      ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       50.0     100.0     150.0     200.0
---------------------------------------------------------------------------
  0+ 5       0.0034      0.50  Q         |          |          |          |
  0+10       0.0245      3.06  Q         |          |          |          |
  0+15       0.0728      7.01  VQ        |          |          |          |
  0+20       0.1311      8.47  VQ        |          |          |          |
  0+25       0.1954      9.33  VQ        |          |          |          |
  0+30       0.2634      9.88  VQ        |          |          |          |
  0+35       0.3339     10.24  V Q       |          |          |          |
  0+40       0.4058     10.44  V Q       |          |          |          |
  0+45       0.4784     10.54  V Q       |          |          |          |
  0+50       0.5514     10.61  V Q       |          |          |          |
  0+55       0.6249     10.66  V Q       |          |          |          |
  1+ 0       0.6987     10.72  V Q       |          |          |          |
  1+ 5       0.7727     10.75  |VQ       |          |          |          |
  1+10       0.8469     10.78  |VQ       |          |          |          |
  1+15       0.9213     10.79  |VQ       |          |          |          |
  1+20       0.9957     10.81  |VQ       |          |          |          |
  1+25       1.0703     10.83  |VQ       |          |          |          |
  1+30       1.1450     10.85  |VQ       |          |          |          |
  1+35       1.2199     10.87  |VQ       |          |          |          |
  1+40       1.2948     10.88  |VQ       |          |          |          |
  1+45       1.3699     10.90  |VQ       |          |          |          |
  1+50       1.4451     10.92  |VQ       |          |          |          |
  1+55       1.5205     10.94  |VQ       |          |          |          |
  2+ 0       1.5959     10.96  | Q       |          |          |          |
  2+ 5       1.6715     10.98  | Q       |          |          |          |
  2+10       1.7472     10.99  | Q       |          |          |          |
  2+15       1.8231     11.01  | Q       |          |          |          |
  2+20       1.8991     11.03  | Q       |          |          |          |
  2+25       1.9752     11.05  | Q       |          |          |          |
  2+30       2.0515     11.07  | Q       |          |          |          |
  2+35       2.1278     11.09  | Q       |          |          |          |
  2+40       2.2044     11.11  | Q       |          |          |          |
  2+45       2.2810     11.13  | Q       |          |          |          |
  2+50       2.3578     11.15  | QV      |          |          |          |
  2+55       2.4348     11.17  | QV      |          |          |          |
  3+ 0       2.5119     11.19  | QV      |          |          |          |
  3+ 5       2.5891     11.21  | QV      |          |          |          |
  3+10       2.6665     11.23  | QV      |          |          |          |
  3+15       2.7440     11.26  | QV      |          |          |          |
  3+20       2.8216     11.28  | QV      |          |          |          |
  3+25       2.8995     11.30  | QV      |          |          |          |
  3+30       2.9774     11.32  | QV      |          |          |          |
  3+35       3.0555     11.34  | Q V     |          |          |          |
  3+40       3.1338     11.36  | Q V     |          |          |          |
  3+45       3.2122     11.38  | Q V     |          |          |          |
  3+50       3.2907     11.41  | Q V     |          |          |          |
  3+55       3.3694     11.43  | Q V     |          |          |          |
  4+ 0       3.4483     11.45  | Q V     |          |          |          |
  4+ 5       3.5273     11.48  | Q V     |          |          |          |
  4+10       3.6065     11.50  | Q V     |          |          |          |
  4+15       3.6859     11.52  | Q V     |          |          |          |
  4+20       3.7654     11.54  | Q V     |          |          |          |
  4+25       3.8451     11.57  | Q  V    |          |          |          |
  4+30       3.9249     11.59  | Q  V    |          |          |          |
```

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 4+35      4.0049     11.62  | Q  V    |         |         |         |
 4+40      4.0851     11.64  | Q  V    |         |         |         |
 4+45      4.1654     11.67  | Q  V    |         |         |         |
 4+50      4.2459     11.69  | Q  V    |         |         |         |
 4+55      4.3266     11.72  | Q  V    |         |         |         |
 5+ 0      4.4074     11.74  | Q  V    |         |         |         |
 5+ 5      4.4885     11.77  | Q  V    |         |         |         |
 5+10      4.5697     11.79  | Q   V   |         |         |         |
 5+15      4.6511     11.82  | Q   V   |         |         |         |
 5+20      4.7326     11.84  | Q   V   |         |         |         |
 5+25      4.8144     11.87  | Q   V   |         |         |         |
 5+30      4.8963     11.90  | Q   V   |         |         |         |
 5+35      4.9784     11.92  | Q   V   |         |         |         |
 5+40      5.0607     11.95  | Q   V   |         |         |         |
 5+45      5.1432     11.98  | Q   V   |         |         |         |
 5+50      5.2259     12.01  | Q   V   |         |         |         |
 5+55      5.3088     12.04  | Q   V   |         |         |         |
 6+ 0      5.3919     12.06  | Q    V  |         |         |         |
 6+ 5      5.4752     12.09  | Q    V  |         |         |         |
 6+10      5.5587     12.12  | Q    V  |         |         |         |
 6+15      5.6423     12.15  | Q    V  |         |         |         |
 6+20      5.7262     12.18  | Q    V  |         |         |         |
 6+25      5.8103     12.21  | Q    V  |         |         |         |
 6+30      5.8946     12.24  | Q    V  |         |         |         |
 6+35      5.9791     12.27  | Q    V  |         |         |         |
 6+40      6.0639     12.30  | Q    V  |         |         |         |
 6+45      6.1488     12.33  | Q     V |         |         |         |
 6+50      6.2340     12.36  | Q     V |         |         |         |
 6+55      6.3193     12.40  | Q     V |         |         |         |
 7+ 0      6.4049     12.43  | Q     V |         |         |         |
 7+ 5      6.4908     12.46  | Q     V |         |         |         |
 7+10      6.5768     12.50  | Q     V |         |         |         |
 7+15      6.6631     12.53  | Q     V |         |         |         |
 7+20      6.7497     12.56  | Q     V |         |         |         |
 7+25      6.8364     12.60  | Q     V |         |         |         |
 7+30      6.9234     12.63  | Q      V|         |         |         |
 7+35      7.0107     12.67  | Q      V|         |         |         |
 7+40      7.0982     12.70  | Q      V|         |         |         |
 7+45      7.1859     12.74  | Q      V|         |         |         |
 7+50      7.2739     12.78  | Q      V|         |         |         |
 7+55      7.3622     12.81  | Q      V|         |         |         |
 8+ 0      7.4507     12.85  | Q      V|         |         |         |
 8+ 5      7.5394     12.89  | Q      V|         |         |         |
 8+10      7.6285     12.93  | Q       V         |         |         |
 8+15      7.7178     12.97  | Q       V         |         |         |
 8+20      7.8074     13.01  | Q       V         |         |         |
 8+25      7.8972     13.05  | Q       V         |         |         |
 8+30      7.9874     13.09  | Q       V         |         |         |
 8+35      8.0778     13.13  | Q       V         |         |         |
 8+40      8.1685     13.17  | Q       V         |         |         |
 8+45      8.2595     13.21  | Q       V         |         |         |
 8+50      8.3508     13.26  | Q       V         |         |         |
 8+55      8.4424     13.30  | Q       |V        |         |         |
 9+ 0      8.5343     13.34  | Q       |V        |         |         |
 9+ 5      8.6265     13.39  | Q       |V        |         |         |
 9+10      8.7191     13.44  | Q       |V        |         |         |
 9+15      8.8119     13.48  | Q       |V        |         |         |
 9+20      8.9051     13.53  | Q       |V        |         |         |
 9+25      8.9986     13.58  | Q       |V        |         |         |
 9+30      9.0924     13.63  | Q       |V        |         |         |
 9+35      9.1866     13.68  | Q       | V       |         |         |
 9+40      9.2812     13.72  | Q       | V       |         |         |
 9+45      9.3760     13.78  | Q       | V       |         |         |
 9+50      9.4713     13.83  | Q       | V       |         |         |
 9+55      9.5669     13.88  | Q       | V       |         |         |
10+ 0      9.6628     13.93  | Q       | V       |         |         |
10+ 5      9.7592     13.99  | Q       | V       |         |         |
10+10      9.8559     14.04  | Q       | V       |         |         |
10+15      9.9530     14.10  | Q       |  V      |         |         |
10+20     10.0506     14.16  | Q       |  V      |         |         |
10+25     10.1485     14.22  | Q       |  V      |         |         |
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10+30      10.2468     14.28  | Q       |  V      |         |         |
10+35      10.3456     14.34  | Q       |  V      |         |         |
10+40      10.4447     14.40  | Q       |  V      |         |         |
10+45      10.5443     14.46  | Q       |  V      |         |         |
10+50      10.6444     14.53  | Q       |  V      |         |         |
10+55      10.7449     14.59  | Q       |   V     |         |         |
11+ 0      10.8459     14.66  | Q       |   V     |         |         |
11+ 5      10.9473     14.73  | Q       |   V     |         |         |
11+10      11.0492     14.80  | Q       |   V     |         |         |
11+15      11.1517     14.87  | Q       |   V     |         |         |
11+20      11.2546     14.94  | Q       |   V     |         |         |
11+25      11.3580     15.02  |  Q      |   V     |         |         |
11+30      11.4620     15.09  |  Q      |    V    |         |         |
11+35      11.5665     15.17  |  Q      |    V    |         |         |
11+40      11.6715     15.25  |  Q      |    V    |         |         |
11+45      11.7771     15.33  |  Q      |    V    |         |         |
11+50      11.8833     15.42  |  Q      |    V    |         |         |
11+55      11.9901     15.50  |  Q      |    V    |         |         |
12+ 0      12.0974     15.59  |  Q      |    V    |         |         |
12+ 5      12.2048     15.58  |  Q      |     V   |         |         |
12+10      12.3092     15.16  |  Q      |     V   |         |         |
12+15      12.4089     14.48  | Q       |     V   |         |         |
12+20      12.5073     14.29  | Q       |     V   |         |         |
12+25      12.6054     14.24  | Q       |     V   |         |         |
12+30      12.7035     14.25  | Q       |     V   |         |         |
12+35      12.8020     14.30  | Q       |     V   |         |         |
12+40      12.9011     14.39  | Q       |     V   |         |         |
12+45      13.0010     14.51  | Q       |      V  |         |         |
12+50      13.1017     14.63  | Q       |      V  |         |         |
12+55      13.2034     14.76  | Q       |      V  |         |         |
13+ 0      13.3060     14.89  | Q       |      V  |         |         |
13+ 5      13.4096     15.04  |  Q      |      V  |         |         |
13+10      13.5142     15.19  |  Q      |      V  |         |         |
13+15      13.6200     15.36  |  Q      |      V  |         |         |
13+20      13.7268     15.52  |  Q      |       V |         |         |
13+25      13.8350     15.70  |  Q      |       V |         |         |
13+30      13.9443     15.88  |  Q      |       V |         |         |
13+35      14.0550     16.07  |  Q      |       V |         |         |
13+40      14.1670     16.26  |  Q      |       V |         |         |
13+45      14.2804     16.47  |  Q      |       V |         |         |
13+50      14.3953     16.68  |  Q      |       V |         |         |
13+55      14.5118     16.92  |  Q      |        V|         |         |
14+ 0      14.6299     17.15  |  Q      |        V|         |         |
14+ 5      14.7498     17.41  |  Q      |        V|         |         |
14+10      14.8715     17.67  |  Q      |        V|         |         |
14+15      14.9953     17.98  |  Q      |        V|         |         |
14+20      15.1211     18.27  |  Q      |        V|         |         |
14+25      15.2492     18.59  |  Q      |         V         |         |
14+30      15.3795     18.92  |  Q      |         V         |         |
14+35      15.5124     19.29  |  Q      |         V         |         |
14+40      15.6478     19.66  |  Q      |         V         |         |
14+45      15.7861     20.09  |   Q     |         V         |         |
14+50      15.9274     20.52  |   Q     |         V         |         |
14+55      16.0721     21.01  |   Q     |         |V        |         |
15+ 0      16.2204     21.53  |   Q     |         |V        |         |
15+ 5      16.3727     22.12  |   Q     |         |V        |         |
15+10      16.5293     22.74  |   Q     |         |V        |         |
15+15      16.6909     23.47  |   Q     |         |V        |         |
15+20      16.8579     24.25  |   Q     |         | V       |         |
15+25      17.0267     24.51  |   Q     |         | V       |         |
15+30      17.1790     22.10  |   Q     |         | V       |         |
15+35      17.3035     18.07  |  Q      |         | V       |         |
15+40      17.4240     17.51  |  Q      |         | V       |         |
15+45      17.5495     18.22  |  Q      |         |  V      |         |
15+50      17.6865     19.89  |  Q      |         |  V      |         |
15+55      17.8461     23.17  |   Q     |         |  V      |         |
16+ 0      18.0509     29.74  |    Q    |         |  V      |         |
16+ 5      18.4324     55.40  |         |Q        |   V     |         |
16+10      19.2674    121.25  |         |         |   QV    |         |
16+15      20.3302    154.32  |         |         |     V   Q         |
16+20      20.8454     74.80  |         |   Q     |      V  |         |
```

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16+25      21.1940     50.62  |          Q          |       V  |          |
16+30      21.4709     40.20  |        Q  |         |        V |          |
16+35      21.7168     35.71  |       Q   |         |        V |          |
16+40      21.9251     30.24  |      Q    |         |        V |          |
16+45      22.1028     25.80  |     Q     |         |         V|          |
16+50      22.2687     24.08  |    Q      |         |         V|          |
16+55      22.4253     22.74  |    Q      |         |         V|          |
17+ 0      22.5756     21.82  |    Q      |         |         V|          |
17+ 5      22.7159     20.37  |    Q      |         |         V|          |
17+10      22.8483     19.22  |   Q       |         |          V          |
17+15      22.9745     18.33  |   Q       |         |          V          |
17+20      23.0968     17.76  |   Q       |         |          V          |
17+25      23.2155     17.24  |   Q       |         |          V          |
17+30      23.3310     16.76  |   Q       |         |          V          |
17+35      23.4434     16.33  |   Q       |         |          V          |
17+40      23.5531     15.93  |   Q       |         |          V          |
17+45      23.6603     15.57  |   Q       |         |          |V         |
17+50      23.7652     15.23  |   Q       |         |          |V         |
17+55      23.8680     14.92  | Q         |         |          |V         |
18+ 0      23.9688     14.63  | Q         |         |          |V         |
18+ 5      24.0684     14.47  | Q         |         |          |V         |
18+10      24.1699     14.73  | Q         |         |          |V         |
18+15      24.2751     15.29  |  Q        |         |          |V         |
18+20      24.3810     15.37  |  Q        |         |          | V        |
18+25      24.4868     15.35  |  Q        |         |          | V        |
18+30      24.5920     15.28  |  Q        |         |          | V        |
18+35      24.6966     15.18  |  Q        |         |          | V        |
18+40      24.8003     15.06  |  Q        |         |          | V        |
18+45      24.9030     14.92  | Q         |         |          | V        |
18+50      25.0049     14.79  | Q         |         |          | V        |
18+55      25.1058     14.66  | Q         |         |          |  V       |
19+ 0      25.2059     14.53  | Q         |         |          |  V       |
19+ 5      25.3051     14.41  | Q         |         |          |  V       |
19+10      25.4035     14.28  | Q         |         |          |  V       |
19+15      25.5010     14.16  | Q         |         |          |  V       |
19+20      25.5978     14.05  | Q         |         |          |  V       |
19+25      25.6938     13.94  | Q         |         |          |  V       |
19+30      25.7890     13.83  | Q         |         |          |  V       |
19+35      25.8836     13.73  | Q         |         |          |   V      |
19+40      25.9775     13.63  | Q         |         |          |   V      |
19+45      26.0707     13.53  | Q         |         |          |   V      |
19+50      26.1632     13.44  | Q         |         |          |   V      |
19+55      26.2552     13.35  | Q         |         |          |   V      |
20+ 0      26.3465     13.26  | Q         |         |          |   V      |
20+ 5      26.4372     13.17  | Q         |         |          |   V      |
20+10      26.5274     13.09  | Q         |         |          |   V      |
20+15      26.6170     13.01  | Q         |         |          |    V     |
20+20      26.7060     12.93  | Q         |         |          |    V     |
20+25      26.7946     12.85  | Q         |         |          |    V     |
20+30      26.8826     12.78  | Q         |         |          |    V     |
20+35      26.9701     12.71  | Q         |         |          |    V     |
20+40      27.0571     12.64  | Q         |         |          |    V     |
20+45      27.1436     12.57  | Q         |         |          |    V     |
20+50      27.2297     12.50  | Q         |         |          |    V     |
20+55      27.3153     12.43  | Q         |         |          |    V     |
21+ 0      27.4005     12.37  | Q         |         |          |     V    |
21+ 5      27.4852     12.30  | Q         |         |          |     V    |
21+10      27.5695     12.24  | Q         |         |          |     V    |
21+15      27.6534     12.18  | Q         |         |          |     V    |
21+20      27.7369     12.12  | Q         |         |          |     V    |
21+25      27.8200     12.06  | Q         |         |          |     V    |
21+30      27.9027     12.01  | Q         |         |          |     V    |
21+35      27.9850     11.95  | Q         |         |          |     V    |
21+40      28.0670     11.90  | Q         |         |          |     V    |
21+45      28.1486     11.84  | Q         |         |          |      V   |
21+50      28.2298     11.79  | Q         |         |          |      V   |
21+55      28.3106     11.74  | Q         |         |          |      V   |
22+ 0      28.3911     11.69  | Q         |         |          |      V   |
22+ 5      28.4713     11.64  | Q         |         |          |      V   |
22+10      28.5512     11.59  | Q         |         |          |      V   |
22+15      28.6307     11.55  | Q         |         |          |      V   |
```

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   22+20      28.7099     11.50  | Q       |         |         |      V  |
   22+25      28.7887     11.45  | Q       |         |         |      V  |
   22+30      28.8673     11.41  | Q       |         |         |      V  |
   22+35      28.9456     11.36  | Q       |         |         |       V |
   22+40      29.0235     11.32  | Q       |         |         |       V |
   22+45      29.1012     11.28  | Q       |         |         |       V |
   22+50      29.1786     11.23  | Q       |         |         |       V |
   22+55      29.2557     11.19  | Q       |         |         |       V |
   23+ 0      29.3325     11.15  | Q       |         |         |       V |
   23+ 5      29.4090     11.11  | Q       |         |         |       V |
   23+10      29.4853     11.07  | Q       |         |         |       V |
   23+15      29.5613     11.03  | Q       |         |         |       V |
   23+20      29.6370     11.00  | Q       |         |         |       V |
   23+25      29.7125     10.96  | Q       |         |         |        V|
   23+30      29.7877     10.92  | Q       |         |         |        V|
   23+35      29.8626     10.88  | Q       |         |         |        V|
   23+40      29.9373     10.85  | Q       |         |         |        V|
   23+45      30.0118     10.81  | Q       |         |         |        V|
   23+50      30.0860     10.78  | Q       |         |         |        V|
   23+55      30.1600     10.74  | Q       |         |         |        V|
   24+ 0      30.2338     10.71  | Q       |         |         |        V|
   24+ 5      30.3039     10.18  | Q       |         |         |        V|
   24+10      30.3561      7.58  |Q        |         |         |        V|
   24+15      30.3811      3.62  Q         |         |         |        V|
   24+20      30.3959      2.16  Q         |         |         |        V|
   24+25      30.4050      1.31  Q         |         |         |        V|
   24+30      30.4103      0.77  Q         |         |         |        V|
   24+35      30.4132      0.43  Q         |         |         |        V|
   24+40      30.4148      0.24  Q         |         |         |        V|
   24+45      30.4159      0.16  Q         |         |         |        V|
   24+50      30.4166      0.10  Q         |         |         |        V|
   24+55      30.4171      0.07  Q         |         |         |        V|
   25+ 0      30.4173      0.03  Q         |         |         |        V|
   25+ 5      30.4173      0.01  Q         |         |         |         V
--------------------------------------------------------------------------
```

Area 'B' – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
2 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 2

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            11.61            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6         11.61      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 11.61 | 1.000 | 78.0 | 60.6 | 6.50 | 0.198 |

Area-averaged catchment yield fraction, Y = 0.198
Area-averaged low loss fraction, Yb = 0.802
User entry of time of concentration = 0.201 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 11.61(Ac.)
Catchment Lag time = 0.161 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.9017
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.802 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 11.61(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.309(In)
30-minute factor = 0.999 Adjusted rainfall = 0.528(In)
1-hour factor = 0.999 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 140.41 (CFS)) | |
| 1 | 4.513 | 6.337 |
| 2 | 27.025 | 31.608 |
| 3 | 64.721 | 52.928 |
| 4 | 78.816 | 19.791 |
| 5 | 86.936 | 11.401 |
| 6 | 92.180 | 7.362 |
| 7 | 95.551 | 4.734 |
| 8 | 97.548 | 2.804 |
| 9 | 98.388 | 1.180 |
| 10 | 98.917 | 0.742 |
| 11 | 99.278 | 0.508 |
| 12 | 99.655 | 0.529 |
| 13 | 99.883 | 0.321 |
| 14 | 100.000 | 0.164 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3085 | 0.3085 |
| 2 | 0.3798 | 0.0713 |
| 3 | 0.4289 | 0.0491 |
| 4 | 0.4676 | 0.0387 |
| 5 | 0.5000 | 0.0324 |
| 6 | 0.5281 | 0.0281 |
| 7 | 0.5531 | 0.0250 |
| 8 | 0.5757 | 0.0226 |
| 9 | 0.5964 | 0.0207 |
| 10 | 0.6156 | 0.0192 |
| 11 | 0.6334 | 0.0179 |
| 12 | 0.6502 | 0.0168 |

| | | |
|---|---|---|
| 13 | 0.6836 | 0.0335 |
| 14 | 0.7162 | 0.0325 |
| 15 | 0.7478 | 0.0317 |
| 16 | 0.7787 | 0.0309 |
| 17 | 0.8089 | 0.0302 |
| 18 | 0.8385 | 0.0295 |
| 19 | 0.8674 | 0.0289 |
| 20 | 0.8957 | 0.0284 |
| 21 | 0.9236 | 0.0278 |
| 22 | 0.9509 | 0.0273 |
| 23 | 0.9778 | 0.0269 |
| 24 | 1.0043 | 0.0265 |
| 25 | 1.0303 | 0.0260 |
| 26 | 1.0560 | 0.0257 |
| 27 | 1.0813 | 0.0253 |
| 28 | 1.1062 | 0.0249 |
| 29 | 1.1308 | 0.0246 |
| 30 | 1.1551 | 0.0243 |
| 31 | 1.1791 | 0.0240 |
| 32 | 1.2029 | 0.0237 |
| 33 | 1.2263 | 0.0234 |
| 34 | 1.2495 | 0.0232 |
| 35 | 1.2724 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3175 | 0.0224 |
| 38 | 1.3397 | 0.0222 |
| 39 | 1.3617 | 0.0220 |
| 40 | 1.3835 | 0.0218 |
| 41 | 1.4051 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4477 | 0.0212 |
| 44 | 1.4687 | 0.0210 |
| 45 | 1.4895 | 0.0208 |
| 46 | 1.5102 | 0.0207 |
| 47 | 1.5307 | 0.0205 |
| 48 | 1.5510 | 0.0203 |
| 49 | 1.5712 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6111 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6892 | 0.0193 |
| 56 | 1.7084 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7652 | 0.0188 |
| 60 | 1.7839 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8393 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8757 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9295 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9649 | 0.0176 |
| 71 | 1.9825 | 0.0176 |
| 72 | 1.9999 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0547 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1212 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |

| | | |
|---|---|---|
| 84 | 2.1602 | 0.0129 |
| 85 | 2.1730 | 0.0128 |
| 86 | 2.1857 | 0.0127 |
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2235 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2851 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3093 | 0.0121 |
| 97 | 2.3213 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3451 | 0.0119 |
| 100 | 2.3569 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3920 | 0.0116 |
| 104 | 2.4036 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4266 | 0.0115 |
| 107 | 2.4380 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4607 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5165 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5494 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5711 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6033 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6873 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7079 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7385 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7987 | 0.0099 |
| 142 | 2.8086 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8479 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8770 | 0.0097 |
| 150 | 2.8867 | 0.0096 |
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |

| | | |
|---|---|---|
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9438 | 0.0095 |
| 157 | 2.9533 | 0.0094 |
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9720 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 2.9999 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0367 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0821 | 0.0090 |
| 172 | 3.0911 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1357 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1797 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2058 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2913 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3249 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3664 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4074 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4640 | 0.0080 |
| 217 | 3.4720 | 0.0080 |
| 218 | 3.4800 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |

| | | |
|---|---|---|
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5511 | 0.0078 |
| 228 | 3.5590 | 0.0078 |
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5745 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5900 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6285 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6817 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7785 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8005 | 0.0073 |
| 261 | 3.8078 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8296 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8441 | 0.0072 |
| 267 | 3.8513 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8657 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8872 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9369 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9510 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9860 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 3.9999 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0056 | 0.0014 |
| 2 | 0.0070 | 0.0056 | 0.0014 |
| 3 | 0.0070 | 0.0056 | 0.0014 |

| | | | |
|---|---|---|---|
| 4 | 0.0070 | 0.0056 | 0.0014 |
| 5 | 0.0070 | 0.0056 | 0.0014 |
| 6 | 0.0070 | 0.0056 | 0.0014 |
| 7 | 0.0071 | 0.0057 | 0.0014 |
| 8 | 0.0071 | 0.0057 | 0.0014 |
| 9 | 0.0071 | 0.0057 | 0.0014 |
| 10 | 0.0071 | 0.0057 | 0.0014 |
| 11 | 0.0071 | 0.0057 | 0.0014 |
| 12 | 0.0072 | 0.0057 | 0.0014 |
| 13 | 0.0072 | 0.0058 | 0.0014 |
| 14 | 0.0072 | 0.0058 | 0.0014 |
| 15 | 0.0072 | 0.0058 | 0.0014 |
| 16 | 0.0072 | 0.0058 | 0.0014 |
| 17 | 0.0073 | 0.0058 | 0.0014 |
| 18 | 0.0073 | 0.0058 | 0.0014 |
| 19 | 0.0073 | 0.0059 | 0.0014 |
| 20 | 0.0073 | 0.0059 | 0.0014 |
| 21 | 0.0073 | 0.0059 | 0.0015 |
| 22 | 0.0074 | 0.0059 | 0.0015 |
| 23 | 0.0074 | 0.0059 | 0.0015 |
| 24 | 0.0074 | 0.0059 | 0.0015 |
| 25 | 0.0074 | 0.0060 | 0.0015 |
| 26 | 0.0074 | 0.0060 | 0.0015 |
| 27 | 0.0075 | 0.0060 | 0.0015 |
| 28 | 0.0075 | 0.0060 | 0.0015 |
| 29 | 0.0075 | 0.0060 | 0.0015 |
| 30 | 0.0075 | 0.0060 | 0.0015 |
| 31 | 0.0076 | 0.0061 | 0.0015 |
| 32 | 0.0076 | 0.0061 | 0.0015 |
| 33 | 0.0076 | 0.0061 | 0.0015 |
| 34 | 0.0076 | 0.0061 | 0.0015 |
| 35 | 0.0077 | 0.0061 | 0.0015 |
| 36 | 0.0077 | 0.0062 | 0.0015 |
| 37 | 0.0077 | 0.0062 | 0.0015 |
| 38 | 0.0077 | 0.0062 | 0.0015 |
| 39 | 0.0078 | 0.0062 | 0.0015 |
| 40 | 0.0078 | 0.0062 | 0.0015 |
| 41 | 0.0078 | 0.0063 | 0.0015 |
| 42 | 0.0078 | 0.0063 | 0.0016 |
| 43 | 0.0079 | 0.0063 | 0.0016 |
| 44 | 0.0079 | 0.0063 | 0.0016 |
| 45 | 0.0079 | 0.0064 | 0.0016 |
| 46 | 0.0079 | 0.0064 | 0.0016 |
| 47 | 0.0080 | 0.0064 | 0.0016 |
| 48 | 0.0080 | 0.0064 | 0.0016 |
| 49 | 0.0080 | 0.0064 | 0.0016 |
| 50 | 0.0080 | 0.0065 | 0.0016 |
| 51 | 0.0081 | 0.0065 | 0.0016 |
| 52 | 0.0081 | 0.0065 | 0.0016 |
| 53 | 0.0081 | 0.0065 | 0.0016 |
| 54 | 0.0082 | 0.0065 | 0.0016 |
| 55 | 0.0082 | 0.0066 | 0.0016 |
| 56 | 0.0082 | 0.0066 | 0.0016 |
| 57 | 0.0083 | 0.0066 | 0.0016 |
| 58 | 0.0083 | 0.0066 | 0.0016 |
| 59 | 0.0083 | 0.0067 | 0.0016 |
| 60 | 0.0083 | 0.0067 | 0.0017 |
| 61 | 0.0084 | 0.0067 | 0.0017 |
| 62 | 0.0084 | 0.0067 | 0.0017 |
| 63 | 0.0085 | 0.0068 | 0.0017 |
| 64 | 0.0085 | 0.0068 | 0.0017 |
| 65 | 0.0085 | 0.0068 | 0.0017 |
| 66 | 0.0085 | 0.0068 | 0.0017 |
| 67 | 0.0086 | 0.0069 | 0.0017 |
| 68 | 0.0086 | 0.0069 | 0.0017 |
| 69 | 0.0087 | 0.0069 | 0.0017 |
| 70 | 0.0087 | 0.0070 | 0.0017 |
| 71 | 0.0087 | 0.0070 | 0.0017 |
| 72 | 0.0087 | 0.0070 | 0.0017 |
| 73 | 0.0088 | 0.0071 | 0.0017 |
| 74 | 0.0088 | 0.0071 | 0.0017 |

| | | | |
|---|---|---|---|
| 75 | 0.0089 | 0.0071 | 0.0018 |
| 76 | 0.0089 | 0.0071 | 0.0018 |
| 77 | 0.0089 | 0.0072 | 0.0018 |
| 78 | 0.0090 | 0.0072 | 0.0018 |
| 79 | 0.0090 | 0.0072 | 0.0018 |
| 80 | 0.0091 | 0.0073 | 0.0018 |
| 81 | 0.0091 | 0.0073 | 0.0018 |
| 82 | 0.0091 | 0.0073 | 0.0018 |
| 83 | 0.0092 | 0.0074 | 0.0018 |
| 84 | 0.0092 | 0.0074 | 0.0018 |
| 85 | 0.0093 | 0.0074 | 0.0018 |
| 86 | 0.0093 | 0.0075 | 0.0018 |
| 87 | 0.0094 | 0.0075 | 0.0019 |
| 88 | 0.0094 | 0.0075 | 0.0019 |
| 89 | 0.0095 | 0.0076 | 0.0019 |
| 90 | 0.0095 | 0.0076 | 0.0019 |
| 91 | 0.0095 | 0.0077 | 0.0019 |
| 92 | 0.0096 | 0.0077 | 0.0019 |
| 93 | 0.0096 | 0.0077 | 0.0019 |
| 94 | 0.0097 | 0.0078 | 0.0019 |
| 95 | 0.0097 | 0.0078 | 0.0019 |
| 96 | 0.0098 | 0.0078 | 0.0019 |
| 97 | 0.0098 | 0.0079 | 0.0019 |
| 98 | 0.0099 | 0.0079 | 0.0020 |
| 99 | 0.0099 | 0.0080 | 0.0020 |
| 100 | 0.0100 | 0.0080 | 0.0020 |
| 101 | 0.0101 | 0.0081 | 0.0020 |
| 102 | 0.0101 | 0.0081 | 0.0020 |
| 103 | 0.0102 | 0.0081 | 0.0020 |
| 104 | 0.0102 | 0.0082 | 0.0020 |
| 105 | 0.0103 | 0.0082 | 0.0020 |
| 106 | 0.0103 | 0.0083 | 0.0020 |
| 107 | 0.0104 | 0.0083 | 0.0021 |
| 108 | 0.0104 | 0.0084 | 0.0021 |
| 109 | 0.0105 | 0.0084 | 0.0021 |
| 110 | 0.0106 | 0.0085 | 0.0021 |
| 111 | 0.0106 | 0.0085 | 0.0021 |
| 112 | 0.0107 | 0.0086 | 0.0021 |
| 113 | 0.0108 | 0.0086 | 0.0021 |
| 114 | 0.0108 | 0.0087 | 0.0021 |
| 115 | 0.0109 | 0.0088 | 0.0022 |
| 116 | 0.0110 | 0.0088 | 0.0022 |
| 117 | 0.0111 | 0.0089 | 0.0022 |
| 118 | 0.0111 | 0.0089 | 0.0022 |
| 119 | 0.0112 | 0.0090 | 0.0022 |
| 120 | 0.0113 | 0.0090 | 0.0022 |
| 121 | 0.0114 | 0.0091 | 0.0023 |
| 122 | 0.0114 | 0.0092 | 0.0023 |
| 123 | 0.0115 | 0.0092 | 0.0023 |
| 124 | 0.0116 | 0.0093 | 0.0023 |
| 125 | 0.0117 | 0.0094 | 0.0023 |
| 126 | 0.0118 | 0.0094 | 0.0023 |
| 127 | 0.0119 | 0.0095 | 0.0024 |
| 128 | 0.0119 | 0.0096 | 0.0024 |
| 129 | 0.0121 | 0.0097 | 0.0024 |
| 130 | 0.0121 | 0.0097 | 0.0024 |
| 131 | 0.0123 | 0.0098 | 0.0024 |
| 132 | 0.0123 | 0.0099 | 0.0024 |
| 133 | 0.0125 | 0.0100 | 0.0025 |
| 134 | 0.0125 | 0.0100 | 0.0025 |
| 135 | 0.0127 | 0.0102 | 0.0025 |
| 136 | 0.0127 | 0.0102 | 0.0025 |
| 137 | 0.0129 | 0.0103 | 0.0026 |
| 138 | 0.0130 | 0.0104 | 0.0026 |
| 139 | 0.0131 | 0.0105 | 0.0026 |
| 140 | 0.0132 | 0.0106 | 0.0026 |
| 141 | 0.0134 | 0.0107 | 0.0027 |
| 142 | 0.0135 | 0.0108 | 0.0027 |
| 143 | 0.0137 | 0.0110 | 0.0027 |
| 144 | 0.0137 | 0.0110 | 0.0027 |
| 145 | 0.0175 | 0.0140 | 0.0035 |

| | | | |
|---|---|---|---|
| 146 | 0.0176 | 0.0141 | 0.0035 |
| 147 | 0.0177 | 0.0142 | 0.0035 |
| 148 | 0.0178 | 0.0143 | 0.0035 |
| 149 | 0.0180 | 0.0145 | 0.0036 |
| 150 | 0.0181 | 0.0145 | 0.0036 |
| 151 | 0.0184 | 0.0147 | 0.0036 |
| 152 | 0.0185 | 0.0148 | 0.0037 |
| 153 | 0.0187 | 0.0150 | 0.0037 |
| 154 | 0.0188 | 0.0151 | 0.0037 |
| 155 | 0.0191 | 0.0153 | 0.0038 |
| 156 | 0.0192 | 0.0154 | 0.0038 |
| 157 | 0.0195 | 0.0156 | 0.0039 |
| 158 | 0.0196 | 0.0157 | 0.0039 |
| 159 | 0.0199 | 0.0159 | 0.0039 |
| 160 | 0.0200 | 0.0161 | 0.0040 |
| 161 | 0.0203 | 0.0163 | 0.0040 |
| 162 | 0.0205 | 0.0164 | 0.0041 |
| 163 | 0.0208 | 0.0167 | 0.0041 |
| 164 | 0.0210 | 0.0169 | 0.0042 |
| 165 | 0.0214 | 0.0172 | 0.0042 |
| 166 | 0.0216 | 0.0173 | 0.0043 |
| 167 | 0.0220 | 0.0176 | 0.0044 |
| 168 | 0.0222 | 0.0178 | 0.0044 |
| 169 | 0.0227 | 0.0182 | 0.0045 |
| 170 | 0.0229 | 0.0184 | 0.0045 |
| 171 | 0.0234 | 0.0188 | 0.0046 |
| 172 | 0.0237 | 0.0190 | 0.0047 |
| 173 | 0.0243 | 0.0195 | 0.0048 |
| 174 | 0.0246 | 0.0197 | 0.0049 |
| 175 | 0.0253 | 0.0203 | 0.0050 |
| 176 | 0.0257 | 0.0206 | 0.0051 |
| 177 | 0.0265 | 0.0212 | 0.0052 |
| 178 | 0.0269 | 0.0216 | 0.0053 |
| 179 | 0.0278 | 0.0223 | 0.0055 |
| 180 | 0.0284 | 0.0227 | 0.0056 |
| 181 | 0.0295 | 0.0237 | 0.0058 |
| 182 | 0.0302 | 0.0242 | 0.0060 |
| 183 | 0.0317 | 0.0254 | 0.0063 |
| 184 | 0.0325 | 0.0261 | 0.0064 |
| 185 | 0.0168 | 0.0134 | 0.0033 |
| 186 | 0.0179 | 0.0143 | 0.0035 |
| 187 | 0.0207 | 0.0166 | 0.0041 |
| 188 | 0.0226 | 0.0181 | 0.0045 |
| 189 | 0.0281 | 0.0225 | 0.0056 |
| 190 | 0.0324 | 0.0260 | 0.0064 |
| 191 | 0.0491 | 0.0394 | 0.0097 |
| 192 | 0.0713 | 0.0559 | 0.0154 |
| 193 | 0.3085 | 0.0559 | 0.2526 |
| 194 | 0.0387 | 0.0310 | 0.0077 |
| 195 | 0.0250 | 0.0200 | 0.0049 |
| 196 | 0.0192 | 0.0154 | 0.0038 |
| 197 | 0.0335 | 0.0268 | 0.0066 |
| 198 | 0.0309 | 0.0248 | 0.0061 |
| 199 | 0.0289 | 0.0232 | 0.0057 |
| 200 | 0.0273 | 0.0219 | 0.0054 |
| 201 | 0.0260 | 0.0209 | 0.0052 |
| 202 | 0.0249 | 0.0200 | 0.0049 |
| 203 | 0.0240 | 0.0193 | 0.0048 |
| 204 | 0.0232 | 0.0186 | 0.0046 |
| 205 | 0.0224 | 0.0180 | 0.0044 |
| 206 | 0.0218 | 0.0175 | 0.0043 |
| 207 | 0.0212 | 0.0170 | 0.0042 |
| 208 | 0.0207 | 0.0166 | 0.0041 |
| 209 | 0.0202 | 0.0162 | 0.0040 |
| 210 | 0.0197 | 0.0158 | 0.0039 |
| 211 | 0.0193 | 0.0155 | 0.0038 |
| 212 | 0.0189 | 0.0152 | 0.0037 |
| 213 | 0.0186 | 0.0149 | 0.0037 |
| 214 | 0.0182 | 0.0146 | 0.0036 |
| 215 | 0.0179 | 0.0144 | 0.0036 |
| 216 | 0.0176 | 0.0142 | 0.0035 |

| | | | |
|---|---|---|---|
| 217 | 0.0138 | 0.0111 | 0.0027 |
| 218 | 0.0136 | 0.0109 | 0.0027 |
| 219 | 0.0133 | 0.0107 | 0.0026 |
| 220 | 0.0131 | 0.0105 | 0.0026 |
| 221 | 0.0128 | 0.0103 | 0.0025 |
| 222 | 0.0126 | 0.0101 | 0.0025 |
| 223 | 0.0124 | 0.0099 | 0.0025 |
| 224 | 0.0122 | 0.0098 | 0.0024 |
| 225 | 0.0120 | 0.0096 | 0.0024 |
| 226 | 0.0118 | 0.0095 | 0.0023 |
| 227 | 0.0116 | 0.0093 | 0.0023 |
| 228 | 0.0115 | 0.0092 | 0.0023 |
| 229 | 0.0113 | 0.0091 | 0.0022 |
| 230 | 0.0112 | 0.0090 | 0.0022 |
| 231 | 0.0110 | 0.0088 | 0.0022 |
| 232 | 0.0109 | 0.0087 | 0.0022 |
| 233 | 0.0107 | 0.0086 | 0.0021 |
| 234 | 0.0106 | 0.0085 | 0.0021 |
| 235 | 0.0105 | 0.0084 | 0.0021 |
| 236 | 0.0104 | 0.0083 | 0.0021 |
| 237 | 0.0102 | 0.0082 | 0.0020 |
| 238 | 0.0101 | 0.0081 | 0.0020 |
| 239 | 0.0100 | 0.0080 | 0.0020 |
| 240 | 0.0099 | 0.0079 | 0.0020 |
| 241 | 0.0098 | 0.0079 | 0.0019 |
| 242 | 0.0097 | 0.0078 | 0.0019 |
| 243 | 0.0096 | 0.0077 | 0.0019 |
| 244 | 0.0095 | 0.0076 | 0.0019 |
| 245 | 0.0094 | 0.0076 | 0.0019 |
| 246 | 0.0093 | 0.0075 | 0.0018 |
| 247 | 0.0092 | 0.0074 | 0.0018 |
| 248 | 0.0092 | 0.0073 | 0.0018 |
| 249 | 0.0091 | 0.0073 | 0.0018 |
| 250 | 0.0090 | 0.0072 | 0.0018 |
| 251 | 0.0089 | 0.0072 | 0.0018 |
| 252 | 0.0088 | 0.0071 | 0.0018 |
| 253 | 0.0088 | 0.0070 | 0.0017 |
| 254 | 0.0087 | 0.0070 | 0.0017 |
| 255 | 0.0086 | 0.0069 | 0.0017 |
| 256 | 0.0086 | 0.0069 | 0.0017 |
| 257 | 0.0085 | 0.0068 | 0.0017 |
| 258 | 0.0084 | 0.0068 | 0.0017 |
| 259 | 0.0084 | 0.0067 | 0.0017 |
| 260 | 0.0083 | 0.0067 | 0.0016 |
| 261 | 0.0082 | 0.0066 | 0.0016 |
| 262 | 0.0082 | 0.0066 | 0.0016 |
| 263 | 0.0081 | 0.0065 | 0.0016 |
| 264 | 0.0081 | 0.0065 | 0.0016 |
| 265 | 0.0080 | 0.0064 | 0.0016 |
| 266 | 0.0080 | 0.0064 | 0.0016 |
| 267 | 0.0079 | 0.0063 | 0.0016 |
| 268 | 0.0078 | 0.0063 | 0.0016 |
| 269 | 0.0078 | 0.0063 | 0.0015 |
| 270 | 0.0077 | 0.0062 | 0.0015 |
| 271 | 0.0077 | 0.0062 | 0.0015 |
| 272 | 0.0076 | 0.0061 | 0.0015 |
| 273 | 0.0076 | 0.0061 | 0.0015 |
| 274 | 0.0076 | 0.0061 | 0.0015 |
| 275 | 0.0075 | 0.0060 | 0.0015 |
| 276 | 0.0075 | 0.0060 | 0.0015 |
| 277 | 0.0074 | 0.0059 | 0.0015 |
| 278 | 0.0074 | 0.0059 | 0.0015 |
| 279 | 0.0073 | 0.0059 | 0.0015 |
| 280 | 0.0073 | 0.0058 | 0.0014 |
| 281 | 0.0072 | 0.0058 | 0.0014 |
| 282 | 0.0072 | 0.0058 | 0.0014 |
| 283 | 0.0072 | 0.0057 | 0.0014 |
| 284 | 0.0071 | 0.0057 | 0.0014 |
| 285 | 0.0071 | 0.0057 | 0.0014 |
| 286 | 0.0070 | 0.0057 | 0.0014 |
| 287 | 0.0070 | 0.0056 | 0.0014 |

```
      288             0.0070          0.0056             0.0014
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.02(In)
      Total effective rainfall =      0.98(In)
      Peak flow rate in flood hydrograph =     14.16(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
----------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |          |          |          |
  0+10       0.0004      0.05  Q          |          |          |          |
  0+15       0.0013      0.13  Q          |          |          |          |
  0+20       0.0023      0.15  Q          |          |          |          |
  0+25       0.0035      0.17  Q          |          |          |          |
  0+30       0.0047      0.18  Q          |          |          |          |
  0+35       0.0060      0.19  Q          |          |          |          |
  0+40       0.0073      0.19  Q          |          |          |          |
  0+45       0.0087      0.19  Q          |          |          |          |
  0+50       0.0100      0.19  Q          |          |          |          |
  0+55       0.0113      0.20  Q          |          |          |          |
  1+ 0       0.0127      0.20  Q          |          |          |          |
  1+ 5       0.0141      0.20  Q          |          |          |          |
  1+10       0.0154      0.20  Q          |          |          |          |
  1+15       0.0168      0.20  Q          |          |          |          |
  1+20       0.0182      0.20  Q          |          |          |          |
  1+25       0.0196      0.20  Q          |          |          |          |
  1+30       0.0209      0.20  Q          |          |          |          |
  1+35       0.0223      0.20  Q          |          |          |          |
  1+40       0.0237      0.20  Q          |          |          |          |
  1+45       0.0251      0.20  QV         |          |          |          |
  1+50       0.0265      0.20  QV         |          |          |          |
  1+55       0.0279      0.20  QV         |          |          |          |
  2+ 0       0.0293      0.20  QV         |          |          |          |
  2+ 5       0.0307      0.20  QV         |          |          |          |
  2+10       0.0322      0.21  QV         |          |          |          |
  2+15       0.0336      0.21  QV         |          |          |          |
  2+20       0.0350      0.21  QV         |          |          |          |
  2+25       0.0364      0.21  QV         |          |          |          |
  2+30       0.0379      0.21  QV         |          |          |          |
  2+35       0.0393      0.21  QV         |          |          |          |
  2+40       0.0407      0.21  QV         |          |          |          |
  2+45       0.0422      0.21  QV         |          |          |          |
  2+50       0.0436      0.21  QV         |          |          |          |
  2+55       0.0451      0.21  QV         |          |          |          |
  3+ 0       0.0465      0.21  QV         |          |          |          |
  3+ 5       0.0480      0.21  Q V        |          |          |          |
  3+10       0.0495      0.21  Q V        |          |          |          |
  3+15       0.0510      0.21  Q V        |          |          |          |
  3+20       0.0524      0.21  Q V        |          |          |          |
  3+25       0.0539      0.22  Q V        |          |          |          |
  3+30       0.0554      0.22  Q V        |          |          |          |
  3+35       0.0569      0.22  Q V        |          |          |          |
  3+40       0.0584      0.22  Q V        |          |          |          |
  3+45       0.0599      0.22  Q V        |          |          |          |
  3+50       0.0614      0.22  Q V        |          |          |          |
  3+55       0.0629      0.22  Q V        |          |          |          |
  4+ 0       0.0644      0.22  Q V        |          |          |          |
  4+ 5       0.0660      0.22  Q V        |          |          |          |
  4+10       0.0675      0.22  Q V        |          |          |          |
  4+15       0.0690      0.22  Q V        |          |          |          |
  4+20       0.0706      0.22  Q V        |          |          |          |
  4+25       0.0721      0.22  Q  V       |          |          |          |
  4+30       0.0737      0.22  Q  V       |          |          |          |
  4+35       0.0752      0.23  Q  V       |          |          |          |
```

```
 4+40      0.0768      0.23  Q  V      |          |          |          |
 4+45      0.0783      0.23  Q  V      |          |          |          |
 4+50      0.0799      0.23  Q  V      |          |          |          |
 4+55      0.0815      0.23  Q  V      |          |          |          |
 5+ 0      0.0831      0.23  Q  V      |          |          |          |
 5+ 5      0.0847      0.23  Q  V      |          |          |          |
 5+10      0.0863      0.23  Q  V      |          |          |          |
 5+15      0.0879      0.23  Q  V      |          |          |          |
 5+20      0.0895      0.23  Q  V      |          |          |          |
 5+25      0.0911      0.23  Q  V      |          |          |          |
 5+30      0.0927      0.24  Q  V      |          |          |          |
 5+35      0.0943      0.24  Q  V      |          |          |          |
 5+40      0.0960      0.24  Q   V     |          |          |          |
 5+45      0.0976      0.24  Q   V     |          |          |          |
 5+50      0.0992      0.24  Q   V     |          |          |          |
 5+55      0.1009      0.24  Q   V     |          |          |          |
 6+ 0      0.1026      0.24  Q   V     |          |          |          |
 6+ 5      0.1042      0.24  Q   V     |          |          |          |
 6+10      0.1059      0.24  Q   V     |          |          |          |
 6+15      0.1076      0.24  Q   V     |          |          |          |
 6+20      0.1093      0.24  Q   V     |          |          |          |
 6+25      0.1109      0.25  Q   V     |          |          |          |
 6+30      0.1126      0.25  Q   V     |          |          |          |
 6+35      0.1144      0.25  Q   V     |          |          |          |
 6+40      0.1161      0.25  Q   V     |          |          |          |
 6+45      0.1178      0.25  Q   V     |          |          |          |
 6+50      0.1195      0.25  Q    V    |          |          |          |
 6+55      0.1213      0.25  Q    V    |          |          |          |
 7+ 0      0.1230      0.25  Q    V    |          |          |          |
 7+ 5      0.1248      0.25  Q    V    |          |          |          |
 7+10      0.1265      0.26  Q    V    |          |          |          |
 7+15      0.1283      0.26  Q    V    |          |          |          |
 7+20      0.1301      0.26  Q    V    |          |          |          |
 7+25      0.1319      0.26  Q    V    |          |          |          |
 7+30      0.1337      0.26  Q    V    |          |          |          |
 7+35      0.1355      0.26  Q    V    |          |          |          |
 7+40      0.1373      0.26  Q    V    |          |          |          |
 7+45      0.1391      0.26  Q    V    |          |          |          |
 7+50      0.1409      0.27  Q    V    |          |          |          |
 7+55      0.1428      0.27  Q    V    |          |          |          |
 8+ 0      0.1446      0.27  Q     V   |          |          |          |
 8+ 5      0.1465      0.27  Q     V   |          |          |          |
 8+10      0.1483      0.27  Q     V   |          |          |          |
 8+15      0.1502      0.27  Q     V   |          |          |          |
 8+20      0.1521      0.27  Q     V   |          |          |          |
 8+25      0.1540      0.28  Q     V   |          |          |          |
 8+30      0.1559      0.28  Q     V   |          |          |          |
 8+35      0.1578      0.28  Q     V   |          |          |          |
 8+40      0.1597      0.28  Q     V   |          |          |          |
 8+45      0.1617      0.28  Q     V   |          |          |          |
 8+50      0.1636      0.28  Q     V   |          |          |          |
 8+55      0.1656      0.28  Q     V   |          |          |          |
 9+ 0      0.1676      0.29  Q      V  |          |          |          |
 9+ 5      0.1695      0.29  Q      V  |          |          |          |
 9+10      0.1715      0.29  Q      V  |          |          |          |
 9+15      0.1735      0.29  Q      V  |          |          |          |
 9+20      0.1756      0.29  Q      V  |          |          |          |
 9+25      0.1776      0.29  Q      V  |          |          |          |
 9+30      0.1796      0.30  Q      V  |          |          |          |
 9+35      0.1817      0.30  Q      V  |          |          |          |
 9+40      0.1838      0.30  Q      V  |          |          |          |
 9+45      0.1858      0.30  Q      V  |          |          |          |
 9+50      0.1879      0.30  Q      V  |          |          |          |
 9+55      0.1900      0.31  Q      V  |          |          |          |
10+ 0      0.1922      0.31  Q       V |          |          |          |
10+ 5      0.1943      0.31  Q       V |          |          |          |
10+10      0.1965      0.31  Q       V |          |          |          |
10+15      0.1986      0.31  Q       V |          |          |          |
10+20      0.2008      0.32  Q       V |          |          |          |
10+25      0.2030      0.32  Q       V |          |          |          |
10+30      0.2052      0.32  Q       V |          |          |          |
```

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10+35      0.2074     0.32  Q       V |         |          |         |
10+40      0.2097     0.33  Q       V |         |          |         |
10+45      0.2120     0.33  Q       V |         |          |         |
10+50      0.2142     0.33  Q       V |         |          |         |
10+55      0.2165     0.33  Q        V|         |          |         |
11+ 0      0.2188     0.34  Q        V|         |          |         |
11+ 5      0.2212     0.34  Q        V|         |          |         |
11+10      0.2235     0.34  Q        V|         |          |         |
11+15      0.2259     0.34  Q        V|         |          |         |
11+20      0.2283     0.35  Q        V|         |          |         |
11+25      0.2307     0.35  Q        V|         |          |         |
11+30      0.2331     0.35  Q        V|         |          |         |
11+35      0.2356     0.36  Q        V|         |          |         |
11+40      0.2381     0.36  Q        V|         |          |         |
11+45      0.2406     0.36  Q         V         |          |         |
11+50      0.2431     0.37  Q         V         |          |         |
11+55      0.2456     0.37  Q         V         |          |         |
12+ 0      0.2482     0.37  Q         V         |          |         |
12+ 5      0.2508     0.38  Q         V         |          |         |
12+10      0.2536     0.41  Q         V         |          |         |
12+15      0.2567     0.45  Q         V         |          |         |
12+20      0.2599     0.47  Q         V         |          |         |
12+25      0.2632     0.48  Q         |V        |          |         |
12+30      0.2666     0.49  Q         |V        |          |         |
12+35      0.2700     0.49  Q         |V        |          |         |
12+40      0.2734     0.50  |Q        |V        |          |         |
12+45      0.2769     0.51  |Q        |V        |          |         |
12+50      0.2804     0.51  |Q        |V        |          |         |
12+55      0.2840     0.52  |Q        |V        |          |         |
13+ 0      0.2876     0.52  |Q        | V       |          |         |
13+ 5      0.2912     0.53  |Q        | V       |          |         |
13+10      0.2949     0.53  |Q        | V       |          |         |
13+15      0.2986     0.54  |Q        | V       |          |         |
13+20      0.3023     0.54  |Q        | V       |          |         |
13+25      0.3061     0.55  |Q        | V       |          |         |
13+30      0.3099     0.55  |Q        |  V      |          |         |
13+35      0.3138     0.56  |Q        |  V      |          |         |
13+40      0.3177     0.57  |Q        |  V      |          |         |
13+45      0.3216     0.57  |Q        |  V      |          |         |
13+50      0.3256     0.58  |Q        |  V      |          |         |
13+55      0.3297     0.59  |Q        |  V      |          |         |
14+ 0      0.3338     0.60  |Q        |   V     |          |         |
14+ 5      0.3380     0.61  |Q        |   V     |          |         |
14+10      0.3422     0.61  |Q        |   V     |          |         |
14+15      0.3465     0.62  |Q        |   V     |          |         |
14+20      0.3509     0.63  |Q        |   V     |          |         |
14+25      0.3553     0.64  |Q        |   V     |          |         |
14+30      0.3598     0.66  |Q        |    V    |          |         |
14+35      0.3644     0.67  |Q        |    V    |          |         |
14+40      0.3691     0.68  |Q        |    V    |          |         |
14+45      0.3739     0.69  |Q        |    V    |          |         |
14+50      0.3788     0.71  |Q        |    V    |          |         |
14+55      0.3838     0.73  |Q        |     V   |          |         |
15+ 0      0.3889     0.74  |Q        |     V   |          |         |
15+ 5      0.3942     0.76  |Q        |     V   |          |         |
15+10      0.3995     0.78  |Q        |     V   |          |         |
15+15      0.4051     0.81  |Q        |      V  |          |         |
15+20      0.4108     0.83  |Q        |      V  |          |         |
15+25      0.4166     0.84  |Q        |      V  |          |         |
15+30      0.4219     0.76  |Q        |      V  |          |         |
15+35      0.4261     0.62  |Q        |      V  |          |         |
15+40      0.4302     0.59  |Q        |       V |          |         |
15+45      0.4345     0.61  |Q        |       V |          |         |
15+50      0.4391     0.67  |Q        |       V |          |         |
15+55      0.4444     0.77  |Q        |       V |          |         |
16+ 0      0.4512     0.98  |Q        |       V |          |         |
16+ 5      0.4709     2.87  |    Q    |        V|          |         |
16+10      0.5343     9.20  |         |       Q | V        |         |
16+15      0.6318    14.16  |         |         |     V Q  |         |
16+20      0.6724     5.89  |         |Q        |       V  |         |
16+25      0.6975     3.65  |      Q  |         |        V|         |
```

```
16+30       0.7155      2.61  |    Q    |         |         V         |
16+35       0.7295      2.03  |   Q     |         |         V         |
16+40       0.7400      1.53  |  Q      |         |         |V        |
16+45       0.7476      1.10  | Q       |         |         |V        |
16+50       0.7541      0.96  |Q        |         |         |V        |
16+55       0.7601      0.87  |Q        |         |         |V        |
17+ 0       0.7660      0.85  |Q        |         |         | V       |
17+ 5       0.7712      0.77  |Q        |         |         | V       |
17+10       0.7761      0.70  |Q        |         |         | V       |
17+15       0.7805      0.64  |Q        |         |         | V       |
17+20       0.7847      0.62  |Q        |         |         | V       |
17+25       0.7889      0.60  |Q        |         |         |  V      |
17+30       0.7929      0.59  |Q        |         |         |  V      |
17+35       0.7969      0.57  |Q        |         |         |  V      |
17+40       0.8007      0.56  |Q        |         |         |  V      |
17+45       0.8045      0.55  |Q        |         |         |  V      |
17+50       0.8081      0.53  |Q        |         |         |  V      |
17+55       0.8117      0.52  |Q        |         |         |   V     |
18+ 0       0.8153      0.51  |Q        |         |         |   V     |
18+ 5       0.8187      0.50  |Q        |         |         |   V     |
18+10       0.8220      0.47  Q         |         |         |   V     |
18+15       0.8249      0.42  Q         |         |         |   V     |
18+20       0.8277      0.40  Q         |         |         |   V     |
18+25       0.8303      0.39  Q         |         |         |   V     |
18+30       0.8329      0.38  Q         |         |         |   V     |
18+35       0.8354      0.37  Q         |         |         |    V    |
18+40       0.8379      0.36  Q         |         |         |    V    |
18+45       0.8403      0.35  Q         |         |         |    V    |
18+50       0.8427      0.34  Q         |         |         |    V    |
18+55       0.8450      0.34  Q         |         |         |    V    |
19+ 0       0.8473      0.33  Q         |         |         |    V    |
19+ 5       0.8495      0.33  Q         |         |         |    V    |
19+10       0.8517      0.32  Q         |         |         |    V    |
19+15       0.8539      0.32  Q         |         |         |    V    |
19+20       0.8561      0.31  Q         |         |         |    V    |
19+25       0.8582      0.31  Q         |         |         |     V   |
19+30       0.8603      0.30  Q         |         |         |     V   |
19+35       0.8624      0.30  Q         |         |         |     V   |
19+40       0.8644      0.30  Q         |         |         |     V   |
19+45       0.8664      0.29  Q         |         |         |     V   |
19+50       0.8684      0.29  Q         |         |         |     V   |
19+55       0.8704      0.29  Q         |         |         |     V   |
20+ 0       0.8724      0.28  Q         |         |         |     V   |
20+ 5       0.8743      0.28  Q         |         |         |     V   |
20+10       0.8762      0.28  Q         |         |         |     V   |
20+15       0.8781      0.27  Q         |         |         |     V   |
20+20       0.8800      0.27  Q         |         |         |     V   |
20+25       0.8818      0.27  Q         |         |         |      V  |
20+30       0.8837      0.27  Q         |         |         |      V  |
20+35       0.8855      0.26  Q         |         |         |      V  |
20+40       0.8873      0.26  Q         |         |         |      V  |
20+45       0.8890      0.26  Q         |         |         |      V  |
20+50       0.8908      0.26  Q         |         |         |      V  |
20+55       0.8926      0.25  Q         |         |         |      V  |
21+ 0       0.8943      0.25  Q         |         |         |      V  |
21+ 5       0.8960      0.25  Q         |         |         |      V  |
21+10       0.8977      0.25  Q         |         |         |      V  |
21+15       0.8994      0.25  Q         |         |         |      V  |
21+20       0.9011      0.24  Q         |         |         |      V  |
21+25       0.9027      0.24  Q         |         |         |      V  |
21+30       0.9044      0.24  Q         |         |         |      V  |
21+35       0.9060      0.24  Q         |         |         |       V |
21+40       0.9076      0.24  Q         |         |         |       V |
21+45       0.9093      0.23  Q         |         |         |       V |
21+50       0.9108      0.23  Q         |         |         |       V |
21+55       0.9124      0.23  Q         |         |         |       V |
22+ 0       0.9140      0.23  Q         |         |         |       V |
22+ 5       0.9156      0.23  Q         |         |         |       V |
22+10       0.9171      0.23  Q         |         |         |       V |
22+15       0.9187      0.22  Q         |         |         |       V |
22+20       0.9202      0.22  Q         |         |         |       V |
```

```
   22+25       0.9217      0.22  Q          |          |          |       V |
   22+30       0.9232      0.22  Q          |          |          |       V |
   22+35       0.9247      0.22  Q          |          |          |       V |
   22+40       0.9262      0.22  Q          |          |          |       V |
   22+45       0.9277      0.21  Q          |          |          |       V |
   22+50       0.9292      0.21  Q          |          |          |        V|
   22+55       0.9306      0.21  Q          |          |          |        V|
   23+ 0       0.9321      0.21  Q          |          |          |        V|
   23+ 5       0.9335      0.21  Q          |          |          |        V|
   23+10       0.9349      0.21  Q          |          |          |        V|
   23+15       0.9364      0.21  Q          |          |          |        V|
   23+20       0.9378      0.21  Q          |          |          |        V|
   23+25       0.9392      0.20  Q          |          |          |        V|
   23+30       0.9406      0.20  Q          |          |          |        V|
   23+35       0.9420      0.20  Q          |          |          |        V|
   23+40       0.9434      0.20  Q          |          |          |        V|
   23+45       0.9447      0.20  Q          |          |          |        V|
   23+50       0.9461      0.20  Q          |          |          |        V|
   23+55       0.9475      0.20  Q          |          |          |        V|
   24+ 0       0.9488      0.20  Q          |          |          |        V|
   24+ 5       0.9501      0.19  Q          |          |          |        V|
   24+10       0.9511      0.14  Q          |          |          |        V|
   24+15       0.9516      0.07  Q          |          |          |        V|
   24+20       0.9519      0.04  Q          |          |          |        V|
   24+25       0.9520      0.03  Q          |          |          |        V|
   24+30       0.9521      0.02  Q          |          |          |        V|
   24+35       0.9522      0.01  Q          |          |          |        V|
   24+40       0.9522      0.00  Q          |          |          |        V|
   24+45       0.9523      0.00  Q          |          |          |        V|
   24+50       0.9523      0.00  Q          |          |          |        V|
   24+55       0.9523      0.00  Q          |          |          |        V|
   25+ 0       0.9523      0.00  Q          |          |          |        V|
   25+ 5       0.9523      0.00  Q          |          |          |         V
------------------------------------------------------------------------------
```

Area 'B' – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
5 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 5

        Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            11.61            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      60.6         11.61      1.000     0.671    1.000    0.671

Area-averaged adjusted loss rate Fm (In/Hr) =  0.671

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 11.61 | 1.000 | 78.0 | 60.6 | 6.50 | 0.322 |

Area-averaged catchment yield fraction, Y = 0.322
Area-averaged low loss fraction, Yb = 0.678
User entry of time of concentration = 0.201 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 11.61(Ac.)
Catchment Lag time = 0.161 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 51.9017
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.671(In/Hr)
Average low loss rate fraction (Yb) = 0.678 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 11.61(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.403(In)
30-minute factor = 0.999 Adjusted rainfall = 0.690(In)
1-hour factor = 0.999 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.585(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)

U n i t H y d r o g r a p h

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 140.41 (CFS)) | |
| 1 | 4.513 | 6.337 |
| 2 | 27.025 | 31.608 |
| 3 | 64.721 | 52.928 |
| 4 | 78.816 | 19.791 |
| 5 | 86.936 | 11.401 |
| 6 | 92.180 | 7.362 |
| 7 | 95.551 | 4.734 |
| 8 | 97.548 | 2.804 |
| 9 | 98.388 | 1.180 |
| 10 | 98.917 | 0.742 |
| 11 | 99.278 | 0.508 |
| 12 | 99.655 | 0.529 |
| 13 | 99.883 | 0.321 |
| 14 | 100.000 | 0.164 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4029 | 0.4029 |
| 2 | 0.4960 | 0.0931 |
| 3 | 0.5601 | 0.0642 |
| 4 | 0.6106 | 0.0505 |
| 5 | 0.6529 | 0.0423 |
| 6 | 0.6896 | 0.0367 |
| 7 | 0.7223 | 0.0326 |
| 8 | 0.7518 | 0.0295 |
| 9 | 0.7788 | 0.0270 |
| 10 | 0.8038 | 0.0250 |
| 11 | 0.8271 | 0.0233 |
| 12 | 0.8490 | 0.0219 |

| | | |
|---|---|---|
| 13 | 0.8923 | 0.0433 |
| 14 | 0.9344 | 0.0421 |
| 15 | 0.9754 | 0.0409 |
| 16 | 1.0153 | 0.0399 |
| 17 | 1.0543 | 0.0390 |
| 18 | 1.0924 | 0.0381 |
| 19 | 1.1298 | 0.0373 |
| 20 | 1.1664 | 0.0366 |
| 21 | 1.2023 | 0.0359 |
| 22 | 1.2375 | 0.0353 |
| 23 | 1.2722 | 0.0347 |
| 24 | 1.3063 | 0.0341 |
| 25 | 1.3399 | 0.0336 |
| 26 | 1.3730 | 0.0331 |
| 27 | 1.4056 | 0.0326 |
| 28 | 1.4377 | 0.0321 |
| 29 | 1.4694 | 0.0317 |
| 30 | 1.5007 | 0.0313 |
| 31 | 1.5316 | 0.0309 |
| 32 | 1.5621 | 0.0305 |
| 33 | 1.5923 | 0.0302 |
| 34 | 1.6221 | 0.0298 |
| 35 | 1.6516 | 0.0295 |
| 36 | 1.6808 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7382 | 0.0286 |
| 39 | 1.7665 | 0.0283 |
| 40 | 1.7945 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8497 | 0.0275 |
| 43 | 1.8770 | 0.0272 |
| 44 | 1.9040 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9573 | 0.0265 |
| 47 | 1.9836 | 0.0263 |
| 48 | 2.0097 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1122 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1623 | 0.0250 |
| 55 | 2.1871 | 0.0248 |
| 56 | 2.2117 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2846 | 0.0241 |
| 60 | 2.3086 | 0.0240 |
| 61 | 2.3324 | 0.0238 |
| 62 | 2.3561 | 0.0237 |
| 63 | 2.3796 | 0.0235 |
| 64 | 2.4030 | 0.0234 |
| 65 | 2.4263 | 0.0233 |
| 66 | 2.4494 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5180 | 0.0227 |
| 70 | 2.5406 | 0.0226 |
| 71 | 2.5631 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6277 | 0.0211 |
| 75 | 2.6487 | 0.0210 |
| 76 | 2.6695 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7109 | 0.0206 |
| 79 | 2.7314 | 0.0205 |
| 80 | 2.7518 | 0.0204 |
| 81 | 2.7722 | 0.0203 |
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |

| | | |
|---|---|---|
| 84 | 2.8325 | 0.0200 |
| 85 | 2.8524 | 0.0199 |
| 86 | 2.8722 | 0.0198 |
| 87 | 2.8919 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9311 | 0.0195 |
| 90 | 2.9505 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0465 | 0.0190 |
| 96 | 3.0654 | 0.0189 |
| 97 | 3.0843 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1218 | 0.0187 |
| 100 | 3.1404 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1774 | 0.0185 |
| 103 | 3.1958 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2324 | 0.0183 |
| 106 | 3.2506 | 0.0182 |
| 107 | 3.2687 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3405 | 0.0178 |
| 112 | 3.3583 | 0.0178 |
| 113 | 3.3760 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4288 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4810 | 0.0173 |
| 120 | 3.4983 | 0.0173 |
| 121 | 3.5155 | 0.0172 |
| 122 | 3.5327 | 0.0172 |
| 123 | 3.5498 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6008 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6345 | 0.0168 |
| 129 | 3.6513 | 0.0168 |
| 130 | 3.6680 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7013 | 0.0166 |
| 133 | 3.7179 | 0.0166 |
| 134 | 3.7344 | 0.0165 |
| 135 | 3.7509 | 0.0165 |
| 136 | 3.7673 | 0.0164 |
| 137 | 3.7837 | 0.0164 |
| 138 | 3.8000 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8325 | 0.0162 |
| 141 | 3.8487 | 0.0162 |
| 142 | 3.8648 | 0.0161 |
| 143 | 3.8809 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9448 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9765 | 0.0158 |
| 150 | 3.9923 | 0.0158 |
| 151 | 4.0080 | 0.0157 |
| 152 | 4.0237 | 0.0157 |
| 153 | 4.0393 | 0.0156 |
| 154 | 4.0549 | 0.0156 |

| | | |
|---|---|---|
| 155 | 4.0705 | 0.0156 |
| 156 | 4.0860 | 0.0155 |
| 157 | 4.1015 | 0.0155 |
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1477 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1783 | 0.0153 |
| 163 | 4.1936 | 0.0152 |
| 164 | 4.2088 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2542 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2843 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3142 | 0.0150 |
| 172 | 4.3291 | 0.0149 |
| 173 | 4.3440 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4032 | 0.0147 |
| 178 | 4.4179 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4472 | 0.0146 |
| 181 | 4.4618 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4909 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5199 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5488 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5775 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6061 | 0.0143 |
| 192 | 4.6204 | 0.0143 |
| 193 | 4.6346 | 0.0142 |
| 194 | 4.6488 | 0.0142 |
| 195 | 4.6630 | 0.0142 |
| 196 | 4.6771 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7053 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7474 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7892 | 0.0139 |
| 205 | 4.8031 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8721 | 0.0137 |
| 211 | 4.8858 | 0.0137 |
| 212 | 4.8995 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9268 | 0.0136 |
| 215 | 4.9404 | 0.0136 |
| 216 | 4.9540 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9811 | 0.0135 |
| 219 | 4.9946 | 0.0135 |
| 220 | 5.0081 | 0.0135 |
| 221 | 5.0216 | 0.0135 |
| 222 | 5.0350 | 0.0134 |
| 223 | 5.0484 | 0.0134 |
| 224 | 5.0618 | 0.0134 |
| 225 | 5.0752 | 0.0134 |

| | | |
|---|---|---|
| 226 | 5.0885 | 0.0133 |
| 227 | 5.1018 | 0.0133 |
| 228 | 5.1151 | 0.0133 |
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1416 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1812 | 0.0132 |
| 234 | 5.1944 | 0.0132 |
| 235 | 5.2075 | 0.0131 |
| 236 | 5.2206 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2728 | 0.0130 |
| 241 | 5.2858 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3117 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3633 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4273 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5034 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5412 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5663 | 0.0125 |
| 264 | 5.5788 | 0.0125 |
| 265 | 5.5913 | 0.0125 |
| 266 | 5.6038 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6287 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6659 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7521 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8131 | 0.0122 |
| 284 | 5.8253 | 0.0122 |
| 285 | 5.8374 | 0.0121 |
| 286 | 5.8495 | 0.0121 |
| 287 | 5.8616 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0082 | 0.0039 |
| 2 | 0.0121 | 0.0082 | 0.0039 |
| 3 | 0.0121 | 0.0082 | 0.0039 |

| | | | |
|---|---|---|---|
| 4 | 0.0122 | 0.0082 | 0.0039 |
| 5 | 0.0122 | 0.0083 | 0.0039 |
| 6 | 0.0122 | 0.0083 | 0.0039 |
| 7 | 0.0122 | 0.0083 | 0.0039 |
| 8 | 0.0123 | 0.0083 | 0.0039 |
| 9 | 0.0123 | 0.0083 | 0.0040 |
| 10 | 0.0123 | 0.0084 | 0.0040 |
| 11 | 0.0123 | 0.0084 | 0.0040 |
| 12 | 0.0124 | 0.0084 | 0.0040 |
| 13 | 0.0124 | 0.0084 | 0.0040 |
| 14 | 0.0124 | 0.0084 | 0.0040 |
| 15 | 0.0125 | 0.0085 | 0.0040 |
| 16 | 0.0125 | 0.0085 | 0.0040 |
| 17 | 0.0125 | 0.0085 | 0.0040 |
| 18 | 0.0125 | 0.0085 | 0.0040 |
| 19 | 0.0126 | 0.0085 | 0.0040 |
| 20 | 0.0126 | 0.0085 | 0.0041 |
| 21 | 0.0126 | 0.0086 | 0.0041 |
| 22 | 0.0127 | 0.0086 | 0.0041 |
| 23 | 0.0127 | 0.0086 | 0.0041 |
| 24 | 0.0127 | 0.0086 | 0.0041 |
| 25 | 0.0128 | 0.0087 | 0.0041 |
| 26 | 0.0128 | 0.0087 | 0.0041 |
| 27 | 0.0128 | 0.0087 | 0.0041 |
| 28 | 0.0128 | 0.0087 | 0.0041 |
| 29 | 0.0129 | 0.0087 | 0.0041 |
| 30 | 0.0129 | 0.0088 | 0.0041 |
| 31 | 0.0129 | 0.0088 | 0.0042 |
| 32 | 0.0130 | 0.0088 | 0.0042 |
| 33 | 0.0130 | 0.0088 | 0.0042 |
| 34 | 0.0130 | 0.0088 | 0.0042 |
| 35 | 0.0131 | 0.0089 | 0.0042 |
| 36 | 0.0131 | 0.0089 | 0.0042 |
| 37 | 0.0132 | 0.0089 | 0.0042 |
| 38 | 0.0132 | 0.0089 | 0.0042 |
| 39 | 0.0132 | 0.0090 | 0.0043 |
| 40 | 0.0132 | 0.0090 | 0.0043 |
| 41 | 0.0133 | 0.0090 | 0.0043 |
| 42 | 0.0133 | 0.0090 | 0.0043 |
| 43 | 0.0134 | 0.0091 | 0.0043 |
| 44 | 0.0134 | 0.0091 | 0.0043 |
| 45 | 0.0134 | 0.0091 | 0.0043 |
| 46 | 0.0135 | 0.0091 | 0.0043 |
| 47 | 0.0135 | 0.0092 | 0.0043 |
| 48 | 0.0135 | 0.0092 | 0.0044 |
| 49 | 0.0136 | 0.0092 | 0.0044 |
| 50 | 0.0136 | 0.0092 | 0.0044 |
| 51 | 0.0137 | 0.0093 | 0.0044 |
| 52 | 0.0137 | 0.0093 | 0.0044 |
| 53 | 0.0137 | 0.0093 | 0.0044 |
| 54 | 0.0138 | 0.0093 | 0.0044 |
| 55 | 0.0138 | 0.0094 | 0.0044 |
| 56 | 0.0139 | 0.0094 | 0.0045 |
| 57 | 0.0139 | 0.0094 | 0.0045 |
| 58 | 0.0139 | 0.0095 | 0.0045 |
| 59 | 0.0140 | 0.0095 | 0.0045 |
| 60 | 0.0140 | 0.0095 | 0.0045 |
| 61 | 0.0141 | 0.0096 | 0.0045 |
| 62 | 0.0141 | 0.0096 | 0.0045 |
| 63 | 0.0142 | 0.0096 | 0.0046 |
| 64 | 0.0142 | 0.0096 | 0.0046 |
| 65 | 0.0143 | 0.0097 | 0.0046 |
| 66 | 0.0143 | 0.0097 | 0.0046 |
| 67 | 0.0144 | 0.0097 | 0.0046 |
| 68 | 0.0144 | 0.0098 | 0.0046 |
| 69 | 0.0144 | 0.0098 | 0.0046 |
| 70 | 0.0145 | 0.0098 | 0.0047 |
| 71 | 0.0145 | 0.0099 | 0.0047 |
| 72 | 0.0146 | 0.0099 | 0.0047 |
| 73 | 0.0146 | 0.0099 | 0.0047 |
| 74 | 0.0147 | 0.0100 | 0.0047 |

| | | | |
|---|---|---|---|
| 75 | 0.0147 | 0.0100 | 0.0047 |
| 76 | 0.0148 | 0.0100 | 0.0048 |
| 77 | 0.0148 | 0.0101 | 0.0048 |
| 78 | 0.0149 | 0.0101 | 0.0048 |
| 79 | 0.0150 | 0.0101 | 0.0048 |
| 80 | 0.0150 | 0.0102 | 0.0048 |
| 81 | 0.0151 | 0.0102 | 0.0048 |
| 82 | 0.0151 | 0.0102 | 0.0049 |
| 83 | 0.0152 | 0.0103 | 0.0049 |
| 84 | 0.0152 | 0.0103 | 0.0049 |
| 85 | 0.0153 | 0.0104 | 0.0049 |
| 86 | 0.0153 | 0.0104 | 0.0049 |
| 87 | 0.0154 | 0.0105 | 0.0050 |
| 88 | 0.0154 | 0.0105 | 0.0050 |
| 89 | 0.0155 | 0.0105 | 0.0050 |
| 90 | 0.0156 | 0.0106 | 0.0050 |
| 91 | 0.0156 | 0.0106 | 0.0050 |
| 92 | 0.0157 | 0.0106 | 0.0050 |
| 93 | 0.0158 | 0.0107 | 0.0051 |
| 94 | 0.0158 | 0.0107 | 0.0051 |
| 95 | 0.0159 | 0.0108 | 0.0051 |
| 96 | 0.0160 | 0.0108 | 0.0051 |
| 97 | 0.0160 | 0.0109 | 0.0052 |
| 98 | 0.0161 | 0.0109 | 0.0052 |
| 99 | 0.0162 | 0.0110 | 0.0052 |
| 100 | 0.0162 | 0.0110 | 0.0052 |
| 101 | 0.0163 | 0.0111 | 0.0052 |
| 102 | 0.0164 | 0.0111 | 0.0053 |
| 103 | 0.0165 | 0.0112 | 0.0053 |
| 104 | 0.0165 | 0.0112 | 0.0053 |
| 105 | 0.0166 | 0.0113 | 0.0053 |
| 106 | 0.0167 | 0.0113 | 0.0054 |
| 107 | 0.0168 | 0.0114 | 0.0054 |
| 108 | 0.0168 | 0.0114 | 0.0054 |
| 109 | 0.0169 | 0.0115 | 0.0054 |
| 110 | 0.0170 | 0.0115 | 0.0055 |
| 111 | 0.0171 | 0.0116 | 0.0055 |
| 112 | 0.0172 | 0.0116 | 0.0055 |
| 113 | 0.0173 | 0.0117 | 0.0056 |
| 114 | 0.0173 | 0.0118 | 0.0056 |
| 115 | 0.0175 | 0.0118 | 0.0056 |
| 116 | 0.0175 | 0.0119 | 0.0056 |
| 117 | 0.0177 | 0.0120 | 0.0057 |
| 118 | 0.0177 | 0.0120 | 0.0057 |
| 119 | 0.0178 | 0.0121 | 0.0057 |
| 120 | 0.0179 | 0.0122 | 0.0058 |
| 121 | 0.0180 | 0.0122 | 0.0058 |
| 122 | 0.0181 | 0.0123 | 0.0058 |
| 123 | 0.0183 | 0.0124 | 0.0059 |
| 124 | 0.0183 | 0.0124 | 0.0059 |
| 125 | 0.0185 | 0.0125 | 0.0059 |
| 126 | 0.0186 | 0.0126 | 0.0060 |
| 127 | 0.0187 | 0.0127 | 0.0060 |
| 128 | 0.0188 | 0.0127 | 0.0060 |
| 129 | 0.0189 | 0.0129 | 0.0061 |
| 130 | 0.0190 | 0.0129 | 0.0061 |
| 131 | 0.0192 | 0.0130 | 0.0062 |
| 132 | 0.0193 | 0.0131 | 0.0062 |
| 133 | 0.0194 | 0.0132 | 0.0063 |
| 134 | 0.0195 | 0.0133 | 0.0063 |
| 135 | 0.0197 | 0.0134 | 0.0063 |
| 136 | 0.0198 | 0.0134 | 0.0064 |
| 137 | 0.0200 | 0.0136 | 0.0064 |
| 138 | 0.0201 | 0.0136 | 0.0065 |
| 139 | 0.0203 | 0.0138 | 0.0065 |
| 140 | 0.0204 | 0.0138 | 0.0066 |
| 141 | 0.0206 | 0.0140 | 0.0066 |
| 142 | 0.0207 | 0.0141 | 0.0067 |
| 143 | 0.0210 | 0.0142 | 0.0067 |
| 144 | 0.0211 | 0.0143 | 0.0068 |
| 145 | 0.0224 | 0.0152 | 0.0072 |

| | | | |
|---|---|---|---|
| 146 | 0.0225 | 0.0153 | 0.0072 |
| 147 | 0.0227 | 0.0154 | 0.0073 |
| 148 | 0.0229 | 0.0155 | 0.0074 |
| 149 | 0.0231 | 0.0157 | 0.0074 |
| 150 | 0.0233 | 0.0158 | 0.0075 |
| 151 | 0.0235 | 0.0160 | 0.0076 |
| 152 | 0.0237 | 0.0161 | 0.0076 |
| 153 | 0.0240 | 0.0163 | 0.0077 |
| 154 | 0.0241 | 0.0164 | 0.0078 |
| 155 | 0.0245 | 0.0166 | 0.0079 |
| 156 | 0.0246 | 0.0167 | 0.0079 |
| 157 | 0.0250 | 0.0169 | 0.0080 |
| 158 | 0.0251 | 0.0171 | 0.0081 |
| 159 | 0.0255 | 0.0173 | 0.0082 |
| 160 | 0.0257 | 0.0174 | 0.0083 |
| 161 | 0.0261 | 0.0177 | 0.0084 |
| 162 | 0.0263 | 0.0179 | 0.0085 |
| 163 | 0.0268 | 0.0182 | 0.0086 |
| 164 | 0.0270 | 0.0183 | 0.0087 |
| 165 | 0.0275 | 0.0186 | 0.0088 |
| 166 | 0.0277 | 0.0188 | 0.0089 |
| 167 | 0.0283 | 0.0192 | 0.0091 |
| 168 | 0.0286 | 0.0194 | 0.0092 |
| 169 | 0.0292 | 0.0198 | 0.0094 |
| 170 | 0.0295 | 0.0200 | 0.0095 |
| 171 | 0.0302 | 0.0205 | 0.0097 |
| 172 | 0.0305 | 0.0207 | 0.0098 |
| 173 | 0.0313 | 0.0212 | 0.0101 |
| 174 | 0.0317 | 0.0215 | 0.0102 |
| 175 | 0.0326 | 0.0221 | 0.0105 |
| 176 | 0.0331 | 0.0224 | 0.0106 |
| 177 | 0.0341 | 0.0231 | 0.0110 |
| 178 | 0.0347 | 0.0235 | 0.0111 |
| 179 | 0.0359 | 0.0244 | 0.0115 |
| 180 | 0.0366 | 0.0248 | 0.0118 |
| 181 | 0.0381 | 0.0259 | 0.0123 |
| 182 | 0.0390 | 0.0265 | 0.0125 |
| 183 | 0.0409 | 0.0278 | 0.0132 |
| 184 | 0.0421 | 0.0285 | 0.0135 |
| 185 | 0.0219 | 0.0148 | 0.0070 |
| 186 | 0.0233 | 0.0158 | 0.0075 |
| 187 | 0.0270 | 0.0183 | 0.0087 |
| 188 | 0.0295 | 0.0200 | 0.0095 |
| 189 | 0.0367 | 0.0249 | 0.0118 |
| 190 | 0.0423 | 0.0287 | 0.0136 |
| 191 | 0.0642 | 0.0435 | 0.0206 |
| 192 | 0.0931 | 0.0559 | 0.0372 |
| 193 | 0.4029 | 0.0559 | 0.3469 |
| 194 | 0.0505 | 0.0343 | 0.0162 |
| 195 | 0.0326 | 0.0221 | 0.0105 |
| 196 | 0.0250 | 0.0170 | 0.0080 |
| 197 | 0.0433 | 0.0294 | 0.0139 |
| 198 | 0.0399 | 0.0271 | 0.0128 |
| 199 | 0.0373 | 0.0253 | 0.0120 |
| 200 | 0.0353 | 0.0239 | 0.0113 |
| 201 | 0.0336 | 0.0228 | 0.0108 |
| 202 | 0.0321 | 0.0218 | 0.0103 |
| 203 | 0.0309 | 0.0210 | 0.0099 |
| 204 | 0.0298 | 0.0202 | 0.0096 |
| 205 | 0.0289 | 0.0196 | 0.0093 |
| 206 | 0.0280 | 0.0190 | 0.0090 |
| 207 | 0.0272 | 0.0185 | 0.0088 |
| 208 | 0.0265 | 0.0180 | 0.0085 |
| 209 | 0.0259 | 0.0176 | 0.0083 |
| 210 | 0.0253 | 0.0172 | 0.0081 |
| 211 | 0.0248 | 0.0168 | 0.0080 |
| 212 | 0.0243 | 0.0165 | 0.0078 |
| 213 | 0.0238 | 0.0162 | 0.0077 |
| 214 | 0.0234 | 0.0159 | 0.0075 |
| 215 | 0.0230 | 0.0156 | 0.0074 |
| 216 | 0.0226 | 0.0153 | 0.0073 |

| | | | |
|---|---|---|---|
| 217 | 0.0212 | 0.0144 | 0.0068 |
| 218 | 0.0208 | 0.0141 | 0.0067 |
| 219 | 0.0205 | 0.0139 | 0.0066 |
| 220 | 0.0202 | 0.0137 | 0.0065 |
| 221 | 0.0199 | 0.0135 | 0.0064 |
| 222 | 0.0196 | 0.0133 | 0.0063 |
| 223 | 0.0194 | 0.0131 | 0.0062 |
| 224 | 0.0191 | 0.0130 | 0.0061 |
| 225 | 0.0189 | 0.0128 | 0.0061 |
| 226 | 0.0186 | 0.0126 | 0.0060 |
| 227 | 0.0184 | 0.0125 | 0.0059 |
| 228 | 0.0182 | 0.0123 | 0.0058 |
| 229 | 0.0180 | 0.0122 | 0.0058 |
| 230 | 0.0178 | 0.0121 | 0.0057 |
| 231 | 0.0176 | 0.0119 | 0.0057 |
| 232 | 0.0174 | 0.0118 | 0.0056 |
| 233 | 0.0172 | 0.0117 | 0.0055 |
| 234 | 0.0171 | 0.0116 | 0.0055 |
| 235 | 0.0169 | 0.0115 | 0.0054 |
| 236 | 0.0167 | 0.0113 | 0.0054 |
| 237 | 0.0166 | 0.0112 | 0.0053 |
| 238 | 0.0164 | 0.0111 | 0.0053 |
| 239 | 0.0163 | 0.0110 | 0.0052 |
| 240 | 0.0161 | 0.0109 | 0.0052 |
| 241 | 0.0160 | 0.0109 | 0.0051 |
| 242 | 0.0159 | 0.0108 | 0.0051 |
| 243 | 0.0157 | 0.0107 | 0.0051 |
| 244 | 0.0156 | 0.0106 | 0.0050 |
| 245 | 0.0155 | 0.0105 | 0.0050 |
| 246 | 0.0154 | 0.0104 | 0.0049 |
| 247 | 0.0152 | 0.0103 | 0.0049 |
| 248 | 0.0151 | 0.0103 | 0.0049 |
| 249 | 0.0150 | 0.0102 | 0.0048 |
| 250 | 0.0149 | 0.0101 | 0.0048 |
| 251 | 0.0148 | 0.0100 | 0.0048 |
| 252 | 0.0147 | 0.0100 | 0.0047 |
| 253 | 0.0146 | 0.0099 | 0.0047 |
| 254 | 0.0145 | 0.0098 | 0.0047 |
| 255 | 0.0144 | 0.0098 | 0.0046 |
| 256 | 0.0143 | 0.0097 | 0.0046 |
| 257 | 0.0142 | 0.0097 | 0.0046 |
| 258 | 0.0141 | 0.0096 | 0.0045 |
| 259 | 0.0141 | 0.0095 | 0.0045 |
| 260 | 0.0140 | 0.0095 | 0.0045 |
| 261 | 0.0139 | 0.0094 | 0.0045 |
| 262 | 0.0138 | 0.0094 | 0.0044 |
| 263 | 0.0137 | 0.0093 | 0.0044 |
| 264 | 0.0136 | 0.0093 | 0.0044 |
| 265 | 0.0136 | 0.0092 | 0.0044 |
| 266 | 0.0135 | 0.0092 | 0.0043 |
| 267 | 0.0134 | 0.0091 | 0.0043 |
| 268 | 0.0133 | 0.0091 | 0.0043 |
| 269 | 0.0133 | 0.0090 | 0.0043 |
| 270 | 0.0132 | 0.0090 | 0.0042 |
| 271 | 0.0131 | 0.0089 | 0.0042 |
| 272 | 0.0131 | 0.0089 | 0.0042 |
| 273 | 0.0130 | 0.0088 | 0.0042 |
| 274 | 0.0129 | 0.0088 | 0.0042 |
| 275 | 0.0129 | 0.0087 | 0.0041 |
| 276 | 0.0128 | 0.0087 | 0.0041 |
| 277 | 0.0127 | 0.0086 | 0.0041 |
| 278 | 0.0127 | 0.0086 | 0.0041 |
| 279 | 0.0126 | 0.0086 | 0.0041 |
| 280 | 0.0126 | 0.0085 | 0.0040 |
| 281 | 0.0125 | 0.0085 | 0.0040 |
| 282 | 0.0124 | 0.0084 | 0.0040 |
| 283 | 0.0124 | 0.0084 | 0.0040 |
| 284 | 0.0123 | 0.0084 | 0.0040 |
| 285 | 0.0123 | 0.0083 | 0.0039 |
| 286 | 0.0122 | 0.0083 | 0.0039 |
| 287 | 0.0122 | 0.0083 | 0.0039 |

```
      288             0.0121          0.0082             0.0039
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      3.76(In)
      Total effective rainfall =      2.11(In)
      Peak flow rate in flood hydrograph =     20.13(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0002      0.02  Q          |          |          |          |
  0+10       0.0012      0.15  Q          |          |          |          |
  0+15       0.0036      0.35  Q          |          |          |          |
  0+20       0.0066      0.43  Q          |          |          |          |
  0+25       0.0099      0.48  Q          |          |          |          |
  0+30       0.0133      0.51  Q          |          |          |          |
  0+35       0.0170      0.53  Q          |          |          |          |
  0+40       0.0207      0.54  Q          |          |          |          |
  0+45       0.0244      0.54  Q          |          |          |          |
  0+50       0.0282      0.55  Q          |          |          |          |
  0+55       0.0320      0.55  Q          |          |          |          |
  1+ 0       0.0358      0.55  Q          |          |          |          |
  1+ 5       0.0396      0.56  Q          |          |          |          |
  1+10       0.0434      0.56  Q          |          |          |          |
  1+15       0.0473      0.56  Q          |          |          |          |
  1+20       0.0511      0.56  QV         |          |          |          |
  1+25       0.0550      0.56  QV         |          |          |          |
  1+30       0.0589      0.56  QV         |          |          |          |
  1+35       0.0628      0.56  QV         |          |          |          |
  1+40       0.0667      0.57  QV         |          |          |          |
  1+45       0.0706      0.57  QV         |          |          |          |
  1+50       0.0745      0.57  QV         |          |          |          |
  1+55       0.0784      0.57  QV         |          |          |          |
  2+ 0       0.0823      0.57  QV         |          |          |          |
  2+ 5       0.0863      0.57  QV         |          |          |          |
  2+10       0.0902      0.57  QV         |          |          |          |
  2+15       0.0942      0.58  QV         |          |          |          |
  2+20       0.0982      0.58  QV         |          |          |          |
  2+25       0.1021      0.58  QV         |          |          |          |
  2+30       0.1061      0.58  Q V        |          |          |          |
  2+35       0.1101      0.58  Q V        |          |          |          |
  2+40       0.1141      0.58  Q V        |          |          |          |
  2+45       0.1182      0.58  Q V        |          |          |          |
  2+50       0.1222      0.59  Q V        |          |          |          |
  2+55       0.1262      0.59  Q V        |          |          |          |
  3+ 0       0.1303      0.59  Q V        |          |          |          |
  3+ 5       0.1343      0.59  Q V        |          |          |          |
  3+10       0.1384      0.59  Q V        |          |          |          |
  3+15       0.1425      0.59  Q V        |          |          |          |
  3+20       0.1466      0.59  Q V        |          |          |          |
  3+25       0.1507      0.60  Q V        |          |          |          |
  3+30       0.1548      0.60  Q  V       |          |          |          |
  3+35       0.1589      0.60  Q  V       |          |          |          |
  3+40       0.1631      0.60  Q  V       |          |          |          |
  3+45       0.1672      0.60  Q  V       |          |          |          |
  3+50       0.1714      0.60  Q  V       |          |          |          |
  3+55       0.1755      0.61  Q  V       |          |          |          |
  4+ 0       0.1797      0.61  Q  V       |          |          |          |
  4+ 5       0.1839      0.61  Q  V       |          |          |          |
  4+10       0.1881      0.61  Q  V       |          |          |          |
  4+15       0.1923      0.61  Q  V       |          |          |          |
  4+20       0.1966      0.61  Q  V       |          |          |          |
  4+25       0.2008      0.62  Q  V       |          |          |          |
  4+30       0.2051      0.62  Q   V      |          |          |          |
  4+35       0.2093      0.62  Q   V      |          |          |          |
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 4+40      0.2136      0.62  Q   V     |         |         |         |
 4+45      0.2179      0.62  Q   V     |         |         |         |
 4+50      0.2222      0.62  Q   V     |         |         |         |
 4+55      0.2265      0.63  Q   V     |         |         |         |
 5+ 0      0.2308      0.63  Q   V     |         |         |         |
 5+ 5      0.2352      0.63  Q   V     |         |         |         |
 5+10      0.2395      0.63  Q   V     |         |         |         |
 5+15      0.2439      0.63  Q   V     |         |         |         |
 5+20      0.2483      0.64  Q   V     |         |         |         |
 5+25      0.2527      0.64  Q   V     |         |         |         |
 5+30      0.2571      0.64  Q    V    |         |         |         |
 5+35      0.2615      0.64  Q    V    |         |         |         |
 5+40      0.2659      0.64  Q    V    |         |         |         |
 5+45      0.2704      0.65  Q    V    |         |         |         |
 5+50      0.2749      0.65  Q    V    |         |         |         |
 5+55      0.2793      0.65  Q    V    |         |         |         |
 6+ 0      0.2838      0.65  Q    V    |         |         |         |
 6+ 5      0.2884      0.66  Q    V    |         |         |         |
 6+10      0.2929      0.66  Q    V    |         |         |         |
 6+15      0.2974      0.66  Q    V    |         |         |         |
 6+20      0.3020      0.66  Q    V    |         |         |         |
 6+25      0.3065      0.66  Q     V   |         |         |         |
 6+30      0.3111      0.67  Q     V   |         |         |         |
 6+35      0.3157      0.67  Q     V   |         |         |         |
 6+40      0.3204      0.67  Q     V   |         |         |         |
 6+45      0.3250      0.67  Q     V   |         |         |         |
 6+50      0.3297      0.68  Q     V   |         |         |         |
 6+55      0.3343      0.68  Q     V   |         |         |         |
 7+ 0      0.3390      0.68  Q     V   |         |         |         |
 7+ 5      0.3437      0.68  Q     V   |         |         |         |
 7+10      0.3484      0.69  Q     V   |         |         |         |
 7+15      0.3532      0.69  Q     V   |         |         |         |
 7+20      0.3579      0.69  Q      V  |         |         |         |
 7+25      0.3627      0.69  Q      V  |         |         |         |
 7+30      0.3675      0.70  Q      V  |         |         |         |
 7+35      0.3723      0.70  Q      V  |         |         |         |
 7+40      0.3772      0.70  Q      V  |         |         |         |
 7+45      0.3820      0.70  Q      V  |         |         |         |
 7+50      0.3869      0.71  Q      V  |         |         |         |
 7+55      0.3918      0.71  Q      V  |         |         |         |
 8+ 0      0.3967      0.71  Q      V  |         |         |         |
 8+ 5      0.4016      0.72  Q      V  |         |         |         |
 8+10      0.4066      0.72  Q      V  |         |         |         |
 8+15      0.4115      0.72  Q       V |         |         |         |
 8+20      0.4165      0.73  Q       V |         |         |         |
 8+25      0.4215      0.73  Q       V |         |         |         |
 8+30      0.4266      0.73  Q       V |         |         |         |
 8+35      0.4316      0.73  Q       V |         |         |         |
 8+40      0.4367      0.74  Q       V |         |         |         |
 8+45      0.4418      0.74  Q       V |         |         |         |
 8+50      0.4470      0.74  Q       V |         |         |         |
 8+55      0.4521      0.75  Q       V |         |         |         |
 9+ 0      0.4573      0.75  |Q      V |         |         |         |
 9+ 5      0.4625      0.76  |Q       V|         |         |         |
 9+10      0.4677      0.76  |Q       V|         |         |         |
 9+15      0.4730      0.76  |Q       V|         |         |         |
 9+20      0.4782      0.77  |Q       V|         |         |         |
 9+25      0.4835      0.77  |Q       V|         |         |         |
 9+30      0.4889      0.77  |Q       V|         |         |         |
 9+35      0.4942      0.78  |Q       V|         |         |         |
 9+40      0.4996      0.78  |Q       V|         |         |         |
 9+45      0.5050      0.79  |Q       V|         |         |         |
 9+50      0.5104      0.79  |Q       V|         |         |         |
 9+55      0.5159      0.79  |Q        V         |         |         |
10+ 0      0.5214      0.80  |Q        V         |         |         |
10+ 5      0.5269      0.80  |Q        V         |         |         |
10+10      0.5325      0.81  |Q        V         |         |         |
10+15      0.5381      0.81  |Q        V         |         |         |
10+20      0.5437      0.82  |Q        V         |         |         |
10+25      0.5494      0.82  |Q        V         |         |         |
10+30      0.5551      0.83  |Q        V         |         |         |
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10+35       0.5608      0.83  |Q        V         |          |          |
10+40       0.5665      0.84  |Q        |V        |          |          |
10+45       0.5723      0.84  |Q        |V        |          |          |
10+50       0.5781      0.85  |Q        |V        |          |          |
10+55       0.5840      0.85  |Q        |V        |          |          |
11+ 0       0.5899      0.86  |Q        |V        |          |          |
11+ 5       0.5958      0.86  |Q        |V        |          |          |
11+10       0.6018      0.87  |Q        |V        |          |          |
11+15       0.6078      0.87  |Q        |V        |          |          |
11+20       0.6139      0.88  |Q        | V       |          |          |
11+25       0.6200      0.89  |Q        | V       |          |          |
11+30       0.6262      0.89  |Q        | V       |          |          |
11+35       0.6323      0.90  |Q        | V       |          |          |
11+40       0.6386      0.91  |Q        | V       |          |          |
11+45       0.6449      0.91  |Q        | V       |          |          |
11+50       0.6512      0.92  |Q        | V       |          |          |
11+55       0.6576      0.93  |Q        | V       |          |          |
12+ 0       0.6640      0.93  |Q        | V       |          |          |
12+ 5       0.6705      0.94  |Q        |  V      |          |          |
12+10       0.6771      0.96  |Q        |  V      |          |          |
12+15       0.6839      0.99  |Q        |  V      |          |          |
12+20       0.6908      1.00  |Q        |  V      |          |          |
12+25       0.6978      1.01  |Q        |  V      |          |          |
12+30       0.7049      1.03  |Q        |  V      |          |          |
12+35       0.7120      1.04  |Q        |  V      |          |          |
12+40       0.7192      1.05  |Q        |   V     |          |          |
12+45       0.7265      1.06  |Q        |   V     |          |          |
12+50       0.7338      1.07  |Q        |   V     |          |          |
12+55       0.7412      1.08  |Q        |   V     |          |          |
13+ 0       0.7487      1.09  |Q        |   V     |          |          |
13+ 5       0.7562      1.10  |Q        |   V     |          |          |
13+10       0.7639      1.11  |Q        |   V     |          |          |
13+15       0.7716      1.12  |Q        |    V    |          |          |
13+20       0.7794      1.13  |Q        |    V    |          |          |
13+25       0.7872      1.14  |Q        |    V    |          |          |
13+30       0.7952      1.16  |Q        |    V    |          |          |
13+35       0.8033      1.17  |Q        |    V    |          |          |
13+40       0.8114      1.18  |Q        |    V    |          |          |
13+45       0.8197      1.20  |Q        |     V   |          |          |
13+50       0.8280      1.21  |Q        |     V   |          |          |
13+55       0.8365      1.23  |Q        |     V   |          |          |
14+ 0       0.8451      1.25  |Q        |     V   |          |          |
14+ 5       0.8538      1.27  |Q        |     V   |          |          |
14+10       0.8626      1.28  |Q        |     V   |          |          |
14+15       0.8716      1.30  |Q        |      V  |          |          |
14+20       0.8807      1.32  |Q        |      V  |          |          |
14+25       0.8900      1.35  |Q        |      V  |          |          |
14+30       0.8995      1.37  |Q        |      V  |          |          |
14+35       0.9091      1.40  |Q        |      V  |          |          |
14+40       0.9189      1.42  |Q        |      V  |          |          |
14+45       0.9289      1.45  |Q        |       V |          |          |
14+50       0.9391      1.48  |Q        |       V |          |          |
14+55       0.9496      1.52  | Q       |       V |          |          |
15+ 0       0.9603      1.55  | Q       |       V |          |          |
15+ 5       0.9713      1.60  | Q       |        V|          |          |
15+10       0.9826      1.64  | Q       |        V|          |          |
15+15       0.9942      1.69  | Q       |        V|          |          |
15+20       1.0062      1.75  | Q       |        V|          |          |
15+25       1.0184      1.77  | Q       |        V|          |          |
15+30       1.0295      1.60  | Q       |         V          |          |
15+35       1.0384      1.30  |Q        |         V          |          |
15+40       1.0471      1.25  |Q        |         V          |          |
15+45       1.0560      1.30  |Q        |         V          |          |
15+50       1.0658      1.41  |Q        |         V          |          |
15+55       1.0771      1.64  | Q       |         |V         |          |
16+ 0       1.0916      2.11  | Q       |         |V         |          |
16+ 5       1.1263      5.04  |     Q   |         | V        |          |
16+10       1.2213     13.79  |         |       Q |  V       |          |
16+15       1.3599     20.13  |         |         |     Q    |          |
16+20       1.4206      8.81  |         |Q        |      V   |          |
16+25       1.4593      5.62  |      Q  |         |       V  |          |
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16+30       1.4880      4.17  |    Q    |         |        V|         |
16+35       1.5115      3.41  |   Q     |         |        V|         |
16+40       1.5301      2.70  |  Q      |         |        V|         |
16+45       1.5445      2.09  | Q       |         |         V         |
16+50       1.5574      1.87  | Q       |         |         V         |
16+55       1.5693      1.73  | Q       |         |         V         |
17+ 0       1.5809      1.68  | Q       |         |         V         |
17+ 5       1.5915      1.55  | Q       |         |         |V        |
17+10       1.6014      1.44  |Q        |         |         |V        |
17+15       1.6106      1.33  |Q        |         |         |V        |
17+20       1.6195      1.29  |Q        |         |         |V        |
17+25       1.6282      1.26  |Q        |         |         |V        |
17+30       1.6366      1.22  |Q        |         |         | V       |
17+35       1.6448      1.19  |Q        |         |         | V       |
17+40       1.6528      1.16  |Q        |         |         | V       |
17+45       1.6606      1.14  |Q        |         |         | V       |
17+50       1.6683      1.11  |Q        |         |         | V       |
17+55       1.6758      1.09  |Q        |         |         | V       |
18+ 0       1.6832      1.07  |Q        |         |         | V       |
18+ 5       1.6904      1.05  |Q        |         |         |  V      |
18+10       1.6974      1.02  |Q        |         |         |  V      |
18+15       1.7042      0.98  |Q        |         |         |  V      |
18+20       1.7108      0.96  |Q        |         |         |  V      |
18+25       1.7173      0.94  |Q        |         |         |  V      |
18+30       1.7237      0.93  |Q        |         |         |  V      |
18+35       1.7300      0.91  |Q        |         |         |  V      |
18+40       1.7361      0.90  |Q        |         |         |  V      |
18+45       1.7422      0.88  |Q        |         |         |   V     |
18+50       1.7482      0.87  |Q        |         |         |   V     |
18+55       1.7541      0.86  |Q        |         |         |   V     |
19+ 0       1.7600      0.85  |Q        |         |         |   V     |
19+ 5       1.7657      0.84  |Q        |         |         |   V     |
19+10       1.7714      0.83  |Q        |         |         |   V     |
19+15       1.7771      0.82  |Q        |         |         |   V     |
19+20       1.7826      0.81  |Q        |         |         |   V     |
19+25       1.7881      0.80  |Q        |         |         |    V    |
19+30       1.7936      0.79  |Q        |         |         |    V    |
19+35       1.7990      0.78  |Q        |         |         |    V    |
19+40       1.8043      0.77  |Q        |         |         |    V    |
19+45       1.8096      0.77  |Q        |         |         |    V    |
19+50       1.8148      0.76  |Q        |         |         |    V    |
19+55       1.8200      0.75  |Q        |         |         |    V    |
20+ 0       1.8251      0.75  Q         |         |         |    V    |
20+ 5       1.8302      0.74  Q         |         |         |    V    |
20+10       1.8353      0.73  Q         |         |         |    V    |
20+15       1.8403      0.73  Q         |         |         |     V   |
20+20       1.8452      0.72  Q         |         |         |     V   |
20+25       1.8501      0.71  Q         |         |         |     V   |
20+30       1.8550      0.71  Q         |         |         |     V   |
20+35       1.8599      0.70  Q         |         |         |     V   |
20+40       1.8647      0.70  Q         |         |         |     V   |
20+45       1.8694      0.69  Q         |         |         |     V   |
20+50       1.8742      0.69  Q         |         |         |     V   |
20+55       1.8788      0.68  Q         |         |         |     V   |
21+ 0       1.8835      0.68  Q         |         |         |     V   |
21+ 5       1.8881      0.67  Q         |         |         |     V   |
21+10       1.8927      0.67  Q         |         |         |      V  |
21+15       1.8973      0.66  Q         |         |         |      V  |
21+20       1.9018      0.66  Q         |         |         |      V  |
21+25       1.9063      0.65  Q         |         |         |      V  |
21+30       1.9108      0.65  Q         |         |         |      V  |
21+35       1.9152      0.64  Q         |         |         |      V  |
21+40       1.9196      0.64  Q         |         |         |      V  |
21+45       1.9240      0.64  Q         |         |         |      V  |
21+50       1.9284      0.63  Q         |         |         |      V  |
21+55       1.9327      0.63  Q         |         |         |      V  |
22+ 0       1.9370      0.63  Q         |         |         |      V  |
22+ 5       1.9413      0.62  Q         |         |         |       V |
22+10       1.9456      0.62  Q         |         |         |       V |
22+15       1.9498      0.61  Q         |         |         |       V |
22+20       1.9540      0.61  Q         |         |         |       V |
```

```
   22+25       1.9582      0.61  Q          |          |          |       V |
   22+30       1.9623      0.60  Q          |          |          |       V |
   22+35       1.9665      0.60  Q          |          |          |       V |
   22+40       1.9706      0.60  Q          |          |          |       V |
   22+45       1.9747      0.59  Q          |          |          |       V |
   22+50       1.9788      0.59  Q          |          |          |       V |
   22+55       1.9828      0.59  Q          |          |          |       V |
   23+ 0       1.9868      0.59  Q          |          |          |       V |
   23+ 5       1.9909      0.58  Q          |          |          |       V |
   23+10       1.9948      0.58  Q          |          |          |        V|
   23+15       1.9988      0.58  Q          |          |          |        V|
   23+20       2.0028      0.57  Q          |          |          |        V|
   23+25       2.0067      0.57  Q          |          |          |        V|
   23+30       2.0106      0.57  Q          |          |          |        V|
   23+35       2.0145      0.57  Q          |          |          |        V|
   23+40       2.0184      0.56  Q          |          |          |        V|
   23+45       2.0223      0.56  Q          |          |          |        V|
   23+50       2.0261      0.56  Q          |          |          |        V|
   23+55       2.0299      0.56  Q          |          |          |        V|
   24+ 0       2.0337      0.55  Q          |          |          |        V|
   24+ 5       2.0374      0.53  Q          |          |          |        V|
   24+10       2.0401      0.40  Q          |          |          |        V|
   24+15       2.0415      0.19  Q          |          |          |        V|
   24+20       2.0423      0.12  Q          |          |          |        V|
   24+25       2.0428      0.07  Q          |          |          |        V|
   24+30       2.0431      0.04  Q          |          |          |        V|
   24+35       2.0432      0.02  Q          |          |          |        V|
   24+40       2.0433      0.01  Q          |          |          |        V|
   24+45       2.0434      0.01  Q          |          |          |        V|
   24+50       2.0434      0.01  Q          |          |          |        V|
   24+55       2.0435      0.00  Q          |          |          |        V|
   25+ 0       2.0435      0.00  Q          |          |          |        V|
   25+ 5       2.0435      0.00  Q          |          |          |        V|
-------------------------------------------------------------------------
```

Area 'B' – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
10 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            11.61            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0         11.61      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 11.61 | 1.000 | 78.0 | 78.0 | 2.82 | 0.650 |

Area-averaged catchment yield fraction, Y = 0.650
Area-averaged low loss fraction, Yb = 0.350
User entry of time of concentration = 0.196 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 11.61(Ac.)
Catchment Lag time = 0.157 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 53.1924
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.350 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 11.61(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.474(In)
30-minute factor = 0.999 Adjusted rainfall = 0.812(In)
1-hour factor = 0.999 Adjusted rainfall = 0.999(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 140.41 (CFS)) | |
| 1 | 4.677 | 6.567 |
| 2 | 28.694 | 33.722 |
| 3 | 65.919 | 52.267 |
| 4 | 79.678 | 19.320 |
| 5 | 87.633 | 11.169 |
| 6 | 92.737 | 7.167 |
| 7 | 95.953 | 4.516 |
| 8 | 97.772 | 2.553 |
| 9 | 98.510 | 1.037 |
| 10 | 99.015 | 0.709 |
| 11 | 99.374 | 0.505 |
| 12 | 99.739 | 0.511 |
| 13 | 99.927 | 0.265 |
| 14 | 100.000 | 0.102 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4743 | 0.4743 |
| 2 | 0.5839 | 0.1096 |
| 3 | 0.6594 | 0.0755 |
| 4 | 0.7188 | 0.0594 |
| 5 | 0.7686 | 0.0498 |
| 6 | 0.8118 | 0.0432 |
| 7 | 0.8502 | 0.0384 |
| 8 | 0.8850 | 0.0348 |
| 9 | 0.9168 | 0.0318 |
| 10 | 0.9463 | 0.0294 |
| 11 | 0.9737 | 0.0274 |
| 12 | 0.9995 | 0.0258 |

| | | |
|---|---|---|
| 13 | 1.0502 | 0.0508 |
| 14 | 1.0995 | 0.0493 |
| 15 | 1.1475 | 0.0480 |
| 16 | 1.1942 | 0.0468 |
| 17 | 1.2399 | 0.0457 |
| 18 | 1.2845 | 0.0446 |
| 19 | 1.3282 | 0.0437 |
| 20 | 1.3711 | 0.0428 |
| 21 | 1.4131 | 0.0420 |
| 22 | 1.4544 | 0.0413 |
| 23 | 1.4949 | 0.0406 |
| 24 | 1.5348 | 0.0399 |
| 25 | 1.5741 | 0.0393 |
| 26 | 1.6128 | 0.0387 |
| 27 | 1.6509 | 0.0381 |
| 28 | 1.6885 | 0.0376 |
| 29 | 1.7255 | 0.0371 |
| 30 | 1.7621 | 0.0366 |
| 31 | 1.7982 | 0.0361 |
| 32 | 1.8339 | 0.0357 |
| 33 | 1.8692 | 0.0353 |
| 34 | 1.9040 | 0.0349 |
| 35 | 1.9385 | 0.0345 |
| 36 | 1.9726 | 0.0341 |
| 37 | 2.0063 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0727 | 0.0330 |
| 40 | 2.1054 | 0.0327 |
| 41 | 2.1378 | 0.0324 |
| 42 | 2.1699 | 0.0321 |
| 43 | 2.2017 | 0.0318 |
| 44 | 2.2332 | 0.0315 |
| 45 | 2.2645 | 0.0313 |
| 46 | 2.2955 | 0.0310 |
| 47 | 2.3262 | 0.0307 |
| 48 | 2.3567 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4170 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4763 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5348 | 0.0291 |
| 55 | 2.5637 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6210 | 0.0285 |
| 58 | 2.6493 | 0.0283 |
| 59 | 2.6775 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7609 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8156 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8697 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9232 | 0.0267 |
| 69 | 2.9497 | 0.0265 |
| 70 | 2.9761 | 0.0264 |
| 71 | 3.0023 | 0.0262 |
| 72 | 3.0284 | 0.0261 |
| 73 | 3.0550 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1078 | 0.0263 |
| 76 | 3.1340 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1860 | 0.0259 |
| 79 | 3.2118 | 0.0258 |
| 80 | 3.2375 | 0.0257 |
| 81 | 3.2631 | 0.0256 |
| 82 | 3.2886 | 0.0255 |
| 83 | 3.3140 | 0.0254 |

| | | |
|---|---|---|
| 84 | 3.3392 | 0.0253 |
| 85 | 3.3644 | 0.0251 |
| 86 | 3.3894 | 0.0250 |
| 87 | 3.4143 | 0.0249 |
| 88 | 3.4391 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5130 | 0.0245 |
| 92 | 3.5374 | 0.0244 |
| 93 | 3.5617 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6101 | 0.0241 |
| 96 | 3.6341 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6819 | 0.0239 |
| 99 | 3.7057 | 0.0238 |
| 100 | 3.7294 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7765 | 0.0235 |
| 103 | 3.7999 | 0.0234 |
| 104 | 3.8232 | 0.0233 |
| 105 | 3.8465 | 0.0233 |
| 106 | 3.8697 | 0.0232 |
| 107 | 3.8928 | 0.0231 |
| 108 | 3.9158 | 0.0230 |
| 109 | 3.9387 | 0.0229 |
| 110 | 3.9616 | 0.0229 |
| 111 | 3.9844 | 0.0228 |
| 112 | 4.0071 | 0.0227 |
| 113 | 4.0297 | 0.0226 |
| 114 | 4.0523 | 0.0226 |
| 115 | 4.0748 | 0.0225 |
| 116 | 4.0972 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1862 | 0.0221 |
| 121 | 4.2083 | 0.0221 |
| 122 | 4.2303 | 0.0220 |
| 123 | 4.2522 | 0.0219 |
| 124 | 4.2741 | 0.0219 |
| 125 | 4.2959 | 0.0218 |
| 126 | 4.3177 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3610 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4255 | 0.0214 |
| 132 | 4.4469 | 0.0214 |
| 133 | 4.4682 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5318 | 0.0211 |
| 137 | 4.5529 | 0.0211 |
| 138 | 4.5739 | 0.0210 |
| 139 | 4.5949 | 0.0210 |
| 140 | 4.6158 | 0.0209 |
| 141 | 4.6367 | 0.0209 |
| 142 | 4.6575 | 0.0208 |
| 143 | 4.6783 | 0.0208 |
| 144 | 4.6990 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7608 | 0.0206 |
| 148 | 4.7813 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |
| 151 | 4.8425 | 0.0204 |
| 152 | 4.8628 | 0.0203 |
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |

| | | |
|---|---|---|
| 155 | 4.9234 | 0.0202 |
| 156 | 4.9435 | 0.0201 |
| 157 | 4.9636 | 0.0201 |
| 158 | 4.9836 | 0.0200 |
| 159 | 5.0036 | 0.0200 |
| 160 | 5.0235 | 0.0199 |
| 161 | 5.0434 | 0.0199 |
| 162 | 5.0632 | 0.0198 |
| 163 | 5.0830 | 0.0198 |
| 164 | 5.1027 | 0.0197 |
| 165 | 5.1224 | 0.0197 |
| 166 | 5.1421 | 0.0197 |
| 167 | 5.1617 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2008 | 0.0195 |
| 170 | 5.2203 | 0.0195 |
| 171 | 5.2397 | 0.0194 |
| 172 | 5.2591 | 0.0194 |
| 173 | 5.2785 | 0.0194 |
| 174 | 5.2978 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3363 | 0.0192 |
| 177 | 5.3555 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3938 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4319 | 0.0190 |
| 182 | 5.4509 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4888 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5265 | 0.0189 |
| 187 | 5.5453 | 0.0188 |
| 188 | 5.5641 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6202 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6760 | 0.0186 |
| 195 | 5.6945 | 0.0185 |
| 196 | 5.7130 | 0.0185 |
| 197 | 5.7315 | 0.0185 |
| 198 | 5.7499 | 0.0184 |
| 199 | 5.7683 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8415 | 0.0183 |
| 204 | 5.8597 | 0.0182 |
| 205 | 5.8779 | 0.0182 |
| 206 | 5.8961 | 0.0182 |
| 207 | 5.9142 | 0.0181 |
| 208 | 5.9323 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9684 | 0.0180 |
| 211 | 5.9864 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0223 | 0.0179 |
| 214 | 6.0402 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0759 | 0.0178 |
| 217 | 6.0937 | 0.0178 |
| 218 | 6.1115 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1470 | 0.0177 |
| 221 | 6.1647 | 0.0177 |
| 222 | 6.1823 | 0.0177 |
| 223 | 6.2000 | 0.0176 |
| 224 | 6.2176 | 0.0176 |
| 225 | 6.2352 | 0.0176 |

| | | |
|---|---|---|
| 226 | 6.2527 | 0.0175 |
| 227 | 6.2702 | 0.0175 |
| 228 | 6.2877 | 0.0175 |
| 229 | 6.3052 | 0.0175 |
| 230 | 6.3226 | 0.0174 |
| 231 | 6.3400 | 0.0174 |
| 232 | 6.3574 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3921 | 0.0173 |
| 235 | 6.4094 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4439 | 0.0172 |
| 238 | 6.4611 | 0.0172 |
| 239 | 6.4783 | 0.0172 |
| 240 | 6.4955 | 0.0172 |
| 241 | 6.5126 | 0.0171 |
| 242 | 6.5297 | 0.0171 |
| 243 | 6.5468 | 0.0171 |
| 244 | 6.5639 | 0.0171 |
| 245 | 6.5809 | 0.0170 |
| 246 | 6.5979 | 0.0170 |
| 247 | 6.6149 | 0.0170 |
| 248 | 6.6319 | 0.0170 |
| 249 | 6.6488 | 0.0169 |
| 250 | 6.6657 | 0.0169 |
| 251 | 6.6826 | 0.0169 |
| 252 | 6.6995 | 0.0169 |
| 253 | 6.7163 | 0.0168 |
| 254 | 6.7331 | 0.0168 |
| 255 | 6.7499 | 0.0168 |
| 256 | 6.7667 | 0.0168 |
| 257 | 6.7834 | 0.0167 |
| 258 | 6.8001 | 0.0167 |
| 259 | 6.8168 | 0.0167 |
| 260 | 6.8335 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8668 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9165 | 0.0166 |
| 266 | 6.9330 | 0.0165 |
| 267 | 6.9495 | 0.0165 |
| 268 | 6.9660 | 0.0165 |
| 269 | 6.9825 | 0.0165 |
| 270 | 6.9989 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0481 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0808 | 0.0163 |
| 276 | 7.0971 | 0.0163 |
| 277 | 7.1134 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1459 | 0.0162 |
| 280 | 7.1621 | 0.0162 |
| 281 | 7.1783 | 0.0162 |
| 282 | 7.1945 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2268 | 0.0161 |
| 285 | 7.2429 | 0.0161 |
| 286 | 7.2590 | 0.0161 |
| 287 | 7.2751 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0056 | 0.0104 |
| 2 | 0.0161 | 0.0056 | 0.0105 |
| 3 | 0.0161 | 0.0056 | 0.0105 |

| | | | |
|---|---|---|---|
| 4 | 0.0161 | 0.0056 | 0.0105 |
| 5 | 0.0162 | 0.0057 | 0.0105 |
| 6 | 0.0162 | 0.0057 | 0.0105 |
| 7 | 0.0162 | 0.0057 | 0.0106 |
| 8 | 0.0163 | 0.0057 | 0.0106 |
| 9 | 0.0163 | 0.0057 | 0.0106 |
| 10 | 0.0163 | 0.0057 | 0.0106 |
| 11 | 0.0164 | 0.0057 | 0.0106 |
| 12 | 0.0164 | 0.0057 | 0.0107 |
| 13 | 0.0164 | 0.0058 | 0.0107 |
| 14 | 0.0165 | 0.0058 | 0.0107 |
| 15 | 0.0165 | 0.0058 | 0.0107 |
| 16 | 0.0165 | 0.0058 | 0.0107 |
| 17 | 0.0166 | 0.0058 | 0.0108 |
| 18 | 0.0166 | 0.0058 | 0.0108 |
| 19 | 0.0166 | 0.0058 | 0.0108 |
| 20 | 0.0167 | 0.0058 | 0.0108 |
| 21 | 0.0167 | 0.0058 | 0.0109 |
| 22 | 0.0167 | 0.0059 | 0.0109 |
| 23 | 0.0168 | 0.0059 | 0.0109 |
| 24 | 0.0168 | 0.0059 | 0.0109 |
| 25 | 0.0169 | 0.0059 | 0.0110 |
| 26 | 0.0169 | 0.0059 | 0.0110 |
| 27 | 0.0169 | 0.0059 | 0.0110 |
| 28 | 0.0170 | 0.0059 | 0.0110 |
| 29 | 0.0170 | 0.0060 | 0.0111 |
| 30 | 0.0170 | 0.0060 | 0.0111 |
| 31 | 0.0171 | 0.0060 | 0.0111 |
| 32 | 0.0171 | 0.0060 | 0.0111 |
| 33 | 0.0172 | 0.0060 | 0.0112 |
| 34 | 0.0172 | 0.0060 | 0.0112 |
| 35 | 0.0172 | 0.0060 | 0.0112 |
| 36 | 0.0173 | 0.0060 | 0.0112 |
| 37 | 0.0173 | 0.0061 | 0.0113 |
| 38 | 0.0174 | 0.0061 | 0.0113 |
| 39 | 0.0174 | 0.0061 | 0.0113 |
| 40 | 0.0174 | 0.0061 | 0.0113 |
| 41 | 0.0175 | 0.0061 | 0.0114 |
| 42 | 0.0175 | 0.0061 | 0.0114 |
| 43 | 0.0176 | 0.0062 | 0.0114 |
| 44 | 0.0176 | 0.0062 | 0.0114 |
| 45 | 0.0177 | 0.0062 | 0.0115 |
| 46 | 0.0177 | 0.0062 | 0.0115 |
| 47 | 0.0178 | 0.0062 | 0.0115 |
| 48 | 0.0178 | 0.0062 | 0.0116 |
| 49 | 0.0178 | 0.0062 | 0.0116 |
| 50 | 0.0179 | 0.0063 | 0.0116 |
| 51 | 0.0179 | 0.0063 | 0.0117 |
| 52 | 0.0180 | 0.0063 | 0.0117 |
| 53 | 0.0180 | 0.0063 | 0.0117 |
| 54 | 0.0181 | 0.0063 | 0.0117 |
| 55 | 0.0181 | 0.0063 | 0.0118 |
| 56 | 0.0182 | 0.0064 | 0.0118 |
| 57 | 0.0182 | 0.0064 | 0.0118 |
| 58 | 0.0183 | 0.0064 | 0.0119 |
| 59 | 0.0183 | 0.0064 | 0.0119 |
| 60 | 0.0184 | 0.0064 | 0.0119 |
| 61 | 0.0184 | 0.0064 | 0.0120 |
| 62 | 0.0185 | 0.0065 | 0.0120 |
| 63 | 0.0185 | 0.0065 | 0.0120 |
| 64 | 0.0186 | 0.0065 | 0.0121 |
| 65 | 0.0186 | 0.0065 | 0.0121 |
| 66 | 0.0187 | 0.0065 | 0.0121 |
| 67 | 0.0187 | 0.0066 | 0.0122 |
| 68 | 0.0188 | 0.0066 | 0.0122 |
| 69 | 0.0189 | 0.0066 | 0.0123 |
| 70 | 0.0189 | 0.0066 | 0.0123 |
| 71 | 0.0190 | 0.0066 | 0.0123 |
| 72 | 0.0190 | 0.0066 | 0.0124 |
| 73 | 0.0191 | 0.0067 | 0.0124 |
| 74 | 0.0191 | 0.0067 | 0.0124 |

| | | | |
|---|---|---|---|
| 75 | 0.0192 | 0.0067 | 0.0125 |
| 76 | 0.0192 | 0.0067 | 0.0125 |
| 77 | 0.0193 | 0.0068 | 0.0126 |
| 78 | 0.0194 | 0.0068 | 0.0126 |
| 79 | 0.0194 | 0.0068 | 0.0126 |
| 80 | 0.0195 | 0.0068 | 0.0127 |
| 81 | 0.0196 | 0.0068 | 0.0127 |
| 82 | 0.0196 | 0.0069 | 0.0127 |
| 83 | 0.0197 | 0.0069 | 0.0128 |
| 84 | 0.0197 | 0.0069 | 0.0128 |
| 85 | 0.0198 | 0.0069 | 0.0129 |
| 86 | 0.0199 | 0.0070 | 0.0129 |
| 87 | 0.0200 | 0.0070 | 0.0130 |
| 88 | 0.0200 | 0.0070 | 0.0130 |
| 89 | 0.0201 | 0.0070 | 0.0131 |
| 90 | 0.0202 | 0.0071 | 0.0131 |
| 91 | 0.0203 | 0.0071 | 0.0132 |
| 92 | 0.0203 | 0.0071 | 0.0132 |
| 93 | 0.0204 | 0.0071 | 0.0133 |
| 94 | 0.0205 | 0.0072 | 0.0133 |
| 95 | 0.0206 | 0.0072 | 0.0134 |
| 96 | 0.0206 | 0.0072 | 0.0134 |
| 97 | 0.0207 | 0.0072 | 0.0135 |
| 98 | 0.0208 | 0.0073 | 0.0135 |
| 99 | 0.0209 | 0.0073 | 0.0136 |
| 100 | 0.0209 | 0.0073 | 0.0136 |
| 101 | 0.0210 | 0.0074 | 0.0137 |
| 102 | 0.0211 | 0.0074 | 0.0137 |
| 103 | 0.0212 | 0.0074 | 0.0138 |
| 104 | 0.0213 | 0.0074 | 0.0138 |
| 105 | 0.0214 | 0.0075 | 0.0139 |
| 106 | 0.0214 | 0.0075 | 0.0139 |
| 107 | 0.0216 | 0.0075 | 0.0140 |
| 108 | 0.0216 | 0.0076 | 0.0141 |
| 109 | 0.0218 | 0.0076 | 0.0141 |
| 110 | 0.0218 | 0.0076 | 0.0142 |
| 111 | 0.0219 | 0.0077 | 0.0143 |
| 112 | 0.0220 | 0.0077 | 0.0143 |
| 113 | 0.0221 | 0.0077 | 0.0144 |
| 114 | 0.0222 | 0.0078 | 0.0144 |
| 115 | 0.0224 | 0.0078 | 0.0145 |
| 116 | 0.0224 | 0.0078 | 0.0146 |
| 117 | 0.0226 | 0.0079 | 0.0147 |
| 118 | 0.0226 | 0.0079 | 0.0147 |
| 119 | 0.0228 | 0.0080 | 0.0148 |
| 120 | 0.0229 | 0.0080 | 0.0149 |
| 121 | 0.0230 | 0.0081 | 0.0150 |
| 122 | 0.0231 | 0.0081 | 0.0150 |
| 123 | 0.0233 | 0.0081 | 0.0151 |
| 124 | 0.0233 | 0.0082 | 0.0152 |
| 125 | 0.0235 | 0.0082 | 0.0153 |
| 126 | 0.0236 | 0.0083 | 0.0153 |
| 127 | 0.0238 | 0.0083 | 0.0155 |
| 128 | 0.0239 | 0.0083 | 0.0155 |
| 129 | 0.0240 | 0.0084 | 0.0156 |
| 130 | 0.0241 | 0.0084 | 0.0157 |
| 131 | 0.0243 | 0.0085 | 0.0158 |
| 132 | 0.0244 | 0.0085 | 0.0159 |
| 133 | 0.0246 | 0.0086 | 0.0160 |
| 134 | 0.0247 | 0.0086 | 0.0161 |
| 135 | 0.0249 | 0.0087 | 0.0162 |
| 136 | 0.0250 | 0.0088 | 0.0163 |
| 137 | 0.0253 | 0.0088 | 0.0164 |
| 138 | 0.0254 | 0.0089 | 0.0165 |
| 139 | 0.0256 | 0.0090 | 0.0166 |
| 140 | 0.0257 | 0.0090 | 0.0167 |
| 141 | 0.0259 | 0.0091 | 0.0169 |
| 142 | 0.0261 | 0.0091 | 0.0169 |
| 143 | 0.0263 | 0.0092 | 0.0171 |
| 144 | 0.0265 | 0.0093 | 0.0172 |
| 145 | 0.0261 | 0.0091 | 0.0170 |

| | | | |
|---|---|---|---|
| 146 | 0.0262 | 0.0092 | 0.0170 |
| 147 | 0.0265 | 0.0093 | 0.0172 |
| 148 | 0.0267 | 0.0093 | 0.0173 |
| 149 | 0.0270 | 0.0094 | 0.0175 |
| 150 | 0.0271 | 0.0095 | 0.0176 |
| 151 | 0.0275 | 0.0096 | 0.0178 |
| 152 | 0.0276 | 0.0097 | 0.0180 |
| 153 | 0.0280 | 0.0098 | 0.0182 |
| 154 | 0.0282 | 0.0099 | 0.0183 |
| 155 | 0.0285 | 0.0100 | 0.0185 |
| 156 | 0.0287 | 0.0101 | 0.0187 |
| 157 | 0.0291 | 0.0102 | 0.0189 |
| 158 | 0.0293 | 0.0103 | 0.0191 |
| 159 | 0.0298 | 0.0104 | 0.0194 |
| 160 | 0.0300 | 0.0105 | 0.0195 |
| 161 | 0.0305 | 0.0107 | 0.0198 |
| 162 | 0.0307 | 0.0108 | 0.0200 |
| 163 | 0.0313 | 0.0109 | 0.0203 |
| 164 | 0.0315 | 0.0110 | 0.0205 |
| 165 | 0.0321 | 0.0112 | 0.0209 |
| 166 | 0.0324 | 0.0113 | 0.0211 |
| 167 | 0.0330 | 0.0116 | 0.0215 |
| 168 | 0.0334 | 0.0117 | 0.0217 |
| 169 | 0.0341 | 0.0119 | 0.0222 |
| 170 | 0.0345 | 0.0121 | 0.0224 |
| 171 | 0.0353 | 0.0123 | 0.0229 |
| 172 | 0.0357 | 0.0125 | 0.0232 |
| 173 | 0.0366 | 0.0128 | 0.0238 |
| 174 | 0.0371 | 0.0130 | 0.0241 |
| 175 | 0.0381 | 0.0133 | 0.0248 |
| 176 | 0.0387 | 0.0135 | 0.0251 |
| 177 | 0.0399 | 0.0140 | 0.0259 |
| 178 | 0.0406 | 0.0142 | 0.0264 |
| 179 | 0.0420 | 0.0147 | 0.0273 |
| 180 | 0.0428 | 0.0150 | 0.0278 |
| 181 | 0.0446 | 0.0156 | 0.0290 |
| 182 | 0.0457 | 0.0160 | 0.0297 |
| 183 | 0.0480 | 0.0168 | 0.0312 |
| 184 | 0.0493 | 0.0172 | 0.0320 |
| 185 | 0.0258 | 0.0090 | 0.0167 |
| 186 | 0.0274 | 0.0096 | 0.0178 |
| 187 | 0.0318 | 0.0111 | 0.0207 |
| 188 | 0.0348 | 0.0122 | 0.0226 |
| 189 | 0.0432 | 0.0151 | 0.0281 |
| 190 | 0.0498 | 0.0174 | 0.0324 |
| 191 | 0.0755 | 0.0264 | 0.0491 |
| 192 | 0.1096 | 0.0336 | 0.0760 |
| 193 | 0.4743 | 0.0336 | 0.4406 |
| 194 | 0.0594 | 0.0208 | 0.0386 |
| 195 | 0.0384 | 0.0134 | 0.0250 |
| 196 | 0.0294 | 0.0103 | 0.0191 |
| 197 | 0.0508 | 0.0178 | 0.0330 |
| 198 | 0.0468 | 0.0164 | 0.0304 |
| 199 | 0.0437 | 0.0153 | 0.0284 |
| 200 | 0.0413 | 0.0144 | 0.0268 |
| 201 | 0.0393 | 0.0137 | 0.0255 |
| 202 | 0.0376 | 0.0131 | 0.0244 |
| 203 | 0.0361 | 0.0126 | 0.0235 |
| 204 | 0.0349 | 0.0122 | 0.0227 |
| 205 | 0.0337 | 0.0118 | 0.0219 |
| 206 | 0.0327 | 0.0114 | 0.0213 |
| 207 | 0.0318 | 0.0111 | 0.0207 |
| 208 | 0.0310 | 0.0108 | 0.0201 |
| 209 | 0.0302 | 0.0106 | 0.0197 |
| 210 | 0.0296 | 0.0103 | 0.0192 |
| 211 | 0.0289 | 0.0101 | 0.0188 |
| 212 | 0.0283 | 0.0099 | 0.0184 |
| 213 | 0.0278 | 0.0097 | 0.0181 |
| 214 | 0.0273 | 0.0095 | 0.0177 |
| 215 | 0.0268 | 0.0094 | 0.0174 |
| 216 | 0.0264 | 0.0092 | 0.0171 |

| | | | |
|---|---|---|---|
| 217 | 0.0266 | 0.0093 | 0.0173 |
| 218 | 0.0262 | 0.0092 | 0.0170 |
| 219 | 0.0258 | 0.0090 | 0.0168 |
| 220 | 0.0255 | 0.0089 | 0.0166 |
| 221 | 0.0251 | 0.0088 | 0.0163 |
| 222 | 0.0248 | 0.0087 | 0.0161 |
| 223 | 0.0245 | 0.0086 | 0.0159 |
| 224 | 0.0242 | 0.0085 | 0.0157 |
| 225 | 0.0239 | 0.0084 | 0.0156 |
| 226 | 0.0237 | 0.0083 | 0.0154 |
| 227 | 0.0234 | 0.0082 | 0.0152 |
| 228 | 0.0232 | 0.0081 | 0.0151 |
| 229 | 0.0229 | 0.0080 | 0.0149 |
| 230 | 0.0227 | 0.0079 | 0.0148 |
| 231 | 0.0225 | 0.0079 | 0.0146 |
| 232 | 0.0223 | 0.0078 | 0.0145 |
| 233 | 0.0221 | 0.0077 | 0.0144 |
| 234 | 0.0219 | 0.0077 | 0.0142 |
| 235 | 0.0217 | 0.0076 | 0.0141 |
| 236 | 0.0215 | 0.0075 | 0.0140 |
| 237 | 0.0213 | 0.0075 | 0.0139 |
| 238 | 0.0211 | 0.0074 | 0.0137 |
| 239 | 0.0210 | 0.0073 | 0.0136 |
| 240 | 0.0208 | 0.0073 | 0.0135 |
| 241 | 0.0207 | 0.0072 | 0.0134 |
| 242 | 0.0205 | 0.0072 | 0.0133 |
| 243 | 0.0204 | 0.0071 | 0.0132 |
| 244 | 0.0202 | 0.0071 | 0.0131 |
| 245 | 0.0201 | 0.0070 | 0.0130 |
| 246 | 0.0199 | 0.0070 | 0.0130 |
| 247 | 0.0198 | 0.0069 | 0.0129 |
| 248 | 0.0197 | 0.0069 | 0.0128 |
| 249 | 0.0195 | 0.0068 | 0.0127 |
| 250 | 0.0194 | 0.0068 | 0.0126 |
| 251 | 0.0193 | 0.0067 | 0.0125 |
| 252 | 0.0192 | 0.0067 | 0.0125 |
| 253 | 0.0190 | 0.0067 | 0.0124 |
| 254 | 0.0189 | 0.0066 | 0.0123 |
| 255 | 0.0188 | 0.0066 | 0.0122 |
| 256 | 0.0187 | 0.0065 | 0.0122 |
| 257 | 0.0186 | 0.0065 | 0.0121 |
| 258 | 0.0185 | 0.0065 | 0.0120 |
| 259 | 0.0184 | 0.0064 | 0.0120 |
| 260 | 0.0183 | 0.0064 | 0.0119 |
| 261 | 0.0182 | 0.0064 | 0.0118 |
| 262 | 0.0181 | 0.0063 | 0.0118 |
| 263 | 0.0180 | 0.0063 | 0.0117 |
| 264 | 0.0179 | 0.0063 | 0.0116 |
| 265 | 0.0178 | 0.0062 | 0.0116 |
| 266 | 0.0177 | 0.0062 | 0.0115 |
| 267 | 0.0176 | 0.0062 | 0.0115 |
| 268 | 0.0175 | 0.0061 | 0.0114 |
| 269 | 0.0175 | 0.0061 | 0.0114 |
| 270 | 0.0174 | 0.0061 | 0.0113 |
| 271 | 0.0173 | 0.0061 | 0.0112 |
| 272 | 0.0172 | 0.0060 | 0.0112 |
| 273 | 0.0171 | 0.0060 | 0.0111 |
| 274 | 0.0171 | 0.0060 | 0.0111 |
| 275 | 0.0170 | 0.0059 | 0.0110 |
| 276 | 0.0169 | 0.0059 | 0.0110 |
| 277 | 0.0168 | 0.0059 | 0.0109 |
| 278 | 0.0168 | 0.0059 | 0.0109 |
| 279 | 0.0167 | 0.0058 | 0.0109 |
| 280 | 0.0166 | 0.0058 | 0.0108 |
| 281 | 0.0166 | 0.0058 | 0.0108 |
| 282 | 0.0165 | 0.0058 | 0.0107 |
| 283 | 0.0164 | 0.0057 | 0.0107 |
| 284 | 0.0164 | 0.0057 | 0.0106 |
| 285 | 0.0163 | 0.0057 | 0.0106 |
| 286 | 0.0162 | 0.0057 | 0.0105 |
| 287 | 0.0162 | 0.0057 | 0.0105 |

```
      288             0.0161          0.0056             0.0105
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      2.41(In)
      Total effective rainfall =      4.88(In)
      Peak flow rate in flood hydrograph =     27.00(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0005      0.07  Q         |          |          |          |
  0+10       0.0034      0.42  Q         |          |          |          |
  0+15       0.0100      0.97  VQ        |          |          |          |
  0+20       0.0181      1.17  VQ        |          |          |          |
  0+25       0.0270      1.29  VQ        |          |          |          |
  0+30       0.0364      1.37  VQ        |          |          |          |
  0+35       0.0461      1.42  VQ        |          |          |          |
  0+40       0.0561      1.45  VQ        |          |          |          |
  0+45       0.0661      1.46  VQ        |          |          |          |
  0+50       0.0762      1.47  VQ        |          |          |          |
  0+55       0.0864      1.48  VQ        |          |          |          |
  1+ 0       0.0967      1.49  VQ        |          |          |          |
  1+ 5       0.1069      1.49  VQ        |          |          |          |
  1+10       0.1172      1.50  VQ        |          |          |          |
  1+15       0.1275      1.50  |Q        |          |          |          |
  1+20       0.1379      1.50  |VQ       |          |          |          |
  1+25       0.1483      1.50  |VQ       |          |          |          |
  1+30       0.1586      1.51  |VQ       |          |          |          |
  1+35       0.1690      1.51  |VQ       |          |          |          |
  1+40       0.1795      1.51  |VQ       |          |          |          |
  1+45       0.1899      1.52  |VQ       |          |          |          |
  1+50       0.2004      1.52  |VQ       |          |          |          |
  1+55       0.2109      1.52  |VQ       |          |          |          |
  2+ 0       0.2214      1.53  |VQ       |          |          |          |
  2+ 5       0.2319      1.53  |VQ       |          |          |          |
  2+10       0.2425      1.53  | Q       |          |          |          |
  2+15       0.2531      1.54  | Q       |          |          |          |
  2+20       0.2637      1.54  | Q       |          |          |          |
  2+25       0.2743      1.54  | Q       |          |          |          |
  2+30       0.2850      1.55  | Q       |          |          |          |
  2+35       0.2957      1.55  | Q       |          |          |          |
  2+40       0.3064      1.55  | Q       |          |          |          |
  2+45       0.3171      1.56  | Q       |          |          |          |
  2+50       0.3278      1.56  | Q       |          |          |          |
  2+55       0.3386      1.56  | Q       |          |          |          |
  3+ 0       0.3494      1.57  | Q       |          |          |          |
  3+ 5       0.3602      1.57  | QV      |          |          |          |
  3+10       0.3711      1.58  | QV      |          |          |          |
  3+15       0.3820      1.58  | QV      |          |          |          |
  3+20       0.3929      1.58  | QV      |          |          |          |
  3+25       0.4038      1.59  | QV      |          |          |          |
  3+30       0.4147      1.59  | QV      |          |          |          |
  3+35       0.4257      1.59  | QV      |          |          |          |
  3+40       0.4367      1.60  | QV      |          |          |          |
  3+45       0.4478      1.60  | QV      |          |          |          |
  3+50       0.4588      1.61  | QV      |          |          |          |
  3+55       0.4699      1.61  | QV      |          |          |          |
  4+ 0       0.4810      1.61  | Q V     |          |          |          |
  4+ 5       0.4922      1.62  | Q V     |          |          |          |
  4+10       0.5033      1.62  | Q V     |          |          |          |
  4+15       0.5145      1.63  | Q V     |          |          |          |
  4+20       0.5258      1.63  | Q V     |          |          |          |
  4+25       0.5370      1.63  | Q V     |          |          |          |
  4+30       0.5483      1.64  | Q V     |          |          |          |
  4+35       0.5596      1.64  | Q V     |          |          |          |
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 4+40      0.5709      1.65  | Q V     |         |         |         |
 4+45      0.5823      1.65  | Q V     |         |         |         |
 4+50      0.5937      1.66  | Q  V    |         |         |         |
 4+55      0.6052      1.66  | Q  V    |         |         |         |
 5+ 0      0.6166      1.66  | Q  V    |         |         |         |
 5+ 5      0.6281      1.67  | Q  V    |         |         |         |
 5+10      0.6397      1.67  | Q  V    |         |         |         |
 5+15      0.6512      1.68  | Q  V    |         |         |         |
 5+20      0.6628      1.68  | Q  V    |         |         |         |
 5+25      0.6744      1.69  | Q  V    |         |         |         |
 5+30      0.6861      1.69  | Q  V    |         |         |         |
 5+35      0.6978      1.70  | Q  V    |         |         |         |
 5+40      0.7095      1.70  | Q   V   |         |         |         |
 5+45      0.7213      1.71  | Q   V   |         |         |         |
 5+50      0.7330      1.71  | Q   V   |         |         |         |
 5+55      0.7449      1.72  | Q   V   |         |         |         |
 6+ 0      0.7567      1.72  | Q   V   |         |         |         |
 6+ 5      0.7686      1.73  | Q   V   |         |         |         |
 6+10      0.7806      1.73  | Q   V   |         |         |         |
 6+15      0.7925      1.74  | Q   V   |         |         |         |
 6+20      0.8045      1.74  | Q   V   |         |         |         |
 6+25      0.8166      1.75  | Q   V   |         |         |         |
 6+30      0.8287      1.75  | Q    V  |         |         |         |
 6+35      0.8408      1.76  | Q    V  |         |         |         |
 6+40      0.8529      1.77  | Q    V  |         |         |         |
 6+45      0.8651      1.77  | Q    V  |         |         |         |
 6+50      0.8774      1.78  | Q    V  |         |         |         |
 6+55      0.8896      1.78  | Q    V  |         |         |         |
 7+ 0      0.9020      1.79  | Q    V  |         |         |         |
 7+ 5      0.9143      1.79  | Q    V  |         |         |         |
 7+10      0.9267      1.80  | Q    V  |         |         |         |
 7+15      0.9392      1.81  | Q    V  |         |         |         |
 7+20      0.9516      1.81  | Q     V |         |         |         |
 7+25      0.9642      1.82  | Q     V |         |         |         |
 7+30      0.9767      1.82  | Q     V |         |         |         |
 7+35      0.9893      1.83  | Q     V |         |         |         |
 7+40      1.0020      1.84  | Q     V |         |         |         |
 7+45      1.0147      1.84  | Q     V |         |         |         |
 7+50      1.0274      1.85  | Q     V |         |         |         |
 7+55      1.0402      1.86  | Q     V |         |         |         |
 8+ 0      1.0531      1.86  | Q     V |         |         |         |
 8+ 5      1.0660      1.87  | Q      V|         |         |         |
 8+10      1.0789      1.88  | Q      V|         |         |         |
 8+15      1.0919      1.89  | Q      V|         |         |         |
 8+20      1.1049      1.89  | Q      V|         |         |         |
 8+25      1.1180      1.90  | Q      V|         |         |         |
 8+30      1.1311      1.91  | Q      V|         |         |         |
 8+35      1.1443      1.92  | Q      V|         |         |         |
 8+40      1.1576      1.92  | Q      V|         |         |         |
 8+45      1.1709      1.93  | Q      V|         |         |         |
 8+50      1.1842      1.94  | Q       V         |         |         |
 8+55      1.1976      1.95  | Q       V         |         |         |
 9+ 0      1.2111      1.95  | Q       V         |         |         |
 9+ 5      1.2246      1.96  | Q       V         |         |         |
 9+10      1.2382      1.97  | Q       V         |         |         |
 9+15      1.2518      1.98  | Q       V         |         |         |
 9+20      1.2655      1.99  | Q       V         |         |         |
 9+25      1.2793      2.00  | Q       V         |         |         |
 9+30      1.2931      2.01  | Q       V         |         |         |
 9+35      1.3070      2.02  | Q       |V        |         |         |
 9+40      1.3209      2.02  | Q       |V        |         |         |
 9+45      1.3349      2.03  | Q       |V        |         |         |
 9+50      1.3490      2.04  | Q       |V        |         |         |
 9+55      1.3631      2.05  | Q       |V        |         |         |
10+ 0      1.3773      2.06  | Q       |V        |         |         |
10+ 5      1.3916      2.07  | Q       |V        |         |         |
10+10      1.4060      2.08  | Q       |V        |         |         |
10+15      1.4204      2.09  | Q       | V       |         |         |
10+20      1.4349      2.10  | Q       | V       |         |         |
10+25      1.4495      2.12  | Q       | V       |         |         |
10+30      1.4641      2.13  | Q       | V       |         |         |
```

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10+35      1.4788     2.14  | Q       | V       |         |         |
10+40      1.4936     2.15  | Q       | V       |         |         |
10+45      1.5085     2.16  | Q       | V       |         |         |
10+50      1.5235     2.17  | Q       | V       |         |         |
10+55      1.5386     2.19  | Q       |  V      |         |         |
11+ 0      1.5537     2.20  | Q       |  V      |         |         |
11+ 5      1.5689     2.21  | Q       |  V      |         |         |
11+10      1.5843     2.22  | Q       |  V      |         |         |
11+15      1.5997     2.24  | Q       |  V      |         |         |
11+20      1.6152     2.25  |  Q      |  V      |         |         |
11+25      1.6308     2.27  |  Q      |  V      |         |         |
11+30      1.6465     2.28  |  Q      |  V      |         |         |
11+35      1.6623     2.30  |  Q      |   V     |         |         |
11+40      1.6782     2.31  |  Q      |   V     |         |         |
11+45      1.6942     2.33  |  Q      |   V     |         |         |
11+50      1.7104     2.34  |  Q      |   V     |         |         |
11+55      1.7266     2.36  |  Q      |   V     |         |         |
12+ 0      1.7430     2.37  |  Q      |   V     |         |         |
12+ 5      1.7594     2.39  |  Q      |   V     |         |         |
12+10      1.7759     2.39  |  Q      |    V    |         |         |
12+15      1.7923     2.39  |  Q      |    V    |         |         |
12+20      1.8089     2.40  |  Q      |    V    |         |         |
12+25      1.8255     2.42  |  Q      |    V    |         |         |
12+30      1.8423     2.43  |  Q      |    V    |         |         |
12+35      1.8591     2.45  |  Q      |    V    |         |         |
12+40      1.8762     2.47  |  Q      |    V    |         |         |
12+45      1.8933     2.49  |  Q      |     V   |         |         |
12+50      1.9106     2.52  |  Q      |     V   |         |         |
12+55      1.9281     2.54  |  Q      |     V   |         |         |
13+ 0      1.9458     2.56  |  Q      |     V   |         |         |
13+ 5      1.9636     2.59  |  Q      |     V   |         |         |
13+10      1.9816     2.61  |  Q      |     V   |         |         |
13+15      1.9998     2.64  |  Q      |     V   |         |         |
13+20      2.0182     2.67  |  Q      |      V  |         |         |
13+25      2.0368     2.70  |  Q      |      V  |         |         |
13+30      2.0556     2.73  |  Q      |      V  |         |         |
13+35      2.0746     2.76  |  Q      |      V  |         |         |
13+40      2.0939     2.80  |  Q      |      V  |         |         |
13+45      2.1134     2.83  |  Q      |      V  |         |         |
13+50      2.1332     2.87  |  Q      |       V |         |         |
13+55      2.1532     2.91  |  Q      |       V |         |         |
14+ 0      2.1735     2.95  |  Q      |       V |         |         |
14+ 5      2.1941     2.99  |  Q      |       V |         |         |
14+10      2.2149     3.03  |   Q     |       V |         |         |
14+15      2.2362     3.08  |   Q     |       V |         |         |
14+20      2.2577     3.13  |   Q     |        V|         |         |
14+25      2.2797     3.19  |   Q     |        V|         |         |
14+30      2.3020     3.24  |   Q     |        V|         |         |
14+35      2.3248     3.30  |   Q     |        V|         |         |
14+40      2.3480     3.37  |   Q     |        V|         |         |
14+45      2.3717     3.44  |   Q     |         V         |         |
14+50      2.3958     3.51  |   Q     |         V         |         |
14+55      2.4206     3.60  |   Q     |         V         |         |
15+ 0      2.4460     3.68  |   Q     |         V         |         |
15+ 5      2.4720     3.78  |    Q    |         V         |         |
15+10      2.4988     3.89  |    Q    |         |V        |         |
15+15      2.5264     4.01  |    Q    |         |V        |         |
15+20      2.5549     4.14  |    Q    |         |V        |         |
15+25      2.5838     4.19  |    Q    |         |V        |         |
15+30      2.6098     3.77  |    Q    |         | V       |         |
15+35      2.6309     3.08  |   Q     |         | V       |         |
15+40      2.6514     2.98  |  Q      |         | V       |         |
15+45      2.6727     3.09  |   Q     |         | V       |         |
15+50      2.6960     3.37  |   Q     |         | V       |         |
15+55      2.7230     3.93  |    Q    |         |  V      |         |
16+ 0      2.7575     5.01  |     Q   |         |  V      |         |
16+ 5      2.8218     9.34  |         | Q       |  V      |         |
16+10      2.9653    20.82  |         |         |    V Q  |         |
16+15      3.1512    27.00  |         |         |     V   |     Q   |
16+20      3.2406    12.99  |         |      Q  |      V  |         |
16+25      3.3010     8.76  |         |Q        |      V  |         |
```

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16+30      3.3487     6.94  |         Q|          |        V |          |
16+35      3.3911     6.15  |        Q |          |        V |          |
16+40      3.4269     5.20  |      Q   |          |         V|          |
16+45      3.4574     4.42  |     Q    |          |         V|          |
16+50      3.4858     4.13  |     Q    |          |         V|          |
16+55      3.5126     3.89  |     Q    |          |         V|          |
17+ 0      3.5384     3.74  |    Q     |          |          V          |
17+ 5      3.5625     3.50  |    Q     |          |          V          |
17+10      3.5852     3.30  |    Q     |          |          V          |
17+15      3.6069     3.15  |    Q     |          |          V          |
17+20      3.6279     3.05  |    Q     |          |          V          |
17+25      3.6483     2.96  |   Q      |          |          V          |
17+30      3.6681     2.88  |   Q      |          |          |V         |
17+35      3.6874     2.81  |   Q      |          |          |V         |
17+40      3.7063     2.74  |   Q      |          |          |V         |
17+45      3.7248     2.68  |   Q      |          |          |V         |
17+50      3.7428     2.62  |   Q      |          |          |V         |
17+55      3.7605     2.57  |   Q      |          |          |V         |
18+ 0      3.7779     2.52  |   Q      |          |          | V        |
18+ 5      3.7949     2.48  |   Q      |          |          | V        |
18+10      3.8118     2.45  |   Q      |          |          | V        |
18+15      3.8285     2.43  |   Q      |          |          | V        |
18+20      3.8451     2.40  |   Q      |          |          | V        |
18+25      3.8614     2.37  |   Q      |          |          | V        |
18+30      3.8775     2.34  |   Q      |          |          | V        |
18+35      3.8934     2.31  |   Q      |          |          |  V       |
18+40      3.9091     2.28  |   Q      |          |          |  V       |
18+45      3.9247     2.25  |   Q      |          |          |  V       |
18+50      3.9400     2.23  | Q        |          |          |  V       |
18+55      3.9551     2.20  | Q        |          |          |  V       |
19+ 0      3.9701     2.18  | Q        |          |          |  V       |
19+ 5      3.9849     2.15  | Q        |          |          |  V       |
19+10      3.9996     2.13  | Q        |          |          |  V       |
19+15      4.0141     2.11  | Q        |          |          |   V      |
19+20      4.0285     2.08  | Q        |          |          |   V      |
19+25      4.0427     2.06  | Q        |          |          |   V      |
19+30      4.0568     2.04  | Q        |          |          |   V      |
19+35      4.0707     2.03  | Q        |          |          |   V      |
19+40      4.0845     2.01  | Q        |          |          |   V      |
19+45      4.0982     1.99  | Q        |          |          |   V      |
19+50      4.1118     1.97  | Q        |          |          |   V      |
19+55      4.1253     1.96  | Q        |          |          |   V      |
20+ 0      4.1386     1.94  | Q        |          |          |    V     |
20+ 5      4.1519     1.92  | Q        |          |          |    V     |
20+10      4.1650     1.91  | Q        |          |          |    V     |
20+15      4.1781     1.89  | Q        |          |          |    V     |
20+20      4.1910     1.88  | Q        |          |          |    V     |
20+25      4.2039     1.87  | Q        |          |          |    V     |
20+30      4.2166     1.85  | Q        |          |          |    V     |
20+35      4.2293     1.84  | Q        |          |          |    V     |
20+40      4.2418     1.83  | Q        |          |          |    V     |
20+45      4.2543     1.81  | Q        |          |          |     V    |
20+50      4.2667     1.80  | Q        |          |          |     V    |
20+55      4.2790     1.79  | Q        |          |          |     V    |
21+ 0      4.2913     1.78  | Q        |          |          |     V    |
21+ 5      4.3034     1.77  | Q        |          |          |     V    |
21+10      4.3155     1.75  | Q        |          |          |     V    |
21+15      4.3275     1.74  | Q        |          |          |     V    |
21+20      4.3395     1.73  | Q        |          |          |     V    |
21+25      4.3513     1.72  | Q        |          |          |     V    |
21+30      4.3631     1.71  | Q        |          |          |      V   |
21+35      4.3749     1.70  | Q        |          |          |      V   |
21+40      4.3865     1.69  | Q        |          |          |      V   |
21+45      4.3981     1.68  | Q        |          |          |      V   |
21+50      4.4096     1.67  | Q        |          |          |      V   |
21+55      4.4211     1.67  | Q        |          |          |      V   |
22+ 0      4.4325     1.66  | Q        |          |          |      V   |
22+ 5      4.4439     1.65  | Q        |          |          |      V   |
22+10      4.4551     1.64  | Q        |          |          |      V   |
22+15      4.4664     1.63  | Q        |          |          |      V   |
22+20      4.4775     1.62  | Q        |          |          |      V   |
```

```
   22+25       4.4887      1.61  | Q       |         |         |       V |
   22+30       4.4997      1.61  | Q       |         |         |       V |
   22+35       4.5107      1.60  | Q       |         |         |       V |
   22+40       4.5217      1.59  | Q       |         |         |       V |
   22+45       4.5326      1.58  | Q       |         |         |       V |
   22+50       4.5434      1.58  | Q       |         |         |       V |
   22+55       4.5542      1.57  | Q       |         |         |       V |
   23+ 0       4.5650      1.56  | Q       |         |         |       V |
   23+ 5       4.5757      1.55  | Q       |         |         |       V |
   23+10       4.5863      1.55  | Q       |         |         |       V |
   23+15       4.5970      1.54  | Q       |         |         |       V |
   23+20       4.6075      1.53  | Q       |         |         |        V|
   23+25       4.6180      1.53  | Q       |         |         |        V|
   23+30       4.6285      1.52  | Q       |         |         |        V|
   23+35       4.6389      1.51  | Q       |         |         |        V|
   23+40       4.6493      1.51  | Q       |         |         |        V|
   23+45       4.6597      1.50  | Q       |         |         |        V|
   23+50       4.6700      1.50  |Q        |         |         |        V|
   23+55       4.6802      1.49  |Q        |         |         |        V|
   24+ 0       4.6904      1.48  |Q        |         |         |        V|
   24+ 5       4.7002      1.41  |Q        |         |         |        V|
   24+10       4.7074      1.05  |Q        |         |         |        V|
   24+15       4.7109      0.50  Q         |         |         |        V|
   24+20       4.7129      0.30  Q         |         |         |        V|
   24+25       4.7142      0.18  Q         |         |         |        V|
   24+30       4.7149      0.11  Q         |         |         |        V|
   24+35       4.7153      0.06  Q         |         |         |        V|
   24+40       4.7156      0.03  Q         |         |         |        V|
   24+45       4.7157      0.02  Q         |         |         |        V|
   24+50       4.7158      0.01  Q         |         |         |        V|
   24+55       4.7159      0.01  Q         |         |         |        V|
   25+ 0       4.7159      0.00  Q         |         |         |        V|
   25+ 5       4.7159      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'B' – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
25 YEAR 24 HOUR STORM
DECEMBER 16, 2024
----------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            11.61           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            11.61           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            11.61          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            11.61           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            11.61           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            11.61          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      78.0         11.61      1.000     0.404    1.000    0.404

Area-averaged adjusted loss rate Fm (In/Hr) =  0.404

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 11.61 | 1.000 | 78.0 | 78.0 | 2.82 | 0.707 |

Area-averaged catchment yield fraction, Y = 0.707
Area-averaged low loss fraction, Yb = 0.293
User entry of time of concentration = 0.196 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 11.61(Ac.)
Catchment Lag time = 0.157 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 53.1924
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.404(In/Hr)
Average low loss rate fraction (Yb) = 0.293 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 11.61(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.569(In)
30-minute factor = 0.999 Adjusted rainfall = 0.973(In)
1-hour factor = 0.999 Adjusted rainfall = 1.198(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 140.41 (CFS)) | |
| 1 | 4.677 | 6.567 |
| 2 | 28.694 | 33.722 |
| 3 | 65.919 | 52.267 |
| 4 | 79.678 | 19.320 |
| 5 | 87.633 | 11.169 |
| 6 | 92.737 | 7.167 |
| 7 | 95.953 | 4.516 |
| 8 | 97.772 | 2.553 |
| 9 | 98.510 | 1.037 |
| 10 | 99.015 | 0.709 |
| 11 | 99.374 | 0.505 |
| 12 | 99.739 | 0.511 |
| 13 | 99.927 | 0.265 |
| 14 | 100.000 | 0.102 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5686 | 0.5686 |
| 2 | 0.7000 | 0.1314 |
| 3 | 0.7906 | 0.0905 |
| 4 | 0.8619 | 0.0713 |
| 5 | 0.9215 | 0.0597 |
| 6 | 0.9733 | 0.0518 |
| 7 | 1.0194 | 0.0461 |
| 8 | 1.0611 | 0.0417 |
| 9 | 1.0992 | 0.0382 |
| 10 | 1.1345 | 0.0353 |
| 11 | 1.1674 | 0.0329 |
| 12 | 1.1983 | 0.0309 |

| | | |
|---|---|---|
| 13 | 1.2589 | 0.0606 |
| 14 | 1.3177 | 0.0588 |
| 15 | 1.3750 | 0.0572 |
| 16 | 1.4308 | 0.0558 |
| 17 | 1.4852 | 0.0545 |
| 18 | 1.5385 | 0.0532 |
| 19 | 1.5906 | 0.0521 |
| 20 | 1.6417 | 0.0511 |
| 21 | 1.6918 | 0.0501 |
| 22 | 1.7410 | 0.0492 |
| 23 | 1.7893 | 0.0483 |
| 24 | 1.8369 | 0.0475 |
| 25 | 1.8837 | 0.0468 |
| 26 | 1.9297 | 0.0461 |
| 27 | 1.9752 | 0.0454 |
| 28 | 2.0199 | 0.0448 |
| 29 | 2.0641 | 0.0442 |
| 30 | 2.1076 | 0.0436 |
| 31 | 2.1507 | 0.0430 |
| 32 | 2.1932 | 0.0425 |
| 33 | 2.2351 | 0.0420 |
| 34 | 2.2766 | 0.0415 |
| 35 | 2.3177 | 0.0410 |
| 36 | 2.3583 | 0.0406 |
| 37 | 2.3984 | 0.0401 |
| 38 | 2.4381 | 0.0397 |
| 39 | 2.4774 | 0.0393 |
| 40 | 2.5164 | 0.0389 |
| 41 | 2.5549 | 0.0386 |
| 42 | 2.5931 | 0.0382 |
| 43 | 2.6310 | 0.0379 |
| 44 | 2.6685 | 0.0375 |
| 45 | 2.7057 | 0.0372 |
| 46 | 2.7425 | 0.0369 |
| 47 | 2.7791 | 0.0366 |
| 48 | 2.8154 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8870 | 0.0357 |
| 51 | 2.9225 | 0.0354 |
| 52 | 2.9576 | 0.0352 |
| 53 | 2.9925 | 0.0349 |
| 54 | 3.0272 | 0.0346 |
| 55 | 3.0616 | 0.0344 |
| 56 | 3.0957 | 0.0342 |
| 57 | 3.1297 | 0.0339 |
| 58 | 3.1634 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2301 | 0.0333 |
| 61 | 3.2632 | 0.0330 |
| 62 | 3.2960 | 0.0328 |
| 63 | 3.3286 | 0.0326 |
| 64 | 3.3611 | 0.0324 |
| 65 | 3.3933 | 0.0322 |
| 66 | 3.4254 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4889 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5518 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6139 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6810 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7475 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8134 | 0.0329 |
| 79 | 3.8462 | 0.0327 |
| 80 | 3.8788 | 0.0326 |
| 81 | 3.9113 | 0.0325 |
| 82 | 3.9436 | 0.0323 |
| 83 | 3.9759 | 0.0322 |

| | | |
|---|---|---|
| 84 | 4.0079 | 0.0321 |
| 85 | 4.0399 | 0.0320 |
| 86 | 4.0718 | 0.0318 |
| 87 | 4.1035 | 0.0317 |
| 88 | 4.1351 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1979 | 0.0314 |
| 91 | 4.2292 | 0.0313 |
| 92 | 4.2603 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3223 | 0.0309 |
| 95 | 4.3531 | 0.0308 |
| 96 | 4.3838 | 0.0307 |
| 97 | 4.4144 | 0.0306 |
| 98 | 4.4449 | 0.0305 |
| 99 | 4.4753 | 0.0304 |
| 100 | 4.5056 | 0.0303 |
| 101 | 4.5358 | 0.0302 |
| 102 | 4.5659 | 0.0301 |
| 103 | 4.5959 | 0.0300 |
| 104 | 4.6258 | 0.0299 |
| 105 | 4.6556 | 0.0298 |
| 106 | 4.6853 | 0.0297 |
| 107 | 4.7149 | 0.0296 |
| 108 | 4.7445 | 0.0295 |
| 109 | 4.7739 | 0.0294 |
| 110 | 4.8033 | 0.0294 |
| 111 | 4.8325 | 0.0293 |
| 112 | 4.8617 | 0.0292 |
| 113 | 4.8908 | 0.0291 |
| 114 | 4.9198 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9776 | 0.0288 |
| 117 | 5.0064 | 0.0288 |
| 118 | 5.0350 | 0.0287 |
| 119 | 5.0636 | 0.0286 |
| 120 | 5.0922 | 0.0285 |
| 121 | 5.1206 | 0.0284 |
| 122 | 5.1490 | 0.0284 |
| 123 | 5.1773 | 0.0283 |
| 124 | 5.2055 | 0.0282 |
| 125 | 5.2336 | 0.0281 |
| 126 | 5.2617 | 0.0281 |
| 127 | 5.2897 | 0.0280 |
| 128 | 5.3176 | 0.0279 |
| 129 | 5.3455 | 0.0279 |
| 130 | 5.3733 | 0.0278 |
| 131 | 5.4010 | 0.0277 |
| 132 | 5.4286 | 0.0276 |
| 133 | 5.4562 | 0.0276 |
| 134 | 5.4837 | 0.0275 |
| 135 | 5.5111 | 0.0274 |
| 136 | 5.5385 | 0.0274 |
| 137 | 5.5658 | 0.0273 |
| 138 | 5.5930 | 0.0272 |
| 139 | 5.6202 | 0.0272 |
| 140 | 5.6473 | 0.0271 |
| 141 | 5.6744 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7283 | 0.0269 |
| 144 | 5.7551 | 0.0269 |
| 145 | 5.7819 | 0.0268 |
| 146 | 5.8087 | 0.0267 |
| 147 | 5.8353 | 0.0267 |
| 148 | 5.8620 | 0.0266 |
| 149 | 5.8885 | 0.0266 |
| 150 | 5.9150 | 0.0265 |
| 151 | 5.9415 | 0.0264 |
| 152 | 5.9678 | 0.0264 |
| 153 | 5.9942 | 0.0263 |
| 154 | 6.0204 | 0.0263 |

| | | |
|---|---|---|
| 155 | 6.0467 | 0.0262 |
| 156 | 6.0728 | 0.0262 |
| 157 | 6.0989 | 0.0261 |
| 158 | 6.1250 | 0.0260 |
| 159 | 6.1510 | 0.0260 |
| 160 | 6.1769 | 0.0259 |
| 161 | 6.2028 | 0.0259 |
| 162 | 6.2286 | 0.0258 |
| 163 | 6.2544 | 0.0258 |
| 164 | 6.2801 | 0.0257 |
| 165 | 6.3058 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3570 | 0.0256 |
| 168 | 6.3826 | 0.0255 |
| 169 | 6.4080 | 0.0255 |
| 170 | 6.4335 | 0.0254 |
| 171 | 6.4588 | 0.0254 |
| 172 | 6.4842 | 0.0253 |
| 173 | 6.5095 | 0.0253 |
| 174 | 6.5347 | 0.0252 |
| 175 | 6.5599 | 0.0252 |
| 176 | 6.5850 | 0.0251 |
| 177 | 6.6101 | 0.0251 |
| 178 | 6.6352 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6851 | 0.0250 |
| 181 | 6.7100 | 0.0249 |
| 182 | 6.7349 | 0.0249 |
| 183 | 6.7597 | 0.0248 |
| 184 | 6.7845 | 0.0248 |
| 185 | 6.8092 | 0.0247 |
| 186 | 6.8339 | 0.0247 |
| 187 | 6.8585 | 0.0246 |
| 188 | 6.8831 | 0.0246 |
| 189 | 6.9077 | 0.0246 |
| 190 | 6.9322 | 0.0245 |
| 191 | 6.9567 | 0.0245 |
| 192 | 6.9811 | 0.0244 |
| 193 | 7.0055 | 0.0244 |
| 194 | 7.0298 | 0.0243 |
| 195 | 7.0541 | 0.0243 |
| 196 | 7.0784 | 0.0243 |
| 197 | 7.1026 | 0.0242 |
| 198 | 7.1268 | 0.0242 |
| 199 | 7.1509 | 0.0241 |
| 200 | 7.1750 | 0.0241 |
| 201 | 7.1991 | 0.0241 |
| 202 | 7.2231 | 0.0240 |
| 203 | 7.2471 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2950 | 0.0239 |
| 206 | 7.3188 | 0.0239 |
| 207 | 7.3427 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3902 | 0.0238 |
| 210 | 7.4139 | 0.0237 |
| 211 | 7.4376 | 0.0237 |
| 212 | 7.4612 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5084 | 0.0236 |
| 215 | 7.5320 | 0.0235 |
| 216 | 7.5555 | 0.0235 |
| 217 | 7.5789 | 0.0235 |
| 218 | 7.6023 | 0.0234 |
| 219 | 7.6257 | 0.0234 |
| 220 | 7.6491 | 0.0234 |
| 221 | 7.6724 | 0.0233 |
| 222 | 7.6957 | 0.0233 |
| 223 | 7.7190 | 0.0233 |
| 224 | 7.7422 | 0.0232 |
| 225 | 7.7654 | 0.0232 |

| | | |
|---|---|---|
| 226 | 7.7885 | 0.0232 |
| 227 | 7.8116 | 0.0231 |
| 228 | 7.8347 | 0.0231 |
| 229 | 7.8578 | 0.0231 |
| 230 | 7.8808 | 0.0230 |
| 231 | 7.9038 | 0.0230 |
| 232 | 7.9267 | 0.0230 |
| 233 | 7.9496 | 0.0229 |
| 234 | 7.9725 | 0.0229 |
| 235 | 7.9954 | 0.0229 |
| 236 | 8.0182 | 0.0228 |
| 237 | 8.0410 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0865 | 0.0227 |
| 240 | 8.1092 | 0.0227 |
| 241 | 8.1318 | 0.0227 |
| 242 | 8.1545 | 0.0226 |
| 243 | 8.1771 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2222 | 0.0225 |
| 246 | 8.2447 | 0.0225 |
| 247 | 8.2672 | 0.0225 |
| 248 | 8.2896 | 0.0225 |
| 249 | 8.3121 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3568 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4015 | 0.0223 |
| 254 | 8.4237 | 0.0223 |
| 255 | 8.4460 | 0.0222 |
| 256 | 8.4682 | 0.0222 |
| 257 | 8.4904 | 0.0222 |
| 258 | 8.5126 | 0.0222 |
| 259 | 8.5347 | 0.0221 |
| 260 | 8.5568 | 0.0221 |
| 261 | 8.5789 | 0.0221 |
| 262 | 8.6009 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6669 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7108 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7545 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8199 | 0.0218 |
| 273 | 8.8417 | 0.0218 |
| 274 | 8.8634 | 0.0217 |
| 275 | 8.8851 | 0.0217 |
| 276 | 8.9068 | 0.0217 |
| 277 | 8.9284 | 0.0216 |
| 278 | 8.9501 | 0.0216 |
| 279 | 8.9717 | 0.0216 |
| 280 | 8.9932 | 0.0216 |
| 281 | 9.0148 | 0.0215 |
| 282 | 9.0363 | 0.0215 |
| 283 | 9.0578 | 0.0215 |
| 284 | 9.0793 | 0.0215 |
| 285 | 9.1007 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1649 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0063 | 0.0151 |
| 2 | 0.0214 | 0.0063 | 0.0151 |
| 3 | 0.0214 | 0.0063 | 0.0152 |

| | | | |
|---|---|---|---|
| 4 | 0.0215 | 0.0063 | 0.0152 |
| 5 | 0.0215 | 0.0063 | 0.0152 |
| 6 | 0.0215 | 0.0063 | 0.0152 |
| 7 | 0.0216 | 0.0063 | 0.0153 |
| 8 | 0.0216 | 0.0063 | 0.0153 |
| 9 | 0.0217 | 0.0064 | 0.0153 |
| 10 | 0.0217 | 0.0064 | 0.0153 |
| 11 | 0.0218 | 0.0064 | 0.0154 |
| 12 | 0.0218 | 0.0064 | 0.0154 |
| 13 | 0.0218 | 0.0064 | 0.0154 |
| 14 | 0.0219 | 0.0064 | 0.0154 |
| 15 | 0.0219 | 0.0064 | 0.0155 |
| 16 | 0.0219 | 0.0064 | 0.0155 |
| 17 | 0.0220 | 0.0065 | 0.0155 |
| 18 | 0.0220 | 0.0065 | 0.0156 |
| 19 | 0.0221 | 0.0065 | 0.0156 |
| 20 | 0.0221 | 0.0065 | 0.0156 |
| 21 | 0.0222 | 0.0065 | 0.0157 |
| 22 | 0.0222 | 0.0065 | 0.0157 |
| 23 | 0.0222 | 0.0065 | 0.0157 |
| 24 | 0.0223 | 0.0065 | 0.0157 |
| 25 | 0.0223 | 0.0066 | 0.0158 |
| 26 | 0.0224 | 0.0066 | 0.0158 |
| 27 | 0.0224 | 0.0066 | 0.0158 |
| 28 | 0.0225 | 0.0066 | 0.0159 |
| 29 | 0.0225 | 0.0066 | 0.0159 |
| 30 | 0.0225 | 0.0066 | 0.0159 |
| 31 | 0.0226 | 0.0066 | 0.0160 |
| 32 | 0.0226 | 0.0066 | 0.0160 |
| 33 | 0.0227 | 0.0067 | 0.0160 |
| 34 | 0.0227 | 0.0067 | 0.0161 |
| 35 | 0.0228 | 0.0067 | 0.0161 |
| 36 | 0.0228 | 0.0067 | 0.0161 |
| 37 | 0.0229 | 0.0067 | 0.0162 |
| 38 | 0.0229 | 0.0067 | 0.0162 |
| 39 | 0.0230 | 0.0067 | 0.0162 |
| 40 | 0.0230 | 0.0068 | 0.0163 |
| 41 | 0.0231 | 0.0068 | 0.0163 |
| 42 | 0.0231 | 0.0068 | 0.0163 |
| 43 | 0.0232 | 0.0068 | 0.0164 |
| 44 | 0.0232 | 0.0068 | 0.0164 |
| 45 | 0.0233 | 0.0068 | 0.0165 |
| 46 | 0.0233 | 0.0068 | 0.0165 |
| 47 | 0.0234 | 0.0069 | 0.0165 |
| 48 | 0.0234 | 0.0069 | 0.0166 |
| 49 | 0.0235 | 0.0069 | 0.0166 |
| 50 | 0.0235 | 0.0069 | 0.0166 |
| 51 | 0.0236 | 0.0069 | 0.0167 |
| 52 | 0.0236 | 0.0069 | 0.0167 |
| 53 | 0.0237 | 0.0070 | 0.0168 |
| 54 | 0.0238 | 0.0070 | 0.0168 |
| 55 | 0.0238 | 0.0070 | 0.0168 |
| 56 | 0.0239 | 0.0070 | 0.0169 |
| 57 | 0.0239 | 0.0070 | 0.0169 |
| 58 | 0.0240 | 0.0070 | 0.0169 |
| 59 | 0.0241 | 0.0071 | 0.0170 |
| 60 | 0.0241 | 0.0071 | 0.0170 |
| 61 | 0.0242 | 0.0071 | 0.0171 |
| 62 | 0.0242 | 0.0071 | 0.0171 |
| 63 | 0.0243 | 0.0071 | 0.0172 |
| 64 | 0.0243 | 0.0071 | 0.0172 |
| 65 | 0.0244 | 0.0072 | 0.0173 |
| 66 | 0.0245 | 0.0072 | 0.0173 |
| 67 | 0.0246 | 0.0072 | 0.0174 |
| 68 | 0.0246 | 0.0072 | 0.0174 |
| 69 | 0.0247 | 0.0072 | 0.0174 |
| 70 | 0.0247 | 0.0073 | 0.0175 |
| 71 | 0.0248 | 0.0073 | 0.0175 |
| 72 | 0.0249 | 0.0073 | 0.0176 |
| 73 | 0.0250 | 0.0073 | 0.0176 |
| 74 | 0.0250 | 0.0073 | 0.0177 |

| | | | |
|---|---|---|---|
| 75 | 0.0251 | 0.0074 | 0.0177 |
| 76 | 0.0251 | 0.0074 | 0.0178 |
| 77 | 0.0252 | 0.0074 | 0.0178 |
| 78 | 0.0253 | 0.0074 | 0.0179 |
| 79 | 0.0254 | 0.0074 | 0.0179 |
| 80 | 0.0254 | 0.0075 | 0.0180 |
| 81 | 0.0255 | 0.0075 | 0.0180 |
| 82 | 0.0256 | 0.0075 | 0.0181 |
| 83 | 0.0257 | 0.0075 | 0.0181 |
| 84 | 0.0257 | 0.0075 | 0.0182 |
| 85 | 0.0258 | 0.0076 | 0.0183 |
| 86 | 0.0259 | 0.0076 | 0.0183 |
| 87 | 0.0260 | 0.0076 | 0.0184 |
| 88 | 0.0260 | 0.0076 | 0.0184 |
| 89 | 0.0262 | 0.0077 | 0.0185 |
| 90 | 0.0262 | 0.0077 | 0.0185 |
| 91 | 0.0263 | 0.0077 | 0.0186 |
| 92 | 0.0264 | 0.0077 | 0.0186 |
| 93 | 0.0265 | 0.0078 | 0.0187 |
| 94 | 0.0266 | 0.0078 | 0.0188 |
| 95 | 0.0267 | 0.0078 | 0.0189 |
| 96 | 0.0267 | 0.0078 | 0.0189 |
| 97 | 0.0269 | 0.0079 | 0.0190 |
| 98 | 0.0269 | 0.0079 | 0.0190 |
| 99 | 0.0270 | 0.0079 | 0.0191 |
| 100 | 0.0271 | 0.0080 | 0.0192 |
| 101 | 0.0272 | 0.0080 | 0.0192 |
| 102 | 0.0273 | 0.0080 | 0.0193 |
| 103 | 0.0274 | 0.0080 | 0.0194 |
| 104 | 0.0275 | 0.0081 | 0.0194 |
| 105 | 0.0276 | 0.0081 | 0.0195 |
| 106 | 0.0277 | 0.0081 | 0.0196 |
| 107 | 0.0279 | 0.0082 | 0.0197 |
| 108 | 0.0279 | 0.0082 | 0.0197 |
| 109 | 0.0281 | 0.0082 | 0.0198 |
| 110 | 0.0281 | 0.0083 | 0.0199 |
| 111 | 0.0283 | 0.0083 | 0.0200 |
| 112 | 0.0284 | 0.0083 | 0.0200 |
| 113 | 0.0285 | 0.0084 | 0.0202 |
| 114 | 0.0286 | 0.0084 | 0.0202 |
| 115 | 0.0288 | 0.0084 | 0.0203 |
| 116 | 0.0288 | 0.0085 | 0.0204 |
| 117 | 0.0290 | 0.0085 | 0.0205 |
| 118 | 0.0291 | 0.0085 | 0.0206 |
| 119 | 0.0293 | 0.0086 | 0.0207 |
| 120 | 0.0294 | 0.0086 | 0.0207 |
| 121 | 0.0295 | 0.0087 | 0.0209 |
| 122 | 0.0296 | 0.0087 | 0.0209 |
| 123 | 0.0298 | 0.0087 | 0.0211 |
| 124 | 0.0299 | 0.0088 | 0.0211 |
| 125 | 0.0301 | 0.0088 | 0.0213 |
| 126 | 0.0302 | 0.0089 | 0.0213 |
| 127 | 0.0304 | 0.0089 | 0.0215 |
| 128 | 0.0305 | 0.0089 | 0.0216 |
| 129 | 0.0307 | 0.0090 | 0.0217 |
| 130 | 0.0308 | 0.0090 | 0.0218 |
| 131 | 0.0310 | 0.0091 | 0.0219 |
| 132 | 0.0311 | 0.0091 | 0.0220 |
| 133 | 0.0314 | 0.0092 | 0.0222 |
| 134 | 0.0315 | 0.0092 | 0.0222 |
| 135 | 0.0317 | 0.0093 | 0.0224 |
| 136 | 0.0318 | 0.0093 | 0.0225 |
| 137 | 0.0321 | 0.0094 | 0.0227 |
| 138 | 0.0322 | 0.0094 | 0.0228 |
| 139 | 0.0325 | 0.0095 | 0.0230 |
| 140 | 0.0326 | 0.0096 | 0.0230 |
| 141 | 0.0329 | 0.0096 | 0.0232 |
| 142 | 0.0330 | 0.0097 | 0.0233 |
| 143 | 0.0333 | 0.0098 | 0.0235 |
| 144 | 0.0335 | 0.0098 | 0.0237 |
| 145 | 0.0310 | 0.0091 | 0.0219 |

| | | | |
|---|---|---|---|
| 146 | 0.0312 | 0.0091 | 0.0220 |
| 147 | 0.0315 | 0.0092 | 0.0223 |
| 148 | 0.0317 | 0.0093 | 0.0224 |
| 149 | 0.0321 | 0.0094 | 0.0227 |
| 150 | 0.0322 | 0.0095 | 0.0228 |
| 151 | 0.0326 | 0.0096 | 0.0231 |
| 152 | 0.0328 | 0.0096 | 0.0232 |
| 153 | 0.0333 | 0.0098 | 0.0235 |
| 154 | 0.0335 | 0.0098 | 0.0237 |
| 155 | 0.0339 | 0.0100 | 0.0240 |
| 156 | 0.0342 | 0.0100 | 0.0241 |
| 157 | 0.0346 | 0.0102 | 0.0245 |
| 158 | 0.0349 | 0.0102 | 0.0247 |
| 159 | 0.0354 | 0.0104 | 0.0250 |
| 160 | 0.0357 | 0.0105 | 0.0252 |
| 161 | 0.0363 | 0.0106 | 0.0256 |
| 162 | 0.0366 | 0.0107 | 0.0258 |
| 163 | 0.0372 | 0.0109 | 0.0263 |
| 164 | 0.0375 | 0.0110 | 0.0265 |
| 165 | 0.0382 | 0.0112 | 0.0270 |
| 166 | 0.0386 | 0.0113 | 0.0272 |
| 167 | 0.0393 | 0.0115 | 0.0278 |
| 168 | 0.0397 | 0.0116 | 0.0281 |
| 169 | 0.0406 | 0.0119 | 0.0287 |
| 170 | 0.0410 | 0.0120 | 0.0290 |
| 171 | 0.0420 | 0.0123 | 0.0297 |
| 172 | 0.0425 | 0.0125 | 0.0300 |
| 173 | 0.0436 | 0.0128 | 0.0308 |
| 174 | 0.0442 | 0.0130 | 0.0312 |
| 175 | 0.0454 | 0.0133 | 0.0321 |
| 176 | 0.0461 | 0.0135 | 0.0326 |
| 177 | 0.0475 | 0.0139 | 0.0336 |
| 178 | 0.0483 | 0.0142 | 0.0342 |
| 179 | 0.0501 | 0.0147 | 0.0354 |
| 180 | 0.0511 | 0.0150 | 0.0361 |
| 181 | 0.0532 | 0.0156 | 0.0376 |
| 182 | 0.0545 | 0.0160 | 0.0385 |
| 183 | 0.0572 | 0.0168 | 0.0404 |
| 184 | 0.0588 | 0.0173 | 0.0416 |
| 185 | 0.0309 | 0.0091 | 0.0218 |
| 186 | 0.0329 | 0.0097 | 0.0233 |
| 187 | 0.0382 | 0.0112 | 0.0270 |
| 188 | 0.0417 | 0.0122 | 0.0294 |
| 189 | 0.0518 | 0.0152 | 0.0366 |
| 190 | 0.0597 | 0.0175 | 0.0422 |
| 191 | 0.0905 | 0.0266 | 0.0640 |
| 192 | 0.1314 | 0.0336 | 0.0978 |
| 193 | 0.5686 | 0.0336 | 0.5350 |
| 194 | 0.0713 | 0.0209 | 0.0504 |
| 195 | 0.0461 | 0.0135 | 0.0326 |
| 196 | 0.0353 | 0.0104 | 0.0249 |
| 197 | 0.0606 | 0.0178 | 0.0428 |
| 198 | 0.0558 | 0.0164 | 0.0394 |
| 199 | 0.0521 | 0.0153 | 0.0368 |
| 200 | 0.0492 | 0.0144 | 0.0348 |
| 201 | 0.0468 | 0.0137 | 0.0331 |
| 202 | 0.0448 | 0.0131 | 0.0316 |
| 203 | 0.0430 | 0.0126 | 0.0304 |
| 204 | 0.0415 | 0.0122 | 0.0293 |
| 205 | 0.0401 | 0.0118 | 0.0284 |
| 206 | 0.0389 | 0.0114 | 0.0275 |
| 207 | 0.0379 | 0.0111 | 0.0267 |
| 208 | 0.0369 | 0.0108 | 0.0261 |
| 209 | 0.0360 | 0.0106 | 0.0254 |
| 210 | 0.0352 | 0.0103 | 0.0248 |
| 211 | 0.0344 | 0.0101 | 0.0243 |
| 212 | 0.0337 | 0.0099 | 0.0238 |
| 213 | 0.0330 | 0.0097 | 0.0234 |
| 214 | 0.0324 | 0.0095 | 0.0229 |
| 215 | 0.0319 | 0.0093 | 0.0225 |
| 216 | 0.0313 | 0.0092 | 0.0221 |

| | | | |
|---|---|---|---|
| 217 | 0.0336 | 0.0099 | 0.0238 |
| 218 | 0.0332 | 0.0097 | 0.0234 |
| 219 | 0.0327 | 0.0096 | 0.0231 |
| 220 | 0.0323 | 0.0095 | 0.0229 |
| 221 | 0.0320 | 0.0094 | 0.0226 |
| 222 | 0.0316 | 0.0093 | 0.0223 |
| 223 | 0.0313 | 0.0092 | 0.0221 |
| 224 | 0.0309 | 0.0091 | 0.0219 |
| 225 | 0.0306 | 0.0090 | 0.0216 |
| 226 | 0.0303 | 0.0089 | 0.0214 |
| 227 | 0.0300 | 0.0088 | 0.0212 |
| 228 | 0.0297 | 0.0087 | 0.0210 |
| 229 | 0.0294 | 0.0086 | 0.0208 |
| 230 | 0.0292 | 0.0086 | 0.0206 |
| 231 | 0.0289 | 0.0085 | 0.0204 |
| 232 | 0.0287 | 0.0084 | 0.0203 |
| 233 | 0.0284 | 0.0083 | 0.0201 |
| 234 | 0.0282 | 0.0083 | 0.0199 |
| 235 | 0.0280 | 0.0082 | 0.0198 |
| 236 | 0.0278 | 0.0081 | 0.0196 |
| 237 | 0.0276 | 0.0081 | 0.0195 |
| 238 | 0.0274 | 0.0080 | 0.0193 |
| 239 | 0.0272 | 0.0080 | 0.0192 |
| 240 | 0.0270 | 0.0079 | 0.0191 |
| 241 | 0.0268 | 0.0079 | 0.0189 |
| 242 | 0.0266 | 0.0078 | 0.0188 |
| 243 | 0.0264 | 0.0078 | 0.0187 |
| 244 | 0.0263 | 0.0077 | 0.0186 |
| 245 | 0.0261 | 0.0077 | 0.0184 |
| 246 | 0.0259 | 0.0076 | 0.0183 |
| 247 | 0.0258 | 0.0076 | 0.0182 |
| 248 | 0.0256 | 0.0075 | 0.0181 |
| 249 | 0.0255 | 0.0075 | 0.0180 |
| 250 | 0.0253 | 0.0074 | 0.0179 |
| 251 | 0.0252 | 0.0074 | 0.0178 |
| 252 | 0.0250 | 0.0073 | 0.0177 |
| 253 | 0.0249 | 0.0073 | 0.0176 |
| 254 | 0.0248 | 0.0073 | 0.0175 |
| 255 | 0.0246 | 0.0072 | 0.0174 |
| 256 | 0.0245 | 0.0072 | 0.0173 |
| 257 | 0.0244 | 0.0072 | 0.0172 |
| 258 | 0.0243 | 0.0071 | 0.0171 |
| 259 | 0.0241 | 0.0071 | 0.0171 |
| 260 | 0.0240 | 0.0070 | 0.0170 |
| 261 | 0.0239 | 0.0070 | 0.0169 |
| 262 | 0.0238 | 0.0070 | 0.0168 |
| 263 | 0.0237 | 0.0069 | 0.0167 |
| 264 | 0.0236 | 0.0069 | 0.0167 |
| 265 | 0.0235 | 0.0069 | 0.0166 |
| 266 | 0.0234 | 0.0069 | 0.0165 |
| 267 | 0.0233 | 0.0068 | 0.0164 |
| 268 | 0.0232 | 0.0068 | 0.0164 |
| 269 | 0.0231 | 0.0068 | 0.0163 |
| 270 | 0.0230 | 0.0067 | 0.0162 |
| 271 | 0.0229 | 0.0067 | 0.0162 |
| 272 | 0.0228 | 0.0067 | 0.0161 |
| 273 | 0.0227 | 0.0066 | 0.0160 |
| 274 | 0.0226 | 0.0066 | 0.0160 |
| 275 | 0.0225 | 0.0066 | 0.0159 |
| 276 | 0.0224 | 0.0066 | 0.0158 |
| 277 | 0.0223 | 0.0065 | 0.0158 |
| 278 | 0.0222 | 0.0065 | 0.0157 |
| 279 | 0.0221 | 0.0065 | 0.0156 |
| 280 | 0.0221 | 0.0065 | 0.0156 |
| 281 | 0.0220 | 0.0064 | 0.0155 |
| 282 | 0.0219 | 0.0064 | 0.0155 |
| 283 | 0.0218 | 0.0064 | 0.0154 |
| 284 | 0.0217 | 0.0064 | 0.0154 |
| 285 | 0.0216 | 0.0063 | 0.0153 |
| 286 | 0.0216 | 0.0063 | 0.0152 |
| 287 | 0.0215 | 0.0063 | 0.0152 |

```
      288             0.0214          0.0063             0.0151
      ------------------------------------------------------------------------
      ------------------------------------------------------------------------
      Total soil rain loss =      2.55(In)
      Total effective rainfall =      6.61(In)
      Peak flow rate in flood hydrograph =     33.11(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                          24 - H O U R    S T O R M
                     R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       10.0      20.0      30.0      40.0
----------------------------------------------------------------------------
  0+ 5       0.0007      0.10  Q         |         |         |         |
  0+10       0.0049      0.61  Q         |         |         |         |
  0+15       0.0145      1.40  VQ        |         |         |         |
  0+20       0.0262      1.69  VQ        |         |         |         |
  0+25       0.0390      1.86  VQ        |         |         |         |
  0+30       0.0526      1.98  VQ        |         |         |         |
  0+35       0.0667      2.05  V Q       |         |         |         |
  0+40       0.0811      2.09  V Q       |         |         |         |
  0+45       0.0956      2.11  V Q       |         |         |         |
  0+50       0.1103      2.12  V Q       |         |         |         |
  0+55       0.1250      2.14  V Q       |         |         |         |
  1+ 0       0.1398      2.15  V Q       |         |         |         |
  1+ 5       0.1546      2.15  V Q       |         |         |         |
  1+10       0.1695      2.16  |VQ       |         |         |         |
  1+15       0.1844      2.16  |VQ       |         |         |         |
  1+20       0.1993      2.17  |VQ       |         |         |         |
  1+25       0.2143      2.17  |VQ       |         |         |         |
  1+30       0.2292      2.18  |VQ       |         |         |         |
  1+35       0.2443      2.18  |VQ       |         |         |         |
  1+40       0.2593      2.18  |VQ       |         |         |         |
  1+45       0.2744      2.19  |VQ       |         |         |         |
  1+50       0.2895      2.19  |VQ       |         |         |         |
  1+55       0.3046      2.20  |VQ       |         |         |         |
  2+ 0       0.3197      2.20  |VQ       |         |         |         |
  2+ 5       0.3349      2.20  | Q       |         |         |         |
  2+10       0.3501      2.21  | Q       |         |         |         |
  2+15       0.3654      2.21  | Q       |         |         |         |
  2+20       0.3807      2.22  | Q       |         |         |         |
  2+25       0.3960      2.22  | Q       |         |         |         |
  2+30       0.4113      2.23  | Q       |         |         |         |
  2+35       0.4267      2.23  | Q       |         |         |         |
  2+40       0.4421      2.24  | Q       |         |         |         |
  2+45       0.4575      2.24  | Q       |         |         |         |
  2+50       0.4729      2.24  | Q       |         |         |         |
  2+55       0.4884      2.25  | QV      |         |         |         |
  3+ 0       0.5040      2.25  | QV      |         |         |         |
  3+ 5       0.5195      2.26  | QV      |         |         |         |
  3+10       0.5351      2.26  | QV      |         |         |         |
  3+15       0.5507      2.27  | QV      |         |         |         |
  3+20       0.5664      2.27  | QV      |         |         |         |
  3+25       0.5820      2.28  | QV      |         |         |         |
  3+30       0.5978      2.28  | QV      |         |         |         |
  3+35       0.6135      2.29  | QV      |         |         |         |
  3+40       0.6293      2.29  | QV      |         |         |         |
  3+45       0.6451      2.30  | Q V     |         |         |         |
  3+50       0.6610      2.30  | Q V     |         |         |         |
  3+55       0.6769      2.31  | Q V     |         |         |         |
  4+ 0       0.6928      2.31  | Q V     |         |         |         |
  4+ 5       0.7088      2.32  | Q V     |         |         |         |
  4+10       0.7248      2.32  | Q V     |         |         |         |
  4+15       0.7408      2.33  | Q V     |         |         |         |
  4+20       0.7569      2.33  | Q V     |         |         |         |
  4+25       0.7730      2.34  | Q V     |         |         |         |
  4+30       0.7891      2.34  | Q V     |         |         |         |
  4+35       0.8053      2.35  | Q  V    |         |         |         |
```

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 4+40      0.8215      2.36  | Q  V    |         |         |         |
 4+45      0.8378      2.36  | Q  V    |         |         |         |
 4+50      0.8541      2.37  | Q  V    |         |         |         |
 4+55      0.8704      2.37  | Q  V    |         |         |         |
 5+ 0      0.8868      2.38  | Q  V    |         |         |         |
 5+ 5      0.9032      2.38  | Q  V    |         |         |         |
 5+10      0.9197      2.39  | Q  V    |         |         |         |
 5+15      0.9362      2.40  | Q  V    |         |         |         |
 5+20      0.9527      2.40  | Q  V    |         |         |         |
 5+25      0.9693      2.41  | Q   V   |         |         |         |
 5+30      0.9859      2.41  | Q   V   |         |         |         |
 5+35      1.0026      2.42  | Q   V   |         |         |         |
 5+40      1.0193      2.43  | Q   V   |         |         |         |
 5+45      1.0360      2.43  | Q   V   |         |         |         |
 5+50      1.0528      2.44  | Q   V   |         |         |         |
 5+55      1.0697      2.45  | Q   V   |         |         |         |
 6+ 0      1.0866      2.45  | Q   V   |         |         |         |
 6+ 5      1.1035      2.46  | Q   V   |         |         |         |
 6+10      1.1205      2.46  | Q    V  |         |         |         |
 6+15      1.1375      2.47  | Q    V  |         |         |         |
 6+20      1.1546      2.48  | Q    V  |         |         |         |
 6+25      1.1717      2.49  | Q    V  |         |         |         |
 6+30      1.1888      2.49  | Q    V  |         |         |         |
 6+35      1.2061      2.50  | Q    V  |         |         |         |
 6+40      1.2233      2.51  | Q    V  |         |         |         |
 6+45      1.2406      2.51  | Q    V  |         |         |         |
 6+50      1.2580      2.52  | Q    V  |         |         |         |
 6+55      1.2754      2.53  | Q    V  |         |         |         |
 7+ 0      1.2929      2.54  | Q     V |         |         |         |
 7+ 5      1.3104      2.54  | Q     V |         |         |         |
 7+10      1.3279      2.55  | Q     V |         |         |         |
 7+15      1.3456      2.56  | Q     V |         |         |         |
 7+20      1.3632      2.57  | Q     V |         |         |         |
 7+25      1.3810      2.57  | Q     V |         |         |         |
 7+30      1.3988      2.58  | Q     V |         |         |         |
 7+35      1.4166      2.59  | Q     V |         |         |         |
 7+40      1.4345      2.60  | Q     V |         |         |         |
 7+45      1.4524      2.61  | Q      V|         |         |         |
 7+50      1.4705      2.62  | Q      V|         |         |         |
 7+55      1.4885      2.62  | Q      V|         |         |         |
 8+ 0      1.5067      2.63  | Q      V|         |         |         |
 8+ 5      1.5249      2.64  | Q      V|         |         |         |
 8+10      1.5431      2.65  | Q      V|         |         |         |
 8+15      1.5614      2.66  | Q      V|         |         |         |
 8+20      1.5798      2.67  | Q      V|         |         |         |
 8+25      1.5982      2.68  | Q      V|         |         |         |
 8+30      1.6167      2.69  | Q       V         |         |         |
 8+35      1.6353      2.70  | Q       V         |         |         |
 8+40      1.6539      2.71  | Q       V         |         |         |
 8+45      1.6727      2.72  | Q       V         |         |         |
 8+50      1.6914      2.73  | Q       V         |         |         |
 8+55      1.7103      2.74  | Q       V         |         |         |
 9+ 0      1.7292      2.75  | Q       V         |         |         |
 9+ 5      1.7482      2.76  | Q       V         |         |         |
 9+10      1.7672      2.77  | Q       |V        |         |         |
 9+15      1.7864      2.78  | Q       |V        |         |         |
 9+20      1.8056      2.79  | Q       |V        |         |         |
 9+25      1.8249      2.80  | Q       |V        |         |         |
 9+30      1.8442      2.81  | Q       |V        |         |         |
 9+35      1.8637      2.82  | Q       |V        |         |         |
 9+40      1.8832      2.83  | Q       |V        |         |         |
 9+45      1.9028      2.85  | Q       |V        |         |         |
 9+50      1.9225      2.86  | Q       | V       |         |         |
 9+55      1.9422      2.87  | Q       | V       |         |         |
10+ 0      1.9621      2.88  | Q       | V       |         |         |
10+ 5      1.9821      2.90  | Q       | V       |         |         |
10+10      2.0021      2.91  | Q       | V       |         |         |
10+15      2.0222      2.92  | Q       | V       |         |         |
10+20      2.0424      2.94  | Q       | V       |         |         |
10+25      2.0627      2.95  | Q       | V       |         |         |
10+30      2.0831      2.96  | Q       |  V      |         |         |
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10+35      2.1036     2.98  | Q       |  V      |         |         |
10+40      2.1242     2.99  | Q       |  V      |         |         |
10+45      2.1450     3.01  |  Q      |  V      |         |         |
10+50      2.1658     3.02  |  Q      |  V      |         |         |
10+55      2.1867     3.04  |  Q      |  V      |         |         |
11+ 0      2.2077     3.05  |  Q      |  V      |         |         |
11+ 5      2.2288     3.07  |  Q      |  V      |         |         |
11+10      2.2501     3.08  |  Q      |   V     |         |         |
11+15      2.2714     3.10  |  Q      |   V     |         |         |
11+20      2.2929     3.12  |  Q      |   V     |         |         |
11+25      2.3145     3.14  |  Q      |   V     |         |         |
11+30      2.3363     3.15  |  Q      |   V     |         |         |
11+35      2.3581     3.17  |  Q      |   V     |         |         |
11+40      2.3801     3.19  |  Q      |   V     |         |         |
11+45      2.4022     3.21  |  Q      |    V    |         |         |
11+50      2.4244     3.23  |  Q      |    V    |         |         |
11+55      2.4468     3.25  |  Q      |    V    |         |         |
12+ 0      2.4694     3.27  |  Q      |    V    |         |         |
12+ 5      2.4919     3.28  |  Q      |    V    |         |         |
12+10      2.5142     3.23  |  Q      |    V    |         |         |
12+15      2.5360     3.16  |  Q      |    V    |         |         |
12+20      2.5576     3.14  |  Q      |    V    |         |         |
12+25      2.5793     3.15  |  Q      |     V   |         |         |
12+30      2.6010     3.16  |  Q      |     V   |         |         |
12+35      2.6229     3.18  |  Q      |     V   |         |         |
12+40      2.6449     3.20  |  Q      |     V   |         |         |
12+45      2.6671     3.22  |  Q      |     V   |         |         |
12+50      2.6895     3.25  |  Q      |     V   |         |         |
12+55      2.7121     3.28  |  Q      |     V   |         |         |
13+ 0      2.7349     3.31  |  Q      |      V  |         |         |
13+ 5      2.7580     3.35  |  Q      |      V  |         |         |
13+10      2.7812     3.38  |  Q      |      V  |         |         |
13+15      2.8048     3.42  |  Q      |      V  |         |         |
13+20      2.8285     3.45  |  Q      |      V  |         |         |
13+25      2.8526     3.49  |  Q      |      V  |         |         |
13+30      2.8769     3.53  |  Q      |      V  |         |         |
13+35      2.9015     3.57  |  Q      |       V |         |         |
13+40      2.9264     3.62  |  Q      |       V |         |         |
13+45      2.9516     3.66  |  Q      |       V |         |         |
13+50      2.9772     3.71  |  Q      |       V |         |         |
13+55      3.0031     3.76  |  Q      |       V |         |         |
14+ 0      3.0293     3.81  |  Q      |       V |         |         |
14+ 5      3.0560     3.87  |  Q      |        V|         |         |
14+10      3.0830     3.93  |  Q      |        V|         |         |
14+15      3.1105     3.99  |  Q      |        V|         |         |
14+20      3.1384     4.05  |   Q     |        V|         |         |
14+25      3.1668     4.13  |   Q     |        V|         |         |
14+30      3.1957     4.20  |   Q     |        V|         |         |
14+35      3.2252     4.28  |   Q     |         V         |         |
14+40      3.2552     4.36  |   Q     |         V         |         |
14+45      3.2859     4.45  |   Q     |         V         |         |
14+50      3.3172     4.55  |   Q     |         V         |         |
14+55      3.3493     4.66  |   Q     |         V         |         |
15+ 0      3.3822     4.77  |   Q     |         |V        |         |
15+ 5      3.4159     4.90  |   Q     |         |V        |         |
15+10      3.4506     5.04  |    Q    |         |V        |         |
15+15      3.4864     5.20  |    Q    |         |V        |         |
15+20      3.5234     5.37  |    Q    |         | V       |         |
15+25      3.5608     5.43  |    Q    |         | V       |         |
15+30      3.5946     4.90  |   Q     |         | V       |         |
15+35      3.6221     4.00  |   Q     |         | V       |         |
15+40      3.6488     3.87  |  Q      |         | V       |         |
15+45      3.6765     4.03  |   Q     |         | V       |         |
15+50      3.7068     4.39  |   Q     |         |  V      |         |
15+55      3.7420     5.12  |    Q    |         |  V      |         |
16+ 0      3.7869     6.52  |     Q   |         |  V      |         |
16+ 5      3.8687    11.88  |         |Q        |   V     |         |
16+10      4.0461    25.75  |         |         |    Q    |         |
16+15      4.2741    33.11  |         |         |     V   |  Q      |
16+20      4.3854    16.15  |         |     Q   |      V  |         |
16+25      4.4609    10.96  |         |Q        |      V  |         |
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16+30       4.5211      8.74  |        Q |          |        V |          |
16+35       4.5749      7.82  |       Q  |          |        V |          |
16+40       4.6208      6.66  |      Q   |          |        V |          |
16+45       4.6601      5.70  |     Q    |          |         V|          |
16+50       4.6967      5.32  |     Q    |          |         V|          |
16+55       4.7314      5.03  |     Q    |          |         V|          |
17+ 0       4.7646      4.83  |    Q     |          |         V|          |
17+ 5       4.7957      4.52  |    Q     |          |         V|          |
17+10       4.8251      4.27  |    Q     |          |          V          |
17+15       4.8532      4.07  |    Q     |          |          V          |
17+20       4.8803      3.95  |   Q      |          |          V          |
17+25       4.9067      3.83  |   Q      |          |          V          |
17+30       4.9324      3.73  |   Q      |          |          V          |
17+35       4.9574      3.63  |   Q      |          |          |V         |
17+40       4.9818      3.54  |   Q      |          |          |V         |
17+45       5.0057      3.46  |   Q      |          |          |V         |
17+50       5.0290      3.39  |   Q      |          |          |V         |
17+55       5.0519      3.32  |   Q      |          |          |V         |
18+ 0       5.0743      3.26  |   Q      |          |          |V         |
18+ 5       5.0964      3.21  |   Q      |          |          |V         |
18+10       5.1186      3.22  |   Q      |          |          | V        |
18+15       5.1411      3.27  |   Q      |          |          | V        |
18+20       5.1636      3.26  |   Q      |          |          | V        |
18+25       5.1859      3.24  |   Q      |          |          | V        |
18+30       5.2081      3.21  |   Q      |          |          | V        |
18+35       5.2300      3.18  |   Q      |          |          | V        |
18+40       5.2517      3.15  |   Q      |          |          | V        |
18+45       5.2732      3.12  |   Q      |          |          | V        |
18+50       5.2944      3.08  |   Q      |          |          |  V       |
18+55       5.3154      3.05  |   Q      |          |          |  V       |
19+ 0       5.3363      3.02  |   Q      |          |          |  V       |
19+ 5       5.3569      2.99  | Q        |          |          |  V       |
19+10       5.3773      2.96  | Q        |          |          |  V       |
19+15       5.3975      2.94  | Q        |          |          |  V       |
19+20       5.4176      2.91  | Q        |          |          |  V       |
19+25       5.4374      2.88  | Q        |          |          |   V      |
19+30       5.4571      2.86  | Q        |          |          |   V      |
19+35       5.4767      2.84  | Q        |          |          |   V      |
19+40       5.4960      2.81  | Q        |          |          |   V      |
19+45       5.5153      2.79  | Q        |          |          |   V      |
19+50       5.5343      2.77  | Q        |          |          |   V      |
19+55       5.5532      2.75  | Q        |          |          |   V      |
20+ 0       5.5720      2.73  | Q        |          |          |   V      |
20+ 5       5.5907      2.71  | Q        |          |          |   V      |
20+10       5.6092      2.69  | Q        |          |          |    V     |
20+15       5.6276      2.67  | Q        |          |          |    V     |
20+20       5.6458      2.65  | Q        |          |          |    V     |
20+25       5.6640      2.63  | Q        |          |          |    V     |
20+30       5.6820      2.62  | Q        |          |          |    V     |
20+35       5.6999      2.60  | Q        |          |          |    V     |
20+40       5.7177      2.58  | Q        |          |          |    V     |
20+45       5.7353      2.57  | Q        |          |          |    V     |
20+50       5.7529      2.55  | Q        |          |          |    V     |
20+55       5.7704      2.54  | Q        |          |          |     V    |
21+ 0       5.7877      2.52  | Q        |          |          |     V    |
21+ 5       5.8050      2.51  | Q        |          |          |     V    |
21+10       5.8222      2.49  | Q        |          |          |     V    |
21+15       5.8392      2.48  | Q        |          |          |     V    |
21+20       5.8562      2.47  | Q        |          |          |     V    |
21+25       5.8731      2.45  | Q        |          |          |     V    |
21+30       5.8899      2.44  | Q        |          |          |     V    |
21+35       5.9066      2.43  | Q        |          |          |     V    |
21+40       5.9233      2.41  | Q        |          |          |      V   |
21+45       5.9398      2.40  | Q        |          |          |      V   |
21+50       5.9563      2.39  | Q        |          |          |      V   |
21+55       5.9726      2.38  | Q        |          |          |      V   |
22+ 0       5.9889      2.37  | Q        |          |          |      V   |
22+ 5       6.0052      2.36  | Q        |          |          |      V   |
22+10       6.0213      2.34  | Q        |          |          |      V   |
22+15       6.0374      2.33  | Q        |          |          |      V   |
22+20       6.0534      2.32  | Q        |          |          |      V   |
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   22+25       6.0693      2.31  | Q       |         |         |      V  |
   22+30       6.0852      2.30  | Q       |         |         |       V |
   22+35       6.1010      2.29  | Q       |         |         |       V |
   22+40       6.1167      2.28  | Q       |         |         |       V |
   22+45       6.1323      2.27  | Q       |         |         |       V |
   22+50       6.1479      2.26  | Q       |         |         |       V |
   22+55       6.1634      2.25  | Q       |         |         |       V |
   23+ 0       6.1789      2.24  | Q       |         |         |       V |
   23+ 5       6.1943      2.24  | Q       |         |         |       V |
   23+10       6.2096      2.23  | Q       |         |         |       V |
   23+15       6.2249      2.22  | Q       |         |         |       V |
   23+20       6.2401      2.21  | Q       |         |         |        V|
   23+25       6.2553      2.20  | Q       |         |         |        V|
   23+30       6.2704      2.19  | Q       |         |         |        V|
   23+35       6.2854      2.18  | Q       |         |         |        V|
   23+40       6.3004      2.18  | Q       |         |         |        V|
   23+45       6.3153      2.17  | Q       |         |         |        V|
   23+50       6.3302      2.16  | Q       |         |         |        V|
   23+55       6.3450      2.15  | Q       |         |         |        V|
   24+ 0       6.3598      2.14  | Q       |         |         |        V|
   24+ 5       6.3738      2.04  | Q       |         |         |        V|
   24+10       6.3843      1.52  |Q        |         |         |        V|
   24+15       6.3893      0.73  Q         |         |         |        V|
   24+20       6.3923      0.43  Q         |         |         |        V|
   24+25       6.3942      0.26  Q         |         |         |        V|
   24+30       6.3952      0.16  Q         |         |         |        V|
   24+35       6.3958      0.09  Q         |         |         |        V|
   24+40       6.3961      0.05  Q         |         |         |        V|
   24+45       6.3964      0.03  Q         |         |         |        V|
   24+50       6.3965      0.02  Q         |         |         |        V|
   24+55       6.3966      0.01  Q         |         |         |        V|
   25+ 0       6.3966      0.01  Q         |         |         |        V|
   25+ 5       6.3966      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'B' – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

                Study date  12/16/24

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San Bernardino County Synthetic Unit Hydrology Method
                Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'B'
100 YEAR 24 HOUR STORM
DECEMBER 16, 2024
------------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
            11.61            1           1.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61            6           2.00
------------------------------------------------------------------------
Rainfall data for year 2
            11.61           24           4.00
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            1           1.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61            6           4.50
------------------------------------------------------------------------
Rainfall data for year 100
            11.61           24          12.00
------------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 78.0      92.8         11.61      1.000     0.140    1.000    0.140

Area-averaged adjusted loss rate Fm (In/Hr) =  0.140

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 11.61 | 1.000 | 78.0 | 92.8 | 0.78 | 0.926 |

Area-averaged catchment yield fraction, Y = 0.926
Area-averaged low loss fraction, Yb = 0.074
User entry of time of concentration = 0.193 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 11.61(Ac.)
Catchment Lag time = 0.155 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 53.8886
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.140(In/Hr)
Average low loss rate fraction (Yb) = 0.074 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 11.61(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.711(In)
30-minute factor = 0.999 Adjusted rainfall = 1.218(In)
1-hour factor = 0.999 Adjusted rainfall = 1.499(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 140.41 (CFS)) | |
| 1 | 4.766 | 6.692 |
| 2 | 29.591 | 34.856 |
| 3 | 66.533 | 51.869 |
| 4 | 80.129 | 19.090 |
| 5 | 87.996 | 11.046 |
| 6 | 93.026 | 7.062 |
| 7 | 96.157 | 4.397 |
| 8 | 97.873 | 2.409 |
| 9 | 98.574 | 0.984 |
| 10 | 99.063 | 0.687 |
| 11 | 99.429 | 0.513 |
| 12 | 99.777 | 0.489 |
| 13 | 100.000 | 0.313 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7114 | 0.7114 |
| 2 | 0.8758 | 0.1644 |
| 3 | 0.9891 | 0.1133 |
| 4 | 1.0782 | 0.0892 |
| 5 | 1.1529 | 0.0747 |
| 6 | 1.2177 | 0.0648 |
| 7 | 1.2754 | 0.0576 |
| 8 | 1.3275 | 0.0521 |
| 9 | 1.3752 | 0.0477 |
| 10 | 1.4194 | 0.0442 |
| 11 | 1.4606 | 0.0412 |
| 12 | 1.4992 | 0.0386 |
| 13 | 1.5747 | 0.0755 |

| | | |
|---|---|---|
| 14 | 1.6479 | 0.0733 |
| 15 | 1.7192 | 0.0713 |
| 16 | 1.7886 | 0.0694 |
| 17 | 1.8564 | 0.0678 |
| 18 | 1.9227 | 0.0663 |
| 19 | 1.9875 | 0.0649 |
| 20 | 2.0511 | 0.0635 |
| 21 | 2.1134 | 0.0623 |
| 22 | 2.1746 | 0.0612 |
| 23 | 2.2347 | 0.0601 |
| 24 | 2.2938 | 0.0591 |
| 25 | 2.3520 | 0.0582 |
| 26 | 2.4093 | 0.0573 |
| 27 | 2.4657 | 0.0564 |
| 28 | 2.5214 | 0.0556 |
| 29 | 2.5763 | 0.0549 |
| 30 | 2.6304 | 0.0542 |
| 31 | 2.6839 | 0.0535 |
| 32 | 2.7367 | 0.0528 |
| 33 | 2.7888 | 0.0522 |
| 34 | 2.8404 | 0.0516 |
| 35 | 2.8913 | 0.0510 |
| 36 | 2.9418 | 0.0504 |
| 37 | 2.9916 | 0.0498 |
| 38 | 3.0409 | 0.0493 |
| 39 | 3.0897 | 0.0488 |
| 40 | 3.1381 | 0.0483 |
| 41 | 3.1860 | 0.0479 |
| 42 | 3.2334 | 0.0474 |
| 43 | 3.2804 | 0.0470 |
| 44 | 3.3270 | 0.0466 |
| 45 | 3.3731 | 0.0462 |
| 46 | 3.4189 | 0.0458 |
| 47 | 3.4643 | 0.0454 |
| 48 | 3.5093 | 0.0450 |
| 49 | 3.5539 | 0.0447 |
| 50 | 3.5982 | 0.0443 |
| 51 | 3.6422 | 0.0440 |
| 52 | 3.6858 | 0.0436 |
| 53 | 3.7291 | 0.0433 |
| 54 | 3.7721 | 0.0430 |
| 55 | 3.8148 | 0.0427 |
| 56 | 3.8572 | 0.0424 |
| 57 | 3.8993 | 0.0421 |
| 58 | 3.9411 | 0.0418 |
| 59 | 3.9826 | 0.0415 |
| 60 | 4.0239 | 0.0413 |
| 61 | 4.0649 | 0.0410 |
| 62 | 4.1056 | 0.0407 |
| 63 | 4.1461 | 0.0405 |
| 64 | 4.1863 | 0.0402 |
| 65 | 4.2263 | 0.0400 |
| 66 | 4.2660 | 0.0398 |
| 67 | 4.3056 | 0.0395 |
| 68 | 4.3449 | 0.0393 |
| 69 | 4.3839 | 0.0391 |
| 70 | 4.4228 | 0.0389 |
| 71 | 4.4614 | 0.0386 |
| 72 | 4.4998 | 0.0384 |
| 73 | 4.5440 | 0.0441 |
| 74 | 4.5879 | 0.0440 |
| 75 | 4.6317 | 0.0438 |
| 76 | 4.6753 | 0.0436 |
| 77 | 4.7188 | 0.0434 |
| 78 | 4.7620 | 0.0433 |
| 79 | 4.8051 | 0.0431 |
| 80 | 4.8481 | 0.0430 |
| 81 | 4.8909 | 0.0428 |
| 82 | 4.9335 | 0.0426 |
| 83 | 4.9760 | 0.0425 |
| 84 | 5.0184 | 0.0423 |

| | | |
|---|---|---|
| 85 | 5.0606 | 0.0422 |
| 86 | 5.1026 | 0.0421 |
| 87 | 5.1445 | 0.0419 |
| 88 | 5.1863 | 0.0418 |
| 89 | 5.2279 | 0.0416 |
| 90 | 5.2694 | 0.0415 |
| 91 | 5.3108 | 0.0414 |
| 92 | 5.3520 | 0.0412 |
| 93 | 5.3931 | 0.0411 |
| 94 | 5.4341 | 0.0410 |
| 95 | 5.4749 | 0.0408 |
| 96 | 5.5156 | 0.0407 |
| 97 | 5.5562 | 0.0406 |
| 98 | 5.5967 | 0.0405 |
| 99 | 5.6370 | 0.0403 |
| 100 | 5.6773 | 0.0402 |
| 101 | 5.7174 | 0.0401 |
| 102 | 5.7574 | 0.0400 |
| 103 | 5.7972 | 0.0399 |
| 104 | 5.8370 | 0.0398 |
| 105 | 5.8767 | 0.0397 |
| 106 | 5.9162 | 0.0395 |
| 107 | 5.9556 | 0.0394 |
| 108 | 5.9950 | 0.0393 |
| 109 | 6.0342 | 0.0392 |
| 110 | 6.0733 | 0.0391 |
| 111 | 6.1123 | 0.0390 |
| 112 | 6.1512 | 0.0389 |
| 113 | 6.1900 | 0.0388 |
| 114 | 6.2288 | 0.0387 |
| 115 | 6.2674 | 0.0386 |
| 116 | 6.3059 | 0.0385 |
| 117 | 6.3443 | 0.0384 |
| 118 | 6.3826 | 0.0383 |
| 119 | 6.4208 | 0.0382 |
| 120 | 6.4590 | 0.0381 |
| 121 | 6.4970 | 0.0380 |
| 122 | 6.5349 | 0.0379 |
| 123 | 6.5728 | 0.0379 |
| 124 | 6.6106 | 0.0378 |
| 125 | 6.6482 | 0.0377 |
| 126 | 6.6858 | 0.0376 |
| 127 | 6.7233 | 0.0375 |
| 128 | 6.7607 | 0.0374 |
| 129 | 6.7981 | 0.0373 |
| 130 | 6.8353 | 0.0372 |
| 131 | 6.8725 | 0.0372 |
| 132 | 6.9095 | 0.0371 |
| 133 | 6.9465 | 0.0370 |
| 134 | 6.9834 | 0.0369 |
| 135 | 7.0203 | 0.0368 |
| 136 | 7.0570 | 0.0368 |
| 137 | 7.0937 | 0.0367 |
| 138 | 7.1303 | 0.0366 |
| 139 | 7.1668 | 0.0365 |
| 140 | 7.2033 | 0.0364 |
| 141 | 7.2396 | 0.0364 |
| 142 | 7.2759 | 0.0363 |
| 143 | 7.3121 | 0.0362 |
| 144 | 7.3483 | 0.0361 |
| 145 | 7.3844 | 0.0361 |
| 146 | 7.4203 | 0.0360 |
| 147 | 7.4563 | 0.0359 |
| 148 | 7.4921 | 0.0359 |
| 149 | 7.5279 | 0.0358 |
| 150 | 7.5636 | 0.0357 |
| 151 | 7.5993 | 0.0356 |
| 152 | 7.6348 | 0.0356 |
| 153 | 7.6703 | 0.0355 |
| 154 | 7.7058 | 0.0354 |
| 155 | 7.7411 | 0.0354 |

| | | |
|---|---|---|
| 156 | 7.7764 | 0.0353 |
| 157 | 7.8117 | 0.0352 |
| 158 | 7.8469 | 0.0352 |
| 159 | 7.8820 | 0.0351 |
| 160 | 7.9170 | 0.0350 |
| 161 | 7.9520 | 0.0350 |
| 162 | 7.9869 | 0.0349 |
| 163 | 8.0217 | 0.0349 |
| 164 | 8.0565 | 0.0348 |
| 165 | 8.0913 | 0.0347 |
| 166 | 8.1259 | 0.0347 |
| 167 | 8.1605 | 0.0346 |
| 168 | 8.1951 | 0.0345 |
| 169 | 8.2296 | 0.0345 |
| 170 | 8.2640 | 0.0344 |
| 171 | 8.2983 | 0.0344 |
| 172 | 8.3327 | 0.0343 |
| 173 | 8.3669 | 0.0342 |
| 174 | 8.4011 | 0.0342 |
| 175 | 8.4352 | 0.0341 |
| 176 | 8.4693 | 0.0341 |
| 177 | 8.5033 | 0.0340 |
| 178 | 8.5373 | 0.0340 |
| 179 | 8.5712 | 0.0339 |
| 180 | 8.6050 | 0.0339 |
| 181 | 8.6388 | 0.0338 |
| 182 | 8.6726 | 0.0337 |
| 183 | 8.7063 | 0.0337 |
| 184 | 8.7399 | 0.0336 |
| 185 | 8.7735 | 0.0336 |
| 186 | 8.8070 | 0.0335 |
| 187 | 8.8405 | 0.0335 |
| 188 | 8.8739 | 0.0334 |
| 189 | 8.9073 | 0.0334 |
| 190 | 8.9406 | 0.0333 |
| 191 | 8.9739 | 0.0333 |
| 192 | 9.0071 | 0.0332 |
| 193 | 9.0403 | 0.0332 |
| 194 | 9.0734 | 0.0331 |
| 195 | 9.1064 | 0.0331 |
| 196 | 9.1395 | 0.0330 |
| 197 | 9.1724 | 0.0330 |
| 198 | 9.2053 | 0.0329 |
| 199 | 9.2382 | 0.0329 |
| 200 | 9.2710 | 0.0328 |
| 201 | 9.3038 | 0.0328 |
| 202 | 9.3365 | 0.0327 |
| 203 | 9.3692 | 0.0327 |
| 204 | 9.4018 | 0.0326 |
| 205 | 9.4344 | 0.0326 |
| 206 | 9.4670 | 0.0325 |
| 207 | 9.4995 | 0.0325 |
| 208 | 9.5319 | 0.0324 |
| 209 | 9.5643 | 0.0324 |
| 210 | 9.5967 | 0.0324 |
| 211 | 9.6290 | 0.0323 |
| 212 | 9.6612 | 0.0323 |
| 213 | 9.6935 | 0.0322 |
| 214 | 9.7256 | 0.0322 |
| 215 | 9.7578 | 0.0321 |
| 216 | 9.7899 | 0.0321 |
| 217 | 9.8219 | 0.0320 |
| 218 | 9.8539 | 0.0320 |
| 219 | 9.8859 | 0.0320 |
| 220 | 9.9178 | 0.0319 |
| 221 | 9.9497 | 0.0319 |
| 222 | 9.9815 | 0.0318 |
| 223 | 10.0133 | 0.0318 |
| 224 | 10.0450 | 0.0317 |
| 225 | 10.0767 | 0.0317 |
| 226 | 10.1084 | 0.0317 |

| | | |
|---|---|---|
| 227 | 10.1400 | 0.0316 |
| 228 | 10.1716 | 0.0316 |
| 229 | 10.2032 | 0.0315 |
| 230 | 10.2347 | 0.0315 |
| 231 | 10.2661 | 0.0315 |
| 232 | 10.2976 | 0.0314 |
| 233 | 10.3289 | 0.0314 |
| 234 | 10.3603 | 0.0313 |
| 235 | 10.3916 | 0.0313 |
| 236 | 10.4229 | 0.0313 |
| 237 | 10.4541 | 0.0312 |
| 238 | 10.4853 | 0.0312 |
| 239 | 10.5164 | 0.0312 |
| 240 | 10.5475 | 0.0311 |
| 241 | 10.5786 | 0.0311 |
| 242 | 10.6097 | 0.0310 |
| 243 | 10.6407 | 0.0310 |
| 244 | 10.6716 | 0.0310 |
| 245 | 10.7026 | 0.0309 |
| 246 | 10.7334 | 0.0309 |
| 247 | 10.7643 | 0.0309 |
| 248 | 10.7951 | 0.0308 |
| 249 | 10.8259 | 0.0308 |
| 250 | 10.8566 | 0.0307 |
| 251 | 10.8873 | 0.0307 |
| 252 | 10.9180 | 0.0307 |
| 253 | 10.9487 | 0.0306 |
| 254 | 10.9793 | 0.0306 |
| 255 | 11.0098 | 0.0306 |
| 256 | 11.0403 | 0.0305 |
| 257 | 11.0708 | 0.0305 |
| 258 | 11.1013 | 0.0305 |
| 259 | 11.1317 | 0.0304 |
| 260 | 11.1621 | 0.0304 |
| 261 | 11.1925 | 0.0304 |
| 262 | 11.2228 | 0.0303 |
| 263 | 11.2531 | 0.0303 |
| 264 | 11.2834 | 0.0303 |
| 265 | 11.3136 | 0.0302 |
| 266 | 11.3438 | 0.0302 |
| 267 | 11.3739 | 0.0302 |
| 268 | 11.4040 | 0.0301 |
| 269 | 11.4341 | 0.0301 |
| 270 | 11.4642 | 0.0301 |
| 271 | 11.4942 | 0.0300 |
| 272 | 11.5242 | 0.0300 |
| 273 | 11.5542 | 0.0300 |
| 274 | 11.5841 | 0.0299 |
| 275 | 11.6140 | 0.0299 |
| 276 | 11.6439 | 0.0299 |
| 277 | 11.6737 | 0.0298 |
| 278 | 11.7035 | 0.0298 |
| 279 | 11.7333 | 0.0298 |
| 280 | 11.7630 | 0.0297 |
| 281 | 11.7927 | 0.0297 |
| 282 | 11.8224 | 0.0297 |
| 283 | 11.8520 | 0.0296 |
| 284 | 11.8817 | 0.0296 |
| 285 | 11.9113 | 0.0296 |
| 286 | 11.9408 | 0.0296 |
| 287 | 11.9703 | 0.0295 |
| 288 | 11.9998 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0022 | 0.0273 |
| 2 | 0.0295 | 0.0022 | 0.0274 |
| 3 | 0.0296 | 0.0022 | 0.0274 |
| 4 | 0.0296 | 0.0022 | 0.0274 |

| | | | |
|---|---|---|---|
| 5 | 0.0297 | 0.0022 | 0.0275 |
| 6 | 0.0297 | 0.0022 | 0.0275 |
| 7 | 0.0298 | 0.0022 | 0.0276 |
| 8 | 0.0298 | 0.0022 | 0.0276 |
| 9 | 0.0299 | 0.0022 | 0.0277 |
| 10 | 0.0299 | 0.0022 | 0.0277 |
| 11 | 0.0300 | 0.0022 | 0.0278 |
| 12 | 0.0300 | 0.0022 | 0.0278 |
| 13 | 0.0301 | 0.0022 | 0.0278 |
| 14 | 0.0301 | 0.0022 | 0.0279 |
| 15 | 0.0302 | 0.0022 | 0.0279 |
| 16 | 0.0302 | 0.0022 | 0.0280 |
| 17 | 0.0303 | 0.0022 | 0.0280 |
| 18 | 0.0303 | 0.0022 | 0.0281 |
| 19 | 0.0304 | 0.0022 | 0.0281 |
| 20 | 0.0304 | 0.0022 | 0.0282 |
| 21 | 0.0305 | 0.0022 | 0.0282 |
| 22 | 0.0305 | 0.0022 | 0.0283 |
| 23 | 0.0306 | 0.0023 | 0.0283 |
| 24 | 0.0306 | 0.0023 | 0.0283 |
| 25 | 0.0307 | 0.0023 | 0.0284 |
| 26 | 0.0307 | 0.0023 | 0.0284 |
| 27 | 0.0308 | 0.0023 | 0.0285 |
| 28 | 0.0308 | 0.0023 | 0.0285 |
| 29 | 0.0309 | 0.0023 | 0.0286 |
| 30 | 0.0309 | 0.0023 | 0.0286 |
| 31 | 0.0310 | 0.0023 | 0.0287 |
| 32 | 0.0310 | 0.0023 | 0.0288 |
| 33 | 0.0311 | 0.0023 | 0.0288 |
| 34 | 0.0312 | 0.0023 | 0.0289 |
| 35 | 0.0312 | 0.0023 | 0.0289 |
| 36 | 0.0313 | 0.0023 | 0.0290 |
| 37 | 0.0313 | 0.0023 | 0.0290 |
| 38 | 0.0314 | 0.0023 | 0.0291 |
| 39 | 0.0315 | 0.0023 | 0.0291 |
| 40 | 0.0315 | 0.0023 | 0.0292 |
| 41 | 0.0316 | 0.0023 | 0.0293 |
| 42 | 0.0316 | 0.0023 | 0.0293 |
| 43 | 0.0317 | 0.0023 | 0.0294 |
| 44 | 0.0317 | 0.0023 | 0.0294 |
| 45 | 0.0318 | 0.0023 | 0.0295 |
| 46 | 0.0319 | 0.0023 | 0.0295 |
| 47 | 0.0320 | 0.0024 | 0.0296 |
| 48 | 0.0320 | 0.0024 | 0.0296 |
| 49 | 0.0321 | 0.0024 | 0.0297 |
| 50 | 0.0321 | 0.0024 | 0.0298 |
| 51 | 0.0322 | 0.0024 | 0.0298 |
| 52 | 0.0323 | 0.0024 | 0.0299 |
| 53 | 0.0324 | 0.0024 | 0.0300 |
| 54 | 0.0324 | 0.0024 | 0.0300 |
| 55 | 0.0325 | 0.0024 | 0.0301 |
| 56 | 0.0325 | 0.0024 | 0.0301 |
| 57 | 0.0326 | 0.0024 | 0.0302 |
| 58 | 0.0327 | 0.0024 | 0.0303 |
| 59 | 0.0328 | 0.0024 | 0.0304 |
| 60 | 0.0328 | 0.0024 | 0.0304 |
| 61 | 0.0329 | 0.0024 | 0.0305 |
| 62 | 0.0330 | 0.0024 | 0.0305 |
| 63 | 0.0331 | 0.0024 | 0.0306 |
| 64 | 0.0331 | 0.0024 | 0.0307 |
| 65 | 0.0332 | 0.0024 | 0.0308 |
| 66 | 0.0333 | 0.0024 | 0.0308 |
| 67 | 0.0334 | 0.0025 | 0.0309 |
| 68 | 0.0334 | 0.0025 | 0.0310 |
| 69 | 0.0335 | 0.0025 | 0.0311 |
| 70 | 0.0336 | 0.0025 | 0.0311 |
| 71 | 0.0337 | 0.0025 | 0.0312 |
| 72 | 0.0337 | 0.0025 | 0.0313 |
| 73 | 0.0339 | 0.0025 | 0.0314 |
| 74 | 0.0339 | 0.0025 | 0.0314 |
| 75 | 0.0340 | 0.0025 | 0.0315 |

| | | | |
|---|---|---|---|
| 76 | 0.0341 | 0.0025 | 0.0316 |
| 77 | 0.0342 | 0.0025 | 0.0317 |
| 78 | 0.0342 | 0.0025 | 0.0317 |
| 79 | 0.0344 | 0.0025 | 0.0318 |
| 80 | 0.0344 | 0.0025 | 0.0319 |
| 81 | 0.0345 | 0.0025 | 0.0320 |
| 82 | 0.0346 | 0.0025 | 0.0321 |
| 83 | 0.0347 | 0.0026 | 0.0322 |
| 84 | 0.0348 | 0.0026 | 0.0322 |
| 85 | 0.0349 | 0.0026 | 0.0323 |
| 86 | 0.0350 | 0.0026 | 0.0324 |
| 87 | 0.0351 | 0.0026 | 0.0325 |
| 88 | 0.0352 | 0.0026 | 0.0326 |
| 89 | 0.0353 | 0.0026 | 0.0327 |
| 90 | 0.0354 | 0.0026 | 0.0328 |
| 91 | 0.0355 | 0.0026 | 0.0329 |
| 92 | 0.0356 | 0.0026 | 0.0330 |
| 93 | 0.0357 | 0.0026 | 0.0331 |
| 94 | 0.0358 | 0.0026 | 0.0331 |
| 95 | 0.0359 | 0.0026 | 0.0333 |
| 96 | 0.0360 | 0.0026 | 0.0333 |
| 97 | 0.0361 | 0.0027 | 0.0335 |
| 98 | 0.0362 | 0.0027 | 0.0336 |
| 99 | 0.0364 | 0.0027 | 0.0337 |
| 100 | 0.0364 | 0.0027 | 0.0338 |
| 101 | 0.0366 | 0.0027 | 0.0339 |
| 102 | 0.0367 | 0.0027 | 0.0340 |
| 103 | 0.0368 | 0.0027 | 0.0341 |
| 104 | 0.0369 | 0.0027 | 0.0342 |
| 105 | 0.0371 | 0.0027 | 0.0343 |
| 106 | 0.0372 | 0.0027 | 0.0344 |
| 107 | 0.0373 | 0.0027 | 0.0346 |
| 108 | 0.0374 | 0.0028 | 0.0347 |
| 109 | 0.0376 | 0.0028 | 0.0348 |
| 110 | 0.0377 | 0.0028 | 0.0349 |
| 111 | 0.0379 | 0.0028 | 0.0351 |
| 112 | 0.0379 | 0.0028 | 0.0352 |
| 113 | 0.0381 | 0.0028 | 0.0353 |
| 114 | 0.0382 | 0.0028 | 0.0354 |
| 115 | 0.0384 | 0.0028 | 0.0356 |
| 116 | 0.0385 | 0.0028 | 0.0357 |
| 117 | 0.0387 | 0.0028 | 0.0359 |
| 118 | 0.0388 | 0.0029 | 0.0360 |
| 119 | 0.0390 | 0.0029 | 0.0361 |
| 120 | 0.0391 | 0.0029 | 0.0362 |
| 121 | 0.0393 | 0.0029 | 0.0364 |
| 122 | 0.0394 | 0.0029 | 0.0365 |
| 123 | 0.0397 | 0.0029 | 0.0367 |
| 124 | 0.0398 | 0.0029 | 0.0368 |
| 125 | 0.0400 | 0.0029 | 0.0371 |
| 126 | 0.0401 | 0.0030 | 0.0372 |
| 127 | 0.0403 | 0.0030 | 0.0374 |
| 128 | 0.0405 | 0.0030 | 0.0375 |
| 129 | 0.0407 | 0.0030 | 0.0377 |
| 130 | 0.0408 | 0.0030 | 0.0378 |
| 131 | 0.0411 | 0.0030 | 0.0381 |
| 132 | 0.0412 | 0.0030 | 0.0382 |
| 133 | 0.0415 | 0.0031 | 0.0384 |
| 134 | 0.0416 | 0.0031 | 0.0386 |
| 135 | 0.0419 | 0.0031 | 0.0388 |
| 136 | 0.0421 | 0.0031 | 0.0390 |
| 137 | 0.0423 | 0.0031 | 0.0392 |
| 138 | 0.0425 | 0.0031 | 0.0394 |
| 139 | 0.0428 | 0.0032 | 0.0396 |
| 140 | 0.0430 | 0.0032 | 0.0398 |
| 141 | 0.0433 | 0.0032 | 0.0401 |
| 142 | 0.0434 | 0.0032 | 0.0402 |
| 143 | 0.0438 | 0.0032 | 0.0406 |
| 144 | 0.0440 | 0.0032 | 0.0407 |
| 145 | 0.0384 | 0.0028 | 0.0356 |
| 146 | 0.0386 | 0.0028 | 0.0358 |

| | | | |
|---|---|---|---|
| 147 | 0.0391 | 0.0029 | 0.0362 |
| 148 | 0.0393 | 0.0029 | 0.0364 |
| 149 | 0.0398 | 0.0029 | 0.0368 |
| 150 | 0.0400 | 0.0029 | 0.0370 |
| 151 | 0.0405 | 0.0030 | 0.0375 |
| 152 | 0.0407 | 0.0030 | 0.0377 |
| 153 | 0.0413 | 0.0030 | 0.0382 |
| 154 | 0.0415 | 0.0031 | 0.0385 |
| 155 | 0.0421 | 0.0031 | 0.0390 |
| 156 | 0.0424 | 0.0031 | 0.0393 |
| 157 | 0.0430 | 0.0032 | 0.0398 |
| 158 | 0.0433 | 0.0032 | 0.0401 |
| 159 | 0.0440 | 0.0032 | 0.0407 |
| 160 | 0.0443 | 0.0033 | 0.0410 |
| 161 | 0.0450 | 0.0033 | 0.0417 |
| 162 | 0.0454 | 0.0033 | 0.0420 |
| 163 | 0.0462 | 0.0034 | 0.0428 |
| 164 | 0.0466 | 0.0034 | 0.0431 |
| 165 | 0.0474 | 0.0035 | 0.0439 |
| 166 | 0.0479 | 0.0035 | 0.0444 |
| 167 | 0.0488 | 0.0036 | 0.0452 |
| 168 | 0.0493 | 0.0036 | 0.0457 |
| 169 | 0.0504 | 0.0037 | 0.0467 |
| 170 | 0.0510 | 0.0038 | 0.0472 |
| 171 | 0.0522 | 0.0038 | 0.0483 |
| 172 | 0.0528 | 0.0039 | 0.0489 |
| 173 | 0.0542 | 0.0040 | 0.0502 |
| 174 | 0.0549 | 0.0040 | 0.0508 |
| 175 | 0.0564 | 0.0042 | 0.0523 |
| 176 | 0.0573 | 0.0042 | 0.0531 |
| 177 | 0.0591 | 0.0044 | 0.0548 |
| 178 | 0.0601 | 0.0044 | 0.0557 |
| 179 | 0.0623 | 0.0046 | 0.0577 |
| 180 | 0.0635 | 0.0047 | 0.0589 |
| 181 | 0.0663 | 0.0049 | 0.0614 |
| 182 | 0.0678 | 0.0050 | 0.0628 |
| 183 | 0.0713 | 0.0052 | 0.0660 |
| 184 | 0.0733 | 0.0054 | 0.0679 |
| 185 | 0.0386 | 0.0028 | 0.0358 |
| 186 | 0.0412 | 0.0030 | 0.0381 |
| 187 | 0.0477 | 0.0035 | 0.0442 |
| 188 | 0.0521 | 0.0038 | 0.0483 |
| 189 | 0.0648 | 0.0048 | 0.0600 |
| 190 | 0.0747 | 0.0055 | 0.0692 |
| 191 | 0.1133 | 0.0083 | 0.1049 |
| 192 | 0.1644 | 0.0117 | 0.1528 |
| 193 | 0.7114 | 0.0117 | 0.6997 |
| 194 | 0.0892 | 0.0066 | 0.0826 |
| 195 | 0.0576 | 0.0042 | 0.0534 |
| 196 | 0.0442 | 0.0033 | 0.0409 |
| 197 | 0.0755 | 0.0056 | 0.0699 |
| 198 | 0.0694 | 0.0051 | 0.0643 |
| 199 | 0.0649 | 0.0048 | 0.0601 |
| 200 | 0.0612 | 0.0045 | 0.0567 |
| 201 | 0.0582 | 0.0043 | 0.0539 |
| 202 | 0.0556 | 0.0041 | 0.0515 |
| 203 | 0.0535 | 0.0039 | 0.0495 |
| 204 | 0.0516 | 0.0038 | 0.0478 |
| 205 | 0.0498 | 0.0037 | 0.0462 |
| 206 | 0.0483 | 0.0036 | 0.0448 |
| 207 | 0.0470 | 0.0035 | 0.0435 |
| 208 | 0.0458 | 0.0034 | 0.0424 |
| 209 | 0.0447 | 0.0033 | 0.0414 |
| 210 | 0.0436 | 0.0032 | 0.0404 |
| 211 | 0.0427 | 0.0031 | 0.0395 |
| 212 | 0.0418 | 0.0031 | 0.0387 |
| 213 | 0.0410 | 0.0030 | 0.0380 |
| 214 | 0.0402 | 0.0030 | 0.0373 |
| 215 | 0.0395 | 0.0029 | 0.0366 |
| 216 | 0.0389 | 0.0029 | 0.0360 |
| 217 | 0.0441 | 0.0032 | 0.0409 |

| | | | |
|---|---|---|---|
| 218 | 0.0436 | 0.0032 | 0.0404 |
| 219 | 0.0431 | 0.0032 | 0.0399 |
| 220 | 0.0426 | 0.0031 | 0.0395 |
| 221 | 0.0422 | 0.0031 | 0.0391 |
| 222 | 0.0418 | 0.0031 | 0.0387 |
| 223 | 0.0414 | 0.0030 | 0.0383 |
| 224 | 0.0410 | 0.0030 | 0.0380 |
| 225 | 0.0406 | 0.0030 | 0.0376 |
| 226 | 0.0402 | 0.0030 | 0.0373 |
| 227 | 0.0399 | 0.0029 | 0.0369 |
| 228 | 0.0395 | 0.0029 | 0.0366 |
| 229 | 0.0392 | 0.0029 | 0.0363 |
| 230 | 0.0389 | 0.0029 | 0.0360 |
| 231 | 0.0386 | 0.0028 | 0.0358 |
| 232 | 0.0383 | 0.0028 | 0.0355 |
| 233 | 0.0380 | 0.0028 | 0.0352 |
| 234 | 0.0378 | 0.0028 | 0.0350 |
| 235 | 0.0375 | 0.0028 | 0.0347 |
| 236 | 0.0372 | 0.0027 | 0.0345 |
| 237 | 0.0370 | 0.0027 | 0.0343 |
| 238 | 0.0368 | 0.0027 | 0.0340 |
| 239 | 0.0365 | 0.0027 | 0.0338 |
| 240 | 0.0363 | 0.0027 | 0.0336 |
| 241 | 0.0361 | 0.0027 | 0.0334 |
| 242 | 0.0359 | 0.0026 | 0.0332 |
| 243 | 0.0356 | 0.0026 | 0.0330 |
| 244 | 0.0354 | 0.0026 | 0.0328 |
| 245 | 0.0352 | 0.0026 | 0.0326 |
| 246 | 0.0350 | 0.0026 | 0.0325 |
| 247 | 0.0349 | 0.0026 | 0.0323 |
| 248 | 0.0347 | 0.0026 | 0.0321 |
| 249 | 0.0345 | 0.0025 | 0.0319 |
| 250 | 0.0343 | 0.0025 | 0.0318 |
| 251 | 0.0341 | 0.0025 | 0.0316 |
| 252 | 0.0340 | 0.0025 | 0.0315 |
| 253 | 0.0338 | 0.0025 | 0.0313 |
| 254 | 0.0336 | 0.0025 | 0.0312 |
| 255 | 0.0335 | 0.0025 | 0.0310 |
| 256 | 0.0333 | 0.0025 | 0.0309 |
| 257 | 0.0332 | 0.0024 | 0.0307 |
| 258 | 0.0330 | 0.0024 | 0.0306 |
| 259 | 0.0329 | 0.0024 | 0.0305 |
| 260 | 0.0327 | 0.0024 | 0.0303 |
| 261 | 0.0326 | 0.0024 | 0.0302 |
| 262 | 0.0324 | 0.0024 | 0.0301 |
| 263 | 0.0323 | 0.0024 | 0.0299 |
| 264 | 0.0322 | 0.0024 | 0.0298 |
| 265 | 0.0320 | 0.0024 | 0.0297 |
| 266 | 0.0319 | 0.0023 | 0.0296 |
| 267 | 0.0318 | 0.0023 | 0.0295 |
| 268 | 0.0317 | 0.0023 | 0.0293 |
| 269 | 0.0315 | 0.0023 | 0.0292 |
| 270 | 0.0314 | 0.0023 | 0.0291 |
| 271 | 0.0313 | 0.0023 | 0.0290 |
| 272 | 0.0312 | 0.0023 | 0.0289 |
| 273 | 0.0311 | 0.0023 | 0.0288 |
| 274 | 0.0310 | 0.0023 | 0.0287 |
| 275 | 0.0309 | 0.0023 | 0.0286 |
| 276 | 0.0307 | 0.0023 | 0.0285 |
| 277 | 0.0306 | 0.0023 | 0.0284 |
| 278 | 0.0305 | 0.0022 | 0.0283 |
| 279 | 0.0304 | 0.0022 | 0.0282 |
| 280 | 0.0303 | 0.0022 | 0.0281 |
| 281 | 0.0302 | 0.0022 | 0.0280 |
| 282 | 0.0301 | 0.0022 | 0.0279 |
| 283 | 0.0300 | 0.0022 | 0.0278 |
| 284 | 0.0299 | 0.0022 | 0.0277 |
| 285 | 0.0298 | 0.0022 | 0.0276 |
| 286 | 0.0297 | 0.0022 | 0.0276 |
| 287 | 0.0296 | 0.0022 | 0.0275 |
| 288 | 0.0296 | 0.0022 | 0.0274 |

```
      ----------------------------------------------------------------------
      ----------------------------------------------------------------------
      Total soil rain loss =      0.84(In)
      Total effective rainfall =     11.16(In)
      Peak flow rate in flood hydrograph =     44.62(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       12.5      25.0      37.5      50.0
----------------------------------------------------------------------------
  0+ 5       0.0013      0.18  Q         |         |         |         |
  0+10       0.0091      1.14  Q         |         |         |         |
  0+15       0.0267      2.55  V Q       |         |         |         |
  0+20       0.0479      3.08  V Q       |         |         |         |
  0+25       0.0712      3.39  V Q       |         |         |         |
  0+30       0.0959      3.58  V Q       |         |         |         |
  0+35       0.1214      3.71  V Q       |         |         |         |
  0+40       0.1475      3.78  V  Q      |         |         |         |
  0+45       0.1737      3.81  V  Q      |         |         |         |
  0+50       0.2002      3.84  V  Q      |         |         |         |
  0+55       0.2268      3.86  V  Q      |         |         |         |
  1+ 0       0.2535      3.88  V  Q      |         |         |         |
  1+ 5       0.2803      3.89  |V Q      |         |         |         |
  1+10       0.3071      3.90  |V Q      |         |         |         |
  1+15       0.3340      3.91  |V Q      |         |         |         |
  1+20       0.3610      3.91  |V Q      |         |         |         |
  1+25       0.3880      3.92  |V Q      |         |         |         |
  1+30       0.4150      3.92  |V Q      |         |         |         |
  1+35       0.4421      3.93  |V Q      |         |         |         |
  1+40       0.4692      3.94  |V Q      |         |         |         |
  1+45       0.4964      3.94  |V Q      |         |         |         |
  1+50       0.5236      3.95  |V Q      |         |         |         |
  1+55       0.5508      3.96  | VQ      |         |         |         |
  2+ 0       0.5781      3.96  | VQ      |         |         |         |
  2+ 5       0.6055      3.97  | VQ      |         |         |         |
  2+10       0.6329      3.98  | VQ      |         |         |         |
  2+15       0.6603      3.99  | VQ      |         |         |         |
  2+20       0.6878      3.99  | VQ      |         |         |         |
  2+25       0.7154      4.00  | VQ      |         |         |         |
  2+30       0.7430      4.01  | VQ      |         |         |         |
  2+35       0.7706      4.01  | VQ      |         |         |         |
  2+40       0.7983      4.02  | VQ      |         |         |         |
  2+45       0.8260      4.03  |  Q      |         |         |         |
  2+50       0.8538      4.03  |  Q      |         |         |         |
  2+55       0.8817      4.04  |  Q      |         |         |         |
  3+ 0       0.9096      4.05  |  Q      |         |         |         |
  3+ 5       0.9375      4.06  |  Q      |         |         |         |
  3+10       0.9655      4.06  |  Q      |         |         |         |
  3+15       0.9935      4.07  |  Q      |         |         |         |
  3+20       1.0216      4.08  |  Q      |         |         |         |
  3+25       1.0498      4.09  |  Q      |         |         |         |
  3+30       1.0780      4.10  |  Q      |         |         |         |
  3+35       1.1063      4.10  |  QV     |         |         |         |
  3+40       1.1346      4.11  |  QV     |         |         |         |
  3+45       1.1629      4.12  |  QV     |         |         |         |
  3+50       1.1914      4.13  |  QV     |         |         |         |
  3+55       1.2198      4.14  |  QV     |         |         |         |
  4+ 0       1.2484      4.14  |  QV     |         |         |         |
  4+ 5       1.2770      4.15  |  QV     |         |         |         |
  4+10       1.3056      4.16  |  QV     |         |         |         |
  4+15       1.3343      4.17  |  QV     |         |         |         |
  4+20       1.3631      4.18  |  Q V    |         |         |         |
  4+25       1.3919      4.19  |  Q V    |         |         |         |
  4+30       1.4208      4.19  |  Q V    |         |         |         |
  4+35       1.4498      4.20  |  Q V    |         |         |         |
  4+40       1.4788      4.21  |  Q V    |         |         |         |
```

```
 4+45      1.5079      4.22  |  Q V    |         |         |         |
 4+50      1.5370      4.23  |  Q V    |         |         |         |
 4+55      1.5662      4.24  |  Q V    |         |         |         |
 5+ 0      1.5954      4.25  |  Q V    |         |         |         |
 5+ 5      1.6248      4.26  |  Q  V   |         |         |         |
 5+10      1.6541      4.27  |  Q  V   |         |         |         |
 5+15      1.6836      4.28  |  Q  V   |         |         |         |
 5+20      1.7131      4.29  |  Q  V   |         |         |         |
 5+25      1.7427      4.30  |  Q  V   |         |         |         |
 5+30      1.7723      4.30  |  Q  V   |         |         |         |
 5+35      1.8020      4.31  |  Q  V   |         |         |         |
 5+40      1.8318      4.32  |  Q  V   |         |         |         |
 5+45      1.8617      4.33  |  Q  V   |         |         |         |
 5+50      1.8916      4.34  |  Q   V  |         |         |         |
 5+55      1.9216      4.35  |  Q   V  |         |         |         |
 6+ 0      1.9516      4.36  |  Q   V  |         |         |         |
 6+ 5      1.9818      4.38  |  Q   V  |         |         |         |
 6+10      2.0120      4.39  |  Q   V  |         |         |         |
 6+15      2.0423      4.40  |  Q   V  |         |         |         |
 6+20      2.0726      4.41  |  Q   V  |         |         |         |
 6+25      2.1030      4.42  |  Q   V  |         |         |         |
 6+30      2.1335      4.43  |  Q   V  |         |         |         |
 6+35      2.1641      4.44  |  Q    V |         |         |         |
 6+40      2.1948      4.45  |  Q    V |         |         |         |
 6+45      2.2255      4.46  |  Q    V |         |         |         |
 6+50      2.2563      4.47  |  Q    V |         |         |         |
 6+55      2.2872      4.49  |  Q    V |         |         |         |
 7+ 0      2.3182      4.50  |  Q    V |         |         |         |
 7+ 5      2.3493      4.51  |  Q    V |         |         |         |
 7+10      2.3804      4.52  |  Q    V |         |         |         |
 7+15      2.4116      4.53  |  Q    V |         |         |         |
 7+20      2.4429      4.55  |  Q     V|         |         |         |
 7+25      2.4743      4.56  |  Q     V|         |         |         |
 7+30      2.5058      4.57  |  Q     V|         |         |         |
 7+35      2.5374      4.58  |  Q     V|         |         |         |
 7+40      2.5690      4.60  |  Q     V|         |         |         |
 7+45      2.6008      4.61  |  Q     V|         |         |         |
 7+50      2.6326      4.62  |  Q     V|         |         |         |
 7+55      2.6646      4.64  |  Q     V|         |         |         |
 8+ 0      2.6966      4.65  |  Q     V|         |         |         |
 8+ 5      2.7287      4.66  |  Q      V         |         |         |
 8+10      2.7609      4.68  |  Q      V         |         |         |
 8+15      2.7933      4.69  |  Q      V         |         |         |
 8+20      2.8257      4.71  |  Q      V         |         |         |
 8+25      2.8582      4.72  |  Q      V         |         |         |
 8+30      2.8908      4.74  |  Q      V         |         |         |
 8+35      2.9235      4.75  |  Q      V         |         |         |
 8+40      2.9563      4.77  |  Q      V         |         |         |
 8+45      2.9893      4.78  |  Q       |V       |         |         |
 8+50      3.0223      4.80  |  Q       |V       |         |         |
 8+55      3.0555      4.81  |  Q       |V       |         |         |
 9+ 0      3.0887      4.83  |  Q       |V       |         |         |
 9+ 5      3.1221      4.85  |  Q       |V       |         |         |
 9+10      3.1556      4.86  |  Q       |V       |         |         |
 9+15      3.1892      4.88  |  Q       |V       |         |         |
 9+20      3.2229      4.90  |  Q       |V       |         |         |
 9+25      3.2567      4.91  |  Q       | V      |         |         |
 9+30      3.2907      4.93  |  Q       | V      |         |         |
 9+35      3.3248      4.95  |  Q       | V      |         |         |
 9+40      3.3590      4.97  |  Q       | V      |         |         |
 9+45      3.3933      4.99  |  Q       | V      |         |         |
 9+50      3.4278      5.00  |   Q      | V      |         |         |
 9+55      3.4624      5.02  |   Q      | V      |         |         |
10+ 0      3.4971      5.04  |   Q      | V      |         |         |
10+ 5      3.5319      5.06  |   Q      |  V     |         |         |
10+10      3.5669      5.08  |   Q      |  V     |         |         |
10+15      3.6021      5.10  |   Q      |  V     |         |         |
10+20      3.6374      5.12  |   Q      |  V     |         |         |
10+25      3.6728      5.15  |   Q      |  V     |         |         |
10+30      3.7084      5.17  |   Q      |  V     |         |         |
10+35      3.7441      5.19  |   Q      |  V     |         |         |
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10+40       3.7800      5.21  |   Q     |   V     |         |         |
10+45       3.8161      5.23  |   Q     |   V     |         |         |
10+50       3.8523      5.26  |   Q     |   V     |         |         |
10+55       3.8886      5.28  |   Q     |   V     |         |         |
11+ 0       3.9252      5.31  |   Q     |   V     |         |         |
11+ 5       3.9619      5.33  |   Q     |   V     |         |         |
11+10       3.9988      5.36  |   Q     |   V     |         |         |
11+15       4.0358      5.38  |   Q     |   V     |         |         |
11+20       4.0731      5.41  |   Q     |    V    |         |         |
11+25       4.1105      5.44  |   Q     |    V    |         |         |
11+30       4.1481      5.46  |   Q     |    V    |         |         |
11+35       4.1859      5.49  |   Q     |    V    |         |         |
11+40       4.2240      5.52  |   Q     |    V    |         |         |
11+45       4.2622      5.55  |   Q     |    V    |         |         |
11+50       4.3006      5.58  |   Q     |    V    |         |         |
11+55       4.3392      5.61  |   Q     |     V   |         |         |
12+ 0       4.3781      5.64  |   Q     |     V   |         |         |
12+ 5       4.4169      5.64  |   Q     |     V   |         |         |
12+10       4.4547      5.48  |   Q     |     V   |         |         |
12+15       4.4907      5.24  |   Q     |     V   |         |         |
12+20       4.5263      5.17  |   Q     |     V   |         |         |
12+25       4.5618      5.15  |   Q     |     V   |         |         |
12+30       4.5973      5.15  |   Q     |      V  |         |         |
12+35       4.6329      5.17  |   Q     |      V  |         |         |
12+40       4.6688      5.21  |   Q     |      V  |         |         |
12+45       4.7049      5.25  |   Q     |      V  |         |         |
12+50       4.7414      5.29  |   Q     |      V  |         |         |
12+55       4.7782      5.34  |   Q     |      V  |         |         |
13+ 0       4.8153      5.39  |   Q     |      V  |         |         |
13+ 5       4.8528      5.44  |   Q     |      V  |         |         |
13+10       4.8906      5.50  |   Q     |       V |         |         |
13+15       4.9289      5.56  |   Q     |       V |         |         |
13+20       4.9676      5.62  |   Q     |       V |         |         |
13+25       5.0067      5.68  |   Q     |       V |         |         |
13+30       5.0463      5.75  |   Q     |       V |         |         |
13+35       5.0863      5.82  |   Q     |       V |         |         |
13+40       5.1269      5.89  |   Q     |        V|         |         |
13+45       5.1679      5.96  |   Q     |        V|         |         |
13+50       5.2095      6.04  |   Q     |        V|         |         |
13+55       5.2517      6.12  |   Q     |        V|         |         |
14+ 0       5.2944      6.21  |   Q     |        V|         |         |
14+ 5       5.3378      6.30  |    Q    |        V|         |         |
14+10       5.3818      6.39  |    Q    |        V|         |         |
14+15       5.4266      6.50  |    Q    |         V         |         |
14+20       5.4721      6.60  |    Q    |         V         |         |
14+25       5.5184      6.72  |    Q    |         V         |         |
14+30       5.5655      6.84  |    Q    |         V         |         |
14+35       5.6135      6.97  |    Q    |         V         |         |
14+40       5.6624      7.11  |    Q    |         V         |         |
14+45       5.7124      7.26  |    Q    |         |V        |         |
14+50       5.7635      7.42  |    Q    |         |V        |         |
14+55       5.8159      7.60  |     Q   |         |V        |         |
15+ 0       5.8695      7.78  |     Q   |         |V        |         |
15+ 5       5.9246      8.00  |     Q   |         |V        |         |
15+10       5.9812      8.23  |     Q   |         | V       |         |
15+15       6.0397      8.49  |     Q   |         | V       |         |
15+20       6.1001      8.77  |      Q  |         | V       |         |
15+25       6.1612      8.87  |      Q  |         | V       |         |
15+30       6.2160      7.97  |     Q   |         |  V      |         |
15+35       6.2610      6.53  |    Q    |         |  V      |         |
15+40       6.3046      6.34  |    Q    |         |  V      |         |
15+45       6.3501      6.60  |    Q    |         |  V      |         |
15+50       6.3998      7.22  |    Q    |         |  V      |         |
15+55       6.4577      8.41  |     Q   |         |  V      |         |
16+ 0       6.5315     10.71  |       Q |         |   V     |         |
16+ 5       6.6570     18.23  |         |   Q     |   V     |         |
16+10       6.9085     36.52  |         |         |    V   Q|         |
16+15       7.2158     44.62  |         |         |     V   |    Q    |
16+20       7.3728     22.79  |         |       Q |      V  |         |
16+25       7.4817     15.82  |         | Q       |      V  |         |
16+30       7.5709     12.95  |         Q         |       V |         |
```

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16+35      7.6528    11.89  |        Q|         |       V |         |
16+40      7.7239    10.33  |       Q |         |       V |         |
16+45      7.7864     9.08  |      Q  |         |       V |         |
16+50      7.8452     8.54  |     Q   |         |        V|         |
16+55      7.9010     8.11  |     Q   |         |        V|         |
17+ 0      7.9545     7.76  |     Q   |         |        V|         |
17+ 5      8.0049     7.33  |    Q    |         |        V|         |
17+10      8.0522     6.86  |    Q    |         |        V|         |
17+15      8.0978     6.62  |    Q    |         |         V         |
17+20      8.1420     6.42  |    Q    |         |         V         |
17+25      8.1849     6.23  |   Q     |         |         V         |
17+30      8.2266     6.06  |   Q     |         |         V         |
17+35      8.2673     5.90  |   Q     |         |         V         |
17+40      8.3069     5.76  |   Q     |         |         V         |
17+45      8.3457     5.63  |   Q     |         |         V         |
17+50      8.3836     5.51  |   Q     |         |         |V        |
17+55      8.4208     5.40  |   Q     |         |         |V        |
18+ 0      8.4572     5.29  |   Q     |         |         |V        |
18+ 5      8.4932     5.23  |   Q     |         |         |V        |
18+10      8.5300     5.33  |   Q     |         |         |V        |
18+15      8.5681     5.53  |   Q     |         |         |V        |
18+20      8.6064     5.56  |   Q     |         |         |V        |
18+25      8.6446     5.56  |   Q     |         |         | V       |
18+30      8.6827     5.53  |   Q     |         |         | V       |
18+35      8.7205     5.49  |   Q     |         |         | V       |
18+40      8.7581     5.45  |   Q     |         |         | V       |
18+45      8.7952     5.40  |   Q     |         |         | V       |
18+50      8.8321     5.35  |   Q     |         |         | V       |
18+55      8.8686     5.30  |   Q     |         |         | V       |
19+ 0      8.9048     5.26  |   Q     |         |         |  V      |
19+ 5      8.9407     5.21  |   Q     |         |         |  V      |
19+10      8.9763     5.17  |   Q     |         |         |  V      |
19+15      9.0116     5.12  |   Q     |         |         |  V      |
19+20      9.0466     5.08  |   Q     |         |         |  V      |
19+25      9.0813     5.04  |   Q     |         |         |  V      |
19+30      9.1158     5.00  |   Q     |         |         |  V      |
19+35      9.1500     4.97  |  Q      |         |         |  V      |
19+40      9.1839     4.93  |  Q      |         |         |   V     |
19+45      9.2176     4.90  |  Q      |         |         |   V     |
19+50      9.2511     4.86  |  Q      |         |         |   V     |
19+55      9.2844     4.83  |  Q      |         |         |   V     |
20+ 0      9.3174     4.80  |  Q      |         |         |   V     |
20+ 5      9.3502     4.77  |  Q      |         |         |   V     |
20+10      9.3829     4.74  |  Q      |         |         |   V     |
20+15      9.4153     4.71  |  Q      |         |         |   V     |
20+20      9.4475     4.68  |  Q      |         |         |    V    |
20+25      9.4795     4.65  |  Q      |         |         |    V    |
20+30      9.5113     4.62  |  Q      |         |         |    V    |
20+35      9.5430     4.60  |  Q      |         |         |    V    |
20+40      9.5745     4.57  |  Q      |         |         |    V    |
20+45      9.6058     4.55  |  Q      |         |         |    V    |
20+50      9.6369     4.52  |  Q      |         |         |    V    |
20+55      9.6679     4.50  |  Q      |         |         |    V    |
21+ 0      9.6987     4.47  |  Q      |         |         |    V    |
21+ 5      9.7294     4.45  |  Q      |         |         |     V   |
21+10      9.7599     4.43  |  Q      |         |         |     V   |
21+15      9.7902     4.41  |  Q      |         |         |     V   |
21+20      9.8204     4.39  |  Q      |         |         |     V   |
21+25      9.8505     4.36  |  Q      |         |         |     V   |
21+30      9.8804     4.34  |  Q      |         |         |     V   |
21+35      9.9102     4.32  |  Q      |         |         |     V   |
21+40      9.9398     4.30  |  Q      |         |         |     V   |
21+45      9.9693     4.29  |  Q      |         |         |     V   |
21+50      9.9987     4.27  |  Q      |         |         |      V  |
21+55     10.0280     4.25  |  Q      |         |         |      V  |
22+ 0     10.0571     4.23  |  Q      |         |         |      V  |
22+ 5     10.0861     4.21  |  Q      |         |         |      V  |
22+10     10.1150     4.19  |  Q      |         |         |      V  |
22+15     10.1438     4.18  |  Q      |         |         |      V  |
22+20     10.1724     4.16  |  Q      |         |         |      V  |
22+25     10.2009     4.14  |  Q      |         |         |      V  |
```

```
   22+30      10.2294      4.13  |  Q      |         |         |      V  |
   22+35      10.2577      4.11  |  Q      |         |         |       V |
   22+40      10.2859      4.10  |  Q      |         |         |       V |
   22+45      10.3140      4.08  |  Q      |         |         |       V |
   22+50      10.3420      4.06  |  Q      |         |         |       V |
   22+55      10.3699      4.05  |  Q      |         |         |       V |
   23+ 0      10.3977      4.03  |  Q      |         |         |       V |
   23+ 5      10.4253      4.02  |  Q      |         |         |       V |
   23+10      10.4529      4.01  |  Q      |         |         |       V |
   23+15      10.4804      3.99  |  Q      |         |         |       V |
   23+20      10.5078      3.98  |  Q      |         |         |       V |
   23+25      10.5351      3.96  |  Q      |         |         |        V|
   23+30      10.5623      3.95  |  Q      |         |         |        V|
   23+35      10.5895      3.94  |  Q      |         |         |        V|
   23+40      10.6165      3.92  |  Q      |         |         |        V|
   23+45      10.6434      3.91  |  Q      |         |         |        V|
   23+50      10.6703      3.90  |  Q      |         |         |        V|
   23+55      10.6970      3.89  |  Q      |         |         |        V|
   24+ 0      10.7237      3.87  |  Q      |         |         |        V|
   24+ 5      10.7491      3.68  | Q       |         |         |        V|
   24+10      10.7678      2.72  | Q       |         |         |        V|
   24+15      10.7767      1.29  |Q        |         |         |        V|
   24+20      10.7820      0.77  Q         |         |         |        V|
   24+25      10.7852      0.46  Q         |         |         |        V|
   24+30      10.7870      0.27  Q         |         |         |        V|
   24+35      10.7880      0.15  Q         |         |         |        V|
   24+40      10.7886      0.08  Q         |         |         |        V|
   24+45      10.7890      0.06  Q         |         |         |        V|
   24+50      10.7892      0.04  Q         |         |         |        V|
   24+55      10.7894      0.02  Q         |         |         |        V|
   25+ 0      10.7894      0.01  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'C' – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

              Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
------------------------------------------------------------------------------

San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

------------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
2 YEAR 24 HOUR STORM
DECEMBER 4, 2024
------------------------------------------------------------------------

       Storm Event Year = 2

       Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
            6.54           1           1.00
------------------------------------------------------------------
Rainfall data for year 2
            6.54           6           2.00
------------------------------------------------------------------
Rainfall data for year 2
            6.54          24           4.00
------------------------------------------------------------------
Rainfall data for year 100
            6.54           1           1.50
------------------------------------------------------------------
Rainfall data for year 100
            6.54           6           4.50
------------------------------------------------------------------
Rainfall data for year 100
            6.54          24          12.00
------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 32.0      16.6          6.54      1.000     1.000    0.600    0.600

Area-averaged adjusted loss rate Fm (In/Hr) =  0.600

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 3.92 | 0.600 | 32.0 | 16.6 | 20.00 | 0.000 |
| 2.62 | 0.400 | 98.0 | 98.0 | 0.20 | 0.941 |

Area-averaged catchment yield fraction, Y = 0.377
Area-averaged low loss fraction, Yb = 0.623
User entry of time of concentration = 0.152 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.54(Ac.)
Catchment Lag time = 0.121 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 68.6210
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.600(In/Hr)
Average low loss rate fraction (Yb) = 0.623 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.309(In)
Computed peak 30-minute rainfall = 0.528(In)
Specified peak 1-hour rainfall = 0.651(In)
Computed peak 3-hour rainfall = 1.295(In)
Specified peak 6-hour rainfall = 2.000(In)
Specified peak 24-hour rainfall = 4.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.54(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.309(In)
30-minute factor = 1.000 Adjusted rainfall = 0.528(In)
1-hour factor = 1.000 Adjusted rainfall = 0.650(In)
3-hour factor = 1.000 Adjusted rainfall = 1.295(In)
6-hour factor = 1.000 Adjusted rainfall = 2.000(In)
24-hour factor = 1.000 Adjusted rainfall = 4.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 79.09 (CFS)) | |
| 1 | 6.926 | 5.478 |
| 2 | 46.826 | 31.558 |
| 3 | 76.548 | 23.508 |
| 4 | 87.652 | 8.782 |
| 5 | 93.849 | 4.901 |
| 6 | 97.160 | 2.619 |
| 7 | 98.439 | 1.012 |
| 8 | 99.077 | 0.504 |
| 9 | 99.557 | 0.380 |
| 10 | 99.888 | 0.262 |
| 11 | 100.000 | 0.088 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.3086 | 0.3086 |
| 2 | 0.3799 | 0.0713 |
| 3 | 0.4290 | 0.0491 |
| 4 | 0.4677 | 0.0387 |
| 5 | 0.5001 | 0.0324 |
| 6 | 0.5282 | 0.0281 |
| 7 | 0.5532 | 0.0250 |
| 8 | 0.5758 | 0.0226 |
| 9 | 0.5965 | 0.0207 |
| 10 | 0.6157 | 0.0192 |
| 11 | 0.6336 | 0.0179 |
| 12 | 0.6503 | 0.0168 |
| 13 | 0.6838 | 0.0335 |
| 14 | 0.7163 | 0.0325 |

| | | |
|---|---|---|
| 15 | 0.7480 | 0.0317 |
| 16 | 0.7789 | 0.0309 |
| 17 | 0.8091 | 0.0302 |
| 18 | 0.8386 | 0.0295 |
| 19 | 0.8675 | 0.0289 |
| 20 | 0.8959 | 0.0284 |
| 21 | 0.9237 | 0.0278 |
| 22 | 0.9510 | 0.0273 |
| 23 | 0.9779 | 0.0269 |
| 24 | 1.0044 | 0.0265 |
| 25 | 1.0304 | 0.0260 |
| 26 | 1.0561 | 0.0257 |
| 27 | 1.0814 | 0.0253 |
| 28 | 1.1063 | 0.0249 |
| 29 | 1.1309 | 0.0246 |
| 30 | 1.1552 | 0.0243 |
| 31 | 1.1792 | 0.0240 |
| 32 | 1.2029 | 0.0237 |
| 33 | 1.2264 | 0.0234 |
| 34 | 1.2495 | 0.0232 |
| 35 | 1.2725 | 0.0229 |
| 36 | 1.2951 | 0.0227 |
| 37 | 1.3176 | 0.0224 |
| 38 | 1.3398 | 0.0222 |
| 39 | 1.3618 | 0.0220 |
| 40 | 1.3836 | 0.0218 |
| 41 | 1.4052 | 0.0216 |
| 42 | 1.4265 | 0.0214 |
| 43 | 1.4477 | 0.0212 |
| 44 | 1.4688 | 0.0210 |
| 45 | 1.4896 | 0.0208 |
| 46 | 1.5103 | 0.0207 |
| 47 | 1.5308 | 0.0205 |
| 48 | 1.5511 | 0.0203 |
| 49 | 1.5713 | 0.0202 |
| 50 | 1.5913 | 0.0200 |
| 51 | 1.6112 | 0.0199 |
| 52 | 1.6309 | 0.0197 |
| 53 | 1.6505 | 0.0196 |
| 54 | 1.6699 | 0.0195 |
| 55 | 1.6893 | 0.0193 |
| 56 | 1.7085 | 0.0192 |
| 57 | 1.7275 | 0.0191 |
| 58 | 1.7464 | 0.0189 |
| 59 | 1.7653 | 0.0188 |
| 60 | 1.7840 | 0.0187 |
| 61 | 1.8025 | 0.0186 |
| 62 | 1.8210 | 0.0185 |
| 63 | 1.8394 | 0.0184 |
| 64 | 1.8576 | 0.0182 |
| 65 | 1.8758 | 0.0181 |
| 66 | 1.8938 | 0.0180 |
| 67 | 1.9117 | 0.0179 |
| 68 | 1.9296 | 0.0178 |
| 69 | 1.9473 | 0.0177 |
| 70 | 1.9650 | 0.0176 |
| 71 | 1.9825 | 0.0175 |
| 72 | 2.0000 | 0.0175 |
| 73 | 2.0138 | 0.0138 |
| 74 | 2.0275 | 0.0137 |
| 75 | 2.0412 | 0.0137 |
| 76 | 2.0548 | 0.0136 |
| 77 | 2.0682 | 0.0135 |
| 78 | 2.0816 | 0.0134 |
| 79 | 2.0949 | 0.0133 |
| 80 | 2.1081 | 0.0132 |
| 81 | 2.1213 | 0.0131 |
| 82 | 2.1343 | 0.0131 |
| 83 | 2.1473 | 0.0130 |
| 84 | 2.1602 | 0.0129 |
| 85 | 2.1730 | 0.0128 |

| | | |
|---|---|---|
| 86 | 2.1858 | 0.0127 |
| 87 | 2.1984 | 0.0127 |
| 88 | 2.2110 | 0.0126 |
| 89 | 2.2236 | 0.0125 |
| 90 | 2.2360 | 0.0125 |
| 91 | 2.2484 | 0.0124 |
| 92 | 2.2607 | 0.0123 |
| 93 | 2.2730 | 0.0123 |
| 94 | 2.2852 | 0.0122 |
| 95 | 2.2973 | 0.0121 |
| 96 | 2.3094 | 0.0121 |
| 97 | 2.3214 | 0.0120 |
| 98 | 2.3333 | 0.0119 |
| 99 | 2.3452 | 0.0119 |
| 100 | 2.3570 | 0.0118 |
| 101 | 2.3687 | 0.0118 |
| 102 | 2.3804 | 0.0117 |
| 103 | 2.3921 | 0.0116 |
| 104 | 2.4037 | 0.0116 |
| 105 | 2.4152 | 0.0115 |
| 106 | 2.4267 | 0.0115 |
| 107 | 2.4381 | 0.0114 |
| 108 | 2.4494 | 0.0114 |
| 109 | 2.4608 | 0.0113 |
| 110 | 2.4720 | 0.0113 |
| 111 | 2.4832 | 0.0112 |
| 112 | 2.4944 | 0.0112 |
| 113 | 2.5055 | 0.0111 |
| 114 | 2.5166 | 0.0111 |
| 115 | 2.5276 | 0.0110 |
| 116 | 2.5385 | 0.0110 |
| 117 | 2.5495 | 0.0109 |
| 118 | 2.5603 | 0.0109 |
| 119 | 2.5712 | 0.0108 |
| 120 | 2.5819 | 0.0108 |
| 121 | 2.5927 | 0.0107 |
| 122 | 2.6034 | 0.0107 |
| 123 | 2.6140 | 0.0106 |
| 124 | 2.6246 | 0.0106 |
| 125 | 2.6352 | 0.0106 |
| 126 | 2.6457 | 0.0105 |
| 127 | 2.6562 | 0.0105 |
| 128 | 2.6666 | 0.0104 |
| 129 | 2.6770 | 0.0104 |
| 130 | 2.6874 | 0.0104 |
| 131 | 2.6977 | 0.0103 |
| 132 | 2.7080 | 0.0103 |
| 133 | 2.7182 | 0.0102 |
| 134 | 2.7284 | 0.0102 |
| 135 | 2.7386 | 0.0102 |
| 136 | 2.7487 | 0.0101 |
| 137 | 2.7588 | 0.0101 |
| 138 | 2.7688 | 0.0101 |
| 139 | 2.7788 | 0.0100 |
| 140 | 2.7888 | 0.0100 |
| 141 | 2.7988 | 0.0099 |
| 142 | 2.8087 | 0.0099 |
| 143 | 2.8185 | 0.0099 |
| 144 | 2.8284 | 0.0098 |
| 145 | 2.8382 | 0.0098 |
| 146 | 2.8480 | 0.0098 |
| 147 | 2.8577 | 0.0097 |
| 148 | 2.8674 | 0.0097 |
| 149 | 2.8771 | 0.0097 |
| 150 | 2.8867 | 0.0096 |
| 151 | 2.8963 | 0.0096 |
| 152 | 2.9059 | 0.0096 |
| 153 | 2.9154 | 0.0095 |
| 154 | 2.9249 | 0.0095 |
| 155 | 2.9344 | 0.0095 |
| 156 | 2.9439 | 0.0095 |

| | | |
|---|---|---|
| 157 | 2.9533 | 0.0094 |
| 158 | 2.9627 | 0.0094 |
| 159 | 2.9721 | 0.0094 |
| 160 | 2.9814 | 0.0093 |
| 161 | 2.9907 | 0.0093 |
| 162 | 3.0000 | 0.0093 |
| 163 | 3.0092 | 0.0092 |
| 164 | 3.0184 | 0.0092 |
| 165 | 3.0276 | 0.0092 |
| 166 | 3.0368 | 0.0092 |
| 167 | 3.0459 | 0.0091 |
| 168 | 3.0550 | 0.0091 |
| 169 | 3.0641 | 0.0091 |
| 170 | 3.0731 | 0.0091 |
| 171 | 3.0822 | 0.0090 |
| 172 | 3.0912 | 0.0090 |
| 173 | 3.1001 | 0.0090 |
| 174 | 3.1091 | 0.0089 |
| 175 | 3.1180 | 0.0089 |
| 176 | 3.1269 | 0.0089 |
| 177 | 3.1358 | 0.0089 |
| 178 | 3.1446 | 0.0088 |
| 179 | 3.1534 | 0.0088 |
| 180 | 3.1622 | 0.0088 |
| 181 | 3.1710 | 0.0088 |
| 182 | 3.1798 | 0.0087 |
| 183 | 3.1885 | 0.0087 |
| 184 | 3.1972 | 0.0087 |
| 185 | 3.2059 | 0.0087 |
| 186 | 3.2145 | 0.0087 |
| 187 | 3.2231 | 0.0086 |
| 188 | 3.2317 | 0.0086 |
| 189 | 3.2403 | 0.0086 |
| 190 | 3.2489 | 0.0086 |
| 191 | 3.2574 | 0.0085 |
| 192 | 3.2659 | 0.0085 |
| 193 | 3.2744 | 0.0085 |
| 194 | 3.2829 | 0.0085 |
| 195 | 3.2914 | 0.0085 |
| 196 | 3.2998 | 0.0084 |
| 197 | 3.3082 | 0.0084 |
| 198 | 3.3166 | 0.0084 |
| 199 | 3.3250 | 0.0084 |
| 200 | 3.3333 | 0.0083 |
| 201 | 3.3416 | 0.0083 |
| 202 | 3.3499 | 0.0083 |
| 203 | 3.3582 | 0.0083 |
| 204 | 3.3665 | 0.0083 |
| 205 | 3.3747 | 0.0082 |
| 206 | 3.3829 | 0.0082 |
| 207 | 3.3911 | 0.0082 |
| 208 | 3.3993 | 0.0082 |
| 209 | 3.4075 | 0.0082 |
| 210 | 3.4156 | 0.0081 |
| 211 | 3.4237 | 0.0081 |
| 212 | 3.4318 | 0.0081 |
| 213 | 3.4399 | 0.0081 |
| 214 | 3.4480 | 0.0081 |
| 215 | 3.4560 | 0.0080 |
| 216 | 3.4641 | 0.0080 |
| 217 | 3.4721 | 0.0080 |
| 218 | 3.4801 | 0.0080 |
| 219 | 3.4880 | 0.0080 |
| 220 | 3.4960 | 0.0080 |
| 221 | 3.5039 | 0.0079 |
| 222 | 3.5118 | 0.0079 |
| 223 | 3.5197 | 0.0079 |
| 224 | 3.5276 | 0.0079 |
| 225 | 3.5355 | 0.0079 |
| 226 | 3.5433 | 0.0078 |
| 227 | 3.5512 | 0.0078 |

| | | |
|---|---|---|
| 228 | 3.5590 | 0.0078 |
| 229 | 3.5668 | 0.0078 |
| 230 | 3.5746 | 0.0078 |
| 231 | 3.5823 | 0.0078 |
| 232 | 3.5901 | 0.0077 |
| 233 | 3.5978 | 0.0077 |
| 234 | 3.6055 | 0.0077 |
| 235 | 3.6132 | 0.0077 |
| 236 | 3.6209 | 0.0077 |
| 237 | 3.6286 | 0.0077 |
| 238 | 3.6362 | 0.0076 |
| 239 | 3.6438 | 0.0076 |
| 240 | 3.6514 | 0.0076 |
| 241 | 3.6590 | 0.0076 |
| 242 | 3.6666 | 0.0076 |
| 243 | 3.6742 | 0.0076 |
| 244 | 3.6818 | 0.0076 |
| 245 | 3.6893 | 0.0075 |
| 246 | 3.6968 | 0.0075 |
| 247 | 3.7043 | 0.0075 |
| 248 | 3.7118 | 0.0075 |
| 249 | 3.7193 | 0.0075 |
| 250 | 3.7267 | 0.0075 |
| 251 | 3.7342 | 0.0074 |
| 252 | 3.7416 | 0.0074 |
| 253 | 3.7490 | 0.0074 |
| 254 | 3.7564 | 0.0074 |
| 255 | 3.7638 | 0.0074 |
| 256 | 3.7712 | 0.0074 |
| 257 | 3.7786 | 0.0074 |
| 258 | 3.7859 | 0.0073 |
| 259 | 3.7932 | 0.0073 |
| 260 | 3.8006 | 0.0073 |
| 261 | 3.8079 | 0.0073 |
| 262 | 3.8151 | 0.0073 |
| 263 | 3.8224 | 0.0073 |
| 264 | 3.8297 | 0.0073 |
| 265 | 3.8369 | 0.0072 |
| 266 | 3.8442 | 0.0072 |
| 267 | 3.8514 | 0.0072 |
| 268 | 3.8586 | 0.0072 |
| 269 | 3.8658 | 0.0072 |
| 270 | 3.8729 | 0.0072 |
| 271 | 3.8801 | 0.0072 |
| 272 | 3.8873 | 0.0072 |
| 273 | 3.8944 | 0.0071 |
| 274 | 3.9015 | 0.0071 |
| 275 | 3.9086 | 0.0071 |
| 276 | 3.9157 | 0.0071 |
| 277 | 3.9228 | 0.0071 |
| 278 | 3.9299 | 0.0071 |
| 279 | 3.9370 | 0.0071 |
| 280 | 3.9440 | 0.0070 |
| 281 | 3.9511 | 0.0070 |
| 282 | 3.9581 | 0.0070 |
| 283 | 3.9651 | 0.0070 |
| 284 | 3.9721 | 0.0070 |
| 285 | 3.9791 | 0.0070 |
| 286 | 3.9861 | 0.0070 |
| 287 | 3.9930 | 0.0070 |
| 288 | 4.0000 | 0.0070 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0070 | 0.0043 | 0.0026 |
| 2 | 0.0070 | 0.0043 | 0.0026 |
| 3 | 0.0070 | 0.0044 | 0.0026 |
| 4 | 0.0070 | 0.0044 | 0.0026 |
| 5 | 0.0070 | 0.0044 | 0.0026 |

| | | | |
|---|---|---|---|
| 6 | 0.0070 | 0.0044 | 0.0026 |
| 7 | 0.0071 | 0.0044 | 0.0027 |
| 8 | 0.0071 | 0.0044 | 0.0027 |
| 9 | 0.0071 | 0.0044 | 0.0027 |
| 10 | 0.0071 | 0.0044 | 0.0027 |
| 11 | 0.0071 | 0.0045 | 0.0027 |
| 12 | 0.0072 | 0.0045 | 0.0027 |
| 13 | 0.0072 | 0.0045 | 0.0027 |
| 14 | 0.0072 | 0.0045 | 0.0027 |
| 15 | 0.0072 | 0.0045 | 0.0027 |
| 16 | 0.0072 | 0.0045 | 0.0027 |
| 17 | 0.0073 | 0.0045 | 0.0027 |
| 18 | 0.0073 | 0.0045 | 0.0027 |
| 19 | 0.0073 | 0.0046 | 0.0027 |
| 20 | 0.0073 | 0.0046 | 0.0028 |
| 21 | 0.0073 | 0.0046 | 0.0028 |
| 22 | 0.0074 | 0.0046 | 0.0028 |
| 23 | 0.0074 | 0.0046 | 0.0028 |
| 24 | 0.0074 | 0.0046 | 0.0028 |
| 25 | 0.0074 | 0.0046 | 0.0028 |
| 26 | 0.0074 | 0.0046 | 0.0028 |
| 27 | 0.0075 | 0.0047 | 0.0028 |
| 28 | 0.0075 | 0.0047 | 0.0028 |
| 29 | 0.0075 | 0.0047 | 0.0028 |
| 30 | 0.0075 | 0.0047 | 0.0028 |
| 31 | 0.0076 | 0.0047 | 0.0028 |
| 32 | 0.0076 | 0.0047 | 0.0029 |
| 33 | 0.0076 | 0.0047 | 0.0029 |
| 34 | 0.0076 | 0.0048 | 0.0029 |
| 35 | 0.0077 | 0.0048 | 0.0029 |
| 36 | 0.0077 | 0.0048 | 0.0029 |
| 37 | 0.0077 | 0.0048 | 0.0029 |
| 38 | 0.0077 | 0.0048 | 0.0029 |
| 39 | 0.0078 | 0.0048 | 0.0029 |
| 40 | 0.0078 | 0.0049 | 0.0029 |
| 41 | 0.0078 | 0.0049 | 0.0029 |
| 42 | 0.0078 | 0.0049 | 0.0029 |
| 43 | 0.0079 | 0.0049 | 0.0030 |
| 44 | 0.0079 | 0.0049 | 0.0030 |
| 45 | 0.0079 | 0.0049 | 0.0030 |
| 46 | 0.0079 | 0.0049 | 0.0030 |
| 47 | 0.0080 | 0.0050 | 0.0030 |
| 48 | 0.0080 | 0.0050 | 0.0030 |
| 49 | 0.0080 | 0.0050 | 0.0030 |
| 50 | 0.0080 | 0.0050 | 0.0030 |
| 51 | 0.0081 | 0.0050 | 0.0030 |
| 52 | 0.0081 | 0.0051 | 0.0031 |
| 53 | 0.0081 | 0.0051 | 0.0031 |
| 54 | 0.0082 | 0.0051 | 0.0031 |
| 55 | 0.0082 | 0.0051 | 0.0031 |
| 56 | 0.0082 | 0.0051 | 0.0031 |
| 57 | 0.0083 | 0.0052 | 0.0031 |
| 58 | 0.0083 | 0.0052 | 0.0031 |
| 59 | 0.0083 | 0.0052 | 0.0031 |
| 60 | 0.0083 | 0.0052 | 0.0031 |
| 61 | 0.0084 | 0.0052 | 0.0032 |
| 62 | 0.0084 | 0.0052 | 0.0032 |
| 63 | 0.0085 | 0.0053 | 0.0032 |
| 64 | 0.0085 | 0.0053 | 0.0032 |
| 65 | 0.0085 | 0.0053 | 0.0032 |
| 66 | 0.0085 | 0.0053 | 0.0032 |
| 67 | 0.0086 | 0.0054 | 0.0032 |
| 68 | 0.0086 | 0.0054 | 0.0032 |
| 69 | 0.0087 | 0.0054 | 0.0033 |
| 70 | 0.0087 | 0.0054 | 0.0033 |
| 71 | 0.0087 | 0.0054 | 0.0033 |
| 72 | 0.0087 | 0.0055 | 0.0033 |
| 73 | 0.0088 | 0.0055 | 0.0033 |
| 74 | 0.0088 | 0.0055 | 0.0033 |
| 75 | 0.0089 | 0.0055 | 0.0033 |
| 76 | 0.0089 | 0.0055 | 0.0033 |

| | | | |
|---|---|---|---|
| 77 | 0.0089 | 0.0056 | 0.0034 |
| 78 | 0.0090 | 0.0056 | 0.0034 |
| 79 | 0.0090 | 0.0056 | 0.0034 |
| 80 | 0.0091 | 0.0056 | 0.0034 |
| 81 | 0.0091 | 0.0057 | 0.0034 |
| 82 | 0.0091 | 0.0057 | 0.0034 |
| 83 | 0.0092 | 0.0057 | 0.0035 |
| 84 | 0.0092 | 0.0057 | 0.0035 |
| 85 | 0.0093 | 0.0058 | 0.0035 |
| 86 | 0.0093 | 0.0058 | 0.0035 |
| 87 | 0.0094 | 0.0058 | 0.0035 |
| 88 | 0.0094 | 0.0059 | 0.0035 |
| 89 | 0.0095 | 0.0059 | 0.0036 |
| 90 | 0.0095 | 0.0059 | 0.0036 |
| 91 | 0.0095 | 0.0060 | 0.0036 |
| 92 | 0.0096 | 0.0060 | 0.0036 |
| 93 | 0.0096 | 0.0060 | 0.0036 |
| 94 | 0.0097 | 0.0060 | 0.0036 |
| 95 | 0.0097 | 0.0061 | 0.0037 |
| 96 | 0.0098 | 0.0061 | 0.0037 |
| 97 | 0.0098 | 0.0061 | 0.0037 |
| 98 | 0.0099 | 0.0062 | 0.0037 |
| 99 | 0.0099 | 0.0062 | 0.0037 |
| 100 | 0.0100 | 0.0062 | 0.0038 |
| 101 | 0.0101 | 0.0063 | 0.0038 |
| 102 | 0.0101 | 0.0063 | 0.0038 |
| 103 | 0.0102 | 0.0063 | 0.0038 |
| 104 | 0.0102 | 0.0064 | 0.0038 |
| 105 | 0.0103 | 0.0064 | 0.0039 |
| 106 | 0.0103 | 0.0064 | 0.0039 |
| 107 | 0.0104 | 0.0065 | 0.0039 |
| 108 | 0.0104 | 0.0065 | 0.0039 |
| 109 | 0.0105 | 0.0066 | 0.0040 |
| 110 | 0.0106 | 0.0066 | 0.0040 |
| 111 | 0.0106 | 0.0066 | 0.0040 |
| 112 | 0.0107 | 0.0067 | 0.0040 |
| 113 | 0.0108 | 0.0067 | 0.0041 |
| 114 | 0.0108 | 0.0068 | 0.0041 |
| 115 | 0.0109 | 0.0068 | 0.0041 |
| 116 | 0.0110 | 0.0068 | 0.0041 |
| 117 | 0.0111 | 0.0069 | 0.0042 |
| 118 | 0.0111 | 0.0069 | 0.0042 |
| 119 | 0.0112 | 0.0070 | 0.0042 |
| 120 | 0.0113 | 0.0070 | 0.0042 |
| 121 | 0.0114 | 0.0071 | 0.0043 |
| 122 | 0.0114 | 0.0071 | 0.0043 |
| 123 | 0.0115 | 0.0072 | 0.0043 |
| 124 | 0.0116 | 0.0072 | 0.0044 |
| 125 | 0.0117 | 0.0073 | 0.0044 |
| 126 | 0.0118 | 0.0073 | 0.0044 |
| 127 | 0.0119 | 0.0074 | 0.0045 |
| 128 | 0.0119 | 0.0074 | 0.0045 |
| 129 | 0.0121 | 0.0075 | 0.0045 |
| 130 | 0.0121 | 0.0076 | 0.0046 |
| 131 | 0.0123 | 0.0076 | 0.0046 |
| 132 | 0.0123 | 0.0077 | 0.0046 |
| 133 | 0.0125 | 0.0078 | 0.0047 |
| 134 | 0.0125 | 0.0078 | 0.0047 |
| 135 | 0.0127 | 0.0079 | 0.0048 |
| 136 | 0.0127 | 0.0079 | 0.0048 |
| 137 | 0.0129 | 0.0080 | 0.0049 |
| 138 | 0.0130 | 0.0081 | 0.0049 |
| 139 | 0.0131 | 0.0082 | 0.0049 |
| 140 | 0.0132 | 0.0082 | 0.0050 |
| 141 | 0.0134 | 0.0083 | 0.0050 |
| 142 | 0.0135 | 0.0084 | 0.0051 |
| 143 | 0.0137 | 0.0085 | 0.0051 |
| 144 | 0.0137 | 0.0086 | 0.0052 |
| 145 | 0.0175 | 0.0109 | 0.0066 |
| 146 | 0.0175 | 0.0109 | 0.0066 |
| 147 | 0.0177 | 0.0111 | 0.0067 |

| | | | |
|---|---|---|---|
| 148 | 0.0178 | 0.0111 | 0.0067 |
| 149 | 0.0180 | 0.0112 | 0.0068 |
| 150 | 0.0181 | 0.0113 | 0.0068 |
| 151 | 0.0184 | 0.0114 | 0.0069 |
| 152 | 0.0185 | 0.0115 | 0.0070 |
| 153 | 0.0187 | 0.0117 | 0.0070 |
| 154 | 0.0188 | 0.0117 | 0.0071 |
| 155 | 0.0191 | 0.0119 | 0.0072 |
| 156 | 0.0192 | 0.0120 | 0.0072 |
| 157 | 0.0195 | 0.0121 | 0.0073 |
| 158 | 0.0196 | 0.0122 | 0.0074 |
| 159 | 0.0199 | 0.0124 | 0.0075 |
| 160 | 0.0200 | 0.0125 | 0.0075 |
| 161 | 0.0203 | 0.0127 | 0.0077 |
| 162 | 0.0205 | 0.0128 | 0.0077 |
| 163 | 0.0208 | 0.0130 | 0.0078 |
| 164 | 0.0210 | 0.0131 | 0.0079 |
| 165 | 0.0214 | 0.0133 | 0.0081 |
| 166 | 0.0216 | 0.0135 | 0.0081 |
| 167 | 0.0220 | 0.0137 | 0.0083 |
| 168 | 0.0222 | 0.0138 | 0.0084 |
| 169 | 0.0227 | 0.0141 | 0.0085 |
| 170 | 0.0229 | 0.0143 | 0.0086 |
| 171 | 0.0234 | 0.0146 | 0.0088 |
| 172 | 0.0237 | 0.0148 | 0.0089 |
| 173 | 0.0243 | 0.0152 | 0.0091 |
| 174 | 0.0246 | 0.0153 | 0.0093 |
| 175 | 0.0253 | 0.0158 | 0.0095 |
| 176 | 0.0257 | 0.0160 | 0.0097 |
| 177 | 0.0265 | 0.0165 | 0.0100 |
| 178 | 0.0269 | 0.0168 | 0.0101 |
| 179 | 0.0278 | 0.0174 | 0.0105 |
| 180 | 0.0284 | 0.0177 | 0.0107 |
| 181 | 0.0295 | 0.0184 | 0.0111 |
| 182 | 0.0302 | 0.0188 | 0.0114 |
| 183 | 0.0317 | 0.0197 | 0.0119 |
| 184 | 0.0325 | 0.0203 | 0.0122 |
| 185 | 0.0168 | 0.0104 | 0.0063 |
| 186 | 0.0179 | 0.0111 | 0.0067 |
| 187 | 0.0207 | 0.0129 | 0.0078 |
| 188 | 0.0226 | 0.0141 | 0.0085 |
| 189 | 0.0281 | 0.0175 | 0.0106 |
| 190 | 0.0324 | 0.0202 | 0.0122 |
| 191 | 0.0491 | 0.0306 | 0.0185 |
| 192 | 0.0713 | 0.0445 | 0.0269 |
| 193 | 0.3086 | 0.0500 | 0.2586 |
| 194 | 0.0387 | 0.0241 | 0.0146 |
| 195 | 0.0250 | 0.0156 | 0.0094 |
| 196 | 0.0192 | 0.0119 | 0.0072 |
| 197 | 0.0335 | 0.0209 | 0.0126 |
| 198 | 0.0309 | 0.0193 | 0.0116 |
| 199 | 0.0289 | 0.0180 | 0.0109 |
| 200 | 0.0273 | 0.0170 | 0.0103 |
| 201 | 0.0260 | 0.0162 | 0.0098 |
| 202 | 0.0249 | 0.0156 | 0.0094 |
| 203 | 0.0240 | 0.0150 | 0.0090 |
| 204 | 0.0232 | 0.0144 | 0.0087 |
| 205 | 0.0224 | 0.0140 | 0.0084 |
| 206 | 0.0218 | 0.0136 | 0.0082 |
| 207 | 0.0212 | 0.0132 | 0.0080 |
| 208 | 0.0207 | 0.0129 | 0.0078 |
| 209 | 0.0202 | 0.0126 | 0.0076 |
| 210 | 0.0197 | 0.0123 | 0.0074 |
| 211 | 0.0193 | 0.0120 | 0.0073 |
| 212 | 0.0189 | 0.0118 | 0.0071 |
| 213 | 0.0186 | 0.0116 | 0.0070 |
| 214 | 0.0182 | 0.0114 | 0.0069 |
| 215 | 0.0179 | 0.0112 | 0.0068 |
| 216 | 0.0176 | 0.0110 | 0.0066 |
| 217 | 0.0138 | 0.0086 | 0.0052 |
| 218 | 0.0136 | 0.0085 | 0.0051 |

| | | | |
|---|---|---|---|
| 219 | 0.0133 | 0.0083 | 0.0050 |
| 220 | 0.0131 | 0.0081 | 0.0049 |
| 221 | 0.0128 | 0.0080 | 0.0048 |
| 222 | 0.0126 | 0.0079 | 0.0047 |
| 223 | 0.0124 | 0.0077 | 0.0047 |
| 224 | 0.0122 | 0.0076 | 0.0046 |
| 225 | 0.0120 | 0.0075 | 0.0045 |
| 226 | 0.0118 | 0.0074 | 0.0044 |
| 227 | 0.0116 | 0.0073 | 0.0044 |
| 228 | 0.0115 | 0.0072 | 0.0043 |
| 229 | 0.0113 | 0.0071 | 0.0043 |
| 230 | 0.0112 | 0.0070 | 0.0042 |
| 231 | 0.0110 | 0.0069 | 0.0041 |
| 232 | 0.0109 | 0.0068 | 0.0041 |
| 233 | 0.0107 | 0.0067 | 0.0040 |
| 234 | 0.0106 | 0.0066 | 0.0040 |
| 235 | 0.0105 | 0.0065 | 0.0039 |
| 236 | 0.0104 | 0.0065 | 0.0039 |
| 237 | 0.0102 | 0.0064 | 0.0039 |
| 238 | 0.0101 | 0.0063 | 0.0038 |
| 239 | 0.0100 | 0.0062 | 0.0038 |
| 240 | 0.0099 | 0.0062 | 0.0037 |
| 241 | 0.0098 | 0.0061 | 0.0037 |
| 242 | 0.0097 | 0.0061 | 0.0037 |
| 243 | 0.0096 | 0.0060 | 0.0036 |
| 244 | 0.0095 | 0.0059 | 0.0036 |
| 245 | 0.0094 | 0.0059 | 0.0035 |
| 246 | 0.0093 | 0.0058 | 0.0035 |
| 247 | 0.0092 | 0.0058 | 0.0035 |
| 248 | 0.0092 | 0.0057 | 0.0034 |
| 249 | 0.0091 | 0.0057 | 0.0034 |
| 250 | 0.0090 | 0.0056 | 0.0034 |
| 251 | 0.0089 | 0.0056 | 0.0034 |
| 252 | 0.0088 | 0.0055 | 0.0033 |
| 253 | 0.0088 | 0.0055 | 0.0033 |
| 254 | 0.0087 | 0.0054 | 0.0033 |
| 255 | 0.0086 | 0.0054 | 0.0032 |
| 256 | 0.0086 | 0.0053 | 0.0032 |
| 257 | 0.0085 | 0.0053 | 0.0032 |
| 258 | 0.0084 | 0.0053 | 0.0032 |
| 259 | 0.0084 | 0.0052 | 0.0031 |
| 260 | 0.0083 | 0.0052 | 0.0031 |
| 261 | 0.0082 | 0.0051 | 0.0031 |
| 262 | 0.0082 | 0.0051 | 0.0031 |
| 263 | 0.0081 | 0.0051 | 0.0031 |
| 264 | 0.0081 | 0.0050 | 0.0030 |
| 265 | 0.0080 | 0.0050 | 0.0030 |
| 266 | 0.0080 | 0.0050 | 0.0030 |
| 267 | 0.0079 | 0.0049 | 0.0030 |
| 268 | 0.0078 | 0.0049 | 0.0030 |
| 269 | 0.0078 | 0.0049 | 0.0029 |
| 270 | 0.0077 | 0.0048 | 0.0029 |
| 271 | 0.0077 | 0.0048 | 0.0029 |
| 272 | 0.0076 | 0.0048 | 0.0029 |
| 273 | 0.0076 | 0.0047 | 0.0029 |
| 274 | 0.0076 | 0.0047 | 0.0028 |
| 275 | 0.0075 | 0.0047 | 0.0028 |
| 276 | 0.0075 | 0.0047 | 0.0028 |
| 277 | 0.0074 | 0.0046 | 0.0028 |
| 278 | 0.0074 | 0.0046 | 0.0028 |
| 279 | 0.0073 | 0.0046 | 0.0028 |
| 280 | 0.0073 | 0.0045 | 0.0027 |
| 281 | 0.0072 | 0.0045 | 0.0027 |
| 282 | 0.0072 | 0.0045 | 0.0027 |
| 283 | 0.0072 | 0.0045 | 0.0027 |
| 284 | 0.0071 | 0.0044 | 0.0027 |
| 285 | 0.0071 | 0.0044 | 0.0027 |
| 286 | 0.0070 | 0.0044 | 0.0027 |
| 287 | 0.0070 | 0.0044 | 0.0026 |
| 288 | 0.0070 | 0.0043 | 0.0026 |

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      ----------------------------------------------------------------------
      Total soil rain loss =      2.35(In)
      Total effective rainfall =      1.65(In)
      Peak flow rate in flood hydrograph =      9.14(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        2.5       5.0       7.5      10.0
----------------------------------------------------------------------------
  0+ 5       0.0001      0.01  Q          |         |         |         |
  0+10       0.0008      0.10  Q          |         |         |         |
  0+15       0.0019      0.16  Q          |         |         |         |
  0+20       0.0031      0.18  Q          |         |         |         |
  0+25       0.0045      0.20  Q          |         |         |         |
  0+30       0.0059      0.20  Q          |         |         |         |
  0+35       0.0073      0.21  Q          |         |         |         |
  0+40       0.0087      0.21  Q          |         |         |         |
  0+45       0.0101      0.21  Q          |         |         |         |
  0+50       0.0116      0.21  Q          |         |         |         |
  0+55       0.0131      0.21  Q          |         |         |         |
  1+ 0       0.0145      0.21  Q          |         |         |         |
  1+ 5       0.0160      0.21  Q          |         |         |         |
  1+10       0.0174      0.21  Q          |         |         |         |
  1+15       0.0189      0.21  Q          |         |         |         |
  1+20       0.0204      0.21  Q          |         |         |         |
  1+25       0.0219      0.21  Q          |         |         |         |
  1+30       0.0234      0.22  QV         |         |         |         |
  1+35       0.0248      0.22  QV         |         |         |         |
  1+40       0.0263      0.22  QV         |         |         |         |
  1+45       0.0278      0.22  QV         |         |         |         |
  1+50       0.0293      0.22  QV         |         |         |         |
  1+55       0.0308      0.22  QV         |         |         |         |
  2+ 0       0.0324      0.22  QV         |         |         |         |
  2+ 5       0.0339      0.22  QV         |         |         |         |
  2+10       0.0354      0.22  QV         |         |         |         |
  2+15       0.0369      0.22  QV         |         |         |         |
  2+20       0.0384      0.22  QV         |         |         |         |
  2+25       0.0400      0.22  QV         |         |         |         |
  2+30       0.0415      0.22  QV         |         |         |         |
  2+35       0.0430      0.22  QV         |         |         |         |
  2+40       0.0446      0.22  QV         |         |         |         |
  2+45       0.0461      0.23  Q V        |         |         |         |
  2+50       0.0477      0.23  Q V        |         |         |         |
  2+55       0.0493      0.23  Q V        |         |         |         |
  3+ 0       0.0508      0.23  Q V        |         |         |         |
  3+ 5       0.0524      0.23  Q V        |         |         |         |
  3+10       0.0540      0.23  Q V        |         |         |         |
  3+15       0.0556      0.23  Q V        |         |         |         |
  3+20       0.0571      0.23  Q V        |         |         |         |
  3+25       0.0587      0.23  Q V        |         |         |         |
  3+30       0.0603      0.23  Q V        |         |         |         |
  3+35       0.0619      0.23  Q V        |         |         |         |
  3+40       0.0635      0.23  Q V        |         |         |         |
  3+45       0.0652      0.23  Q V        |         |         |         |
  3+50       0.0668      0.23  Q V        |         |         |         |
  3+55       0.0684      0.24  Q  V       |         |         |         |
  4+ 0       0.0700      0.24  Q  V       |         |         |         |
  4+ 5       0.0717      0.24  Q  V       |         |         |         |
  4+10       0.0733      0.24  Q  V       |         |         |         |
  4+15       0.0749      0.24  Q  V       |         |         |         |
  4+20       0.0766      0.24  Q  V       |         |         |         |
  4+25       0.0783      0.24  Q  V       |         |         |         |
  4+30       0.0799      0.24  Q  V       |         |         |         |
  4+35       0.0816      0.24  Q  V       |         |         |         |
  4+40       0.0833      0.24  Q  V       |         |         |         |
  4+45       0.0849      0.24  Q  V       |         |         |         |
```

```
 4+50      0.0866      0.25  Q  V      |          |          |          |
 4+55      0.0883      0.25  Q  V      |          |          |          |
 5+ 0      0.0900      0.25  Q   V     |          |          |          |
 5+ 5      0.0917      0.25  Q   V     |          |          |          |
 5+10      0.0934      0.25  Q   V     |          |          |          |
 5+15      0.0952      0.25  Q   V     |          |          |          |
 5+20      0.0969      0.25  |Q  V     |          |          |          |
 5+25      0.0986      0.25  |Q  V     |          |          |          |
 5+30      0.1004      0.25  |Q  V     |          |          |          |
 5+35      0.1021      0.25  |Q  V     |          |          |          |
 5+40      0.1039      0.25  |Q  V     |          |          |          |
 5+45      0.1056      0.26  |Q  V     |          |          |          |
 5+50      0.1074      0.26  |Q  V     |          |          |          |
 5+55      0.1092      0.26  |Q  V     |          |          |          |
 6+ 0      0.1109      0.26  |Q  V     |          |          |          |
 6+ 5      0.1127      0.26  |Q   V    |          |          |          |
 6+10      0.1145      0.26  |Q   V    |          |          |          |
 6+15      0.1163      0.26  |Q   V    |          |          |          |
 6+20      0.1181      0.26  |Q   V    |          |          |          |
 6+25      0.1200      0.26  |Q   V    |          |          |          |
 6+30      0.1218      0.27  |Q   V    |          |          |          |
 6+35      0.1236      0.27  |Q   V    |          |          |          |
 6+40      0.1255      0.27  |Q   V    |          |          |          |
 6+45      0.1273      0.27  |Q   V    |          |          |          |
 6+50      0.1292      0.27  |Q   V    |          |          |          |
 6+55      0.1310      0.27  |Q   V    |          |          |          |
 7+ 0      0.1329      0.27  |Q   V    |          |          |          |
 7+ 5      0.1348      0.27  |Q    V   |          |          |          |
 7+10      0.1367      0.27  |Q    V   |          |          |          |
 7+15      0.1386      0.28  |Q    V   |          |          |          |
 7+20      0.1405      0.28  |Q    V   |          |          |          |
 7+25      0.1424      0.28  |Q    V   |          |          |          |
 7+30      0.1444      0.28  |Q    V   |          |          |          |
 7+35      0.1463      0.28  |Q    V   |          |          |          |
 7+40      0.1482      0.28  |Q    V   |          |          |          |
 7+45      0.1502      0.28  |Q    V   |          |          |          |
 7+50      0.1522      0.29  |Q    V   |          |          |          |
 7+55      0.1541      0.29  |Q    V   |          |          |          |
 8+ 0      0.1561      0.29  |Q    V   |          |          |          |
 8+ 5      0.1581      0.29  |Q     V  |          |          |          |
 8+10      0.1601      0.29  |Q     V  |          |          |          |
 8+15      0.1621      0.29  |Q     V  |          |          |          |
 8+20      0.1642      0.29  |Q     V  |          |          |          |
 8+25      0.1662      0.30  |Q     V  |          |          |          |
 8+30      0.1683      0.30  |Q     V  |          |          |          |
 8+35      0.1703      0.30  |Q     V  |          |          |          |
 8+40      0.1724      0.30  |Q     V  |          |          |          |
 8+45      0.1745      0.30  |Q     V  |          |          |          |
 8+50      0.1766      0.30  |Q     V  |          |          |          |
 8+55      0.1787      0.31  |Q     V  |          |          |          |
 9+ 0      0.1808      0.31  |Q      V |          |          |          |
 9+ 5      0.1829      0.31  |Q      V |          |          |          |
 9+10      0.1851      0.31  |Q      V |          |          |          |
 9+15      0.1872      0.31  |Q      V |          |          |          |
 9+20      0.1894      0.32  |Q      V |          |          |          |
 9+25      0.1916      0.32  |Q      V |          |          |          |
 9+30      0.1938      0.32  |Q      V |          |          |          |
 9+35      0.1960      0.32  |Q      V |          |          |          |
 9+40      0.1982      0.32  |Q      V |          |          |          |
 9+45      0.2004      0.32  |Q      V |          |          |          |
 9+50      0.2027      0.33  |Q       V|          |          |          |
 9+55      0.2050      0.33  |Q       V|          |          |          |
10+ 0      0.2072      0.33  |Q       V|          |          |          |
10+ 5      0.2095      0.33  |Q       V|          |          |          |
10+10      0.2119      0.34  |Q       V|          |          |          |
10+15      0.2142      0.34  |Q       V|          |          |          |
10+20      0.2165      0.34  |Q       V|          |          |          |
10+25      0.2189      0.34  |Q       V|          |          |          |
10+30      0.2213      0.35  |Q       V|          |          |          |
10+35      0.2237      0.35  |Q       V|          |          |          |
10+40      0.2261      0.35  |Q        V          |          |          |
```

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10+45       0.2285      0.35  |Q        V         |          |          |
10+50       0.2310      0.36  |Q        V         |          |          |
10+55       0.2334      0.36  |Q        V         |          |          |
11+ 0       0.2359      0.36  |Q        V         |          |          |
11+ 5       0.2384      0.36  |Q        V         |          |          |
11+10       0.2410      0.37  |Q        V         |          |          |
11+15       0.2435      0.37  |Q        V         |          |          |
11+20       0.2461      0.37  |Q        V         |          |          |
11+25       0.2487      0.38  |Q        |V        |          |          |
11+30       0.2513      0.38  |Q        |V        |          |          |
11+35       0.2540      0.38  |Q        |V        |          |          |
11+40       0.2566      0.39  |Q        |V        |          |          |
11+45       0.2593      0.39  |Q        |V        |          |          |
11+50       0.2620      0.39  |Q        |V        |          |          |
11+55       0.2648      0.40  |Q        |V        |          |          |
12+ 0       0.2676      0.40  |Q        |V        |          |          |
12+ 5       0.2704      0.41  |Q        | V       |          |          |
12+10       0.2736      0.46  |Q        | V       |          |          |
12+15       0.2770      0.49  |Q        | V       |          |          |
12+20       0.2805      0.51  | Q       | V       |          |          |
12+25       0.2841      0.52  | Q       | V       |          |          |
12+30       0.2877      0.53  | Q       | V       |          |          |
12+35       0.2914      0.54  | Q       | V       |          |          |
12+40       0.2951      0.54  | Q       |  V      |          |          |
12+45       0.2989      0.55  | Q       |  V      |          |          |
12+50       0.3027      0.55  | Q       |  V      |          |          |
12+55       0.3065      0.56  | Q       |  V      |          |          |
13+ 0       0.3104      0.56  | Q       |  V      |          |          |
13+ 5       0.3143      0.57  | Q       |   V     |          |          |
13+10       0.3182      0.57  | Q       |   V     |          |          |
13+15       0.3222      0.58  | Q       |   V     |          |          |
13+20       0.3263      0.59  | Q       |   V     |          |          |
13+25       0.3303      0.59  | Q       |   V     |          |          |
13+30       0.3345      0.60  | Q       |   V     |          |          |
13+35       0.3386      0.61  | Q       |    V    |          |          |
13+40       0.3428      0.61  | Q       |    V    |          |          |
13+45       0.3471      0.62  | Q       |    V    |          |          |
13+50       0.3514      0.63  | Q       |    V    |          |          |
13+55       0.3558      0.64  | Q       |    V    |          |          |
14+ 0       0.3603      0.65  | Q       |     V   |          |          |
14+ 5       0.3648      0.65  | Q       |     V   |          |          |
14+10       0.3693      0.66  | Q       |     V   |          |          |
14+15       0.3740      0.67  | Q       |     V   |          |          |
14+20       0.3787      0.69  | Q       |     V   |          |          |
14+25       0.3835      0.70  | Q       |      V  |          |          |
14+30       0.3884      0.71  | Q       |      V  |          |          |
14+35       0.3934      0.72  | Q       |      V  |          |          |
14+40       0.3985      0.74  | Q       |      V  |          |          |
14+45       0.4036      0.75  |  Q      |      V  |          |          |
14+50       0.4089      0.77  |  Q      |       V |          |          |
14+55       0.4144      0.79  |  Q      |       V |          |          |
15+ 0       0.4199      0.81  |  Q      |       V |          |          |
15+ 5       0.4256      0.83  |  Q      |       V |          |          |
15+10       0.4315      0.85  |  Q      |        V|          |          |
15+15       0.4376      0.88  |  Q      |        V|          |          |
15+20       0.4438      0.91  |  Q      |        V|          |          |
15+25       0.4501      0.91  |  Q      |         V          |          |
15+30       0.4551      0.74  | Q       |         V          |          |
15+35       0.4594      0.62  | Q       |         V          |          |
15+40       0.4637      0.62  | Q       |         V          |          |
15+45       0.4683      0.66  | Q       |         V          |          |
15+50       0.4734      0.75  | Q       |         |V         |          |
15+55       0.4795      0.89  |  Q      |         |V         |          |
16+ 0       0.4877      1.19  |   Q     |         |V         |          |
16+ 5       0.5077      2.90  |         |Q        | V        |          |
16+10       0.5706      9.14  |         |         |    V     |     Q    |
16+15       0.6186      6.97  |         |         |      Q   |          |
16+20       0.6403      3.15  |         | Q       |       V  |          |
16+25       0.6542      2.02  |       Q |         |        V|          |
16+30       0.6646      1.51  |     Q   |         |        V|          |
16+35       0.6725      1.16  |   Q     |         |        V|          |
```

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16+40       0.6795      1.01  |   Q     |          |          V          |
16+45       0.6859      0.94  |  Q      |          |          V          |
16+50       0.6920      0.88  |  Q      |          |          V          |
16+55       0.6975      0.80  |  Q      |          |          |V         |
17+ 0       0.7026      0.74  | Q       |          |          |V         |
17+ 5       0.7075      0.72  | Q       |          |          |V         |
17+10       0.7123      0.69  | Q       |          |          |V         |
17+15       0.7169      0.67  | Q       |          |          |V         |
17+20       0.7214      0.65  | Q       |          |          | V        |
17+25       0.7257      0.63  | Q       |          |          | V        |
17+30       0.7300      0.62  | Q       |          |          | V        |
17+35       0.7341      0.60  | Q       |          |          | V        |
17+40       0.7382      0.59  | Q       |          |          | V        |
17+45       0.7421      0.58  | Q       |          |          |  V       |
17+50       0.7460      0.56  | Q       |          |          |  V       |
17+55       0.7498      0.55  | Q       |          |          |  V       |
18+ 0       0.7536      0.54  | Q       |          |          |  V       |
18+ 5       0.7572      0.53  | Q       |          |          |  V       |
18+10       0.7605      0.48  |Q        |          |          |  V       |
18+15       0.7635      0.44  |Q        |          |          |   V      |
18+20       0.7664      0.42  |Q        |          |          |   V      |
18+25       0.7691      0.40  |Q        |          |          |   V      |
18+30       0.7718      0.39  |Q        |          |          |   V      |
18+35       0.7745      0.38  |Q        |          |          |   V      |
18+40       0.7771      0.38  |Q        |          |          |   V      |
18+45       0.7796      0.37  |Q        |          |          |   V      |
18+50       0.7821      0.36  |Q        |          |          |   V      |
18+55       0.7846      0.36  |Q        |          |          |   V      |
19+ 0       0.7870      0.35  |Q        |          |          |    V     |
19+ 5       0.7894      0.35  |Q        |          |          |    V     |
19+10       0.7917      0.34  |Q        |          |          |    V     |
19+15       0.7941      0.34  |Q        |          |          |    V     |
19+20       0.7963      0.33  |Q        |          |          |    V     |
19+25       0.7986      0.33  |Q        |          |          |    V     |
19+30       0.8008      0.32  |Q        |          |          |    V     |
19+35       0.8030      0.32  |Q        |          |          |    V     |
19+40       0.8052      0.32  |Q        |          |          |    V     |
19+45       0.8074      0.31  |Q        |          |          |    V     |
19+50       0.8095      0.31  |Q        |          |          |     V    |
19+55       0.8116      0.30  |Q        |          |          |     V    |
20+ 0       0.8137      0.30  |Q        |          |          |     V    |
20+ 5       0.8157      0.30  |Q        |          |          |     V    |
20+10       0.8177      0.29  |Q        |          |          |     V    |
20+15       0.8197      0.29  |Q        |          |          |     V    |
20+20       0.8217      0.29  |Q        |          |          |     V    |
20+25       0.8237      0.29  |Q        |          |          |     V    |
20+30       0.8257      0.28  |Q        |          |          |     V    |
20+35       0.8276      0.28  |Q        |          |          |     V    |
20+40       0.8295      0.28  |Q        |          |          |     V    |
20+45       0.8314      0.28  |Q        |          |          |      V   |
20+50       0.8333      0.27  |Q        |          |          |      V   |
20+55       0.8351      0.27  |Q        |          |          |      V   |
21+ 0       0.8370      0.27  |Q        |          |          |      V   |
21+ 5       0.8388      0.27  |Q        |          |          |      V   |
21+10       0.8406      0.26  |Q        |          |          |      V   |
21+15       0.8424      0.26  |Q        |          |          |      V   |
21+20       0.8442      0.26  |Q        |          |          |      V   |
21+25       0.8460      0.26  |Q        |          |          |      V   |
21+30       0.8477      0.25  |Q        |          |          |      V   |
21+35       0.8495      0.25  |Q        |          |          |      V   |
21+40       0.8512      0.25  |Q        |          |          |      V   |
21+45       0.8529      0.25  Q         |          |          |      V   |
21+50       0.8546      0.25  Q         |          |          |       V  |
21+55       0.8563      0.25  Q         |          |          |       V  |
22+ 0       0.8580      0.24  Q         |          |          |       V  |
22+ 5       0.8597      0.24  Q         |          |          |       V  |
22+10       0.8613      0.24  Q         |          |          |       V  |
22+15       0.8629      0.24  Q         |          |          |       V  |
22+20       0.8646      0.24  Q         |          |          |       V  |
22+25       0.8662      0.24  Q         |          |          |       V  |
22+30       0.8678      0.23  Q         |          |          |       V  |
```

```
  22+35       0.8694      0.23  Q         |          |          |       V |
  22+40       0.8710      0.23  Q         |          |          |       V |
  22+45       0.8726      0.23  Q         |          |          |       V |
  22+50       0.8741      0.23  Q         |          |          |       V |
  22+55       0.8757      0.23  Q         |          |          |        V|
  23+ 0       0.8772      0.22  Q         |          |          |        V|
  23+ 5       0.8788      0.22  Q         |          |          |        V|
  23+10       0.8803      0.22  Q         |          |          |        V|
  23+15       0.8818      0.22  Q         |          |          |        V|
  23+20       0.8833      0.22  Q         |          |          |        V|
  23+25       0.8849      0.22  Q         |          |          |        V|
  23+30       0.8863      0.22  Q         |          |          |        V|
  23+35       0.8878      0.22  Q         |          |          |        V|
  23+40       0.8893      0.21  Q         |          |          |        V|
  23+45       0.8908      0.21  Q         |          |          |        V|
  23+50       0.8922      0.21  Q         |          |          |        V|
  23+55       0.8937      0.21  Q         |          |          |        V|
  24+ 0       0.8951      0.21  Q         |          |          |        V|
  24+ 5       0.8965      0.19  Q         |          |          |        V|
  24+10       0.8972      0.11  Q         |          |          |        V|
  24+15       0.8976      0.05  Q         |          |          |        V|
  24+20       0.8978      0.03  Q         |          |          |        V|
  24+25       0.8978      0.01  Q         |          |          |        V|
  24+30       0.8979      0.01  Q         |          |          |        V|
  24+35       0.8979      0.00  Q         |          |          |        V|
  24+40       0.8979      0.00  Q         |          |          |        V|
  24+45       0.8979      0.00  Q         |          |          |        V|
  24+50       0.8979      0.00  Q         |          |          |        V|
-------------------------------------------------------------------------
```

Area 'C' – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
       U n i t   H y d r o g r a p h   A n a l y s i s

       Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

              Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
              Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
5 YEAR 24 HOUR STORM
DECEMBER 4, 2024
----------------------------------------------------------------------

       Storm Event Year = 5

       Antecedent Moisture Condition = 1

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
       Sub-Area        Duration        Isohyetal
       (Ac.)            (hours)         (In)
Rainfall data for year 10
            6.54           1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
            6.54           6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
            6.54          24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
            6.54           1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
            6.54           6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
            6.54          24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 1)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 32.0      16.6          6.54      1.000     1.000    0.600    0.600

Area-averaged adjusted loss rate Fm (In/Hr) =  0.600

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC1) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 3.92 | 0.600 | 32.0 | 16.6 | 29.37 | 0.000 |
| 2.62 | 0.400 | 98.0 | 98.0 | 0.20 | 0.959 |

Area-averaged catchment yield fraction, Y = 0.384
Area-averaged low loss fraction, Yb = 0.616
User entry of time of concentration = 0.152 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.54(Ac.)
Catchment Lag time = 0.121 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 68.6210
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.600(In/Hr)
Average low loss rate fraction (Yb) = 0.616 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.403(In)
Computed peak 30-minute rainfall = 0.690(In)
Specified peak 1-hour rainfall = 0.849(In)
Computed peak 3-hour rainfall = 1.681(In)
Specified peak 6-hour rainfall = 2.586(In)
Specified peak 24-hour rainfall = 5.874(In)

Rainfall depth area reduction factors:
Using a total area of 6.54(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.403(In)
30-minute factor = 1.000 Adjusted rainfall = 0.690(In)
1-hour factor = 1.000 Adjusted rainfall = 0.849(In)
3-hour factor = 1.000 Adjusted rainfall = 1.681(In)
6-hour factor = 1.000 Adjusted rainfall = 2.586(In)
24-hour factor = 1.000 Adjusted rainfall = 5.874(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 79.09 (CFS)) | |
| 1 | 6.926 | 5.478 |
| 2 | 46.826 | 31.558 |
| 3 | 76.548 | 23.508 |
| 4 | 87.652 | 8.782 |
| 5 | 93.849 | 4.901 |
| 6 | 97.160 | 2.619 |
| 7 | 98.439 | 1.012 |
| 8 | 99.077 | 0.504 |
| 9 | 99.557 | 0.380 |
| 10 | 99.888 | 0.262 |
| 11 | 100.000 | 0.088 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4030 | 0.4030 |
| 2 | 0.4961 | 0.0931 |
| 3 | 0.5603 | 0.0642 |
| 4 | 0.6108 | 0.0505 |
| 5 | 0.6531 | 0.0423 |
| 6 | 0.6898 | 0.0367 |
| 7 | 0.7224 | 0.0326 |
| 8 | 0.7520 | 0.0295 |
| 9 | 0.7790 | 0.0270 |
| 10 | 0.8040 | 0.0250 |
| 11 | 0.8273 | 0.0233 |
| 12 | 0.8492 | 0.0219 |
| 13 | 0.8925 | 0.0433 |
| 14 | 0.9346 | 0.0421 |

| | | |
|---|---|---|
| 15 | 0.9755 | 0.0409 |
| 16 | 1.0155 | 0.0399 |
| 17 | 1.0545 | 0.0390 |
| 18 | 1.0926 | 0.0381 |
| 19 | 1.1299 | 0.0373 |
| 20 | 1.1665 | 0.0366 |
| 21 | 1.2024 | 0.0359 |
| 22 | 1.2377 | 0.0353 |
| 23 | 1.2724 | 0.0347 |
| 24 | 1.3065 | 0.0341 |
| 25 | 1.3400 | 0.0336 |
| 26 | 1.3731 | 0.0331 |
| 27 | 1.4057 | 0.0326 |
| 28 | 1.4378 | 0.0321 |
| 29 | 1.4695 | 0.0317 |
| 30 | 1.5008 | 0.0313 |
| 31 | 1.5317 | 0.0309 |
| 32 | 1.5622 | 0.0305 |
| 33 | 1.5924 | 0.0302 |
| 34 | 1.6222 | 0.0298 |
| 35 | 1.6517 | 0.0295 |
| 36 | 1.6809 | 0.0292 |
| 37 | 1.7097 | 0.0289 |
| 38 | 1.7383 | 0.0286 |
| 39 | 1.7666 | 0.0283 |
| 40 | 1.7946 | 0.0280 |
| 41 | 1.8223 | 0.0277 |
| 42 | 1.8498 | 0.0275 |
| 43 | 1.8770 | 0.0272 |
| 44 | 1.9040 | 0.0270 |
| 45 | 1.9308 | 0.0268 |
| 46 | 1.9573 | 0.0265 |
| 47 | 1.9837 | 0.0263 |
| 48 | 2.0098 | 0.0261 |
| 49 | 2.0357 | 0.0259 |
| 50 | 2.0614 | 0.0257 |
| 51 | 2.0869 | 0.0255 |
| 52 | 2.1123 | 0.0253 |
| 53 | 2.1374 | 0.0251 |
| 54 | 2.1624 | 0.0250 |
| 55 | 2.1872 | 0.0248 |
| 56 | 2.2118 | 0.0246 |
| 57 | 2.2362 | 0.0245 |
| 58 | 2.2605 | 0.0243 |
| 59 | 2.2847 | 0.0241 |
| 60 | 2.3086 | 0.0240 |
| 61 | 2.3325 | 0.0238 |
| 62 | 2.3561 | 0.0237 |
| 63 | 2.3797 | 0.0235 |
| 64 | 2.4031 | 0.0234 |
| 65 | 2.4263 | 0.0233 |
| 66 | 2.4495 | 0.0231 |
| 67 | 2.4724 | 0.0230 |
| 68 | 2.4953 | 0.0229 |
| 69 | 2.5180 | 0.0227 |
| 70 | 2.5407 | 0.0226 |
| 71 | 2.5631 | 0.0225 |
| 72 | 2.5855 | 0.0224 |
| 73 | 2.6067 | 0.0212 |
| 74 | 2.6278 | 0.0211 |
| 75 | 2.6487 | 0.0210 |
| 76 | 2.6696 | 0.0208 |
| 77 | 2.6903 | 0.0207 |
| 78 | 2.7110 | 0.0206 |
| 79 | 2.7315 | 0.0205 |
| 80 | 2.7519 | 0.0204 |
| 81 | 2.7722 | 0.0203 |
| 82 | 2.7924 | 0.0202 |
| 83 | 2.8125 | 0.0201 |
| 84 | 2.8325 | 0.0200 |
| 85 | 2.8524 | 0.0199 |

| | | |
|---|---|---|
| 86 | 2.8722 | 0.0198 |
| 87 | 2.8920 | 0.0197 |
| 88 | 2.9116 | 0.0196 |
| 89 | 2.9311 | 0.0195 |
| 90 | 2.9506 | 0.0194 |
| 91 | 2.9699 | 0.0194 |
| 92 | 2.9892 | 0.0193 |
| 93 | 3.0084 | 0.0192 |
| 94 | 3.0275 | 0.0191 |
| 95 | 3.0465 | 0.0190 |
| 96 | 3.0655 | 0.0189 |
| 97 | 3.0843 | 0.0189 |
| 98 | 3.1031 | 0.0188 |
| 99 | 3.1218 | 0.0187 |
| 100 | 3.1405 | 0.0186 |
| 101 | 3.1590 | 0.0186 |
| 102 | 3.1775 | 0.0185 |
| 103 | 3.1959 | 0.0184 |
| 104 | 3.2142 | 0.0183 |
| 105 | 3.2325 | 0.0183 |
| 106 | 3.2507 | 0.0182 |
| 107 | 3.2688 | 0.0181 |
| 108 | 3.2868 | 0.0180 |
| 109 | 3.3048 | 0.0180 |
| 110 | 3.3227 | 0.0179 |
| 111 | 3.3406 | 0.0178 |
| 112 | 3.3584 | 0.0178 |
| 113 | 3.3761 | 0.0177 |
| 114 | 3.3937 | 0.0177 |
| 115 | 3.4113 | 0.0176 |
| 116 | 3.4288 | 0.0175 |
| 117 | 3.4463 | 0.0175 |
| 118 | 3.4637 | 0.0174 |
| 119 | 3.4811 | 0.0173 |
| 120 | 3.4983 | 0.0173 |
| 121 | 3.5156 | 0.0172 |
| 122 | 3.5327 | 0.0172 |
| 123 | 3.5498 | 0.0171 |
| 124 | 3.5669 | 0.0171 |
| 125 | 3.5839 | 0.0170 |
| 126 | 3.6008 | 0.0169 |
| 127 | 3.6177 | 0.0169 |
| 128 | 3.6346 | 0.0168 |
| 129 | 3.6513 | 0.0168 |
| 130 | 3.6681 | 0.0167 |
| 131 | 3.6847 | 0.0167 |
| 132 | 3.7014 | 0.0166 |
| 133 | 3.7179 | 0.0166 |
| 134 | 3.7345 | 0.0165 |
| 135 | 3.7509 | 0.0165 |
| 136 | 3.7674 | 0.0164 |
| 137 | 3.7837 | 0.0164 |
| 138 | 3.8001 | 0.0163 |
| 139 | 3.8163 | 0.0163 |
| 140 | 3.8326 | 0.0162 |
| 141 | 3.8487 | 0.0162 |
| 142 | 3.8649 | 0.0161 |
| 143 | 3.8810 | 0.0161 |
| 144 | 3.8970 | 0.0160 |
| 145 | 3.9130 | 0.0160 |
| 146 | 3.9289 | 0.0160 |
| 147 | 3.9449 | 0.0159 |
| 148 | 3.9607 | 0.0159 |
| 149 | 3.9765 | 0.0158 |
| 150 | 3.9923 | 0.0158 |
| 151 | 4.0080 | 0.0157 |
| 152 | 4.0237 | 0.0157 |
| 153 | 4.0394 | 0.0156 |
| 154 | 4.0550 | 0.0156 |
| 155 | 4.0706 | 0.0156 |
| 156 | 4.0861 | 0.0155 |

| | | |
|---|---|---|
| 157 | 4.1016 | 0.0155 |
| 158 | 4.1170 | 0.0154 |
| 159 | 4.1324 | 0.0154 |
| 160 | 4.1478 | 0.0154 |
| 161 | 4.1631 | 0.0153 |
| 162 | 4.1784 | 0.0153 |
| 163 | 4.1936 | 0.0152 |
| 164 | 4.2088 | 0.0152 |
| 165 | 4.2240 | 0.0152 |
| 166 | 4.2391 | 0.0151 |
| 167 | 4.2542 | 0.0151 |
| 168 | 4.2693 | 0.0151 |
| 169 | 4.2843 | 0.0150 |
| 170 | 4.2993 | 0.0150 |
| 171 | 4.3143 | 0.0150 |
| 172 | 4.3292 | 0.0149 |
| 173 | 4.3441 | 0.0149 |
| 174 | 4.3589 | 0.0148 |
| 175 | 4.3737 | 0.0148 |
| 176 | 4.3885 | 0.0148 |
| 177 | 4.4032 | 0.0147 |
| 178 | 4.4180 | 0.0147 |
| 179 | 4.4326 | 0.0147 |
| 180 | 4.4473 | 0.0146 |
| 181 | 4.4619 | 0.0146 |
| 182 | 4.4764 | 0.0146 |
| 183 | 4.4910 | 0.0145 |
| 184 | 4.5055 | 0.0145 |
| 185 | 4.5200 | 0.0145 |
| 186 | 4.5344 | 0.0144 |
| 187 | 4.5488 | 0.0144 |
| 188 | 4.5632 | 0.0144 |
| 189 | 4.5776 | 0.0144 |
| 190 | 4.5919 | 0.0143 |
| 191 | 4.6062 | 0.0143 |
| 192 | 4.6204 | 0.0143 |
| 193 | 4.6347 | 0.0142 |
| 194 | 4.6489 | 0.0142 |
| 195 | 4.6630 | 0.0142 |
| 196 | 4.6772 | 0.0141 |
| 197 | 4.6913 | 0.0141 |
| 198 | 4.7054 | 0.0141 |
| 199 | 4.7194 | 0.0141 |
| 200 | 4.7334 | 0.0140 |
| 201 | 4.7474 | 0.0140 |
| 202 | 4.7614 | 0.0140 |
| 203 | 4.7753 | 0.0139 |
| 204 | 4.7893 | 0.0139 |
| 205 | 4.8031 | 0.0139 |
| 206 | 4.8170 | 0.0139 |
| 207 | 4.8308 | 0.0138 |
| 208 | 4.8446 | 0.0138 |
| 209 | 4.8584 | 0.0138 |
| 210 | 4.8721 | 0.0137 |
| 211 | 4.8859 | 0.0137 |
| 212 | 4.8996 | 0.0137 |
| 213 | 4.9132 | 0.0137 |
| 214 | 4.9269 | 0.0136 |
| 215 | 4.9405 | 0.0136 |
| 216 | 4.9541 | 0.0136 |
| 217 | 4.9676 | 0.0136 |
| 218 | 4.9812 | 0.0135 |
| 219 | 4.9947 | 0.0135 |
| 220 | 5.0082 | 0.0135 |
| 221 | 5.0216 | 0.0135 |
| 222 | 5.0351 | 0.0134 |
| 223 | 5.0485 | 0.0134 |
| 224 | 5.0619 | 0.0134 |
| 225 | 5.0752 | 0.0134 |
| 226 | 5.0886 | 0.0133 |
| 227 | 5.1019 | 0.0133 |

| | | |
|---|---|---|
| 228 | 5.1152 | 0.0133 |
| 229 | 5.1284 | 0.0133 |
| 230 | 5.1417 | 0.0132 |
| 231 | 5.1549 | 0.0132 |
| 232 | 5.1681 | 0.0132 |
| 233 | 5.1813 | 0.0132 |
| 234 | 5.1944 | 0.0132 |
| 235 | 5.2076 | 0.0131 |
| 236 | 5.2207 | 0.0131 |
| 237 | 5.2337 | 0.0131 |
| 238 | 5.2468 | 0.0131 |
| 239 | 5.2598 | 0.0130 |
| 240 | 5.2729 | 0.0130 |
| 241 | 5.2859 | 0.0130 |
| 242 | 5.2988 | 0.0130 |
| 243 | 5.3118 | 0.0129 |
| 244 | 5.3247 | 0.0129 |
| 245 | 5.3376 | 0.0129 |
| 246 | 5.3505 | 0.0129 |
| 247 | 5.3634 | 0.0129 |
| 248 | 5.3762 | 0.0128 |
| 249 | 5.3890 | 0.0128 |
| 250 | 5.4018 | 0.0128 |
| 251 | 5.4146 | 0.0128 |
| 252 | 5.4274 | 0.0128 |
| 253 | 5.4401 | 0.0127 |
| 254 | 5.4528 | 0.0127 |
| 255 | 5.4655 | 0.0127 |
| 256 | 5.4782 | 0.0127 |
| 257 | 5.4908 | 0.0127 |
| 258 | 5.5035 | 0.0126 |
| 259 | 5.5161 | 0.0126 |
| 260 | 5.5287 | 0.0126 |
| 261 | 5.5413 | 0.0126 |
| 262 | 5.5538 | 0.0126 |
| 263 | 5.5664 | 0.0125 |
| 264 | 5.5789 | 0.0125 |
| 265 | 5.5914 | 0.0125 |
| 266 | 5.6039 | 0.0125 |
| 267 | 5.6163 | 0.0125 |
| 268 | 5.6288 | 0.0124 |
| 269 | 5.6412 | 0.0124 |
| 270 | 5.6536 | 0.0124 |
| 271 | 5.6660 | 0.0124 |
| 272 | 5.6783 | 0.0124 |
| 273 | 5.6907 | 0.0123 |
| 274 | 5.7030 | 0.0123 |
| 275 | 5.7153 | 0.0123 |
| 276 | 5.7276 | 0.0123 |
| 277 | 5.7399 | 0.0123 |
| 278 | 5.7522 | 0.0123 |
| 279 | 5.7644 | 0.0122 |
| 280 | 5.7766 | 0.0122 |
| 281 | 5.7888 | 0.0122 |
| 282 | 5.8010 | 0.0122 |
| 283 | 5.8132 | 0.0122 |
| 284 | 5.8253 | 0.0121 |
| 285 | 5.8375 | 0.0121 |
| 286 | 5.8496 | 0.0121 |
| 287 | 5.8617 | 0.0121 |
| 288 | 5.8737 | 0.0121 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0121 | 0.0074 | 0.0046 |
| 2 | 0.0121 | 0.0075 | 0.0046 |
| 3 | 0.0121 | 0.0075 | 0.0047 |
| 4 | 0.0121 | 0.0075 | 0.0047 |
| 5 | 0.0122 | 0.0075 | 0.0047 |

| | | | |
|---|---|---|---|
| 6 | 0.0122 | 0.0075 | 0.0047 |
| 7 | 0.0122 | 0.0075 | 0.0047 |
| 8 | 0.0123 | 0.0076 | 0.0047 |
| 9 | 0.0123 | 0.0076 | 0.0047 |
| 10 | 0.0123 | 0.0076 | 0.0047 |
| 11 | 0.0123 | 0.0076 | 0.0047 |
| 12 | 0.0124 | 0.0076 | 0.0047 |
| 13 | 0.0124 | 0.0076 | 0.0048 |
| 14 | 0.0124 | 0.0077 | 0.0048 |
| 15 | 0.0125 | 0.0077 | 0.0048 |
| 16 | 0.0125 | 0.0077 | 0.0048 |
| 17 | 0.0125 | 0.0077 | 0.0048 |
| 18 | 0.0125 | 0.0077 | 0.0048 |
| 19 | 0.0126 | 0.0077 | 0.0048 |
| 20 | 0.0126 | 0.0078 | 0.0048 |
| 21 | 0.0126 | 0.0078 | 0.0048 |
| 22 | 0.0127 | 0.0078 | 0.0049 |
| 23 | 0.0127 | 0.0078 | 0.0049 |
| 24 | 0.0127 | 0.0078 | 0.0049 |
| 25 | 0.0128 | 0.0079 | 0.0049 |
| 26 | 0.0128 | 0.0079 | 0.0049 |
| 27 | 0.0128 | 0.0079 | 0.0049 |
| 28 | 0.0128 | 0.0079 | 0.0049 |
| 29 | 0.0129 | 0.0079 | 0.0049 |
| 30 | 0.0129 | 0.0080 | 0.0050 |
| 31 | 0.0129 | 0.0080 | 0.0050 |
| 32 | 0.0130 | 0.0080 | 0.0050 |
| 33 | 0.0130 | 0.0080 | 0.0050 |
| 34 | 0.0130 | 0.0080 | 0.0050 |
| 35 | 0.0131 | 0.0081 | 0.0050 |
| 36 | 0.0131 | 0.0081 | 0.0050 |
| 37 | 0.0132 | 0.0081 | 0.0050 |
| 38 | 0.0132 | 0.0081 | 0.0051 |
| 39 | 0.0132 | 0.0081 | 0.0051 |
| 40 | 0.0132 | 0.0082 | 0.0051 |
| 41 | 0.0133 | 0.0082 | 0.0051 |
| 42 | 0.0133 | 0.0082 | 0.0051 |
| 43 | 0.0134 | 0.0082 | 0.0051 |
| 44 | 0.0134 | 0.0082 | 0.0051 |
| 45 | 0.0134 | 0.0083 | 0.0052 |
| 46 | 0.0135 | 0.0083 | 0.0052 |
| 47 | 0.0135 | 0.0083 | 0.0052 |
| 48 | 0.0135 | 0.0083 | 0.0052 |
| 49 | 0.0136 | 0.0084 | 0.0052 |
| 50 | 0.0136 | 0.0084 | 0.0052 |
| 51 | 0.0137 | 0.0084 | 0.0052 |
| 52 | 0.0137 | 0.0084 | 0.0053 |
| 53 | 0.0137 | 0.0085 | 0.0053 |
| 54 | 0.0138 | 0.0085 | 0.0053 |
| 55 | 0.0138 | 0.0085 | 0.0053 |
| 56 | 0.0139 | 0.0085 | 0.0053 |
| 57 | 0.0139 | 0.0086 | 0.0053 |
| 58 | 0.0139 | 0.0086 | 0.0053 |
| 59 | 0.0140 | 0.0086 | 0.0054 |
| 60 | 0.0140 | 0.0086 | 0.0054 |
| 61 | 0.0141 | 0.0087 | 0.0054 |
| 62 | 0.0141 | 0.0087 | 0.0054 |
| 63 | 0.0142 | 0.0087 | 0.0054 |
| 64 | 0.0142 | 0.0087 | 0.0054 |
| 65 | 0.0143 | 0.0088 | 0.0055 |
| 66 | 0.0143 | 0.0088 | 0.0055 |
| 67 | 0.0144 | 0.0088 | 0.0055 |
| 68 | 0.0144 | 0.0089 | 0.0055 |
| 69 | 0.0144 | 0.0089 | 0.0055 |
| 70 | 0.0145 | 0.0089 | 0.0056 |
| 71 | 0.0145 | 0.0090 | 0.0056 |
| 72 | 0.0146 | 0.0090 | 0.0056 |
| 73 | 0.0146 | 0.0090 | 0.0056 |
| 74 | 0.0147 | 0.0090 | 0.0056 |
| 75 | 0.0147 | 0.0091 | 0.0057 |
| 76 | 0.0148 | 0.0091 | 0.0057 |

| | | | |
|---|---|---|---|
| 77 | 0.0148 | 0.0091 | 0.0057 |
| 78 | 0.0149 | 0.0092 | 0.0057 |
| 79 | 0.0150 | 0.0092 | 0.0057 |
| 80 | 0.0150 | 0.0092 | 0.0058 |
| 81 | 0.0151 | 0.0093 | 0.0058 |
| 82 | 0.0151 | 0.0093 | 0.0058 |
| 83 | 0.0152 | 0.0093 | 0.0058 |
| 84 | 0.0152 | 0.0094 | 0.0058 |
| 85 | 0.0153 | 0.0094 | 0.0059 |
| 86 | 0.0153 | 0.0094 | 0.0059 |
| 87 | 0.0154 | 0.0095 | 0.0059 |
| 88 | 0.0154 | 0.0095 | 0.0059 |
| 89 | 0.0155 | 0.0096 | 0.0060 |
| 90 | 0.0156 | 0.0096 | 0.0060 |
| 91 | 0.0156 | 0.0096 | 0.0060 |
| 92 | 0.0157 | 0.0097 | 0.0060 |
| 93 | 0.0158 | 0.0097 | 0.0061 |
| 94 | 0.0158 | 0.0097 | 0.0061 |
| 95 | 0.0159 | 0.0098 | 0.0061 |
| 96 | 0.0160 | 0.0098 | 0.0061 |
| 97 | 0.0160 | 0.0099 | 0.0062 |
| 98 | 0.0161 | 0.0099 | 0.0062 |
| 99 | 0.0162 | 0.0100 | 0.0062 |
| 100 | 0.0162 | 0.0100 | 0.0062 |
| 101 | 0.0163 | 0.0101 | 0.0063 |
| 102 | 0.0164 | 0.0101 | 0.0063 |
| 103 | 0.0165 | 0.0101 | 0.0063 |
| 104 | 0.0165 | 0.0102 | 0.0063 |
| 105 | 0.0166 | 0.0102 | 0.0064 |
| 106 | 0.0167 | 0.0103 | 0.0064 |
| 107 | 0.0168 | 0.0103 | 0.0064 |
| 108 | 0.0168 | 0.0104 | 0.0065 |
| 109 | 0.0169 | 0.0104 | 0.0065 |
| 110 | 0.0170 | 0.0105 | 0.0065 |
| 111 | 0.0171 | 0.0105 | 0.0066 |
| 112 | 0.0172 | 0.0106 | 0.0066 |
| 113 | 0.0173 | 0.0107 | 0.0066 |
| 114 | 0.0173 | 0.0107 | 0.0067 |
| 115 | 0.0175 | 0.0108 | 0.0067 |
| 116 | 0.0175 | 0.0108 | 0.0067 |
| 117 | 0.0177 | 0.0109 | 0.0068 |
| 118 | 0.0177 | 0.0109 | 0.0068 |
| 119 | 0.0178 | 0.0110 | 0.0068 |
| 120 | 0.0179 | 0.0110 | 0.0069 |
| 121 | 0.0180 | 0.0111 | 0.0069 |
| 122 | 0.0181 | 0.0112 | 0.0070 |
| 123 | 0.0183 | 0.0113 | 0.0070 |
| 124 | 0.0183 | 0.0113 | 0.0070 |
| 125 | 0.0185 | 0.0114 | 0.0071 |
| 126 | 0.0186 | 0.0114 | 0.0071 |
| 127 | 0.0187 | 0.0115 | 0.0072 |
| 128 | 0.0188 | 0.0116 | 0.0072 |
| 129 | 0.0189 | 0.0117 | 0.0073 |
| 130 | 0.0190 | 0.0117 | 0.0073 |
| 131 | 0.0192 | 0.0118 | 0.0074 |
| 132 | 0.0193 | 0.0119 | 0.0074 |
| 133 | 0.0194 | 0.0120 | 0.0075 |
| 134 | 0.0195 | 0.0120 | 0.0075 |
| 135 | 0.0197 | 0.0122 | 0.0076 |
| 136 | 0.0198 | 0.0122 | 0.0076 |
| 137 | 0.0200 | 0.0123 | 0.0077 |
| 138 | 0.0201 | 0.0124 | 0.0077 |
| 139 | 0.0203 | 0.0125 | 0.0078 |
| 140 | 0.0204 | 0.0126 | 0.0078 |
| 141 | 0.0206 | 0.0127 | 0.0079 |
| 142 | 0.0207 | 0.0128 | 0.0080 |
| 143 | 0.0210 | 0.0129 | 0.0080 |
| 144 | 0.0211 | 0.0130 | 0.0081 |
| 145 | 0.0224 | 0.0138 | 0.0086 |
| 146 | 0.0225 | 0.0139 | 0.0086 |
| 147 | 0.0227 | 0.0140 | 0.0087 |

| | | | |
|---|---|---|---|
| 148 | 0.0229 | 0.0141 | 0.0088 |
| 149 | 0.0231 | 0.0142 | 0.0089 |
| 150 | 0.0233 | 0.0143 | 0.0089 |
| 151 | 0.0235 | 0.0145 | 0.0090 |
| 152 | 0.0237 | 0.0146 | 0.0091 |
| 153 | 0.0240 | 0.0148 | 0.0092 |
| 154 | 0.0241 | 0.0149 | 0.0093 |
| 155 | 0.0245 | 0.0151 | 0.0094 |
| 156 | 0.0246 | 0.0152 | 0.0094 |
| 157 | 0.0250 | 0.0154 | 0.0096 |
| 158 | 0.0251 | 0.0155 | 0.0097 |
| 159 | 0.0255 | 0.0157 | 0.0098 |
| 160 | 0.0257 | 0.0158 | 0.0099 |
| 161 | 0.0261 | 0.0161 | 0.0100 |
| 162 | 0.0263 | 0.0162 | 0.0101 |
| 163 | 0.0268 | 0.0165 | 0.0103 |
| 164 | 0.0270 | 0.0166 | 0.0104 |
| 165 | 0.0275 | 0.0169 | 0.0105 |
| 166 | 0.0277 | 0.0171 | 0.0106 |
| 167 | 0.0283 | 0.0174 | 0.0109 |
| 168 | 0.0286 | 0.0176 | 0.0110 |
| 169 | 0.0292 | 0.0180 | 0.0112 |
| 170 | 0.0295 | 0.0182 | 0.0113 |
| 171 | 0.0302 | 0.0186 | 0.0116 |
| 172 | 0.0305 | 0.0188 | 0.0117 |
| 173 | 0.0313 | 0.0193 | 0.0120 |
| 174 | 0.0317 | 0.0195 | 0.0122 |
| 175 | 0.0326 | 0.0201 | 0.0125 |
| 176 | 0.0331 | 0.0204 | 0.0127 |
| 177 | 0.0341 | 0.0210 | 0.0131 |
| 178 | 0.0347 | 0.0214 | 0.0133 |
| 179 | 0.0359 | 0.0221 | 0.0138 |
| 180 | 0.0366 | 0.0226 | 0.0140 |
| 181 | 0.0381 | 0.0235 | 0.0146 |
| 182 | 0.0390 | 0.0240 | 0.0150 |
| 183 | 0.0409 | 0.0252 | 0.0157 |
| 184 | 0.0421 | 0.0259 | 0.0161 |
| 185 | 0.0219 | 0.0135 | 0.0084 |
| 186 | 0.0233 | 0.0144 | 0.0090 |
| 187 | 0.0270 | 0.0167 | 0.0104 |
| 188 | 0.0295 | 0.0182 | 0.0113 |
| 189 | 0.0367 | 0.0226 | 0.0141 |
| 190 | 0.0423 | 0.0261 | 0.0162 |
| 191 | 0.0642 | 0.0395 | 0.0246 |
| 192 | 0.0931 | 0.0500 | 0.0431 |
| 193 | 0.4030 | 0.0500 | 0.3530 |
| 194 | 0.0505 | 0.0311 | 0.0194 |
| 195 | 0.0326 | 0.0201 | 0.0125 |
| 196 | 0.0250 | 0.0154 | 0.0096 |
| 197 | 0.0433 | 0.0267 | 0.0166 |
| 198 | 0.0399 | 0.0246 | 0.0153 |
| 199 | 0.0373 | 0.0230 | 0.0143 |
| 200 | 0.0353 | 0.0217 | 0.0135 |
| 201 | 0.0336 | 0.0207 | 0.0129 |
| 202 | 0.0321 | 0.0198 | 0.0123 |
| 203 | 0.0309 | 0.0190 | 0.0119 |
| 204 | 0.0298 | 0.0184 | 0.0114 |
| 205 | 0.0289 | 0.0178 | 0.0111 |
| 206 | 0.0280 | 0.0173 | 0.0107 |
| 207 | 0.0272 | 0.0168 | 0.0105 |
| 208 | 0.0265 | 0.0164 | 0.0102 |
| 209 | 0.0259 | 0.0160 | 0.0099 |
| 210 | 0.0253 | 0.0156 | 0.0097 |
| 211 | 0.0248 | 0.0153 | 0.0095 |
| 212 | 0.0243 | 0.0150 | 0.0093 |
| 213 | 0.0238 | 0.0147 | 0.0091 |
| 214 | 0.0234 | 0.0144 | 0.0090 |
| 215 | 0.0230 | 0.0142 | 0.0088 |
| 216 | 0.0226 | 0.0139 | 0.0087 |
| 217 | 0.0212 | 0.0131 | 0.0081 |
| 218 | 0.0208 | 0.0128 | 0.0080 |

| | | | |
|---|---|---|---|
| 219 | 0.0205 | 0.0126 | 0.0079 |
| 220 | 0.0202 | 0.0125 | 0.0078 |
| 221 | 0.0199 | 0.0123 | 0.0076 |
| 222 | 0.0196 | 0.0121 | 0.0075 |
| 223 | 0.0194 | 0.0119 | 0.0074 |
| 224 | 0.0191 | 0.0118 | 0.0073 |
| 225 | 0.0189 | 0.0116 | 0.0072 |
| 226 | 0.0186 | 0.0115 | 0.0071 |
| 227 | 0.0184 | 0.0113 | 0.0071 |
| 228 | 0.0182 | 0.0112 | 0.0070 |
| 229 | 0.0180 | 0.0111 | 0.0069 |
| 230 | 0.0178 | 0.0110 | 0.0068 |
| 231 | 0.0176 | 0.0108 | 0.0068 |
| 232 | 0.0174 | 0.0107 | 0.0067 |
| 233 | 0.0172 | 0.0106 | 0.0066 |
| 234 | 0.0171 | 0.0105 | 0.0065 |
| 235 | 0.0169 | 0.0104 | 0.0065 |
| 236 | 0.0167 | 0.0103 | 0.0064 |
| 237 | 0.0166 | 0.0102 | 0.0064 |
| 238 | 0.0164 | 0.0101 | 0.0063 |
| 239 | 0.0163 | 0.0100 | 0.0062 |
| 240 | 0.0161 | 0.0099 | 0.0062 |
| 241 | 0.0160 | 0.0099 | 0.0061 |
| 242 | 0.0159 | 0.0098 | 0.0061 |
| 243 | 0.0157 | 0.0097 | 0.0060 |
| 244 | 0.0156 | 0.0096 | 0.0060 |
| 245 | 0.0155 | 0.0095 | 0.0059 |
| 246 | 0.0154 | 0.0095 | 0.0059 |
| 247 | 0.0152 | 0.0094 | 0.0059 |
| 248 | 0.0151 | 0.0093 | 0.0058 |
| 249 | 0.0150 | 0.0093 | 0.0058 |
| 250 | 0.0149 | 0.0092 | 0.0057 |
| 251 | 0.0148 | 0.0091 | 0.0057 |
| 252 | 0.0147 | 0.0091 | 0.0056 |
| 253 | 0.0146 | 0.0090 | 0.0056 |
| 254 | 0.0145 | 0.0089 | 0.0056 |
| 255 | 0.0144 | 0.0089 | 0.0055 |
| 256 | 0.0143 | 0.0088 | 0.0055 |
| 257 | 0.0142 | 0.0088 | 0.0055 |
| 258 | 0.0141 | 0.0087 | 0.0054 |
| 259 | 0.0141 | 0.0087 | 0.0054 |
| 260 | 0.0140 | 0.0086 | 0.0054 |
| 261 | 0.0139 | 0.0086 | 0.0053 |
| 262 | 0.0138 | 0.0085 | 0.0053 |
| 263 | 0.0137 | 0.0085 | 0.0053 |
| 264 | 0.0136 | 0.0084 | 0.0052 |
| 265 | 0.0136 | 0.0084 | 0.0052 |
| 266 | 0.0135 | 0.0083 | 0.0052 |
| 267 | 0.0134 | 0.0083 | 0.0051 |
| 268 | 0.0133 | 0.0082 | 0.0051 |
| 269 | 0.0133 | 0.0082 | 0.0051 |
| 270 | 0.0132 | 0.0081 | 0.0051 |
| 271 | 0.0131 | 0.0081 | 0.0050 |
| 272 | 0.0131 | 0.0080 | 0.0050 |
| 273 | 0.0130 | 0.0080 | 0.0050 |
| 274 | 0.0129 | 0.0080 | 0.0050 |
| 275 | 0.0129 | 0.0079 | 0.0049 |
| 276 | 0.0128 | 0.0079 | 0.0049 |
| 277 | 0.0127 | 0.0078 | 0.0049 |
| 278 | 0.0127 | 0.0078 | 0.0049 |
| 279 | 0.0126 | 0.0078 | 0.0048 |
| 280 | 0.0126 | 0.0077 | 0.0048 |
| 281 | 0.0125 | 0.0077 | 0.0048 |
| 282 | 0.0124 | 0.0077 | 0.0048 |
| 283 | 0.0124 | 0.0076 | 0.0048 |
| 284 | 0.0123 | 0.0076 | 0.0047 |
| 285 | 0.0123 | 0.0076 | 0.0047 |
| 286 | 0.0122 | 0.0075 | 0.0047 |
| 287 | 0.0122 | 0.0075 | 0.0047 |
| 288 | 0.0121 | 0.0075 | 0.0046 |

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      ------------------------------------------------------------------------
      Total soil rain loss =      3.41(In)
      Total effective rainfall =      2.46(In)
      Peak flow rate in flood hydrograph =     12.62(CFS)
      ------------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
------------------------------------------------------------------------
  0+ 5       0.0002      0.03  Q         |         |         |         |
  0+10       0.0014      0.17  Q         |         |         |         |
  0+15       0.0033      0.28  Q         |         |         |         |
  0+20       0.0055      0.32  Q         |         |         |         |
  0+25       0.0079      0.35  Q         |         |         |         |
  0+30       0.0104      0.36  Q         |         |         |         |
  0+35       0.0129      0.36  Q         |         |         |         |
  0+40       0.0154      0.37  Q         |         |         |         |
  0+45       0.0179      0.37  Q         |         |         |         |
  0+50       0.0205      0.37  Q         |         |         |         |
  0+55       0.0231      0.37  Q         |         |         |         |
  1+ 0       0.0257      0.37  Q         |         |         |         |
  1+ 5       0.0282      0.37  Q         |         |         |         |
  1+10       0.0308      0.38  Q         |         |         |         |
  1+15       0.0334      0.38  Q         |         |         |         |
  1+20       0.0360      0.38  QV        |         |         |         |
  1+25       0.0386      0.38  QV        |         |         |         |
  1+30       0.0412      0.38  QV        |         |         |         |
  1+35       0.0438      0.38  QV        |         |         |         |
  1+40       0.0465      0.38  QV        |         |         |         |
  1+45       0.0491      0.38  QV        |         |         |         |
  1+50       0.0517      0.38  QV        |         |         |         |
  1+55       0.0544      0.38  QV        |         |         |         |
  2+ 0       0.0570      0.38  QV        |         |         |         |
  2+ 5       0.0597      0.39  QV        |         |         |         |
  2+10       0.0623      0.39  QV        |         |         |         |
  2+15       0.0650      0.39  QV        |         |         |         |
  2+20       0.0677      0.39  Q V       |         |         |         |
  2+25       0.0704      0.39  Q V       |         |         |         |
  2+30       0.0730      0.39  Q V       |         |         |         |
  2+35       0.0757      0.39  Q V       |         |         |         |
  2+40       0.0784      0.39  Q V       |         |         |         |
  2+45       0.0811      0.39  Q V       |         |         |         |
  2+50       0.0839      0.39  Q V       |         |         |         |
  2+55       0.0866      0.39  Q V       |         |         |         |
  3+ 0       0.0893      0.40  Q V       |         |         |         |
  3+ 5       0.0920      0.40  Q V       |         |         |         |
  3+10       0.0948      0.40  Q V       |         |         |         |
  3+15       0.0975      0.40  Q V       |         |         |         |
  3+20       0.1003      0.40  Q V       |         |         |         |
  3+25       0.1030      0.40  Q  V      |         |         |         |
  3+30       0.1058      0.40  Q  V      |         |         |         |
  3+35       0.1086      0.40  Q  V      |         |         |         |
  3+40       0.1114      0.40  Q  V      |         |         |         |
  3+45       0.1142      0.41  Q  V      |         |         |         |
  3+50       0.1170      0.41  Q  V      |         |         |         |
  3+55       0.1198      0.41  Q  V      |         |         |         |
  4+ 0       0.1226      0.41  Q  V      |         |         |         |
  4+ 5       0.1254      0.41  Q  V      |         |         |         |
  4+10       0.1283      0.41  Q  V      |         |         |         |
  4+15       0.1311      0.41  Q  V      |         |         |         |
  4+20       0.1339      0.41  Q  V      |         |         |         |
  4+25       0.1368      0.41  Q   V     |         |         |         |
  4+30       0.1397      0.42  Q   V     |         |         |         |
  4+35       0.1425      0.42  Q   V     |         |         |         |
  4+40       0.1454      0.42  Q   V     |         |         |         |
  4+45       0.1483      0.42  Q   V     |         |         |         |
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 4+50      0.1512      0.42  Q   V     |          |          |          |
 4+55      0.1541      0.42  Q   V     |          |          |          |
 5+ 0      0.1570      0.42  Q   V     |          |          |          |
 5+ 5      0.1600      0.42  Q   V     |          |          |          |
 5+10      0.1629      0.43  Q   V     |          |          |          |
 5+15      0.1658      0.43  Q   V     |          |          |          |
 5+20      0.1688      0.43  Q    V    |          |          |          |
 5+25      0.1717      0.43  Q    V    |          |          |          |
 5+30      0.1747      0.43  Q    V    |          |          |          |
 5+35      0.1777      0.43  Q    V    |          |          |          |
 5+40      0.1807      0.43  Q    V    |          |          |          |
 5+45      0.1837      0.44  Q    V    |          |          |          |
 5+50      0.1867      0.44  Q    V    |          |          |          |
 5+55      0.1897      0.44  Q    V    |          |          |          |
 6+ 0      0.1927      0.44  Q    V    |          |          |          |
 6+ 5      0.1958      0.44  Q    V    |          |          |          |
 6+10      0.1988      0.44  Q    V    |          |          |          |
 6+15      0.2019      0.44  Q     V   |          |          |          |
 6+20      0.2050      0.45  Q     V   |          |          |          |
 6+25      0.2080      0.45  Q     V   |          |          |          |
 6+30      0.2111      0.45  Q     V   |          |          |          |
 6+35      0.2142      0.45  Q     V   |          |          |          |
 6+40      0.2173      0.45  Q     V   |          |          |          |
 6+45      0.2205      0.45  Q     V   |          |          |          |
 6+50      0.2236      0.46  Q     V   |          |          |          |
 6+55      0.2268      0.46  Q     V   |          |          |          |
 7+ 0      0.2299      0.46  Q     V   |          |          |          |
 7+ 5      0.2331      0.46  Q     V   |          |          |          |
 7+10      0.2363      0.46  Q      V  |          |          |          |
 7+15      0.2395      0.46  Q      V  |          |          |          |
 7+20      0.2427      0.47  Q      V  |          |          |          |
 7+25      0.2459      0.47  Q      V  |          |          |          |
 7+30      0.2491      0.47  Q      V  |          |          |          |
 7+35      0.2524      0.47  Q      V  |          |          |          |
 7+40      0.2556      0.47  Q      V  |          |          |          |
 7+45      0.2589      0.47  Q      V  |          |          |          |
 7+50      0.2622      0.48  Q      V  |          |          |          |
 7+55      0.2655      0.48  Q      V  |          |          |          |
 8+ 0      0.2688      0.48  Q       V |          |          |          |
 8+ 5      0.2721      0.48  Q       V |          |          |          |
 8+10      0.2754      0.48  Q       V |          |          |          |
 8+15      0.2788      0.49  Q       V |          |          |          |
 8+20      0.2822      0.49  Q       V |          |          |          |
 8+25      0.2855      0.49  Q       V |          |          |          |
 8+30      0.2889      0.49  Q       V |          |          |          |
 8+35      0.2924      0.50  Q       V |          |          |          |
 8+40      0.2958      0.50  Q       V |          |          |          |
 8+45      0.2992      0.50  Q       V |          |          |          |
 8+50      0.3027      0.50  |Q       V|          |          |          |
 8+55      0.3062      0.50  |Q       V|          |          |          |
 9+ 0      0.3096      0.51  |Q       V|          |          |          |
 9+ 5      0.3131      0.51  |Q       V|          |          |          |
 9+10      0.3167      0.51  |Q       V|          |          |          |
 9+15      0.3202      0.51  |Q       V|          |          |          |
 9+20      0.3238      0.52  |Q       V|          |          |          |
 9+25      0.3273      0.52  |Q       V|          |          |          |
 9+30      0.3309      0.52  |Q       V|          |          |          |
 9+35      0.3346      0.52  |Q       V|          |          |          |
 9+40      0.3382      0.53  |Q        V          |          |          |
 9+45      0.3418      0.53  |Q        V          |          |          |
 9+50      0.3455      0.53  |Q        V          |          |          |
 9+55      0.3492      0.54  |Q        V          |          |          |
10+ 0      0.3529      0.54  |Q        V          |          |          |
10+ 5      0.3566      0.54  |Q        V          |          |          |
10+10      0.3604      0.54  |Q        V          |          |          |
10+15      0.3641      0.55  |Q        V          |          |          |
10+20      0.3679      0.55  |Q        V          |          |          |
10+25      0.3718      0.55  |Q        |V         |          |          |
10+30      0.3756      0.56  |Q        |V         |          |          |
10+35      0.3795      0.56  |Q        |V         |          |          |
10+40      0.3833      0.56  |Q        |V         |          |          |
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10+45       0.3872      0.57  |Q        |V        |         |         |
10+50       0.3912      0.57  |Q        |V        |         |         |
10+55       0.3951      0.57  |Q        |V        |         |         |
11+ 0       0.3991      0.58  |Q        |V        |         |         |
11+ 5       0.4031      0.58  |Q        | V       |         |         |
11+10       0.4072      0.59  |Q        | V       |         |         |
11+15       0.4112      0.59  |Q        | V       |         |         |
11+20       0.4153      0.59  |Q        | V       |         |         |
11+25       0.4194      0.60  |Q        | V       |         |         |
11+30       0.4236      0.60  |Q        | V       |         |         |
11+35       0.4278      0.61  |Q        | V       |         |         |
11+40       0.4320      0.61  |Q        | V       |         |         |
11+45       0.4362      0.62  |Q        |  V      |         |         |
11+50       0.4405      0.62  |Q        |  V      |         |         |
11+55       0.4448      0.63  |Q        |  V      |         |         |
12+ 0       0.4492      0.63  |Q        |  V      |         |         |
12+ 5       0.4536      0.64  |Q        |  V      |         |         |
12+10       0.4581      0.66  |Q        |  V      |         |         |
12+15       0.4627      0.67  |Q        |  V      |         |         |
12+20       0.4674      0.68  |Q        |  V      |         |         |
12+25       0.4721      0.69  |Q        |   V     |         |         |
12+30       0.4769      0.69  |Q        |   V     |         |         |
12+35       0.4817      0.70  |Q        |   V     |         |         |
12+40       0.4866      0.71  |Q        |   V     |         |         |
12+45       0.4915      0.71  |Q        |   V     |         |         |
12+50       0.4965      0.72  |Q        |   V     |         |         |
12+55       0.5015      0.73  |Q        |   V     |         |         |
13+ 0       0.5065      0.73  |Q        |    V    |         |         |
13+ 5       0.5116      0.74  |Q        |    V    |         |         |
13+10       0.5168      0.75  |Q        |    V    |         |         |
13+15       0.5220      0.76  |Q        |    V    |         |         |
13+20       0.5273      0.77  |Q        |    V    |         |         |
13+25       0.5326      0.77  |Q        |    V    |         |         |
13+30       0.5380      0.78  |Q        |     V   |         |         |
13+35       0.5435      0.79  |Q        |     V   |         |         |
13+40       0.5490      0.80  |Q        |     V   |         |         |
13+45       0.5546      0.81  |Q        |     V   |         |         |
13+50       0.5603      0.82  |Q        |     V   |         |         |
13+55       0.5660      0.83  |Q        |     V   |         |         |
14+ 0       0.5718      0.85  |Q        |      V  |         |         |
14+ 5       0.5777      0.86  |Q        |      V  |         |         |
14+10       0.5837      0.87  |Q        |      V  |         |         |
14+15       0.5898      0.88  |Q        |      V  |         |         |
14+20       0.5960      0.90  |Q        |      V  |         |         |
14+25       0.6023      0.91  |Q        |      V  |         |         |
14+30       0.6087      0.93  |Q        |       V |         |         |
14+35       0.6153      0.95  |Q        |       V |         |         |
14+40       0.6219      0.97  |Q        |       V |         |         |
14+45       0.6287      0.99  |Q        |       V |         |         |
14+50       0.6357      1.01  | Q       |       V |         |         |
14+55       0.6428      1.03  | Q       |        V|         |         |
15+ 0       0.6501      1.06  | Q       |        V|         |         |
15+ 5       0.6576      1.09  | Q       |        V|         |         |
15+10       0.6654      1.12  | Q       |        V|         |         |
15+15       0.6733      1.16  | Q       |         V         |         |
15+20       0.6816      1.20  | Q       |         V         |         |
15+25       0.6898      1.19  | Q       |         V         |         |
15+30       0.6965      0.97  |Q        |         V         |         |
15+35       0.7022      0.83  |Q        |         V         |         |
15+40       0.7079      0.83  |Q        |         |V        |         |
15+45       0.7139      0.87  |Q        |         |V        |         |
15+50       0.7208      0.99  |Q        |         |V        |         |
15+55       0.7289      1.18  | Q       |         |V        |         |
16+ 0       0.7401      1.63  |  Q      |         | V       |         |
16+ 5       0.7686      4.14  |       Q |         | V       |         |
16+10       0.8555     12.62  |         |         |    Q    |         |
16+15       0.9212      9.55  |         |        Q|      V  |         |
16+20       0.9509      4.31  |       Q |         |       V |         |
16+25       0.9698      2.74  |    Q    |         |       V |         |
16+30       0.9838      2.03  |   Q     |         |        V|         |
16+35       0.9944      1.54  |  Q      |         |        V|         |
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16+40       1.0036      1.33  | Q       |         |         V|         |
16+45       1.0122      1.25  | Q       |         |          V         |
16+50       1.0202      1.16  | Q       |         |          V         |
16+55       1.0274      1.05  | Q       |         |          V         |
17+ 0       1.0341      0.98  |Q        |         |          V         |
17+ 5       1.0406      0.94  |Q        |         |          |V        |
17+10       1.0468      0.91  |Q        |         |          |V        |
17+15       1.0529      0.88  |Q        |         |          |V        |
17+20       1.0588      0.85  |Q        |         |          |V        |
17+25       1.0645      0.83  |Q        |         |          |V        |
17+30       1.0700      0.81  |Q        |         |          |V        |
17+35       1.0754      0.79  |Q        |         |          | V       |
17+40       1.0807      0.77  |Q        |         |          | V       |
17+45       1.0859      0.75  |Q        |         |          | V       |
17+50       1.0910      0.74  |Q        |         |          | V       |
17+55       1.0960      0.72  |Q        |         |          | V       |
18+ 0       1.1009      0.71  |Q        |         |          | V       |
18+ 5       1.1057      0.70  |Q        |         |          |  V      |
18+10       1.1103      0.67  |Q        |         |          |  V      |
18+15       1.1148      0.65  |Q        |         |          |  V      |
18+20       1.1192      0.64  |Q        |         |          |  V      |
18+25       1.1235      0.62  |Q        |         |          |  V      |
18+30       1.1277      0.61  |Q        |         |          |  V      |
18+35       1.1319      0.60  |Q        |         |          |  V      |
18+40       1.1360      0.60  |Q        |         |          |  V      |
18+45       1.1400      0.59  |Q        |         |          |   V     |
18+50       1.1440      0.58  |Q        |         |          |   V     |
18+55       1.1480      0.57  |Q        |         |          |   V     |
19+ 0       1.1519      0.57  |Q        |         |          |   V     |
19+ 5       1.1557      0.56  |Q        |         |          |   V     |
19+10       1.1595      0.55  |Q        |         |          |   V     |
19+15       1.1633      0.55  |Q        |         |          |   V     |
19+20       1.1670      0.54  |Q        |         |          |   V     |
19+25       1.1707      0.53  |Q        |         |          |   V     |
19+30       1.1743      0.53  |Q        |         |          |    V    |
19+35       1.1779      0.52  |Q        |         |          |    V    |
19+40       1.1815      0.52  |Q        |         |          |    V    |
19+45       1.1850      0.51  |Q        |         |          |    V    |
19+50       1.1885      0.51  |Q        |         |          |    V    |
19+55       1.1919      0.50  |Q        |         |          |    V    |
20+ 0       1.1954      0.50  Q         |         |          |    V    |
20+ 5       1.1988      0.49  Q         |         |          |    V    |
20+10       1.2022      0.49  Q         |         |          |    V    |
20+15       1.2055      0.49  Q         |         |          |    V    |
20+20       1.2088      0.48  Q         |         |          |     V   |
20+25       1.2121      0.48  Q         |         |          |     V   |
20+30       1.2154      0.47  Q         |         |          |     V   |
20+35       1.2186      0.47  Q         |         |          |     V   |
20+40       1.2218      0.47  Q         |         |          |     V   |
20+45       1.2250      0.46  Q         |         |          |     V   |
20+50       1.2282      0.46  Q         |         |          |     V   |
20+55       1.2313      0.46  Q         |         |          |     V   |
21+ 0       1.2344      0.45  Q         |         |          |     V   |
21+ 5       1.2375      0.45  Q         |         |          |     V   |
21+10       1.2406      0.45  Q         |         |          |      V  |
21+15       1.2436      0.44  Q         |         |          |      V  |
21+20       1.2467      0.44  Q         |         |          |      V  |
21+25       1.2497      0.44  Q         |         |          |      V  |
21+30       1.2527      0.43  Q         |         |          |      V  |
21+35       1.2557      0.43  Q         |         |          |      V  |
21+40       1.2586      0.43  Q         |         |          |      V  |
21+45       1.2615      0.43  Q         |         |          |      V  |
21+50       1.2645      0.42  Q         |         |          |      V  |
21+55       1.2674      0.42  Q         |         |          |      V  |
22+ 0       1.2702      0.42  Q         |         |          |      V  |
22+ 5       1.2731      0.42  Q         |         |          |       V |
22+10       1.2760      0.41  Q         |         |          |       V |
22+15       1.2788      0.41  Q         |         |          |       V |
22+20       1.2816      0.41  Q         |         |          |       V |
22+25       1.2844      0.41  Q         |         |          |       V |
22+30       1.2872      0.40  Q         |         |          |       V |
```

```
   22+35       1.2900      0.40  Q          |          |          |       V |
   22+40       1.2927      0.40  Q          |          |          |       V |
   22+45       1.2955      0.40  Q          |          |          |       V |
   22+50       1.2982      0.40  Q          |          |          |       V |
   22+55       1.3009      0.39  Q          |          |          |       V |
   23+ 0       1.3036      0.39  Q          |          |          |       V |
   23+ 5       1.3063      0.39  Q          |          |          |       V |
   23+10       1.3090      0.39  Q          |          |          |        V|
   23+15       1.3117      0.39  Q          |          |          |        V|
   23+20       1.3143      0.38  Q          |          |          |        V|
   23+25       1.3169      0.38  Q          |          |          |        V|
   23+30       1.3196      0.38  Q          |          |          |        V|
   23+35       1.3222      0.38  Q          |          |          |        V|
   23+40       1.3248      0.38  Q          |          |          |        V|
   23+45       1.3274      0.38  Q          |          |          |        V|
   23+50       1.3300      0.37  Q          |          |          |        V|
   23+55       1.3325      0.37  Q          |          |          |        V|
   24+ 0       1.3351      0.37  Q          |          |          |        V|
   24+ 5       1.3374      0.34  Q          |          |          |        V|
   24+10       1.3388      0.20  Q          |          |          |        V|
   24+15       1.3394      0.09  Q          |          |          |        V|
   24+20       1.3397      0.05  Q          |          |          |        V|
   24+25       1.3399      0.02  Q          |          |          |        V|
   24+30       1.3399      0.01  Q          |          |          |        V|
   24+35       1.3400      0.01  Q          |          |          |        V|
   24+40       1.3400      0.00  Q          |          |          |        V|
   24+45       1.3400      0.00  Q          |          |          |        V|
   24+50       1.3400      0.00  Q          |          |          |         V
-------------------------------------------------------------------------
```

Area 'C' – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
10 YEAR 24 HOUR STORM
DECEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 10

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.54            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 32.0      32.0          6.54      1.000     0.978    0.600    0.587

Area-averaged adjusted loss rate Fm (In/Hr) =  0.587

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 3.92 | 0.600 | 32.0 | 32.0 | 21.25 | 0.052 |
| 2.62 | 0.400 | 98.0 | 98.0 | 0.20 | 0.967 |

Area-averaged catchment yield fraction, Y = 0.418
Area-averaged low loss fraction, Yb = 0.582
User entry of time of concentration = 0.152 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.54(Ac.)
Catchment Lag time = 0.121 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 68.6210
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.587(In/Hr)
Average low loss rate fraction (Yb) = 0.582 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.475(In)
Computed peak 30-minute rainfall = 0.812(In)
Specified peak 1-hour rainfall = 1.000(In)
Computed peak 3-hour rainfall = 1.973(In)
Specified peak 6-hour rainfall = 3.029(In)
Specified peak 24-hour rainfall = 7.291(In)

Rainfall depth area reduction factors:
Using a total area of 6.54(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.474(In)
30-minute factor = 1.000 Adjusted rainfall = 0.812(In)
1-hour factor = 1.000 Adjusted rainfall = 1.000(In)
3-hour factor = 1.000 Adjusted rainfall = 1.973(In)
6-hour factor = 1.000 Adjusted rainfall = 3.028(In)
24-hour factor = 1.000 Adjusted rainfall = 7.291(In)
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U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 79.09 (CFS)) | |
| 1 | 6.926 | 5.478 |
| 2 | 46.826 | 31.558 |
| 3 | 76.548 | 23.508 |
| 4 | 87.652 | 8.782 |
| 5 | 93.849 | 4.901 |
| 6 | 97.160 | 2.619 |
| 7 | 98.439 | 1.012 |
| 8 | 99.077 | 0.504 |
| 9 | 99.557 | 0.380 |
| 10 | 99.888 | 0.262 |
| 11 | 100.000 | 0.088 |

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.4744 | 0.4744 |
| 2 | 0.5840 | 0.1096 |
| 3 | 0.6596 | 0.0755 |
| 4 | 0.7190 | 0.0595 |
| 5 | 0.7688 | 0.0498 |
| 6 | 0.8120 | 0.0432 |
| 7 | 0.8504 | 0.0384 |
| 8 | 0.8852 | 0.0348 |
| 9 | 0.9170 | 0.0318 |
| 10 | 0.9465 | 0.0294 |
| 11 | 0.9739 | 0.0275 |
| 12 | 0.9997 | 0.0258 |
| 13 | 1.0504 | 0.0508 |
| 14 | 1.0997 | 0.0493 |

| | | |
|---|---|---|
| 15 | 1.1477 | 0.0480 |
| 16 | 1.1944 | 0.0468 |
| 17 | 1.2401 | 0.0457 |
| 18 | 1.2847 | 0.0446 |
| 19 | 1.3284 | 0.0437 |
| 20 | 1.3713 | 0.0428 |
| 21 | 1.4133 | 0.0420 |
| 22 | 1.4545 | 0.0413 |
| 23 | 1.4951 | 0.0406 |
| 24 | 1.5350 | 0.0399 |
| 25 | 1.5743 | 0.0393 |
| 26 | 1.6129 | 0.0387 |
| 27 | 1.6510 | 0.0381 |
| 28 | 1.6886 | 0.0376 |
| 29 | 1.7256 | 0.0371 |
| 30 | 1.7622 | 0.0366 |
| 31 | 1.7983 | 0.0361 |
| 32 | 1.8340 | 0.0357 |
| 33 | 1.8693 | 0.0352 |
| 34 | 1.9041 | 0.0348 |
| 35 | 1.9386 | 0.0345 |
| 36 | 1.9726 | 0.0341 |
| 37 | 2.0064 | 0.0337 |
| 38 | 2.0397 | 0.0334 |
| 39 | 2.0728 | 0.0330 |
| 40 | 2.1055 | 0.0327 |
| 41 | 2.1379 | 0.0324 |
| 42 | 2.1700 | 0.0321 |
| 43 | 2.2018 | 0.0318 |
| 44 | 2.2333 | 0.0315 |
| 45 | 2.2646 | 0.0313 |
| 46 | 2.2955 | 0.0310 |
| 47 | 2.3263 | 0.0307 |
| 48 | 2.3568 | 0.0305 |
| 49 | 2.3870 | 0.0302 |
| 50 | 2.4170 | 0.0300 |
| 51 | 2.4468 | 0.0298 |
| 52 | 2.4764 | 0.0296 |
| 53 | 2.5057 | 0.0293 |
| 54 | 2.5349 | 0.0291 |
| 55 | 2.5638 | 0.0289 |
| 56 | 2.5925 | 0.0287 |
| 57 | 2.6210 | 0.0285 |
| 58 | 2.6494 | 0.0283 |
| 59 | 2.6775 | 0.0282 |
| 60 | 2.7055 | 0.0280 |
| 61 | 2.7333 | 0.0278 |
| 62 | 2.7610 | 0.0276 |
| 63 | 2.7884 | 0.0275 |
| 64 | 2.8157 | 0.0273 |
| 65 | 2.8428 | 0.0271 |
| 66 | 2.8698 | 0.0270 |
| 67 | 2.8966 | 0.0268 |
| 68 | 2.9233 | 0.0267 |
| 69 | 2.9498 | 0.0265 |
| 70 | 2.9762 | 0.0264 |
| 71 | 3.0024 | 0.0262 |
| 72 | 3.0285 | 0.0261 |
| 73 | 3.0550 | 0.0266 |
| 74 | 3.0815 | 0.0265 |
| 75 | 3.1078 | 0.0263 |
| 76 | 3.1340 | 0.0262 |
| 77 | 3.1601 | 0.0261 |
| 78 | 3.1861 | 0.0259 |
| 79 | 3.2119 | 0.0258 |
| 80 | 3.2376 | 0.0257 |
| 81 | 3.2632 | 0.0256 |
| 82 | 3.2887 | 0.0255 |
| 83 | 3.3140 | 0.0254 |
| 84 | 3.3393 | 0.0253 |
| 85 | 3.3644 | 0.0251 |

| | | |
|---|---|---|
| 86 | 3.3894 | 0.0250 |
| 87 | 3.4144 | 0.0249 |
| 88 | 3.4392 | 0.0248 |
| 89 | 3.4639 | 0.0247 |
| 90 | 3.4885 | 0.0246 |
| 91 | 3.5130 | 0.0245 |
| 92 | 3.5375 | 0.0244 |
| 93 | 3.5618 | 0.0243 |
| 94 | 3.5860 | 0.0242 |
| 95 | 3.6101 | 0.0241 |
| 96 | 3.6342 | 0.0240 |
| 97 | 3.6581 | 0.0239 |
| 98 | 3.6820 | 0.0239 |
| 99 | 3.7057 | 0.0238 |
| 100 | 3.7294 | 0.0237 |
| 101 | 3.7530 | 0.0236 |
| 102 | 3.7765 | 0.0235 |
| 103 | 3.8000 | 0.0234 |
| 104 | 3.8233 | 0.0233 |
| 105 | 3.8466 | 0.0233 |
| 106 | 3.8697 | 0.0232 |
| 107 | 3.8928 | 0.0231 |
| 108 | 3.9158 | 0.0230 |
| 109 | 3.9388 | 0.0229 |
| 110 | 3.9617 | 0.0229 |
| 111 | 3.9844 | 0.0228 |
| 112 | 4.0072 | 0.0227 |
| 113 | 4.0298 | 0.0226 |
| 114 | 4.0524 | 0.0226 |
| 115 | 4.0749 | 0.0225 |
| 116 | 4.0973 | 0.0224 |
| 117 | 4.1196 | 0.0224 |
| 118 | 4.1419 | 0.0223 |
| 119 | 4.1641 | 0.0222 |
| 120 | 4.1863 | 0.0221 |
| 121 | 4.2083 | 0.0221 |
| 122 | 4.2303 | 0.0220 |
| 123 | 4.2523 | 0.0219 |
| 124 | 4.2742 | 0.0219 |
| 125 | 4.2960 | 0.0218 |
| 126 | 4.3177 | 0.0218 |
| 127 | 4.3394 | 0.0217 |
| 128 | 4.3610 | 0.0216 |
| 129 | 4.3826 | 0.0216 |
| 130 | 4.4041 | 0.0215 |
| 131 | 4.4256 | 0.0214 |
| 132 | 4.4469 | 0.0214 |
| 133 | 4.4683 | 0.0213 |
| 134 | 4.4895 | 0.0213 |
| 135 | 4.5107 | 0.0212 |
| 136 | 4.5319 | 0.0211 |
| 137 | 4.5530 | 0.0211 |
| 138 | 4.5740 | 0.0210 |
| 139 | 4.5950 | 0.0210 |
| 140 | 4.6159 | 0.0209 |
| 141 | 4.6368 | 0.0209 |
| 142 | 4.6576 | 0.0208 |
| 143 | 4.6783 | 0.0208 |
| 144 | 4.6991 | 0.0207 |
| 145 | 4.7197 | 0.0207 |
| 146 | 4.7403 | 0.0206 |
| 147 | 4.7609 | 0.0206 |
| 148 | 4.7814 | 0.0205 |
| 149 | 4.8018 | 0.0205 |
| 150 | 4.8222 | 0.0204 |
| 151 | 4.8426 | 0.0204 |
| 152 | 4.8629 | 0.0203 |
| 153 | 4.8831 | 0.0203 |
| 154 | 4.9033 | 0.0202 |
| 155 | 4.9235 | 0.0202 |
| 156 | 4.9436 | 0.0201 |

| | | |
|---|---|---|
| 157 | 4.9636 | 0.0201 |
| 158 | 4.9837 | 0.0200 |
| 159 | 5.0036 | 0.0200 |
| 160 | 5.0236 | 0.0199 |
| 161 | 5.0434 | 0.0199 |
| 162 | 5.0633 | 0.0198 |
| 163 | 5.0830 | 0.0198 |
| 164 | 5.1028 | 0.0197 |
| 165 | 5.1225 | 0.0197 |
| 166 | 5.1421 | 0.0197 |
| 167 | 5.1618 | 0.0196 |
| 168 | 5.1813 | 0.0196 |
| 169 | 5.2008 | 0.0195 |
| 170 | 5.2203 | 0.0195 |
| 171 | 5.2398 | 0.0194 |
| 172 | 5.2592 | 0.0194 |
| 173 | 5.2785 | 0.0194 |
| 174 | 5.2978 | 0.0193 |
| 175 | 5.3171 | 0.0193 |
| 176 | 5.3364 | 0.0192 |
| 177 | 5.3556 | 0.0192 |
| 178 | 5.3747 | 0.0192 |
| 179 | 5.3938 | 0.0191 |
| 180 | 5.4129 | 0.0191 |
| 181 | 5.4319 | 0.0190 |
| 182 | 5.4510 | 0.0190 |
| 183 | 5.4699 | 0.0190 |
| 184 | 5.4888 | 0.0189 |
| 185 | 5.5077 | 0.0189 |
| 186 | 5.5266 | 0.0189 |
| 187 | 5.5454 | 0.0188 |
| 188 | 5.5642 | 0.0188 |
| 189 | 5.5829 | 0.0187 |
| 190 | 5.6016 | 0.0187 |
| 191 | 5.6203 | 0.0187 |
| 192 | 5.6389 | 0.0186 |
| 193 | 5.6575 | 0.0186 |
| 194 | 5.6761 | 0.0186 |
| 195 | 5.6946 | 0.0185 |
| 196 | 5.7131 | 0.0185 |
| 197 | 5.7315 | 0.0185 |
| 198 | 5.7500 | 0.0184 |
| 199 | 5.7683 | 0.0184 |
| 200 | 5.7867 | 0.0184 |
| 201 | 5.8050 | 0.0183 |
| 202 | 5.8233 | 0.0183 |
| 203 | 5.8416 | 0.0183 |
| 204 | 5.8598 | 0.0182 |
| 205 | 5.8780 | 0.0182 |
| 206 | 5.8961 | 0.0182 |
| 207 | 5.9143 | 0.0181 |
| 208 | 5.9323 | 0.0181 |
| 209 | 5.9504 | 0.0181 |
| 210 | 5.9684 | 0.0180 |
| 211 | 5.9864 | 0.0180 |
| 212 | 6.0044 | 0.0180 |
| 213 | 6.0223 | 0.0179 |
| 214 | 6.0402 | 0.0179 |
| 215 | 6.0581 | 0.0179 |
| 216 | 6.0760 | 0.0178 |
| 217 | 6.0938 | 0.0178 |
| 218 | 6.1116 | 0.0178 |
| 219 | 6.1293 | 0.0178 |
| 220 | 6.1470 | 0.0177 |
| 221 | 6.1647 | 0.0177 |
| 222 | 6.1824 | 0.0177 |
| 223 | 6.2000 | 0.0176 |
| 224 | 6.2176 | 0.0176 |
| 225 | 6.2352 | 0.0176 |
| 226 | 6.2528 | 0.0175 |
| 227 | 6.2703 | 0.0175 |

| | | |
|---|---|---|
| 228 | 6.2878 | 0.0175 |
| 229 | 6.3052 | 0.0175 |
| 230 | 6.3227 | 0.0174 |
| 231 | 6.3401 | 0.0174 |
| 232 | 6.3575 | 0.0174 |
| 233 | 6.3748 | 0.0174 |
| 234 | 6.3921 | 0.0173 |
| 235 | 6.4094 | 0.0173 |
| 236 | 6.4267 | 0.0173 |
| 237 | 6.4440 | 0.0172 |
| 238 | 6.4612 | 0.0172 |
| 239 | 6.4784 | 0.0172 |
| 240 | 6.4955 | 0.0172 |
| 241 | 6.5127 | 0.0171 |
| 242 | 6.5298 | 0.0171 |
| 243 | 6.5469 | 0.0171 |
| 244 | 6.5639 | 0.0171 |
| 245 | 6.5810 | 0.0170 |
| 246 | 6.5980 | 0.0170 |
| 247 | 6.6150 | 0.0170 |
| 248 | 6.6319 | 0.0170 |
| 249 | 6.6489 | 0.0169 |
| 250 | 6.6658 | 0.0169 |
| 251 | 6.6827 | 0.0169 |
| 252 | 6.6995 | 0.0169 |
| 253 | 6.7164 | 0.0168 |
| 254 | 6.7332 | 0.0168 |
| 255 | 6.7500 | 0.0168 |
| 256 | 6.7667 | 0.0168 |
| 257 | 6.7835 | 0.0167 |
| 258 | 6.8002 | 0.0167 |
| 259 | 6.8169 | 0.0167 |
| 260 | 6.8336 | 0.0167 |
| 261 | 6.8502 | 0.0166 |
| 262 | 6.8668 | 0.0166 |
| 263 | 6.8834 | 0.0166 |
| 264 | 6.9000 | 0.0166 |
| 265 | 6.9166 | 0.0166 |
| 266 | 6.9331 | 0.0165 |
| 267 | 6.9496 | 0.0165 |
| 268 | 6.9661 | 0.0165 |
| 269 | 6.9825 | 0.0165 |
| 270 | 6.9990 | 0.0164 |
| 271 | 7.0154 | 0.0164 |
| 272 | 7.0318 | 0.0164 |
| 273 | 7.0482 | 0.0164 |
| 274 | 7.0645 | 0.0164 |
| 275 | 7.0809 | 0.0163 |
| 276 | 7.0972 | 0.0163 |
| 277 | 7.1134 | 0.0163 |
| 278 | 7.1297 | 0.0163 |
| 279 | 7.1460 | 0.0162 |
| 280 | 7.1622 | 0.0162 |
| 281 | 7.1784 | 0.0162 |
| 282 | 7.1946 | 0.0162 |
| 283 | 7.2107 | 0.0162 |
| 284 | 7.2269 | 0.0161 |
| 285 | 7.2430 | 0.0161 |
| 286 | 7.2591 | 0.0161 |
| 287 | 7.2751 | 0.0161 |
| 288 | 7.2912 | 0.0161 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0161 | 0.0093 | 0.0067 |
| 2 | 0.0161 | 0.0094 | 0.0067 |
| 3 | 0.0161 | 0.0094 | 0.0067 |
| 4 | 0.0161 | 0.0094 | 0.0067 |
| 5 | 0.0162 | 0.0094 | 0.0068 |

| | | | |
|---|---|---|---|
| 6 | 0.0162 | 0.0094 | 0.0068 |
| 7 | 0.0162 | 0.0095 | 0.0068 |
| 8 | 0.0163 | 0.0095 | 0.0068 |
| 9 | 0.0163 | 0.0095 | 0.0068 |
| 10 | 0.0163 | 0.0095 | 0.0068 |
| 11 | 0.0164 | 0.0095 | 0.0068 |
| 12 | 0.0164 | 0.0095 | 0.0069 |
| 13 | 0.0164 | 0.0096 | 0.0069 |
| 14 | 0.0165 | 0.0096 | 0.0069 |
| 15 | 0.0165 | 0.0096 | 0.0069 |
| 16 | 0.0165 | 0.0096 | 0.0069 |
| 17 | 0.0166 | 0.0096 | 0.0069 |
| 18 | 0.0166 | 0.0097 | 0.0069 |
| 19 | 0.0166 | 0.0097 | 0.0070 |
| 20 | 0.0167 | 0.0097 | 0.0070 |
| 21 | 0.0167 | 0.0097 | 0.0070 |
| 22 | 0.0167 | 0.0097 | 0.0070 |
| 23 | 0.0168 | 0.0098 | 0.0070 |
| 24 | 0.0168 | 0.0098 | 0.0070 |
| 25 | 0.0169 | 0.0098 | 0.0071 |
| 26 | 0.0169 | 0.0098 | 0.0071 |
| 27 | 0.0169 | 0.0099 | 0.0071 |
| 28 | 0.0170 | 0.0099 | 0.0071 |
| 29 | 0.0170 | 0.0099 | 0.0071 |
| 30 | 0.0170 | 0.0099 | 0.0071 |
| 31 | 0.0171 | 0.0099 | 0.0071 |
| 32 | 0.0171 | 0.0100 | 0.0072 |
| 33 | 0.0172 | 0.0100 | 0.0072 |
| 34 | 0.0172 | 0.0100 | 0.0072 |
| 35 | 0.0172 | 0.0100 | 0.0072 |
| 36 | 0.0173 | 0.0100 | 0.0072 |
| 37 | 0.0173 | 0.0101 | 0.0072 |
| 38 | 0.0174 | 0.0101 | 0.0073 |
| 39 | 0.0174 | 0.0101 | 0.0073 |
| 40 | 0.0174 | 0.0101 | 0.0073 |
| 41 | 0.0175 | 0.0102 | 0.0073 |
| 42 | 0.0175 | 0.0102 | 0.0073 |
| 43 | 0.0176 | 0.0102 | 0.0074 |
| 44 | 0.0176 | 0.0102 | 0.0074 |
| 45 | 0.0177 | 0.0103 | 0.0074 |
| 46 | 0.0177 | 0.0103 | 0.0074 |
| 47 | 0.0178 | 0.0103 | 0.0074 |
| 48 | 0.0178 | 0.0103 | 0.0074 |
| 49 | 0.0178 | 0.0104 | 0.0075 |
| 50 | 0.0179 | 0.0104 | 0.0075 |
| 51 | 0.0179 | 0.0104 | 0.0075 |
| 52 | 0.0180 | 0.0105 | 0.0075 |
| 53 | 0.0180 | 0.0105 | 0.0075 |
| 54 | 0.0181 | 0.0105 | 0.0076 |
| 55 | 0.0181 | 0.0105 | 0.0076 |
| 56 | 0.0182 | 0.0106 | 0.0076 |
| 57 | 0.0182 | 0.0106 | 0.0076 |
| 58 | 0.0183 | 0.0106 | 0.0076 |
| 59 | 0.0183 | 0.0107 | 0.0077 |
| 60 | 0.0184 | 0.0107 | 0.0077 |
| 61 | 0.0184 | 0.0107 | 0.0077 |
| 62 | 0.0185 | 0.0107 | 0.0077 |
| 63 | 0.0185 | 0.0108 | 0.0077 |
| 64 | 0.0186 | 0.0108 | 0.0078 |
| 65 | 0.0186 | 0.0108 | 0.0078 |
| 66 | 0.0187 | 0.0109 | 0.0078 |
| 67 | 0.0187 | 0.0109 | 0.0078 |
| 68 | 0.0188 | 0.0109 | 0.0079 |
| 69 | 0.0189 | 0.0110 | 0.0079 |
| 70 | 0.0189 | 0.0110 | 0.0079 |
| 71 | 0.0190 | 0.0110 | 0.0079 |
| 72 | 0.0190 | 0.0111 | 0.0079 |
| 73 | 0.0191 | 0.0111 | 0.0080 |
| 74 | 0.0191 | 0.0111 | 0.0080 |
| 75 | 0.0192 | 0.0112 | 0.0080 |
| 76 | 0.0192 | 0.0112 | 0.0080 |

| | | | |
|---|---|---|---|
| 77 | 0.0193 | 0.0112 | 0.0081 |
| 78 | 0.0194 | 0.0113 | 0.0081 |
| 79 | 0.0194 | 0.0113 | 0.0081 |
| 80 | 0.0195 | 0.0113 | 0.0081 |
| 81 | 0.0196 | 0.0114 | 0.0082 |
| 82 | 0.0196 | 0.0114 | 0.0082 |
| 83 | 0.0197 | 0.0115 | 0.0082 |
| 84 | 0.0197 | 0.0115 | 0.0083 |
| 85 | 0.0198 | 0.0115 | 0.0083 |
| 86 | 0.0199 | 0.0116 | 0.0083 |
| 87 | 0.0200 | 0.0116 | 0.0084 |
| 88 | 0.0200 | 0.0116 | 0.0084 |
| 89 | 0.0201 | 0.0117 | 0.0084 |
| 90 | 0.0202 | 0.0117 | 0.0084 |
| 91 | 0.0203 | 0.0118 | 0.0085 |
| 92 | 0.0203 | 0.0118 | 0.0085 |
| 93 | 0.0204 | 0.0119 | 0.0085 |
| 94 | 0.0205 | 0.0119 | 0.0086 |
| 95 | 0.0206 | 0.0120 | 0.0086 |
| 96 | 0.0206 | 0.0120 | 0.0086 |
| 97 | 0.0207 | 0.0120 | 0.0087 |
| 98 | 0.0208 | 0.0121 | 0.0087 |
| 99 | 0.0209 | 0.0121 | 0.0087 |
| 100 | 0.0209 | 0.0122 | 0.0088 |
| 101 | 0.0210 | 0.0122 | 0.0088 |
| 102 | 0.0211 | 0.0123 | 0.0088 |
| 103 | 0.0212 | 0.0123 | 0.0089 |
| 104 | 0.0213 | 0.0124 | 0.0089 |
| 105 | 0.0214 | 0.0124 | 0.0089 |
| 106 | 0.0214 | 0.0125 | 0.0090 |
| 107 | 0.0216 | 0.0125 | 0.0090 |
| 108 | 0.0216 | 0.0126 | 0.0090 |
| 109 | 0.0218 | 0.0127 | 0.0091 |
| 110 | 0.0218 | 0.0127 | 0.0091 |
| 111 | 0.0219 | 0.0128 | 0.0092 |
| 112 | 0.0220 | 0.0128 | 0.0092 |
| 113 | 0.0221 | 0.0129 | 0.0093 |
| 114 | 0.0222 | 0.0129 | 0.0093 |
| 115 | 0.0224 | 0.0130 | 0.0093 |
| 116 | 0.0224 | 0.0130 | 0.0094 |
| 117 | 0.0226 | 0.0131 | 0.0094 |
| 118 | 0.0226 | 0.0132 | 0.0095 |
| 119 | 0.0228 | 0.0133 | 0.0095 |
| 120 | 0.0229 | 0.0133 | 0.0096 |
| 121 | 0.0230 | 0.0134 | 0.0096 |
| 122 | 0.0231 | 0.0134 | 0.0097 |
| 123 | 0.0233 | 0.0135 | 0.0097 |
| 124 | 0.0233 | 0.0136 | 0.0098 |
| 125 | 0.0235 | 0.0137 | 0.0098 |
| 126 | 0.0236 | 0.0137 | 0.0099 |
| 127 | 0.0238 | 0.0138 | 0.0099 |
| 128 | 0.0239 | 0.0139 | 0.0100 |
| 129 | 0.0240 | 0.0140 | 0.0101 |
| 130 | 0.0241 | 0.0140 | 0.0101 |
| 131 | 0.0243 | 0.0141 | 0.0102 |
| 132 | 0.0244 | 0.0142 | 0.0102 |
| 133 | 0.0246 | 0.0143 | 0.0103 |
| 134 | 0.0247 | 0.0144 | 0.0103 |
| 135 | 0.0249 | 0.0145 | 0.0104 |
| 136 | 0.0250 | 0.0146 | 0.0105 |
| 137 | 0.0253 | 0.0147 | 0.0106 |
| 138 | 0.0254 | 0.0148 | 0.0106 |
| 139 | 0.0256 | 0.0149 | 0.0107 |
| 140 | 0.0257 | 0.0150 | 0.0108 |
| 141 | 0.0259 | 0.0151 | 0.0109 |
| 142 | 0.0261 | 0.0152 | 0.0109 |
| 143 | 0.0263 | 0.0153 | 0.0110 |
| 144 | 0.0265 | 0.0154 | 0.0111 |
| 145 | 0.0261 | 0.0152 | 0.0109 |
| 146 | 0.0262 | 0.0153 | 0.0110 |
| 147 | 0.0265 | 0.0154 | 0.0111 |

| | | | |
|---|---|---|---|
| 148 | 0.0267 | 0.0155 | 0.0112 |
| 149 | 0.0270 | 0.0157 | 0.0113 |
| 150 | 0.0271 | 0.0158 | 0.0113 |
| 151 | 0.0275 | 0.0160 | 0.0115 |
| 152 | 0.0276 | 0.0161 | 0.0116 |
| 153 | 0.0280 | 0.0163 | 0.0117 |
| 154 | 0.0282 | 0.0164 | 0.0118 |
| 155 | 0.0285 | 0.0166 | 0.0119 |
| 156 | 0.0287 | 0.0167 | 0.0120 |
| 157 | 0.0291 | 0.0170 | 0.0122 |
| 158 | 0.0293 | 0.0171 | 0.0123 |
| 159 | 0.0298 | 0.0173 | 0.0125 |
| 160 | 0.0300 | 0.0175 | 0.0126 |
| 161 | 0.0305 | 0.0177 | 0.0128 |
| 162 | 0.0307 | 0.0179 | 0.0129 |
| 163 | 0.0313 | 0.0182 | 0.0131 |
| 164 | 0.0315 | 0.0183 | 0.0132 |
| 165 | 0.0321 | 0.0187 | 0.0134 |
| 166 | 0.0324 | 0.0189 | 0.0135 |
| 167 | 0.0330 | 0.0192 | 0.0138 |
| 168 | 0.0334 | 0.0194 | 0.0140 |
| 169 | 0.0341 | 0.0198 | 0.0143 |
| 170 | 0.0345 | 0.0200 | 0.0144 |
| 171 | 0.0352 | 0.0205 | 0.0147 |
| 172 | 0.0357 | 0.0208 | 0.0149 |
| 173 | 0.0366 | 0.0213 | 0.0153 |
| 174 | 0.0371 | 0.0216 | 0.0155 |
| 175 | 0.0381 | 0.0222 | 0.0159 |
| 176 | 0.0387 | 0.0225 | 0.0162 |
| 177 | 0.0399 | 0.0232 | 0.0167 |
| 178 | 0.0406 | 0.0236 | 0.0170 |
| 179 | 0.0420 | 0.0244 | 0.0176 |
| 180 | 0.0428 | 0.0249 | 0.0179 |
| 181 | 0.0446 | 0.0260 | 0.0187 |
| 182 | 0.0457 | 0.0266 | 0.0191 |
| 183 | 0.0480 | 0.0279 | 0.0201 |
| 184 | 0.0493 | 0.0287 | 0.0206 |
| 185 | 0.0258 | 0.0150 | 0.0108 |
| 186 | 0.0275 | 0.0160 | 0.0115 |
| 187 | 0.0318 | 0.0185 | 0.0133 |
| 188 | 0.0348 | 0.0202 | 0.0145 |
| 189 | 0.0432 | 0.0251 | 0.0181 |
| 190 | 0.0498 | 0.0290 | 0.0208 |
| 191 | 0.0755 | 0.0439 | 0.0316 |
| 192 | 0.1096 | 0.0489 | 0.0608 |
| 193 | 0.4744 | 0.0489 | 0.4255 |
| 194 | 0.0595 | 0.0346 | 0.0249 |
| 195 | 0.0384 | 0.0224 | 0.0161 |
| 196 | 0.0294 | 0.0171 | 0.0123 |
| 197 | 0.0508 | 0.0295 | 0.0212 |
| 198 | 0.0468 | 0.0272 | 0.0196 |
| 199 | 0.0437 | 0.0254 | 0.0183 |
| 200 | 0.0413 | 0.0240 | 0.0173 |
| 201 | 0.0393 | 0.0228 | 0.0164 |
| 202 | 0.0376 | 0.0219 | 0.0157 |
| 203 | 0.0361 | 0.0210 | 0.0151 |
| 204 | 0.0348 | 0.0203 | 0.0146 |
| 205 | 0.0337 | 0.0196 | 0.0141 |
| 206 | 0.0327 | 0.0190 | 0.0137 |
| 207 | 0.0318 | 0.0185 | 0.0133 |
| 208 | 0.0310 | 0.0180 | 0.0130 |
| 209 | 0.0302 | 0.0176 | 0.0126 |
| 210 | 0.0296 | 0.0172 | 0.0124 |
| 211 | 0.0289 | 0.0168 | 0.0121 |
| 212 | 0.0283 | 0.0165 | 0.0119 |
| 213 | 0.0278 | 0.0162 | 0.0116 |
| 214 | 0.0273 | 0.0159 | 0.0114 |
| 215 | 0.0268 | 0.0156 | 0.0112 |
| 216 | 0.0264 | 0.0153 | 0.0110 |
| 217 | 0.0266 | 0.0155 | 0.0111 |
| 218 | 0.0262 | 0.0152 | 0.0110 |

| | | | |
|---|---|---|---|
| 219 | 0.0258 | 0.0150 | 0.0108 |
| 220 | 0.0255 | 0.0148 | 0.0107 |
| 221 | 0.0251 | 0.0146 | 0.0105 |
| 222 | 0.0248 | 0.0144 | 0.0104 |
| 223 | 0.0245 | 0.0143 | 0.0103 |
| 224 | 0.0242 | 0.0141 | 0.0101 |
| 225 | 0.0239 | 0.0139 | 0.0100 |
| 226 | 0.0237 | 0.0138 | 0.0099 |
| 227 | 0.0234 | 0.0136 | 0.0098 |
| 228 | 0.0232 | 0.0135 | 0.0097 |
| 229 | 0.0229 | 0.0133 | 0.0096 |
| 230 | 0.0227 | 0.0132 | 0.0095 |
| 231 | 0.0225 | 0.0131 | 0.0094 |
| 232 | 0.0223 | 0.0130 | 0.0093 |
| 233 | 0.0221 | 0.0128 | 0.0092 |
| 234 | 0.0219 | 0.0127 | 0.0091 |
| 235 | 0.0217 | 0.0126 | 0.0091 |
| 236 | 0.0215 | 0.0125 | 0.0090 |
| 237 | 0.0213 | 0.0124 | 0.0089 |
| 238 | 0.0211 | 0.0123 | 0.0088 |
| 239 | 0.0210 | 0.0122 | 0.0088 |
| 240 | 0.0208 | 0.0121 | 0.0087 |
| 241 | 0.0207 | 0.0120 | 0.0086 |
| 242 | 0.0205 | 0.0119 | 0.0086 |
| 243 | 0.0204 | 0.0118 | 0.0085 |
| 244 | 0.0202 | 0.0118 | 0.0084 |
| 245 | 0.0201 | 0.0117 | 0.0084 |
| 246 | 0.0199 | 0.0116 | 0.0083 |
| 247 | 0.0198 | 0.0115 | 0.0083 |
| 248 | 0.0197 | 0.0114 | 0.0082 |
| 249 | 0.0195 | 0.0114 | 0.0082 |
| 250 | 0.0194 | 0.0113 | 0.0081 |
| 251 | 0.0193 | 0.0112 | 0.0081 |
| 252 | 0.0192 | 0.0111 | 0.0080 |
| 253 | 0.0190 | 0.0111 | 0.0080 |
| 254 | 0.0189 | 0.0110 | 0.0079 |
| 255 | 0.0188 | 0.0109 | 0.0079 |
| 256 | 0.0187 | 0.0109 | 0.0078 |
| 257 | 0.0186 | 0.0108 | 0.0078 |
| 258 | 0.0185 | 0.0108 | 0.0077 |
| 259 | 0.0184 | 0.0107 | 0.0077 |
| 260 | 0.0183 | 0.0106 | 0.0076 |
| 261 | 0.0182 | 0.0106 | 0.0076 |
| 262 | 0.0181 | 0.0105 | 0.0076 |
| 263 | 0.0180 | 0.0105 | 0.0075 |
| 264 | 0.0179 | 0.0104 | 0.0075 |
| 265 | 0.0178 | 0.0104 | 0.0074 |
| 266 | 0.0177 | 0.0103 | 0.0074 |
| 267 | 0.0176 | 0.0103 | 0.0074 |
| 268 | 0.0175 | 0.0102 | 0.0073 |
| 269 | 0.0175 | 0.0102 | 0.0073 |
| 270 | 0.0174 | 0.0101 | 0.0073 |
| 271 | 0.0173 | 0.0101 | 0.0072 |
| 272 | 0.0172 | 0.0100 | 0.0072 |
| 273 | 0.0171 | 0.0100 | 0.0072 |
| 274 | 0.0171 | 0.0099 | 0.0071 |
| 275 | 0.0170 | 0.0099 | 0.0071 |
| 276 | 0.0169 | 0.0098 | 0.0071 |
| 277 | 0.0168 | 0.0098 | 0.0070 |
| 278 | 0.0168 | 0.0098 | 0.0070 |
| 279 | 0.0167 | 0.0097 | 0.0070 |
| 280 | 0.0166 | 0.0097 | 0.0070 |
| 281 | 0.0166 | 0.0096 | 0.0069 |
| 282 | 0.0165 | 0.0096 | 0.0069 |
| 283 | 0.0164 | 0.0096 | 0.0069 |
| 284 | 0.0164 | 0.0095 | 0.0068 |
| 285 | 0.0163 | 0.0095 | 0.0068 |
| 286 | 0.0162 | 0.0094 | 0.0068 |
| 287 | 0.0162 | 0.0094 | 0.0068 |
| 288 | 0.0161 | 0.0094 | 0.0067 |

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      ----------------------------------------------------------------------
      Total soil rain loss =      4.00(In)
      Total effective rainfall =      3.29(In)
      Peak flow rate in flood hydrograph =     15.45(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                    R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
----------------------------------------------------------------------
  0+ 5       0.0003      0.04  Q          |         |         |         |
  0+10       0.0020      0.25  Q          |         |         |         |
  0+15       0.0048      0.41  Q          |         |         |         |
  0+20       0.0080      0.47  Q          |         |         |         |
  0+25       0.0114      0.50  VQ         |         |         |         |
  0+30       0.0150      0.52  VQ         |         |         |         |
  0+35       0.0186      0.53  VQ         |         |         |         |
  0+40       0.0223      0.53  VQ         |         |         |         |
  0+45       0.0260      0.53  VQ         |         |         |         |
  0+50       0.0297      0.54  VQ         |         |         |         |
  0+55       0.0334      0.54  VQ         |         |         |         |
  1+ 0       0.0371      0.54  VQ         |         |         |         |
  1+ 5       0.0408      0.54  VQ         |         |         |         |
  1+10       0.0446      0.54  VQ         |         |         |         |
  1+15       0.0483      0.54  |Q         |         |         |         |
  1+20       0.0521      0.54  |Q         |         |         |         |
  1+25       0.0558      0.55  |Q         |         |         |         |
  1+30       0.0596      0.55  |Q         |         |         |         |
  1+35       0.0634      0.55  |Q         |         |         |         |
  1+40       0.0672      0.55  |Q         |         |         |         |
  1+45       0.0710      0.55  |Q         |         |         |         |
  1+50       0.0748      0.55  |Q         |         |         |         |
  1+55       0.0786      0.55  |Q         |         |         |         |
  2+ 0       0.0824      0.55  |Q         |         |         |         |
  2+ 5       0.0862      0.56  |Q         |         |         |         |
  2+10       0.0900      0.56  |QV        |         |         |         |
  2+15       0.0939      0.56  |QV        |         |         |         |
  2+20       0.0977      0.56  |QV        |         |         |         |
  2+25       0.1016      0.56  |QV        |         |         |         |
  2+30       0.1054      0.56  |QV        |         |         |         |
  2+35       0.1093      0.56  |QV        |         |         |         |
  2+40       0.1132      0.56  |QV        |         |         |         |
  2+45       0.1171      0.57  |QV        |         |         |         |
  2+50       0.1210      0.57  |QV        |         |         |         |
  2+55       0.1249      0.57  |QV        |         |         |         |
  3+ 0       0.1288      0.57  |QV        |         |         |         |
  3+ 5       0.1328      0.57  |QV        |         |         |         |
  3+10       0.1367      0.57  |Q V       |         |         |         |
  3+15       0.1406      0.57  |Q V       |         |         |         |
  3+20       0.1446      0.57  |Q V       |         |         |         |
  3+25       0.1486      0.58  |Q V       |         |         |         |
  3+30       0.1525      0.58  |Q V       |         |         |         |
  3+35       0.1565      0.58  |Q V       |         |         |         |
  3+40       0.1605      0.58  |Q V       |         |         |         |
  3+45       0.1645      0.58  |Q V       |         |         |         |
  3+50       0.1685      0.58  |Q V       |         |         |         |
  3+55       0.1725      0.58  |Q V       |         |         |         |
  4+ 0       0.1766      0.59  |Q V       |         |         |         |
  4+ 5       0.1806      0.59  |Q  V      |         |         |         |
  4+10       0.1847      0.59  |Q  V      |         |         |         |
  4+15       0.1887      0.59  |Q  V      |         |         |         |
  4+20       0.1928      0.59  |Q  V      |         |         |         |
  4+25       0.1969      0.59  |Q  V      |         |         |         |
  4+30       0.2010      0.59  |Q  V      |         |         |         |
  4+35       0.2051      0.60  |Q  V      |         |         |         |
  4+40       0.2092      0.60  |Q  V      |         |         |         |
  4+45       0.2133      0.60  |Q  V      |         |         |         |
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 4+50       0.2175      0.60  |Q  V     |          |          |          |
 4+55       0.2216      0.60  |Q  V     |          |          |          |
 5+ 0       0.2258      0.60  |Q   V    |          |          |          |
 5+ 5       0.2300      0.61  |Q   V    |          |          |          |
 5+10       0.2341      0.61  |Q   V    |          |          |          |
 5+15       0.2383      0.61  |Q   V    |          |          |          |
 5+20       0.2426      0.61  |Q   V    |          |          |          |
 5+25       0.2468      0.61  |Q   V    |          |          |          |
 5+30       0.2510      0.61  |Q   V    |          |          |          |
 5+35       0.2552      0.62  |Q   V    |          |          |          |
 5+40       0.2595      0.62  |Q   V    |          |          |          |
 5+45       0.2638      0.62  |Q   V    |          |          |          |
 5+50       0.2680      0.62  |Q   V    |          |          |          |
 5+55       0.2723      0.62  |Q    V   |          |          |          |
 6+ 0       0.2766      0.63  |Q    V   |          |          |          |
 6+ 5       0.2810      0.63  |Q    V   |          |          |          |
 6+10       0.2853      0.63  |Q    V   |          |          |          |
 6+15       0.2896      0.63  |Q    V   |          |          |          |
 6+20       0.2940      0.63  |Q    V   |          |          |          |
 6+25       0.2984      0.63  |Q    V   |          |          |          |
 6+30       0.3028      0.64  |Q    V   |          |          |          |
 6+35       0.3072      0.64  |Q    V   |          |          |          |
 6+40       0.3116      0.64  |Q    V   |          |          |          |
 6+45       0.3160      0.64  |Q     V  |          |          |          |
 6+50       0.3204      0.64  |Q     V  |          |          |          |
 6+55       0.3249      0.65  |Q     V  |          |          |          |
 7+ 0       0.3294      0.65  |Q     V  |          |          |          |
 7+ 5       0.3339      0.65  |Q     V  |          |          |          |
 7+10       0.3384      0.65  |Q     V  |          |          |          |
 7+15       0.3429      0.66  |Q     V  |          |          |          |
 7+20       0.3474      0.66  |Q     V  |          |          |          |
 7+25       0.3519      0.66  |Q     V  |          |          |          |
 7+30       0.3565      0.66  |Q     V  |          |          |          |
 7+35       0.3611      0.66  |Q      V |          |          |          |
 7+40       0.3657      0.67  |Q      V |          |          |          |
 7+45       0.3703      0.67  |Q      V |          |          |          |
 7+50       0.3749      0.67  |Q      V |          |          |          |
 7+55       0.3796      0.67  |Q      V |          |          |          |
 8+ 0       0.3842      0.68  |Q      V |          |          |          |
 8+ 5       0.3889      0.68  |Q      V |          |          |          |
 8+10       0.3936      0.68  |Q      V |          |          |          |
 8+15       0.3983      0.68  |Q      V |          |          |          |
 8+20       0.4031      0.69  |Q      V |          |          |          |
 8+25       0.4078      0.69  |Q       V|          |          |          |
 8+30       0.4126      0.69  |Q       V|          |          |          |
 8+35       0.4174      0.70  |Q       V|          |          |          |
 8+40       0.4222      0.70  |Q       V|          |          |          |
 8+45       0.4270      0.70  |Q       V|          |          |          |
 8+50       0.4319      0.70  |Q       V|          |          |          |
 8+55       0.4367      0.71  |Q       V|          |          |          |
 9+ 0       0.4416      0.71  |Q       V|          |          |          |
 9+ 5       0.4465      0.71  |Q       V|          |          |          |
 9+10       0.4515      0.72  |Q        V          |          |          |
 9+15       0.4564      0.72  |Q        V          |          |          |
 9+20       0.4614      0.72  |Q        V          |          |          |
 9+25       0.4664      0.73  |Q        V          |          |          |
 9+30       0.4714      0.73  |Q        V          |          |          |
 9+35       0.4764      0.73  |Q        V          |          |          |
 9+40       0.4815      0.74  |Q        V          |          |          |
 9+45       0.4866      0.74  |Q        V          |          |          |
 9+50       0.4917      0.74  |Q        V          |          |          |
 9+55       0.4969      0.75  |Q        |V         |          |          |
10+ 0       0.5020      0.75  |Q        |V         |          |          |
10+ 5       0.5072      0.75  |Q        |V         |          |          |
10+10       0.5124      0.76  |Q        |V         |          |          |
10+15       0.5177      0.76  |Q        |V         |          |          |
10+20       0.5229      0.77  |Q        |V         |          |          |
10+25       0.5282      0.77  |Q        |V         |          |          |
10+30       0.5336      0.77  |Q        |V         |          |          |
10+35       0.5389      0.78  |Q        | V        |          |          |
10+40       0.5443      0.78  |Q        | V        |          |          |
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10+45       0.5497      0.79  |Q        | V       |         |         |
10+50       0.5551      0.79  |Q        | V       |         |         |
10+55       0.5606      0.79  |Q        | V       |         |         |
11+ 0       0.5661      0.80  |Q        | V       |         |         |
11+ 5       0.5717      0.80  |Q        | V       |         |         |
11+10       0.5772      0.81  |Q        | V       |         |         |
11+15       0.5828      0.81  |Q        |  V      |         |         |
11+20       0.5885      0.82  |Q        |  V      |         |         |
11+25       0.5942      0.82  |Q        |  V      |         |         |
11+30       0.5999      0.83  |Q        |  V      |         |         |
11+35       0.6056      0.83  |Q        |  V      |         |         |
11+40       0.6114      0.84  |Q        |  V      |         |         |
11+45       0.6172      0.85  |Q        |  V      |         |         |
11+50       0.6231      0.85  |Q        |  V      |         |         |
11+55       0.6290      0.86  |Q        |   V     |         |         |
12+ 0       0.6350      0.86  |Q        |   V     |         |         |
12+ 5       0.6409      0.87  |Q        |   V     |         |         |
12+10       0.6469      0.87  |Q        |   V     |         |         |
12+15       0.6529      0.87  |Q        |   V     |         |         |
12+20       0.6589      0.87  |Q        |   V     |         |         |
12+25       0.6649      0.88  |Q        |   V     |         |         |
12+30       0.6710      0.88  |Q        |   V     |         |         |
12+35       0.6772      0.89  |Q        |    V    |         |         |
12+40       0.6834      0.90  |Q        |    V    |         |         |
12+45       0.6896      0.91  |Q        |    V    |         |         |
12+50       0.6959      0.92  |Q        |    V    |         |         |
12+55       0.7023      0.92  |Q        |    V    |         |         |
13+ 0       0.7087      0.93  |Q        |    V    |         |         |
13+ 5       0.7152      0.94  |Q        |    V    |         |         |
13+10       0.7218      0.95  |Q        |     V   |         |         |
13+15       0.7284      0.96  |Q        |     V   |         |         |
13+20       0.7351      0.97  |Q        |     V   |         |         |
13+25       0.7419      0.98  |Q        |     V   |         |         |
13+30       0.7487      1.00  |Q        |     V   |         |         |
13+35       0.7557      1.01  | Q       |     V   |         |         |
13+40       0.7627      1.02  | Q       |      V  |         |         |
13+45       0.7698      1.03  | Q       |      V  |         |         |
13+50       0.7770      1.05  | Q       |      V  |         |         |
13+55       0.7843      1.06  | Q       |      V  |         |         |
14+ 0       0.7918      1.08  | Q       |      V  |         |         |
14+ 5       0.7993      1.09  | Q       |      V  |         |         |
14+10       0.8069      1.11  | Q       |       V |         |         |
14+15       0.8147      1.13  | Q       |       V |         |         |
14+20       0.8226      1.15  | Q       |       V |         |         |
14+25       0.8306      1.16  | Q       |       V |         |         |
14+30       0.8387      1.19  | Q       |       V |         |         |
14+35       0.8471      1.21  | Q       |       V |         |         |
14+40       0.8556      1.23  | Q       |        V|         |         |
14+45       0.8642      1.26  | Q       |        V|         |         |
14+50       0.8731      1.29  | Q       |        V|         |         |
14+55       0.8822      1.32  | Q       |        V|         |         |
15+ 0       0.8915      1.35  | Q       |        V|         |         |
15+ 5       0.9011      1.39  | Q       |         V         |         |
15+10       0.9109      1.43  | Q       |         V         |         |
15+15       0.9211      1.48  | Q       |         V         |         |
15+20       0.9316      1.53  |  Q      |         V         |         |
15+25       0.9421      1.53  |  Q      |         |V        |         |
15+30       0.9507      1.25  | Q       |         |V        |         |
15+35       0.9580      1.06  | Q       |         |V        |         |
15+40       0.9653      1.06  | Q       |         |V        |         |
15+45       0.9730      1.12  | Q       |         |V        |         |
15+50       0.9818      1.27  | Q       |         |V        |         |
15+55       0.9922      1.51  |  Q      |         | V       |         |
16+ 0       1.0068      2.12  |   Q     |         | V       |         |
16+ 5       1.0435      5.33  |         Q         |  V      |         |
16+10       1.1499     15.45  |         |         |    V    Q         |
16+15       1.2301     11.65  |         |         |  Q   V  |         |
16+20       1.2667      5.32  |         Q         |       V |         |
16+25       1.2902      3.40  |     Q   |         |       V |         |
16+30       1.3076      2.54  |    Q    |         |        V|         |
16+35       1.3210      1.95  |  Q      |         |        V|         |
```

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16+40      1.3327      1.69  |  Q      |         |        V|         |
16+45      1.3436      1.58  |  Q      |         |        V|         |
16+50      1.3537      1.47  | Q       |         |         V         |
16+55      1.3629      1.33  | Q       |         |         V         |
17+ 0      1.3715      1.24  | Q       |         |         V         |
17+ 5      1.3797      1.20  | Q       |         |         V         |
17+10      1.3877      1.16  | Q       |         |         V         |
17+15      1.3954      1.12  | Q       |         |         |V        |
17+20      1.4028      1.08  | Q       |         |         |V        |
17+25      1.4101      1.05  | Q       |         |         |V        |
17+30      1.4172      1.03  | Q       |         |         |V        |
17+35      1.4241      1.00  | Q       |         |         |V        |
17+40      1.4308      0.98  |Q        |         |         |V        |
17+45      1.4374      0.96  |Q        |         |         | V       |
17+50      1.4439      0.94  |Q        |         |         | V       |
17+55      1.4502      0.92  |Q        |         |         | V       |
18+ 0      1.4564      0.90  |Q        |         |         | V       |
18+ 5      1.4625      0.89  |Q        |         |         | V       |
18+10      1.4686      0.88  |Q        |         |         | V       |
18+15      1.4746      0.87  |Q        |         |         | V       |
18+20      1.4806      0.86  |Q        |         |         |  V      |
18+25      1.4865      0.85  |Q        |         |         |  V      |
18+30      1.4923      0.84  |Q        |         |         |  V      |
18+35      1.4980      0.83  |Q        |         |         |  V      |
18+40      1.5036      0.82  |Q        |         |         |  V      |
18+45      1.5092      0.81  |Q        |         |         |  V      |
18+50      1.5147      0.80  |Q        |         |         |  V      |
18+55      1.5202      0.79  |Q        |         |         |  V      |
19+ 0      1.5256      0.78  |Q        |         |         |   V     |
19+ 5      1.5309      0.77  |Q        |         |         |   V     |
19+10      1.5362      0.77  |Q        |         |         |   V     |
19+15      1.5414      0.76  |Q        |         |         |   V     |
19+20      1.5466      0.75  |Q        |         |         |   V     |
19+25      1.5517      0.74  |Q        |         |         |   V     |
19+30      1.5568      0.74  |Q        |         |         |   V     |
19+35      1.5618      0.73  |Q        |         |         |   V     |
19+40      1.5668      0.72  |Q        |         |         |   V     |
19+45      1.5717      0.72  |Q        |         |         |    V    |
19+50      1.5766      0.71  |Q        |         |         |    V    |
19+55      1.5815      0.71  |Q        |         |         |    V    |
20+ 0      1.5863      0.70  |Q        |         |         |    V    |
20+ 5      1.5911      0.69  |Q        |         |         |    V    |
20+10      1.5958      0.69  |Q        |         |         |    V    |
20+15      1.6005      0.68  |Q        |         |         |    V    |
20+20      1.6052      0.68  |Q        |         |         |    V    |
20+25      1.6098      0.67  |Q        |         |         |    V    |
20+30      1.6144      0.67  |Q        |         |         |     V   |
20+35      1.6190      0.66  |Q        |         |         |     V   |
20+40      1.6236      0.66  |Q        |         |         |     V   |
20+45      1.6281      0.65  |Q        |         |         |     V   |
20+50      1.6325      0.65  |Q        |         |         |     V   |
20+55      1.6370      0.65  |Q        |         |         |     V   |
21+ 0      1.6414      0.64  |Q        |         |         |     V   |
21+ 5      1.6458      0.64  |Q        |         |         |     V   |
21+10      1.6502      0.63  |Q        |         |         |     V   |
21+15      1.6545      0.63  |Q        |         |         |     V   |
21+20      1.6588      0.63  |Q        |         |         |      V  |
21+25      1.6631      0.62  |Q        |         |         |      V  |
21+30      1.6673      0.62  |Q        |         |         |      V  |
21+35      1.6716      0.61  |Q        |         |         |      V  |
21+40      1.6758      0.61  |Q        |         |         |      V  |
21+45      1.6800      0.61  |Q        |         |         |      V  |
21+50      1.6841      0.60  |Q        |         |         |      V  |
21+55      1.6883      0.60  |Q        |         |         |      V  |
22+ 0      1.6924      0.60  |Q        |         |         |      V  |
22+ 5      1.6965      0.60  |Q        |         |         |      V  |
22+10      1.7006      0.59  |Q        |         |         |      V  |
22+15      1.7046      0.59  |Q        |         |         |       V |
22+20      1.7087      0.59  |Q        |         |         |       V |
22+25      1.7127      0.58  |Q        |         |         |       V |
22+30      1.7167      0.58  |Q        |         |         |       V |
```

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   22+35       1.7207      0.58  |Q        |         |         |       V |
   22+40       1.7246      0.57  |Q        |         |         |       V |
   22+45       1.7286      0.57  |Q        |         |         |       V |
   22+50       1.7325      0.57  |Q        |         |         |       V |
   22+55       1.7364      0.57  |Q        |         |         |       V |
   23+ 0       1.7403      0.56  |Q        |         |         |       V |
   23+ 5       1.7442      0.56  |Q        |         |         |       V |
   23+10       1.7480      0.56  |Q        |         |         |        V|
   23+15       1.7518      0.56  |Q        |         |         |        V|
   23+20       1.7557      0.55  |Q        |         |         |        V|
   23+25       1.7595      0.55  |Q        |         |         |        V|
   23+30       1.7632      0.55  |Q        |         |         |        V|
   23+35       1.7670      0.55  |Q        |         |         |        V|
   23+40       1.7708      0.55  |Q        |         |         |        V|
   23+45       1.7745      0.54  |Q        |         |         |        V|
   23+50       1.7782      0.54  |Q        |         |         |        V|
   23+55       1.7819      0.54  |Q        |         |         |        V|
   24+ 0       1.7856      0.54  |Q        |         |         |        V|
   24+ 5       1.7891      0.50  Q         |         |         |        V|
   24+10       1.7910      0.28  Q         |         |         |        V|
   24+15       1.7919      0.13  Q         |         |         |        V|
   24+20       1.7923      0.07  Q         |         |         |        V|
   24+25       1.7926      0.03  Q         |         |         |        V|
   24+30       1.7927      0.02  Q         |         |         |        V|
   24+35       1.7927      0.01  Q         |         |         |        V|
   24+40       1.7928      0.00  Q         |         |         |        V|
   24+45       1.7928      0.00  Q         |         |         |        V|
   24+50       1.7928      0.00  Q         |         |         |        V|
-------------------------------------------------------------------------
```

Area 'C' – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
25 YEAR 24 HOUR STORM
DECEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 25

        Antecedent Moisture Condition = 2

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.54            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 2)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 32.0      32.0          6.54      1.000     0.978    0.600    0.587

Area-averaged adjusted loss rate Fm (In/Hr) =  0.587

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC2) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 3.92 | 0.600 | 32.0 | 32.0 | 21.25 | 0.101 |
| 2.62 | 0.400 | 98.0 | 98.0 | 0.20 | 0.974 |

Area-averaged catchment yield fraction, Y = 0.450
Area-averaged low loss fraction, Yb = 0.550
User entry of time of concentration = 0.152 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.54(Ac.)
Catchment Lag time = 0.121 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 68.6210
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.587(In/Hr)
Average low loss rate fraction (Yb) = 0.550 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.569(In)
Computed peak 30-minute rainfall = 0.974(In)
Specified peak 1-hour rainfall = 1.199(In)
Computed peak 3-hour rainfall = 2.358(In)
Specified peak 6-hour rainfall = 3.614(In)
Specified peak 24-hour rainfall = 9.165(In)

Rainfall depth area reduction factors:
Using a total area of 6.54(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.569(In)
30-minute factor = 1.000 Adjusted rainfall = 0.974(In)
1-hour factor = 1.000 Adjusted rainfall = 1.199(In)
3-hour factor = 1.000 Adjusted rainfall = 2.358(In)
6-hour factor = 1.000 Adjusted rainfall = 3.614(In)
24-hour factor = 1.000 Adjusted rainfall = 9.165(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 79.09 (CFS)) | |
| 1 | 6.926 | 5.478 |
| 2 | 46.826 | 31.558 |
| 3 | 76.548 | 23.508 |
| 4 | 87.652 | 8.782 |
| 5 | 93.849 | 4.901 |
| 6 | 97.160 | 2.619 |
| 7 | 98.439 | 1.012 |
| 8 | 99.077 | 0.504 |
| 9 | 99.557 | 0.380 |
| 10 | 99.888 | 0.262 |
| 11 | 100.000 | 0.088 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.5687 | 0.5687 |
| 2 | 0.7002 | 0.1315 |
| 3 | 0.7908 | 0.0906 |
| 4 | 0.8621 | 0.0713 |
| 5 | 0.9217 | 0.0597 |
| 6 | 0.9736 | 0.0518 |
| 7 | 1.0196 | 0.0461 |
| 8 | 1.0613 | 0.0417 |
| 9 | 1.0995 | 0.0382 |
| 10 | 1.1348 | 0.0353 |
| 11 | 1.1677 | 0.0329 |
| 12 | 1.1986 | 0.0309 |
| 13 | 1.2592 | 0.0606 |
| 14 | 1.3180 | 0.0588 |

| | | |
|---|---|---|
| 15 | 1.3752 | 0.0572 |
| 16 | 1.4310 | 0.0558 |
| 17 | 1.4855 | 0.0545 |
| 18 | 1.5387 | 0.0532 |
| 19 | 1.5908 | 0.0521 |
| 20 | 1.6419 | 0.0511 |
| 21 | 1.6920 | 0.0501 |
| 22 | 1.7412 | 0.0492 |
| 23 | 1.7895 | 0.0483 |
| 24 | 1.8371 | 0.0475 |
| 25 | 1.8838 | 0.0468 |
| 26 | 1.9299 | 0.0461 |
| 27 | 1.9753 | 0.0454 |
| 28 | 2.0201 | 0.0448 |
| 29 | 2.0642 | 0.0441 |
| 30 | 2.1078 | 0.0436 |
| 31 | 2.1508 | 0.0430 |
| 32 | 2.1933 | 0.0425 |
| 33 | 2.2352 | 0.0420 |
| 34 | 2.2767 | 0.0415 |
| 35 | 2.3178 | 0.0410 |
| 36 | 2.3583 | 0.0406 |
| 37 | 2.3985 | 0.0401 |
| 38 | 2.4382 | 0.0397 |
| 39 | 2.4775 | 0.0393 |
| 40 | 2.5164 | 0.0389 |
| 41 | 2.5550 | 0.0386 |
| 42 | 2.5932 | 0.0382 |
| 43 | 2.6310 | 0.0379 |
| 44 | 2.6685 | 0.0375 |
| 45 | 2.7057 | 0.0372 |
| 46 | 2.7426 | 0.0369 |
| 47 | 2.7792 | 0.0366 |
| 48 | 2.8154 | 0.0363 |
| 49 | 2.8514 | 0.0360 |
| 50 | 2.8871 | 0.0357 |
| 51 | 2.9225 | 0.0354 |
| 52 | 2.9577 | 0.0352 |
| 53 | 2.9926 | 0.0349 |
| 54 | 3.0272 | 0.0346 |
| 55 | 3.0616 | 0.0344 |
| 56 | 3.0958 | 0.0342 |
| 57 | 3.1297 | 0.0339 |
| 58 | 3.1634 | 0.0337 |
| 59 | 3.1969 | 0.0335 |
| 60 | 3.2302 | 0.0333 |
| 61 | 3.2632 | 0.0330 |
| 62 | 3.2961 | 0.0328 |
| 63 | 3.3287 | 0.0326 |
| 64 | 3.3611 | 0.0324 |
| 65 | 3.3934 | 0.0322 |
| 66 | 3.4254 | 0.0321 |
| 67 | 3.4573 | 0.0319 |
| 68 | 3.4890 | 0.0317 |
| 69 | 3.5205 | 0.0315 |
| 70 | 3.5519 | 0.0313 |
| 71 | 3.5830 | 0.0312 |
| 72 | 3.6140 | 0.0310 |
| 73 | 3.6476 | 0.0336 |
| 74 | 3.6811 | 0.0335 |
| 75 | 3.7144 | 0.0333 |
| 76 | 3.7476 | 0.0332 |
| 77 | 3.7806 | 0.0330 |
| 78 | 3.8135 | 0.0329 |
| 79 | 3.8462 | 0.0328 |
| 80 | 3.8789 | 0.0326 |
| 81 | 3.9113 | 0.0325 |
| 82 | 3.9437 | 0.0323 |
| 83 | 3.9759 | 0.0322 |
| 84 | 4.0080 | 0.0321 |
| 85 | 4.0400 | 0.0320 |

| | | |
|---|---|---|
| 86 | 4.0718 | 0.0318 |
| 87 | 4.1035 | 0.0317 |
| 88 | 4.1351 | 0.0316 |
| 89 | 4.1666 | 0.0315 |
| 90 | 4.1980 | 0.0314 |
| 91 | 4.2292 | 0.0313 |
| 92 | 4.2604 | 0.0311 |
| 93 | 4.2914 | 0.0310 |
| 94 | 4.3223 | 0.0309 |
| 95 | 4.3531 | 0.0308 |
| 96 | 4.3839 | 0.0307 |
| 97 | 4.4145 | 0.0306 |
| 98 | 4.4450 | 0.0305 |
| 99 | 4.4753 | 0.0304 |
| 100 | 4.5056 | 0.0303 |
| 101 | 4.5358 | 0.0302 |
| 102 | 4.5659 | 0.0301 |
| 103 | 4.5959 | 0.0300 |
| 104 | 4.6258 | 0.0299 |
| 105 | 4.6557 | 0.0298 |
| 106 | 4.6854 | 0.0297 |
| 107 | 4.7150 | 0.0296 |
| 108 | 4.7445 | 0.0295 |
| 109 | 4.7740 | 0.0294 |
| 110 | 4.8033 | 0.0294 |
| 111 | 4.8326 | 0.0293 |
| 112 | 4.8618 | 0.0292 |
| 113 | 4.8909 | 0.0291 |
| 114 | 4.9199 | 0.0290 |
| 115 | 4.9488 | 0.0289 |
| 116 | 4.9777 | 0.0288 |
| 117 | 5.0064 | 0.0288 |
| 118 | 5.0351 | 0.0287 |
| 119 | 5.0637 | 0.0286 |
| 120 | 5.0922 | 0.0285 |
| 121 | 5.1207 | 0.0284 |
| 122 | 5.1491 | 0.0284 |
| 123 | 5.1773 | 0.0283 |
| 124 | 5.2056 | 0.0282 |
| 125 | 5.2337 | 0.0281 |
| 126 | 5.2618 | 0.0281 |
| 127 | 5.2898 | 0.0280 |
| 128 | 5.3177 | 0.0279 |
| 129 | 5.3455 | 0.0279 |
| 130 | 5.3733 | 0.0278 |
| 131 | 5.4010 | 0.0277 |
| 132 | 5.4287 | 0.0276 |
| 133 | 5.4563 | 0.0276 |
| 134 | 5.4838 | 0.0275 |
| 135 | 5.5112 | 0.0274 |
| 136 | 5.5386 | 0.0274 |
| 137 | 5.5659 | 0.0273 |
| 138 | 5.5931 | 0.0272 |
| 139 | 5.6203 | 0.0272 |
| 140 | 5.6474 | 0.0271 |
| 141 | 5.6744 | 0.0270 |
| 142 | 5.7014 | 0.0270 |
| 143 | 5.7283 | 0.0269 |
| 144 | 5.7552 | 0.0269 |
| 145 | 5.7820 | 0.0268 |
| 146 | 5.8087 | 0.0267 |
| 147 | 5.8354 | 0.0267 |
| 148 | 5.8620 | 0.0266 |
| 149 | 5.8886 | 0.0266 |
| 150 | 5.9151 | 0.0265 |
| 151 | 5.9415 | 0.0264 |
| 152 | 5.9679 | 0.0264 |
| 153 | 5.9942 | 0.0263 |
| 154 | 6.0205 | 0.0263 |
| 155 | 6.0467 | 0.0262 |
| 156 | 6.0729 | 0.0262 |

| | | |
|---|---|---|
| 157 | 6.0990 | 0.0261 |
| 158 | 6.1250 | 0.0260 |
| 159 | 6.1510 | 0.0260 |
| 160 | 6.1770 | 0.0259 |
| 161 | 6.2029 | 0.0259 |
| 162 | 6.2287 | 0.0258 |
| 163 | 6.2545 | 0.0258 |
| 164 | 6.2802 | 0.0257 |
| 165 | 6.3059 | 0.0257 |
| 166 | 6.3315 | 0.0256 |
| 167 | 6.3571 | 0.0256 |
| 168 | 6.3826 | 0.0255 |
| 169 | 6.4081 | 0.0255 |
| 170 | 6.4335 | 0.0254 |
| 171 | 6.4589 | 0.0254 |
| 172 | 6.4842 | 0.0253 |
| 173 | 6.5095 | 0.0253 |
| 174 | 6.5348 | 0.0252 |
| 175 | 6.5599 | 0.0252 |
| 176 | 6.5851 | 0.0251 |
| 177 | 6.6102 | 0.0251 |
| 178 | 6.6352 | 0.0250 |
| 179 | 6.6602 | 0.0250 |
| 180 | 6.6852 | 0.0250 |
| 181 | 6.7101 | 0.0249 |
| 182 | 6.7349 | 0.0249 |
| 183 | 6.7598 | 0.0248 |
| 184 | 6.7845 | 0.0248 |
| 185 | 6.8093 | 0.0247 |
| 186 | 6.8340 | 0.0247 |
| 187 | 6.8586 | 0.0246 |
| 188 | 6.8832 | 0.0246 |
| 189 | 6.9077 | 0.0246 |
| 190 | 6.9323 | 0.0245 |
| 191 | 6.9567 | 0.0245 |
| 192 | 6.9812 | 0.0244 |
| 193 | 7.0055 | 0.0244 |
| 194 | 7.0299 | 0.0243 |
| 195 | 7.0542 | 0.0243 |
| 196 | 7.0785 | 0.0243 |
| 197 | 7.1027 | 0.0242 |
| 198 | 7.1269 | 0.0242 |
| 199 | 7.1510 | 0.0241 |
| 200 | 7.1751 | 0.0241 |
| 201 | 7.1992 | 0.0241 |
| 202 | 7.2232 | 0.0240 |
| 203 | 7.2472 | 0.0240 |
| 204 | 7.2711 | 0.0239 |
| 205 | 7.2950 | 0.0239 |
| 206 | 7.3189 | 0.0239 |
| 207 | 7.3427 | 0.0238 |
| 208 | 7.3665 | 0.0238 |
| 209 | 7.3903 | 0.0238 |
| 210 | 7.4140 | 0.0237 |
| 211 | 7.4377 | 0.0237 |
| 212 | 7.4613 | 0.0236 |
| 213 | 7.4849 | 0.0236 |
| 214 | 7.5085 | 0.0236 |
| 215 | 7.5320 | 0.0235 |
| 216 | 7.5555 | 0.0235 |
| 217 | 7.5790 | 0.0235 |
| 218 | 7.6024 | 0.0234 |
| 219 | 7.6258 | 0.0234 |
| 220 | 7.6492 | 0.0234 |
| 221 | 7.6725 | 0.0233 |
| 222 | 7.6958 | 0.0233 |
| 223 | 7.7190 | 0.0233 |
| 224 | 7.7422 | 0.0232 |
| 225 | 7.7654 | 0.0232 |
| 226 | 7.7886 | 0.0232 |
| 227 | 7.8117 | 0.0231 |

| | | |
|---|---|---|
| 228 | 7.8348 | 0.0231 |
| 229 | 7.8578 | 0.0231 |
| 230 | 7.8808 | 0.0230 |
| 231 | 7.9038 | 0.0230 |
| 232 | 7.9268 | 0.0230 |
| 233 | 7.9497 | 0.0229 |
| 234 | 7.9726 | 0.0229 |
| 235 | 7.9954 | 0.0229 |
| 236 | 8.0183 | 0.0228 |
| 237 | 8.0411 | 0.0228 |
| 238 | 8.0638 | 0.0228 |
| 239 | 8.0865 | 0.0227 |
| 240 | 8.1092 | 0.0227 |
| 241 | 8.1319 | 0.0227 |
| 242 | 8.1545 | 0.0226 |
| 243 | 8.1771 | 0.0226 |
| 244 | 8.1997 | 0.0226 |
| 245 | 8.2223 | 0.0225 |
| 246 | 8.2448 | 0.0225 |
| 247 | 8.2673 | 0.0225 |
| 248 | 8.2897 | 0.0225 |
| 249 | 8.3121 | 0.0224 |
| 250 | 8.3345 | 0.0224 |
| 251 | 8.3569 | 0.0224 |
| 252 | 8.3792 | 0.0223 |
| 253 | 8.4015 | 0.0223 |
| 254 | 8.4238 | 0.0223 |
| 255 | 8.4461 | 0.0222 |
| 256 | 8.4683 | 0.0222 |
| 257 | 8.4905 | 0.0222 |
| 258 | 8.5126 | 0.0222 |
| 259 | 8.5348 | 0.0221 |
| 260 | 8.5569 | 0.0221 |
| 261 | 8.5789 | 0.0221 |
| 262 | 8.6010 | 0.0221 |
| 263 | 8.6230 | 0.0220 |
| 264 | 8.6450 | 0.0220 |
| 265 | 8.6670 | 0.0220 |
| 266 | 8.6889 | 0.0219 |
| 267 | 8.7108 | 0.0219 |
| 268 | 8.7327 | 0.0219 |
| 269 | 8.7546 | 0.0219 |
| 270 | 8.7764 | 0.0218 |
| 271 | 8.7982 | 0.0218 |
| 272 | 8.8200 | 0.0218 |
| 273 | 8.8418 | 0.0218 |
| 274 | 8.8635 | 0.0217 |
| 275 | 8.8852 | 0.0217 |
| 276 | 8.9069 | 0.0217 |
| 277 | 8.9285 | 0.0216 |
| 278 | 8.9501 | 0.0216 |
| 279 | 8.9717 | 0.0216 |
| 280 | 8.9933 | 0.0216 |
| 281 | 9.0148 | 0.0215 |
| 282 | 9.0364 | 0.0215 |
| 283 | 9.0579 | 0.0215 |
| 284 | 9.0793 | 0.0215 |
| 285 | 9.1008 | 0.0214 |
| 286 | 9.1222 | 0.0214 |
| 287 | 9.1436 | 0.0214 |
| 288 | 9.1650 | 0.0214 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0214 | 0.0118 | 0.0096 |
| 2 | 0.0214 | 0.0118 | 0.0096 |
| 3 | 0.0214 | 0.0118 | 0.0097 |
| 4 | 0.0215 | 0.0118 | 0.0097 |
| 5 | 0.0215 | 0.0118 | 0.0097 |

| | | | |
|---|---|---|---|
| 6 | 0.0215 | 0.0119 | 0.0097 |
| 7 | 0.0216 | 0.0119 | 0.0097 |
| 8 | 0.0216 | 0.0119 | 0.0097 |
| 9 | 0.0217 | 0.0119 | 0.0098 |
| 10 | 0.0217 | 0.0119 | 0.0098 |
| 11 | 0.0218 | 0.0120 | 0.0098 |
| 12 | 0.0218 | 0.0120 | 0.0098 |
| 13 | 0.0218 | 0.0120 | 0.0098 |
| 14 | 0.0219 | 0.0120 | 0.0098 |
| 15 | 0.0219 | 0.0121 | 0.0099 |
| 16 | 0.0219 | 0.0121 | 0.0099 |
| 17 | 0.0220 | 0.0121 | 0.0099 |
| 18 | 0.0220 | 0.0121 | 0.0099 |
| 19 | 0.0221 | 0.0121 | 0.0099 |
| 20 | 0.0221 | 0.0122 | 0.0099 |
| 21 | 0.0222 | 0.0122 | 0.0100 |
| 22 | 0.0222 | 0.0122 | 0.0100 |
| 23 | 0.0222 | 0.0122 | 0.0100 |
| 24 | 0.0223 | 0.0123 | 0.0100 |
| 25 | 0.0223 | 0.0123 | 0.0100 |
| 26 | 0.0224 | 0.0123 | 0.0101 |
| 27 | 0.0224 | 0.0123 | 0.0101 |
| 28 | 0.0225 | 0.0124 | 0.0101 |
| 29 | 0.0225 | 0.0124 | 0.0101 |
| 30 | 0.0225 | 0.0124 | 0.0101 |
| 31 | 0.0226 | 0.0124 | 0.0102 |
| 32 | 0.0226 | 0.0125 | 0.0102 |
| 33 | 0.0227 | 0.0125 | 0.0102 |
| 34 | 0.0227 | 0.0125 | 0.0102 |
| 35 | 0.0228 | 0.0125 | 0.0103 |
| 36 | 0.0228 | 0.0126 | 0.0103 |
| 37 | 0.0229 | 0.0126 | 0.0103 |
| 38 | 0.0229 | 0.0126 | 0.0103 |
| 39 | 0.0230 | 0.0126 | 0.0103 |
| 40 | 0.0230 | 0.0127 | 0.0104 |
| 41 | 0.0231 | 0.0127 | 0.0104 |
| 42 | 0.0231 | 0.0127 | 0.0104 |
| 43 | 0.0232 | 0.0128 | 0.0104 |
| 44 | 0.0232 | 0.0128 | 0.0104 |
| 45 | 0.0233 | 0.0128 | 0.0105 |
| 46 | 0.0233 | 0.0128 | 0.0105 |
| 47 | 0.0234 | 0.0129 | 0.0105 |
| 48 | 0.0234 | 0.0129 | 0.0105 |
| 49 | 0.0235 | 0.0129 | 0.0106 |
| 50 | 0.0235 | 0.0129 | 0.0106 |
| 51 | 0.0236 | 0.0130 | 0.0106 |
| 52 | 0.0236 | 0.0130 | 0.0106 |
| 53 | 0.0237 | 0.0130 | 0.0107 |
| 54 | 0.0238 | 0.0131 | 0.0107 |
| 55 | 0.0238 | 0.0131 | 0.0107 |
| 56 | 0.0239 | 0.0131 | 0.0107 |
| 57 | 0.0239 | 0.0132 | 0.0108 |
| 58 | 0.0240 | 0.0132 | 0.0108 |
| 59 | 0.0241 | 0.0132 | 0.0108 |
| 60 | 0.0241 | 0.0133 | 0.0108 |
| 61 | 0.0242 | 0.0133 | 0.0109 |
| 62 | 0.0242 | 0.0133 | 0.0109 |
| 63 | 0.0243 | 0.0134 | 0.0109 |
| 64 | 0.0243 | 0.0134 | 0.0110 |
| 65 | 0.0244 | 0.0134 | 0.0110 |
| 66 | 0.0245 | 0.0135 | 0.0110 |
| 67 | 0.0246 | 0.0135 | 0.0110 |
| 68 | 0.0246 | 0.0135 | 0.0111 |
| 69 | 0.0247 | 0.0136 | 0.0111 |
| 70 | 0.0247 | 0.0136 | 0.0111 |
| 71 | 0.0248 | 0.0137 | 0.0112 |
| 72 | 0.0249 | 0.0137 | 0.0112 |
| 73 | 0.0250 | 0.0137 | 0.0112 |
| 74 | 0.0250 | 0.0138 | 0.0112 |
| 75 | 0.0251 | 0.0138 | 0.0113 |
| 76 | 0.0251 | 0.0138 | 0.0113 |

| | | | |
|---|---|---|---|
| 77 | 0.0252 | 0.0139 | 0.0114 |
| 78 | 0.0253 | 0.0139 | 0.0114 |
| 79 | 0.0254 | 0.0140 | 0.0114 |
| 80 | 0.0254 | 0.0140 | 0.0114 |
| 81 | 0.0255 | 0.0140 | 0.0115 |
| 82 | 0.0256 | 0.0141 | 0.0115 |
| 83 | 0.0257 | 0.0141 | 0.0116 |
| 84 | 0.0257 | 0.0142 | 0.0116 |
| 85 | 0.0258 | 0.0142 | 0.0116 |
| 86 | 0.0259 | 0.0142 | 0.0116 |
| 87 | 0.0260 | 0.0143 | 0.0117 |
| 88 | 0.0260 | 0.0143 | 0.0117 |
| 89 | 0.0262 | 0.0144 | 0.0118 |
| 90 | 0.0262 | 0.0144 | 0.0118 |
| 91 | 0.0263 | 0.0145 | 0.0118 |
| 92 | 0.0264 | 0.0145 | 0.0119 |
| 93 | 0.0265 | 0.0146 | 0.0119 |
| 94 | 0.0266 | 0.0146 | 0.0119 |
| 95 | 0.0267 | 0.0147 | 0.0120 |
| 96 | 0.0267 | 0.0147 | 0.0120 |
| 97 | 0.0269 | 0.0148 | 0.0121 |
| 98 | 0.0269 | 0.0148 | 0.0121 |
| 99 | 0.0270 | 0.0149 | 0.0122 |
| 100 | 0.0271 | 0.0149 | 0.0122 |
| 101 | 0.0272 | 0.0150 | 0.0123 |
| 102 | 0.0273 | 0.0150 | 0.0123 |
| 103 | 0.0274 | 0.0151 | 0.0123 |
| 104 | 0.0275 | 0.0151 | 0.0124 |
| 105 | 0.0276 | 0.0152 | 0.0124 |
| 106 | 0.0277 | 0.0152 | 0.0125 |
| 107 | 0.0279 | 0.0153 | 0.0125 |
| 108 | 0.0279 | 0.0154 | 0.0126 |
| 109 | 0.0281 | 0.0154 | 0.0126 |
| 110 | 0.0281 | 0.0155 | 0.0127 |
| 111 | 0.0283 | 0.0156 | 0.0127 |
| 112 | 0.0284 | 0.0156 | 0.0128 |
| 113 | 0.0285 | 0.0157 | 0.0128 |
| 114 | 0.0286 | 0.0157 | 0.0129 |
| 115 | 0.0288 | 0.0158 | 0.0129 |
| 116 | 0.0288 | 0.0159 | 0.0130 |
| 117 | 0.0290 | 0.0160 | 0.0131 |
| 118 | 0.0291 | 0.0160 | 0.0131 |
| 119 | 0.0293 | 0.0161 | 0.0132 |
| 120 | 0.0294 | 0.0161 | 0.0132 |
| 121 | 0.0295 | 0.0162 | 0.0133 |
| 122 | 0.0296 | 0.0163 | 0.0133 |
| 123 | 0.0298 | 0.0164 | 0.0134 |
| 124 | 0.0299 | 0.0164 | 0.0135 |
| 125 | 0.0301 | 0.0166 | 0.0135 |
| 126 | 0.0302 | 0.0166 | 0.0136 |
| 127 | 0.0304 | 0.0167 | 0.0137 |
| 128 | 0.0305 | 0.0168 | 0.0137 |
| 129 | 0.0307 | 0.0169 | 0.0138 |
| 130 | 0.0308 | 0.0169 | 0.0139 |
| 131 | 0.0310 | 0.0171 | 0.0140 |
| 132 | 0.0311 | 0.0171 | 0.0140 |
| 133 | 0.0314 | 0.0173 | 0.0141 |
| 134 | 0.0315 | 0.0173 | 0.0142 |
| 135 | 0.0317 | 0.0174 | 0.0143 |
| 136 | 0.0318 | 0.0175 | 0.0143 |
| 137 | 0.0321 | 0.0177 | 0.0144 |
| 138 | 0.0322 | 0.0177 | 0.0145 |
| 139 | 0.0325 | 0.0179 | 0.0146 |
| 140 | 0.0326 | 0.0179 | 0.0147 |
| 141 | 0.0329 | 0.0181 | 0.0148 |
| 142 | 0.0330 | 0.0182 | 0.0149 |
| 143 | 0.0333 | 0.0183 | 0.0150 |
| 144 | 0.0335 | 0.0184 | 0.0151 |
| 145 | 0.0310 | 0.0170 | 0.0139 |
| 146 | 0.0312 | 0.0171 | 0.0140 |
| 147 | 0.0315 | 0.0173 | 0.0142 |

| | | | |
|---|---|---|---|
| 148 | 0.0317 | 0.0174 | 0.0143 |
| 149 | 0.0321 | 0.0176 | 0.0144 |
| 150 | 0.0322 | 0.0177 | 0.0145 |
| 151 | 0.0326 | 0.0180 | 0.0147 |
| 152 | 0.0328 | 0.0181 | 0.0148 |
| 153 | 0.0333 | 0.0183 | 0.0150 |
| 154 | 0.0335 | 0.0184 | 0.0151 |
| 155 | 0.0339 | 0.0187 | 0.0153 |
| 156 | 0.0342 | 0.0188 | 0.0154 |
| 157 | 0.0346 | 0.0191 | 0.0156 |
| 158 | 0.0349 | 0.0192 | 0.0157 |
| 159 | 0.0354 | 0.0195 | 0.0159 |
| 160 | 0.0357 | 0.0196 | 0.0161 |
| 161 | 0.0363 | 0.0199 | 0.0163 |
| 162 | 0.0366 | 0.0201 | 0.0165 |
| 163 | 0.0372 | 0.0205 | 0.0167 |
| 164 | 0.0375 | 0.0206 | 0.0169 |
| 165 | 0.0382 | 0.0210 | 0.0172 |
| 166 | 0.0386 | 0.0212 | 0.0173 |
| 167 | 0.0393 | 0.0216 | 0.0177 |
| 168 | 0.0397 | 0.0218 | 0.0179 |
| 169 | 0.0406 | 0.0223 | 0.0183 |
| 170 | 0.0410 | 0.0226 | 0.0185 |
| 171 | 0.0420 | 0.0231 | 0.0189 |
| 172 | 0.0425 | 0.0234 | 0.0191 |
| 173 | 0.0436 | 0.0240 | 0.0196 |
| 174 | 0.0441 | 0.0243 | 0.0199 |
| 175 | 0.0454 | 0.0250 | 0.0204 |
| 176 | 0.0461 | 0.0253 | 0.0207 |
| 177 | 0.0475 | 0.0261 | 0.0214 |
| 178 | 0.0483 | 0.0266 | 0.0218 |
| 179 | 0.0501 | 0.0276 | 0.0225 |
| 180 | 0.0511 | 0.0281 | 0.0230 |
| 181 | 0.0532 | 0.0293 | 0.0240 |
| 182 | 0.0545 | 0.0300 | 0.0245 |
| 183 | 0.0572 | 0.0315 | 0.0257 |
| 184 | 0.0588 | 0.0324 | 0.0265 |
| 185 | 0.0309 | 0.0170 | 0.0139 |
| 186 | 0.0329 | 0.0181 | 0.0148 |
| 187 | 0.0382 | 0.0210 | 0.0172 |
| 188 | 0.0417 | 0.0229 | 0.0188 |
| 189 | 0.0518 | 0.0285 | 0.0233 |
| 190 | 0.0597 | 0.0328 | 0.0269 |
| 191 | 0.0906 | 0.0489 | 0.0417 |
| 192 | 0.1315 | 0.0489 | 0.0826 |
| 193 | 0.5687 | 0.0489 | 0.5199 |
| 194 | 0.0713 | 0.0392 | 0.0321 |
| 195 | 0.0461 | 0.0253 | 0.0207 |
| 196 | 0.0353 | 0.0194 | 0.0159 |
| 197 | 0.0606 | 0.0333 | 0.0273 |
| 198 | 0.0558 | 0.0307 | 0.0251 |
| 199 | 0.0521 | 0.0287 | 0.0234 |
| 200 | 0.0492 | 0.0271 | 0.0221 |
| 201 | 0.0468 | 0.0257 | 0.0211 |
| 202 | 0.0448 | 0.0246 | 0.0201 |
| 203 | 0.0430 | 0.0237 | 0.0194 |
| 204 | 0.0415 | 0.0228 | 0.0187 |
| 205 | 0.0401 | 0.0221 | 0.0181 |
| 206 | 0.0389 | 0.0214 | 0.0175 |
| 207 | 0.0379 | 0.0208 | 0.0170 |
| 208 | 0.0369 | 0.0203 | 0.0166 |
| 209 | 0.0360 | 0.0198 | 0.0162 |
| 210 | 0.0352 | 0.0193 | 0.0158 |
| 211 | 0.0344 | 0.0189 | 0.0155 |
| 212 | 0.0337 | 0.0185 | 0.0152 |
| 213 | 0.0330 | 0.0182 | 0.0149 |
| 214 | 0.0324 | 0.0178 | 0.0146 |
| 215 | 0.0319 | 0.0175 | 0.0143 |
| 216 | 0.0313 | 0.0172 | 0.0141 |
| 217 | 0.0336 | 0.0185 | 0.0151 |
| 218 | 0.0332 | 0.0182 | 0.0149 |

| | | | |
|---|---|---|---|
| 219 | 0.0328 | 0.0180 | 0.0147 |
| 220 | 0.0323 | 0.0178 | 0.0146 |
| 221 | 0.0320 | 0.0176 | 0.0144 |
| 222 | 0.0316 | 0.0174 | 0.0142 |
| 223 | 0.0313 | 0.0172 | 0.0141 |
| 224 | 0.0309 | 0.0170 | 0.0139 |
| 225 | 0.0306 | 0.0168 | 0.0138 |
| 226 | 0.0303 | 0.0167 | 0.0136 |
| 227 | 0.0300 | 0.0165 | 0.0135 |
| 228 | 0.0297 | 0.0163 | 0.0134 |
| 229 | 0.0294 | 0.0162 | 0.0132 |
| 230 | 0.0292 | 0.0161 | 0.0131 |
| 231 | 0.0289 | 0.0159 | 0.0130 |
| 232 | 0.0287 | 0.0158 | 0.0129 |
| 233 | 0.0284 | 0.0156 | 0.0128 |
| 234 | 0.0282 | 0.0155 | 0.0127 |
| 235 | 0.0280 | 0.0154 | 0.0126 |
| 236 | 0.0278 | 0.0153 | 0.0125 |
| 237 | 0.0276 | 0.0152 | 0.0124 |
| 238 | 0.0274 | 0.0151 | 0.0123 |
| 239 | 0.0272 | 0.0149 | 0.0122 |
| 240 | 0.0270 | 0.0148 | 0.0121 |
| 241 | 0.0268 | 0.0147 | 0.0121 |
| 242 | 0.0266 | 0.0146 | 0.0120 |
| 243 | 0.0264 | 0.0145 | 0.0119 |
| 244 | 0.0263 | 0.0145 | 0.0118 |
| 245 | 0.0261 | 0.0144 | 0.0117 |
| 246 | 0.0259 | 0.0143 | 0.0117 |
| 247 | 0.0258 | 0.0142 | 0.0116 |
| 248 | 0.0256 | 0.0141 | 0.0115 |
| 249 | 0.0255 | 0.0140 | 0.0115 |
| 250 | 0.0253 | 0.0139 | 0.0114 |
| 251 | 0.0252 | 0.0139 | 0.0113 |
| 252 | 0.0250 | 0.0138 | 0.0113 |
| 253 | 0.0249 | 0.0137 | 0.0112 |
| 254 | 0.0248 | 0.0136 | 0.0111 |
| 255 | 0.0246 | 0.0136 | 0.0111 |
| 256 | 0.0245 | 0.0135 | 0.0110 |
| 257 | 0.0244 | 0.0134 | 0.0110 |
| 258 | 0.0243 | 0.0133 | 0.0109 |
| 259 | 0.0241 | 0.0133 | 0.0109 |
| 260 | 0.0240 | 0.0132 | 0.0108 |
| 261 | 0.0239 | 0.0131 | 0.0108 |
| 262 | 0.0238 | 0.0131 | 0.0107 |
| 263 | 0.0237 | 0.0130 | 0.0107 |
| 264 | 0.0236 | 0.0130 | 0.0106 |
| 265 | 0.0235 | 0.0129 | 0.0106 |
| 266 | 0.0234 | 0.0128 | 0.0105 |
| 267 | 0.0233 | 0.0128 | 0.0105 |
| 268 | 0.0232 | 0.0127 | 0.0104 |
| 269 | 0.0231 | 0.0127 | 0.0104 |
| 270 | 0.0230 | 0.0126 | 0.0103 |
| 271 | 0.0229 | 0.0126 | 0.0103 |
| 272 | 0.0228 | 0.0125 | 0.0102 |
| 273 | 0.0227 | 0.0125 | 0.0102 |
| 274 | 0.0226 | 0.0124 | 0.0102 |
| 275 | 0.0225 | 0.0124 | 0.0101 |
| 276 | 0.0224 | 0.0123 | 0.0101 |
| 277 | 0.0223 | 0.0123 | 0.0100 |
| 278 | 0.0222 | 0.0122 | 0.0100 |
| 279 | 0.0221 | 0.0122 | 0.0100 |
| 280 | 0.0221 | 0.0121 | 0.0099 |
| 281 | 0.0220 | 0.0121 | 0.0099 |
| 282 | 0.0219 | 0.0120 | 0.0098 |
| 283 | 0.0218 | 0.0120 | 0.0098 |
| 284 | 0.0217 | 0.0120 | 0.0098 |
| 285 | 0.0216 | 0.0119 | 0.0097 |
| 286 | 0.0216 | 0.0119 | 0.0097 |
| 287 | 0.0215 | 0.0118 | 0.0097 |
| 288 | 0.0214 | 0.0118 | 0.0096 |

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```
      ------------------------------------------------------------------
      Total soil rain loss =      4.75(In)
      Total effective rainfall =      4.41(In)
      Peak flow rate in flood hydrograph =     19.12(CFS)
      ------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ------------------------------------------------------------------
                 Hydrograph in   5   Minute intervals ((CFS))

      ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        5.0      10.0      15.0      20.0
------------------------------------------------------------------------
  0+ 5       0.0004      0.05  Q          |          |          |          |
  0+10       0.0028      0.36  Q          |          |          |          |
  0+15       0.0068      0.58  VQ         |          |          |          |
  0+20       0.0114      0.67  VQ         |          |          |          |
  0+25       0.0164      0.72  VQ         |          |          |          |
  0+30       0.0215      0.74  VQ         |          |          |          |
  0+35       0.0267      0.75  VQ         |          |          |          |
  0+40       0.0319      0.76  VQ         |          |          |          |
  0+45       0.0372      0.77  VQ         |          |          |          |
  0+50       0.0425      0.77  VQ         |          |          |          |
  0+55       0.0478      0.77  VQ         |          |          |          |
  1+ 0       0.0531      0.77  VQ         |          |          |          |
  1+ 5       0.0584      0.77  VQ         |          |          |          |
  1+10       0.0638      0.78  |Q         |          |          |          |
  1+15       0.0691      0.78  |Q         |          |          |          |
  1+20       0.0745      0.78  |Q         |          |          |          |
  1+25       0.0799      0.78  |Q         |          |          |          |
  1+30       0.0852      0.78  |Q         |          |          |          |
  1+35       0.0906      0.78  |Q         |          |          |          |
  1+40       0.0960      0.78  |Q         |          |          |          |
  1+45       0.1014      0.79  |Q         |          |          |          |
  1+50       0.1069      0.79  |Q         |          |          |          |
  1+55       0.1123      0.79  |Q         |          |          |          |
  2+ 0       0.1177      0.79  |Q         |          |          |          |
  2+ 5       0.1232      0.79  |QV        |          |          |          |
  2+10       0.1286      0.79  |QV        |          |          |          |
  2+15       0.1341      0.79  |QV        |          |          |          |
  2+20       0.1396      0.80  |QV        |          |          |          |
  2+25       0.1451      0.80  |QV        |          |          |          |
  2+30       0.1506      0.80  |QV        |          |          |          |
  2+35       0.1561      0.80  |QV        |          |          |          |
  2+40       0.1617      0.80  |QV        |          |          |          |
  2+45       0.1672      0.80  |QV        |          |          |          |
  2+50       0.1727      0.81  |QV        |          |          |          |
  2+55       0.1783      0.81  |QV        |          |          |          |
  3+ 0       0.1839      0.81  |Q V       |          |          |          |
  3+ 5       0.1895      0.81  |Q V       |          |          |          |
  3+10       0.1951      0.81  |Q V       |          |          |          |
  3+15       0.2007      0.81  |Q V       |          |          |          |
  3+20       0.2063      0.82  |Q V       |          |          |          |
  3+25       0.2119      0.82  |Q V       |          |          |          |
  3+30       0.2176      0.82  |Q V       |          |          |          |
  3+35       0.2232      0.82  |Q V       |          |          |          |
  3+40       0.2289      0.82  |Q V       |          |          |          |
  3+45       0.2346      0.82  |Q V       |          |          |          |
  3+50       0.2403      0.83  |Q V       |          |          |          |
  3+55       0.2460      0.83  |Q  V      |          |          |          |
  4+ 0       0.2517      0.83  |Q  V      |          |          |          |
  4+ 5       0.2574      0.83  |Q  V      |          |          |          |
  4+10       0.2632      0.83  |Q  V      |          |          |          |
  4+15       0.2689      0.84  |Q  V      |          |          |          |
  4+20       0.2747      0.84  |Q  V      |          |          |          |
  4+25       0.2805      0.84  |Q  V      |          |          |          |
  4+30       0.2863      0.84  |Q  V      |          |          |          |
  4+35       0.2921      0.84  |Q  V      |          |          |          |
  4+40       0.2979      0.85  |Q  V      |          |          |          |
  4+45       0.3038      0.85  |Q   V     |          |          |          |
```

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 4+50      0.3096      0.85  |Q   V    |          |          |          |
 4+55      0.3155      0.85  |Q   V    |          |          |          |
 5+ 0      0.3214      0.85  |Q   V    |          |          |          |
 5+ 5      0.3273      0.86  |Q   V    |          |          |          |
 5+10      0.3332      0.86  |Q   V    |          |          |          |
 5+15      0.3391      0.86  |Q   V    |          |          |          |
 5+20      0.3450      0.86  |Q   V    |          |          |          |
 5+25      0.3510      0.86  |Q   V    |          |          |          |
 5+30      0.3570      0.87  |Q   V    |          |          |          |
 5+35      0.3629      0.87  |Q    V   |          |          |          |
 5+40      0.3689      0.87  |Q    V   |          |          |          |
 5+45      0.3750      0.87  |Q    V   |          |          |          |
 5+50      0.3810      0.88  |Q    V   |          |          |          |
 5+55      0.3870      0.88  |Q    V   |          |          |          |
 6+ 0      0.3931      0.88  |Q    V   |          |          |          |
 6+ 5      0.3992      0.88  |Q    V   |          |          |          |
 6+10      0.4053      0.89  |Q    V   |          |          |          |
 6+15      0.4114      0.89  |Q    V   |          |          |          |
 6+20      0.4175      0.89  |Q    V   |          |          |          |
 6+25      0.4237      0.89  |Q     V  |          |          |          |
 6+30      0.4298      0.90  |Q     V  |          |          |          |
 6+35      0.4360      0.90  |Q     V  |          |          |          |
 6+40      0.4422      0.90  |Q     V  |          |          |          |
 6+45      0.4484      0.90  |Q     V  |          |          |          |
 6+50      0.4547      0.91  |Q     V  |          |          |          |
 6+55      0.4609      0.91  |Q     V  |          |          |          |
 7+ 0      0.4672      0.91  |Q     V  |          |          |          |
 7+ 5      0.4735      0.91  |Q     V  |          |          |          |
 7+10      0.4798      0.92  |Q     V  |          |          |          |
 7+15      0.4861      0.92  |Q      V |          |          |          |
 7+20      0.4925      0.92  |Q      V |          |          |          |
 7+25      0.4989      0.92  |Q      V |          |          |          |
 7+30      0.5053      0.93  |Q      V |          |          |          |
 7+35      0.5117      0.93  |Q      V |          |          |          |
 7+40      0.5181      0.93  |Q      V |          |          |          |
 7+45      0.5245      0.94  |Q      V |          |          |          |
 7+50      0.5310      0.94  |Q      V |          |          |          |
 7+55      0.5375      0.94  |Q      V |          |          |          |
 8+ 0      0.5440      0.95  |Q       V|          |          |          |
 8+ 5      0.5506      0.95  |Q       V|          |          |          |
 8+10      0.5571      0.95  |Q       V|          |          |          |
 8+15      0.5637      0.96  |Q       V|          |          |          |
 8+20      0.5703      0.96  |Q       V|          |          |          |
 8+25      0.5769      0.96  |Q       V|          |          |          |
 8+30      0.5836      0.97  |Q       V|          |          |          |
 8+35      0.5903      0.97  |Q       V|          |          |          |
 8+40      0.5970      0.97  |Q       V|          |          |          |
 8+45      0.6037      0.98  |Q        V          |          |          |
 8+50      0.6104      0.98  |Q        V          |          |          |
 8+55      0.6172      0.98  |Q        V          |          |          |
 9+ 0      0.6240      0.99  |Q        V          |          |          |
 9+ 5      0.6308      0.99  |Q        V          |          |          |
 9+10      0.6377      0.99  |Q        V          |          |          |
 9+15      0.6445      1.00  |Q        V          |          |          |
 9+20      0.6514      1.00  | Q       V          |          |          |
 9+25      0.6584      1.01  | Q       V          |          |          |
 9+30      0.6653      1.01  | Q       |V         |          |          |
 9+35      0.6723      1.01  | Q       |V         |          |          |
 9+40      0.6793      1.02  | Q       |V         |          |          |
 9+45      0.6864      1.02  | Q       |V         |          |          |
 9+50      0.6935      1.03  | Q       |V         |          |          |
 9+55      0.7006      1.03  | Q       |V         |          |          |
10+ 0      0.7077      1.04  | Q       |V         |          |          |
10+ 5      0.7149      1.04  | Q       |V         |          |          |
10+10      0.7221      1.05  | Q       | V        |          |          |
10+15      0.7293      1.05  | Q       | V        |          |          |
10+20      0.7366      1.06  | Q       | V        |          |          |
10+25      0.7439      1.06  | Q       | V        |          |          |
10+30      0.7512      1.07  | Q       | V        |          |          |
10+35      0.7586      1.07  | Q       | V        |          |          |
10+40      0.7660      1.08  | Q       | V        |          |          |
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10+45       0.7735      1.08  | Q       | V       |         |         |
10+50       0.7810      1.09  | Q       | V       |         |         |
10+55       0.7885      1.09  | Q       |  V      |         |         |
11+ 0       0.7960      1.10  | Q       |  V      |         |         |
11+ 5       0.8036      1.10  | Q       |  V      |         |         |
11+10       0.8113      1.11  | Q       |  V      |         |         |
11+15       0.8190      1.12  | Q       |  V      |         |         |
11+20       0.8267      1.12  | Q       |  V      |         |         |
11+25       0.8345      1.13  | Q       |  V      |         |         |
11+30       0.8423      1.13  | Q       |   V     |         |         |
11+35       0.8501      1.14  | Q       |   V     |         |         |
11+40       0.8581      1.15  | Q       |   V     |         |         |
11+45       0.8660      1.16  | Q       |   V     |         |         |
11+50       0.8740      1.16  | Q       |   V     |         |         |
11+55       0.8821      1.17  | Q       |   V     |         |         |
12+ 0       0.8902      1.18  | Q       |   V     |         |         |
12+ 5       0.8983      1.18  | Q       |   V     |         |         |
12+10       0.9062      1.15  | Q       |    V    |         |         |
12+15       0.9139      1.13  | Q       |    V    |         |         |
12+20       0.9217      1.12  | Q       |    V    |         |         |
12+25       0.9294      1.13  | Q       |    V    |         |         |
12+30       0.9372      1.13  | Q       |    V    |         |         |
12+35       0.9451      1.14  | Q       |    V    |         |         |
12+40       0.9530      1.15  | Q       |    V    |         |         |
12+45       0.9610      1.16  | Q       |    V    |         |         |
12+50       0.9691      1.17  | Q       |     V   |         |         |
12+55       0.9773      1.18  | Q       |     V   |         |         |
13+ 0       0.9855      1.19  | Q       |     V   |         |         |
13+ 5       0.9938      1.21  | Q       |     V   |         |         |
13+10       1.0022      1.22  | Q       |     V   |         |         |
13+15       1.0107      1.23  | Q       |     V   |         |         |
13+20       1.0192      1.25  | Q       |     V   |         |         |
13+25       1.0279      1.26  | Q       |      V  |         |         |
13+30       1.0367      1.27  | Q       |      V  |         |         |
13+35       1.0456      1.29  | Q       |      V  |         |         |
13+40       1.0546      1.31  | Q       |      V  |         |         |
13+45       1.0637      1.32  | Q       |      V  |         |         |
13+50       1.0729      1.34  | Q       |      V  |         |         |
13+55       1.0823      1.36  | Q       |       V |         |         |
14+ 0       1.0918      1.38  | Q       |       V |         |         |
14+ 5       1.1014      1.40  | Q       |       V |         |         |
14+10       1.1112      1.42  | Q       |       V |         |         |
14+15       1.1211      1.44  | Q       |       V |         |         |
14+20       1.1312      1.47  | Q       |       V |         |         |
14+25       1.1415      1.49  | Q       |       V |         |         |
14+30       1.1519      1.52  |  Q      |        V|         |         |
14+35       1.1626      1.55  |  Q      |        V|         |         |
14+40       1.1735      1.58  |  Q      |        V|         |         |
14+45       1.1846      1.61  |  Q      |        V|         |         |
14+50       1.1960      1.65  |  Q      |        V|         |         |
14+55       1.2076      1.69  |  Q      |         V         |         |
15+ 0       1.2196      1.74  |  Q      |         V         |         |
15+ 5       1.2319      1.78  |  Q      |         V         |         |
15+10       1.2445      1.84  |  Q      |         V         |         |
15+15       1.2575      1.89  |  Q      |         V         |         |
15+20       1.2711      1.96  |  Q      |         |V        |         |
15+25       1.2846      1.96  |  Q      |         |V        |         |
15+30       1.2956      1.60  |  Q      |         |V        |         |
15+35       1.3050      1.36  | Q       |         |V        |         |
15+40       1.3144      1.37  | Q       |         |V        |         |
15+45       1.3243      1.45  | Q       |         | V       |         |
15+50       1.3356      1.64  |  Q      |         | V       |         |
15+55       1.3491      1.96  |  Q      |         | V       |         |
16+ 0       1.3683      2.78  |    Q    |         | V       |         |
16+ 5       1.4156      6.87  |         |  Q      |  V      |         |
16+10       1.5473     19.12  |         |         |    V    |       Q |
16+15       1.6464     14.39  |         |         |     VQ  |         |
16+20       1.6920      6.63  |         |  Q      |       V |         |
16+25       1.7213      4.25  |       Q |         |       V |         |
16+30       1.7433      3.19  |     Q   |         |        V|         |
16+35       1.7604      2.48  |   Q     |         |        V|         |
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16+40       1.7753      2.16  |   Q     |         |        V|         |
16+45       1.7892      2.02  |   Q     |         |        V|         |
16+50       1.8021      1.88  |  Q      |         |        V|         |
16+55       1.8139      1.71  |  Q      |         |         V         |
17+ 0       1.8249      1.59  |  Q      |         |         V         |
17+ 5       1.8355      1.53  |  Q      |         |         V         |
17+10       1.8457      1.48  | Q       |         |         V         |
17+15       1.8555      1.43  | Q       |         |         V         |
17+20       1.8651      1.39  | Q       |         |         |V        |
17+25       1.8744      1.35  | Q       |         |         |V        |
17+30       1.8834      1.31  | Q       |         |         |V        |
17+35       1.8923      1.28  | Q       |         |         |V        |
17+40       1.9009      1.25  | Q       |         |         |V        |
17+45       1.9093      1.23  | Q       |         |         |V        |
17+50       1.9176      1.20  | Q       |         |         |V        |
17+55       1.9257      1.18  | Q       |         |         | V       |
18+ 0       1.9336      1.15  | Q       |         |         | V       |
18+ 5       1.9415      1.14  | Q       |         |         | V       |
18+10       1.9495      1.16  | Q       |         |         | V       |
18+15       1.9576      1.17  | Q       |         |         | V       |
18+20       1.9656      1.17  | Q       |         |         | V       |
18+25       1.9736      1.16  | Q       |         |         | V       |
18+30       1.9815      1.15  | Q       |         |         | V       |
18+35       1.9894      1.14  | Q       |         |         |  V      |
18+40       1.9971      1.12  | Q       |         |         |  V      |
18+45       2.0048      1.11  | Q       |         |         |  V      |
18+50       2.0123      1.10  | Q       |         |         |  V      |
18+55       2.0198      1.09  | Q       |         |         |  V      |
19+ 0       2.0273      1.08  | Q       |         |         |  V      |
19+ 5       2.0346      1.07  | Q       |         |         |  V      |
19+10       2.0419      1.06  | Q       |         |         |  V      |
19+15       2.0491      1.05  | Q       |         |         |   V     |
19+20       2.0563      1.04  | Q       |         |         |   V     |
19+25       2.0633      1.03  | Q       |         |         |   V     |
19+30       2.0704      1.02  | Q       |         |         |   V     |
19+35       2.0773      1.01  | Q       |         |         |   V     |
19+40       2.0843      1.00  | Q       |         |         |   V     |
19+45       2.0911      1.00  |Q        |         |         |   V     |
19+50       2.0979      0.99  |Q        |         |         |   V     |
19+55       2.1047      0.98  |Q        |         |         |    V    |
20+ 0       2.1114      0.97  |Q        |         |         |    V    |
20+ 5       2.1181      0.97  |Q        |         |         |    V    |
20+10       2.1247      0.96  |Q        |         |         |    V    |
20+15       2.1312      0.95  |Q        |         |         |    V    |
20+20       2.1378      0.95  |Q        |         |         |    V    |
20+25       2.1442      0.94  |Q        |         |         |    V    |
20+30       2.1507      0.93  |Q        |         |         |    V    |
20+35       2.1571      0.93  |Q        |         |         |    V    |
20+40       2.1634      0.92  |Q        |         |         |     V   |
20+45       2.1697      0.92  |Q        |         |         |     V   |
20+50       2.1760      0.91  |Q        |         |         |     V   |
20+55       2.1823      0.91  |Q        |         |         |     V   |
21+ 0       2.1885      0.90  |Q        |         |         |     V   |
21+ 5       2.1946      0.90  |Q        |         |         |     V   |
21+10       2.2008      0.89  |Q        |         |         |     V   |
21+15       2.2069      0.89  |Q        |         |         |     V   |
21+20       2.2130      0.88  |Q        |         |         |     V   |
21+25       2.2190      0.88  |Q        |         |         |     V   |
21+30       2.2250      0.87  |Q        |         |         |      V  |
21+35       2.2310      0.87  |Q        |         |         |      V  |
21+40       2.2369      0.86  |Q        |         |         |      V  |
21+45       2.2428      0.86  |Q        |         |         |      V  |
21+50       2.2487      0.85  |Q        |         |         |      V  |
21+55       2.2546      0.85  |Q        |         |         |      V  |
22+ 0       2.2604      0.85  |Q        |         |         |      V  |
22+ 5       2.2662      0.84  |Q        |         |         |      V  |
22+10       2.2720      0.84  |Q        |         |         |      V  |
22+15       2.2777      0.83  |Q        |         |         |      V  |
22+20       2.2835      0.83  |Q        |         |         |       V |
22+25       2.2892      0.83  |Q        |         |         |       V |
22+30       2.2948      0.82  |Q        |         |         |       V |
```

```
   22+35       2.3005      0.82  |Q        |          |          |       V |
   22+40       2.3061      0.82  |Q        |          |          |       V |
   22+45       2.3117      0.81  |Q        |          |          |       V |
   22+50       2.3173      0.81  |Q        |          |          |       V |
   22+55       2.3228      0.81  |Q        |          |          |       V |
   23+ 0       2.3284      0.80  |Q        |          |          |       V |
   23+ 5       2.3339      0.80  |Q        |          |          |       V |
   23+10       2.3394      0.80  |Q        |          |          |       V |
   23+15       2.3448      0.79  |Q        |          |          |        V|
   23+20       2.3503      0.79  |Q        |          |          |        V|
   23+25       2.3557      0.79  |Q        |          |          |        V|
   23+30       2.3611      0.78  |Q        |          |          |        V|
   23+35       2.3665      0.78  |Q        |          |          |        V|
   23+40       2.3719      0.78  |Q        |          |          |        V|
   23+45       2.3772      0.78  |Q        |          |          |        V|
   23+50       2.3825      0.77  |Q        |          |          |        V|
   23+55       2.3878      0.77  |Q        |          |          |        V|
   24+ 0       2.3931      0.77  |Q        |          |          |        V|
   24+ 5       2.3980      0.71  |Q        |          |          |        V|
   24+10       2.4008      0.41  Q         |          |          |        V|
   24+15       2.4021      0.18  Q         |          |          |        V|
   24+20       2.4027      0.09  Q         |          |          |        V|
   24+25       2.4030      0.05  Q         |          |          |        V|
   24+30       2.4032      0.02  Q         |          |          |        V|
   24+35       2.4033      0.01  Q         |          |          |        V|
   24+40       2.4033      0.01  Q         |          |          |        V|
   24+45       2.4033      0.00  Q         |          |          |        V|
   24+50       2.4033      0.00  Q         |          |          |         V
-------------------------------------------------------------------------
```

Area ‘C’ – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

```
        U n i t   H y d r o g r a p h   A n a l y s i s

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2014, Version 9.0

               Study date  12/17/24

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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San Bernardino County Synthetic Unit Hydrology Method
               Manual date - August 1986


Program License Serial Number 6407

----------------------------------------------------------------------
TTM 20707 - PROPOSED PRELIMINARY UNIT HYDROGRAPH
DRAINAGE AREA 'C'
100 YEAR 24 HOUR STORM
DECEMBER 4, 2024
----------------------------------------------------------------------

        Storm Event Year = 100

        Antecedent Moisture Condition = 3

 English (in-lb) Input Units Used

 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



Area averaged rainfall intensity isohyetal data:
        Sub-Area        Duration        Isohyetal
        (Ac.)            (hours)         (In)
Rainfall data for year 10
             6.54            1           1.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54            6           2.00
----------------------------------------------------------------------
Rainfall data for year 2
             6.54           24           4.00
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            1           1.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54            6           4.50
----------------------------------------------------------------------
Rainfall data for year 100
             6.54           24          12.00
----------------------------------------------------------------------
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

******** Area-averaged max loss rate, Fm ********


SCS curve  SCS curve     Area     Area     Fp(Fig C6)    Ap      Fm
No.(AMCII) NO.(AMC 3)    (Ac.)    Fraction     (In/Hr)  (dec.)   (In/Hr)
 32.0      52.0          6.54      1.000     0.785    0.600    0.471

Area-averaged adjusted loss rate Fm (In/Hr) =  0.471

********* Area-Averaged low loss rate fraction, Yb **********
```

| Area (Ac.) | Area Fract | SCS CN (AMC2) | SCS CN (AMC3) | S | Pervious Yield Fr |
|---|---|---|---|---|---|
| 3.92 | 0.600 | 32.0 | 52.0 | 9.23 | 0.443 |
| 2.62 | 0.400 | 98.0 | 98.0 | 0.20 | 0.980 |

Area-averaged catchment yield fraction, Y = 0.658
Area-averaged low loss fraction, Yb = 0.342
User entry of time of concentration = 0.152 (hours)
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Watershed area = 6.54(Ac.)
Catchment Lag time = 0.121 hours
Unit interval = 5.000 minutes
Unit interval percentage of lag time = 68.7569
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.471(In/Hr)
Average low loss rate fraction (Yb) = 0.342 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.712(In)
Computed peak 30-minute rainfall = 1.218(In)
Specified peak 1-hour rainfall = 1.500(In)
Computed peak 3-hour rainfall = 2.942(In)
Specified peak 6-hour rainfall = 4.500(In)
Specified peak 24-hour rainfall = 12.000(In)

Rainfall depth area reduction factors:
Using a total area of 6.54(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.712(In)
30-minute factor = 1.000 Adjusted rainfall = 1.218(In)
1-hour factor = 1.000 Adjusted rainfall = 1.500(In)
3-hour factor = 1.000 Adjusted rainfall = 2.942(In)
6-hour factor = 1.000 Adjusted rainfall = 4.500(In)
24-hour factor = 1.000 Adjusted rainfall = 12.000(In)
---

U n i t H y d r o g r a p h
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

| Interval Number | 'S' Graph Mean values | Unit Hydrograph ((CFS)) |
|---|---|---|
| | (K = 79.09 (CFS)) | |
| 1 | 6.949 | 5.496 |
| 2 | 46.966 | 31.651 |
| 3 | 76.622 | 23.455 |
| 4 | 87.707 | 8.768 |
| 5 | 93.888 | 4.889 |
| 6 | 97.183 | 2.606 |
| 7 | 98.449 | 1.001 |
| 8 | 99.084 | 0.502 |
| 9 | 99.565 | 0.381 |
| 10 | 99.892 | 0.259 |
| 11 | 100.000 | 0.085 |

---

| Peak Unit Number | Adjusted mass rainfall (In) | Unit rainfall (In) |
|---|---|---|
| 1 | 0.7115 | 0.7115 |
| 2 | 0.8760 | 0.1645 |
| 3 | 0.9893 | 0.1133 |
| 4 | 1.0785 | 0.0892 |
| 5 | 1.1532 | 0.0747 |
| 6 | 1.2180 | 0.0648 |
| 7 | 1.2757 | 0.0576 |
| 8 | 1.3278 | 0.0521 |
| 9 | 1.3756 | 0.0478 |
| 10 | 1.4197 | 0.0442 |
| 11 | 1.4609 | 0.0412 |
| 12 | 1.4995 | 0.0386 |
| 13 | 1.5750 | 0.0755 |
| 14 | 1.6482 | 0.0732 |

| | | |
|---|---|---|
| 15 | 1.7195 | 0.0713 |
| 16 | 1.7889 | 0.0694 |
| 17 | 1.8567 | 0.0678 |
| 18 | 1.9230 | 0.0663 |
| 19 | 1.9878 | 0.0648 |
| 20 | 2.0513 | 0.0635 |
| 21 | 2.1137 | 0.0623 |
| 22 | 2.1748 | 0.0612 |
| 23 | 2.2350 | 0.0601 |
| 24 | 2.2941 | 0.0591 |
| 25 | 2.3522 | 0.0582 |
| 26 | 2.4095 | 0.0573 |
| 27 | 2.4659 | 0.0564 |
| 28 | 2.5216 | 0.0556 |
| 29 | 2.5764 | 0.0549 |
| 30 | 2.6306 | 0.0541 |
| 31 | 2.6840 | 0.0534 |
| 32 | 2.7368 | 0.0528 |
| 33 | 2.7890 | 0.0521 |
| 34 | 2.8405 | 0.0515 |
| 35 | 2.8914 | 0.0510 |
| 36 | 2.9418 | 0.0504 |
| 37 | 2.9917 | 0.0498 |
| 38 | 3.0410 | 0.0493 |
| 39 | 3.0898 | 0.0488 |
| 40 | 3.1382 | 0.0483 |
| 41 | 3.1861 | 0.0479 |
| 42 | 3.2335 | 0.0474 |
| 43 | 3.2805 | 0.0470 |
| 44 | 3.3270 | 0.0466 |
| 45 | 3.3732 | 0.0462 |
| 46 | 3.4190 | 0.0458 |
| 47 | 3.4644 | 0.0454 |
| 48 | 3.5094 | 0.0450 |
| 49 | 3.5540 | 0.0447 |
| 50 | 3.5983 | 0.0443 |
| 51 | 3.6423 | 0.0440 |
| 52 | 3.6859 | 0.0436 |
| 53 | 3.7292 | 0.0433 |
| 54 | 3.7722 | 0.0430 |
| 55 | 3.8149 | 0.0427 |
| 56 | 3.8573 | 0.0424 |
| 57 | 3.8994 | 0.0421 |
| 58 | 3.9412 | 0.0418 |
| 59 | 3.9827 | 0.0415 |
| 60 | 4.0239 | 0.0413 |
| 61 | 4.0649 | 0.0410 |
| 62 | 4.1057 | 0.0407 |
| 63 | 4.1461 | 0.0405 |
| 64 | 4.1864 | 0.0402 |
| 65 | 4.2264 | 0.0400 |
| 66 | 4.2661 | 0.0398 |
| 67 | 4.3056 | 0.0395 |
| 68 | 4.3449 | 0.0393 |
| 69 | 4.3840 | 0.0391 |
| 70 | 4.4228 | 0.0389 |
| 71 | 4.4615 | 0.0386 |
| 72 | 4.4999 | 0.0384 |
| 73 | 4.5440 | 0.0441 |
| 74 | 4.5880 | 0.0440 |
| 75 | 4.6318 | 0.0438 |
| 76 | 4.6754 | 0.0436 |
| 77 | 4.7188 | 0.0434 |
| 78 | 4.7621 | 0.0433 |
| 79 | 4.8052 | 0.0431 |
| 80 | 4.8482 | 0.0430 |
| 81 | 4.8910 | 0.0428 |
| 82 | 4.9336 | 0.0426 |
| 83 | 4.9761 | 0.0425 |
| 84 | 5.0185 | 0.0423 |
| 85 | 5.0607 | 0.0422 |

| | | |
|---|---|---|
| 86 | 5.1027 | 0.0421 |
| 87 | 5.1446 | 0.0419 |
| 88 | 5.1864 | 0.0418 |
| 89 | 5.2280 | 0.0416 |
| 90 | 5.2695 | 0.0415 |
| 91 | 5.3109 | 0.0414 |
| 92 | 5.3521 | 0.0412 |
| 93 | 5.3932 | 0.0411 |
| 94 | 5.4342 | 0.0410 |
| 95 | 5.4750 | 0.0408 |
| 96 | 5.5157 | 0.0407 |
| 97 | 5.5563 | 0.0406 |
| 98 | 5.5968 | 0.0405 |
| 99 | 5.6371 | 0.0403 |
| 100 | 5.6773 | 0.0402 |
| 101 | 5.7174 | 0.0401 |
| 102 | 5.7574 | 0.0400 |
| 103 | 5.7973 | 0.0399 |
| 104 | 5.8371 | 0.0398 |
| 105 | 5.8767 | 0.0397 |
| 106 | 5.9163 | 0.0395 |
| 107 | 5.9557 | 0.0394 |
| 108 | 5.9951 | 0.0393 |
| 109 | 6.0343 | 0.0392 |
| 110 | 6.0734 | 0.0391 |
| 111 | 6.1124 | 0.0390 |
| 112 | 6.1513 | 0.0389 |
| 113 | 6.1901 | 0.0388 |
| 114 | 6.2288 | 0.0387 |
| 115 | 6.2674 | 0.0386 |
| 116 | 6.3060 | 0.0385 |
| 117 | 6.3444 | 0.0384 |
| 118 | 6.3827 | 0.0383 |
| 119 | 6.4209 | 0.0382 |
| 120 | 6.4590 | 0.0381 |
| 121 | 6.4971 | 0.0380 |
| 122 | 6.5350 | 0.0379 |
| 123 | 6.5729 | 0.0379 |
| 124 | 6.6106 | 0.0378 |
| 125 | 6.6483 | 0.0377 |
| 126 | 6.6859 | 0.0376 |
| 127 | 6.7234 | 0.0375 |
| 128 | 6.7608 | 0.0374 |
| 129 | 6.7981 | 0.0373 |
| 130 | 6.8354 | 0.0372 |
| 131 | 6.8725 | 0.0372 |
| 132 | 6.9096 | 0.0371 |
| 133 | 6.9466 | 0.0370 |
| 134 | 6.9835 | 0.0369 |
| 135 | 7.0204 | 0.0368 |
| 136 | 7.0571 | 0.0368 |
| 137 | 7.0938 | 0.0367 |
| 138 | 7.1304 | 0.0366 |
| 139 | 7.1669 | 0.0365 |
| 140 | 7.2033 | 0.0364 |
| 141 | 7.2397 | 0.0364 |
| 142 | 7.2760 | 0.0363 |
| 143 | 7.3122 | 0.0362 |
| 144 | 7.3484 | 0.0361 |
| 145 | 7.3844 | 0.0361 |
| 146 | 7.4204 | 0.0360 |
| 147 | 7.4564 | 0.0359 |
| 148 | 7.4922 | 0.0359 |
| 149 | 7.5280 | 0.0358 |
| 150 | 7.5637 | 0.0357 |
| 151 | 7.5993 | 0.0356 |
| 152 | 7.6349 | 0.0356 |
| 153 | 7.6704 | 0.0355 |
| 154 | 7.7059 | 0.0354 |
| 155 | 7.7412 | 0.0354 |
| 156 | 7.7765 | 0.0353 |

| | | |
|---|---|---|
| 157 | 7.8118 | 0.0352 |
| 158 | 7.8469 | 0.0352 |
| 159 | 7.8820 | 0.0351 |
| 160 | 7.9171 | 0.0350 |
| 161 | 7.9521 | 0.0350 |
| 162 | 7.9870 | 0.0349 |
| 163 | 8.0218 | 0.0349 |
| 164 | 8.0566 | 0.0348 |
| 165 | 8.0913 | 0.0347 |
| 166 | 8.1260 | 0.0347 |
| 167 | 8.1606 | 0.0346 |
| 168 | 8.1952 | 0.0345 |
| 169 | 8.2296 | 0.0345 |
| 170 | 8.2641 | 0.0344 |
| 171 | 8.2984 | 0.0344 |
| 172 | 8.3327 | 0.0343 |
| 173 | 8.3670 | 0.0342 |
| 174 | 8.4012 | 0.0342 |
| 175 | 8.4353 | 0.0341 |
| 176 | 8.4694 | 0.0341 |
| 177 | 8.5034 | 0.0340 |
| 178 | 8.5374 | 0.0340 |
| 179 | 8.5713 | 0.0339 |
| 180 | 8.6051 | 0.0339 |
| 181 | 8.6389 | 0.0338 |
| 182 | 8.6727 | 0.0337 |
| 183 | 8.7064 | 0.0337 |
| 184 | 8.7400 | 0.0336 |
| 185 | 8.7736 | 0.0336 |
| 186 | 8.8071 | 0.0335 |
| 187 | 8.8406 | 0.0335 |
| 188 | 8.8740 | 0.0334 |
| 189 | 8.9074 | 0.0334 |
| 190 | 8.9407 | 0.0333 |
| 191 | 8.9740 | 0.0333 |
| 192 | 9.0072 | 0.0332 |
| 193 | 9.0403 | 0.0332 |
| 194 | 9.0735 | 0.0331 |
| 195 | 9.1065 | 0.0331 |
| 196 | 9.1395 | 0.0330 |
| 197 | 9.1725 | 0.0330 |
| 198 | 9.2054 | 0.0329 |
| 199 | 9.2383 | 0.0329 |
| 200 | 9.2711 | 0.0328 |
| 201 | 9.3039 | 0.0328 |
| 202 | 9.3366 | 0.0327 |
| 203 | 9.3693 | 0.0327 |
| 204 | 9.4019 | 0.0326 |
| 205 | 9.4345 | 0.0326 |
| 206 | 9.4670 | 0.0325 |
| 207 | 9.4995 | 0.0325 |
| 208 | 9.5320 | 0.0324 |
| 209 | 9.5644 | 0.0324 |
| 210 | 9.5967 | 0.0324 |
| 211 | 9.6291 | 0.0323 |
| 212 | 9.6613 | 0.0323 |
| 213 | 9.6935 | 0.0322 |
| 214 | 9.7257 | 0.0322 |
| 215 | 9.7579 | 0.0321 |
| 216 | 9.7899 | 0.0321 |
| 217 | 9.8220 | 0.0320 |
| 218 | 9.8540 | 0.0320 |
| 219 | 9.8860 | 0.0320 |
| 220 | 9.9179 | 0.0319 |
| 221 | 9.9497 | 0.0319 |
| 222 | 9.9816 | 0.0318 |
| 223 | 10.0134 | 0.0318 |
| 224 | 10.0451 | 0.0317 |
| 225 | 10.0768 | 0.0317 |
| 226 | 10.1085 | 0.0317 |
| 227 | 10.1401 | 0.0316 |

| | | |
|---|---|---|
| 228 | 10.1717 | 0.0316 |
| 229 | 10.2032 | 0.0315 |
| 230 | 10.2348 | 0.0315 |
| 231 | 10.2662 | 0.0315 |
| 232 | 10.2976 | 0.0314 |
| 233 | 10.3290 | 0.0314 |
| 234 | 10.3604 | 0.0313 |
| 235 | 10.3917 | 0.0313 |
| 236 | 10.4229 | 0.0313 |
| 237 | 10.4542 | 0.0312 |
| 238 | 10.4854 | 0.0312 |
| 239 | 10.5165 | 0.0312 |
| 240 | 10.5476 | 0.0311 |
| 241 | 10.5787 | 0.0311 |
| 242 | 10.6097 | 0.0310 |
| 243 | 10.6407 | 0.0310 |
| 244 | 10.6717 | 0.0310 |
| 245 | 10.7026 | 0.0309 |
| 246 | 10.7335 | 0.0309 |
| 247 | 10.7644 | 0.0309 |
| 248 | 10.7952 | 0.0308 |
| 249 | 10.8260 | 0.0308 |
| 250 | 10.8567 | 0.0307 |
| 251 | 10.8874 | 0.0307 |
| 252 | 10.9181 | 0.0307 |
| 253 | 10.9487 | 0.0306 |
| 254 | 10.9793 | 0.0306 |
| 255 | 11.0099 | 0.0306 |
| 256 | 11.0404 | 0.0305 |
| 257 | 11.0709 | 0.0305 |
| 258 | 11.1014 | 0.0305 |
| 259 | 11.1318 | 0.0304 |
| 260 | 11.1622 | 0.0304 |
| 261 | 11.1926 | 0.0304 |
| 262 | 11.2229 | 0.0303 |
| 263 | 11.2532 | 0.0303 |
| 264 | 11.2834 | 0.0303 |
| 265 | 11.3137 | 0.0302 |
| 266 | 11.3438 | 0.0302 |
| 267 | 11.3740 | 0.0302 |
| 268 | 11.4041 | 0.0301 |
| 269 | 11.4342 | 0.0301 |
| 270 | 11.4643 | 0.0301 |
| 271 | 11.4943 | 0.0300 |
| 272 | 11.5243 | 0.0300 |
| 273 | 11.5543 | 0.0300 |
| 274 | 11.5842 | 0.0299 |
| 275 | 11.6141 | 0.0299 |
| 276 | 11.6439 | 0.0299 |
| 277 | 11.6738 | 0.0298 |
| 278 | 11.7036 | 0.0298 |
| 279 | 11.7334 | 0.0298 |
| 280 | 11.7631 | 0.0297 |
| 281 | 11.7928 | 0.0297 |
| 282 | 11.8225 | 0.0297 |
| 283 | 11.8521 | 0.0296 |
| 284 | 11.8817 | 0.0296 |
| 285 | 11.9113 | 0.0296 |
| 286 | 11.9409 | 0.0296 |
| 287 | 11.9704 | 0.0295 |
| 288 | 11.9999 | 0.0295 |

| Unit Period (number) | Unit Rainfall (In) | Unit Soil-Loss (In) | Effective Rainfall (In) |
|---|---|---|---|
| 1 | 0.0295 | 0.0101 | 0.0194 |
| 2 | 0.0295 | 0.0101 | 0.0194 |
| 3 | 0.0296 | 0.0101 | 0.0195 |
| 4 | 0.0296 | 0.0101 | 0.0195 |
| 5 | 0.0297 | 0.0102 | 0.0195 |

| | | | |
|---|---|---|---|
| 6 | 0.0297 | 0.0102 | 0.0195 |
| 7 | 0.0298 | 0.0102 | 0.0196 |
| 8 | 0.0298 | 0.0102 | 0.0196 |
| 9 | 0.0299 | 0.0102 | 0.0196 |
| 10 | 0.0299 | 0.0102 | 0.0197 |
| 11 | 0.0300 | 0.0103 | 0.0197 |
| 12 | 0.0300 | 0.0103 | 0.0197 |
| 13 | 0.0301 | 0.0103 | 0.0198 |
| 14 | 0.0301 | 0.0103 | 0.0198 |
| 15 | 0.0302 | 0.0103 | 0.0198 |
| 16 | 0.0302 | 0.0103 | 0.0199 |
| 17 | 0.0303 | 0.0104 | 0.0199 |
| 18 | 0.0303 | 0.0104 | 0.0199 |
| 19 | 0.0304 | 0.0104 | 0.0200 |
| 20 | 0.0304 | 0.0104 | 0.0200 |
| 21 | 0.0305 | 0.0104 | 0.0200 |
| 22 | 0.0305 | 0.0104 | 0.0201 |
| 23 | 0.0306 | 0.0105 | 0.0201 |
| 24 | 0.0306 | 0.0105 | 0.0201 |
| 25 | 0.0307 | 0.0105 | 0.0202 |
| 26 | 0.0307 | 0.0105 | 0.0202 |
| 27 | 0.0308 | 0.0105 | 0.0202 |
| 28 | 0.0308 | 0.0105 | 0.0203 |
| 29 | 0.0309 | 0.0106 | 0.0203 |
| 30 | 0.0309 | 0.0106 | 0.0203 |
| 31 | 0.0310 | 0.0106 | 0.0204 |
| 32 | 0.0310 | 0.0106 | 0.0204 |
| 33 | 0.0311 | 0.0106 | 0.0205 |
| 34 | 0.0312 | 0.0107 | 0.0205 |
| 35 | 0.0312 | 0.0107 | 0.0205 |
| 36 | 0.0313 | 0.0107 | 0.0206 |
| 37 | 0.0313 | 0.0107 | 0.0206 |
| 38 | 0.0314 | 0.0107 | 0.0206 |
| 39 | 0.0315 | 0.0108 | 0.0207 |
| 40 | 0.0315 | 0.0108 | 0.0207 |
| 41 | 0.0316 | 0.0108 | 0.0208 |
| 42 | 0.0316 | 0.0108 | 0.0208 |
| 43 | 0.0317 | 0.0108 | 0.0209 |
| 44 | 0.0317 | 0.0109 | 0.0209 |
| 45 | 0.0318 | 0.0109 | 0.0209 |
| 46 | 0.0319 | 0.0109 | 0.0210 |
| 47 | 0.0320 | 0.0109 | 0.0210 |
| 48 | 0.0320 | 0.0109 | 0.0211 |
| 49 | 0.0321 | 0.0110 | 0.0211 |
| 50 | 0.0321 | 0.0110 | 0.0211 |
| 51 | 0.0322 | 0.0110 | 0.0212 |
| 52 | 0.0323 | 0.0110 | 0.0212 |
| 53 | 0.0324 | 0.0111 | 0.0213 |
| 54 | 0.0324 | 0.0111 | 0.0213 |
| 55 | 0.0325 | 0.0111 | 0.0214 |
| 56 | 0.0325 | 0.0111 | 0.0214 |
| 57 | 0.0326 | 0.0112 | 0.0215 |
| 58 | 0.0327 | 0.0112 | 0.0215 |
| 59 | 0.0328 | 0.0112 | 0.0216 |
| 60 | 0.0328 | 0.0112 | 0.0216 |
| 61 | 0.0329 | 0.0113 | 0.0217 |
| 62 | 0.0330 | 0.0113 | 0.0217 |
| 63 | 0.0331 | 0.0113 | 0.0218 |
| 64 | 0.0331 | 0.0113 | 0.0218 |
| 65 | 0.0332 | 0.0114 | 0.0219 |
| 66 | 0.0333 | 0.0114 | 0.0219 |
| 67 | 0.0334 | 0.0114 | 0.0220 |
| 68 | 0.0334 | 0.0114 | 0.0220 |
| 69 | 0.0335 | 0.0115 | 0.0221 |
| 70 | 0.0336 | 0.0115 | 0.0221 |
| 71 | 0.0337 | 0.0115 | 0.0222 |
| 72 | 0.0337 | 0.0115 | 0.0222 |
| 73 | 0.0339 | 0.0116 | 0.0223 |
| 74 | 0.0339 | 0.0116 | 0.0223 |
| 75 | 0.0340 | 0.0116 | 0.0224 |
| 76 | 0.0341 | 0.0117 | 0.0224 |

| | | | |
|---|---|---|---|
| 77 | 0.0342 | 0.0117 | 0.0225 |
| 78 | 0.0342 | 0.0117 | 0.0225 |
| 79 | 0.0344 | 0.0118 | 0.0226 |
| 80 | 0.0344 | 0.0118 | 0.0226 |
| 81 | 0.0345 | 0.0118 | 0.0227 |
| 82 | 0.0346 | 0.0118 | 0.0228 |
| 83 | 0.0347 | 0.0119 | 0.0228 |
| 84 | 0.0348 | 0.0119 | 0.0229 |
| 85 | 0.0349 | 0.0119 | 0.0230 |
| 86 | 0.0350 | 0.0120 | 0.0230 |
| 87 | 0.0351 | 0.0120 | 0.0231 |
| 88 | 0.0352 | 0.0120 | 0.0231 |
| 89 | 0.0353 | 0.0121 | 0.0232 |
| 90 | 0.0354 | 0.0121 | 0.0233 |
| 91 | 0.0355 | 0.0121 | 0.0234 |
| 92 | 0.0356 | 0.0122 | 0.0234 |
| 93 | 0.0357 | 0.0122 | 0.0235 |
| 94 | 0.0358 | 0.0122 | 0.0235 |
| 95 | 0.0359 | 0.0123 | 0.0236 |
| 96 | 0.0360 | 0.0123 | 0.0237 |
| 97 | 0.0361 | 0.0124 | 0.0238 |
| 98 | 0.0362 | 0.0124 | 0.0238 |
| 99 | 0.0364 | 0.0124 | 0.0239 |
| 100 | 0.0364 | 0.0125 | 0.0240 |
| 101 | 0.0366 | 0.0125 | 0.0241 |
| 102 | 0.0367 | 0.0125 | 0.0241 |
| 103 | 0.0368 | 0.0126 | 0.0242 |
| 104 | 0.0369 | 0.0126 | 0.0243 |
| 105 | 0.0371 | 0.0127 | 0.0244 |
| 106 | 0.0372 | 0.0127 | 0.0244 |
| 107 | 0.0373 | 0.0128 | 0.0246 |
| 108 | 0.0374 | 0.0128 | 0.0246 |
| 109 | 0.0376 | 0.0129 | 0.0247 |
| 110 | 0.0377 | 0.0129 | 0.0248 |
| 111 | 0.0379 | 0.0130 | 0.0249 |
| 112 | 0.0379 | 0.0130 | 0.0250 |
| 113 | 0.0381 | 0.0130 | 0.0251 |
| 114 | 0.0382 | 0.0131 | 0.0251 |
| 115 | 0.0384 | 0.0131 | 0.0253 |
| 116 | 0.0385 | 0.0132 | 0.0253 |
| 117 | 0.0387 | 0.0132 | 0.0255 |
| 118 | 0.0388 | 0.0133 | 0.0255 |
| 119 | 0.0390 | 0.0133 | 0.0257 |
| 120 | 0.0391 | 0.0134 | 0.0257 |
| 121 | 0.0393 | 0.0135 | 0.0259 |
| 122 | 0.0394 | 0.0135 | 0.0259 |
| 123 | 0.0397 | 0.0136 | 0.0261 |
| 124 | 0.0398 | 0.0136 | 0.0262 |
| 125 | 0.0400 | 0.0137 | 0.0263 |
| 126 | 0.0401 | 0.0137 | 0.0264 |
| 127 | 0.0403 | 0.0138 | 0.0265 |
| 128 | 0.0405 | 0.0138 | 0.0266 |
| 129 | 0.0407 | 0.0139 | 0.0268 |
| 130 | 0.0408 | 0.0140 | 0.0269 |
| 131 | 0.0411 | 0.0141 | 0.0270 |
| 132 | 0.0412 | 0.0141 | 0.0271 |
| 133 | 0.0415 | 0.0142 | 0.0273 |
| 134 | 0.0416 | 0.0142 | 0.0274 |
| 135 | 0.0419 | 0.0143 | 0.0276 |
| 136 | 0.0421 | 0.0144 | 0.0277 |
| 137 | 0.0423 | 0.0145 | 0.0279 |
| 138 | 0.0425 | 0.0145 | 0.0280 |
| 139 | 0.0428 | 0.0146 | 0.0282 |
| 140 | 0.0430 | 0.0147 | 0.0283 |
| 141 | 0.0433 | 0.0148 | 0.0285 |
| 142 | 0.0434 | 0.0149 | 0.0286 |
| 143 | 0.0438 | 0.0150 | 0.0288 |
| 144 | 0.0440 | 0.0150 | 0.0289 |
| 145 | 0.0384 | 0.0131 | 0.0253 |
| 146 | 0.0386 | 0.0132 | 0.0254 |
| 147 | 0.0391 | 0.0134 | 0.0257 |

| | | | |
|---|---|---|---|
| 148 | 0.0393 | 0.0134 | 0.0258 |
| 149 | 0.0398 | 0.0136 | 0.0262 |
| 150 | 0.0400 | 0.0137 | 0.0263 |
| 151 | 0.0405 | 0.0138 | 0.0266 |
| 152 | 0.0407 | 0.0139 | 0.0268 |
| 153 | 0.0413 | 0.0141 | 0.0271 |
| 154 | 0.0415 | 0.0142 | 0.0273 |
| 155 | 0.0421 | 0.0144 | 0.0277 |
| 156 | 0.0424 | 0.0145 | 0.0279 |
| 157 | 0.0430 | 0.0147 | 0.0283 |
| 158 | 0.0433 | 0.0148 | 0.0285 |
| 159 | 0.0440 | 0.0150 | 0.0289 |
| 160 | 0.0443 | 0.0152 | 0.0291 |
| 161 | 0.0450 | 0.0154 | 0.0296 |
| 162 | 0.0454 | 0.0155 | 0.0299 |
| 163 | 0.0462 | 0.0158 | 0.0304 |
| 164 | 0.0466 | 0.0159 | 0.0306 |
| 165 | 0.0474 | 0.0162 | 0.0312 |
| 166 | 0.0479 | 0.0164 | 0.0315 |
| 167 | 0.0488 | 0.0167 | 0.0321 |
| 168 | 0.0493 | 0.0169 | 0.0324 |
| 169 | 0.0504 | 0.0172 | 0.0332 |
| 170 | 0.0510 | 0.0174 | 0.0335 |
| 171 | 0.0521 | 0.0178 | 0.0343 |
| 172 | 0.0528 | 0.0181 | 0.0347 |
| 173 | 0.0541 | 0.0185 | 0.0356 |
| 174 | 0.0549 | 0.0188 | 0.0361 |
| 175 | 0.0564 | 0.0193 | 0.0371 |
| 176 | 0.0573 | 0.0196 | 0.0377 |
| 177 | 0.0591 | 0.0202 | 0.0389 |
| 178 | 0.0601 | 0.0206 | 0.0395 |
| 179 | 0.0623 | 0.0213 | 0.0410 |
| 180 | 0.0635 | 0.0217 | 0.0418 |
| 181 | 0.0663 | 0.0227 | 0.0436 |
| 182 | 0.0678 | 0.0232 | 0.0446 |
| 183 | 0.0713 | 0.0244 | 0.0469 |
| 184 | 0.0732 | 0.0251 | 0.0482 |
| 185 | 0.0386 | 0.0132 | 0.0254 |
| 186 | 0.0412 | 0.0141 | 0.0271 |
| 187 | 0.0478 | 0.0163 | 0.0314 |
| 188 | 0.0521 | 0.0178 | 0.0343 |
| 189 | 0.0648 | 0.0222 | 0.0427 |
| 190 | 0.0747 | 0.0255 | 0.0491 |
| 191 | 0.1133 | 0.0388 | 0.0745 |
| 192 | 0.1645 | 0.0393 | 0.1252 |
| 193 | 0.7115 | 0.0393 | 0.6723 |
| 194 | 0.0892 | 0.0305 | 0.0587 |
| 195 | 0.0576 | 0.0197 | 0.0379 |
| 196 | 0.0442 | 0.0151 | 0.0291 |
| 197 | 0.0755 | 0.0258 | 0.0496 |
| 198 | 0.0694 | 0.0238 | 0.0457 |
| 199 | 0.0648 | 0.0222 | 0.0427 |
| 200 | 0.0612 | 0.0209 | 0.0403 |
| 201 | 0.0582 | 0.0199 | 0.0383 |
| 202 | 0.0556 | 0.0190 | 0.0366 |
| 203 | 0.0534 | 0.0183 | 0.0352 |
| 204 | 0.0515 | 0.0176 | 0.0339 |
| 205 | 0.0498 | 0.0171 | 0.0328 |
| 206 | 0.0483 | 0.0165 | 0.0318 |
| 207 | 0.0470 | 0.0161 | 0.0309 |
| 208 | 0.0458 | 0.0157 | 0.0301 |
| 209 | 0.0447 | 0.0153 | 0.0294 |
| 210 | 0.0436 | 0.0149 | 0.0287 |
| 211 | 0.0427 | 0.0146 | 0.0281 |
| 212 | 0.0418 | 0.0143 | 0.0275 |
| 213 | 0.0410 | 0.0140 | 0.0270 |
| 214 | 0.0402 | 0.0138 | 0.0265 |
| 215 | 0.0395 | 0.0135 | 0.0260 |
| 216 | 0.0389 | 0.0133 | 0.0256 |
| 217 | 0.0441 | 0.0151 | 0.0290 |
| 218 | 0.0436 | 0.0149 | 0.0287 |

| | | | |
|---|---|---|---|
| 219 | 0.0431 | 0.0148 | 0.0284 |
| 220 | 0.0426 | 0.0146 | 0.0281 |
| 221 | 0.0422 | 0.0144 | 0.0278 |
| 222 | 0.0418 | 0.0143 | 0.0275 |
| 223 | 0.0414 | 0.0141 | 0.0272 |
| 224 | 0.0410 | 0.0140 | 0.0270 |
| 225 | 0.0406 | 0.0139 | 0.0267 |
| 226 | 0.0402 | 0.0138 | 0.0265 |
| 227 | 0.0399 | 0.0136 | 0.0262 |
| 228 | 0.0395 | 0.0135 | 0.0260 |
| 229 | 0.0392 | 0.0134 | 0.0258 |
| 230 | 0.0389 | 0.0133 | 0.0256 |
| 231 | 0.0386 | 0.0132 | 0.0254 |
| 232 | 0.0383 | 0.0131 | 0.0252 |
| 233 | 0.0380 | 0.0130 | 0.0250 |
| 234 | 0.0378 | 0.0129 | 0.0248 |
| 235 | 0.0375 | 0.0128 | 0.0247 |
| 236 | 0.0372 | 0.0127 | 0.0245 |
| 237 | 0.0370 | 0.0127 | 0.0243 |
| 238 | 0.0368 | 0.0126 | 0.0242 |
| 239 | 0.0365 | 0.0125 | 0.0240 |
| 240 | 0.0363 | 0.0124 | 0.0239 |
| 241 | 0.0361 | 0.0123 | 0.0237 |
| 242 | 0.0359 | 0.0123 | 0.0236 |
| 243 | 0.0356 | 0.0122 | 0.0234 |
| 244 | 0.0354 | 0.0121 | 0.0233 |
| 245 | 0.0352 | 0.0121 | 0.0232 |
| 246 | 0.0350 | 0.0120 | 0.0231 |
| 247 | 0.0349 | 0.0119 | 0.0229 |
| 248 | 0.0347 | 0.0119 | 0.0228 |
| 249 | 0.0345 | 0.0118 | 0.0227 |
| 250 | 0.0343 | 0.0117 | 0.0226 |
| 251 | 0.0341 | 0.0117 | 0.0225 |
| 252 | 0.0340 | 0.0116 | 0.0223 |
| 253 | 0.0338 | 0.0116 | 0.0222 |
| 254 | 0.0336 | 0.0115 | 0.0221 |
| 255 | 0.0335 | 0.0115 | 0.0220 |
| 256 | 0.0333 | 0.0114 | 0.0219 |
| 257 | 0.0332 | 0.0113 | 0.0218 |
| 258 | 0.0330 | 0.0113 | 0.0217 |
| 259 | 0.0329 | 0.0112 | 0.0216 |
| 260 | 0.0327 | 0.0112 | 0.0215 |
| 261 | 0.0326 | 0.0111 | 0.0214 |
| 262 | 0.0324 | 0.0111 | 0.0213 |
| 263 | 0.0323 | 0.0111 | 0.0213 |
| 264 | 0.0322 | 0.0110 | 0.0212 |
| 265 | 0.0320 | 0.0110 | 0.0211 |
| 266 | 0.0319 | 0.0109 | 0.0210 |
| 267 | 0.0318 | 0.0109 | 0.0209 |
| 268 | 0.0317 | 0.0108 | 0.0208 |
| 269 | 0.0315 | 0.0108 | 0.0208 |
| 270 | 0.0314 | 0.0108 | 0.0207 |
| 271 | 0.0313 | 0.0107 | 0.0206 |
| 272 | 0.0312 | 0.0107 | 0.0205 |
| 273 | 0.0311 | 0.0106 | 0.0204 |
| 274 | 0.0310 | 0.0106 | 0.0204 |
| 275 | 0.0309 | 0.0106 | 0.0203 |
| 276 | 0.0307 | 0.0105 | 0.0202 |
| 277 | 0.0306 | 0.0105 | 0.0202 |
| 278 | 0.0305 | 0.0104 | 0.0201 |
| 279 | 0.0304 | 0.0104 | 0.0200 |
| 280 | 0.0303 | 0.0104 | 0.0199 |
| 281 | 0.0302 | 0.0103 | 0.0199 |
| 282 | 0.0301 | 0.0103 | 0.0198 |
| 283 | 0.0300 | 0.0103 | 0.0198 |
| 284 | 0.0299 | 0.0102 | 0.0197 |
| 285 | 0.0298 | 0.0102 | 0.0196 |
| 286 | 0.0297 | 0.0102 | 0.0196 |
| 287 | 0.0296 | 0.0101 | 0.0195 |
| 288 | 0.0296 | 0.0101 | 0.0194 |

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```
      ----------------------------------------------------------------------
      Total soil rain loss =      3.88(In)
      Total effective rainfall =      8.12(In)
      Peak flow rate in flood hydrograph =     25.61(CFS)
      ----------------------------------------------------------------------
      ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                        24 - H O U R    S T O R M
                   R u n o f f      H y d r o g r a p h
      ----------------------------------------------------------------------
                Hydrograph in   5   Minute intervals ((CFS))

      ----------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0        7.5      15.0      22.5      30.0
----------------------------------------------------------------------------
  0+ 5       0.0007      0.11  Q         |         |         |         |
  0+10       0.0057      0.72  Q         |         |         |         |
  0+15       0.0138      1.18  VQ        |         |         |         |
  0+20       0.0231      1.35  VQ        |         |         |         |
  0+25       0.0331      1.45  VQ        |         |         |         |
  0+30       0.0434      1.50  VQ        |         |         |         |
  0+35       0.0538      1.52  V Q       |         |         |         |
  0+40       0.0644      1.53  V Q       |         |         |         |
  0+45       0.0750      1.54  V Q       |         |         |         |
  0+50       0.0857      1.55  V Q       |         |         |         |
  0+55       0.0964      1.55  V Q       |         |         |         |
  1+ 0       0.1071      1.56  V Q       |         |         |         |
  1+ 5       0.1178      1.56  |VQ       |         |         |         |
  1+10       0.1286      1.56  |VQ       |         |         |         |
  1+15       0.1394      1.56  |VQ       |         |         |         |
  1+20       0.1502      1.57  |VQ       |         |         |         |
  1+25       0.1610      1.57  |VQ       |         |         |         |
  1+30       0.1718      1.57  |VQ       |         |         |         |
  1+35       0.1826      1.57  |VQ       |         |         |         |
  1+40       0.1935      1.58  |VQ       |         |         |         |
  1+45       0.2044      1.58  |VQ       |         |         |         |
  1+50       0.2153      1.58  |VQ       |         |         |         |
  1+55       0.2262      1.58  | Q       |         |         |         |
  2+ 0       0.2371      1.59  | Q       |         |         |         |
  2+ 5       0.2481      1.59  | Q       |         |         |         |
  2+10       0.2590      1.59  | Q       |         |         |         |
  2+15       0.2700      1.60  | Q       |         |         |         |
  2+20       0.2810      1.60  | Q       |         |         |         |
  2+25       0.2921      1.60  | Q       |         |         |         |
  2+30       0.3031      1.60  | Q       |         |         |         |
  2+35       0.3142      1.61  | Q       |         |         |         |
  2+40       0.3253      1.61  | Q       |         |         |         |
  2+45       0.3364      1.61  | QV      |         |         |         |
  2+50       0.3475      1.62  | QV      |         |         |         |
  2+55       0.3586      1.62  | QV      |         |         |         |
  3+ 0       0.3698      1.62  | QV      |         |         |         |
  3+ 5       0.3810      1.62  | QV      |         |         |         |
  3+10       0.3922      1.63  | QV      |         |         |         |
  3+15       0.4034      1.63  | QV      |         |         |         |
  3+20       0.4147      1.63  | QV      |         |         |         |
  3+25       0.4260      1.64  | QV      |         |         |         |
  3+30       0.4373      1.64  | QV      |         |         |         |
  3+35       0.4486      1.64  | Q V     |         |         |         |
  3+40       0.4599      1.65  | Q V     |         |         |         |
  3+45       0.4713      1.65  | Q V     |         |         |         |
  3+50       0.4827      1.65  | Q V     |         |         |         |
  3+55       0.4941      1.66  | Q V     |         |         |         |
  4+ 0       0.5055      1.66  | Q V     |         |         |         |
  4+ 5       0.5169      1.66  | Q V     |         |         |         |
  4+10       0.5284      1.67  | Q V     |         |         |         |
  4+15       0.5399      1.67  | Q V     |         |         |         |
  4+20       0.5514      1.67  | Q V     |         |         |         |
  4+25       0.5630      1.68  | Q  V    |         |         |         |
  4+30       0.5746      1.68  | Q  V    |         |         |         |
  4+35       0.5861      1.68  | Q  V    |         |         |         |
  4+40       0.5978      1.69  | Q  V    |         |         |         |
  4+45       0.6094      1.69  | Q  V    |         |         |         |
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 4+50      0.6211     1.69  | Q  V    |         |         |         |
 4+55      0.6328     1.70  | Q  V    |         |         |         |
 5+ 0      0.6445     1.70  | Q  V    |         |         |         |
 5+ 5      0.6562     1.70  | Q  V    |         |         |         |
 5+10      0.6680     1.71  | Q   V   |         |         |         |
 5+15      0.6798     1.71  | Q   V   |         |         |         |
 5+20      0.6916     1.72  | Q   V   |         |         |         |
 5+25      0.7034     1.72  | Q   V   |         |         |         |
 5+30      0.7153     1.72  | Q   V   |         |         |         |
 5+35      0.7272     1.73  | Q   V   |         |         |         |
 5+40      0.7392     1.73  | Q   V   |         |         |         |
 5+45      0.7511     1.74  | Q   V   |         |         |         |
 5+50      0.7631     1.74  | Q   V   |         |         |         |
 5+55      0.7751     1.74  | Q    V  |         |         |         |
 6+ 0      0.7871     1.75  | Q    V  |         |         |         |
 6+ 5      0.7992     1.75  | Q    V  |         |         |         |
 6+10      0.8113     1.76  | Q    V  |         |         |         |
 6+15      0.8234     1.76  | Q    V  |         |         |         |
 6+20      0.8356     1.77  | Q    V  |         |         |         |
 6+25      0.8478     1.77  | Q    V  |         |         |         |
 6+30      0.8600     1.77  | Q    V  |         |         |         |
 6+35      0.8723     1.78  | Q    V  |         |         |         |
 6+40      0.8845     1.78  | Q     V |         |         |         |
 6+45      0.8969     1.79  | Q     V |         |         |         |
 6+50      0.9092     1.79  | Q     V |         |         |         |
 6+55      0.9216     1.80  | Q     V |         |         |         |
 7+ 0      0.9340     1.80  | Q     V |         |         |         |
 7+ 5      0.9464     1.81  | Q     V |         |         |         |
 7+10      0.9589     1.81  | Q     V |         |         |         |
 7+15      0.9714     1.82  | Q     V |         |         |         |
 7+20      0.9840     1.82  | Q     V |         |         |         |
 7+25      0.9965     1.83  | Q      V|         |         |         |
 7+30      1.0091     1.83  | Q      V|         |         |         |
 7+35      1.0218     1.84  | Q      V|         |         |         |
 7+40      1.0345     1.84  | Q      V|         |         |         |
 7+45      1.0472     1.85  | Q      V|         |         |         |
 7+50      1.0600     1.85  | Q      V|         |         |         |
 7+55      1.0727     1.86  | Q      V|         |         |         |
 8+ 0      1.0856     1.86  | Q      V|         |         |         |
 8+ 5      1.0984     1.87  | Q      V|         |         |         |
 8+10      1.1114     1.87  | Q       V         |         |         |
 8+15      1.1243     1.88  | Q       V         |         |         |
 8+20      1.1373     1.89  | Q       V         |         |         |
 8+25      1.1503     1.89  | Q       V         |         |         |
 8+30      1.1634     1.90  | Q       V         |         |         |
 8+35      1.1765     1.90  | Q       V         |         |         |
 8+40      1.1897     1.91  | Q       V         |         |         |
 8+45      1.2029     1.92  | Q       V         |         |         |
 8+50      1.2161     1.92  | Q        |V        |         |         |
 8+55      1.2294     1.93  | Q        |V        |         |         |
 9+ 0      1.2427     1.94  | Q        |V        |         |         |
 9+ 5      1.2561     1.94  | Q        |V        |         |         |
 9+10      1.2695     1.95  | Q        |V        |         |         |
 9+15      1.2830     1.96  | Q        |V        |         |         |
 9+20      1.2965     1.96  | Q        |V        |         |         |
 9+25      1.3100     1.97  | Q        |V        |         |         |
 9+30      1.3236     1.98  | Q        |V        |         |         |
 9+35      1.3373     1.98  | Q        | V       |         |         |
 9+40      1.3510     1.99  | Q        | V       |         |         |
 9+45      1.3648     2.00  | Q        | V       |         |         |
 9+50      1.3786     2.01  | Q        | V       |         |         |
 9+55      1.3925     2.01  | Q        | V       |         |         |
10+ 0      1.4064     2.02  | Q        | V       |         |         |
10+ 5      1.4204     2.03  | Q        | V       |         |         |
10+10      1.4344     2.04  | Q        | V       |         |         |
10+15      1.4485     2.05  | Q        |  V      |         |         |
10+20      1.4626     2.05  | Q        |  V      |         |         |
10+25      1.4768     2.06  | Q        |  V      |         |         |
10+30      1.4911     2.07  | Q        |  V      |         |         |
10+35      1.5054     2.08  | Q        |  V      |         |         |
10+40      1.5198     2.09  | Q        |  V      |         |         |
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10+45      1.5343     2.10  | Q       |  V      |         |         |
10+50      1.5488     2.11  | Q       |   V     |         |         |
10+55      1.5634     2.12  | Q       |   V     |         |         |
11+ 0      1.5780     2.13  | Q       |   V     |         |         |
11+ 5      1.5927     2.14  | Q       |   V     |         |         |
11+10      1.6075     2.15  | Q       |   V     |         |         |
11+15      1.6224     2.16  | Q       |   V     |         |         |
11+20      1.6373     2.17  | Q       |   V     |         |         |
11+25      1.6523     2.18  | Q       |   V     |         |         |
11+30      1.6674     2.19  | Q       |    V    |         |         |
11+35      1.6826     2.20  | Q       |    V    |         |         |
11+40      1.6979     2.21  | Q       |    V    |         |         |
11+45      1.7132     2.23  | Q       |    V    |         |         |
11+50      1.7286     2.24  | Q       |    V    |         |         |
11+55      1.7441     2.25  |  Q      |    V    |         |         |
12+ 0      1.7597     2.26  |  Q      |    V    |         |         |
12+ 5      1.7752     2.26  |  Q      |     V   |         |         |
12+10      1.7900     2.15  | Q       |     V   |         |         |
12+15      1.8043     2.07  | Q       |     V   |         |         |
12+20      1.8184     2.05  | Q       |     V   |         |         |
12+25      1.8325     2.05  | Q       |     V   |         |         |
12+30      1.8467     2.06  | Q       |     V   |         |         |
12+35      1.8610     2.07  | Q       |     V   |         |         |
12+40      1.8754     2.09  | Q       |     V   |         |         |
12+45      1.8899     2.11  | Q       |      V  |         |         |
12+50      1.9045     2.13  | Q       |      V  |         |         |
12+55      1.9193     2.14  | Q       |      V  |         |         |
13+ 0      1.9342     2.17  | Q       |      V  |         |         |
13+ 5      1.9493     2.19  | Q       |      V  |         |         |
13+10      1.9645     2.21  | Q       |      V  |         |         |
13+15      1.9799     2.23  | Q       |      V  |         |         |
13+20      1.9955     2.26  |  Q      |       V |         |         |
13+25      2.0112     2.29  |  Q      |       V |         |         |
13+30      2.0271     2.31  |  Q      |       V |         |         |
13+35      2.0432     2.34  |  Q      |       V |         |         |
13+40      2.0596     2.37  |  Q      |       V |         |         |
13+45      2.0761     2.40  |  Q      |       V |         |         |
13+50      2.0929     2.43  |  Q      |       V |         |         |
13+55      2.1098     2.47  |  Q      |        V|         |         |
14+ 0      2.1271     2.50  |  Q      |        V|         |         |
14+ 5      2.1445     2.54  |  Q      |        V|         |         |
14+10      2.1623     2.58  |  Q      |        V|         |         |
14+15      2.1803     2.62  |  Q      |        V|         |         |
14+20      2.1987     2.67  |  Q      |        V|         |         |
14+25      2.2174     2.71  |  Q      |         V         |         |
14+30      2.2364     2.76  |  Q      |         V         |         |
14+35      2.2558     2.81  |  Q      |         V         |         |
14+40      2.2756     2.87  |  Q      |         V         |         |
14+45      2.2958     2.93  |  Q      |         V         |         |
14+50      2.3164     3.00  |   Q     |         V         |         |
14+55      2.3376     3.07  |   Q     |         |V        |         |
15+ 0      2.3593     3.16  |   Q     |         |V        |         |
15+ 5      2.3817     3.24  |   Q     |         |V        |         |
15+10      2.4047     3.34  |   Q     |         |V        |         |
15+15      2.4284     3.45  |   Q     |         |V        |         |
15+20      2.4530     3.57  |   Q     |         | V       |         |
15+25      2.4776     3.57  |   Q     |         | V       |         |
15+30      2.4977     2.92  |  Q      |         | V       |         |
15+35      2.5148     2.49  |  Q      |         | V       |         |
15+40      2.5320     2.50  |  Q      |         | V       |         |
15+45      2.5502     2.64  |  Q      |         |  V      |         |
15+50      2.5709     3.00  |   Q     |         |  V      |         |
15+55      2.5955     3.57  |   Q     |         |  V      |         |
16+ 0      2.6292     4.90  |     Q   |         |  V      |         |
16+ 5      2.6995    10.21  |         |  Q      |   V     |         |
16+10      2.8759    25.61  |         |         |    V    |   Q     |
16+15      3.0102    19.51  |         |         |    QV   |         |
16+20      3.0759     9.53  |         | Q       |     V   |         |
16+25      3.1195     6.34  |       Q |         |      V  |         |
16+30      3.1545     5.07  |     Q   |         |      V  |         |
16+35      3.1835     4.22  |    Q    |         |      V  |         |
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16+40       3.2096      3.79  |    Q    |         |         V|         |
16+45       3.2341      3.57  |   Q     |         |         V|         |
16+50       3.2571      3.34  |   Q     |         |         V|         |
16+55       3.2784      3.08  |   Q     |         |         V|         |
17+ 0       3.2983      2.90  |  Q      |         |         V|         |
17+ 5       3.3175      2.79  |  Q      |         |          V         |
17+10       3.3360      2.69  |  Q      |         |          V         |
17+15       3.3539      2.60  |  Q      |         |          V         |
17+20       3.3713      2.52  |  Q      |         |          V         |
17+25       3.3882      2.45  |  Q      |         |          V         |
17+30       3.4046      2.38  |  Q      |         |          V         |
17+35       3.4206      2.33  |  Q      |         |          V         |
17+40       3.4362      2.27  |  Q      |         |          |V        |
17+45       3.4516      2.22  | Q       |         |          |V        |
17+50       3.4665      2.18  | Q       |         |          |V        |
17+55       3.4812      2.13  | Q       |         |          |V        |
18+ 0       3.4957      2.09  | Q       |         |          |V        |
18+ 5       3.5100      2.08  | Q       |         |          |V        |
18+10       3.5249      2.17  | Q       |         |          |V        |
18+15       3.5402      2.23  | Q       |         |          | V       |
18+20       3.5556      2.23  | Q       |         |          | V       |
18+25       3.5709      2.23  | Q       |         |          | V       |
18+30       3.5861      2.21  | Q       |         |          | V       |
18+35       3.6012      2.19  | Q       |         |          | V       |
18+40       3.6162      2.17  | Q       |         |          | V       |
18+45       3.6310      2.15  | Q       |         |          | V       |
18+50       3.6457      2.13  | Q       |         |          | V       |
18+55       3.6602      2.11  | Q       |         |          |  V      |
19+ 0       3.6746      2.09  | Q       |         |          |  V      |
19+ 5       3.6889      2.07  | Q       |         |          |  V      |
19+10       3.7031      2.06  | Q       |         |          |  V      |
19+15       3.7171      2.04  | Q       |         |          |  V      |
19+20       3.7311      2.02  | Q       |         |          |  V      |
19+25       3.7449      2.01  | Q       |         |          |  V      |
19+30       3.7586      1.99  | Q       |         |          |   V     |
19+35       3.7723      1.98  | Q       |         |          |   V     |
19+40       3.7858      1.96  | Q       |         |          |   V     |
19+45       3.7992      1.95  | Q       |         |          |   V     |
19+50       3.8126      1.94  | Q       |         |          |   V     |
19+55       3.8258      1.92  | Q       |         |          |   V     |
20+ 0       3.8390      1.91  | Q       |         |          |   V     |
20+ 5       3.8521      1.90  | Q       |         |          |   V     |
20+10       3.8651      1.89  | Q       |         |          |   V     |
20+15       3.8780      1.88  | Q       |         |          |    V    |
20+20       3.8909      1.87  | Q       |         |          |    V    |
20+25       3.9036      1.85  | Q       |         |          |    V    |
20+30       3.9163      1.84  | Q       |         |          |    V    |
20+35       3.9289      1.83  | Q       |         |          |    V    |
20+40       3.9415      1.82  | Q       |         |          |    V    |
20+45       3.9540      1.81  | Q       |         |          |    V    |
20+50       3.9664      1.80  | Q       |         |          |    V    |
20+55       3.9788      1.79  | Q       |         |          |     V   |
21+ 0       3.9911      1.78  | Q       |         |          |     V   |
21+ 5       4.0033      1.78  | Q       |         |          |     V   |
21+10       4.0155      1.77  | Q       |         |          |     V   |
21+15       4.0276      1.76  | Q       |         |          |     V   |
21+20       4.0396      1.75  | Q       |         |          |     V   |
21+25       4.0516      1.74  | Q       |         |          |     V   |
21+30       4.0635      1.73  | Q       |         |          |     V   |
21+35       4.0754      1.73  | Q       |         |          |     V   |
21+40       4.0873      1.72  | Q       |         |          |     V   |
21+45       4.0990      1.71  | Q       |         |          |      V  |
21+50       4.1108      1.70  | Q       |         |          |      V  |
21+55       4.1224      1.70  | Q       |         |          |      V  |
22+ 0       4.1341      1.69  | Q       |         |          |      V  |
22+ 5       4.1456      1.68  | Q       |         |          |      V  |
22+10       4.1572      1.67  | Q       |         |          |      V  |
22+15       4.1687      1.67  | Q       |         |          |      V  |
22+20       4.1801      1.66  | Q       |         |          |      V  |
22+25       4.1915      1.65  | Q       |         |          |      V  |
22+30       4.2028      1.65  | Q       |         |          |       V |
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  22+35       4.2141      1.64  | Q       |         |         |       V |
  22+40       4.2254      1.63  | Q       |         |         |       V |
  22+45       4.2366      1.63  | Q       |         |         |       V |
  22+50       4.2478      1.62  | Q       |         |         |       V |
  22+55       4.2589      1.62  | Q       |         |         |       V |
  23+ 0       4.2700      1.61  | Q       |         |         |       V |
  23+ 5       4.2811      1.61  | Q       |         |         |       V |
  23+10       4.2921      1.60  | Q       |         |         |       V |
  23+15       4.3031      1.59  | Q       |         |         |       V |
  23+20       4.3140      1.59  | Q       |         |         |        V|
  23+25       4.3249      1.58  | Q       |         |         |        V|
  23+30       4.3358      1.58  | Q       |         |         |        V|
  23+35       4.3466      1.57  | Q       |         |         |        V|
  23+40       4.3574      1.57  | Q       |         |         |        V|
  23+45       4.3681      1.56  | Q       |         |         |        V|
  23+50       4.3789      1.56  | Q       |         |         |        V|
  23+55       4.3896      1.55  | Q       |         |         |        V|
  24+ 0       4.4002      1.55  | Q       |         |         |        V|
  24+ 5       4.4101      1.44  |Q        |         |         |        V|
  24+10       4.4157      0.82  |Q        |         |         |        V|
  24+15       4.4182      0.36  Q         |         |         |        V|
  24+20       4.4195      0.19  Q         |         |         |        V|
  24+25       4.4202      0.09  Q         |         |         |        V|
  24+30       4.4205      0.04  Q         |         |         |        V|
  24+35       4.4206      0.02  Q         |         |         |        V|
  24+40       4.4207      0.01  Q         |         |         |        V|
  24+45       4.4208      0.01  Q         |         |         |        V|
  24+50       4.4208      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
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Area 'D' – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area 'D' – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area 'D' – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area 'D' – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area 'D' – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

NO CHANGE FROM EXISTING CONDITION

Area ‘E’ – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘E’ – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘E’ – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘E’ – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘E’ – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

NO CHANGE FROM EXISTING CONDITION

Area ‘F’ – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘F’ – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘F’ – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘F’ – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘F’ – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

MERGED WITH PROPOSED CONDITION - AREA ‘B’

Area ‘G’ – 2 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘G’ – 5 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘G’ – 10 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘G’ – 25 Year 24 Hour - Proposed Condition – Unit Hydrograph

Area ‘G’ – 100 Year 24 Hour - Proposed Condition – Unit Hydrograph

MERGED WITH PROPOSED CONDITION - AREA ‘A’

# Attachment 5

# Debris Basin Sizing

**TTM 20707 - DEBRIS BASINS**

**SE-2 Basin Design Option 1**

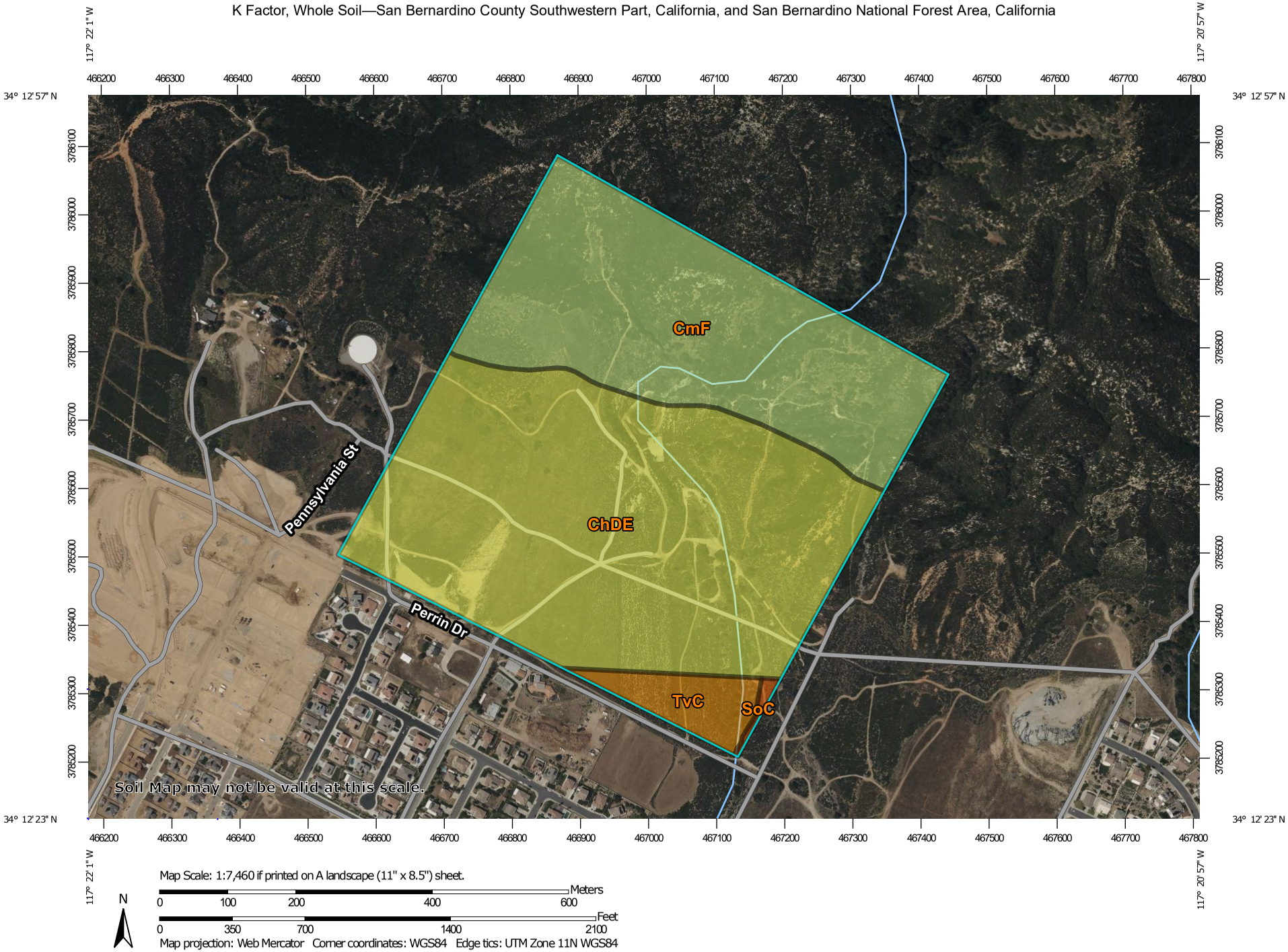
| | | DMA 'B' | DMA 'E' |
|---|---|---|---|
| As = 1.2 Q/Vs (area is sq ft) | As = | 45,214 | 142,770 |
| As = minimum surface area for trapping soil particles of a certain size | Q = | 10.55 | 33.31 |
| Vs = settling velocity of the design particle size chosen (Vs=0.00028 ft/s for a design particle size of 0.01 mm at 68 degree F) | Vs = | 0.00028 | 0.00028 |

| Q=CIA | | DMA 'B' | DMA 'E' |
|---|---|---|---|
| Q = peak basin influent flow rate measured in ft3/s | Q = | 10.55 | 33.31 |
| C = runoff coefficient (unitless) = 0.3 | C = | 0.3 | 0.3 |
| I = peak rainfall intensity for the 10-year, 6-hour rain event (in/hr) = 2.13 | I = | 3.029 | 3.029 |
| A = area draining into the sediment basin in acres | A = | 11.61 | 36.66 |

| **CASQA RUSLE Sediment Basin Volume Calculations** | | DMA 'B' | DMA 'E' |
|---|---|---|---|
| A=R x K x LS x C x P | A= | 28.3 | 28.3 |
| A= annual soil loss, tons/acre-year | | | |
| R= rainfall erosion index, in 100 ft.tons/acre.in/hr | R = | 70 | 70 |
| K= soil erodibility factor, tons/acre per unit of R | K = | 0.204 | 0.204 |
| LS = slope length and steepness factor (unitless) | LS = | 1.98 | 1.98 |
| C = vegetative cover factor (unitless) | C = | 1 | 1 |
| P = erosion control practice factor (unitless) | P = | 1 | 1 |

| | DMA 'B' | DMA 'E' |
|---|---|---|
| Weight of the loose soil = 121 lb/ft3 = 121 x 0.0005 lb/ton = 0.0605 tons/ft3 | 0.0605 | 0.0605 |
| Annual soil loss volume = A / Weight of soil = 3.75 / 0.0605 = 61.98 ft3/acre | 467.3 | 467.3 |
| Soil Loss Volume = 467.35 x Tributary Area / 27 = cy | 201 | 635 |

| **Sediment Basin Spillway Width Calculations** | | DMA 'B' | DMA 'E' |
|---|---|---|---|
| Minimum size of the spillway required = 1 ft / acre of tributary area | | | |
| Minimum width of spillway = At / h (feet) | W = | 8 | 24 |
| At = sediment basin tributary area | At = | 11.61 | 36.66 |
| h = spillway height = 1.5 ft | H = | 1.5 | 1.5 |
| Width = 1.5 / 1.5 = 1 ft | | | |


117° 22' 1" W
117° 20' 57" W
34° 12' 57" N
34° 12' 23" N
466200
466300
466400
466500
466600
466700
466800
466900
467000
467100
467200
467300
467400
467500
467600
467700
467800
3786100
3786000
3785900
3785800
3785700
3785600
3785500
3785400
3785300
3785200
CmF
ChDE
TvC
SoC
Pennsylvania St
Perrin Dr
Soil Map may not be valid at this scale.
Map Scale: 1:7,460 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 100 200 400 600
Feet
0 350 700 1400 2100
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Lines**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Soil Rating Points**
- .02
- .05
- .10
- .15
- .17
- .20
- .24
- .28
- .32
- .37
- .43
- .49
- .55
- .64
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Bernardino County Southwestern Part, California
Survey Area Data: Version 16, Aug 30, 2024

Soil Survey Area: San Bernardino National Forest Area, California
Survey Area Data: Version 16, Sep 3, 2024

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 17, 2022—Jun 12, 2022

## MAP LEGEND

## MAP INFORMATION

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# K Factor, Whole Soil

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| SoC | Soboba gravelly loamy sand, 0 to 9 percent slopes | .05 | 0.4 | 0.3% |
| TvC | Tujunga gravelly loamy sand, 0 to 9 percent slopes | .10 | 4.3 | 4.0% |
| **Subtotals for Soil Survey Area** | | | **4.6** | **4.4%** |
| **Totals for Area of Interest** | | | **106.5** | **100.0%** |

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| ChDE | Ramona family-Typic Xerorthents, warm association, 2 to 30 percent slopes | .20 | 62.6 | 58.8% |
| CmF | Osito-Modesto families association, 30 to 50 percent slopes | .24 | 39.3 | 36.9% |
| **Subtotals for Soil Survey Area** | | | **101.9** | **95.6%** |
| **Totals for Area of Interest** | | | **106.5** | **100.0%** |

## Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

*Layer Options (Horizon Aggregation Method):* Surface Layer (Not applicable)

# Geotechnical Investigation/Infiltration Testing

GeoTek, Inc.
1548 North Maple Street, Corona, California 92878
(951) 710-1160 Office (951) 710-1167 Fax www.geotekusa.com

May 11, 2022
Project No. 2137-CR

**GFR Homes**
434 North 2nd Avenue
Upland, California 91786

Attention: Ms. Arlene Anaya

Subject: **Infiltration Evaluation**
Proposed Single-Family Residential Development
Tract No. 17329-4
Verdemont Drive and North Little League Drive
City of San Bernardino, San Bernardino County, California

References: See Page 5

Dear Ms. Anaya:

As requested and authorized, GeoTek, Inc. (GeoTek) has performed an Infiltration Evaluation associated with the proposed single-family residential development to be located in the City of San Bernardino, San Bernardino County California. The intent of this study is to evaluate the infiltration properties of the underlying soils within the proposed project storm water disposal facilities. This report presents the results of the evaluation performed by GeoTek.

## Site Description

The approximately 30-acre irregular-shaped project is located southwesterly of the intersection of North Little League Drive and Verdemont Drive, in the City of San Bernardino, San Bernardino County, California.

Most of the project site has been utilized as a "borrow" area for soils to complete the earthwork construction of the new residential development areas to the southeast of the project site. The northwesterly portion of the site is vacant and undeveloped land. Elevations across the site range from approximately 1,895 feet msl (mean sea level) to 2,025 feet msl. The site is situated within an area generally surrounded by residential development or vacant land.

## Infiltration Testing

Two (2) percolation test borings were excavated with a track-mounted hollow stem auger drill rig to depths of approximately five (5) feet below the existing ground surface (bgs) at the locations of the proposed storm water disposal facilities as provided to GeoTek by the project civil engineer, Joseph E. Bonadiman & Associates, Inc. The depths of each of the borings generally coincided with the depth of the bottom of each proposed storm water disposal facility location. The approximate locations of the percolation test borings are indicated on the attached Infiltration Test Location Map provided as Figure 1.

The borings were approximately 8-inches in diameter. Four-inch diameter slotted PVC pipes encapsulated in filter sock were inserted into the test holes. The annular space between the test hole sidewalls and PVC pipe was filled with gravel.

The materials encountered in both borings were alluvial deposits which excavated as silty sands to clayey sands (SM and SC soil types based upon the Unified Soil Classification System). The logs of the borings are presented in Appendix A.

Groundwater was not encountered nor observed in any of the borings for this evaluation. Groundwater was not encountered within the previously excavated exploratory test borings performed by GeoTek (GeoTek, 2022). Based on a review of groundwater data provided on the Department of Water Resources Water Data Library website, it is estimated that the depth to groundwater is greater than 100 feet below grade.

Subsequent to pre-soaking the test holes in general conformance with the referenced document (County of San Bernardino, 2011), percolation testing was performed in the lower approximately 24 inches in each of the percolation borings. The percolation testing was conducted in general conformance with the referenced document prepared by the County of San Bernardino. The percolation rates were converted to an infiltration rate via the Porchet Method.

The infiltration rate for each of the borings is presented in the follow table after the water level had stabilized.

| Boring No. | Infiltration Rate (inches per hour) | Depth of Boring (feet) |
|---|---|---|
| Boring I-1 | 0.41 | 5 |
| Boring I-2 | 0.24 | 5 |

Copies of the percolation data sheets and infiltration conversion sheets (Porchet Method) are included in Appendix B.

The reported infiltration rates are the measured rates without any factor of safety applied. Over the lifetime of the water quality facility, the infiltration rates may be affected by silt build up and biological activities, as well as local variations in near surface soil conditions. A suitable factor of safety should be applied to the field rates in design the infiltration systems.

It should be noted that the infiltration rates provided above were performed in relatively undisturbed native materials. Infiltration rates will vary and are mostly dependent on the underlying consistency of the site soils and relative density. Infiltration rates will be impacted by weight of equipment travelling over the soils, placement of engineered fill and other various factors. GeoTek, Inc. assumes no responsibility or liability for the ultimate design or performance of the storm water facilities.

## LIMITATIONS

The earth materials observed on the project site appear to be representative of the tested areas; however, soil materials vary in character between excavations and natural outcrops or conditions exposed during site construction. Site conditions may vary due to seasonal changes or other factors. GeoTek, Inc. assumes no responsibility or liability for work, testing or recommendations performed or provided by others.

GeoTek's conclusions and recommendations are professional opinions that are limited to the extent of the available data. Observations during construction are important to allow for any change in recommendations found to be warranted. These opinions have been derived in accordance with current standards of practice and no warranty is expressed or implied. Standards of practice are subject to change with time.

The opportunity to be of continued service on this project is sincerely appreciated. If you should have any questions, please do not hesitate to contact GeoTek.

Respectfully submitted,
**GeoTek, Inc.**







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Enclosures: Figure 1– Infiltration Test Location Map
Appendix A – Logs of Exploratory Borings
Appendix B – Percolation Data Sheets and Conversion Sheets (Porchet Method)

Distribution: (1) Addressee via email (PDF file)

*G:\Projects\2101 to 2150\2137CR GFR Homes Tract No. 17329 San Bernardino\17329-4\Infiltration Evaluation\2137CR Infiltration Evaluation Tract No. 17329-4.doc*

## REFERENCES

County of San Bernardino, 2011, "Appendix VII. Infiltration Rate Evaluation Protocol and Factor of Safety Recommendations." Dated May 19.

GeoTek, Inc., 2022, "Geotechnical Evaluation, Proposed Single-Family Residential Development, Tract No. 17329-4, Little League Drive and Verdemont Drive, City of San Bernardino, San Bernardino County, California," Project No. 2137-CR, dated April 7.




**GFR Homes**
Tract No. 17329-4
San Bernardino, San Bernardino County, California

GeoTek Project No. 2137-CR

Scale As Shown

NORTH

**Figure 1**

Infiltration Test Location Map

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# APPENDIX A

## LOGS OF EXPLORATORY BORINGS

**Tract No. 14881**
**San Bernardino, San Bernardino County, California**
**Project No. 2719-CR**

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# LOG OF EXPLORATORY BORING

| | | | | | |
|---|---|---|---|---|---|
| **CLIENT:** | GFR Homes | **DRILLER:** | 2R Drilling | **LOGGED BY:** | C. Diaz |
| **PROJECT NAME:** | Tract No. 17329 | **DRILL METHOD:** | Hollow Stem | **OPERATOR:** | Jeff |
| **PROJECT NO.:** | 2137-CR | **HAMMER:** | 140#/30" | **RIG TYPE:** | CME 75 |
| **LOCATION:** | San Bernardino, CA | | | **DATE:** | 5/2/2022 |

| Depth (ft) | SAMPLES: Sample Type | SAMPLES: Blows/ 6 in | SAMPLES: Sample Number | USCS Symbol | **Boring No.: I-1** / MATERIAL DESCRIPTION AND COMMENTS | Laboratory Testing: Water Content (%) | Laboratory Testing: Dry Density (pcf) | Laboratory Testing: Others |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | SM-SC | **Alluvium:**<br>Clayey-silty f-m SAND, reddish brown, slightly moist | | | |
| 5 | | | | | **BORING TERMINATED AT 5 FEET**<br><br>No groundwater encountered<br>Boring set with pipe, sock, and gravel | | | |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

LEGEND

**Sample type**: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

**Lab testing:** AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

**GeoTek, Inc.**

# LOG OF EXPLORATORY BORING

| | | | | | |
|---|---|---|---|---|---|
| **CLIENT:** | GFR Homes | **DRILLER:** | 2R Drilling | **LOGGED BY:** | C. Diaz |
| **PROJECT NAME:** | Tract No. 17329 | **DRILL METHOD:** | Hollow Stem | **OPERATOR:** | Jeff |
| **PROJECT NO.:** | 2137-CR | **HAMMER:** | 140#/30" | **RIG TYPE:** | CME 75 |
| **LOCATION:** | San Bernardino, CA | | | **DATE:** | 5/2/2022 |

| Depth (ft) | SAMPLES: Sample Type | SAMPLES: Blows/ 6 in | SAMPLES: Sample Number | USCS Symbol | **Boring No.: I-2** / MATERIAL DESCRIPTION AND COMMENTS | Laboratory Testing: Water Content (%) | Laboratory Testing: Dry Density (pcf) | Laboratory Testing: Others |
|---|---|---|---|---|---|---|---|---|
| 0 | | | | SM-SC | **Alluvium:**<br>Clayey-silty f-m SAND, reddish brown, slightly moist | | | |
| 5 | | | | | **BORING TERMINATED AT 5 FEET**<br><br>No groundwater encountered<br>Boring set with pipe, sock, and gravel | | | |
| 10 | | | | | | | | |
| 15 | | | | | | | | |
| 20 | | | | | | | | |
| 25 | | | | | | | | |
| 30 | | | | | | | | |

LEGEND

**Sample type**: ---Ring ---SPT ---Small Bulk ---Large Bulk ---No Recovery ---Water Table

**Lab testing:** AL = Atterberg Limits; EI = Expansion Index; SA = Sieve Analysis; RV = R-Value Test; SR = Sulfate/Resisitivity Test; SH = Shear Test; HC= Consolidation; MD = Maximum Density

# APPENDIX B

## PERCOLATION DATA AND CONVERSION SHEETS

**Tract No. 14881**
**San Bernardino, San Bernardino County, California**
**Project No. 2719-CR**

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## PERCOLATION DATA SHEET

Project: GFR Homes. Tract No. 17329-4 Job No.: 2137-CR

Test Hole No.: I-1 Tested By: C. Diaz Date: 5/3/2022

Depth of Hole As Drilled: 60' Before Test: 60' After Test: 60'

| Reading No. | Time | Time Interval (Min) | Total Depth of Hole (Inches) | Initial Water Level (Inches) | Final Water Level (Inches) | Δ In Water Level (Inches) | Rate (minutes per inch) | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Pre Soak 5 gal |
| | 7:12 / 7:37 | 25 | 60 | 24 | 21 1/2 | 2 1/2 | | Begin 5/3/2022 1st 25 Min |
| | 7:39 / 8:04 | 25 | 60 | 24 | 21 3/4 | 2 1/4 | | 2nd 25 Min |
| | 8:06 / 8:36 | 30 | 60 | 23 3/4 | 21 1/4 | 2 1/2 | | 1st 30 Min |
| | 8:38 / 9:08 | 30 | 60 | 23 1/2 | 20 1/2 | 3 | | 2nd 30 Min |
| | 9:10 / 9:40 | 30 | 60 | 23 3/4 | 21 | 2 3/4 | | 3rd 30 Min |
| | 9:42 / 10:12 | 30 | 60 | 23 3/4 | 21 1/4 | 2 1/2 | | 4th 30 Min |
| | 10:14 / 10:44 | 30 | 60 | 23 3/4 | 21 1/4 | 2 1/2 | | 5th 30 Min |
| | 10:46 / 11:16 | 30 | 60 | 24 | 21 3/4 | 2 1/4 | | 6th 30 Min |
| | 11:18 / 11:48 | 30 | 60 | 24 | 21 1/2 | 2 1/2 | | 7th 30 Min |

## PERCOLATION DATA SHEET

Project: GFR Homes Tract No 17329-4 Job No.: 2137-CR

Test Hole No.: I-1 Tested By: C. Diaz Date: 5/3/2022

Depth of Hole As Drilled: 60' Before Test: 60' After Test: 60'

| Reading No. | Time | Time Interval (Min) | Total Depth of Hole (Inches) | Initial Water Level (Inches) | Final Water Level (Inches) | Δ In Water Level (Inches) | Rate (minutes per inch) | Comments |
|---|---|---|---|---|---|---|---|---|
| | 11:50 | | 60 | 23 3/4 | | | | |
| | 12:20 | 30 | | | 21 1/4 | 2 1/2 | | 8th 30 Min |
| | 12:22 | | 60 | 23 1/2 | | | | |
| | 12:52 | 30 | | | 21 1/4 | 2 1/4 | | 9th 30 Min |
| | 12:54 | | 60 | 23 3/4 | | | | |
| | 1:24 | 30 | | | 21 1/4 | 2 1/2 | | 10th 30 Min |
| | 1:26 | | 60 | 23 3/4 | | | | |
| | 1:56 | 30 | | | 21 1/4 | 2 1/2 | | 11th 30 Min |
| | 1:58 | | 60 | 23 3/4 | | | | |
| | 2:28 | 30 | | | 21 1/4 | 2 1/2 | | 12th 30 Min |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

## PERCOLATION DATA SHEET

Project: GFR Homes Tract No 17329-4 Job No.: 2137-CR

Test Hole No.: I-2 Tested By: C. Diaz Date: 5/3/2022

Depth of Hole As Drilled: 60' Before Test: 60' After Test: 60'

| Reading No. | Time | Time Interval (Min) | Total Depth of Hole (Inches) | Initial Water Level (Inches) | Final Water Level (Inches) | Δ In Water Level (Inches) | Rate (minutes per inch) | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Pre Soaking 5 Gal |
| | 7:05 | | 60 | 24 | | | | Begin 5/3/2022 |
| | 7:30 | 25 | | | 22 1/2 | 1 1/2 | | 1st 25 Min |
| | 7:32 | | 60 | 24 | | | | |
| | 7:57 | 25 | | | 22 3/4 | 1 1/4 | | 2nd 25 Min |
| | 7:59 | | 60 | 23 3/4 | | | | |
| | 8:29 | 30 | | | 22 1/4 | 1 1/2 | | 1st 30 Min |
| | 8:31 | | 60 | 24 | | | | |
| | 9:01 | 30 | | | 22 1/2 | 1 1/2 | | 2nd 30 Min |
| | 9:03 | | 60 | 24 | | | | |
| | 9:33 | 30 | | | 22 1/2 | 1 1/2 | | 3rd 30 Min |
| | 9:35 | | 60 | 24 | | | | |
| | 10:05 | 30 | | | 22 1/2 | 1 1/2 | | 4th 30 Min |
| | 10:07 | | 60 | 23 1/2 | | | | |
| | 10:37 | 30 | | | 22 | 1 1/2 | | 5th 30 Min |
| | 10:39 | | 60 | 24 | | | | |
| | 11:09 | 30 | | | 22 1/2 | 1 1/2 | | 6th 30 Min |
| | 11:11 | | 60 | 23 1/2 | | | | |
| | 11:41 | 30 | | | 22 | 1 1/2 | | 7th 30 Min |

## PERCOLATION DATA SHEET

Project: GFR Homes Tract No 17329-4 Job No.: 2137-CR

Test Hole No.: I-2 Tested By: C. Diaz Date: 5/3/2022

Depth of Hole As Drilled: 60' Before Test: 60' After Test: 60'

| Reading No. | Time | Time Interval (Min) | Total Depth of Hole (Inches) | Initial Water Level (Inches) | Final Water Level (Inches) | Δ In Water Level (Inches) | Rate (minutes per inch) | Comments |
|---|---|---|---|---|---|---|---|---|
| | 11:43 | | 60 | 24 | | | | |
| | 12:13 | 30 | | | 22 1/2 | 1 1/2 | | 8th 30 Min |
| | 12:15 | | 60 | 24 | | | | |
| | 12:45 | 30 | | | 22 1/2 | 1 1/2 | | 9th 30 Min |
| | 12:47 | | 60 | 23 3/4 | | | | |
| | 1:17 | 30 | | | 22 1/4 | 1 1/2 | | 10th 30 Min |
| | 1:19 | | 60 | 23 3/4 | | | | |
| | 1:49 | 30 | | | 22 1/4 | 1 1/2 | | 11th 30 Min |
| | 1:51 | | 60 | 24 | | | | |
| | 2:21 | 30 | | | 22 1/2 | 1 1/2 | | 12th 30 Min |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| | |
|---|---|
| **Client:** | **GFR Homes** |
| **Project:** | **Tract No. 17329-4** |
| **Project No:** | **2137-CR** |
| **Date:** | **5/3/2022** |

**Boring No.** **I-1**

## Percolation Rate (Porchet Method)

| | |
|---|---|
| Time Interval, $\Delta t$ = | 30 |
| Final Depth to Water, $D_F$ = | 38.75 |
| Test Hole Radius, r = | 4 |
| Initial Depth to Water, $D_O$ = | 36.25 |
| Total Test Hole Depth, $D_T$ = | 60 |

Equation - $I_t = \dfrac{\Delta H\ (60r)}{\Delta t\ (r+2H_{avg})}$

| | |
|---|---|
| $H_O = D_T - D_O$ = | 23.75 |
| $H_F = D_T - D_F$ = | 21.25 |
| $\Delta H = \Delta D = H_O - H_F$ = | 2.5 |
| $H_{avg} = (H_O+H_F)/2$ = | 22.5 |

**$I_t$ =** 0.41 **Inches per Hour**

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| | |
|---|---|
| **Client:** | **GFR Homes** |
| **Project:** | **Tract No. 17329-4** |
| **Project No:** | **2137-CR** |
| **Date:** | **5/3/2022** |

**Boring No.** **I-2**

## Percolation Rate (Porchet Method)

| | |
|---|---|
| Time Interval, $\Delta t$ = | 30 |
| Final Depth to Water, $D_F$ = | 37.5 |
| Test Hole Radius, r = | 4 |
| Initial Depth to Water, $D_O$ = | 36 |
| Total Test Hole Depth, $D_T$ = | 60 |

Equation - $I_t = \dfrac{\Delta H\ (60r)}{\Delta t\ (r+2H_{avg})}$

| | |
|---|---|
| $H_O = D_T - D_O$ = | 24 |
| $H_F = D_T - D_F$ = | 22.5 |
| $\Delta H = \Delta D = H_O - H_F$ = | 1.5 |
| $H_{avg} = (H_O+H_F)/2$ = | 23.25 |

**$I_t$ =** 0.24 **Inches per Hour**

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# Conditions of Approval

To be provided in the Final WQMP Document

# Preliminary BMP Details

# Extended Detention Basin Factsheet

## 1.0 General Description



**Figure 1. Extended Detention basin (Stormwater Partners SW Washington)**

| Potential Treatment Mechanisms | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| I[1] | ET | FA | B | RH | S | F | P | T |
| ✓ | | | | | ✓ | | | ✓ |

Legend:
I = Infiltration
ET = Evapotranspiration
FA = Filtration and/or Adsorption
B = Biochemical Transformation
RH = Rainfall and Runoff Harvest
S = Sedimentation
F = Floatation
P = Plant Uptake
T = Trash Capture

[1] *For unlined systems only; these systems are sometimes constructed with a liner*

Extended detention basins are designed to capture rainfall and runoff and hold it for a maximum time (e.g., up to 72 hours), after which the basin fully drains and returns to being a dry basin. The maximum drain time (via orifice drain and infiltration) is specified to prevent mosquito breeding and to restore capacity for subsequent storm events. A minimum drain time is sometimes specified to encourage quiescent conditions for particle sedimentation. An orifice on the outlet riser typically meters out treated water. A riser or overflow weir is typically provided to route flood flows. A schematic of a basic detention basin is shown in Figure 2.

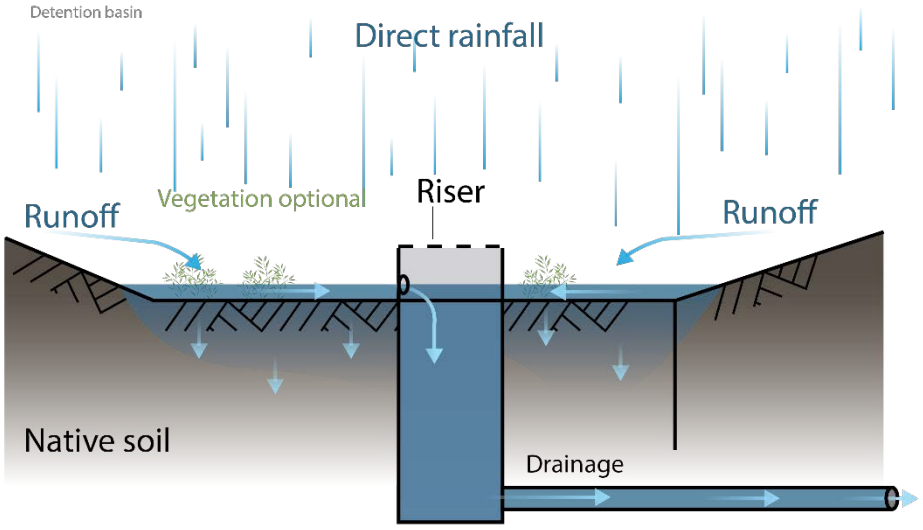



**Figure 2. Schematic of a basic extended detention baisn**

## 1.1 Variations and Alternative Names

- Detention ponds
- Detention basins
- Dry extended detention basins or ponds
- Dry ponds

## 2.0 Advantages & Limitations

## 2.1 Advantages

- ✓ Provides flood control as well as stormwater runoff treatment, in some cases
- ✓ Can be inexpensive
- ✓ Can have relatively low maintenance

- ✓ Can be integrated into an aesthetically appealing landscape design, though access restriction may be required for public safety

## 2.2 Limitations

- × Moderate pollutant removal
- × May not be suited for areas where the water table is close to the ground surface
- × Requires elevation change between inlet and outlet

## 3.0 Siting

To avoid direct connection to groundwater, reduce mosquito breeding habitat, and avoid wetland habitat conditions, the bottom of the basin should be located sufficiently above the wet season water table. If the water table is high, an impermeable liner may be required.

According to the California Stormwater Quality Association, detention basins should not be used for contributing drainage areas (CDA) of less than 5 acres because such a small CDA may require an orifice size so small that it will clog easily (CASQA 2003).

## 4.0 Design Considerations

When designing a detention basin, the following parameters should be considered:

- ❑ Contributing drainage area
- ❑ Design volume
- ❑ Drawdown time
- ❑ Side slopes
- ❑ Length to width ratio (distance between inlet and outlet)
- ❑ Orifice diameter
- ❑ Slope stability
- ❑ Energy dissipation at inlet
- ❑ Maintenance and inspection areas
- ❑ Basin area and infiltration capacity
- ❑ Seepage collar (to prevent piping/internal erosion on bermed systems)
- ❑ Utility conflicts
- ❑ Buried manmade materials and past disposal practices

## 5.0 Construction Considerations

- ❑ Potholing is recommended to verify locations of buried infrastructure.

## 6.0 Maintenance

- ❑ Identify and remediate clogging issues at the orifice or outlet screens (may require special training)
- ❑ Plant management
- ❑ Litter removal (for areas prone to litter)
- ❑ Inspect for standing water to prevent mosquitos and other vector breeding

## 7.0 References

California Stormwater Quality Association (CASQA 2003). *Stormwater Best Management Practice Handbook: New Development and Redevelopment*. January 2003.

California Stormwater Quality Association (CASQA 2017). *Draft Stormwater Best Management Practice Handbook: New Development and Redevelopment*. April 2017.

Sacramento Stormwater Quality Partnership (SSQP 2018). *Stormwater Quality Design Manual*. July 2018.