Appendix F – Water Quality Management Plan

Preliminary Water Quality Management Plan

(P-WQMP)

For:

TENATIVE TRACT MAP NO. 20320 (TERRACINA)

CUP: PENDING

APN: 299-213-11, 12, & 13, 174-281-13, 0299-213-21-000, 0299-213-14-000

THE COUNTY OF SAN BERNARDINO AREA WIDE STORMWATER PROGRAM

NPDES NO. CAS618036, ORDER NO. R8-2010-0036

Prepared for:

Terracina Recovery, LLC

690 East Green Street, Suite 200

Pasadena, CA 91101

(323) 874-8000

Prepared by:

Aguilar Consulting, Inc.

2155 Chicago Avenue, Suite 304

Riverside, CA 92507

(951) 300-1431

1st Submittal Date: July 3, 2020

Approval Date:_____

Project Owner's Certification

This Preliminary Water Quality Management Plan (P-WQMP) has been prepared for Terracina Recovery, LLC by Aguilar Consulting, Inc. The P-WQMP is intended to comply with the requirements of the City of Redlands and the NPDES Areawide Stormwater Program requiring the preparation of a P-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 P-WQMP. A copy of the approved P-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."

Project Data			
Permit/Application Number(s):	Pending	Grading Permit Number(s):	Pending
Tract/Parcel Map Number(s):	Tentative Tract Map No. 20320	Building Permit Number(s):	Pending
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): Pending			APN: 299-213-11, 12, & 13, 174-281-13, 0299-213-21-000, 0299-213-14-000. 0174-281-33, 34, & 35

Owner's Signature			
Owner Name: Mohamad Younes			
Title	Senior Vice President		
Company	Terracina Recovery, LLC		
Address	690 East Green Street, Suite 200, Pasadena, CA 91101		
Email	Mohamad.y@inlandcorp.com		
Telephone #	(323) 874-8000		
Signature		Date	

Preparer's Certification

Project Data			
Permit/Application Number(s):	Pending	Grading Permit Number(s):	Pending
Tract/Parcel Map Number(s):	Tentative Tract Map No. 20320	Building Permit Number(s):	Pending
CUP, SUP, and/or APN (Specify Lot Numbers if Portions of Tract): Pending			APN: 299-213-11, 12, & 13, 174-281-13, 0299-213-21-000, 0299-213-14-000

"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: Ceazar Aguilar, PE	
Title	President
Company	Aguilar Consulting, Inc.
Address	2155 Chicago Avenue, Suite 304, Riverside, CA 92507
Email	caguilar@aguilarconsultinginc.com
Telephone #	(951) 300-1431
Signature	
Date	

PE Stamp Below



Table of Contents

Section 1 Discretionary Permits 1-1

Section 2 Project Description 2-1

2.1 Project Information 2-1
2.2 Property Ownership / Management 2-2
2.3 Potential Stormwater Pollutants 2-3
2.4 Water Quality Credits 2-4

Section 3 Site and Watershed Description 3-1

Section 4 Best Management Practices 4-1

4.1 Source Control BMP 4-1
4.1.1 Pollution Prevention 4-1
4.1.2 Preventative LID Site Design Practices 4-7
4.2 Project Performance Criteria 4-13
4.3 Project Conformance Analysis 4-22
4.3.1 Site Design Hydrologic Source Control BMP 4-24
4.3.2 Infiltration BMP 4-26
4.3.3 Harvest and Use BMP 4-35
4.3.4 Biotreatment BMP 4.36
4.3.5 Conformance Summary 4-40
4.3.6 Hydromodification Control BMP 4-48
4.4 Alternative Compliance Plan (if applicable) 4-56

Section 5 Inspection & Maintenance Responsibility Post Construction BMPs 5-1

Section 6 Site Plan and Drainage Plan 6-1

6.1. Site Plan and Drainage Plan 6-1
6.2 Electronic Data Submittal 6-1
6.3 Post Construction 6-1
6.4 Other Supporting Documentation 6-1

Forms

Form 1-1 Project Information 1-1
Form 2.1-1 Description of Proposed Project 2-1
Form 2.2-1 Property Ownership/Management 2-2
Form 2.3-1 Pollutants of Concern 2-3
Form 2.4-1 Water Quality Credits 2-4
Form 3-1 Site Location and Hydrologic Features 3-1
Form 3-2 Hydrologic Characteristics 3-2
Form 3-3 Watershed Description 3-17
Form 4.1-1 Non-Structural Source Control BMP 4-2
Form 4.1-2 Structural Source Control BMP 4-5
Form 4.1-3 Site Design Practices Checklist 4-7
Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume 4-8
Form 4.2-2 Summary of HCOC Assessment 4-14
Form 4.2-3 HCOC Assessment for Runoff Volume 4-29

Form 4.2-4 HCOC Assessment for Time of Concentration 4-20
Form 4.2-5 HCOC Assessment for Peak Runoff..... 4-21
Form 4.3-1 Infiltration BMP Feasibility 4-23
Form 4.3-2 Site Design Hydrologic Source Control BMP 4-24
Form 4.3-3 Infiltration LID BMP..... 4-27
Form 4.3-4 Harvest and Use BMP 4-35
Form 4.3-5 Selection and Evaluation of Biotreatment BMP 4-36
Form 4.3-6 Volume Based Biotreatment – Bioretention and Planter Boxes w/Underdrains 4-37
Form 4.3-7 Volume Based Biotreatment- Constructed Wetlands and Extended Detention 4-38
Form 4.3-8 Flow Based Biotreatment 4-39
Form 4.3-9 Conformance Summary and Alternative Compliance Volume Estimate 4-40
Form 4.3-10 Hydromodification Control BMP 4-48
Form 5-1 BMP Inspection and Maintenance 5-1

Appendix

Appendix A
- **Appendix A.1: 2-year/24-hour Unit Hydrograph Calculations based on Existing Development**
- **Appendix A.2: 2-year/24-hour Unit Hydrograph Calculations based on Proposed Development**
- **Appendix A.3: Above-Ground Infiltration Basin Capacity Calculations**
- **Appendix A.4: Impervious Area Calculations**
- **Appendix A.5: DCV Calculations**
- **Appendix A.6: Form 4.3-3 Calculations**
- **Appendix A.7: Debris Production Calculations**
- **Appendix A.8: Debris Basin Capacity Calculations**
- **Appendix A.9: NOAA Precipitation Data**
- **Appendix A.10: Websoil Survey Hydrological Soil Group Data**

Appendix B – Project Maps and Plans
- **Appendix B.1: WQMP Site Plan**
- **Appendix B.2: Preliminary Drainage Plan**
- **Appendix B.3: Vicinity Map**
- **Appendix B.4: Receiving Waters Map**
- **Appendix B.5: City of Redlands Zoning Map**
- **Appendix B.6: Onsite Unit Hydrograph Map (Existing Condition)**
- **Appendix B.7: Onsite Unit Hydrograph Map (Proposed Condition)**
- **Appendix B.8: Tentative Tract Map**

Appendix C – Geotechnical Recommendations
Appendix D – Operations and Maintenance Plan (to be provided during Final Engineering)
Appendix E – Supporting Documents
- **Appendix E.1: Project Photographs**
- **Appendix E.2: Conditions of Approval**
- **Appendix E.3: Agreements – CC&Rs, Covenant and Agreements, BMP Maintenance Agreements and/or Other Mechanisms for ensuring ongoing Operation, Maintenance, Funding and Transfer of Requirements for this project-specific WQMP**

Section 1 Discretionary Permit(s)

Form 1-1 Project Information

Project Name	Tentative Tract Map No. 20320 (Terracina)				
Project Owner Contact Name:	Mohamad Younes				
Mailing Address:	690 East Green Street, Suite 200, Pasadena, CA 91101	E-mail Address:	Mohamad.y@inlandcorp.com	Telephone:	(323) 874-8000
Permit/Application Number(s):	Pending		Tract/Parcel Map Number(s): PM 14285		TTM 20320/ APN: 299-213-11, 12, & 13, 174-281-13, 0299-213-21-000, 0299-213-14-000
Additional Information/ Comments:	N/A				
Description of Project:	TTM 20320 is a proposed residential development. It is located in the City of Redlands, along Wabash Avenue, north of Interstate-10. This tract is approximately 65 acres in size and will be subdivided into 67 single family residential lots and 9 lettered lots in 2 phases: 42 residential lots and 4 lettered lots for Phase 1 and 25 residential lots and 5 lettered lots for Phase 2. Several improvements are planned in support of the proposed development including street and drainage improvements, above-ground stormwater quality/detention and debris basins, underground stormwater quality/retention storage chambers, and water/sewer systems to serve the proposed community.				
Provide summary of Conceptual WQMP conditions (if previously submitted and approved). Attach complete copy.	N/A				

Section 2 Project Description

2.1 Project Information

This section of the WQMP should provide the information listed below. The information provided for 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 ft^2 or more of impervious surface on an already developed site	☒ New development involving the creation of 10,000 ft^2 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 ft^2 or more
☐ Hillside developments of 5,000 ft^2 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 ft^2 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 ft^2 or more exposed to storm water	☐ Retail gasoline outlets that are either 5,000 ft^2 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):	2,831,400	**3** Number of Dwelling Units:	Phase 1: 42 Phase 2: 25	**4** SIC Code:	1521

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:

The tract will be annexed into the City of Redlands Communities Facilities District, CFD 2004-1, to provide ongoing maintenance of common areas including BMP facilities, storm drain facilities, debris basins, and landscaping.

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 ☐	
Nutrients - Phosphorous	E ☒	N ☐	
Nutrients - Nitrogen	E ☒	N ☐	
Noxious Aquatic Plants	E ☐	N ☒	
Sediment	E ☒	N ☐	
Metals	E ☐	N ☒	
Oil and Grease	E ☒	N ☐	
Trash/Debris	E ☒	N ☐	
Pesticides / Herbicides	E ☒	N ☐	
Organic Compounds	E ☒	N ☐	
Other:	E ☐	N ☐	
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.

A water quality credit program is not applicable as the full LID DCV of the proposed development is being treated with the proposed above-ground infiltration basins and underground stormwater chambers.

Not applicable to this 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 ☐ Vertical density [20%] ☐ 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)			

Section 3 Site and Watershed Description

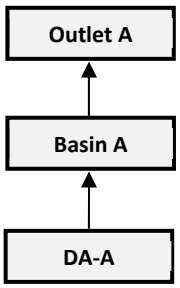
Describe the project site conditions that will facilitate the selection of BMP through an analysis of the physical conditions and limitations of the site and its receiving waters. Identify distinct drainage areas (DA) that collect flow from a portion of the site and describe how runoff from each DA (and 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 for Drainage Area A

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-A storm water runoff will be conveyed to above-ground Infiltration Basin A via the proposed streets and storm drain facilities.
DA-A flows to Outlet A	DA-A covers 7.47 acres of the proposed development. Storm runoff from DA-A is conveyed via the proposed streets and/or storm drain facilities and discharged into proposed above-ground Infiltration Basin A, where the water quality flow is retained. From the basin, storm flows are then discharged through an underground storm drain at Outlet A, the existing storm drain line at Reservoir Road.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area A

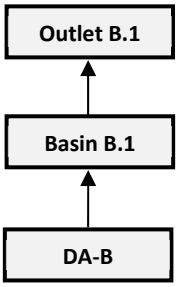
For Drainage Area A, provide the following characteristics	DA-A			
1 DA-A drainage area (ft^2)	325,393			
2 Existing site impervious area (ft^2)	325,393			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A/C			
5 Longest flowpath length (ft)	730			
6 Longest flowpath slope (ft/ft)	0.095			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Open Brush			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area B.1

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-B.1 storm water runoff will be conveyed to above ground Infiltration Basin B-1 via the proposed streets and/or storm drain facilities.
DA-B.1 flows to Outlet B.1	DA-B.1 covers 13.74 acres of the proposed development. Storm runoff from DA-B.1 is conveyed via the proposed streets and/or storm drain facilities and discharged into proposed above-ground Infiltration Basin B.1, where the water quality flow is retained. From the basin, storm flows are then discharged through an underground storm drain line and ultimately discharged sheet flowed at Outlet B.1, onto Sophia Court.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area B.1

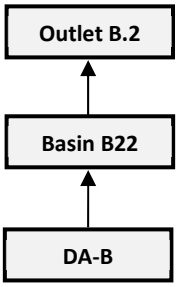
For Drainage Area B.1, provide the following characteristics	DA-B.1			
1 DA-B.2 drainage area (ft^2)	598,514			
2 Existing site impervious area (ft^2)	598,514			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	C			
5 Longest flowpath length (ft)	1,775			
6 Longest flowpath slope (ft/ft)	0.037			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Open Brush			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area B.2

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-B.2 storm water runoff will be conveyed to above ground Infiltration Basin B-2 via the proposed streets and/or storm drain facilities.
DA-B.2 flows to Outlet B.2	DA-B.2 covers 12.45 acres of the proposed development. Storm runoff from DA-B.2 is conveyed via the proposed streets and/or storm drain facilities and discharged into proposed above-ground Infiltration Basin B.2, where the water quality flow is retained. From the basin, storm flows are then discharged through an underground storm drain line and ultimately discharged sheet flowed at Outlet B.2, onto Sophia Court.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area B.2

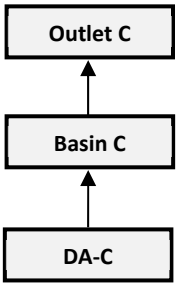
For Drainage Area B.2, provide the following characteristics	DA-B.2			
1 DA-B.2 drainage area (ft^2)	542,322			
2 Existing site impervious area (ft^2)	542,322			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	C			
5 Longest flowpath length (ft)	1,380			
6 Longest flowpath slope (ft/ft)	0.08			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Open Brush			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area C

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-C storm water runoff will be conveyed to above ground Infiltration Basin C via the proposed streets and/or storm drain facilities.
DA-C flows to Outlet C	DA-C covers 13.87 acres of the proposed development. Storm runoff from DA-C is conveyed via the proposed streets and/or storm drain facilities and discharged into proposed above-ground Infiltration Basin C, where the water quality flow is retained. From the basin, storm flows are then discharged through an underground storm drain at Outlet C, the existing 48" storm drain line at Reservoir Road and Wabash Avenue.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area C

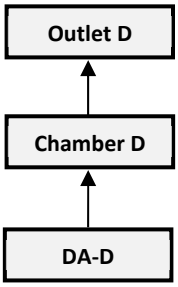
For Drainage Area C, provide the following characteristics	DA-C			
1 DA-B.2 drainage area (ft^2)	604,177			
2 Existing site impervious area (ft^2)	604,177			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A/C/D			
5 Longest flowpath length (ft)	1,690			
6 Longest flowpath slope (ft/ft)	0.061			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Open Brush			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area D

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-D storm water runoff will be conveyed to underground Stormwater Chamber D via the proposed streets and/or storm drain facilities.
DA-D flows to Outlet D	DA-D covers 4.42 acres of the proposed development. Storm runoff from DA-D is conveyed via the proposed streets and/or storm drain facilities and discharged into proposed underground Stormwater Chamber D, where the water quality flow is retained. From the chamber, storm flows are then discharged through at Outlet D, the existing 48" storm drain line at Reservoir Road and Wabash Avenue.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area D

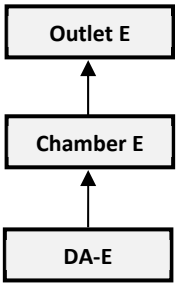
For Drainage Area D, provide the following characteristics	DA-D			
1 DA-B.2 drainage area (ft^2)	192,535			
2 Existing site impervious area (ft^2)	192,535			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A/C			
5 Longest flowpath length (ft)	1150			
6 Longest flowpath slope (ft/ft)	0.09			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Open Brush			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area E

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-E storm water runoff will be conveyed to underground Stormwater Chamber D via the proposed streets and/or storm drain facilities.
DA-E flows to Outlet E	DA-D covers 1.20 acres of the proposed development. Storm runoff from DA-E is conveyed via the proposed street section at Reservoir Road and/or storm drain facilities and discharged into proposed underground Stormwater Chamber E, where the water quality flow is retained. From the chamber, storm flows are then discharged through at Outlet E, the existing storm drain line at Reservoir Road.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area E

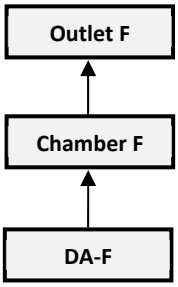
For Drainage Area E, provide the following characteristics	DA-E			
1 DA-B.2 drainage area (ft^2)	23,868			
2 Existing site impervious area (ft^2)	23,868			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A/C			
5 Longest flowpath length (ft)	435			
6 Longest flowpath slope (ft/ft)	0.12			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Mostly Open Brush and some Commercial			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area F

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-F storm water runoff will be conveyed to underground Stormwater Chamber F via the proposed streets and/or storm drain facilities.
DA-F flows to Outlet F	DA-F covers 3.38 acres of the proposed development. Storm runoff from DA-F is conveyed via the proposed street section at Reservoir Road and/or storm drain facilities and discharged into proposed underground Stormwater Chamber F, where the water quality flow is retained. From the chamber, storm flows are then discharged through at Outlet F, the existing storm drain line at Reservoir Road.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area F

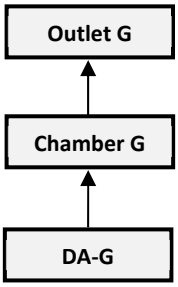
For Drainage Area F, provide the following characteristics	DA-F			
1 DA-B.2 drainage area (ft^2)	147,233			
2 Existing site impervious area (ft^2)	147,233			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	A/C			
5 Longest flowpath length (ft)	940			
6 Longest flowpath slope (ft/ft)	0.11			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Mostly Open Brush and some Commercial			
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 (See Appendix E for Photos)*	Fair			

Form 3-1 Site Location and Hydrologic Features for Drainage Area G

Site coordinates	Latitude: 34°2'7.64"N	Longitude: -117°8'21.90"N	Thomas Bros Map page: Page No. 579, Section J7

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	DA-G storm water runoff will be conveyed to underground Stormwater Chamber G via the proposed streets and/or storm drain facilities.
DA-G flows to Outlet G	DA-G covers 1.36 acres of the proposed development. Storm runoff from DA-G is conveyed via the proposed street section at Reservoir Road and/or storm drain facilities and discharged into proposed underground Stormwater Chamber G, where the water quality flow is retained. From the chamber, storm flows are then discharged through at Outlet G, the existing storm drain line at Reservoir Road.

Form 3-2 Existing Hydrologic Characteristics for Drainage Area G

For Drainage Area G, provide the following characteristics	DA-G			
1 DA-B.2 drainage area (ft^2)	59,242			
2 Existing site impervious area (ft^2)	59,242			
3 Antecedent moisture condition *For desert areas, use http://www.sbcounty.gov/dpw/floodcontrol/pdf/20100412_map.pdf*	1			
4 Hydrologic soil group *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	C			
5 Longest flowpath length (ft)	445			
6 Longest flowpath slope (ft/ft)	0.20			
7 Current land cover type(s) *Select from Fig C-3 of Hydrology Manual*	Mostly Open Brush and some Commercial			
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 (See Appendix E for Photos)*	Fair			

Form 3-3 Watershed Description for Drainage Areas A to G

Receiving waters *Refer to Watershed Mapping Tool - http://permitrack.sbcounty.gov/wap/ See 'Drainage Facilities" link at this website*	Zanja Channel, Upper Santa Ana River Watershed (Reach 5), Prado Dam, Pacific Ocean
Applicable TMDLs *Refer to Local Implementation Plan*	Alachlor, Atrazine, Azinphos-methyl (Guthion), Carbaryl, Carbofuran, Chlorpyrifos, DDE, Diazinon, Dieldrin, Disulfoton, Malathion, Methyl Parathion, Molinate, Simazine, Thiobencarb/Bolero, Arsenic, Cadmium Copper, Lead, Zinc, Selenium, pH
303(d) listed impairments *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*	Santa Ana River (Reach 5): Acenaphthene, Chlorine, Residual (Chlorine Demand), Iron, Mercury, Naphthalene, Silver
Environmentally Sensitive Areas (ESA) *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	None
Unlined Downstream Water Bodies *Refer to Watershed Mapping Tool – http://permitrack.sbcounty.gov/wap/*	Zanja Channel, Santa Ana River, Pacific Ocean (Outlet near Huntington Beach, CA)
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* ☐ No
Watershed–based BMP included in a RWQCB approved WAP	☐ Yes *Attach verification of regional BMP evaluation criteria in WAP* • *More Effective than On-site LID* • *Remaining Capacity for Project DCV* • *Upstream of any Water of the US* • *Operational at Project Completion* • *Long-Term Maintenance Plan* ☒ 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 developer shall provide environmental awareness education materials, made available by the municipalities, to all of the property owners. Among other things, these materials will describe the use of chemicals (including household type) that should be limited to the property, with no discharge of wastes via hosing or other direct discharge to gutters, catch basins and storm drains.
N2	Activity Restrictions	☒	☐	Conditions, covenants and restrictions (CCRs) as prepared by the developer for the purpose of surface water quality protection restricts activities that will negatively affect surface water quality and do not have a BMP in store to protect are restricted. Activities include: prohibiting vehicle maintenance activities, prohibiting long-term parking without prior authorization, prohibiting outdoor vehicle washing, prohibiting Commercial Activity and prohibiting Drilling. Activities that will negatively affect surface water quality and do not have a BMP in store to protect are restricted as listed in the City of Redlands Muincpal Code under Ordinance. 2274 § 1, 1995 shall also be enforced by the CFD. Found: https://www.sterlingcodifiers.com/codebook/index.php?book_id=550
N3	Landscape Management BMPs	☒	☐	Owners to maintain landscaping on their lot. The City of Redlands is responsible for landscaping in commons areas. Project will implement efficient and water-conservation minded techinques to manage landscaped areas. Fertilizer and pesticide usage shall be consistent with the instructions contained on product labels and with regulations administered by California's Department of Pesticide Regulation.
N4	BMP Maintenance	☒	☐	The Project WQMP identifies the responsibility for implementation of each non-structural BMP and scheduled cleaning and/ or maintenance of all structural BMP facilities.
N5	Title 22 CCR Compliance (How development will comply)	☐	☒	No hazardous waste on-site. Project is a residential development.

Form 4.1-1 Non-Structural Source Control BMPs				
N6	Local Water Quality Ordinances	☒	☐	Ordinance 13.54.100 Complaince with Best Management Practices Ordinance 13.54.170 Nonstormwater Discharges Ordinance 13.54.180 Best Management Practices Found: http://www.sterlingcodifiers.com/codebook/m_index.php?book_id=550
N7	Spill Contingency Plan	☒	☐	Crews resposible for landscape and BMP mainteance shall be trained in spill protection and protocols for spill clean up. Material and handouts related to spill protection can be found in the O&M Plan, under Appendix B, Educational Materials.
N8	Underground Storage Tank Compliance	☐	☒	No underground storage tanks on-site.
N9	Hazardous Materials Disclosure Compliance	☐	☒	No hazardous materials on-site.
N10	Uniform Fire Code Implementation	☒	☐	Compliance with Article 80 of the Uniform Fire Code will enforced by local fire protection agency.
N11	Litter/Debris Control Program	☒	☐	The homeowners and City of Redlands will implement trash management and litter control procedures in the common areas aimed at reducing pollution of drainage water. The homeowners and City of Redlands will contract with their landscape maintenance contractors to provide this service during regularly scheduled maintenance, which should consist of litter patrol, and noting trash disposal vioiations by tenants/homeowners and reporting the violations to the City of Redlands for investigation.
N12	Employee Training	☒	☐	All employees of the City of Redlands and any contractors will require training to ensure that employees are aware of maintenance activities that may result in pollutants reaching the storm drain. Training will include, but not be limited to, spill cleanup procedures, proper waste disposal, housekeeping practices, etc.
N13	Housekeeping of Loading Docks	☐	☒	There are no loading docks on site.
N14	Catch Basin Inspection Program	☒	☐	All on-site storm drain inlets, curb and gutters and ribbon gutter systems shall be inspected and cleaned out by the City of Redlands annually.

Form 4.1-1 Non-Structural Source Control BMPs				
N15	Vacuum Sweeping of Private Streets and Parking Lots	☒	☐	Streets shall be swept twice a month in according with the City of Redlands street sweeping policy.
N16	Other Non-structural Measures for Public Agency Projects	☐	☒	N/A
N17	Comply with all other applicable NPDES permits	☒	☐	General Industrial Permit to include BMPs that are required as part of the future SWPPP

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)	☒	☐	The stencil shall be blue on a white background with lettering 2-1/2" in height or a catch basin curb marker, circular, or rectangular at least 4" in height or diameter may be used. Wording will read, "No Dumping – Drains to River".
S2	Design and construct outdoor material storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-34)	☐	☒	The project is a residential development; No chemicals or materials will be stored on-site.
S3	Design and construct trash and waste storage areas to reduce pollution introduction (CASQA New Development BMP Handbook SD-32)	☒	☐	The project is a residential development; each house will have their own trash and waste receptacles.
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)	☒	☐	Efficient SMART irrigation will be utilized to conserve water throughout the development and common landscape areas. Irrigations systems will meet City of Redlands Landscape and Water Conservation Ordinances and Resolutions. Ordinance 13.06 Water Conservation Plan Ordinance 13.28 Irrigation Found: http://www.sterlingcodifiers.com/codebook/index.php?book_id=550
S5	Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	☒	☐	All landscape will be finish graded at a minimum of 1-2 inches below top of curb or sidewalk for increased retention/infiltration of stormwater and irrigation water.
S6	Protect slopes and channels and provide energy dissipation (CASQA New Development BMP Handbook SD-10)	☒	☐	All slopes to be landscaped to prevent erosion. At various intervals along the slopes, v-ditches and terrace drains will be installed to safely convey runoff from tops of slopes and to provide protection from erosion.
S7	Covered dock areas (CASQA New Development BMP Handbook SD-31)	☐	☒	The project is a residential development; there are no docking areas.
S8	Covered maintenance bays with spill containment plans (CASQA New Development BMP Handbook SD-31)	☐	☒	The project is a residential development; there are no maintenance areas.
S9	Vehicle wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	The project is a residential development; there are no vehicle wash areas.

S10	Covered outdoor processing areas (CASQA New Development BMP Handbook SD-36)	☐	☒	The project is a residential development; there are no processing areas.
S11	Equipment wash areas with spill containment plans (CASQA New Development BMP Handbook SD-33)	☐	☒	The project is a residential development; there are no equipment wash areas.
S12	Fueling areas (CASQA New Development BMP Handbook SD-30)	☐	☒	The project is a residential development; there are no fueling areas.
S13	Hillside landscaping (CASQA New Development BMP Handbook SD-10)	☒	☐	Hillside areas that are disturbed by project development shall be landscaped with deep-rooted, drought tolerant plant species selected for erosion control, satisfactory to the local permitting authority
S14	Wash water control for food preparation areas	☐	☒	There are no outdoor food preparations areas on this project site
S15	Community car wash racks (CASQA New Development BMP Handbook SD-33)	☐	☒	There are no community car wash racks on this project site.

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
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 ☐
Explanation: 2-story homes are proposed to increase building density and street and sidewalk widths are both the minimum necessary in order to provide for public and pedestrian safety in accordance with the City of Redlands Engineering Design Guidelines. Additionally, the proposed pedestrian trail will be constructed using decomposed granite and all graded slopes will have natural cover with landscape, with no hardscaping.

Maximize natural infiltration capacity: Yes ☐ No ☒
Explanation: As indicated on the WQMP site plan, the above-ground water quality basins and underground storm water chambers were designed for the different drainage areas to allow for infiltration of storm water quality flows back into the ground.

Preserve existing drainage patterns and time of concentration: Yes ☐ No ☒
Explanation: Drainage patterns and time of concentration based on pre-project condition will change due to lot layout and grading design. However, all storm flows for the most part under the proposed condition will be discharged into the same drainage facilities as in the existing condition.

Disconnect impervious areas: Yes ☒ No ☐
Explanation: All disturbed drainage areas will drain into infiltration basins (DA-A to DA-C) or to underground storage chambers (DA-D to DA-G) where flows will be treated before they are discharged. Additionally, homes will have roof drains that will discharge into landscaped areas and impervious surfaces will drain into landscaped areas where feasible.

Protect existing vegetation and sensitive areas: Yes ☐ No ☒
Explanation: Due to the layout of the project site, the existing vegetation will be removed.

Re-vegetate disturbed areas: Yes ☒ No ☐
Explanation: The proposed lots and common areas such as sidewalks, parkways, and medians will have landscape. Graded slopes will be stabilized with hydroseed and landscaping.

Minimize unnecessary compaction in stormwater retention/infiltration basin/trench areas: Yes ☒ No ☐
Explanation: After excavation of the water quality basins is complete, ground disturbance around the basins will be limited, and access routes for heavy equipment will be routed away from the basins.

Utilize vegetated drainage swales in place of underground piping or imperviously lined swales: Yes ☒ No ☐
Explanation: Individual lot drainage will be achieved using vegetated swales.

Stake off areas that will be used for landscaping to minimize compaction during construction : Yes ☒ No ☐
Explanation: The landscaping plans will show the areas that will be staked off in order to clear the area of heavy equipment.

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 mi²), 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.

Note: * See Appendix A.4 for Impervious Area Calculations; Appendix A.5 for DCV Calculations; Appendix A.6 for Form 4.3-3 Calculations for all Drainage Areas

****Water quality flows emanating from drainage areas "D", "E", "F" and "G" will drain into underground stormwater chambers. The DCV values for these areas were increased by multiplying the computed results by 1.20, which is equivalent to using a factor of safety of 20 percent***

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area A)

1 Project area DA-A (ft^2): 325,393	**2** Imperviousness after applying preventative site design practices (Imp%): 45.1%	**3** Runoff Coefficient (Rc): 0.31 *$R_c = 0.858(Imp\%)^{\wedge 3}-0.78(Imp\%)^{\wedge 2}+0.774(Imp\%)+0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 12,070 *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*		

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area B.1)

1 Project area DA-B.1 (ft^2): 598,514	**2** Imperviousness after applying preventative site design practices (Imp%): 41.7%	**3** Runoff Coefficient (Rc): 0.29 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 20,745 *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*		

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area B.2)

1 Project area DA-B.2 (ft^2): 542,322	**2** Imperviousness after applying preventative site design practices (Imp%): 37.8%	**3** Runoff Coefficient (Rc): 0.27 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 17,407 *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*		

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area C)

1 Project area DA-C(ft^2): 604,177	**2** Imperviousness after applying preventative site design practices (Imp%): 47.1%	**3** Runoff Coefficient (Rc): 0.32 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73

*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): 23,276

*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

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area D)

1 Project area DA-D (ft^2): 192,535	**2** Imperviousness after applying preventative site design practices (Imp%): 51.9%	**3** Runoff Coefficient (Rc): 0.35 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*

4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)

5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73

*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): 8,111 * 1.2 = 9,733

*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

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area E)

1 Project area DA-E (ft^2): 52,272	**2** Imperviousness after applying preventative site design practices (Imp%): 52.0%	**3** Runoff Coefficient (Rc): 0.35 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 2,206 * 1.2 = 2,647 *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*		

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area F)

1 Project area DA-F (ft^2): 147,233	**2** Imperviousness after applying preventative site design practices (Imp%): 33.0%	**3** Runoff Coefficient (Rc): 0.24 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 4,257 * 1.2 = 5,108 *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*		

Form 4.2-1 LID BMP Performance Criteria for Design Capture Volume (Drainage Area G)

1 Project area DA-F (ft^2): 59,242	**2** Imperviousness after applying preventative site design practices (Imp%): 44.9%	**3** Runoff Coefficient (Rc): 0.31 *$R_c = 0.858(Imp\%)^{\wedge 3} - 0.78(Imp\%)^{\wedge 2} + 0.774(Imp\%) + 0.04$*
4 Determine 1-hour rainfall depth for a 2-year return period $P_{2yr\text{-}1hr}$ (in): 0.495 (NOAA National Weather Service Website https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html)		
5 Compute P_6, Mean 6-hr Precipitation (inches): 0.73 *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): 2,189 * 1.2 = 2,627 *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*		

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.

Please Note:
****See Appendix A.1 and Appendix A.2 for Preliminary Hydrologic Calculations utilizing the Civildesign Software for Items 1 thru 6. Under the Final WQMP, Forms 4.2-3 through 4.2-5 will be used for the HCOC Assessment as required by the City of Redlands.***
****** Derived by Dividing the Lag Time of the 2-year/24-hour hydrograph by a factor of 0.8 {per Equation (E.1): Lag Time = 0.8 TC as shown on page E-5 of the San Bernardino County Hydrology Manual}***

Form 4.2-2 Summary of HCOC Assessment (Drainage Area A)

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** 3,925 *Form 4.2-3 Item 12*	**2** 2.6 *Form 4.2-4 Item 13*	**3** 6.5 *Form 4.2-5 Item 10*
Post-developed	**4** 29,246 *Form 4.2-3 Item 13*	**5** 1.3 *Form 4.2-4 Item 14*	**6** 11.9 *Form 4.2-5 Item 14*
Difference	**7** 25,321 *Item 4 – Item 1*	**8** 1.3 *Item 2 – Item 5*	**9** 5.4 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 645% *Item 7 / Item 1*	**11** 50% *Item 8 / Item 2*	**12** 83% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area B.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** 13,360 *Form 4.2-3 Item 12*	**2** 7.3 *Form 4.2-4 Item 13*	**3** 13.6 *Form 4.2-5 Item 10*
Post-developed	**4** 41,722 *Form 4.2-3 Item 13*	**5** 2.7 *Form 4.2-4 Item 14*	**6** 15.1 *Form 4.2-5 Item 14*
Difference	**7** 38,362 *Item 4 – Item 1*	**8** 4.6 *Item 2 – Item 5*	**9** 1.5 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 213% *Item 7 / Item 1*	**11** 63% *Item 8 / Item 2*	**12** 11% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area B.2)

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** 9,479 *Form 4.2-3 Item 12*	**2** 3.5 *Form 4.2-4 Item 13*	**3** 11.9 *Form 4.2-5 Item 10*
Post-developed	**4** 40,023 *Form 4.2-3 Item 13*	**5** 1.8 *Form 4.2-4 Item 14*	**6** 17.3 *Form 4.2-5 Item 14*
Difference	**7** 30,544 *Item 4 – Item 1*	**8** 1.7 *Item 2 – Item 5*	**9** 5.4 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 322% *Item 7 / Item 1*	**11** 49% *Item 8 / Item 2*	**12** 45% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area C)

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** 6,939 *Form 4.2-3 Item 12*	**2** 5.6 *Form 4.2-4 Item 13*	**3** 13.0 *Form 4.2-5 Item 10*
Post-developed	**4** 54,049 *Form 4.2-3 Item 13*	**5** 2.8 *Form 4.2-4 Item 14*	**6** 15.5 *Form 4.2-5 Item 14*
Difference	**7** 47,110 *Item 4 – Item 1*	**8** 3.3 *Item 2 – Item 5*	**9** 1.8 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 679% *Item 7 / Item 1*	**11** 50% *Item 8 / Item 2*	**12** 12% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area D)

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** 2,626 *Form 4.2-3 Item 12*	**2** 3.8 *Form 4.2-4 Item 13*	**3** 4.2 *Form 4.2-5 Item 10*
Post-developed	**4** 30,736 *Form 4.2-3 Item 13*	**5** 1.9 *Form 4.2-4 Item 14*	**6** 7.7 *Form 4.2-5 Item 14*
Difference	**7** 28,110 *Item 4 – Item 1*	**8** 1.9 *Item 2 – Item 5*	**9** 3.5 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 1,070% *Item 7 / Item 1*	**11** 50% *Item 8 / Item 2*	**12** 83% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area E)

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** 558 *Form 4.2-3 Item 12*	**2** 1.8 *Form 4.2-4 Item 13*	**3** 1.2 *Form 4.2-5 Item 10*
Post-developed	**4** 11,195 *Form 4.2-3 Item 13*	**5** 0.9 *Form 4.2-4 Item 14*	**6** 2.5 *Form 4.2-5 Item 14*
Difference	**7** 10,937 *Item 4 – Item 1*	**8** 0.9 *Item 2 – Item 5*	**9** 1.3 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 1,960% *Item 7 / Item 1*	**11** 50% *Item 8 / Item 2*	**12** 156% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area F)

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** 1,568 *Form 4.2-3 Item 12*	**2** 2.5 *Form 4.2-4 Item 13*	**3** 2.7 *Form 4.2-5 Item 10*
Post-developed	**4** 24,002 *Form 4.2-3 Item 13*	**5** 1.2 *Form 4.2-4 Item 14*	**6** 6.8 *Form 4.2-5 Item 14*
Difference	**7** 22,434 *Item 4 – Item 1*	**8** 1.3 *Item 2 – Item 5*	**9** 4.1 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 1,431% *Item 7 / Item 1*	**11** 52% *Item 8 / Item 2*	**12** 152% *Item 9 / Item 3*

Form 4.2-2 Summary of HCOC Assessment (Drainage Area G)

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** 745 *Form 4.2-3 Item 12*	**2** 2.0 *Form 4.2-4 Item 13*	**3** 1.5 *Form 4.2-5 Item 10*
Post-developed	**4** 12,711 *Form 4.2-3 Item 13*	**5** 1.0 *Form 4.2-4 Item 14*	**6** 3.2 *Form 4.2-5 Item 14*
Difference	**7** 11,966 *Item 4 – Item 1*	**8** 1.0 *Item 2 – Item 5*	**9** 1.7 *Item 6 – Item 3*
Difference (as % of pre-developed)	**10** 1,606% *Item 7 / Item 1*	**11** 50% *Item 8 / Item 2*	**12** 113% *Item 9 / Item 3*

Form 4.2-3 HCOC Assessment for Runoff Volume

Weighted Curve Number Determination for: Pre-developed DA A								
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 A								
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

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 DA A *Use additional forms if there are more than 4 DMA*				Post-developed DA A *Use additional forms if there are more than 4 DMA*			
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

Compute peak runoff for pre- and post-developed conditions.

Variables		Pre-developed DA A to Project Outlet (*Use additional forms if more than 3 DMA)*			Post-developed DA A to Project Outlet (*Use additional forms if more than 3 DMA)*		
1 Rainfall Intensity for storm duration equal to time of concentration *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) *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 *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) *Use pervious area CN and antecedent moisture condition with Appendix C-3 of the TGD for WQMP*							
5 Maximum loss rate (in/hr) *F_m = Item 3 * Item 4* *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) *Q_p =Item 2 * 0.9 * (Item 1 - Item 5)*							
7 Time of concentration adjustment factor for other DMA to site discharge point *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 DA A: *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 $7_{DMAA/3}$]*	**9** Pre-developed Q_p at T_c for DMA B: *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 $7_{DMAB/3}$]*	**10** Pre-developed Q_p at T_c for DMA C: *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 DA A: *Same as Item 8 for post-developed values*	**12** Post-developed Q_p at T_c for DMA B: *Same as Item 9 for post-developed values*	**13** Post-developed Q_p at T_c for DMA C: *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 (Drainage Area A – Drainage Area G)

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.

Not applicable to this project.

Form 4.3-2 Site Design Hydrologic Source Control BMPs

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): 0 $V_{retention}$ *=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): 0 $V_{retention}$ *=Sum of Item 12 for all BMPs*			

Form 4.3-2 cont. Site Design Hydrologic Source Control BMPs

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): 0 $V_{retention}$ *=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): 0 $V_{retention}$ *= 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): $V_{retention}$ *=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).

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Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area A)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 12,070 *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 A BMP Type Infiltration Basin	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*	2.0 (Assumed Rate)		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	8.0		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	4.0		
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*	3,222		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	13,694		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	0		
16 Total Retention Volume from LID Infiltration BMPs: 13,694 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*			
17 Fraction of DCV achieved with infiltration BMP: 113% *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.* ****Note: See calculation in Appendix A.6 for Form 4.3-3 Calculations***			

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area B.1)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 20,745 *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 B.1 BMP Type Infiltration Basin	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	4.0		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	4.0		
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*	5,495		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	23,354		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	0		

16 Total Retention Volume from LID Infiltration BMPs: 23,354 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 113% *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.

Note: See calculation in Appendix A.6 for Form 4.3-3 Calculations

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area B.2)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 17,407 *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 B.2 BMP Type Infiltration Basin	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	4.0		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	4.0		
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*	4,389		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	18,653		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	0		

16 Total Retention Volume from LID Infiltration BMPs: 18,653 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 107% *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.

Note: See calculation in Appendix A.6 for Form 4.3-3 Calculations

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area C)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 23,276 *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 C BMP Type Infiltration Basin	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	4.0		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	4.0		
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*	5,843		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	24,833		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	0		

16 Total Retention Volume from LID Infiltration BMPs: 24,833 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 107% *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.

Note: See calculation in Appendix A.6 for Form 4.3-3 Calculations

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area D)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 9,733 *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 D BMP Type Underground Chamber	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	N/A		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	N/A		
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*	N/A		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	9,733		

16 Total Retention Volume from LID Infiltration BMPs: 9,733 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *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.

***Note: Underground Chambers will be designed and manufactured during final engineering.**

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area E)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 2,647 *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 E BMP Type Underground Chamber	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	N/A		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	N/A		
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*	N/A		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	2,647		

16 Total Retention Volume from LID Infiltration BMPs: 2,647 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *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.

***Note: Underground Chambers will be designed and manufactured during final engineering.**

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area F)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 5,108 *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 F BMP Type Underground Chamber	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	N/A		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	N/A		
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*	N/A		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	5,108		

16 Total Retention Volume from LID Infiltration BMPs: 5,108 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *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.

***Note: Underground Chambers will be designed and manufactured during final engineering.**

Form 4.3-3 Infiltration LID BMP - including underground BMPs (Drainage Area G)

1 Remaining LID DCV not met by site design HSC BMP (ft^3): 2,627 *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 G BMP Type Underground Chamber	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*	2.00		
3 Infiltration safety factor *See TGD Section 5.4.2 and Appendix D*	2.00		
4 Design percolation rate (in/hr) *P_{design} = Item 2 / Item 3*	1.00		
5 Ponded water drawdown time (hr) *Copy Item 6 in Form 4.2-1*	48		
6 Maximum ponding depth (ft) *BMP specific, see Table 5-4 of the TGD for WQMP for BMP design details*	N/A		
7 Ponding Depth (ft) *d_{BMP} = Minimum of (1/12*Item 4*Item 5) or Item 6*	N/A		
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*	N/A		
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*	0		
10 Amended soil porosity	0		
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*	0		
12 Gravel porosity	0		
13 Duration of storm as basin is filling (hrs) *Typical ~ 3hrs*	3		
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))]*	0		
15 Underground Retention Volume (ft^3) *Volume determined using manufacturer's specifications and calculations*	2,627		

16 Total Retention Volume from LID Infiltration BMPs: 2,627 *(Sum of Items 14 and 15 for all infiltration BMP included in plan)*

17 Fraction of DCV achieved with infiltration BMP: 100% *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.

***Note: Underground Chambers will be designed and manufactured during final engineering.**

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).

Not applicable to this project.

Form 4.3-4 Harvest and Use BMPs

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)

Not applicable to this project.

Form 4.3-5 Selection and Evaluation of Biotreatment BMP

1 Remaining LID DCV not met by site design HSC, infiltration, or harvest and use BMP for potential biotreatment (ft^3): *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.*	
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 ☐ Planter box with underdrain ☐ Constructed wetlands ☐ Wet extended detention ☐ Dry extended detention	☐ Vegetated swale ☐ Vegetated filter strip ☐ Proprietary biotreatment
3 Volume biotreated in volume based biotreatment BMP (ft^3): *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): *Item 1 – Item 3*	**5** Remaining fraction of LID DCV for sizing flow based biotreatment BMP: % *Item 4 / Item 1*
6 Flow-based biotreatment BMP capacity provided (cfs): *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: *Sum of Item 14 for all volume-based BMPs included in this form*			

Form 4.3-7 Volume Based Biotreatment – Constructed Wetlands and Extended Detention

Biotreatment BMP Type *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.*	DA DMA BMP Type		DA DMA BMP Type *(Use additional forms for more BMPs)*	
	Forebay	Basin	Forebay	Basin
1 Pollutants addressed with BMP forebay and basin *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 Bottom width (ft)				
3 Bottom length (ft)				
4 Bottom area (ft^2) A_{bottom} = *Item 2 * Item 3*				
5 Side slope (ft/ft)				
6 Depth of storage (ft)				
7 Water surface area (ft^2) $A_{surface}$ =*(Item 2 + (2 * Item 5 * Item 6)) * (Item 3 + (2 * Item 5 * Item 6))*				
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* V =*Item 6 / 3 * [Item 4 + Item 7 + (Item 4 * Item 7)^0.5]*				
9 Drawdown Time (hrs) *Copy Item 6 from Form 2.1*				
10 Outflow rate (cfs) Q_{BMP} = *(Item $8_{forebay}$ + Item 8_{basin}) / (Item 9 * 3600)*				
11 Duration of design storm event (hrs)				
12 Biotreated Volume (ft^3) $V_{biotreated}$ = *(Item $8_{forebay}$ + Item 8_{basin}) +(Item 10 * Item 11 * 3600)*				
13 Total biotreated volume from constructed wetlands, extended dry detention, or extended wet detention : *(Sum of Item 12 for all BMP included in plan)*				

Form 4.3-8 Flow Based Biotreatment

Biotreatment BMP Type *Vegetated swale, vegetated filter strip, or other comparable proprietary 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 TGD Table 5-5*			
2 Flow depth for water quality treatment (ft) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
3 Bed slope (ft/ft) *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) 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) *BMP specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
7 Cross sectional area (ft^2) *A = (Item 5 * Item 2) + (Item 6 * Item 2^2)*			
8 Water quality flow velocity (ft/sec) *V = Form 4.3-5 Item 6 / Item 7*			
9 Hydraulic residence time (min) *Pollutant specific, see Table 5-6 of the TGD for WQMP for reference to BMP design details*			
10 Length of flow based BMP (ft) *L = Item 8 * Item 9 * 60*			
11 Water surface area at water quality flow depth (ft^2) 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 (Drainage Area A)

1 Total LID DCV for the Project DA-A (ft^3): 12,070 *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): 13,694 *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): 0 *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 ☐

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 (Drainage Area B.1)

1 Total LID DCV for the Project DA-B.1 (ft^3): 20,745 *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): 23,354 *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): 0 *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 ☐

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 (Drainage Area B.2)

1 Total LID DCV for the Project DA-B.2 (ft^3): 17,407 *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): 18,653 *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): 0 *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 ☐

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 (Drainage Area C)

1 Total LID DCV for the Project DA-C (ft^3): 23,276 *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): 24,833 *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): 0 *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 ☐

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 (Drainage Area D)

1 Total LID DCV for the Project DA-D (ft^3): 9,733 *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): 9,733 *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): 0 *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 ☐

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 (Drainage Area E)

1 Total LID DCV for the Project DA-E (ft^3): 2,647 *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): 2,647*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): 0 *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 ☐

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 (Drainage Area F)

1 Total LID DCV for the Project DA-F (ft^3): 5,108 *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): 5,108 *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): 0 *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 ☐

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 (Drainage Area G)

1 Total LID DCV for the Project DA-G (ft^3): 2,627 *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): 2,627 *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): 0 *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 ☐

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.

Since this Water Quality Management Plan is in the preliminary design phase, the Hydromod and Basin Routing Calculations will be performed during the final design phase. At this preliminary design phase, the above ground infiltration basins were conservatively designed to retain the DCV and difference in the total 2-year/24-hour flood volume between the existing and proposed conditions. The underground stormwater chambers will be designed to capture the DCV that was increased by multiplying the computed results by 1.20, which is equivalent to using a factor of safety of 20 percent. During final engineering, the basins and chambers will be designed to satisfy ALL Hydromod requirements.

Form 4.3-10 Hydromodification Control BMPs (Drainage Area A)

1 Volume reduction needed for HCOC performance criteria (ft^3): 23,859 *(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): 13,694 *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): 10,165 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area B.1)

1 Volume reduction needed for HCOC performance criteria (ft^3): 26,276 *(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): 23,354 *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): 2,922 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area B.2)

1 Volume reduction needed for HCOC performance criteria (ft^3): 28,543 *(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): 18,653 *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): 9,890 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area C)

1 Volume reduction needed for HCOC performance criteria (ft^3): 44,408 *(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): 24,833 *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): 19,575 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area D)

1 Volume reduction needed for HCOC performance criteria (ft^3): 26,573 *(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): 9,733 *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): 16,840 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area E)

1 Volume reduction needed for HCOC performance criteria (ft^3): 10,077 *(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): 2,647 *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): 7,430 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area F)

1 Volume reduction needed for HCOC performance criteria (ft^3): 21,234 *(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): 5,108 *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): 16,126 *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 ☐

Form 4.3-10 Hydromodification Control BMPs (Drainage Area G)

1 Volume reduction needed for HCOC performance criteria (ft^3): 11,330 *(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): 2,627 *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): 8,704 *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).

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 (use additional forms as necessary)

BMP	Reponsible Party(s)	Inspection/ Maintenance Activities Required	Minimum Frequency of Activities
Infiltration Basin – Basins "A", "B-1", "B-2", and "C" (TC-11)	CFD	The CFD will inspect for erosion damage, and forebay and inlet/outlet structure damage. Observe drawdown time after each storm, to confirm that the drawdown time of 48-hours has been obtained and inspect depth of sediment build-up. Sediment shall be removed when build-up reaches a depth of 3 inches or more within a 50-foot radius of the outlet pipes. The repairs shall be made as soon as damage is found.	Shall be inspected and cleaned October 1st of each year, and after every major rain event. Monthly inspection by the City Inspector for erosion, inlet damage, and pre-treatment devices will determine if basin needs cleaning and repair.
Underground Storm Water Chambers	CFD	Inspect Sediment Row Pre-Treatment through viewport for depth of sediment and water in each riser. Elevations are to be recorded in the Inspection and Maintenance Log Sheet found in the Operations and Maintenance Plan. If risers are found full of sediment, system cleaning must be performed right away. System cleaning of chambers are to be performed per manufactures specifications. Manufactures operation manual and recommendations in will be included in Appendix D during Final Engineering.	Shall be inspected and cleaned October 1st of each year. Inspections shall also occur after each rain event to check depth of sediment.

Catch Basin Trash Capture Devices	CFD	Inspect for trash, sediment buildup, and any defects or damages within trash capture device. Remove trash and sediment during each inspection. Inspect for leakage between the frame of the insert and frame of drain inlet. Repair as soon as possible. Manufactures operation manual and recommendations in will be included in Appendix D during Final Engineering.	Shall be inspected and cleaned October 1st of each year, and after every rain event.
Sediment Basin and Basin Outlet Structure (Basins "D" and "E") (SE-02)	CFD	The CFD shall inspect for erosion, inlet and outlet damage of the basins. Examine basin banks, riprap and bottom for seepage and structural soundness including the outlet structure. Removal of sediment shall occur when build-up reaches one half of the storage volume. Accumulated standing water will be removed within 96 hours to avoid vector issues. Repairs shall be made as soon as damage is found. Remove major trash, liter, and sediment accumulation in the basin, pipe and riser and check for evidence of illegal dumping of waste materials into basin and riser. Sediment removal from basin invert along entire footprint of basin shall be performed during dry weather season. The 6-inch sand material, filter fabric and 12-inch thick 1" diameter rocks (filter material) on the bottom of the basin floor shall be removed and replaced when fine sediment occupies or covers half of the surface area of the basin floor or sand material. The filter material must be maintained properly in order for the storm flows to infiltrate into the ground.	Shall be inspected and cleaned October 1st of each year, and after every major rain event.

N1. Education for Property Owners, Tenants and Occupants	Developer	Developer 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. Developer shall distribute appropriate materials to owners, tenants and/or occupants via CC&R's or lease agreement, mailings, website or meeting. Materials can be downloaded from http://www.sbcountystormwater.org. and are included in Appendix D.	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 Restriction	CFD	Enforcement of the restricted activities as laid out in the CC&R's or lease agreement and City of Redlands Ord. 2274 § 1, 1995. Restriction shall begin upon occupancy. Monitoring and enforcement of Activity Restrictions will be scheduled by the CFD.	Continuous.
N3. Common Area Landscape Management & Efficient Landscape Design (SC-73)	CFD	Landscape crews shall inspect irrigation systems and shall report all drainage problems to the owner or City. Inspect for signs of erosion and vegetation health. Repair and replant damaged landscape areas. All routine landscaping maintenance shall be completed in conformance with CASQA SC-73. See Appendix D for further details.	Weekly landscape service or as scheduled by the CFD
N4. BMP Maintenance	CFD	The CFD will be responsible in inspecting, maintaining and repairing the on-site BMPs (above-ground infiltration basins, underground storage chambers, and catch basins) as described above in order to maintain their design function-ability.	BMPs maintained per specified BMP.
N11. Common Area Litter Control (SC-60)	Home Owner/CFD	Landscape crews shall inspect for trash disposal violations by homeowners. Landscape crews will sweep and trash pickup landscape areas, infiltration basins, and streets to ensure there is no litter in conformance with CASQA SC-60. See Appendix D for further details.	During weekly landscape service or as scheduled by the CFD.

N12. Contractor Training	Home Owner/CFD	The home owner and CFD will ensure all contractors shall be trained and made aware of this WQMP and as well as the operation and maintenance requirements of the BMPs. Contractors will be provided educational material.	Information to be initially provided to a new contractor. Educational materials will be provided to contractors, thereafter.
N14. Common Area Catch Basin Inspection	CFD	Inspect and clean out accumulation of trash, litter and sediment and check for evidence of illegal dumping of waste materials into on-site drains.	Shall be inspected and cleaned October 1st of each year, and after every rain event or as scheduled by the CFD.
N15. Street Sweeping Private Streets and Parking Lots	CFD	Streets shall be swept bi-monthly in accordance with the City of Redlands street sweeping policy.	Bi-monthly
S1 Provide Storm Drain System Stenciling and Signage	CFD	Inspect for graffiti and/or degradation of stencil. Repaint as needed The painted message shall be inspected annually & repainted as necessary.	Shall be inspected annually and repainted as necessary or as scheduled by the CFD.
S4. Use efficient irrigation systems & landscape design, water conservation, smart controllers, and source control	Home Owner/CFD	Inspect that landscape design continues to function properly by adjusting properly to eliminate overspray to hardscape areas, and to verify that irrigation timing and cycle lengths are adjusted in accordance with water demands, given time of year, weather, and day or night time temperatures. Irrigations systems will meet City of Redlands Landscape and Water Conservation Ordinances and Resolutions. Ordinance 13.06 Water Conservation Plan Ordinance 13.28 Irrigation Found: http://www.sterlingcodifiers.com/codebook/index.php?book_id=550	Weekly or as scheduled by the CFD.

S5. Finish grade of landscaped areas at a minimum of 1-2 inches below top of curb, sidewalk, or pavement	Home Owner/CFD	Maintain vegetation height to ensure area has ponding capacity. Inspect area for standing water, saturated soil or other nuisance conditions. Repair as soon as possible.	Weekly or as scheduled by the CFD
S6. Protect slopes and channels and provide energy dissipation	Home Owner/CFD	The v-ditches and terrace drains and slope landscaping within the individual lots will be maintained by the individual homeowners, and the v-ditches and terrace drains and slope landscaping within the common areas and landscape easements will be maintained the CFD. Inspect that v-ditches and drains are properly draining and are free of any sediment build up and trash. Inspect for any damages and repair as soon as possible	Weekly or as scheduled by the CFD
S13. Hillside landscaping	Home Owner/CFD	Inspect that native/drought tolerant vegetation is being used onsite to limit water use to ensure plant viability to dry climates and good plant establishment. Replace dead/dying vegetation with same grouping as planting area. Repair rills and other signs of erosion as soon as possible.	Weekly or as scheduled by the CFD

Section 6 P-WQMP Attachments

6.1. Site Plan and Drainage Plan

See Appendix B for all related project plans and maps.

6.2 Electronic Data Submittal

CD on the inside of the report binder containing a PDF copy of the P-WQMP for this project.

6.3 Post Construction

See Appendix D for Operations and Maintenance Guidelines (to be provided during Final Engineering).

6.4 Other Supporting Documentation

See Appendix E and F for details regarding documentation and information that support this WQMP.

APPENDIX

APPENDIX A: HYDROLOGY CALCULATIONS

APPENDIX A.1: 2-YEAR/24-HOUR HYDROGRAPH CALCULATIONS BASED ON EXISTING DEVELOPMENT

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA A
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
7.47	1	0.78
Rainfall data for year 2		
7.47	6	1.20
Rainfall data for year 2		
7.47	24	2.18
Rainfall data for year 100		
7.47	1	1.27
Rainfall data for year 100		
7.47	6	2.86
Rainfall data for year 100		
7.47	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
69.1	49.9	7.47	1.000	0.811	1.000	0.811

Area-averaged adjusted loss rate Fm (In/Hr) = 0.811

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
7.47	1.000	69.1	49.9	10.05	0.001

Area-averaged catchment yield fraction, Y = 0.001
Area-averaged low loss fraction, Yb = 0.999

++
Watercourse length = 730.00(Ft.)
Length from concentration point to centroid = 280.00(Ft.)
Elevation difference along watercourse = 69.50(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 7.47(Ac.)
Catchment Lag time = 0.034 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 244.3158
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.811(In/Hr)
Average low loss rate fraction (Yb) = 0.999 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 7.47(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 90.34 (CFS))	
1	50.117	45.276
2	95.749	41.224
3	100.000	3.841

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2585	0.0485
3	0.2919	0.0334
4	0.3182	0.0263
5	0.3402	0.0220
6	0.3594	0.0191
7	0.3764	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4189	0.0130
11	0.4310	0.0122
12	0.4424	0.0114
13	0.4626	0.0202
14	0.4821	0.0195
15	0.5010	0.0189
16	0.5193	0.0183
17	0.5372	0.0178
18	0.5545	0.0174
19	0.5715	0.0170
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6201	0.0159
23	0.6357	0.0155
24	0.6509	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6950	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113

		AREAA
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAA
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5781	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039

		AREAA
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0033	0.0000
2	0.0033	0.0033	0.0000
3	0.0033	0.0033	0.0000
4	0.0033	0.0033	0.0000
5	0.0033	0.0033	0.0000
6	0.0033	0.0033	0.0000

		AREAA	
7	0.0033	0.0033	0.0000
8	0.0033	0.0033	0.0000
9	0.0033	0.0033	0.0000
10	0.0034	0.0033	0.0000
11	0.0034	0.0034	0.0000
12	0.0034	0.0034	0.0000
13	0.0034	0.0034	0.0000
14	0.0034	0.0034	0.0000
15	0.0034	0.0034	0.0000
16	0.0034	0.0034	0.0000
17	0.0034	0.0034	0.0000
18	0.0034	0.0034	0.0000
19	0.0035	0.0034	0.0000
20	0.0035	0.0035	0.0000
21	0.0035	0.0035	0.0000
22	0.0035	0.0035	0.0000
23	0.0035	0.0035	0.0000
24	0.0035	0.0035	0.0000
25	0.0035	0.0035	0.0000
26	0.0035	0.0035	0.0000
27	0.0035	0.0035	0.0000
28	0.0036	0.0035	0.0000
29	0.0036	0.0036	0.0000
30	0.0036	0.0036	0.0000
31	0.0036	0.0036	0.0000
32	0.0036	0.0036	0.0000
33	0.0036	0.0036	0.0000
34	0.0036	0.0036	0.0000
35	0.0036	0.0036	0.0000
36	0.0037	0.0037	0.0000
37	0.0037	0.0037	0.0000
38	0.0037	0.0037	0.0000
39	0.0037	0.0037	0.0000
40	0.0037	0.0037	0.0000
41	0.0037	0.0037	0.0000
42	0.0037	0.0037	0.0000
43	0.0038	0.0038	0.0000
44	0.0038	0.0038	0.0000
45	0.0038	0.0038	0.0000
46	0.0038	0.0038	0.0000
47	0.0038	0.0038	0.0000
48	0.0038	0.0038	0.0000
49	0.0038	0.0038	0.0000
50	0.0039	0.0039	0.0000
51	0.0039	0.0039	0.0000
52	0.0039	0.0039	0.0000
53	0.0039	0.0039	0.0000
54	0.0039	0.0039	0.0000
55	0.0039	0.0039	0.0000
56	0.0040	0.0039	0.0000
57	0.0040	0.0040	0.0000
58	0.0040	0.0040	0.0000
59	0.0040	0.0040	0.0000
60	0.0040	0.0040	0.0000
61	0.0040	0.0040	0.0000
62	0.0041	0.0040	0.0000
63	0.0041	0.0041	0.0000
64	0.0041	0.0041	0.0000
65	0.0041	0.0041	0.0000
66	0.0041	0.0041	0.0000
67	0.0041	0.0041	0.0000
68	0.0042	0.0042	0.0000
69	0.0042	0.0042	0.0000
70	0.0042	0.0042	0.0000
71	0.0042	0.0042	0.0000
72	0.0042	0.0042	0.0000
73	0.0043	0.0043	0.0000
74	0.0043	0.0043	0.0000
75	0.0043	0.0043	0.0000
76	0.0043	0.0043	0.0000
77	0.0044	0.0043	0.0000
78	0.0044	0.0044	0.0000
79	0.0044	0.0044	0.0000
80	0.0044	0.0044	0.0000
81	0.0044	0.0044	0.0000
82	0.0045	0.0044	0.0000
83	0.0045	0.0045	0.0000
84	0.0045	0.0045	0.0000
85	0.0045	0.0045	0.0000
86	0.0045	0.0045	0.0000
87	0.0046	0.0046	0.0000
88	0.0046	0.0046	0.0000
89	0.0046	0.0046	0.0000
90	0.0046	0.0046	0.0000

		AREAA	
91	0.0047	0.0047	0.0000
92	0.0047	0.0047	0.0000
93	0.0047	0.0047	0.0000
94	0.0048	0.0047	0.0000
95	0.0048	0.0048	0.0000
96	0.0048	0.0048	0.0000
97	0.0048	0.0048	0.0000
98	0.0049	0.0049	0.0000
99	0.0049	0.0049	0.0000
100	0.0049	0.0049	0.0000
101	0.0050	0.0050	0.0000
102	0.0050	0.0050	0.0000
103	0.0050	0.0050	0.0000
104	0.0051	0.0050	0.0000
105	0.0051	0.0051	0.0000
106	0.0051	0.0051	0.0000
107	0.0052	0.0052	0.0000
108	0.0052	0.0052	0.0000
109	0.0052	0.0052	0.0000
110	0.0053	0.0052	0.0000
111	0.0053	0.0053	0.0000
112	0.0053	0.0053	0.0000
113	0.0054	0.0054	0.0000
114	0.0054	0.0054	0.0000
115	0.0055	0.0055	0.0000
116	0.0055	0.0055	0.0000
117	0.0055	0.0055	0.0000
118	0.0056	0.0056	0.0000
119	0.0056	0.0056	0.0000
120	0.0057	0.0056	0.0000
121	0.0057	0.0057	0.0000
122	0.0057	0.0057	0.0000
123	0.0058	0.0058	0.0000
124	0.0058	0.0058	0.0000
125	0.0059	0.0059	0.0000
126	0.0059	0.0059	0.0000
127	0.0060	0.0060	0.0000
128	0.0060	0.0060	0.0000
129	0.0061	0.0061	0.0000
130	0.0061	0.0061	0.0000
131	0.0062	0.0062	0.0000
132	0.0063	0.0063	0.0000
133	0.0063	0.0063	0.0000
134	0.0064	0.0064	0.0000
135	0.0065	0.0065	0.0000
136	0.0065	0.0065	0.0000
137	0.0066	0.0066	0.0000
138	0.0066	0.0066	0.0000
139	0.0067	0.0067	0.0000
140	0.0068	0.0068	0.0000
141	0.0069	0.0069	0.0000
142	0.0069	0.0069	0.0000
143	0.0070	0.0070	0.0000
144	0.0071	0.0071	0.0000
145	0.0093	0.0093	0.0000
146	0.0094	0.0094	0.0000
147	0.0095	0.0095	0.0000
148	0.0095	0.0095	0.0000
149	0.0097	0.0097	0.0000
150	0.0097	0.0097	0.0000
151	0.0099	0.0099	0.0000
152	0.0099	0.0099	0.0000
153	0.0101	0.0101	0.0000
154	0.0102	0.0102	0.0000
155	0.0103	0.0103	0.0000
156	0.0104	0.0104	0.0000
157	0.0106	0.0106	0.0000
158	0.0107	0.0107	0.0000
159	0.0109	0.0108	0.0000
160	0.0110	0.0109	0.0000
161	0.0112	0.0111	0.0000
162	0.0113	0.0112	0.0000
163	0.0115	0.0115	0.0000
164	0.0116	0.0116	0.0000
165	0.0118	0.0118	0.0000
166	0.0120	0.0120	0.0000
167	0.0122	0.0122	0.0000
168	0.0124	0.0124	0.0000
169	0.0127	0.0127	0.0000
170	0.0129	0.0128	0.0000
171	0.0132	0.0132	0.0000
172	0.0134	0.0134	0.0000
173	0.0138	0.0138	0.0000
174	0.0140	0.0140	0.0000

		AREAA	
175	0.0145	0.0144	0.0000
176	0.0147	0.0147	0.0000
177	0.0152	0.0152	0.0000
178	0.0155	0.0155	0.0000
179	0.0162	0.0162	0.0000
180	0.0166	0.0165	0.0000
181	0.0174	0.0174	0.0000
182	0.0178	0.0178	0.0000
183	0.0189	0.0189	0.0000
184	0.0195	0.0195	0.0000
185	0.0114	0.0114	0.0000
186	0.0122	0.0121	0.0000
187	0.0141	0.0141	0.0000
188	0.0154	0.0154	0.0000
189	0.0191	0.0191	0.0000
190	0.0220	0.0220	0.0000
191	0.0334	0.0334	0.0000
192	0.0485	0.0485	0.0001
193	0.2099	0.0676	0.1424
194	0.0263	0.0263	0.0000
195	0.0170	0.0170	0.0000
196	0.0130	0.0130	0.0000
197	0.0202	0.0201	0.0000
198	0.0183	0.0183	0.0000
199	0.0170	0.0169	0.0000
200	0.0159	0.0158	0.0000
201	0.0150	0.0149	0.0000
202	0.0142	0.0142	0.0000
203	0.0136	0.0136	0.0000
204	0.0130	0.0130	0.0000
205	0.0125	0.0125	0.0000
206	0.0121	0.0121	0.0000
207	0.0117	0.0117	0.0000
208	0.0114	0.0114	0.0000
209	0.0111	0.0110	0.0000
210	0.0108	0.0108	0.0000
211	0.0105	0.0105	0.0000
212	0.0103	0.0102	0.0000
213	0.0100	0.0100	0.0000
214	0.0098	0.0098	0.0000
215	0.0096	0.0096	0.0000
216	0.0094	0.0094	0.0000
217	0.0071	0.0071	0.0000
218	0.0070	0.0070	0.0000
219	0.0068	0.0068	0.0000
220	0.0067	0.0067	0.0000
221	0.0066	0.0065	0.0000
222	0.0064	0.0064	0.0000
223	0.0063	0.0063	0.0000
224	0.0062	0.0062	0.0000
225	0.0061	0.0061	0.0000
226	0.0060	0.0060	0.0000
227	0.0059	0.0059	0.0000
228	0.0058	0.0058	0.0000
229	0.0057	0.0057	0.0000
230	0.0056	0.0056	0.0000
231	0.0055	0.0055	0.0000
232	0.0054	0.0054	0.0000
233	0.0054	0.0053	0.0000
234	0.0053	0.0053	0.0000
235	0.0052	0.0052	0.0000
236	0.0051	0.0051	0.0000
237	0.0051	0.0051	0.0000
238	0.0050	0.0050	0.0000
239	0.0049	0.0049	0.0000
240	0.0049	0.0049	0.0000
241	0.0048	0.0048	0.0000
242	0.0048	0.0048	0.0000
243	0.0047	0.0047	0.0000
244	0.0047	0.0047	0.0000
245	0.0046	0.0046	0.0000
246	0.0046	0.0046	0.0000
247	0.0045	0.0045	0.0000
248	0.0045	0.0045	0.0000
249	0.0044	0.0044	0.0000
250	0.0044	0.0044	0.0000
251	0.0043	0.0043	0.0000
252	0.0043	0.0043	0.0000
253	0.0043	0.0042	0.0000
254	0.0042	0.0042	0.0000
255	0.0042	0.0042	0.0000
256	0.0041	0.0041	0.0000
257	0.0041	0.0041	0.0000
258	0.0041	0.0041	0.0000

259	0.0040	0.0040	0.0000
260	0.0040	0.0040	0.0000
261	0.0040	0.0040	0.0000
262	0.0039	0.0039	0.0000
263	0.0039	0.0039	0.0000
264	0.0039	0.0039	0.0000
265	0.0038	0.0038	0.0000
266	0.0038	0.0038	0.0000
267	0.0038	0.0038	0.0000
268	0.0037	0.0037	0.0000
269	0.0037	0.0037	0.0000
270	0.0037	0.0037	0.0000
271	0.0037	0.0037	0.0000
272	0.0036	0.0036	0.0000
273	0.0036	0.0036	0.0000
274	0.0036	0.0036	0.0000
275	0.0036	0.0036	0.0000
276	0.0035	0.0035	0.0000
277	0.0035	0.0035	0.0000
278	0.0035	0.0035	0.0000
279	0.0035	0.0035	0.0000
280	0.0034	0.0034	0.0000
281	0.0034	0.0034	0.0000
282	0.0034	0.0034	0.0000
283	0.0034	0.0034	0.0000
284	0.0034	0.0034	0.0000
285	0.0033	0.0033	0.0000
286	0.0033	0.0033	0.0000
287	0.0033	0.0033	0.0000
288	0.0033	0.0033	0.0000

Total soil rain loss = 2.04(In)
Total effective rainfall = 0.14(In)
Peak flow rate in flood hydrograph = 6.45(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0000	0.00	Q				
0+25	0.0000	0.00	Q				
0+30	0.0000	0.00	Q				
0+35	0.0000	0.00	Q				
0+40	0.0000	0.00	Q				
0+45	0.0000	0.00	Q				
0+50	0.0000	0.00	Q				
0+55	0.0000	0.00	Q				
1+ 0	0.0000	0.00	Q				
1+ 5	0.0000	0.00	Q				
1+10	0.0000	0.00	Q				
1+15	0.0000	0.00	Q				
1+20	0.0000	0.00	Q				
1+25	0.0000	0.00	Q				
1+30	0.0000	0.00	Q				
1+35	0.0000	0.00	Q				
1+40	0.0001	0.00	Q				
1+45	0.0001	0.00	Q				
1+50	0.0001	0.00	Q				
1+55	0.0001	0.00	Q				
2+ 0	0.0001	0.00	Q				
2+ 5	0.0001	0.00	Q				
2+10	0.0001	0.00	Q				
2+15	0.0001	0.00	Q				
2+20	0.0001	0.00	Q				
2+25	0.0001	0.00	Q				
2+30	0.0001	0.00	Q				
2+35	0.0001	0.00	Q				
2+40	0.0001	0.00	Q				
2+45	0.0001	0.00	Q				
2+50	0.0001	0.00	Q				
2+55	0.0001	0.00	Q				
3+ 0	0.0001	0.00	Q				
3+ 5	0.0001	0.00	Q				
3+10	0.0001	0.00	Q				
3+15	0.0001	0.00	Q				

3+20	0.0001	0.00	Q				
3+25	0.0001	0.00	Q				
3+30	0.0001	0.00	Q				
3+35	0.0001	0.00	Q				
3+40	0.0001	0.00	Q				
3+45	0.0001	0.00	Q				
3+50	0.0001	0.00	Q				
3+55	0.0001	0.00	Q				
4+ 0	0.0001	0.00	Q				
4+ 5	0.0001	0.00	Q				
4+10	0.0001	0.00	Q				
4+15	0.0001	0.00	Q				
4+20	0.0001	0.00	Q				
4+25	0.0001	0.00	Q				
4+30	0.0002	0.00	Q				
4+35	0.0002	0.00	Q				
4+40	0.0002	0.00	Q				
4+45	0.0002	0.00	Q				
4+50	0.0002	0.00	Q				
4+55	0.0002	0.00	Q				
5+ 0	0.0002	0.00	Q				
5+ 5	0.0002	0.00	Q				
5+10	0.0002	0.00	Q				
5+15	0.0002	0.00	Q				
5+20	0.0002	0.00	Q				
5+25	0.0002	0.00	Q				
5+30	0.0002	0.00	Q				
5+35	0.0002	0.00	Q				
5+40	0.0002	0.00	Q				
5+45	0.0002	0.00	Q				
5+50	0.0002	0.00	Q				
5+55	0.0002	0.00	Q				
6+ 0	0.0002	0.00	Q				
6+ 5	0.0002	0.00	Q				
6+10	0.0002	0.00	Q				
6+15	0.0002	0.00	Q				
6+20	0.0002	0.00	Q				
6+25	0.0002	0.00	Q				
6+30	0.0002	0.00	Q				
6+35	0.0002	0.00	Q				
6+40	0.0002	0.00	Q				
6+45	0.0002	0.00	Q				
6+50	0.0002	0.00	Q				
6+55	0.0002	0.00	Q				
7+ 0	0.0003	0.00	Q				
7+ 5	0.0003	0.00	Q				
7+10	0.0003	0.00	Q				
7+15	0.0003	0.00	Q				
7+20	0.0003	0.00	Q				
7+25	0.0003	0.00	Q				
7+30	0.0003	0.00	Q				
7+35	0.0003	0.00	Q				
7+40	0.0003	0.00	Q				
7+45	0.0003	0.00	Q				
7+50	0.0003	0.00	Q				
7+55	0.0003	0.00	Q				
8+ 0	0.0003	0.00	Q				
8+ 5	0.0003	0.00	Q				
8+10	0.0003	0.00	Q				
8+15	0.0003	0.00	Q				
8+20	0.0003	0.00	Q				
8+25	0.0003	0.00	Q				
8+30	0.0003	0.00	Q				
8+35	0.0003	0.00	Q				
8+40	0.0003	0.00	Q				
8+45	0.0003	0.00	Q				
8+50	0.0003	0.00	Q				
8+55	0.0003	0.00	Q				
9+ 0	0.0003	0.00	Q				
9+ 5	0.0003	0.00	Q				
9+10	0.0004	0.00	Q				
9+15	0.0004	0.00	Q				
9+20	0.0004	0.00	Q				
9+25	0.0004	0.00	Q				
9+30	0.0004	0.00	Q				
9+35	0.0004	0.00	Q				
9+40	0.0004	0.00	Q				
9+45	0.0004	0.00	Q				
9+50	0.0004	0.00	Q				
9+55	0.0004	0.00	Q				
10+ 0	0.0004	0.00	Q				
10+ 5	0.0004	0.00	Q				
10+10	0.0004	0.00	Q				
10+15	0.0004	0.00	Q				

10+20	0.0004	0.00	Q				
10+25	0.0004	0.00	Q				
10+30	0.0004	0.00	Q				
10+35	0.0004	0.00	Q				
10+40	0.0004	0.00	Q				
10+45	0.0004	0.00	Q				
10+50	0.0004	0.00	Q				
10+55	0.0004	0.00	Q				
11+ 0	0.0005	0.00	Q				
11+ 5	0.0005	0.00	Q				
11+10	0.0005	0.00	Q				
11+15	0.0005	0.00	Q				
11+20	0.0005	0.00	Q				
11+25	0.0005	0.00	Q				
11+30	0.0005	0.00	Q				
11+35	0.0005	0.00	Q				
11+40	0.0005	0.00	Q				
11+45	0.0005	0.00	Q				
11+50	0.0005	0.00	Q				
11+55	0.0005	0.00	Q				
12+ 0	0.0005	0.00	Q				
12+ 5	0.0005	0.00	Q				
12+10	0.0005	0.00	Q				
12+15	0.0005	0.00	Q				
12+20	0.0005	0.00	Q				
12+25	0.0006	0.00	Q				
12+30	0.0006	0.00	Q				
12+35	0.0006	0.00	Q				
12+40	0.0006	0.00	Q				
12+45	0.0006	0.00	Q				
12+50	0.0006	0.00	Q				
12+55	0.0006	0.00	Q				
13+ 0	0.0006	0.00	Q				
13+ 5	0.0006	0.00	Q				
13+10	0.0006	0.00	Q				
13+15	0.0006	0.00	Q				
13+20	0.0006	0.00	Q				
13+25	0.0007	0.00	Q				
13+30	0.0007	0.00	Q				
13+35	0.0007	0.00	Q				
13+40	0.0007	0.00	Q				
13+45	0.0007	0.00	Q				
13+50	0.0007	0.00	Q				
13+55	0.0007	0.00	Q				
14+ 0	0.0007	0.00	Q				
14+ 5	0.0007	0.00	Q				
14+10	0.0007	0.00	Q				
14+15	0.0008	0.00	Q				
14+20	0.0008	0.00	Q				
14+25	0.0008	0.00	Q				
14+30	0.0008	0.00	Q				
14+35	0.0008	0.00	Q				
14+40	0.0008	0.00	Q				
14+45	0.0008	0.00	Q				
14+50	0.0008	0.00	Q				
14+55	0.0008	0.00	Q				
15+ 0	0.0009	0.00	Q				
15+ 5	0.0009	0.00	Q				
15+10	0.0009	0.00	Q				
15+15	0.0009	0.00	Q				
15+20	0.0009	0.00	Q				
15+25	0.0009	0.00	Q				
15+30	0.0009	0.00	Q				
15+35	0.0009	0.00	Q				
15+40	0.0010	0.00	Q				
15+45	0.0010	0.00	Q				
15+50	0.0010	0.00	Q				
15+55	0.0010	0.00	Q				
16+ 0	0.0010	0.00	Q				
16+ 5	0.0454	6.45	|		V Q		
16+10	0.0859	5.87	|		Q		V
16+15	0.0897	0.55	| Q				V
16+20	0.0897	0.00	Q				V
16+25	0.0897	0.00	Q				V
16+30	0.0897	0.00	Q				V
16+35	0.0897	0.00	Q				V
16+40	0.0897	0.00	Q				V
16+45	0.0897	0.00	Q				V
16+50	0.0898	0.00	Q				V
16+55	0.0898	0.00	Q				V
17+ 0	0.0898	0.00	Q				V
17+ 5	0.0898	0.00	Q				V
17+10	0.0898	0.00	Q				V
17+15	0.0898	0.00	Q				V

17+20	0.0898	0.00	Q				V
17+25	0.0898	0.00	Q				V
17+30	0.0898	0.00	Q				V
17+35	0.0898	0.00	Q				V
17+40	0.0898	0.00	Q				V
17+45	0.0899	0.00	Q				V
17+50	0.0899	0.00	Q				V
17+55	0.0899	0.00	Q				V
18+ 0	0.0899	0.00	Q				V
18+ 5	0.0899	0.00	Q				V
18+10	0.0899	0.00	Q				V
18+15	0.0899	0.00	Q				V
18+20	0.0899	0.00	Q				V
18+25	0.0899	0.00	Q				V
18+30	0.0899	0.00	Q				V
18+35	0.0899	0.00	Q				V
18+40	0.0899	0.00	Q				V
18+45	0.0899	0.00	Q				V
18+50	0.0899	0.00	Q				V
18+55	0.0899	0.00	Q				V
19+ 0	0.0899	0.00	Q				V
19+ 5	0.0899	0.00	Q				V
19+10	0.0899	0.00	Q				V
19+15	0.0900	0.00	Q				V
19+20	0.0900	0.00	Q				V
19+25	0.0900	0.00	Q				V
19+30	0.0900	0.00	Q				V
19+35	0.0900	0.00	Q				V
19+40	0.0900	0.00	Q				V
19+45	0.0900	0.00	Q				V
19+50	0.0900	0.00	Q				V
19+55	0.0900	0.00	Q				V
20+ 0	0.0900	0.00	Q				V
20+ 5	0.0900	0.00	Q				V
20+10	0.0900	0.00	Q				V
20+15	0.0900	0.00	Q				V
20+20	0.0900	0.00	Q				V
20+25	0.0900	0.00	Q				V
20+30	0.0900	0.00	Q				V
20+35	0.0900	0.00	Q				V
20+40	0.0900	0.00	Q				V
20+45	0.0900	0.00	Q				V
20+50	0.0900	0.00	Q				V
20+55	0.0900	0.00	Q				V
21+ 0	0.0900	0.00	Q				V
21+ 5	0.0900	0.00	Q				V
21+10	0.0900	0.00	Q				V
21+15	0.0900	0.00	Q				V
21+20	0.0900	0.00	Q				V
21+25	0.0901	0.00	Q				V
21+30	0.0901	0.00	Q				V
21+35	0.0901	0.00	Q				V
21+40	0.0901	0.00	Q				V
21+45	0.0901	0.00	Q				V
21+50	0.0901	0.00	Q				V
21+55	0.0901	0.00	Q				V
22+ 0	0.0901	0.00	Q				V
22+ 5	0.0901	0.00	Q				V
22+10	0.0901	0.00	Q				V
22+15	0.0901	0.00	Q				V
22+20	0.0901	0.00	Q				V
22+25	0.0901	0.00	Q				V
22+30	0.0901	0.00	Q				V
22+35	0.0901	0.00	Q				V
22+40	0.0901	0.00	Q				V
22+45	0.0901	0.00	Q				V
22+50	0.0901	0.00	Q				V
22+55	0.0901	0.00	Q				V
23+ 0	0.0901	0.00	Q				V
23+ 5	0.0901	0.00	Q				V
23+10	0.0901	0.00	Q				V
23+15	0.0901	0.00	Q				V
23+20	0.0901	0.00	Q				V
23+25	0.0901	0.00	Q				V
23+30	0.0901	0.00	Q				V
23+35	0.0901	0.00	Q				V
23+40	0.0901	0.00	Q				V
23+45	0.0901	0.00	Q				V
23+50	0.0901	0.00	Q				V
23+55	0.0901	0.00	Q				V
24+ 0	0.0901	0.00	Q				V

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 06/19/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA B.1
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10	13.74	1	0.78
Rainfall data for year 2	13.74	6	1.20
Rainfall data for year 2	13.74	24	2.18
Rainfall data for year 100	13.74	1	1.27
Rainfall data for year 100	13.74	6	2.86
Rainfall data for year 100	13.74	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
79.0	61.8	13.74	1.000	0.654	1.000	0.654

Area-averaged adjusted loss rate Fm (In/Hr) = 0.654

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
13.74	1.000	79.0	61.8	6.18	0.057

Area-averaged catchment yield fraction, Y = 0.057
Area-averaged low loss fraction, Yb = 0.943

++
Watercourse length = 1775.00(Ft.)
Length from concentration point to centroid = 520.00(Ft.)
Elevation difference along watercourse = 65.20(Ft.)
Mannings friction factor along watercourse = 0.040
Watershed area = 13.74(Ac.)
Catchment Lag time = 0.097 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 86.2249
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.654(In/Hr)
Average low loss rate fraction (Yb) = 0.943 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 13.74(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 166.17 (CFS))	
1	10.357	17.210
2	62.193	86.134
3	84.295	36.726
4	93.294	14.955
5	97.410	6.839
6	98.731	2.195
7	99.396	1.104
8	99.868	0.785
9	100.000	0.219

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3401	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4057	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5371	0.0178
18	0.5544	0.0174
19	0.5714	0.0170
20	0.5880	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120

		AREAB1
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9463	0.0113
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9903	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.1999	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3146	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3335	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3941	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4514	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4735	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053

		AREAB1
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7633	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8631	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039

		AREAB1
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9182	0.0039
215	1.9221	0.0039
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9971	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0404	0.0036
248	2.0440	0.0036
249	2.0475	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0616	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)

	AREAB1		
1	0.0033	0.0031	0.0002
2	0.0033	0.0031	0.0002
3	0.0033	0.0031	0.0002
4	0.0033	0.0031	0.0002
5	0.0033	0.0031	0.0002
6	0.0033	0.0031	0.0002
7	0.0033	0.0031	0.0002
8	0.0033	0.0031	0.0002
9	0.0033	0.0032	0.0002
10	0.0034	0.0032	0.0002
11	0.0034	0.0032	0.0002
12	0.0034	0.0032	0.0002
13	0.0034	0.0032	0.0002
14	0.0034	0.0032	0.0002
15	0.0034	0.0032	0.0002
16	0.0034	0.0032	0.0002
17	0.0034	0.0032	0.0002
18	0.0034	0.0032	0.0002
19	0.0035	0.0033	0.0002
20	0.0035	0.0033	0.0002
21	0.0035	0.0033	0.0002
22	0.0035	0.0033	0.0002
23	0.0035	0.0033	0.0002
24	0.0035	0.0033	0.0002
25	0.0035	0.0033	0.0002
26	0.0035	0.0033	0.0002
27	0.0035	0.0033	0.0002
28	0.0036	0.0033	0.0002
29	0.0036	0.0034	0.0002
30	0.0036	0.0034	0.0002
31	0.0036	0.0034	0.0002
32	0.0036	0.0034	0.0002
33	0.0036	0.0034	0.0002
34	0.0036	0.0034	0.0002
35	0.0036	0.0034	0.0002
36	0.0037	0.0034	0.0002
37	0.0037	0.0035	0.0002
38	0.0037	0.0035	0.0002
39	0.0037	0.0035	0.0002
40	0.0037	0.0035	0.0002
41	0.0037	0.0035	0.0002
42	0.0037	0.0035	0.0002
43	0.0038	0.0035	0.0002
44	0.0038	0.0036	0.0002
45	0.0038	0.0036	0.0002
46	0.0038	0.0036	0.0002
47	0.0038	0.0036	0.0002
48	0.0038	0.0036	0.0002
49	0.0038	0.0036	0.0002
50	0.0039	0.0036	0.0002
51	0.0039	0.0037	0.0002
52	0.0039	0.0037	0.0002
53	0.0039	0.0037	0.0002
54	0.0039	0.0037	0.0002
55	0.0039	0.0037	0.0002
56	0.0040	0.0037	0.0002
57	0.0040	0.0037	0.0002
58	0.0040	0.0038	0.0002
59	0.0040	0.0038	0.0002
60	0.0040	0.0038	0.0002
61	0.0040	0.0038	0.0002
62	0.0041	0.0038	0.0002
63	0.0041	0.0038	0.0002
64	0.0041	0.0039	0.0002
65	0.0041	0.0039	0.0002
66	0.0041	0.0039	0.0002
67	0.0041	0.0039	0.0002
68	0.0042	0.0039	0.0002
69	0.0042	0.0039	0.0002
70	0.0042	0.0040	0.0002
71	0.0042	0.0040	0.0002
72	0.0042	0.0040	0.0002
73	0.0043	0.0040	0.0002
74	0.0043	0.0040	0.0002
75	0.0043	0.0041	0.0002
76	0.0043	0.0041	0.0002
77	0.0044	0.0041	0.0002
78	0.0044	0.0041	0.0003
79	0.0044	0.0041	0.0003
80	0.0044	0.0042	0.0003
81	0.0044	0.0042	0.0003
82	0.0045	0.0042	0.0003
83	0.0045	0.0042	0.0003
84	0.0045	0.0042	0.0003

85	0.0045	0.0043	0.0003
86	0.0045	0.0043	0.0003
87	0.0046	0.0043	0.0003
88	0.0046	0.0043	0.0003
89	0.0046	0.0044	0.0003
90	0.0046	0.0044	0.0003
91	0.0047	0.0044	0.0003
92	0.0047	0.0044	0.0003
93	0.0047	0.0045	0.0003
94	0.0048	0.0045	0.0003
95	0.0048	0.0045	0.0003
96	0.0048	0.0045	0.0003
97	0.0048	0.0046	0.0003
98	0.0049	0.0046	0.0003
99	0.0049	0.0046	0.0003
100	0.0049	0.0046	0.0003
101	0.0050	0.0047	0.0003
102	0.0050	0.0047	0.0003
103	0.0050	0.0047	0.0003
104	0.0051	0.0048	0.0003
105	0.0051	0.0048	0.0003
106	0.0051	0.0048	0.0003
107	0.0052	0.0049	0.0003
108	0.0052	0.0049	0.0003
109	0.0052	0.0049	0.0003
110	0.0053	0.0050	0.0003
111	0.0053	0.0050	0.0003
112	0.0053	0.0050	0.0003
113	0.0054	0.0051	0.0003
114	0.0054	0.0051	0.0003
115	0.0055	0.0051	0.0003
116	0.0055	0.0052	0.0003
117	0.0055	0.0052	0.0003
118	0.0056	0.0052	0.0003
119	0.0056	0.0053	0.0003
120	0.0057	0.0053	0.0003
121	0.0057	0.0054	0.0003
122	0.0057	0.0054	0.0003
123	0.0058	0.0055	0.0003
124	0.0058	0.0055	0.0003
125	0.0059	0.0056	0.0003
126	0.0059	0.0056	0.0003
127	0.0060	0.0057	0.0003
128	0.0060	0.0057	0.0003
129	0.0061	0.0058	0.0004
130	0.0061	0.0058	0.0004
131	0.0062	0.0059	0.0004
132	0.0063	0.0059	0.0004
133	0.0063	0.0060	0.0004
134	0.0064	0.0060	0.0004
135	0.0065	0.0061	0.0004
136	0.0065	0.0061	0.0004
137	0.0066	0.0062	0.0004
138	0.0066	0.0063	0.0004
139	0.0067	0.0063	0.0004
140	0.0068	0.0064	0.0004
141	0.0069	0.0065	0.0004
142	0.0069	0.0065	0.0004
143	0.0070	0.0066	0.0004
144	0.0071	0.0067	0.0004
145	0.0093	0.0088	0.0005
146	0.0094	0.0088	0.0005
147	0.0095	0.0089	0.0005
148	0.0095	0.0090	0.0005
149	0.0097	0.0091	0.0006
150	0.0097	0.0092	0.0006
151	0.0099	0.0093	0.0006
152	0.0099	0.0094	0.0006
153	0.0101	0.0095	0.0006
154	0.0102	0.0096	0.0006
155	0.0103	0.0097	0.0006
156	0.0104	0.0098	0.0006
157	0.0106	0.0100	0.0006
158	0.0107	0.0101	0.0006
159	0.0109	0.0102	0.0006
160	0.0110	0.0103	0.0006
161	0.0112	0.0105	0.0006
162	0.0113	0.0106	0.0006
163	0.0115	0.0108	0.0007
164	0.0116	0.0109	0.0007
165	0.0118	0.0112	0.0007
166	0.0120	0.0113	0.0007
167	0.0122	0.0115	0.0007
168	0.0124	0.0117	0.0007

		AREAB1	
169	0.0127	0.0120	0.0007
170	0.0129	0.0121	0.0007
171	0.0132	0.0125	0.0008
172	0.0134	0.0126	0.0008
173	0.0138	0.0130	0.0008
174	0.0140	0.0132	0.0008
175	0.0145	0.0136	0.0008
176	0.0147	0.0139	0.0008
177	0.0153	0.0144	0.0009
178	0.0155	0.0147	0.0009
179	0.0162	0.0153	0.0009
180	0.0166	0.0156	0.0009
181	0.0174	0.0164	0.0010
182	0.0178	0.0168	0.0010
183	0.0189	0.0178	0.0011
184	0.0195	0.0184	0.0011
185	0.0114	0.0107	0.0007
186	0.0121	0.0115	0.0007
187	0.0141	0.0133	0.0008
188	0.0154	0.0145	0.0009
189	0.0191	0.0180	0.0011
190	0.0220	0.0208	0.0013
191	0.0334	0.0315	0.0019
192	0.0485	0.0457	0.0028
193	0.2099	0.0545	0.1553
194	0.0263	0.0248	0.0015
195	0.0170	0.0160	0.0010
196	0.0130	0.0123	0.0007
197	0.0202	0.0190	0.0012
198	0.0183	0.0173	0.0011
199	0.0170	0.0160	0.0010
200	0.0159	0.0150	0.0009
201	0.0150	0.0141	0.0009
202	0.0142	0.0134	0.0008
203	0.0136	0.0128	0.0008
204	0.0130	0.0123	0.0007
205	0.0125	0.0118	0.0007
206	0.0121	0.0114	0.0007
207	0.0117	0.0110	0.0007
208	0.0114	0.0107	0.0007
209	0.0111	0.0104	0.0006
210	0.0108	0.0101	0.0006
211	0.0105	0.0099	0.0006
212	0.0103	0.0097	0.0006
213	0.0100	0.0094	0.0006
214	0.0098	0.0092	0.0006
215	0.0096	0.0091	0.0006
216	0.0094	0.0089	0.0005
217	0.0071	0.0067	0.0004
218	0.0070	0.0066	0.0004
219	0.0068	0.0064	0.0004
220	0.0067	0.0063	0.0004
221	0.0066	0.0062	0.0004
222	0.0064	0.0061	0.0004
223	0.0063	0.0059	0.0004
224	0.0062	0.0058	0.0004
225	0.0061	0.0057	0.0003
226	0.0060	0.0056	0.0003
227	0.0059	0.0055	0.0003
228	0.0058	0.0054	0.0003
229	0.0057	0.0054	0.0003
230	0.0056	0.0053	0.0003
231	0.0055	0.0052	0.0003
232	0.0054	0.0051	0.0003
233	0.0054	0.0050	0.0003
234	0.0053	0.0050	0.0003
235	0.0052	0.0049	0.0003
236	0.0051	0.0048	0.0003
237	0.0051	0.0048	0.0003
238	0.0050	0.0047	0.0003
239	0.0049	0.0047	0.0003
240	0.0049	0.0046	0.0003
241	0.0048	0.0046	0.0003
242	0.0048	0.0045	0.0003
243	0.0047	0.0044	0.0003
244	0.0047	0.0044	0.0003
245	0.0046	0.0043	0.0003
246	0.0046	0.0043	0.0003
247	0.0045	0.0043	0.0003
248	0.0045	0.0042	0.0003
249	0.0044	0.0042	0.0003
250	0.0044	0.0041	0.0003
251	0.0043	0.0041	0.0002
252	0.0043	0.0040	0.0002

253	0.0043	0.0040	0.0002
254	0.0042	0.0040	0.0002
255	0.0042	0.0039	0.0002
256	0.0041	0.0039	0.0002
257	0.0041	0.0039	0.0002
258	0.0041	0.0038	0.0002
259	0.0040	0.0038	0.0002
260	0.0040	0.0038	0.0002
261	0.0040	0.0037	0.0002
262	0.0039	0.0037	0.0002
263	0.0039	0.0037	0.0002
264	0.0039	0.0036	0.0002
265	0.0038	0.0036	0.0002
266	0.0038	0.0036	0.0002
267	0.0038	0.0036	0.0002
268	0.0037	0.0035	0.0002
269	0.0037	0.0035	0.0002
270	0.0037	0.0035	0.0002
271	0.0037	0.0035	0.0002
272	0.0036	0.0034	0.0002
273	0.0036	0.0034	0.0002
274	0.0036	0.0034	0.0002
275	0.0036	0.0034	0.0002
276	0.0035	0.0033	0.0002
277	0.0035	0.0033	0.0002
278	0.0035	0.0033	0.0002
279	0.0035	0.0033	0.0002
280	0.0034	0.0032	0.0002
281	0.0034	0.0032	0.0002
282	0.0034	0.0032	0.0002
283	0.0034	0.0032	0.0002
284	0.0034	0.0032	0.0002
285	0.0033	0.0031	0.0002
286	0.0033	0.0031	0.0002
287	0.0033	0.0031	0.0002
288	0.0033	0.0031	0.0002

Total soil rain loss = 1.91(In)
Total effective rainfall = 0.27(In)
Peak flow rate in flood hydrograph = 13.55(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	0.00	Q				
0+10	0.0002	0.02	Q				
0+15	0.0003	0.03	Q				
0+20	0.0005	0.03	Q				
0+25	0.0007	0.03	Q				
0+30	0.0010	0.03	Q				
0+35	0.0012	0.03	Q				
0+40	0.0014	0.03	Q				
0+45	0.0016	0.03	Q				
0+50	0.0018	0.03	Q				
0+55	0.0021	0.03	Q				
1+ 0	0.0023	0.03	Q				
1+ 5	0.0025	0.03	Q				
1+10	0.0027	0.03	Q				
1+15	0.0029	0.03	Q				
1+20	0.0032	0.03	Q				
1+25	0.0034	0.03	Q				
1+30	0.0036	0.03	Q				
1+35	0.0038	0.03	Q				
1+40	0.0041	0.03	Q				
1+45	0.0043	0.03	Q				
1+50	0.0045	0.03	Q				
1+55	0.0047	0.03	Q				
2+ 0	0.0050	0.03	Q				
2+ 5	0.0052	0.03	Q				
2+10	0.0054	0.03	Q				
2+15	0.0057	0.03	Q				
2+20	0.0059	0.03	Q				
2+25	0.0061	0.03	Q				
2+30	0.0064	0.03	Q				
2+35	0.0066	0.03	Q				
2+40	0.0068	0.03	Q				
2+45	0.0071	0.03	Q				

2+50	0.0073	0.03	Q				
2+55	0.0075	0.03	Q				
3+ 0	0.0078	0.03	QV				
3+ 5	0.0080	0.03	QV				
3+10	0.0083	0.03	QV				
3+15	0.0085	0.04	QV				
3+20	0.0087	0.04	QV				
3+25	0.0090	0.04	QV				
3+30	0.0092	0.04	QV				
3+35	0.0095	0.04	QV				
3+40	0.0097	0.04	QV				
3+45	0.0100	0.04	QV				
3+50	0.0102	0.04	QV				
3+55	0.0105	0.04	QV				
4+ 0	0.0107	0.04	QV				
4+ 5	0.0110	0.04	QV				
4+10	0.0112	0.04	QV				
4+15	0.0115	0.04	QV				
4+20	0.0117	0.04	QV				
4+25	0.0120	0.04	QV				
4+30	0.0122	0.04	QV				
4+35	0.0125	0.04	QV				
4+40	0.0127	0.04	QV				
4+45	0.0130	0.04	QV				
4+50	0.0133	0.04	QV				
4+55	0.0135	0.04	QV				
5+ 0	0.0138	0.04	QV				
5+ 5	0.0141	0.04	QV				
5+10	0.0143	0.04	QV				
5+15	0.0146	0.04	QV				
5+20	0.0148	0.04	QV				
5+25	0.0151	0.04	QV				
5+30	0.0154	0.04	Q V				
5+35	0.0157	0.04	Q V				
5+40	0.0159	0.04	Q V				
5+45	0.0162	0.04	Q V				
5+50	0.0165	0.04	Q V				
5+55	0.0167	0.04	Q V				
6+ 0	0.0170	0.04	Q V				
6+ 5	0.0173	0.04	Q V				
6+10	0.0176	0.04	Q V				
6+15	0.0179	0.04	Q V				
6+20	0.0181	0.04	Q V				
6+25	0.0184	0.04	Q V				
6+30	0.0187	0.04	Q V				
6+35	0.0190	0.04	Q V				
6+40	0.0193	0.04	Q V				
6+45	0.0196	0.04	Q V				
6+50	0.0199	0.04	Q V				
6+55	0.0202	0.04	Q V				
7+ 0	0.0204	0.04	Q V				
7+ 5	0.0207	0.04	Q V				
7+10	0.0210	0.04	Q V				
7+15	0.0213	0.04	Q V				
7+20	0.0216	0.04	Q V				
7+25	0.0219	0.04	Q V				
7+30	0.0222	0.04	Q V				
7+35	0.0225	0.04	Q V				
7+40	0.0229	0.04	Q V				
7+45	0.0232	0.04	Q V				
7+50	0.0235	0.04	Q V				
7+55	0.0238	0.05	Q V				
8+ 0	0.0241	0.05	Q V				
8+ 5	0.0244	0.05	Q V				
8+10	0.0247	0.05	Q V				
8+15	0.0250	0.05	Q V				
8+20	0.0254	0.05	Q V				
8+25	0.0257	0.05	Q V				
8+30	0.0260	0.05	Q V				
8+35	0.0263	0.05	Q V				
8+40	0.0267	0.05	Q V				
8+45	0.0270	0.05	Q V				
8+50	0.0273	0.05	Q V				
8+55	0.0277	0.05	Q V				
9+ 0	0.0280	0.05	Q V				
9+ 5	0.0283	0.05	Q V				
9+10	0.0287	0.05	Q V				
9+15	0.0290	0.05	Q V				
9+20	0.0294	0.05	Q V				
9+25	0.0297	0.05	Q V				
9+30	0.0301	0.05	Q V				
9+35	0.0304	0.05	Q V				
9+40	0.0308	0.05	Q V				
9+45	0.0311	0.05	Q V				

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 9+50       0.0315      0.05  Q   V     |           |           |           |
 9+55       0.0319      0.05  Q   V     |           |           |           |
10+ 0       0.0322      0.05  Q   V     |           |           |           |
10+ 5       0.0326      0.05  Q   V     |           |           |           |
10+10       0.0330      0.05  Q   V     |           |           |           |
10+15       0.0334      0.05  Q   V     |           |           |           |
10+20       0.0337      0.06  Q   V     |           |           |           |
10+25       0.0341      0.06  Q   V     |           |           |           |
10+30       0.0345      0.06  Q   V     |           |           |           |
10+35       0.0349      0.06  Q   V     |           |           |           |
10+40       0.0353      0.06  Q   V     |           |           |           |
10+45       0.0357      0.06  Q   V     |           |           |           |
10+50       0.0361      0.06  Q   V     |           |           |           |
10+55       0.0365      0.06  Q   V     |           |           |           |
11+ 0       0.0369      0.06  Q   V     |           |           |           |
11+ 5       0.0373      0.06  Q   V     |           |           |           |
11+10       0.0377      0.06  Q   V     |           |           |           |
11+15       0.0381      0.06  Q   V     |           |           |           |
11+20       0.0385      0.06  Q    V    |           |           |           |
11+25       0.0390      0.06  Q    V    |           |           |           |
11+30       0.0394      0.06  Q    V    |           |           |           |
11+35       0.0398      0.06  Q    V    |           |           |           |
11+40       0.0403      0.06  Q    V    |           |           |           |
11+45       0.0407      0.06  Q    V    |           |           |           |
11+50       0.0412      0.07  Q    V    |           |           |           |
11+55       0.0416      0.07  Q    V    |           |           |           |
12+ 0       0.0421      0.07  Q    V    |           |           |           |
12+ 5       0.0426      0.07  Q    V    |           |           |           |
12+10       0.0431      0.08  Q    V    |           |           |           |
12+15       0.0437      0.09  Q    V    |           |           |           |
12+20       0.0443      0.09  Q    V    |           |           |           |
12+25       0.0449      0.09  Q    V    |           |           |           |
12+30       0.0456      0.09  Q    V    |           |           |           |
12+35       0.0462      0.09  Q     V   |           |           |           |
12+40       0.0468      0.09  Q     V   |           |           |           |
12+45       0.0475      0.09  Q     V   |           |           |           |
12+50       0.0481      0.10  Q     V   |           |           |           |
12+55       0.0488      0.10  Q     V   |           |           |           |
13+ 0       0.0495      0.10  Q     V   |           |           |           |
13+ 5       0.0502      0.10  Q     V   |           |           |           |
13+10       0.0509      0.10  Q     V   |           |           |           |
13+15       0.0515      0.10  Q     V   |           |           |           |
13+20       0.0523      0.10  Q     V   |           |           |           |
13+25       0.0530      0.10  Q     V   |           |           |           |
13+30       0.0537      0.11  Q     V   |           |           |           |
13+35       0.0544      0.11  Q      V  |           |           |           |
13+40       0.0552      0.11  Q      V  |           |           |           |
13+45       0.0559      0.11  Q      V  |           |           |           |
13+50       0.0567      0.11  Q      V  |           |           |           |
13+55       0.0575      0.11  Q      V  |           |           |           |
14+ 0       0.0583      0.12  Q      V  |           |           |           |
14+ 5       0.0591      0.12  Q      V  |           |           |           |
14+10       0.0599      0.12  Q      V  |           |           |           |
14+15       0.0607      0.12  Q      V  |           |           |           |
14+20       0.0616      0.12  Q       V |           |           |           |
14+25       0.0625      0.13  Q       V |           |           |           |
14+30       0.0634      0.13  Q       V |           |           |           |
14+35       0.0643      0.13  Q       V |           |           |           |
14+40       0.0652      0.14  Q       V |           |           |           |
14+45       0.0662      0.14  Q       V |           |           |           |
14+50       0.0672      0.14  Q       V |           |           |           |
14+55       0.0682      0.15  Q       V |           |           |           |
15+ 0       0.0692      0.15  Q        V|           |           |           |
15+ 5       0.0703      0.16  Q        V|           |           |           |
15+10       0.0714      0.16  Q        V|           |           |           |
15+15       0.0726      0.17  Q        V|           |           |           |
15+20       0.0738      0.18  Q        V|           |           |           |
15+25       0.0750      0.17  Q        V|           |           |           |
15+30       0.0759      0.14  Q        V|           |           |           |
15+35       0.0768      0.13  Q         V           |           |           |
15+40       0.0777      0.13  Q         V           |           |           |
15+45       0.0787      0.14  Q         V           |           |           |
15+50       0.0798      0.17  Q         V           |           |           |
15+55       0.0812      0.20  Q         V           |           |           |
16+ 0       0.0832      0.29  Q         V           |           |           |
16+ 5       0.1040      3.01  |      Q   |  V        |           |           |
16+10       0.1973     13.55  |          |           |    V Q    |           |
16+15       0.2380      5.91  |          |Q          |           |V          |
16+20       0.2552      2.50  |     Q    |           |           |  V        |
16+25       0.2636      1.21  | Q        |           |           |   V       |
16+30       0.2671      0.52  |Q         |           |           |   V       |
16+35       0.2695      0.35  Q          |           |           |    V      |
16+40       0.2715      0.29  Q          |           |           |    V      |
16+45       0.2728      0.19  Q          |           |           |    V      |
```

16+50	0.2738	0.15	Q				V
16+55	0.2748	0.14	Q				V
17+ 0	0.2757	0.13	Q				V
17+ 5	0.2766	0.13	Q				V
17+10	0.2774	0.12	Q				V
17+15	0.2782	0.12	Q				V
17+20	0.2790	0.11	Q				V
17+25	0.2798	0.11	Q				V
17+30	0.2805	0.11	Q				V
17+35	0.2812	0.10	Q				V
17+40	0.2819	0.10	Q				V
17+45	0.2826	0.10	Q				V
17+50	0.2833	0.10	Q				V
17+55	0.2839	0.09	Q				V
18+ 0	0.2846	0.09	Q				V
18+ 5	0.2852	0.09	Q				V
18+10	0.2857	0.08	Q				V
18+15	0.2862	0.07	Q				V
18+20	0.2867	0.07	Q				V
18+25	0.2871	0.07	Q				V
18+30	0.2875	0.06	Q				V
18+35	0.2880	0.06	Q				V
18+40	0.2884	0.06	Q				V
18+45	0.2888	0.06	Q				V
18+50	0.2892	0.06	Q				V
18+55	0.2896	0.06	Q				V
19+ 0	0.2900	0.06	Q				V
19+ 5	0.2904	0.06	Q				V
19+10	0.2907	0.05	Q				V
19+15	0.2911	0.05	Q				V
19+20	0.2915	0.05	Q				V
19+25	0.2918	0.05	Q				V
19+30	0.2922	0.05	Q				V
19+35	0.2925	0.05	Q				V
19+40	0.2929	0.05	Q				V
19+45	0.2932	0.05	Q				V
19+50	0.2936	0.05	Q				V
19+55	0.2939	0.05	Q				V
20+ 0	0.2942	0.05	Q				V
20+ 5	0.2945	0.05	Q				V
20+10	0.2949	0.05	Q				V
20+15	0.2952	0.05	Q				V
20+20	0.2955	0.05	Q				V
20+25	0.2958	0.04	Q				V
20+30	0.2961	0.04	Q				V
20+35	0.2964	0.04	Q				V
20+40	0.2967	0.04	Q				V
20+45	0.2970	0.04	Q				V
20+50	0.2973	0.04	Q				V
20+55	0.2976	0.04	Q				V
21+ 0	0.2979	0.04	Q				V
21+ 5	0.2981	0.04	Q				V
21+10	0.2984	0.04	Q				V
21+15	0.2987	0.04	Q				V
21+20	0.2990	0.04	Q				V
21+25	0.2993	0.04	Q				V
21+30	0.2995	0.04	Q				V
21+35	0.2998	0.04	Q				V
21+40	0.3001	0.04	Q				V
21+45	0.3003	0.04	Q				V
21+50	0.3006	0.04	Q				V
21+55	0.3008	0.04	Q				V
22+ 0	0.3011	0.04	Q				V
22+ 5	0.3014	0.04	Q				V
22+10	0.3016	0.04	Q				V
22+15	0.3019	0.04	Q				V
22+20	0.3021	0.04	Q				V
22+25	0.3024	0.04	Q				V
22+30	0.3026	0.04	Q				V
22+35	0.3028	0.04	Q				V
22+40	0.3031	0.04	Q				V
22+45	0.3033	0.03	Q				V
22+50	0.3036	0.03	Q				V
22+55	0.3038	0.03	Q				V
23+ 0	0.3040	0.03	Q				V
23+ 5	0.3043	0.03	Q				V
23+10	0.3045	0.03	Q				V
23+15	0.3047	0.03	Q				V
23+20	0.3050	0.03	Q				V
23+25	0.3052	0.03	Q				V
23+30	0.3054	0.03	Q				V
23+35	0.3056	0.03	Q				V
23+40	0.3059	0.03	Q				V
23+45	0.3061	0.03	Q				V

```
                                                AREAB1
   23+50       0.3063      0.03  Q         |          |          |        V|
   23+55       0.3065      0.03  Q         |          |          |        V|
   24+ 0       0.3067      0.03  Q         |          |          |        V|
-------------------------------------------------------------------------
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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 06/19/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA B.2
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
12.45	1	0.78
Rainfall data for year 2		
12.45	6	1.20
Rainfall data for year 2		
12.45	24	2.18
Rainfall data for year 100		
12.45	1	1.27
Rainfall data for year 100		
12.45	6	2.86
Rainfall data for year 100		
12.45	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
75.7	57.9	12.45	1.000	0.709	1.000	0.709

Area-averaged adjusted loss rate Fm (In/Hr) = 0.709

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
12.45	1.000	75.7	57.9	7.28	0.030

Area-averaged catchment yield fraction, Y = 0.030
Area-averaged low loss fraction, Yb = 0.970

++
Watercourse length = 1380.00(Ft.)
Length from concentration point to centroid = 320.00(Ft.)
Elevation difference along watercourse = 108.60(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 12.45(Ac.)
Catchment Lag time = 0.047 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 175.8361
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.709(In/Hr)
Average low loss rate fraction (Yb) = 0.970 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 12.45(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 150.57 (CFS))	
1	37.071	55.816
2	89.292	78.629
3	98.207	13.423
4	100.000	2.699

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3402	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4058	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5371	0.0178
18	0.5545	0.0174
19	0.5714	0.0170
20	0.5880	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114

		AREAB2
47	0.9463	0.0113
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3942	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051

		AREAB2
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9182	0.0039

		AREAB2
215	1.9221	0.0039
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0032	0.0001
2	0.0033	0.0032	0.0001
3	0.0033	0.0032	0.0001
4	0.0033	0.0032	0.0001
5	0.0033	0.0032	0.0001

		AREAB2	
6	0.0033	0.0032	0.0001
7	0.0033	0.0032	0.0001
8	0.0033	0.0032	0.0001
9	0.0033	0.0032	0.0001
10	0.0034	0.0032	0.0001
11	0.0034	0.0033	0.0001
12	0.0034	0.0033	0.0001
13	0.0034	0.0033	0.0001
14	0.0034	0.0033	0.0001
15	0.0034	0.0033	0.0001
16	0.0034	0.0033	0.0001
17	0.0034	0.0033	0.0001
18	0.0034	0.0033	0.0001
19	0.0035	0.0033	0.0001
20	0.0035	0.0034	0.0001
21	0.0035	0.0034	0.0001
22	0.0035	0.0034	0.0001
23	0.0035	0.0034	0.0001
24	0.0035	0.0034	0.0001
25	0.0035	0.0034	0.0001
26	0.0035	0.0034	0.0001
27	0.0035	0.0034	0.0001
28	0.0036	0.0034	0.0001
29	0.0036	0.0035	0.0001
30	0.0036	0.0035	0.0001
31	0.0036	0.0035	0.0001
32	0.0036	0.0035	0.0001
33	0.0036	0.0035	0.0001
34	0.0036	0.0035	0.0001
35	0.0036	0.0035	0.0001
36	0.0037	0.0035	0.0001
37	0.0037	0.0036	0.0001
38	0.0037	0.0036	0.0001
39	0.0037	0.0036	0.0001
40	0.0037	0.0036	0.0001
41	0.0037	0.0036	0.0001
42	0.0037	0.0036	0.0001
43	0.0038	0.0036	0.0001
44	0.0038	0.0037	0.0001
45	0.0038	0.0037	0.0001
46	0.0038	0.0037	0.0001
47	0.0038	0.0037	0.0001
48	0.0038	0.0037	0.0001
49	0.0038	0.0037	0.0001
50	0.0039	0.0037	0.0001
51	0.0039	0.0038	0.0001
52	0.0039	0.0038	0.0001
53	0.0039	0.0038	0.0001
54	0.0039	0.0038	0.0001
55	0.0039	0.0038	0.0001
56	0.0040	0.0038	0.0001
57	0.0040	0.0039	0.0001
58	0.0040	0.0039	0.0001
59	0.0040	0.0039	0.0001
60	0.0040	0.0039	0.0001
61	0.0040	0.0039	0.0001
62	0.0041	0.0039	0.0001
63	0.0041	0.0040	0.0001
64	0.0041	0.0040	0.0001
65	0.0041	0.0040	0.0001
66	0.0041	0.0040	0.0001
67	0.0041	0.0040	0.0001
68	0.0042	0.0040	0.0001
69	0.0042	0.0041	0.0001
70	0.0042	0.0041	0.0001
71	0.0042	0.0041	0.0001
72	0.0042	0.0041	0.0001
73	0.0043	0.0041	0.0001
74	0.0043	0.0042	0.0001
75	0.0043	0.0042	0.0001
76	0.0043	0.0042	0.0001
77	0.0044	0.0042	0.0001
78	0.0044	0.0042	0.0001
79	0.0044	0.0043	0.0001
80	0.0044	0.0043	0.0001
81	0.0044	0.0043	0.0001
82	0.0045	0.0043	0.0001
83	0.0045	0.0043	0.0001
84	0.0045	0.0044	0.0001
85	0.0045	0.0044	0.0001
86	0.0045	0.0044	0.0001
87	0.0046	0.0044	0.0001
88	0.0046	0.0045	0.0001
89	0.0046	0.0045	0.0001

		AREAB2	
90	0.0046	0.0045	0.0001
91	0.0047	0.0045	0.0001
92	0.0047	0.0046	0.0001
93	0.0047	0.0046	0.0001
94	0.0048	0.0046	0.0001
95	0.0048	0.0046	0.0001
96	0.0048	0.0047	0.0001
97	0.0048	0.0047	0.0001
98	0.0049	0.0047	0.0001
99	0.0049	0.0048	0.0001
100	0.0049	0.0048	0.0001
101	0.0050	0.0048	0.0001
102	0.0050	0.0048	0.0001
103	0.0050	0.0049	0.0002
104	0.0051	0.0049	0.0002
105	0.0051	0.0049	0.0002
106	0.0051	0.0050	0.0002
107	0.0052	0.0050	0.0002
108	0.0052	0.0050	0.0002
109	0.0052	0.0051	0.0002
110	0.0053	0.0051	0.0002
111	0.0053	0.0051	0.0002
112	0.0053	0.0052	0.0002
113	0.0054	0.0052	0.0002
114	0.0054	0.0052	0.0002
115	0.0055	0.0053	0.0002
116	0.0055	0.0053	0.0002
117	0.0055	0.0054	0.0002
118	0.0056	0.0054	0.0002
119	0.0056	0.0055	0.0002
120	0.0057	0.0055	0.0002
121	0.0057	0.0055	0.0002
122	0.0057	0.0056	0.0002
123	0.0058	0.0056	0.0002
124	0.0058	0.0057	0.0002
125	0.0059	0.0057	0.0002
126	0.0059	0.0058	0.0002
127	0.0060	0.0058	0.0002
128	0.0060	0.0059	0.0002
129	0.0061	0.0059	0.0002
130	0.0061	0.0060	0.0002
131	0.0062	0.0060	0.0002
132	0.0063	0.0061	0.0002
133	0.0063	0.0062	0.0002
134	0.0064	0.0062	0.0002
135	0.0065	0.0063	0.0002
136	0.0065	0.0063	0.0002
137	0.0066	0.0064	0.0002
138	0.0066	0.0064	0.0002
139	0.0067	0.0065	0.0002
140	0.0068	0.0066	0.0002
141	0.0069	0.0067	0.0002
142	0.0069	0.0067	0.0002
143	0.0070	0.0068	0.0002
144	0.0071	0.0069	0.0002
145	0.0093	0.0090	0.0003
146	0.0094	0.0091	0.0003
147	0.0095	0.0092	0.0003
148	0.0095	0.0093	0.0003
149	0.0097	0.0094	0.0003
150	0.0097	0.0094	0.0003
151	0.0099	0.0096	0.0003
152	0.0099	0.0097	0.0003
153	0.0101	0.0098	0.0003
154	0.0102	0.0099	0.0003
155	0.0103	0.0100	0.0003
156	0.0104	0.0101	0.0003
157	0.0106	0.0103	0.0003
158	0.0107	0.0104	0.0003
159	0.0109	0.0105	0.0003
160	0.0110	0.0106	0.0003
161	0.0112	0.0108	0.0003
162	0.0113	0.0109	0.0003
163	0.0115	0.0111	0.0003
164	0.0116	0.0113	0.0003
165	0.0118	0.0115	0.0004
166	0.0120	0.0116	0.0004
167	0.0122	0.0119	0.0004
168	0.0124	0.0120	0.0004
169	0.0127	0.0123	0.0004
170	0.0129	0.0125	0.0004
171	0.0132	0.0128	0.0004
172	0.0134	0.0130	0.0004
173	0.0138	0.0134	0.0004

174	0.0140	0.0136	0.0004
175	0.0145	0.0140	0.0004
176	0.0147	0.0143	0.0004
177	0.0153	0.0148	0.0005
178	0.0155	0.0151	0.0005
179	0.0162	0.0157	0.0005
180	0.0166	0.0161	0.0005
181	0.0174	0.0169	0.0005
182	0.0178	0.0173	0.0005
183	0.0189	0.0183	0.0006
184	0.0195	0.0189	0.0006
185	0.0114	0.0111	0.0003
186	0.0121	0.0118	0.0004
187	0.0141	0.0137	0.0004
188	0.0154	0.0149	0.0005
189	0.0191	0.0186	0.0006
190	0.0220	0.0214	0.0007
191	0.0334	0.0324	0.0010
192	0.0485	0.0471	0.0015
193	0.2099	0.0591	0.1508
194	0.0263	0.0255	0.0008
195	0.0170	0.0165	0.0005
196	0.0130	0.0126	0.0004
197	0.0202	0.0196	0.0006
198	0.0183	0.0178	0.0005
199	0.0170	0.0164	0.0005
200	0.0159	0.0154	0.0005
201	0.0150	0.0145	0.0004
202	0.0142	0.0138	0.0004
203	0.0136	0.0132	0.0004
204	0.0130	0.0126	0.0004
205	0.0125	0.0122	0.0004
206	0.0121	0.0117	0.0004
207	0.0117	0.0114	0.0004
208	0.0114	0.0110	0.0003
209	0.0111	0.0107	0.0003
210	0.0108	0.0104	0.0003
211	0.0105	0.0102	0.0003
212	0.0103	0.0099	0.0003
213	0.0100	0.0097	0.0003
214	0.0098	0.0095	0.0003
215	0.0096	0.0093	0.0003
216	0.0094	0.0091	0.0003
217	0.0071	0.0069	0.0002
218	0.0070	0.0068	0.0002
219	0.0068	0.0066	0.0002
220	0.0067	0.0065	0.0002
221	0.0066	0.0064	0.0002
222	0.0064	0.0062	0.0002
223	0.0063	0.0061	0.0002
224	0.0062	0.0060	0.0002
225	0.0061	0.0059	0.0002
226	0.0060	0.0058	0.0002
227	0.0059	0.0057	0.0002
228	0.0058	0.0056	0.0002
229	0.0057	0.0055	0.0002
230	0.0056	0.0054	0.0002
231	0.0055	0.0053	0.0002
232	0.0054	0.0053	0.0002
233	0.0054	0.0052	0.0002
234	0.0053	0.0051	0.0002
235	0.0052	0.0051	0.0002
236	0.0051	0.0050	0.0002
237	0.0051	0.0049	0.0002
238	0.0050	0.0049	0.0002
239	0.0049	0.0048	0.0001
240	0.0049	0.0047	0.0001
241	0.0048	0.0047	0.0001
242	0.0048	0.0046	0.0001
243	0.0047	0.0046	0.0001
244	0.0047	0.0045	0.0001
245	0.0046	0.0045	0.0001
246	0.0046	0.0044	0.0001
247	0.0045	0.0044	0.0001
248	0.0045	0.0043	0.0001
249	0.0044	0.0043	0.0001
250	0.0044	0.0042	0.0001
251	0.0043	0.0042	0.0001
252	0.0043	0.0042	0.0001
253	0.0043	0.0041	0.0001
254	0.0042	0.0041	0.0001
255	0.0042	0.0040	0.0001
256	0.0041	0.0040	0.0001
257	0.0041	0.0040	0.0001

258	0.0041	0.0039	0.0001
259	0.0040	0.0039	0.0001
260	0.0040	0.0039	0.0001
261	0.0040	0.0038	0.0001
262	0.0039	0.0038	0.0001
263	0.0039	0.0038	0.0001
264	0.0039	0.0037	0.0001
265	0.0038	0.0037	0.0001
266	0.0038	0.0037	0.0001
267	0.0038	0.0037	0.0001
268	0.0037	0.0036	0.0001
269	0.0037	0.0036	0.0001
270	0.0037	0.0036	0.0001
271	0.0037	0.0036	0.0001
272	0.0036	0.0035	0.0001
273	0.0036	0.0035	0.0001
274	0.0036	0.0035	0.0001
275	0.0036	0.0035	0.0001
276	0.0035	0.0034	0.0001
277	0.0035	0.0034	0.0001
278	0.0035	0.0034	0.0001
279	0.0035	0.0034	0.0001
280	0.0034	0.0033	0.0001
281	0.0034	0.0033	0.0001
282	0.0034	0.0033	0.0001
283	0.0034	0.0033	0.0001
284	0.0034	0.0033	0.0001
285	0.0033	0.0032	0.0001
286	0.0033	0.0032	0.0001
287	0.0033	0.0032	0.0001
288	0.0033	0.0032	0.0001

Total soil rain loss = 1.97(In)
Total effective rainfall = 0.21(In)
Peak flow rate in flood hydrograph = 11.92(CFS)

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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	0.0001	0.01	Q	|	|	|	|
0+15	0.0002	0.01	Q	|	|	|	|
0+20	0.0003	0.01	Q	|	|	|	|
0+25	0.0004	0.01	Q	|	|	|	|
0+30	0.0005	0.01	Q	|	|	|	|
0+35	0.0006	0.01	Q	|	|	|	|
0+40	0.0007	0.02	Q	|	|	|	|
0+45	0.0008	0.02	Q	|	|	|	|
0+50	0.0009	0.02	Q	|	|	|	|
0+55	0.0011	0.02	Q	|	|	|	|
1+ 0	0.0012	0.02	Q	|	|	|	|
1+ 5	0.0013	0.02	Q	|	|	|	|
1+10	0.0014	0.02	Q	|	|	|	|
1+15	0.0015	0.02	Q	|	|	|	|
1+20	0.0016	0.02	Q	|	|	|	|
1+25	0.0017	0.02	Q	|	|	|	|
1+30	0.0018	0.02	Q	|	|	|	|
1+35	0.0019	0.02	Q	|	|	|	|
1+40	0.0020	0.02	Q	|	|	|	|
1+45	0.0021	0.02	Q	|	|	|	|
1+50	0.0022	0.02	Q	|	|	|	|
1+55	0.0023	0.02	Q	|	|	|	|
2+ 0	0.0024	0.02	Q	|	|	|	|
2+ 5	0.0025	0.02	Q	|	|	|	|
2+10	0.0027	0.02	Q	|	|	|	|
2+15	0.0028	0.02	Q	|	|	|	|
2+20	0.0029	0.02	Q	|	|	|	|
2+25	0.0030	0.02	Q	|	|	|	|
2+30	0.0031	0.02	Q	|	|	|	|
2+35	0.0032	0.02	Q	|	|	|	|
2+40	0.0033	0.02	Q	|	|	|	|
2+45	0.0034	0.02	Q	|	|	|	|
2+50	0.0035	0.02	Q	|	|	|	|
2+55	0.0037	0.02	Q	|	|	|	|
3+ 0	0.0038	0.02	Q	|	|	|	|
3+ 5	0.0039	0.02	Q	|	|	|	|
3+10	0.0040	0.02	Q	|	|	|	|

3+15	0.0041	0.02	Q				
3+20	0.0042	0.02	Q				
3+25	0.0043	0.02	Q				
3+30	0.0045	0.02	Q				
3+35	0.0046	0.02	Q				
3+40	0.0047	0.02	Q				
3+45	0.0048	0.02	Q				
3+50	0.0049	0.02	Q				
3+55	0.0051	0.02	Q				
4+ 0	0.0052	0.02	Q				
4+ 5	0.0053	0.02	Q				
4+10	0.0054	0.02	Q				
4+15	0.0055	0.02	QV				
4+20	0.0056	0.02	QV				
4+25	0.0058	0.02	QV				
4+30	0.0059	0.02	QV				
4+35	0.0060	0.02	QV				
4+40	0.0061	0.02	QV				
4+45	0.0063	0.02	QV				
4+50	0.0064	0.02	QV				
4+55	0.0065	0.02	QV				
5+ 0	0.0066	0.02	QV				
5+ 5	0.0068	0.02	QV				
5+10	0.0069	0.02	QV				
5+15	0.0070	0.02	QV				
5+20	0.0071	0.02	QV				
5+25	0.0073	0.02	QV				
5+30	0.0074	0.02	QV				
5+35	0.0075	0.02	QV				
5+40	0.0076	0.02	QV				
5+45	0.0078	0.02	QV				
5+50	0.0079	0.02	QV				
5+55	0.0080	0.02	QV				
6+ 0	0.0082	0.02	QV				
6+ 5	0.0083	0.02	QV				
6+10	0.0084	0.02	QV				
6+15	0.0086	0.02	QV				
6+20	0.0087	0.02	QV				
6+25	0.0088	0.02	QV				
6+30	0.0090	0.02	QV				
6+35	0.0091	0.02	QV				
6+40	0.0092	0.02	QV				
6+45	0.0094	0.02	QV				
6+50	0.0095	0.02	QV				
6+55	0.0097	0.02	QV				
7+ 0	0.0098	0.02	QV				
7+ 5	0.0099	0.02	QV				
7+10	0.0101	0.02	QV				
7+15	0.0102	0.02	QV				
7+20	0.0104	0.02	QV				
7+25	0.0105	0.02	QV				
7+30	0.0107	0.02	QV				
7+35	0.0108	0.02	QV				
7+40	0.0109	0.02	Q V				
7+45	0.0111	0.02	Q V				
7+50	0.0112	0.02	Q V				
7+55	0.0114	0.02	Q V				
8+ 0	0.0115	0.02	Q V				
8+ 5	0.0117	0.02	Q V				
8+10	0.0118	0.02	Q V				
8+15	0.0120	0.02	Q V				
8+20	0.0121	0.02	Q V				
8+25	0.0123	0.02	Q V				
8+30	0.0124	0.02	Q V				
8+35	0.0126	0.02	Q V				
8+40	0.0128	0.02	Q V				
8+45	0.0129	0.02	Q V				
8+50	0.0131	0.02	Q V				
8+55	0.0132	0.02	Q V				
9+ 0	0.0134	0.02	Q V				
9+ 5	0.0136	0.02	Q V				
9+10	0.0137	0.02	Q V				
9+15	0.0139	0.02	Q V				
9+20	0.0140	0.02	Q V				
9+25	0.0142	0.02	Q V				
9+30	0.0144	0.02	Q V				
9+35	0.0145	0.02	Q V				
9+40	0.0147	0.02	Q V				
9+45	0.0149	0.02	Q V				
9+50	0.0151	0.03	Q V				
9+55	0.0152	0.03	Q V				
10+ 0	0.0154	0.03	Q V				
10+ 5	0.0156	0.03	Q V				
10+10	0.0158	0.03	Q V				

10+15	0.0159	0.03	Q V				
10+20	0.0161	0.03	Q V				
10+25	0.0163	0.03	Q V				
10+30	0.0165	0.03	Q V				
10+35	0.0167	0.03	Q V				
10+40	0.0169	0.03	Q V				
10+45	0.0171	0.03	Q V				
10+50	0.0172	0.03	Q V				
10+55	0.0174	0.03	Q V				
11+ 0	0.0176	0.03	Q V				
11+ 5	0.0178	0.03	Q V				
11+10	0.0180	0.03	Q V				
11+15	0.0182	0.03	Q V				
11+20	0.0184	0.03	Q V				
11+25	0.0186	0.03	Q V				
11+30	0.0188	0.03	Q V				
11+35	0.0190	0.03	Q V				
11+40	0.0192	0.03	Q V				
11+45	0.0195	0.03	Q V				
11+50	0.0197	0.03	Q V				
11+55	0.0199	0.03	Q V				
12+ 0	0.0201	0.03	Q V				
12+ 5	0.0204	0.04	Q V				
12+10	0.0206	0.04	Q V				
12+15	0.0209	0.04	Q V				
12+20	0.0212	0.04	Q V				
12+25	0.0215	0.04	Q V				
12+30	0.0218	0.04	Q V				
12+35	0.0221	0.04	Q V				
12+40	0.0224	0.04	Q V				
12+45	0.0227	0.05	Q V				
12+50	0.0231	0.05	Q V				
12+55	0.0234	0.05	Q V				
13+ 0	0.0237	0.05	Q V				
13+ 5	0.0240	0.05	Q V				
13+10	0.0244	0.05	Q V				
13+15	0.0247	0.05	Q V				
13+20	0.0250	0.05	Q V				
13+25	0.0254	0.05	Q V				
13+30	0.0257	0.05	Q V				
13+35	0.0261	0.05	Q V				
13+40	0.0264	0.05	Q V				
13+45	0.0268	0.05	Q V				
13+50	0.0272	0.05	Q V				
13+55	0.0275	0.05	Q V				
14+ 0	0.0279	0.06	Q V				
14+ 5	0.0283	0.06	Q V				
14+10	0.0287	0.06	Q V				
14+15	0.0291	0.06	Q V				
14+20	0.0295	0.06	Q V				
14+25	0.0299	0.06	Q V				
14+30	0.0304	0.06	Q V				
14+35	0.0308	0.06	Q V				
14+40	0.0312	0.07	Q V				
14+45	0.0317	0.07	Q V				
14+50	0.0322	0.07	Q V				
14+55	0.0327	0.07	Q V				
15+ 0	0.0332	0.07	Q V				
15+ 5	0.0337	0.08	Q V				
15+10	0.0342	0.08	Q V				
15+15	0.0348	0.08	Q V				
15+20	0.0354	0.09	Q V				
15+25	0.0359	0.07	Q V				
15+30	0.0363	0.06	Q V				
15+35	0.0367	0.06	Q V				
15+40	0.0372	0.06	Q V				
15+45	0.0377	0.07	Q V				
15+50	0.0383	0.09	Q V				
15+55	0.0391	0.12	Q V				
16+ 0	0.0403	0.17	Q V				
16+ 5	0.0991	8.55	|	QV			
16+10	0.1812	11.92	|		Q	V	
16+15	0.1958	2.12	Q |			V	
16+20	0.1991	0.48	Q			V	
16+25	0.1996	0.07	Q			V	
16+30	0.2002	0.08	Q			V	
16+35	0.2008	0.08	Q			V	
16+40	0.2013	0.08	Q			V	
16+45	0.2018	0.07	Q			V	
16+50	0.2023	0.07	Q			V	
16+55	0.2027	0.06	Q			V	
17+ 0	0.2031	0.06	Q			V	
17+ 5	0.2035	0.06	Q			V	
17+10	0.2039	0.06	Q			V	

17+15	0.2043	0.05	Q	|	|	|	V |
17+20	0.2046	0.05	Q	|	|	|	V |
17+25	0.2050	0.05	Q	|	|	|	V |
17+30	0.2053	0.05	Q	|	|	|	V |
17+35	0.2057	0.05	Q	|	|	|	V |
17+40	0.2060	0.05	Q	|	|	|	V |
17+45	0.2063	0.05	Q	|	|	|	V |
17+50	0.2066	0.05	Q	|	|	|	V |
17+55	0.2069	0.04	Q	|	|	|	V |
18+ 0	0.2072	0.04	Q	|	|	|	V |
18+ 5	0.2075	0.04	Q	|	|	|	V |
18+10	0.2077	0.03	Q	|	|	|	V |
18+15	0.2079	0.03	Q	|	|	|	V |
18+20	0.2081	0.03	Q	|	|	|	V |
18+25	0.2083	0.03	Q	|	|	|	V |
18+30	0.2085	0.03	Q	|	|	|	V |
18+35	0.2087	0.03	Q	|	|	|	V |
18+40	0.2089	0.03	Q	|	|	|	V |
18+45	0.2091	0.03	Q	|	|	|	V |
18+50	0.2093	0.03	Q	|	|	|	V |
18+55	0.2095	0.03	Q	|	|	|	V |
19+ 0	0.2097	0.03	Q	|	|	|	V |
19+ 5	0.2099	0.03	Q	|	|	|	V |
19+10	0.2100	0.03	Q	|	|	|	V |
19+15	0.2102	0.03	Q	|	|	|	V |
19+20	0.2104	0.02	Q	|	|	|	V |
19+25	0.2106	0.02	Q	|	|	|	V |
19+30	0.2107	0.02	Q	|	|	|	V |
19+35	0.2109	0.02	Q	|	|	|	V |
19+40	0.2110	0.02	Q	|	|	|	V |
19+45	0.2112	0.02	Q	|	|	|	V |
19+50	0.2114	0.02	Q	|	|	|	V |
19+55	0.2115	0.02	Q	|	|	|	V |
20+ 0	0.2117	0.02	Q	|	|	|	V |
20+ 5	0.2118	0.02	Q	|	|	|	V |
20+10	0.2120	0.02	Q	|	|	|	V |
20+15	0.2121	0.02	Q	|	|	|	V |
20+20	0.2123	0.02	Q	|	|	|	V|
20+25	0.2124	0.02	Q	|	|	|	V|
20+30	0.2126	0.02	Q	|	|	|	V|
20+35	0.2127	0.02	Q	|	|	|	V|
20+40	0.2128	0.02	Q	|	|	|	V|
20+45	0.2130	0.02	Q	|	|	|	V|
20+50	0.2131	0.02	Q	|	|	|	V|
20+55	0.2132	0.02	Q	|	|	|	V|
21+ 0	0.2134	0.02	Q	|	|	|	V|
21+ 5	0.2135	0.02	Q	|	|	|	V|
21+10	0.2136	0.02	Q	|	|	|	V|
21+15	0.2138	0.02	Q	|	|	|	V|
21+20	0.2139	0.02	Q	|	|	|	V|
21+25	0.2140	0.02	Q	|	|	|	V|
21+30	0.2142	0.02	Q	|	|	|	V|
21+35	0.2143	0.02	Q	|	|	|	V|
21+40	0.2144	0.02	Q	|	|	|	V|
21+45	0.2145	0.02	Q	|	|	|	V|
21+50	0.2147	0.02	Q	|	|	|	V|
21+55	0.2148	0.02	Q	|	|	|	V|
22+ 0	0.2149	0.02	Q	|	|	|	V|
22+ 5	0.2150	0.02	Q	|	|	|	V|
22+10	0.2151	0.02	Q	|	|	|	V|
22+15	0.2153	0.02	Q	|	|	|	V|
22+20	0.2154	0.02	Q	|	|	|	V|
22+25	0.2155	0.02	Q	|	|	|	V|
22+30	0.2156	0.02	Q	|	|	|	V|
22+35	0.2157	0.02	Q	|	|	|	V|
22+40	0.2158	0.02	Q	|	|	|	V|
22+45	0.2159	0.02	Q	|	|	|	V|
22+50	0.2161	0.02	Q	|	|	|	V|
22+55	0.2162	0.02	Q	|	|	|	V|
23+ 0	0.2163	0.02	Q	|	|	|	V|
23+ 5	0.2164	0.02	Q	|	|	|	V|
23+10	0.2165	0.02	Q	|	|	|	V|
23+15	0.2166	0.02	Q	|	|	|	V|
23+20	0.2167	0.02	Q	|	|	|	V|
23+25	0.2168	0.02	Q	|	|	|	V|
23+30	0.2169	0.02	Q	|	|	|	V|
23+35	0.2170	0.02	Q	|	|	|	V|
23+40	0.2171	0.02	Q	|	|	|	V|
23+45	0.2172	0.02	Q	|	|	|	V|
23+50	0.2173	0.02	Q	|	|	|	V|
23+55	0.2175	0.01	Q	|	|	|	V|
24+ 0	0.2176	0.01	Q	|	|	|	V|

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA C
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
13.87	1	0.78
Rainfall data for year 2		
13.87	6	1.20
Rainfall data for year 2		
13.87	24	2.18
Rainfall data for year 100		
13.87	1	1.27
Rainfall data for year 100		
13.87	6	2.86
Rainfall data for year 100		
13.87	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
65.2	45.2	13.87	1.000	0.864	1.000	0.864

Area-averaged adjusted loss rate Fm (In/Hr) = 0.864

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
13.87	1.000	65.2	45.2	10.90	0.000

Area-averaged catchment yield fraction, Y = 0.000
Area-averaged low loss fraction, Yb = 1.000

++
Watercourse length = 1690.00(Ft.)
Length from concentration point to centroid = 755.00(Ft.)
Elevation difference along watercourse = 102.90(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 13.87(Ac.)
Catchment Lag time = 0.074 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 111.9005
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.864(In/Hr)
Average low loss rate fraction (Yb) = 1.000 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 13.87(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 167.74 (CFS))	
1	18.635	31.258
2	74.821	94.247
3	91.420	27.842
4	97.414	10.055
5	98.973	2.615
6	99.728	1.267
7	100.000	0.456

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3401	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4057	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5370	0.0178
18	0.5544	0.0174
19	0.5714	0.0170
20	0.5879	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120
42	0.8889	0.0118
43	0.9006	0.0117

		AREAC
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9463	0.0113
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9903	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.1999	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2556	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3146	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3335	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3941	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4514	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4735	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053
126	1.5270	0.0052
127	1.5322	0.0052

		AREAC
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7633	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8631	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039

		AREAC
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9182	0.0039
215	1.9221	0.0039
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9971	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0404	0.0036
248	2.0440	0.0036
249	2.0475	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0616	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0033	0.0000
2	0.0033	0.0033	0.0000

		AREAC	
3	0.0033	0.0033	0.0000
4	0.0033	0.0033	0.0000
5	0.0033	0.0033	0.0000
6	0.0033	0.0033	0.0000
7	0.0033	0.0033	0.0000
8	0.0033	0.0033	0.0000
9	0.0033	0.0033	0.0000
10	0.0034	0.0034	0.0000
11	0.0034	0.0034	0.0000
12	0.0034	0.0034	0.0000
13	0.0034	0.0034	0.0000
14	0.0034	0.0034	0.0000
15	0.0034	0.0034	0.0000
16	0.0034	0.0034	0.0000
17	0.0034	0.0034	0.0000
18	0.0034	0.0034	0.0000
19	0.0035	0.0035	0.0000
20	0.0035	0.0035	0.0000
21	0.0035	0.0035	0.0000
22	0.0035	0.0035	0.0000
23	0.0035	0.0035	0.0000
24	0.0035	0.0035	0.0000
25	0.0035	0.0035	0.0000
26	0.0035	0.0035	0.0000
27	0.0035	0.0035	0.0000
28	0.0036	0.0036	0.0000
29	0.0036	0.0036	0.0000
30	0.0036	0.0036	0.0000
31	0.0036	0.0036	0.0000
32	0.0036	0.0036	0.0000
33	0.0036	0.0036	0.0000
34	0.0036	0.0036	0.0000
35	0.0036	0.0036	0.0000
36	0.0037	0.0037	0.0000
37	0.0037	0.0037	0.0000
38	0.0037	0.0037	0.0000
39	0.0037	0.0037	0.0000
40	0.0037	0.0037	0.0000
41	0.0037	0.0037	0.0000
42	0.0037	0.0037	0.0000
43	0.0038	0.0038	0.0000
44	0.0038	0.0038	0.0000
45	0.0038	0.0038	0.0000
46	0.0038	0.0038	0.0000
47	0.0038	0.0038	0.0000
48	0.0038	0.0038	0.0000
49	0.0038	0.0038	0.0000
50	0.0039	0.0039	0.0000
51	0.0039	0.0039	0.0000
52	0.0039	0.0039	0.0000
53	0.0039	0.0039	0.0000
54	0.0039	0.0039	0.0000
55	0.0039	0.0039	0.0000
56	0.0040	0.0040	0.0000
57	0.0040	0.0040	0.0000
58	0.0040	0.0040	0.0000
59	0.0040	0.0040	0.0000
60	0.0040	0.0040	0.0000
61	0.0040	0.0040	0.0000
62	0.0041	0.0041	0.0000
63	0.0041	0.0041	0.0000
64	0.0041	0.0041	0.0000
65	0.0041	0.0041	0.0000
66	0.0041	0.0041	0.0000
67	0.0041	0.0041	0.0000
68	0.0042	0.0042	0.0000
69	0.0042	0.0042	0.0000
70	0.0042	0.0042	0.0000
71	0.0042	0.0042	0.0000
72	0.0042	0.0042	0.0000
73	0.0043	0.0043	0.0000
74	0.0043	0.0043	0.0000
75	0.0043	0.0043	0.0000
76	0.0043	0.0043	0.0000
77	0.0044	0.0044	0.0000
78	0.0044	0.0044	0.0000
79	0.0044	0.0044	0.0000
80	0.0044	0.0044	0.0000
81	0.0044	0.0044	0.0000
82	0.0045	0.0045	0.0000
83	0.0045	0.0045	0.0000
84	0.0045	0.0045	0.0000
85	0.0045	0.0045	0.0000
86	0.0045	0.0045	0.0000

87	0.0046	0.0046	0.0000
88	0.0046	0.0046	0.0000
89	0.0046	0.0046	0.0000
90	0.0046	0.0046	0.0000
91	0.0047	0.0047	0.0000
92	0.0047	0.0047	0.0000
93	0.0047	0.0047	0.0000
94	0.0048	0.0048	0.0000
95	0.0048	0.0048	0.0000
96	0.0048	0.0048	0.0000
97	0.0048	0.0048	0.0000
98	0.0049	0.0049	0.0000
99	0.0049	0.0049	0.0000
100	0.0049	0.0049	0.0000
101	0.0050	0.0050	0.0000
102	0.0050	0.0050	0.0000
103	0.0050	0.0050	0.0000
104	0.0051	0.0051	0.0000
105	0.0051	0.0051	0.0000
106	0.0051	0.0051	0.0000
107	0.0052	0.0052	0.0000
108	0.0052	0.0052	0.0000
109	0.0052	0.0052	0.0000
110	0.0053	0.0053	0.0000
111	0.0053	0.0053	0.0000
112	0.0053	0.0053	0.0000
113	0.0054	0.0054	0.0000
114	0.0054	0.0054	0.0000
115	0.0055	0.0055	0.0000
116	0.0055	0.0055	0.0000
117	0.0055	0.0055	0.0000
118	0.0056	0.0056	0.0000
119	0.0056	0.0056	0.0000
120	0.0057	0.0057	0.0000
121	0.0057	0.0057	0.0000
122	0.0057	0.0057	0.0000
123	0.0058	0.0058	0.0000
124	0.0058	0.0058	0.0000
125	0.0059	0.0059	0.0000
126	0.0059	0.0059	0.0000
127	0.0060	0.0060	0.0000
128	0.0060	0.0060	0.0000
129	0.0061	0.0061	0.0000
130	0.0061	0.0061	0.0000
131	0.0062	0.0062	0.0000
132	0.0063	0.0063	0.0000
133	0.0063	0.0063	0.0000
134	0.0064	0.0064	0.0000
135	0.0065	0.0065	0.0000
136	0.0065	0.0065	0.0000
137	0.0066	0.0066	0.0000
138	0.0066	0.0066	0.0000
139	0.0067	0.0067	0.0000
140	0.0068	0.0068	0.0000
141	0.0069	0.0069	0.0000
142	0.0069	0.0069	0.0000
143	0.0070	0.0070	0.0000
144	0.0071	0.0071	0.0000
145	0.0093	0.0093	0.0000
146	0.0094	0.0094	0.0000
147	0.0095	0.0095	0.0000
148	0.0095	0.0095	0.0000
149	0.0097	0.0097	0.0000
150	0.0097	0.0097	0.0000
151	0.0099	0.0099	0.0000
152	0.0099	0.0099	0.0000
153	0.0101	0.0101	0.0000
154	0.0102	0.0102	0.0000
155	0.0103	0.0103	0.0000
156	0.0104	0.0104	0.0000
157	0.0106	0.0106	0.0000
158	0.0107	0.0107	0.0000
159	0.0109	0.0109	0.0000
160	0.0110	0.0110	0.0000
161	0.0112	0.0112	0.0000
162	0.0113	0.0113	0.0000
163	0.0115	0.0115	0.0000
164	0.0116	0.0116	0.0000
165	0.0118	0.0118	0.0000
166	0.0120	0.0120	0.0000
167	0.0122	0.0122	0.0000
168	0.0124	0.0124	0.0000
169	0.0127	0.0127	0.0000
170	0.0129	0.0129	0.0000

		AREAC	
171	0.0132	0.0132	0.0000
172	0.0134	0.0134	0.0000
173	0.0138	0.0138	0.0000
174	0.0140	0.0140	0.0000
175	0.0145	0.0145	0.0000
176	0.0147	0.0147	0.0000
177	0.0153	0.0153	0.0000
178	0.0155	0.0155	0.0000
179	0.0162	0.0162	0.0000
180	0.0166	0.0166	0.0000
181	0.0174	0.0174	0.0000
182	0.0178	0.0178	0.0000
183	0.0189	0.0189	0.0000
184	0.0195	0.0195	0.0000
185	0.0114	0.0114	0.0000
186	0.0121	0.0121	0.0000
187	0.0141	0.0141	0.0000
188	0.0154	0.0154	0.0000
189	0.0191	0.0191	0.0000
190	0.0220	0.0220	0.0000
191	0.0334	0.0334	0.0000
192	0.0485	0.0485	0.0000
193	0.2099	0.0720	0.1379
194	0.0263	0.0263	0.0000
195	0.0170	0.0170	0.0000
196	0.0130	0.0130	0.0000
197	0.0202	0.0202	0.0000
198	0.0183	0.0183	0.0000
199	0.0170	0.0170	0.0000
200	0.0159	0.0159	0.0000
201	0.0150	0.0150	0.0000
202	0.0142	0.0142	0.0000
203	0.0136	0.0136	0.0000
204	0.0130	0.0130	0.0000
205	0.0125	0.0125	0.0000
206	0.0121	0.0121	0.0000
207	0.0117	0.0117	0.0000
208	0.0114	0.0114	0.0000
209	0.0111	0.0111	0.0000
210	0.0108	0.0108	0.0000
211	0.0105	0.0105	0.0000
212	0.0103	0.0103	0.0000
213	0.0100	0.0100	0.0000
214	0.0098	0.0098	0.0000
215	0.0096	0.0096	0.0000
216	0.0094	0.0094	0.0000
217	0.0071	0.0071	0.0000
218	0.0070	0.0070	0.0000
219	0.0068	0.0068	0.0000
220	0.0067	0.0067	0.0000
221	0.0066	0.0066	0.0000
222	0.0064	0.0064	0.0000
223	0.0063	0.0063	0.0000
224	0.0062	0.0062	0.0000
225	0.0061	0.0061	0.0000
226	0.0060	0.0060	0.0000
227	0.0059	0.0059	0.0000
228	0.0058	0.0058	0.0000
229	0.0057	0.0057	0.0000
230	0.0056	0.0056	0.0000
231	0.0055	0.0055	0.0000
232	0.0054	0.0054	0.0000
233	0.0054	0.0054	0.0000
234	0.0053	0.0053	0.0000
235	0.0052	0.0052	0.0000
236	0.0051	0.0051	0.0000
237	0.0051	0.0051	0.0000
238	0.0050	0.0050	0.0000
239	0.0049	0.0049	0.0000
240	0.0049	0.0049	0.0000
241	0.0048	0.0048	0.0000
242	0.0048	0.0048	0.0000
243	0.0047	0.0047	0.0000
244	0.0047	0.0047	0.0000
245	0.0046	0.0046	0.0000
246	0.0046	0.0046	0.0000
247	0.0045	0.0045	0.0000
248	0.0045	0.0045	0.0000
249	0.0044	0.0044	0.0000
250	0.0044	0.0044	0.0000
251	0.0043	0.0043	0.0000
252	0.0043	0.0043	0.0000
253	0.0043	0.0043	0.0000
254	0.0042	0.0042	0.0000

255	0.0042	0.0042	0.0000
256	0.0041	0.0041	0.0000
257	0.0041	0.0041	0.0000
258	0.0041	0.0041	0.0000
259	0.0040	0.0040	0.0000
260	0.0040	0.0040	0.0000
261	0.0040	0.0040	0.0000
262	0.0039	0.0039	0.0000
263	0.0039	0.0039	0.0000
264	0.0039	0.0039	0.0000
265	0.0038	0.0038	0.0000
266	0.0038	0.0038	0.0000
267	0.0038	0.0038	0.0000
268	0.0037	0.0037	0.0000
269	0.0037	0.0037	0.0000
270	0.0037	0.0037	0.0000
271	0.0037	0.0037	0.0000
272	0.0036	0.0036	0.0000
273	0.0036	0.0036	0.0000
274	0.0036	0.0036	0.0000
275	0.0036	0.0036	0.0000
276	0.0035	0.0035	0.0000
277	0.0035	0.0035	0.0000
278	0.0035	0.0035	0.0000
279	0.0035	0.0035	0.0000
280	0.0034	0.0034	0.0000
281	0.0034	0.0034	0.0000
282	0.0034	0.0034	0.0000
283	0.0034	0.0034	0.0000
284	0.0034	0.0034	0.0000
285	0.0033	0.0033	0.0000
286	0.0033	0.0033	0.0000
287	0.0033	0.0033	0.0000
288	0.0033	0.0033	0.0000

Total soil rain loss = 2.04(In)
Total effective rainfall = 0.14(In)
Peak flow rate in flood hydrograph = 13.00(CFS)

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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	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0000	0.00	Q	|	|	|	|
0+40	0.0000	0.00	Q	|	|	|	|
0+45	0.0000	0.00	Q	|	|	|	|
0+50	0.0000	0.00	Q	|	|	|	|
0+55	0.0000	0.00	Q	|	|	|	|
1+ 0	0.0000	0.00	Q	|	|	|	|
1+ 5	0.0000	0.00	Q	|	|	|	|
1+10	0.0000	0.00	Q	|	|	|	|
1+15	0.0000	0.00	Q	|	|	|	|
1+20	0.0000	0.00	Q	|	|	|	|
1+25	0.0000	0.00	Q	|	|	|	|
1+30	0.0000	0.00	Q	|	|	|	|
1+35	0.0000	0.00	Q	|	|	|	|
1+40	0.0000	0.00	Q	|	|	|	|
1+45	0.0000	0.00	Q	|	|	|	|
1+50	0.0000	0.00	Q	|	|	|	|
1+55	0.0000	0.00	Q	|	|	|	|
2+ 0	0.0000	0.00	Q	|	|	|	|
2+ 5	0.0000	0.00	Q	|	|	|	|
2+10	0.0000	0.00	Q	|	|	|	|
2+15	0.0000	0.00	Q	|	|	|	|
2+20	0.0000	0.00	Q	|	|	|	|
2+25	0.0000	0.00	Q	|	|	|	|
2+30	0.0000	0.00	Q	|	|	|	|
2+35	0.0000	0.00	Q	|	|	|	|
2+40	0.0000	0.00	Q	|	|	|	|
2+45	0.0000	0.00	Q	|	|	|	|
2+50	0.0000	0.00	Q	|	|	|	|
2+55	0.0000	0.00	Q	|	|	|	|

3+ 0	0.0000	0.00	Q				
3+ 5	0.0000	0.00	Q				
3+10	0.0000	0.00	Q				
3+15	0.0000	0.00	Q				
3+20	0.0000	0.00	Q				
3+25	0.0000	0.00	Q				
3+30	0.0000	0.00	Q				
3+35	0.0000	0.00	Q				
3+40	0.0000	0.00	Q				
3+45	0.0000	0.00	Q				
3+50	0.0000	0.00	Q				
3+55	0.0000	0.00	Q				
4+ 0	0.0000	0.00	Q				
4+ 5	0.0000	0.00	Q				
4+10	0.0000	0.00	Q				
4+15	0.0000	0.00	Q				
4+20	0.0000	0.00	Q				
4+25	0.0000	0.00	Q				
4+30	0.0000	0.00	Q				
4+35	0.0000	0.00	Q				
4+40	0.0000	0.00	Q				
4+45	0.0000	0.00	Q				
4+50	0.0000	0.00	Q				
4+55	0.0000	0.00	Q				
5+ 0	0.0000	0.00	Q				
5+ 5	0.0000	0.00	Q				
5+10	0.0000	0.00	Q				
5+15	0.0000	0.00	Q				
5+20	0.0000	0.00	Q				
5+25	0.0000	0.00	Q				
5+30	0.0000	0.00	Q				
5+35	0.0000	0.00	Q				
5+40	0.0000	0.00	Q				
5+45	0.0000	0.00	Q				
5+50	0.0000	0.00	Q				
5+55	0.0000	0.00	Q				
6+ 0	0.0000	0.00	Q				
6+ 5	0.0000	0.00	Q				
6+10	0.0000	0.00	Q				
6+15	0.0000	0.00	Q				
6+20	0.0000	0.00	Q				
6+25	0.0000	0.00	Q				
6+30	0.0000	0.00	Q				
6+35	0.0000	0.00	Q				
6+40	0.0000	0.00	Q				
6+45	0.0000	0.00	Q				
6+50	0.0000	0.00	Q				
6+55	0.0000	0.00	Q				
7+ 0	0.0000	0.00	Q				
7+ 5	0.0000	0.00	Q				
7+10	0.0000	0.00	Q				
7+15	0.0000	0.00	Q				
7+20	0.0000	0.00	Q				
7+25	0.0000	0.00	Q				
7+30	0.0000	0.00	Q				
7+35	0.0000	0.00	Q				
7+40	0.0000	0.00	Q				
7+45	0.0000	0.00	Q				
7+50	0.0000	0.00	Q				
7+55	0.0000	0.00	Q				
8+ 0	0.0000	0.00	Q				
8+ 5	0.0000	0.00	Q				
8+10	0.0000	0.00	Q				
8+15	0.0000	0.00	Q				
8+20	0.0000	0.00	Q				
8+25	0.0000	0.00	Q				
8+30	0.0000	0.00	Q				
8+35	0.0000	0.00	Q				
8+40	0.0000	0.00	Q				
8+45	0.0000	0.00	Q				
8+50	0.0000	0.00	Q				
8+55	0.0000	0.00	Q				
9+ 0	0.0000	0.00	Q				
9+ 5	0.0000	0.00	Q				
9+10	0.0000	0.00	Q				
9+15	0.0000	0.00	Q				
9+20	0.0000	0.00	Q				
9+25	0.0000	0.00	Q				
9+30	0.0000	0.00	Q				
9+35	0.0000	0.00	Q				
9+40	0.0000	0.00	Q				
9+45	0.0000	0.00	Q				
9+50	0.0000	0.00	Q				
9+55	0.0000	0.00	Q				

10+ 0	0.0000	0.00	Q					
10+ 5	0.0000	0.00	Q					
10+10	0.0000	0.00	Q					
10+15	0.0000	0.00	Q					
10+20	0.0000	0.00	Q					
10+25	0.0000	0.00	Q					
10+30	0.0000	0.00	Q					
10+35	0.0000	0.00	Q					
10+40	0.0000	0.00	Q					
10+45	0.0000	0.00	Q					
10+50	0.0000	0.00	Q					
10+55	0.0000	0.00	Q					
11+ 0	0.0000	0.00	Q					
11+ 5	0.0000	0.00	Q					
11+10	0.0000	0.00	Q					
11+15	0.0000	0.00	Q					
11+20	0.0000	0.00	Q					
11+25	0.0000	0.00	Q					
11+30	0.0000	0.00	Q					
11+35	0.0000	0.00	Q					
11+40	0.0000	0.00	Q					
11+45	0.0000	0.00	Q					
11+50	0.0000	0.00	Q					
11+55	0.0000	0.00	Q					
12+ 0	0.0000	0.00	Q					
12+ 5	0.0000	0.00	Q					
12+10	0.0000	0.00	Q					
12+15	0.0000	0.00	Q					
12+20	0.0000	0.00	Q					
12+25	0.0000	0.00	Q					
12+30	0.0000	0.00	Q					
12+35	0.0000	0.00	Q					
12+40	0.0000	0.00	Q					
12+45	0.0000	0.00	Q					
12+50	0.0000	0.00	Q					
12+55	0.0000	0.00	Q					
13+ 0	0.0000	0.00	Q					
13+ 5	0.0000	0.00	Q					
13+10	0.0000	0.00	Q					
13+15	0.0000	0.00	Q					
13+20	0.0000	0.00	Q					
13+25	0.0000	0.00	Q					
13+30	0.0000	0.00	Q					
13+35	0.0000	0.00	Q					
13+40	0.0000	0.00	Q					
13+45	0.0000	0.00	Q					
13+50	0.0000	0.00	Q					
13+55	0.0000	0.00	Q					
14+ 0	0.0000	0.00	Q					
14+ 5	0.0000	0.00	Q					
14+10	0.0000	0.00	Q					
14+15	0.0000	0.00	Q					
14+20	0.0000	0.00	Q					
14+25	0.0000	0.00	Q					
14+30	0.0000	0.00	Q					
14+35	0.0000	0.00	Q					
14+40	0.0000	0.00	Q					
14+45	0.0000	0.00	Q					
14+50	0.0000	0.00	Q					
14+55	0.0000	0.00	Q					
15+ 0	0.0000	0.00	Q					
15+ 5	0.0000	0.00	Q					
15+10	0.0000	0.00	Q					
15+15	0.0000	0.00	Q					
15+20	0.0000	0.00	Q					
15+25	0.0000	0.00	Q					
15+30	0.0000	0.00	Q					
15+35	0.0000	0.00	Q					
15+40	0.0000	0.00	Q					
15+45	0.0000	0.00	Q					
15+50	0.0000	0.00	Q					
15+55	0.0000	0.00	Q					
16+ 0	0.0000	0.00	Q					
16+ 5	0.0297	4.31	| VQ					
16+10	0.1192	13.00	|			Q V		
16+15	0.1456	3.84	| Q				V	
16+20	0.1552	1.39	Q |				V	
16+25	0.1577	0.36	Q					V|
16+30	0.1589	0.17	Q					V|
16+35	0.1593	0.06	Q					V|
16+40	0.1593	0.00	Q					V|
16+45	0.1593	0.00	Q					V|
16+50	0.1593	0.00	Q					V|
16+55	0.1593	0.00	Q					V|

17+ 0	0.1593	0.00	Q	|	|	|	V|
17+ 5	0.1593	0.00	Q	|	|	|	V|
17+10	0.1593	0.00	Q	|	|	|	V|
17+15	0.1593	0.00	Q	|	|	|	V|
17+20	0.1593	0.00	Q	|	|	|	V|
17+25	0.1593	0.00	Q	|	|	|	V|
17+30	0.1593	0.00	Q	|	|	|	V|
17+35	0.1593	0.00	Q	|	|	|	V|
17+40	0.1593	0.00	Q	|	|	|	V|
17+45	0.1593	0.00	Q	|	|	|	V|
17+50	0.1593	0.00	Q	|	|	|	V|
17+55	0.1593	0.00	Q	|	|	|	V|
18+ 0	0.1593	0.00	Q	|	|	|	V|
18+ 5	0.1593	0.00	Q	|	|	|	V|
18+10	0.1593	0.00	Q	|	|	|	V|
18+15	0.1593	0.00	Q	|	|	|	V|
18+20	0.1593	0.00	Q	|	|	|	V|
18+25	0.1593	0.00	Q	|	|	|	V|
18+30	0.1593	0.00	Q	|	|	|	V|
18+35	0.1593	0.00	Q	|	|	|	V|
18+40	0.1593	0.00	Q	|	|	|	V|
18+45	0.1593	0.00	Q	|	|	|	V|
18+50	0.1593	0.00	Q	|	|	|	V|
18+55	0.1593	0.00	Q	|	|	|	V|
19+ 0	0.1593	0.00	Q	|	|	|	V|
19+ 5	0.1593	0.00	Q	|	|	|	V|
19+10	0.1593	0.00	Q	|	|	|	V|
19+15	0.1593	0.00	Q	|	|	|	V|
19+20	0.1593	0.00	Q	|	|	|	V|
19+25	0.1593	0.00	Q	|	|	|	V|
19+30	0.1593	0.00	Q	|	|	|	V|
19+35	0.1593	0.00	Q	|	|	|	V|
19+40	0.1593	0.00	Q	|	|	|	V|
19+45	0.1593	0.00	Q	|	|	|	V|
19+50	0.1593	0.00	Q	|	|	|	V|
19+55	0.1593	0.00	Q	|	|	|	V|
20+ 0	0.1593	0.00	Q	|	|	|	V|
20+ 5	0.1593	0.00	Q	|	|	|	V|
20+10	0.1593	0.00	Q	|	|	|	V|
20+15	0.1593	0.00	Q	|	|	|	V|
20+20	0.1593	0.00	Q	|	|	|	V|
20+25	0.1593	0.00	Q	|	|	|	V|
20+30	0.1593	0.00	Q	|	|	|	V|
20+35	0.1593	0.00	Q	|	|	|	V|
20+40	0.1593	0.00	Q	|	|	|	V|
20+45	0.1593	0.00	Q	|	|	|	V|
20+50	0.1593	0.00	Q	|	|	|	V|
20+55	0.1593	0.00	Q	|	|	|	V|
21+ 0	0.1593	0.00	Q	|	|	|	V|
21+ 5	0.1593	0.00	Q	|	|	|	V|
21+10	0.1593	0.00	Q	|	|	|	V|
21+15	0.1593	0.00	Q	|	|	|	V|
21+20	0.1593	0.00	Q	|	|	|	V|
21+25	0.1593	0.00	Q	|	|	|	V|
21+30	0.1593	0.00	Q	|	|	|	V|
21+35	0.1593	0.00	Q	|	|	|	V|
21+40	0.1593	0.00	Q	|	|	|	V|
21+45	0.1593	0.00	Q	|	|	|	V|
21+50	0.1593	0.00	Q	|	|	|	V|
21+55	0.1593	0.00	Q	|	|	|	V|
22+ 0	0.1593	0.00	Q	|	|	|	V|
22+ 5	0.1593	0.00	Q	|	|	|	V|
22+10	0.1593	0.00	Q	|	|	|	V|
22+15	0.1593	0.00	Q	|	|	|	V|
22+20	0.1593	0.00	Q	|	|	|	V|
22+25	0.1593	0.00	Q	|	|	|	V|
22+30	0.1593	0.00	Q	|	|	|	V|
22+35	0.1593	0.00	Q	|	|	|	V|
22+40	0.1593	0.00	Q	|	|	|	V|
22+45	0.1593	0.00	Q	|	|	|	V|
22+50	0.1593	0.00	Q	|	|	|	V|
22+55	0.1593	0.00	Q	|	|	|	V|
23+ 0	0.1593	0.00	Q	|	|	|	V|
23+ 5	0.1593	0.00	Q	|	|	|	V|
23+10	0.1593	0.00	Q	|	|	|	V|
23+15	0.1593	0.00	Q	|	|	|	V|
23+20	0.1593	0.00	Q	|	|	|	V|
23+25	0.1593	0.00	Q	|	|	|	V|
23+30	0.1593	0.00	Q	|	|	|	V|
23+35	0.1593	0.00	Q	|	|	|	V|
23+40	0.1593	0.00	Q	|	|	|	V|
23+45	0.1593	0.00	Q	|	|	|	V|
23+50	0.1593	0.00	Q	|	|	|	V|
23+55	0.1593	0.00	Q	|	|	|	V|

```
                                                                AREAC
   24+ 0       0.1593      0.00  Q          |          |          |        V|
-------------------------------------------------------------------------------
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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

Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 1999, Version 6.0

Study date 02/26/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA D
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10	4.42	1	0.78
Rainfall data for year 2	4.42	6	1.20
Rainfall data for year 2	4.42	24	2.18
Rainfall data for year 100	4.42	1	1.27
Rainfall data for year 100	4.42	6	2.86
Rainfall data for year 100	4.42	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
71.9	53.3	4.42	1.000	0.769	1.000	0.769

Area-averaged adjusted loss rate Fm (In/Hr) = 0.769

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
4.42	1.000	71.9	53.3	8.77	0.009

Area-averaged catchment yield fraction, Y = 0.009
Area-averaged low loss fraction, Yb = 0.991

++
Watercourse length = 1155.00(Ft.)
Length from concentration point to centroid = 490.00(Ft.)
Elevation difference along watercourse = 108.50(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 4.42(Ac.)
Catchment Lag time = 0.050 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 165.4908
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.769(In/Hr)
Average low loss rate fraction (Yb) = 0.991 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 4.42(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 53.45 (CFS))	
1	34.589	18.489
2	87.698	28.389
3	97.742	5.369
4	99.504	0.941
5	100.000	0.265

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2100	0.2100
2	0.2585	0.0485
3	0.2919	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3594	0.0191
7	0.3764	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4190	0.0130
11	0.4311	0.0122
12	0.4425	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5372	0.0178
18	0.5546	0.0174
19	0.5715	0.0170
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6509	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115

		AREAD
46	0.9351	0.0114
47	0.9464	0.0113
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052

		AREAD
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039

		AREAD
214	1.9183	0.0039
215	1.9221	0.0039
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0032	0.0000
2	0.0033	0.0032	0.0000
3	0.0033	0.0033	0.0000
4	0.0033	0.0033	0.0000

5	0.0033	0.0033	0.0000
6	0.0033	0.0033	0.0000
7	0.0033	0.0033	0.0000
8	0.0033	0.0033	0.0000
9	0.0033	0.0033	0.0000
10	0.0034	0.0033	0.0000
11	0.0034	0.0033	0.0000
12	0.0034	0.0033	0.0000
13	0.0034	0.0034	0.0000
14	0.0034	0.0034	0.0000
15	0.0034	0.0034	0.0000
16	0.0034	0.0034	0.0000
17	0.0034	0.0034	0.0000
18	0.0034	0.0034	0.0000
19	0.0035	0.0034	0.0000
20	0.0035	0.0034	0.0000
21	0.0035	0.0034	0.0000
22	0.0035	0.0035	0.0000
23	0.0035	0.0035	0.0000
24	0.0035	0.0035	0.0000
25	0.0035	0.0035	0.0000
26	0.0035	0.0035	0.0000
27	0.0035	0.0035	0.0000
28	0.0036	0.0035	0.0000
29	0.0036	0.0035	0.0000
30	0.0036	0.0035	0.0000
31	0.0036	0.0036	0.0000
32	0.0036	0.0036	0.0000
33	0.0036	0.0036	0.0000
34	0.0036	0.0036	0.0000
35	0.0036	0.0036	0.0000
36	0.0037	0.0036	0.0000
37	0.0037	0.0036	0.0000
38	0.0037	0.0036	0.0000
39	0.0037	0.0037	0.0000
40	0.0037	0.0037	0.0000
41	0.0037	0.0037	0.0000
42	0.0037	0.0037	0.0000
43	0.0038	0.0037	0.0000
44	0.0038	0.0037	0.0000
45	0.0038	0.0038	0.0000
46	0.0038	0.0038	0.0000
47	0.0038	0.0038	0.0000
48	0.0038	0.0038	0.0000
49	0.0038	0.0038	0.0000
50	0.0039	0.0038	0.0000
51	0.0039	0.0038	0.0000
52	0.0039	0.0039	0.0000
53	0.0039	0.0039	0.0000
54	0.0039	0.0039	0.0000
55	0.0039	0.0039	0.0000
56	0.0040	0.0039	0.0000
57	0.0040	0.0039	0.0000
58	0.0040	0.0039	0.0000
59	0.0040	0.0040	0.0000
60	0.0040	0.0040	0.0000
61	0.0040	0.0040	0.0000
62	0.0041	0.0040	0.0000
63	0.0041	0.0040	0.0000
64	0.0041	0.0041	0.0000
65	0.0041	0.0041	0.0000
66	0.0041	0.0041	0.0000
67	0.0041	0.0041	0.0000
68	0.0042	0.0041	0.0000
69	0.0042	0.0041	0.0000
70	0.0042	0.0042	0.0000
71	0.0042	0.0042	0.0000
72	0.0042	0.0042	0.0000
73	0.0043	0.0042	0.0000
74	0.0043	0.0042	0.0000
75	0.0043	0.0043	0.0000
76	0.0043	0.0043	0.0000
77	0.0044	0.0043	0.0000
78	0.0044	0.0043	0.0000
79	0.0044	0.0044	0.0000
80	0.0044	0.0044	0.0000
81	0.0044	0.0044	0.0000
82	0.0045	0.0044	0.0000
83	0.0045	0.0044	0.0000
84	0.0045	0.0045	0.0000
85	0.0045	0.0045	0.0000
86	0.0045	0.0045	0.0000
87	0.0046	0.0045	0.0000
88	0.0046	0.0046	0.0000

89	0.0046	0.0046	0.0000
90	0.0046	0.0046	0.0000
91	0.0047	0.0046	0.0000
92	0.0047	0.0047	0.0000
93	0.0047	0.0047	0.0000
94	0.0048	0.0047	0.0000
95	0.0048	0.0047	0.0000
96	0.0048	0.0048	0.0000
97	0.0048	0.0048	0.0000
98	0.0049	0.0048	0.0000
99	0.0049	0.0049	0.0000
100	0.0049	0.0049	0.0000
101	0.0050	0.0049	0.0000
102	0.0050	0.0049	0.0000
103	0.0050	0.0050	0.0000
104	0.0051	0.0050	0.0000
105	0.0051	0.0050	0.0000
106	0.0051	0.0051	0.0000
107	0.0052	0.0051	0.0000
108	0.0052	0.0051	0.0000
109	0.0052	0.0052	0.0000
110	0.0053	0.0052	0.0000
111	0.0053	0.0053	0.0000
112	0.0053	0.0053	0.0000
113	0.0054	0.0053	0.0000
114	0.0054	0.0054	0.0000
115	0.0055	0.0054	0.0000
116	0.0055	0.0054	0.0000
117	0.0055	0.0055	0.0001
118	0.0056	0.0055	0.0001
119	0.0056	0.0056	0.0001
120	0.0057	0.0056	0.0001
121	0.0057	0.0057	0.0001
122	0.0057	0.0057	0.0001
123	0.0058	0.0058	0.0001
124	0.0058	0.0058	0.0001
125	0.0059	0.0058	0.0001
126	0.0059	0.0059	0.0001
127	0.0060	0.0060	0.0001
128	0.0060	0.0060	0.0001
129	0.0061	0.0061	0.0001
130	0.0061	0.0061	0.0001
131	0.0062	0.0062	0.0001
132	0.0063	0.0062	0.0001
133	0.0063	0.0063	0.0001
134	0.0064	0.0063	0.0001
135	0.0065	0.0064	0.0001
136	0.0065	0.0064	0.0001
137	0.0066	0.0065	0.0001
138	0.0066	0.0066	0.0001
139	0.0067	0.0067	0.0001
140	0.0068	0.0067	0.0001
141	0.0069	0.0068	0.0001
142	0.0069	0.0069	0.0001
143	0.0070	0.0070	0.0001
144	0.0071	0.0070	0.0001
145	0.0093	0.0092	0.0001
146	0.0094	0.0093	0.0001
147	0.0095	0.0094	0.0001
148	0.0095	0.0095	0.0001
149	0.0097	0.0096	0.0001
150	0.0097	0.0097	0.0001
151	0.0099	0.0098	0.0001
152	0.0099	0.0099	0.0001
153	0.0101	0.0100	0.0001
154	0.0102	0.0101	0.0001
155	0.0103	0.0102	0.0001
156	0.0104	0.0103	0.0001
157	0.0106	0.0105	0.0001
158	0.0107	0.0106	0.0001
159	0.0109	0.0108	0.0001
160	0.0110	0.0109	0.0001
161	0.0112	0.0111	0.0001
162	0.0113	0.0112	0.0001
163	0.0115	0.0114	0.0001
164	0.0116	0.0115	0.0001
165	0.0118	0.0117	0.0001
166	0.0120	0.0119	0.0001
167	0.0122	0.0121	0.0001
168	0.0124	0.0123	0.0001
169	0.0127	0.0126	0.0001
170	0.0129	0.0127	0.0001
171	0.0132	0.0131	0.0001
172	0.0134	0.0133	0.0001

173	0.0138	0.0137	0.0001
174	0.0140	0.0139	0.0001
175	0.0145	0.0143	0.0001
176	0.0147	0.0146	0.0001
177	0.0152	0.0151	0.0001
178	0.0155	0.0154	0.0001
179	0.0162	0.0160	0.0001
180	0.0166	0.0164	0.0002
181	0.0174	0.0172	0.0002
182	0.0178	0.0177	0.0002
183	0.0189	0.0187	0.0002
184	0.0195	0.0193	0.0002
185	0.0114	0.0113	0.0001
186	0.0122	0.0120	0.0001
187	0.0141	0.0140	0.0001
188	0.0154	0.0152	0.0001
189	0.0191	0.0190	0.0002
190	0.0220	0.0218	0.0002
191	0.0334	0.0331	0.0003
192	0.0485	0.0481	0.0004
193	0.2100	0.0641	0.1459
194	0.0263	0.0261	0.0002
195	0.0170	0.0169	0.0002
196	0.0130	0.0129	0.0001
197	0.0202	0.0200	0.0002
198	0.0183	0.0182	0.0002
199	0.0170	0.0168	0.0002
200	0.0159	0.0157	0.0001
201	0.0150	0.0148	0.0001
202	0.0142	0.0141	0.0001
203	0.0136	0.0135	0.0001
204	0.0130	0.0129	0.0001
205	0.0125	0.0124	0.0001
206	0.0121	0.0120	0.0001
207	0.0117	0.0116	0.0001
208	0.0114	0.0113	0.0001
209	0.0111	0.0110	0.0001
210	0.0108	0.0107	0.0001
211	0.0105	0.0104	0.0001
212	0.0103	0.0102	0.0001
213	0.0100	0.0099	0.0001
214	0.0098	0.0097	0.0001
215	0.0096	0.0095	0.0001
216	0.0094	0.0093	0.0001
217	0.0071	0.0071	0.0001
218	0.0070	0.0069	0.0001
219	0.0068	0.0068	0.0001
220	0.0067	0.0066	0.0001
221	0.0066	0.0065	0.0001
222	0.0064	0.0064	0.0001
223	0.0063	0.0062	0.0001
224	0.0062	0.0061	0.0001
225	0.0061	0.0060	0.0001
226	0.0060	0.0059	0.0001
227	0.0059	0.0058	0.0001
228	0.0058	0.0057	0.0001
229	0.0057	0.0056	0.0001
230	0.0056	0.0055	0.0001
231	0.0055	0.0055	0.0000
232	0.0054	0.0054	0.0000
233	0.0054	0.0053	0.0000
234	0.0053	0.0052	0.0000
235	0.0052	0.0052	0.0000
236	0.0051	0.0051	0.0000
237	0.0051	0.0050	0.0000
238	0.0050	0.0050	0.0000
239	0.0049	0.0049	0.0000
240	0.0049	0.0048	0.0000
241	0.0048	0.0048	0.0000
242	0.0048	0.0047	0.0000
243	0.0047	0.0047	0.0000
244	0.0047	0.0046	0.0000
245	0.0046	0.0046	0.0000
246	0.0046	0.0045	0.0000
247	0.0045	0.0045	0.0000
248	0.0045	0.0044	0.0000
249	0.0044	0.0044	0.0000
250	0.0044	0.0043	0.0000
251	0.0043	0.0043	0.0000
252	0.0043	0.0043	0.0000
253	0.0043	0.0042	0.0000
254	0.0042	0.0042	0.0000
255	0.0042	0.0041	0.0000
256	0.0041	0.0041	0.0000

257	0.0041	0.0041	0.0000
258	0.0041	0.0040	0.0000
259	0.0040	0.0040	0.0000
260	0.0040	0.0040	0.0000
261	0.0040	0.0039	0.0000
262	0.0039	0.0039	0.0000
263	0.0039	0.0039	0.0000
264	0.0039	0.0038	0.0000
265	0.0038	0.0038	0.0000
266	0.0038	0.0038	0.0000
267	0.0038	0.0037	0.0000
268	0.0037	0.0037	0.0000
269	0.0037	0.0037	0.0000
270	0.0037	0.0037	0.0000
271	0.0037	0.0036	0.0000
272	0.0036	0.0036	0.0000
273	0.0036	0.0036	0.0000
274	0.0036	0.0036	0.0000
275	0.0036	0.0035	0.0000
276	0.0035	0.0035	0.0000
277	0.0035	0.0035	0.0000
278	0.0035	0.0035	0.0000
279	0.0035	0.0034	0.0000
280	0.0034	0.0034	0.0000
281	0.0034	0.0034	0.0000
282	0.0034	0.0034	0.0000
283	0.0034	0.0033	0.0000
284	0.0034	0.0033	0.0000
285	0.0033	0.0033	0.0000
286	0.0033	0.0033	0.0000
287	0.0033	0.0033	0.0000
288	0.0033	0.0032	0.0000

Total soil rain loss = 2.02(In)
Total effective rainfall = 0.16(In)
Peak flow rate in flood hydrograph = 4.15(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	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0000	0.00	Q				
0+25	0.0000	0.00	Q				
0+30	0.0001	0.00	Q				
0+35	0.0001	0.00	Q				
0+40	0.0001	0.00	Q				
0+45	0.0001	0.00	Q				
0+50	0.0001	0.00	Q				
0+55	0.0001	0.00	Q				
1+ 0	0.0001	0.00	Q				
1+ 5	0.0001	0.00	Q				
1+10	0.0001	0.00	Q				
1+15	0.0002	0.00	Q				
1+20	0.0002	0.00	Q				
1+25	0.0002	0.00	Q				
1+30	0.0002	0.00	Q				
1+35	0.0002	0.00	Q				
1+40	0.0002	0.00	Q				
1+45	0.0002	0.00	Q				
1+50	0.0002	0.00	Q				
1+55	0.0002	0.00	Q				
2+ 0	0.0003	0.00	Q				
2+ 5	0.0003	0.00	Q				
2+10	0.0003	0.00	Q				
2+15	0.0003	0.00	Q				
2+20	0.0003	0.00	Q				
2+25	0.0003	0.00	Q				
2+30	0.0003	0.00	Q				
2+35	0.0003	0.00	Q				
2+40	0.0004	0.00	Q				
2+45	0.0004	0.00	Q				
2+50	0.0004	0.00	Q				
2+55	0.0004	0.00	Q				
3+ 0	0.0004	0.00	Q				
3+ 5	0.0004	0.00	Q				

3+10	0.0004	0.00	Q				
3+15	0.0004	0.00	Q				
3+20	0.0005	0.00	Q				
3+25	0.0005	0.00	Q				
3+30	0.0005	0.00	Q				
3+35	0.0005	0.00	Q				
3+40	0.0005	0.00	Q				
3+45	0.0005	0.00	Q				
3+50	0.0005	0.00	Q				
3+55	0.0005	0.00	Q				
4+ 0	0.0006	0.00	Q				
4+ 5	0.0006	0.00	Q				
4+10	0.0006	0.00	Q				
4+15	0.0006	0.00	Q				
4+20	0.0006	0.00	Q				
4+25	0.0006	0.00	Q				
4+30	0.0006	0.00	Q				
4+35	0.0006	0.00	Q				
4+40	0.0007	0.00	Q				
4+45	0.0007	0.00	Q				
4+50	0.0007	0.00	Q				
4+55	0.0007	0.00	Q				
5+ 0	0.0007	0.00	Q				
5+ 5	0.0007	0.00	Q				
5+10	0.0007	0.00	Q				
5+15	0.0008	0.00	Q				
5+20	0.0008	0.00	Q				
5+25	0.0008	0.00	Q				
5+30	0.0008	0.00	Q				
5+35	0.0008	0.00	Q				
5+40	0.0008	0.00	Q				
5+45	0.0008	0.00	Q				
5+50	0.0008	0.00	Q				
5+55	0.0009	0.00	Q				
6+ 0	0.0009	0.00	Q				
6+ 5	0.0009	0.00	Q				
6+10	0.0009	0.00	Q				
6+15	0.0009	0.00	Q				
6+20	0.0009	0.00	Q				
6+25	0.0009	0.00	Q				
6+30	0.0010	0.00	Q				
6+35	0.0010	0.00	Q				
6+40	0.0010	0.00	Q				
6+45	0.0010	0.00	Q				
6+50	0.0010	0.00	Q				
6+55	0.0010	0.00	Q				
7+ 0	0.0011	0.00	Q				
7+ 5	0.0011	0.00	Q				
7+10	0.0011	0.00	Q				
7+15	0.0011	0.00	Q				
7+20	0.0011	0.00	Q				
7+25	0.0011	0.00	Q				
7+30	0.0011	0.00	Q				
7+35	0.0012	0.00	Q				
7+40	0.0012	0.00	Q				
7+45	0.0012	0.00	Q				
7+50	0.0012	0.00	Q				
7+55	0.0012	0.00	Q				
8+ 0	0.0012	0.00	Q				
8+ 5	0.0013	0.00	Q				
8+10	0.0013	0.00	Q				
8+15	0.0013	0.00	Q				
8+20	0.0013	0.00	Q				
8+25	0.0013	0.00	Q				
8+30	0.0013	0.00	Q				
8+35	0.0014	0.00	Q				
8+40	0.0014	0.00	Q				
8+45	0.0014	0.00	Q				
8+50	0.0014	0.00	Q				
8+55	0.0014	0.00	Q				
9+ 0	0.0014	0.00	Q				
9+ 5	0.0015	0.00	Q				
9+10	0.0015	0.00	Q				
9+15	0.0015	0.00	Q				
9+20	0.0015	0.00	Q				
9+25	0.0015	0.00	QV				
9+30	0.0015	0.00	QV				
9+35	0.0016	0.00	QV				
9+40	0.0016	0.00	QV				
9+45	0.0016	0.00	QV				
9+50	0.0016	0.00	QV				
9+55	0.0016	0.00	QV				
10+ 0	0.0017	0.00	QV				
10+ 5	0.0017	0.00	QV				

10+10	0.0017	0.00	QV				
10+15	0.0017	0.00	QV				
10+20	0.0017	0.00	QV				
10+25	0.0017	0.00	QV				
10+30	0.0018	0.00	QV				
10+35	0.0018	0.00	QV				
10+40	0.0018	0.00	QV				
10+45	0.0018	0.00	QV				
10+50	0.0018	0.00	QV				
10+55	0.0019	0.00	QV				
11+ 0	0.0019	0.00	QV				
11+ 5	0.0019	0.00	QV				
11+10	0.0019	0.00	QV				
11+15	0.0020	0.00	QV				
11+20	0.0020	0.00	QV				
11+25	0.0020	0.00	QV				
11+30	0.0020	0.00	QV				
11+35	0.0020	0.00	QV				
11+40	0.0021	0.00	QV				
11+45	0.0021	0.00	QV				
11+50	0.0021	0.00	QV				
11+55	0.0021	0.00	QV				
12+ 0	0.0022	0.00	QV				
12+ 5	0.0022	0.00	QV				
12+10	0.0022	0.00	QV				
12+15	0.0022	0.00	QV				
12+20	0.0023	0.00	QV				
12+25	0.0023	0.00	QV				
12+30	0.0023	0.00	QV				
12+35	0.0024	0.00	QV				
12+40	0.0024	0.00	QV				
12+45	0.0024	0.00	QV				
12+50	0.0025	0.00	QV				
12+55	0.0025	0.00	QV				
13+ 0	0.0025	0.01	QV				
13+ 5	0.0026	0.01	QV				
13+10	0.0026	0.01	QV				
13+15	0.0026	0.01	QV				
13+20	0.0027	0.01	QV				
13+25	0.0027	0.01	QV				
13+30	0.0028	0.01	QV				
13+35	0.0028	0.01	QV				
13+40	0.0028	0.01	QV				
13+45	0.0029	0.01	QV				
13+50	0.0029	0.01	QV				
13+55	0.0030	0.01	QV				
14+ 0	0.0030	0.01	QV				
14+ 5	0.0030	0.01	Q V				
14+10	0.0031	0.01	Q V				
14+15	0.0031	0.01	Q V				
14+20	0.0032	0.01	Q V				
14+25	0.0032	0.01	Q V				
14+30	0.0033	0.01	Q V				
14+35	0.0033	0.01	Q V				
14+40	0.0034	0.01	Q V				
14+45	0.0034	0.01	Q V				
14+50	0.0035	0.01	Q V				
14+55	0.0035	0.01	Q V				
15+ 0	0.0036	0.01	Q V				
15+ 5	0.0036	0.01	Q V				
15+10	0.0037	0.01	Q V				
15+15	0.0037	0.01	Q V				
15+20	0.0038	0.01	Q V				
15+25	0.0039	0.01	Q V				
15+30	0.0039	0.01	Q V				
15+35	0.0039	0.01	Q V				
15+40	0.0040	0.01	Q V				
15+45	0.0040	0.01	Q V				
15+50	0.0041	0.01	Q V				
15+55	0.0042	0.01	Q V				
16+ 0	0.0043	0.02	Q V				
16+ 5	0.0230	2.71		Q V			
16+10	0.0516	4.15		Q		V	
16+15	0.0570	0.79	Q			V	
16+20	0.0580	0.15	Q			V	
16+25	0.0583	0.05	Q			V	
16+30	0.0584	0.01	Q			V	
16+35	0.0585	0.01	Q			V	
16+40	0.0585	0.01	Q			V	
16+45	0.0586	0.01	Q			V	
16+50	0.0586	0.01	Q			V	
16+55	0.0587	0.01	Q			V	
17+ 0	0.0587	0.01	Q			V	
17+ 5	0.0588	0.01	Q			V	

17+10	0.0588	0.01	Q	|	|	|	V|
17+15	0.0588	0.01	Q	|	|	|	V|
17+20	0.0589	0.01	Q	|	|	|	V|
17+25	0.0589	0.01	Q	|	|	|	V|
17+30	0.0590	0.01	Q	|	|	|	V|
17+35	0.0590	0.01	Q	|	|	|	V|
17+40	0.0590	0.01	Q	|	|	|	V|
17+45	0.0591	0.00	Q	|	|	|	V|
17+50	0.0591	0.00	Q	|	|	|	V|
17+55	0.0591	0.00	Q	|	|	|	V|
18+ 0	0.0592	0.00	Q	|	|	|	V|
18+ 5	0.0592	0.00	Q	|	|	|	V|
18+10	0.0592	0.00	Q	|	|	|	V|
18+15	0.0592	0.00	Q	|	|	|	V|
18+20	0.0593	0.00	Q	|	|	|	V|
18+25	0.0593	0.00	Q	|	|	|	V|
18+30	0.0593	0.00	Q	|	|	|	V|
18+35	0.0593	0.00	Q	|	|	|	V|
18+40	0.0593	0.00	Q	|	|	|	V|
18+45	0.0594	0.00	Q	|	|	|	V|
18+50	0.0594	0.00	Q	|	|	|	V|
18+55	0.0594	0.00	Q	|	|	|	V|
19+ 0	0.0594	0.00	Q	|	|	|	V|
19+ 5	0.0594	0.00	Q	|	|	|	V|
19+10	0.0595	0.00	Q	|	|	|	V|
19+15	0.0595	0.00	Q	|	|	|	V|
19+20	0.0595	0.00	Q	|	|	|	V|
19+25	0.0595	0.00	Q	|	|	|	V|
19+30	0.0595	0.00	Q	|	|	|	V|
19+35	0.0596	0.00	Q	|	|	|	V|
19+40	0.0596	0.00	Q	|	|	|	V|
19+45	0.0596	0.00	Q	|	|	|	V|
19+50	0.0596	0.00	Q	|	|	|	V|
19+55	0.0596	0.00	Q	|	|	|	V|
20+ 0	0.0596	0.00	Q	|	|	|	V|
20+ 5	0.0597	0.00	Q	|	|	|	V|
20+10	0.0597	0.00	Q	|	|	|	V|
20+15	0.0597	0.00	Q	|	|	|	V|
20+20	0.0597	0.00	Q	|	|	|	V|
20+25	0.0597	0.00	Q	|	|	|	V|
20+30	0.0597	0.00	Q	|	|	|	V|
20+35	0.0597	0.00	Q	|	|	|	V|
20+40	0.0598	0.00	Q	|	|	|	V|
20+45	0.0598	0.00	Q	|	|	|	V|
20+50	0.0598	0.00	Q	|	|	|	V|
20+55	0.0598	0.00	Q	|	|	|	V|
21+ 0	0.0598	0.00	Q	|	|	|	V|
21+ 5	0.0598	0.00	Q	|	|	|	V|
21+10	0.0599	0.00	Q	|	|	|	V|
21+15	0.0599	0.00	Q	|	|	|	V|
21+20	0.0599	0.00	Q	|	|	|	V|
21+25	0.0599	0.00	Q	|	|	|	V|
21+30	0.0599	0.00	Q	|	|	|	V|
21+35	0.0599	0.00	Q	|	|	|	V|
21+40	0.0599	0.00	Q	|	|	|	V|
21+45	0.0599	0.00	Q	|	|	|	V|
21+50	0.0600	0.00	Q	|	|	|	V|
21+55	0.0600	0.00	Q	|	|	|	V|
22+ 0	0.0600	0.00	Q	|	|	|	V|
22+ 5	0.0600	0.00	Q	|	|	|	V|
22+10	0.0600	0.00	Q	|	|	|	V|
22+15	0.0600	0.00	Q	|	|	|	V|
22+20	0.0600	0.00	Q	|	|	|	V|
22+25	0.0600	0.00	Q	|	|	|	V|
22+30	0.0601	0.00	Q	|	|	|	V|
22+35	0.0601	0.00	Q	|	|	|	V|
22+40	0.0601	0.00	Q	|	|	|	V|
22+45	0.0601	0.00	Q	|	|	|	V|
22+50	0.0601	0.00	Q	|	|	|	V|
22+55	0.0601	0.00	Q	|	|	|	V|
23+ 0	0.0601	0.00	Q	|	|	|	V|
23+ 5	0.0601	0.00	Q	|	|	|	V|
23+10	0.0602	0.00	Q	|	|	|	V|
23+15	0.0602	0.00	Q	|	|	|	V|
23+20	0.0602	0.00	Q	|	|	|	V|
23+25	0.0602	0.00	Q	|	|	|	V|
23+30	0.0602	0.00	Q	|	|	|	V|
23+35	0.0602	0.00	Q	|	|	|	V|
23+40	0.0602	0.00	Q	|	|	|	V|
23+45	0.0602	0.00	Q	|	|	|	V|
23+50	0.0602	0.00	Q	|	|	|	V|
23+55	0.0603	0.00	Q	|	|	|	V|
24+ 0	0.0603	0.00	Q	|	|	|	V|

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 02/26/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA E
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10	1.20	1	0.78
Rainfall data for year 2	1.20	6	1.20
Rainfall data for year 2	1.20	24	2.18
Rainfall data for year 100	1.20	1	1.27
Rainfall data for year 100	1.20	6	2.86
Rainfall data for year 100	1.20	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
50.0	31.0	1.20	1.000	0.983	1.000	0.983

Area-averaged adjusted loss rate Fm (In/Hr) = 0.983

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
1.20	1.000	50.0	31.0	10.90	0.000

Area-averaged catchment yield fraction, Y = 0.000
Area-averaged low loss fraction, Yb = 1.000

++
Watercourse length = 650.00(Ft.)
Length from concentration point to centroid = 120.00(Ft.)
Elevation difference along watercourse = 57.30(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 1.20(Ac.)
Catchment Lag time = 0.024 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 347.2069
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.983(In/Hr)
Average low loss rate fraction (Yb) = 1.000 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 1.20(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 14.51 (CFS))	
1	62.757	9.108
2	98.885	5.243
3	100.000	0.162

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2100	0.2100
2	0.2585	0.0485
3	0.2920	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3595	0.0191
7	0.3765	0.0170
8	0.3919	0.0154
9	0.4060	0.0141
10	0.4190	0.0130
11	0.4312	0.0122
12	0.4426	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5373	0.0178
18	0.5547	0.0174
19	0.5716	0.0169
20	0.5882	0.0166
21	0.6044	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6510	0.0152
25	0.6660	0.0150
26	0.6807	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7507	0.0136
32	0.7641	0.0134
33	0.7773	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9007	0.0117
44	0.9123	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113

		AREAE
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0537	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1042	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1433	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2824	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3522	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3824	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4571	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4791	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5113	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAE
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5831	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6126	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6414	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7016	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7151	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7933	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8471	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8871	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9028	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039

		AREAE
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9375	0.0038
220	1.9413	0.0038
221	1.9451	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9899	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0118	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0334	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0547	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0930	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1067	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1169	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1304	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0033	0.0000
2	0.0033	0.0033	0.0000
3	0.0033	0.0033	0.0000
4	0.0033	0.0033	0.0000
5	0.0033	0.0033	0.0000
6	0.0033	0.0033	0.0000

		AREAE	
7	0.0033	0.0033	0.0000
8	0.0033	0.0033	0.0000
9	0.0033	0.0033	0.0000
10	0.0034	0.0034	0.0000
11	0.0034	0.0034	0.0000
12	0.0034	0.0034	0.0000
13	0.0034	0.0034	0.0000
14	0.0034	0.0034	0.0000
15	0.0034	0.0034	0.0000
16	0.0034	0.0034	0.0000
17	0.0034	0.0034	0.0000
18	0.0034	0.0034	0.0000
19	0.0035	0.0035	0.0000
20	0.0035	0.0035	0.0000
21	0.0035	0.0035	0.0000
22	0.0035	0.0035	0.0000
23	0.0035	0.0035	0.0000
24	0.0035	0.0035	0.0000
25	0.0035	0.0035	0.0000
26	0.0035	0.0035	0.0000
27	0.0035	0.0035	0.0000
28	0.0036	0.0036	0.0000
29	0.0036	0.0036	0.0000
30	0.0036	0.0036	0.0000
31	0.0036	0.0036	0.0000
32	0.0036	0.0036	0.0000
33	0.0036	0.0036	0.0000
34	0.0036	0.0036	0.0000
35	0.0036	0.0036	0.0000
36	0.0037	0.0037	0.0000
37	0.0037	0.0037	0.0000
38	0.0037	0.0037	0.0000
39	0.0037	0.0037	0.0000
40	0.0037	0.0037	0.0000
41	0.0037	0.0037	0.0000
42	0.0037	0.0037	0.0000
43	0.0038	0.0038	0.0000
44	0.0038	0.0038	0.0000
45	0.0038	0.0038	0.0000
46	0.0038	0.0038	0.0000
47	0.0038	0.0038	0.0000
48	0.0038	0.0038	0.0000
49	0.0038	0.0038	0.0000
50	0.0039	0.0039	0.0000
51	0.0039	0.0039	0.0000
52	0.0039	0.0039	0.0000
53	0.0039	0.0039	0.0000
54	0.0039	0.0039	0.0000
55	0.0039	0.0039	0.0000
56	0.0040	0.0040	0.0000
57	0.0040	0.0040	0.0000
58	0.0040	0.0040	0.0000
59	0.0040	0.0040	0.0000
60	0.0040	0.0040	0.0000
61	0.0040	0.0040	0.0000
62	0.0041	0.0041	0.0000
63	0.0041	0.0041	0.0000
64	0.0041	0.0041	0.0000
65	0.0041	0.0041	0.0000
66	0.0041	0.0041	0.0000
67	0.0041	0.0041	0.0000
68	0.0042	0.0042	0.0000
69	0.0042	0.0042	0.0000
70	0.0042	0.0042	0.0000
71	0.0042	0.0042	0.0000
72	0.0042	0.0042	0.0000
73	0.0043	0.0043	0.0000
74	0.0043	0.0043	0.0000
75	0.0043	0.0043	0.0000
76	0.0043	0.0043	0.0000
77	0.0044	0.0044	0.0000
78	0.0044	0.0044	0.0000
79	0.0044	0.0044	0.0000
80	0.0044	0.0044	0.0000
81	0.0044	0.0044	0.0000
82	0.0045	0.0045	0.0000
83	0.0045	0.0045	0.0000
84	0.0045	0.0045	0.0000
85	0.0045	0.0045	0.0000
86	0.0045	0.0045	0.0000
87	0.0046	0.0046	0.0000
88	0.0046	0.0046	0.0000
89	0.0046	0.0046	0.0000
90	0.0046	0.0046	0.0000

91	0.0047	0.0047	0.0000
92	0.0047	0.0047	0.0000
93	0.0047	0.0047	0.0000
94	0.0048	0.0048	0.0000
95	0.0048	0.0048	0.0000
96	0.0048	0.0048	0.0000
97	0.0048	0.0048	0.0000
98	0.0049	0.0049	0.0000
99	0.0049	0.0049	0.0000
100	0.0049	0.0049	0.0000
101	0.0050	0.0050	0.0000
102	0.0050	0.0050	0.0000
103	0.0050	0.0050	0.0000
104	0.0051	0.0051	0.0000
105	0.0051	0.0051	0.0000
106	0.0051	0.0051	0.0000
107	0.0052	0.0052	0.0000
108	0.0052	0.0052	0.0000
109	0.0052	0.0052	0.0000
110	0.0053	0.0053	0.0000
111	0.0053	0.0053	0.0000
112	0.0053	0.0053	0.0000
113	0.0054	0.0054	0.0000
114	0.0054	0.0054	0.0000
115	0.0055	0.0055	0.0000
116	0.0055	0.0055	0.0000
117	0.0055	0.0055	0.0000
118	0.0056	0.0056	0.0000
119	0.0056	0.0056	0.0000
120	0.0057	0.0057	0.0000
121	0.0057	0.0057	0.0000
122	0.0057	0.0057	0.0000
123	0.0058	0.0058	0.0000
124	0.0058	0.0058	0.0000
125	0.0059	0.0059	0.0000
126	0.0059	0.0059	0.0000
127	0.0060	0.0060	0.0000
128	0.0060	0.0060	0.0000
129	0.0061	0.0061	0.0000
130	0.0061	0.0061	0.0000
131	0.0062	0.0062	0.0000
132	0.0063	0.0063	0.0000
133	0.0063	0.0063	0.0000
134	0.0064	0.0064	0.0000
135	0.0065	0.0065	0.0000
136	0.0065	0.0065	0.0000
137	0.0066	0.0066	0.0000
138	0.0066	0.0066	0.0000
139	0.0067	0.0067	0.0000
140	0.0068	0.0068	0.0000
141	0.0069	0.0069	0.0000
142	0.0069	0.0069	0.0000
143	0.0070	0.0070	0.0000
144	0.0071	0.0071	0.0000
145	0.0093	0.0093	0.0000
146	0.0094	0.0094	0.0000
147	0.0095	0.0095	0.0000
148	0.0095	0.0095	0.0000
149	0.0097	0.0097	0.0000
150	0.0097	0.0097	0.0000
151	0.0099	0.0099	0.0000
152	0.0099	0.0099	0.0000
153	0.0101	0.0101	0.0000
154	0.0102	0.0102	0.0000
155	0.0103	0.0103	0.0000
156	0.0104	0.0104	0.0000
157	0.0106	0.0106	0.0000
158	0.0107	0.0107	0.0000
159	0.0109	0.0109	0.0000
160	0.0110	0.0110	0.0000
161	0.0112	0.0112	0.0000
162	0.0113	0.0113	0.0000
163	0.0115	0.0115	0.0000
164	0.0116	0.0116	0.0000
165	0.0118	0.0118	0.0000
166	0.0120	0.0120	0.0000
167	0.0122	0.0122	0.0000
168	0.0124	0.0124	0.0000
169	0.0127	0.0127	0.0000
170	0.0129	0.0129	0.0000
171	0.0132	0.0132	0.0000
172	0.0134	0.0134	0.0000
173	0.0138	0.0138	0.0000
174	0.0140	0.0140	0.0000

175	0.0145	0.0145	0.0000
176	0.0147	0.0147	0.0000
177	0.0152	0.0152	0.0000
178	0.0155	0.0155	0.0000
179	0.0162	0.0162	0.0000
180	0.0166	0.0166	0.0000
181	0.0174	0.0174	0.0000
182	0.0178	0.0178	0.0000
183	0.0189	0.0189	0.0000
184	0.0195	0.0195	0.0000
185	0.0114	0.0114	0.0000
186	0.0122	0.0122	0.0000
187	0.0141	0.0141	0.0000
188	0.0154	0.0154	0.0000
189	0.0191	0.0191	0.0000
190	0.0220	0.0220	0.0000
191	0.0334	0.0334	0.0000
192	0.0485	0.0485	0.0000
193	0.2100	0.0819	0.1281
194	0.0263	0.0263	0.0000
195	0.0170	0.0170	0.0000
196	0.0130	0.0130	0.0000
197	0.0202	0.0202	0.0000
198	0.0183	0.0183	0.0000
199	0.0169	0.0169	0.0000
200	0.0159	0.0159	0.0000
201	0.0150	0.0150	0.0000
202	0.0142	0.0142	0.0000
203	0.0136	0.0136	0.0000
204	0.0130	0.0130	0.0000
205	0.0125	0.0125	0.0000
206	0.0121	0.0121	0.0000
207	0.0117	0.0117	0.0000
208	0.0114	0.0114	0.0000
209	0.0111	0.0111	0.0000
210	0.0108	0.0108	0.0000
211	0.0105	0.0105	0.0000
212	0.0103	0.0103	0.0000
213	0.0100	0.0100	0.0000
214	0.0098	0.0098	0.0000
215	0.0096	0.0096	0.0000
216	0.0094	0.0094	0.0000
217	0.0071	0.0071	0.0000
218	0.0070	0.0070	0.0000
219	0.0068	0.0068	0.0000
220	0.0067	0.0067	0.0000
221	0.0066	0.0066	0.0000
222	0.0064	0.0064	0.0000
223	0.0063	0.0063	0.0000
224	0.0062	0.0062	0.0000
225	0.0061	0.0061	0.0000
226	0.0060	0.0060	0.0000
227	0.0059	0.0059	0.0000
228	0.0058	0.0058	0.0000
229	0.0057	0.0057	0.0000
230	0.0056	0.0056	0.0000
231	0.0055	0.0055	0.0000
232	0.0054	0.0054	0.0000
233	0.0054	0.0054	0.0000
234	0.0053	0.0053	0.0000
235	0.0052	0.0052	0.0000
236	0.0051	0.0051	0.0000
237	0.0051	0.0051	0.0000
238	0.0050	0.0050	0.0000
239	0.0049	0.0049	0.0000
240	0.0049	0.0049	0.0000
241	0.0048	0.0048	0.0000
242	0.0048	0.0048	0.0000
243	0.0047	0.0047	0.0000
244	0.0047	0.0047	0.0000
245	0.0046	0.0046	0.0000
246	0.0046	0.0046	0.0000
247	0.0045	0.0045	0.0000
248	0.0045	0.0045	0.0000
249	0.0044	0.0044	0.0000
250	0.0044	0.0044	0.0000
251	0.0043	0.0043	0.0000
252	0.0043	0.0043	0.0000
253	0.0043	0.0043	0.0000
254	0.0042	0.0042	0.0000
255	0.0042	0.0042	0.0000
256	0.0041	0.0041	0.0000
257	0.0041	0.0041	0.0000
258	0.0041	0.0041	0.0000

259	0.0040	0.0040	0.0000
260	0.0040	0.0040	0.0000
261	0.0040	0.0040	0.0000
262	0.0039	0.0039	0.0000
263	0.0039	0.0039	0.0000
264	0.0039	0.0039	0.0000
265	0.0038	0.0038	0.0000
266	0.0038	0.0038	0.0000
267	0.0038	0.0038	0.0000
268	0.0037	0.0037	0.0000
269	0.0037	0.0037	0.0000
270	0.0037	0.0037	0.0000
271	0.0037	0.0037	0.0000
272	0.0036	0.0036	0.0000
273	0.0036	0.0036	0.0000
274	0.0036	0.0036	0.0000
275	0.0036	0.0036	0.0000
276	0.0035	0.0035	0.0000
277	0.0035	0.0035	0.0000
278	0.0035	0.0035	0.0000
279	0.0035	0.0035	0.0000
280	0.0034	0.0034	0.0000
281	0.0034	0.0034	0.0000
282	0.0034	0.0034	0.0000
283	0.0034	0.0034	0.0000
284	0.0034	0.0034	0.0000
285	0.0033	0.0033	0.0000
286	0.0033	0.0033	0.0000
287	0.0033	0.0033	0.0000
288	0.0033	0.0033	0.0000

Total soil rain loss = 2.05(In)
Total effective rainfall = 0.13(In)
Peak flow rate in flood hydrograph = 1.17(CFS)

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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	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0000	0.00	Q	|	|	|	|
0+40	0.0000	0.00	Q	|	|	|	|
0+45	0.0000	0.00	Q	|	|	|	|
0+50	0.0000	0.00	Q	|	|	|	|
0+55	0.0000	0.00	Q	|	|	|	|
1+ 0	0.0000	0.00	Q	|	|	|	|
1+ 5	0.0000	0.00	Q	|	|	|	|
1+10	0.0000	0.00	Q	|	|	|	|
1+15	0.0000	0.00	Q	|	|	|	|
1+20	0.0000	0.00	Q	|	|	|	|
1+25	0.0000	0.00	Q	|	|	|	|
1+30	0.0000	0.00	Q	|	|	|	|
1+35	0.0000	0.00	Q	|	|	|	|
1+40	0.0000	0.00	Q	|	|	|	|
1+45	0.0000	0.00	Q	|	|	|	|
1+50	0.0000	0.00	Q	|	|	|	|
1+55	0.0000	0.00	Q	|	|	|	|
2+ 0	0.0000	0.00	Q	|	|	|	|
2+ 5	0.0000	0.00	Q	|	|	|	|
2+10	0.0000	0.00	Q	|	|	|	|
2+15	0.0000	0.00	Q	|	|	|	|
2+20	0.0000	0.00	Q	|	|	|	|
2+25	0.0000	0.00	Q	|	|	|	|
2+30	0.0000	0.00	Q	|	|	|	|
2+35	0.0000	0.00	Q	|	|	|	|
2+40	0.0000	0.00	Q	|	|	|	|
2+45	0.0000	0.00	Q	|	|	|	|
2+50	0.0000	0.00	Q	|	|	|	|
2+55	0.0000	0.00	Q	|	|	|	|
3+ 0	0.0000	0.00	Q	|	|	|	|
3+ 5	0.0000	0.00	Q	|	|	|	|
3+10	0.0000	0.00	Q	|	|	|	|
3+15	0.0000	0.00	Q	|	|	|	|

3+20	0.0000	0.00	Q				
3+25	0.0000	0.00	Q				
3+30	0.0000	0.00	Q				
3+35	0.0000	0.00	Q				
3+40	0.0000	0.00	Q				
3+45	0.0000	0.00	Q				
3+50	0.0000	0.00	Q				
3+55	0.0000	0.00	Q				
4+ 0	0.0000	0.00	Q				
4+ 5	0.0000	0.00	Q				
4+10	0.0000	0.00	Q				
4+15	0.0000	0.00	Q				
4+20	0.0000	0.00	Q				
4+25	0.0000	0.00	Q				
4+30	0.0000	0.00	Q				
4+35	0.0000	0.00	Q				
4+40	0.0000	0.00	Q				
4+45	0.0000	0.00	Q				
4+50	0.0000	0.00	Q				
4+55	0.0000	0.00	Q				
5+ 0	0.0000	0.00	Q				
5+ 5	0.0000	0.00	Q				
5+10	0.0000	0.00	Q				
5+15	0.0000	0.00	Q				
5+20	0.0000	0.00	Q				
5+25	0.0000	0.00	Q				
5+30	0.0000	0.00	Q				
5+35	0.0000	0.00	Q				
5+40	0.0000	0.00	Q				
5+45	0.0000	0.00	Q				
5+50	0.0000	0.00	Q				
5+55	0.0000	0.00	Q				
6+ 0	0.0000	0.00	Q				
6+ 5	0.0000	0.00	Q				
6+10	0.0000	0.00	Q				
6+15	0.0000	0.00	Q				
6+20	0.0000	0.00	Q				
6+25	0.0000	0.00	Q				
6+30	0.0000	0.00	Q				
6+35	0.0000	0.00	Q				
6+40	0.0000	0.00	Q				
6+45	0.0000	0.00	Q				
6+50	0.0000	0.00	Q				
6+55	0.0000	0.00	Q				
7+ 0	0.0000	0.00	Q				
7+ 5	0.0000	0.00	Q				
7+10	0.0000	0.00	Q				
7+15	0.0000	0.00	Q				
7+20	0.0000	0.00	Q				
7+25	0.0000	0.00	Q				
7+30	0.0000	0.00	Q				
7+35	0.0000	0.00	Q				
7+40	0.0000	0.00	Q				
7+45	0.0000	0.00	Q				
7+50	0.0000	0.00	Q				
7+55	0.0000	0.00	Q				
8+ 0	0.0000	0.00	Q				
8+ 5	0.0000	0.00	Q				
8+10	0.0000	0.00	Q				
8+15	0.0000	0.00	Q				
8+20	0.0000	0.00	Q				
8+25	0.0000	0.00	Q				
8+30	0.0000	0.00	Q				
8+35	0.0000	0.00	Q				
8+40	0.0000	0.00	Q				
8+45	0.0000	0.00	Q				
8+50	0.0000	0.00	Q				
8+55	0.0000	0.00	Q				
9+ 0	0.0000	0.00	Q				
9+ 5	0.0000	0.00	Q				
9+10	0.0000	0.00	Q				
9+15	0.0000	0.00	Q				
9+20	0.0000	0.00	Q				
9+25	0.0000	0.00	Q				
9+30	0.0000	0.00	Q				
9+35	0.0000	0.00	Q				
9+40	0.0000	0.00	Q				
9+45	0.0000	0.00	Q				
9+50	0.0000	0.00	Q				
9+55	0.0000	0.00	Q				
10+ 0	0.0000	0.00	Q				
10+ 5	0.0000	0.00	Q				
10+10	0.0000	0.00	Q				
10+15	0.0000	0.00	Q				

10+20	0.0000	0.00	Q				
10+25	0.0000	0.00	Q				
10+30	0.0000	0.00	Q				
10+35	0.0000	0.00	Q				
10+40	0.0000	0.00	Q				
10+45	0.0000	0.00	Q				
10+50	0.0000	0.00	Q				
10+55	0.0000	0.00	Q				
11+ 0	0.0000	0.00	Q				
11+ 5	0.0000	0.00	Q				
11+10	0.0000	0.00	Q				
11+15	0.0000	0.00	Q				
11+20	0.0000	0.00	Q				
11+25	0.0000	0.00	Q				
11+30	0.0000	0.00	Q				
11+35	0.0000	0.00	Q				
11+40	0.0000	0.00	Q				
11+45	0.0000	0.00	Q				
11+50	0.0000	0.00	Q				
11+55	0.0000	0.00	Q				
12+ 0	0.0000	0.00	Q				
12+ 5	0.0000	0.00	Q				
12+10	0.0000	0.00	Q				
12+15	0.0000	0.00	Q				
12+20	0.0000	0.00	Q				
12+25	0.0000	0.00	Q				
12+30	0.0000	0.00	Q				
12+35	0.0000	0.00	Q				
12+40	0.0000	0.00	Q				
12+45	0.0000	0.00	Q				
12+50	0.0000	0.00	Q				
12+55	0.0000	0.00	Q				
13+ 0	0.0000	0.00	Q				
13+ 5	0.0000	0.00	Q				
13+10	0.0000	0.00	Q				
13+15	0.0000	0.00	Q				
13+20	0.0000	0.00	Q				
13+25	0.0000	0.00	Q				
13+30	0.0000	0.00	Q				
13+35	0.0000	0.00	Q				
13+40	0.0000	0.00	Q				
13+45	0.0000	0.00	Q				
13+50	0.0000	0.00	Q				
13+55	0.0000	0.00	Q				
14+ 0	0.0000	0.00	Q				
14+ 5	0.0000	0.00	Q				
14+10	0.0000	0.00	Q				
14+15	0.0000	0.00	Q				
14+20	0.0000	0.00	Q				
14+25	0.0000	0.00	Q				
14+30	0.0000	0.00	Q				
14+35	0.0000	0.00	Q				
14+40	0.0000	0.00	Q				
14+45	0.0000	0.00	Q				
14+50	0.0000	0.00	Q				
14+55	0.0000	0.00	Q				
15+ 0	0.0000	0.00	Q				
15+ 5	0.0000	0.00	Q				
15+10	0.0000	0.00	Q				
15+15	0.0000	0.00	Q				
15+20	0.0000	0.00	Q				
15+25	0.0000	0.00	Q				
15+30	0.0000	0.00	Q				
15+35	0.0000	0.00	Q				
15+40	0.0000	0.00	Q				
15+45	0.0000	0.00	Q				
15+50	0.0000	0.00	Q				
15+55	0.0000	0.00	Q				
16+ 0	0.0000	0.00	Q				
16+ 5	0.0080	1.17	Q			V	
16+10	0.0127	0.67	Q				V
16+15	0.0128	0.02	Q				V
16+20	0.0128	0.00	Q				V
16+25	0.0128	0.00	Q				V
16+30	0.0128	0.00	Q				V
16+35	0.0128	0.00	Q				V
16+40	0.0128	0.00	Q				V
16+45	0.0128	0.00	Q				V
16+50	0.0128	0.00	Q				V
16+55	0.0128	0.00	Q				V
17+ 0	0.0128	0.00	Q				V
17+ 5	0.0128	0.00	Q				V
17+10	0.0128	0.00	Q				V
17+15	0.0128	0.00	Q				V

17+20	0.0128	0.00	Q				V
17+25	0.0128	0.00	Q				V
17+30	0.0128	0.00	Q				V
17+35	0.0128	0.00	Q				V
17+40	0.0128	0.00	Q				V
17+45	0.0128	0.00	Q				V
17+50	0.0128	0.00	Q				V
17+55	0.0128	0.00	Q				V
18+ 0	0.0128	0.00	Q				V
18+ 5	0.0128	0.00	Q				V
18+10	0.0128	0.00	Q				V
18+15	0.0128	0.00	Q				V
18+20	0.0128	0.00	Q				V
18+25	0.0128	0.00	Q				V
18+30	0.0128	0.00	Q				V
18+35	0.0128	0.00	Q				V
18+40	0.0128	0.00	Q				V
18+45	0.0128	0.00	Q				V
18+50	0.0128	0.00	Q				V
18+55	0.0128	0.00	Q				V
19+ 0	0.0128	0.00	Q				V
19+ 5	0.0128	0.00	Q				V
19+10	0.0128	0.00	Q				V
19+15	0.0128	0.00	Q				V
19+20	0.0128	0.00	Q				V
19+25	0.0128	0.00	Q				V
19+30	0.0128	0.00	Q				V
19+35	0.0128	0.00	Q				V
19+40	0.0128	0.00	Q				V
19+45	0.0128	0.00	Q				V
19+50	0.0128	0.00	Q				V
19+55	0.0128	0.00	Q				V
20+ 0	0.0128	0.00	Q				V
20+ 5	0.0128	0.00	Q				V
20+10	0.0128	0.00	Q				V
20+15	0.0128	0.00	Q				V
20+20	0.0128	0.00	Q				V
20+25	0.0128	0.00	Q				V
20+30	0.0128	0.00	Q				V
20+35	0.0128	0.00	Q				V
20+40	0.0128	0.00	Q				V
20+45	0.0128	0.00	Q				V
20+50	0.0128	0.00	Q				V
20+55	0.0128	0.00	Q				V
21+ 0	0.0128	0.00	Q				V
21+ 5	0.0128	0.00	Q				V
21+10	0.0128	0.00	Q				V
21+15	0.0128	0.00	Q				V
21+20	0.0128	0.00	Q				V
21+25	0.0128	0.00	Q				V
21+30	0.0128	0.00	Q				V
21+35	0.0128	0.00	Q				V
21+40	0.0128	0.00	Q				V
21+45	0.0128	0.00	Q				V
21+50	0.0128	0.00	Q				V
21+55	0.0128	0.00	Q				V
22+ 0	0.0128	0.00	Q				V
22+ 5	0.0128	0.00	Q				V
22+10	0.0128	0.00	Q				V
22+15	0.0128	0.00	Q				V
22+20	0.0128	0.00	Q				V
22+25	0.0128	0.00	Q				V
22+30	0.0128	0.00	Q				V
22+35	0.0128	0.00	Q				V
22+40	0.0128	0.00	Q				V
22+45	0.0128	0.00	Q				V
22+50	0.0128	0.00	Q				V
22+55	0.0128	0.00	Q				V
23+ 0	0.0128	0.00	Q				V
23+ 5	0.0128	0.00	Q				V
23+10	0.0128	0.00	Q				V
23+15	0.0128	0.00	Q				V
23+20	0.0128	0.00	Q				V
23+25	0.0128	0.00	Q				V
23+30	0.0128	0.00	Q				V
23+35	0.0128	0.00	Q				V
23+40	0.0128	0.00	Q				V
23+45	0.0128	0.00	Q				V
23+50	0.0128	0.00	Q				V
23+55	0.0128	0.00	Q				V
24+ 0	0.0128	0.00	Q				V

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 02/26/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA F
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
3.38	1	0.78
Rainfall data for year 2		
3.38	6	1.20
Rainfall data for year 2		
3.38	24	2.18
Rainfall data for year 100		
3.38	1	1.27
Rainfall data for year 100		
3.38	6	2.86
Rainfall data for year 100		
3.38	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
50.0	31.0	3.38	1.000	0.983	1.000	0.983

Area-averaged adjusted loss rate Fm (In/Hr) = 0.983

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
3.38	1.000	50.0	31.0	10.90	0.000

Area-averaged catchment yield fraction, Y = 0.000
Area-averaged low loss fraction, Yb = 1.000

++
Watercourse length = 940.00(Ft.)
Length from concentration point to centroid = 210.00(Ft.)
Elevation difference along watercourse = 102.80(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 3.38(Ac.)
Catchment Lag time = 0.033 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 254.1798
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.983(In/Hr)
Average low loss rate fraction (Yb) = 1.000 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 3.38(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 40.88 (CFS))	
1	51.621	21.101
2	96.265	18.249
3	100.000	1.527

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2100	0.2100
2	0.2585	0.0485
3	0.2920	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3594	0.0191
7	0.3765	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4190	0.0130
11	0.4311	0.0122
12	0.4425	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5372	0.0178
18	0.5546	0.0174
19	0.5716	0.0169
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6510	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7507	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9007	0.0117
44	0.9123	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113

		AREAF
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0537	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2824	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4571	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAF
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5831	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7933	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8871	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039

		AREAF
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0118	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1067	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0033	0.0000
2	0.0033	0.0033	0.0000
3	0.0033	0.0033	0.0000
4	0.0033	0.0033	0.0000
5	0.0033	0.0033	0.0000
6	0.0033	0.0033	0.0000

		AREAF	
7	0.0033	0.0033	0.0000
8	0.0033	0.0033	0.0000
9	0.0033	0.0033	0.0000
10	0.0034	0.0034	0.0000
11	0.0034	0.0034	0.0000
12	0.0034	0.0034	0.0000
13	0.0034	0.0034	0.0000
14	0.0034	0.0034	0.0000
15	0.0034	0.0034	0.0000
16	0.0034	0.0034	0.0000
17	0.0034	0.0034	0.0000
18	0.0034	0.0034	0.0000
19	0.0035	0.0035	0.0000
20	0.0035	0.0035	0.0000
21	0.0035	0.0035	0.0000
22	0.0035	0.0035	0.0000
23	0.0035	0.0035	0.0000
24	0.0035	0.0035	0.0000
25	0.0035	0.0035	0.0000
26	0.0035	0.0035	0.0000
27	0.0035	0.0035	0.0000
28	0.0036	0.0036	0.0000
29	0.0036	0.0036	0.0000
30	0.0036	0.0036	0.0000
31	0.0036	0.0036	0.0000
32	0.0036	0.0036	0.0000
33	0.0036	0.0036	0.0000
34	0.0036	0.0036	0.0000
35	0.0036	0.0036	0.0000
36	0.0037	0.0037	0.0000
37	0.0037	0.0037	0.0000
38	0.0037	0.0037	0.0000
39	0.0037	0.0037	0.0000
40	0.0037	0.0037	0.0000
41	0.0037	0.0037	0.0000
42	0.0037	0.0037	0.0000
43	0.0038	0.0038	0.0000
44	0.0038	0.0038	0.0000
45	0.0038	0.0038	0.0000
46	0.0038	0.0038	0.0000
47	0.0038	0.0038	0.0000
48	0.0038	0.0038	0.0000
49	0.0038	0.0038	0.0000
50	0.0039	0.0039	0.0000
51	0.0039	0.0039	0.0000
52	0.0039	0.0039	0.0000
53	0.0039	0.0039	0.0000
54	0.0039	0.0039	0.0000
55	0.0039	0.0039	0.0000
56	0.0040	0.0040	0.0000
57	0.0040	0.0040	0.0000
58	0.0040	0.0040	0.0000
59	0.0040	0.0040	0.0000
60	0.0040	0.0040	0.0000
61	0.0040	0.0040	0.0000
62	0.0041	0.0041	0.0000
63	0.0041	0.0041	0.0000
64	0.0041	0.0041	0.0000
65	0.0041	0.0041	0.0000
66	0.0041	0.0041	0.0000
67	0.0041	0.0041	0.0000
68	0.0042	0.0042	0.0000
69	0.0042	0.0042	0.0000
70	0.0042	0.0042	0.0000
71	0.0042	0.0042	0.0000
72	0.0042	0.0042	0.0000
73	0.0043	0.0043	0.0000
74	0.0043	0.0043	0.0000
75	0.0043	0.0043	0.0000
76	0.0043	0.0043	0.0000
77	0.0044	0.0044	0.0000
78	0.0044	0.0044	0.0000
79	0.0044	0.0044	0.0000
80	0.0044	0.0044	0.0000
81	0.0044	0.0044	0.0000
82	0.0045	0.0045	0.0000
83	0.0045	0.0045	0.0000
84	0.0045	0.0045	0.0000
85	0.0045	0.0045	0.0000
86	0.0045	0.0045	0.0000
87	0.0046	0.0046	0.0000
88	0.0046	0.0046	0.0000
89	0.0046	0.0046	0.0000
90	0.0046	0.0046	0.0000

		AREAF	
91	0.0047	0.0047	0.0000
92	0.0047	0.0047	0.0000
93	0.0047	0.0047	0.0000
94	0.0048	0.0048	0.0000
95	0.0048	0.0048	0.0000
96	0.0048	0.0048	0.0000
97	0.0048	0.0048	0.0000
98	0.0049	0.0049	0.0000
99	0.0049	0.0049	0.0000
100	0.0049	0.0049	0.0000
101	0.0050	0.0050	0.0000
102	0.0050	0.0050	0.0000
103	0.0050	0.0050	0.0000
104	0.0051	0.0051	0.0000
105	0.0051	0.0051	0.0000
106	0.0051	0.0051	0.0000
107	0.0052	0.0052	0.0000
108	0.0052	0.0052	0.0000
109	0.0052	0.0052	0.0000
110	0.0053	0.0053	0.0000
111	0.0053	0.0053	0.0000
112	0.0053	0.0053	0.0000
113	0.0054	0.0054	0.0000
114	0.0054	0.0054	0.0000
115	0.0055	0.0055	0.0000
116	0.0055	0.0055	0.0000
117	0.0055	0.0055	0.0000
118	0.0056	0.0056	0.0000
119	0.0056	0.0056	0.0000
120	0.0057	0.0057	0.0000
121	0.0057	0.0057	0.0000
122	0.0057	0.0057	0.0000
123	0.0058	0.0058	0.0000
124	0.0058	0.0058	0.0000
125	0.0059	0.0059	0.0000
126	0.0059	0.0059	0.0000
127	0.0060	0.0060	0.0000
128	0.0060	0.0060	0.0000
129	0.0061	0.0061	0.0000
130	0.0061	0.0061	0.0000
131	0.0062	0.0062	0.0000
132	0.0063	0.0063	0.0000
133	0.0063	0.0063	0.0000
134	0.0064	0.0064	0.0000
135	0.0065	0.0065	0.0000
136	0.0065	0.0065	0.0000
137	0.0066	0.0066	0.0000
138	0.0066	0.0066	0.0000
139	0.0067	0.0067	0.0000
140	0.0068	0.0068	0.0000
141	0.0069	0.0069	0.0000
142	0.0069	0.0069	0.0000
143	0.0070	0.0070	0.0000
144	0.0071	0.0071	0.0000
145	0.0093	0.0093	0.0000
146	0.0094	0.0094	0.0000
147	0.0095	0.0095	0.0000
148	0.0095	0.0095	0.0000
149	0.0097	0.0097	0.0000
150	0.0097	0.0097	0.0000
151	0.0099	0.0099	0.0000
152	0.0099	0.0099	0.0000
153	0.0101	0.0101	0.0000
154	0.0102	0.0102	0.0000
155	0.0103	0.0103	0.0000
156	0.0104	0.0104	0.0000
157	0.0106	0.0106	0.0000
158	0.0107	0.0107	0.0000
159	0.0109	0.0109	0.0000
160	0.0110	0.0110	0.0000
161	0.0112	0.0112	0.0000
162	0.0113	0.0113	0.0000
163	0.0115	0.0115	0.0000
164	0.0116	0.0116	0.0000
165	0.0118	0.0118	0.0000
166	0.0120	0.0120	0.0000
167	0.0122	0.0122	0.0000
168	0.0124	0.0124	0.0000
169	0.0127	0.0127	0.0000
170	0.0129	0.0129	0.0000
171	0.0132	0.0132	0.0000
172	0.0134	0.0134	0.0000
173	0.0138	0.0138	0.0000
174	0.0140	0.0140	0.0000

175	0.0145	0.0145	0.0000
176	0.0147	0.0147	0.0000
177	0.0152	0.0152	0.0000
178	0.0155	0.0155	0.0000
179	0.0162	0.0162	0.0000
180	0.0166	0.0166	0.0000
181	0.0174	0.0174	0.0000
182	0.0178	0.0178	0.0000
183	0.0189	0.0189	0.0000
184	0.0195	0.0195	0.0000
185	0.0114	0.0114	0.0000
186	0.0122	0.0122	0.0000
187	0.0141	0.0141	0.0000
188	0.0154	0.0154	0.0000
189	0.0191	0.0191	0.0000
190	0.0220	0.0220	0.0000
191	0.0334	0.0334	0.0000
192	0.0485	0.0485	0.0000
193	0.2100	0.0819	0.1281
194	0.0263	0.0263	0.0000
195	0.0170	0.0170	0.0000
196	0.0130	0.0130	0.0000
197	0.0202	0.0202	0.0000
198	0.0183	0.0183	0.0000
199	0.0169	0.0169	0.0000
200	0.0159	0.0159	0.0000
201	0.0150	0.0150	0.0000
202	0.0142	0.0142	0.0000
203	0.0136	0.0136	0.0000
204	0.0130	0.0130	0.0000
205	0.0125	0.0125	0.0000
206	0.0121	0.0121	0.0000
207	0.0117	0.0117	0.0000
208	0.0114	0.0114	0.0000
209	0.0111	0.0111	0.0000
210	0.0108	0.0108	0.0000
211	0.0105	0.0105	0.0000
212	0.0103	0.0103	0.0000
213	0.0100	0.0100	0.0000
214	0.0098	0.0098	0.0000
215	0.0096	0.0096	0.0000
216	0.0094	0.0094	0.0000
217	0.0071	0.0071	0.0000
218	0.0070	0.0070	0.0000
219	0.0068	0.0068	0.0000
220	0.0067	0.0067	0.0000
221	0.0066	0.0066	0.0000
222	0.0064	0.0064	0.0000
223	0.0063	0.0063	0.0000
224	0.0062	0.0062	0.0000
225	0.0061	0.0061	0.0000
226	0.0060	0.0060	0.0000
227	0.0059	0.0059	0.0000
228	0.0058	0.0058	0.0000
229	0.0057	0.0057	0.0000
230	0.0056	0.0056	0.0000
231	0.0055	0.0055	0.0000
232	0.0054	0.0054	0.0000
233	0.0054	0.0054	0.0000
234	0.0053	0.0053	0.0000
235	0.0052	0.0052	0.0000
236	0.0051	0.0051	0.0000
237	0.0051	0.0051	0.0000
238	0.0050	0.0050	0.0000
239	0.0049	0.0049	0.0000
240	0.0049	0.0049	0.0000
241	0.0048	0.0048	0.0000
242	0.0048	0.0048	0.0000
243	0.0047	0.0047	0.0000
244	0.0047	0.0047	0.0000
245	0.0046	0.0046	0.0000
246	0.0046	0.0046	0.0000
247	0.0045	0.0045	0.0000
248	0.0045	0.0045	0.0000
249	0.0044	0.0044	0.0000
250	0.0044	0.0044	0.0000
251	0.0043	0.0043	0.0000
252	0.0043	0.0043	0.0000
253	0.0043	0.0043	0.0000
254	0.0042	0.0042	0.0000
255	0.0042	0.0042	0.0000
256	0.0041	0.0041	0.0000
257	0.0041	0.0041	0.0000
258	0.0041	0.0041	0.0000

		AREAF
259	0.0040	0.0040	0.0000
260	0.0040	0.0040	0.0000
261	0.0040	0.0040	0.0000
262	0.0039	0.0039	0.0000
263	0.0039	0.0039	0.0000
264	0.0039	0.0039	0.0000
265	0.0038	0.0038	0.0000
266	0.0038	0.0038	0.0000
267	0.0038	0.0038	0.0000
268	0.0037	0.0037	0.0000
269	0.0037	0.0037	0.0000
270	0.0037	0.0037	0.0000
271	0.0037	0.0037	0.0000
272	0.0036	0.0036	0.0000
273	0.0036	0.0036	0.0000
274	0.0036	0.0036	0.0000
275	0.0036	0.0036	0.0000
276	0.0035	0.0035	0.0000
277	0.0035	0.0035	0.0000
278	0.0035	0.0035	0.0000
279	0.0035	0.0035	0.0000
280	0.0034	0.0034	0.0000
281	0.0034	0.0034	0.0000
282	0.0034	0.0034	0.0000
283	0.0034	0.0034	0.0000
284	0.0034	0.0034	0.0000
285	0.0033	0.0033	0.0000
286	0.0033	0.0033	0.0000
287	0.0033	0.0033	0.0000
288	0.0033	0.0033	0.0000

Total soil rain loss = 2.05(In)
Total effective rainfall = 0.13(In)
Peak flow rate in flood hydrograph = 2.70(CFS)

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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	0.0000	0.00	Q				
0+15	0.0000	0.00	Q				
0+20	0.0000	0.00	Q				
0+25	0.0000	0.00	Q				
0+30	0.0000	0.00	Q				
0+35	0.0000	0.00	Q				
0+40	0.0000	0.00	Q				
0+45	0.0000	0.00	Q				
0+50	0.0000	0.00	Q				
0+55	0.0000	0.00	Q				
1+ 0	0.0000	0.00	Q				
1+ 5	0.0000	0.00	Q				
1+10	0.0000	0.00	Q				
1+15	0.0000	0.00	Q				
1+20	0.0000	0.00	Q				
1+25	0.0000	0.00	Q				
1+30	0.0000	0.00	Q				
1+35	0.0000	0.00	Q				
1+40	0.0000	0.00	Q				
1+45	0.0000	0.00	Q				
1+50	0.0000	0.00	Q				
1+55	0.0000	0.00	Q				
2+ 0	0.0000	0.00	Q				
2+ 5	0.0000	0.00	Q				
2+10	0.0000	0.00	Q				
2+15	0.0000	0.00	Q				
2+20	0.0000	0.00	Q				
2+25	0.0000	0.00	Q				
2+30	0.0000	0.00	Q				
2+35	0.0000	0.00	Q				
2+40	0.0000	0.00	Q				
2+45	0.0000	0.00	Q				
2+50	0.0000	0.00	Q				
2+55	0.0000	0.00	Q				
3+ 0	0.0000	0.00	Q				
3+ 5	0.0000	0.00	Q				
3+10	0.0000	0.00	Q				
3+15	0.0000	0.00	Q				

3+20	0.0000	0.00	Q				
3+25	0.0000	0.00	Q				
3+30	0.0000	0.00	Q				
3+35	0.0000	0.00	Q				
3+40	0.0000	0.00	Q				
3+45	0.0000	0.00	Q				
3+50	0.0000	0.00	Q				
3+55	0.0000	0.00	Q				
4+ 0	0.0000	0.00	Q				
4+ 5	0.0000	0.00	Q				
4+10	0.0000	0.00	Q				
4+15	0.0000	0.00	Q				
4+20	0.0000	0.00	Q				
4+25	0.0000	0.00	Q				
4+30	0.0000	0.00	Q				
4+35	0.0000	0.00	Q				
4+40	0.0000	0.00	Q				
4+45	0.0000	0.00	Q				
4+50	0.0000	0.00	Q				
4+55	0.0000	0.00	Q				
5+ 0	0.0000	0.00	Q				
5+ 5	0.0000	0.00	Q				
5+10	0.0000	0.00	Q				
5+15	0.0000	0.00	Q				
5+20	0.0000	0.00	Q				
5+25	0.0000	0.00	Q				
5+30	0.0000	0.00	Q				
5+35	0.0000	0.00	Q				
5+40	0.0000	0.00	Q				
5+45	0.0000	0.00	Q				
5+50	0.0000	0.00	Q				
5+55	0.0000	0.00	Q				
6+ 0	0.0000	0.00	Q				
6+ 5	0.0000	0.00	Q				
6+10	0.0000	0.00	Q				
6+15	0.0000	0.00	Q				
6+20	0.0000	0.00	Q				
6+25	0.0000	0.00	Q				
6+30	0.0000	0.00	Q				
6+35	0.0000	0.00	Q				
6+40	0.0000	0.00	Q				
6+45	0.0000	0.00	Q				
6+50	0.0000	0.00	Q				
6+55	0.0000	0.00	Q				
7+ 0	0.0000	0.00	Q				
7+ 5	0.0000	0.00	Q				
7+10	0.0000	0.00	Q				
7+15	0.0000	0.00	Q				
7+20	0.0000	0.00	Q				
7+25	0.0000	0.00	Q				
7+30	0.0000	0.00	Q				
7+35	0.0000	0.00	Q				
7+40	0.0000	0.00	Q				
7+45	0.0000	0.00	Q				
7+50	0.0000	0.00	Q				
7+55	0.0000	0.00	Q				
8+ 0	0.0000	0.00	Q				
8+ 5	0.0000	0.00	Q				
8+10	0.0000	0.00	Q				
8+15	0.0000	0.00	Q				
8+20	0.0000	0.00	Q				
8+25	0.0000	0.00	Q				
8+30	0.0000	0.00	Q				
8+35	0.0000	0.00	Q				
8+40	0.0000	0.00	Q				
8+45	0.0000	0.00	Q				
8+50	0.0000	0.00	Q				
8+55	0.0000	0.00	Q				
9+ 0	0.0000	0.00	Q				
9+ 5	0.0000	0.00	Q				
9+10	0.0000	0.00	Q				
9+15	0.0000	0.00	Q				
9+20	0.0000	0.00	Q				
9+25	0.0000	0.00	Q				
9+30	0.0000	0.00	Q				
9+35	0.0000	0.00	Q				
9+40	0.0000	0.00	Q				
9+45	0.0000	0.00	Q				
9+50	0.0000	0.00	Q				
9+55	0.0000	0.00	Q				
10+ 0	0.0000	0.00	Q				
10+ 5	0.0000	0.00	Q				
10+10	0.0000	0.00	Q				
10+15	0.0000	0.00	Q				

10+20	0.0000	0.00	Q				
10+25	0.0000	0.00	Q				
10+30	0.0000	0.00	Q				
10+35	0.0000	0.00	Q				
10+40	0.0000	0.00	Q				
10+45	0.0000	0.00	Q				
10+50	0.0000	0.00	Q				
10+55	0.0000	0.00	Q				
11+ 0	0.0000	0.00	Q				
11+ 5	0.0000	0.00	Q				
11+10	0.0000	0.00	Q				
11+15	0.0000	0.00	Q				
11+20	0.0000	0.00	Q				
11+25	0.0000	0.00	Q				
11+30	0.0000	0.00	Q				
11+35	0.0000	0.00	Q				
11+40	0.0000	0.00	Q				
11+45	0.0000	0.00	Q				
11+50	0.0000	0.00	Q				
11+55	0.0000	0.00	Q				
12+ 0	0.0000	0.00	Q				
12+ 5	0.0000	0.00	Q				
12+10	0.0000	0.00	Q				
12+15	0.0000	0.00	Q				
12+20	0.0000	0.00	Q				
12+25	0.0000	0.00	Q				
12+30	0.0000	0.00	Q				
12+35	0.0000	0.00	Q				
12+40	0.0000	0.00	Q				
12+45	0.0000	0.00	Q				
12+50	0.0000	0.00	Q				
12+55	0.0000	0.00	Q				
13+ 0	0.0000	0.00	Q				
13+ 5	0.0000	0.00	Q				
13+10	0.0000	0.00	Q				
13+15	0.0000	0.00	Q				
13+20	0.0000	0.00	Q				
13+25	0.0000	0.00	Q				
13+30	0.0000	0.00	Q				
13+35	0.0000	0.00	Q				
13+40	0.0000	0.00	Q				
13+45	0.0000	0.00	Q				
13+50	0.0000	0.00	Q				
13+55	0.0000	0.00	Q				
14+ 0	0.0000	0.00	Q				
14+ 5	0.0000	0.00	Q				
14+10	0.0000	0.00	Q				
14+15	0.0000	0.00	Q				
14+20	0.0000	0.00	Q				
14+25	0.0000	0.00	Q				
14+30	0.0000	0.00	Q				
14+35	0.0000	0.00	Q				
14+40	0.0000	0.00	Q				
14+45	0.0000	0.00	Q				
14+50	0.0000	0.00	Q				
14+55	0.0000	0.00	Q				
15+ 0	0.0000	0.00	Q				
15+ 5	0.0000	0.00	Q				
15+10	0.0000	0.00	Q				
15+15	0.0000	0.00	Q				
15+20	0.0000	0.00	Q				
15+25	0.0000	0.00	Q				
15+30	0.0000	0.00	Q				
15+35	0.0000	0.00	Q				
15+40	0.0000	0.00	Q				
15+45	0.0000	0.00	Q				
15+50	0.0000	0.00	Q				
15+55	0.0000	0.00	Q				
16+ 0	0.0000	0.00	Q				
16+ 5	0.0186	2.70	|	Q	V		
16+10	0.0347	2.34	|	Q|	|	|	V
16+15	0.0360	0.20	Q	|	|	|	V|
16+20	0.0360	0.00	Q	|	|	|	V|
16+25	0.0360	0.00	Q	|	|	|	V|
16+30	0.0360	0.00	Q	|	|	|	V|
16+35	0.0360	0.00	Q	|	|	|	V|
16+40	0.0360	0.00	Q	|	|	|	V|
16+45	0.0360	0.00	Q	|	|	|	V|
16+50	0.0360	0.00	Q	|	|	|	V|
16+55	0.0360	0.00	Q	|	|	|	V|
17+ 0	0.0360	0.00	Q	|	|	|	V|
17+ 5	0.0360	0.00	Q	|	|	|	V|
17+10	0.0360	0.00	Q	|	|	|	V|
17+15	0.0360	0.00	Q	|	|	|	V|

17+20	0.0360	0.00	Q	|	|	|	V|
17+25	0.0360	0.00	Q	|	|	|	V|
17+30	0.0360	0.00	Q	|	|	|	V|
17+35	0.0360	0.00	Q	|	|	|	V|
17+40	0.0360	0.00	Q	|	|	|	V|
17+45	0.0360	0.00	Q	|	|	|	V|
17+50	0.0360	0.00	Q	|	|	|	V|
17+55	0.0360	0.00	Q	|	|	|	V|
18+ 0	0.0360	0.00	Q	|	|	|	V|
18+ 5	0.0360	0.00	Q	|	|	|	V|
18+10	0.0360	0.00	Q	|	|	|	V|
18+15	0.0360	0.00	Q	|	|	|	V|
18+20	0.0360	0.00	Q	|	|	|	V|
18+25	0.0360	0.00	Q	|	|	|	V|
18+30	0.0360	0.00	Q	|	|	|	V|
18+35	0.0360	0.00	Q	|	|	|	V|
18+40	0.0360	0.00	Q	|	|	|	V|
18+45	0.0360	0.00	Q	|	|	|	V|
18+50	0.0360	0.00	Q	|	|	|	V|
18+55	0.0360	0.00	Q	|	|	|	V|
19+ 0	0.0360	0.00	Q	|	|	|	V|
19+ 5	0.0360	0.00	Q	|	|	|	V|
19+10	0.0360	0.00	Q	|	|	|	V|
19+15	0.0360	0.00	Q	|	|	|	V|
19+20	0.0360	0.00	Q	|	|	|	V|
19+25	0.0360	0.00	Q	|	|	|	V|
19+30	0.0360	0.00	Q	|	|	|	V|
19+35	0.0360	0.00	Q	|	|	|	V|
19+40	0.0360	0.00	Q	|	|	|	V|
19+45	0.0360	0.00	Q	|	|	|	V|
19+50	0.0360	0.00	Q	|	|	|	V|
19+55	0.0360	0.00	Q	|	|	|	V|
20+ 0	0.0360	0.00	Q	|	|	|	V|
20+ 5	0.0360	0.00	Q	|	|	|	V|
20+10	0.0360	0.00	Q	|	|	|	V|
20+15	0.0360	0.00	Q	|	|	|	V|
20+20	0.0360	0.00	Q	|	|	|	V|
20+25	0.0360	0.00	Q	|	|	|	V|
20+30	0.0360	0.00	Q	|	|	|	V|
20+35	0.0360	0.00	Q	|	|	|	V|
20+40	0.0360	0.00	Q	|	|	|	V|
20+45	0.0360	0.00	Q	|	|	|	V|
20+50	0.0360	0.00	Q	|	|	|	V|
20+55	0.0360	0.00	Q	|	|	|	V|
21+ 0	0.0360	0.00	Q	|	|	|	V|
21+ 5	0.0360	0.00	Q	|	|	|	V|
21+10	0.0360	0.00	Q	|	|	|	V|
21+15	0.0360	0.00	Q	|	|	|	V|
21+20	0.0360	0.00	Q	|	|	|	V|
21+25	0.0360	0.00	Q	|	|	|	V|
21+30	0.0360	0.00	Q	|	|	|	V|
21+35	0.0360	0.00	Q	|	|	|	V|
21+40	0.0360	0.00	Q	|	|	|	V|
21+45	0.0360	0.00	Q	|	|	|	V|
21+50	0.0360	0.00	Q	|	|	|	V|
21+55	0.0360	0.00	Q	|	|	|	V|
22+ 0	0.0360	0.00	Q	|	|	|	V|
22+ 5	0.0360	0.00	Q	|	|	|	V|
22+10	0.0360	0.00	Q	|	|	|	V|
22+15	0.0360	0.00	Q	|	|	|	V|
22+20	0.0360	0.00	Q	|	|	|	V|
22+25	0.0360	0.00	Q	|	|	|	V|
22+30	0.0360	0.00	Q	|	|	|	V|
22+35	0.0360	0.00	Q	|	|	|	V|
22+40	0.0360	0.00	Q	|	|	|	V|
22+45	0.0360	0.00	Q	|	|	|	V|
22+50	0.0360	0.00	Q	|	|	|	V|
22+55	0.0360	0.00	Q	|	|	|	V|
23+ 0	0.0360	0.00	Q	|	|	|	V|
23+ 5	0.0360	0.00	Q	|	|	|	V|
23+10	0.0360	0.00	Q	|	|	|	V|
23+15	0.0360	0.00	Q	|	|	|	V|
23+20	0.0360	0.00	Q	|	|	|	V|
23+25	0.0360	0.00	Q	|	|	|	V|
23+30	0.0360	0.00	Q	|	|	|	V|
23+35	0.0360	0.00	Q	|	|	|	V|
23+40	0.0360	0.00	Q	|	|	|	V|
23+45	0.0360	0.00	Q	|	|	|	V|
23+50	0.0360	0.00	Q	|	|	|	V|
23+55	0.0360	0.00	Q	|	|	|	V|
24+ 0	0.0360	0.00	Q	|	|	|	V|

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 02/26/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-EXISTING CONDITION
AREA G
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
1.36	1	0.78
Rainfall data for year 2		
1.36	6	2.18
Rainfall data for year 2		
1.36	24	2.86
Rainfall data for year 100		
1.36	1	1.20
Rainfall data for year 100		
1.36	6	1.27
Rainfall data for year 100		
1.36	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
50.0	31.0	1.36	1.000	0.983	1.000	0.983

Area-averaged adjusted loss rate Fm (In/Hr) = 0.983

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
1.36	1.000	50.0	31.0	14.30	0.000

Area-averaged catchment yield fraction, Y = 0.000
Area-averaged low loss fraction, Yb = 1.000

++
Watercourse length = 650.00(Ft.)
Length from concentration point to centroid = 200.00(Ft.)
Elevation difference along watercourse = 87.70(Ft.)
Mannings friction factor along watercourse = 0.030
Watershed area = 1.36(Ac.)
Catchment Lag time = 0.027 hours
Unit interval = 5.000 minutes

Unit interval percentage of lag time = 310.0319
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.983(In/Hr)
Average low loss rate fraction (Yb) = 1.000 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.233(In)
Computed peak 30-minute rainfall = 0.399(In)
Specified peak 1-hour rainfall = 0.492(In)
Computed peak 3-hour rainfall = 1.225(In)
Specified peak 6-hour rainfall = 2.180(In)
Specified peak 24-hour rainfall = 2.860(In)

Rainfall depth area reduction factors:
Using a total area of 1.36(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.233(In)
30-minute factor = 1.000 Adjusted rainfall = 0.399(In)
1-hour factor = 1.000 Adjusted rainfall = 0.491(In)
3-hour factor = 1.000 Adjusted rainfall = 1.225(In)
6-hour factor = 1.000 Adjusted rainfall = 2.180(In)
24-hour factor = 1.000 Adjusted rainfall = 2.860(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 = 16.45 (CFS))	
1	58.876	9.684
2	98.191	6.466
3	100.000	0.298

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2332	0.2332
2	0.2871	0.0539
3	0.3243	0.0371
4	0.3535	0.0292
5	0.3780	0.0245
6	0.3992	0.0212
7	0.4181	0.0189
8	0.4352	0.0171
9	0.4509	0.0157
10	0.4653	0.0145
11	0.4788	0.0135
12	0.4915	0.0127
13	0.5253	0.0338
14	0.5587	0.0334
15	0.5917	0.0330
16	0.6243	0.0326
17	0.6566	0.0323
18	0.6885	0.0320
19	0.7202	0.0317
20	0.7516	0.0314
21	0.7827	0.0311
22	0.8135	0.0309
23	0.8442	0.0306
24	0.8746	0.0304
25	0.9048	0.0302
26	0.9348	0.0300
27	0.9645	0.0298
28	0.9942	0.0296
29	1.0236	0.0294
30	1.0528	0.0293
31	1.0819	0.0291
32	1.1109	0.0289
33	1.1397	0.0288
34	1.1683	0.0286
35	1.1968	0.0285
36	1.2252	0.0284
37	1.2534	0.0282
38	1.2815	0.0281
39	1.3095	0.0280
40	1.3373	0.0279
41	1.3651	0.0277
42	1.3927	0.0276
43	1.4202	0.0275
44	1.4476	0.0274
45	1.4749	0.0273
46	1.5021	0.0272
47	1.5292	0.0271

		AREAG
48	1.5562	0.0270
49	1.5831	0.0269
50	1.6099	0.0268
51	1.6366	0.0267
52	1.6633	0.0266
53	1.6898	0.0265
54	1.7163	0.0265
55	1.7427	0.0264
56	1.7690	0.0263
57	1.7952	0.0262
58	1.8213	0.0261
59	1.8474	0.0261
60	1.8734	0.0260
61	1.8993	0.0259
62	1.9252	0.0258
63	1.9509	0.0258
64	1.9766	0.0257
65	2.0023	0.0256
66	2.0279	0.0256
67	2.0534	0.0255
68	2.0788	0.0254
69	2.1042	0.0254
70	2.1295	0.0253
71	2.1548	0.0253
72	2.1800	0.0252
73	2.1859	0.0059
74	2.1917	0.0058
75	2.1975	0.0058
76	2.2032	0.0057
77	2.2088	0.0056
78	2.2144	0.0056
79	2.2200	0.0055
80	2.2254	0.0055
81	2.2309	0.0054
82	2.2362	0.0054
83	2.2415	0.0053
84	2.2468	0.0053
85	2.2520	0.0052
86	2.2572	0.0052
87	2.2623	0.0051
88	2.2674	0.0051
89	2.2724	0.0050
90	2.2774	0.0050
91	2.2823	0.0049
92	2.2872	0.0049
93	2.2920	0.0048
94	2.2968	0.0048
95	2.3016	0.0048
96	2.3063	0.0047
97	2.3110	0.0047
98	2.3157	0.0046
99	2.3203	0.0046
100	2.3249	0.0046
101	2.3294	0.0045
102	2.3339	0.0045
103	2.3384	0.0045
104	2.3428	0.0044
105	2.3472	0.0044
106	2.3515	0.0044
107	2.3559	0.0043
108	2.3602	0.0043
109	2.3644	0.0043
110	2.3687	0.0042
111	2.3729	0.0042
112	2.3770	0.0042
113	2.3812	0.0041
114	2.3853	0.0041
115	2.3894	0.0041
116	2.3934	0.0041
117	2.3974	0.0040
118	2.4014	0.0040
119	2.4054	0.0040
120	2.4094	0.0039
121	2.4133	0.0039
122	2.4172	0.0039
123	2.4210	0.0039
124	2.4249	0.0038
125	2.4287	0.0038
126	2.4325	0.0038
127	2.4363	0.0038
128	2.4400	0.0037
129	2.4437	0.0037
130	2.4474	0.0037
131	2.4511	0.0037

		AREAG
132	2.4548	0.0037
133	2.4584	0.0036
134	2.4620	0.0036
135	2.4656	0.0036
136	2.4692	0.0036
137	2.4727	0.0035
138	2.4762	0.0035
139	2.4797	0.0035
140	2.4832	0.0035
141	2.4867	0.0035
142	2.4901	0.0034
143	2.4935	0.0034
144	2.4970	0.0034
145	2.5003	0.0034
146	2.5037	0.0034
147	2.5071	0.0033
148	2.5104	0.0033
149	2.5137	0.0033
150	2.5170	0.0033
151	2.5203	0.0033
152	2.5235	0.0033
153	2.5268	0.0032
154	2.5300	0.0032
155	2.5332	0.0032
156	2.5364	0.0032
157	2.5396	0.0032
158	2.5427	0.0032
159	2.5459	0.0031
160	2.5490	0.0031
161	2.5521	0.0031
162	2.5552	0.0031
163	2.5583	0.0031
164	2.5614	0.0031
165	2.5644	0.0031
166	2.5675	0.0030
167	2.5705	0.0030
168	2.5735	0.0030
169	2.5765	0.0030
170	2.5795	0.0030
171	2.5824	0.0030
172	2.5854	0.0030
173	2.5883	0.0029
174	2.5912	0.0029
175	2.5941	0.0029
176	2.5970	0.0029
177	2.5999	0.0029
178	2.6028	0.0029
179	2.6056	0.0029
180	2.6085	0.0028
181	2.6113	0.0028
182	2.6141	0.0028
183	2.6169	0.0028
184	2.6197	0.0028
185	2.6225	0.0028
186	2.6253	0.0028
187	2.6281	0.0028
188	2.6308	0.0027
189	2.6335	0.0027
190	2.6363	0.0027
191	2.6390	0.0027
192	2.6417	0.0027
193	2.6444	0.0027
194	2.6470	0.0027
195	2.6497	0.0027
196	2.6524	0.0027
197	2.6550	0.0026
198	2.6576	0.0026
199	2.6603	0.0026
200	2.6629	0.0026
201	2.6655	0.0026
202	2.6681	0.0026
203	2.6707	0.0026
204	2.6732	0.0026
205	2.6758	0.0026
206	2.6783	0.0026
207	2.6809	0.0025
208	2.6834	0.0025
209	2.6859	0.0025
210	2.6884	0.0025
211	2.6909	0.0025
212	2.6934	0.0025
213	2.6959	0.0025
214	2.6984	0.0025
215	2.7009	0.0025

		AREAG
216	2.7033	0.0025
217	2.7058	0.0024
218	2.7082	0.0024
219	2.7106	0.0024
220	2.7130	0.0024
221	2.7155	0.0024
222	2.7179	0.0024
223	2.7203	0.0024
224	2.7226	0.0024
225	2.7250	0.0024
226	2.7274	0.0024
227	2.7297	0.0024
228	2.7321	0.0024
229	2.7344	0.0023
230	2.7368	0.0023
231	2.7391	0.0023
232	2.7414	0.0023
233	2.7437	0.0023
234	2.7460	0.0023
235	2.7483	0.0023
236	2.7506	0.0023
237	2.7529	0.0023
238	2.7552	0.0023
239	2.7574	0.0023
240	2.7597	0.0023
241	2.7619	0.0022
242	2.7642	0.0022
243	2.7664	0.0022
244	2.7686	0.0022
245	2.7708	0.0022
246	2.7731	0.0022
247	2.7753	0.0022
248	2.7775	0.0022
249	2.7796	0.0022
250	2.7818	0.0022
251	2.7840	0.0022
252	2.7862	0.0022
253	2.7883	0.0022
254	2.7905	0.0022
255	2.7926	0.0021
256	2.7948	0.0021
257	2.7969	0.0021
258	2.7990	0.0021
259	2.8012	0.0021
260	2.8033	0.0021
261	2.8054	0.0021
262	2.8075	0.0021
263	2.8096	0.0021
264	2.8117	0.0021
265	2.8138	0.0021
266	2.8158	0.0021
267	2.8179	0.0021
268	2.8200	0.0021
269	2.8220	0.0021
270	2.8241	0.0021
271	2.8261	0.0020
272	2.8282	0.0020
273	2.8302	0.0020
274	2.8322	0.0020
275	2.8342	0.0020
276	2.8363	0.0020
277	2.8383	0.0020
278	2.8403	0.0020
279	2.8423	0.0020
280	2.8443	0.0020
281	2.8462	0.0020
282	2.8482	0.0020
283	2.8502	0.0020
284	2.8522	0.0020
285	2.8541	0.0020
286	2.8561	0.0020
287	2.8580	0.0020
288	2.8600	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0019	0.0000
2	0.0020	0.0020	0.0000
3	0.0020	0.0020	0.0000
4	0.0020	0.0020	0.0000
5	0.0020	0.0020	0.0000
6	0.0020	0.0020	0.0000

7	0.0020	0.0020	0.0000
8	0.0020	0.0020	0.0000
9	0.0020	0.0020	0.0000
10	0.0020	0.0020	0.0000
11	0.0020	0.0020	0.0000
12	0.0020	0.0020	0.0000
13	0.0021	0.0021	0.0000
14	0.0021	0.0021	0.0000
15	0.0021	0.0021	0.0000
16	0.0021	0.0021	0.0000
17	0.0021	0.0021	0.0000
18	0.0021	0.0021	0.0000
19	0.0021	0.0021	0.0000
20	0.0021	0.0021	0.0000
21	0.0021	0.0021	0.0000
22	0.0021	0.0021	0.0000
23	0.0021	0.0021	0.0000
24	0.0022	0.0022	0.0000
25	0.0022	0.0022	0.0000
26	0.0022	0.0022	0.0000
27	0.0022	0.0022	0.0000
28	0.0022	0.0022	0.0000
29	0.0022	0.0022	0.0000
30	0.0022	0.0022	0.0000
31	0.0022	0.0022	0.0000
32	0.0022	0.0022	0.0000
33	0.0023	0.0023	0.0000
34	0.0023	0.0023	0.0000
35	0.0023	0.0023	0.0000
36	0.0023	0.0023	0.0000
37	0.0023	0.0023	0.0000
38	0.0023	0.0023	0.0000
39	0.0023	0.0023	0.0000
40	0.0023	0.0023	0.0000
41	0.0024	0.0024	0.0000
42	0.0024	0.0024	0.0000
43	0.0024	0.0024	0.0000
44	0.0024	0.0024	0.0000
45	0.0024	0.0024	0.0000
46	0.0024	0.0024	0.0000
47	0.0024	0.0024	0.0000
48	0.0024	0.0024	0.0000
49	0.0025	0.0025	0.0000
50	0.0025	0.0025	0.0000
51	0.0025	0.0025	0.0000
52	0.0025	0.0025	0.0000
53	0.0025	0.0025	0.0000
54	0.0025	0.0025	0.0000
55	0.0025	0.0025	0.0000
56	0.0026	0.0026	0.0000
57	0.0026	0.0026	0.0000
58	0.0026	0.0026	0.0000
59	0.0026	0.0026	0.0000
60	0.0026	0.0026	0.0000
61	0.0026	0.0026	0.0000
62	0.0026	0.0026	0.0000
63	0.0027	0.0027	0.0000
64	0.0027	0.0027	0.0000
65	0.0027	0.0027	0.0000
66	0.0027	0.0027	0.0000
67	0.0027	0.0027	0.0000
68	0.0027	0.0027	0.0000
69	0.0028	0.0028	0.0000
70	0.0028	0.0028	0.0000
71	0.0028	0.0028	0.0000
72	0.0028	0.0028	0.0000
73	0.0028	0.0028	0.0000
74	0.0029	0.0029	0.0000
75	0.0029	0.0029	0.0000
76	0.0029	0.0029	0.0000
77	0.0029	0.0029	0.0000
78	0.0029	0.0029	0.0000
79	0.0030	0.0030	0.0000
80	0.0030	0.0030	0.0000
81	0.0030	0.0030	0.0000
82	0.0030	0.0030	0.0000
83	0.0031	0.0031	0.0000
84	0.0031	0.0031	0.0000
85	0.0031	0.0031	0.0000
86	0.0031	0.0031	0.0000
87	0.0031	0.0031	0.0000
88	0.0032	0.0032	0.0000
89	0.0032	0.0032	0.0000
90	0.0032	0.0032	0.0000

		AREAG	
91	0.0032	0.0032	0.0000
92	0.0033	0.0033	0.0000
93	0.0033	0.0033	0.0000
94	0.0033	0.0033	0.0000
95	0.0033	0.0033	0.0000
96	0.0034	0.0034	0.0000
97	0.0034	0.0034	0.0000
98	0.0034	0.0034	0.0000
99	0.0035	0.0035	0.0000
100	0.0035	0.0035	0.0000
101	0.0035	0.0035	0.0000
102	0.0035	0.0035	0.0000
103	0.0036	0.0036	0.0000
104	0.0036	0.0036	0.0000
105	0.0037	0.0037	0.0000
106	0.0037	0.0037	0.0000
107	0.0037	0.0037	0.0000
108	0.0037	0.0037	0.0000
109	0.0038	0.0038	0.0000
110	0.0038	0.0038	0.0000
111	0.0039	0.0039	0.0000
112	0.0039	0.0039	0.0000
113	0.0039	0.0039	0.0000
114	0.0040	0.0040	0.0000
115	0.0040	0.0040	0.0000
116	0.0041	0.0041	0.0000
117	0.0041	0.0041	0.0000
118	0.0041	0.0041	0.0000
119	0.0042	0.0042	0.0000
120	0.0042	0.0042	0.0000
121	0.0043	0.0043	0.0000
122	0.0043	0.0043	0.0000
123	0.0044	0.0044	0.0000
124	0.0044	0.0044	0.0000
125	0.0045	0.0045	0.0000
126	0.0045	0.0045	0.0000
127	0.0046	0.0046	0.0000
128	0.0046	0.0046	0.0000
129	0.0047	0.0047	0.0000
130	0.0048	0.0048	0.0000
131	0.0048	0.0048	0.0000
132	0.0049	0.0049	0.0000
133	0.0050	0.0050	0.0000
134	0.0050	0.0050	0.0000
135	0.0051	0.0051	0.0000
136	0.0052	0.0052	0.0000
137	0.0053	0.0053	0.0000
138	0.0053	0.0053	0.0000
139	0.0054	0.0054	0.0000
140	0.0055	0.0055	0.0000
141	0.0056	0.0056	0.0000
142	0.0056	0.0056	0.0000
143	0.0058	0.0058	0.0000
144	0.0058	0.0058	0.0000
145	0.0252	0.0252	0.0000
146	0.0253	0.0253	0.0000
147	0.0254	0.0254	0.0000
148	0.0254	0.0254	0.0000
149	0.0256	0.0256	0.0000
150	0.0256	0.0256	0.0000
151	0.0258	0.0258	0.0000
152	0.0258	0.0258	0.0000
153	0.0260	0.0260	0.0000
154	0.0261	0.0261	0.0000
155	0.0262	0.0262	0.0000
156	0.0263	0.0263	0.0000
157	0.0265	0.0265	0.0000
158	0.0265	0.0265	0.0000
159	0.0267	0.0267	0.0000
160	0.0268	0.0268	0.0000
161	0.0270	0.0270	0.0000
162	0.0271	0.0271	0.0000
163	0.0273	0.0273	0.0000
164	0.0274	0.0274	0.0000
165	0.0276	0.0276	0.0000
166	0.0277	0.0277	0.0000
167	0.0280	0.0280	0.0000
168	0.0281	0.0281	0.0000
169	0.0284	0.0284	0.0000
170	0.0285	0.0285	0.0000
171	0.0288	0.0288	0.0000
172	0.0289	0.0289	0.0000
173	0.0293	0.0293	0.0000
174	0.0294	0.0294	0.0000

175	0.0298	0.0298	0.0000
176	0.0300	0.0300	0.0000
177	0.0304	0.0304	0.0000
178	0.0306	0.0306	0.0000
179	0.0311	0.0311	0.0000
180	0.0314	0.0314	0.0000
181	0.0320	0.0320	0.0000
182	0.0323	0.0323	0.0000
183	0.0330	0.0330	0.0000
184	0.0334	0.0334	0.0000
185	0.0127	0.0127	0.0000
186	0.0135	0.0135	0.0000
187	0.0157	0.0157	0.0000
188	0.0171	0.0171	0.0000
189	0.0212	0.0212	0.0000
190	0.0245	0.0245	0.0000
191	0.0371	0.0371	0.0000
192	0.0539	0.0539	0.0000
193	0.2332	0.0819	0.1513
194	0.0292	0.0292	0.0000
195	0.0189	0.0189	0.0000
196	0.0145	0.0145	0.0000
197	0.0338	0.0338	0.0000
198	0.0326	0.0326	0.0000
199	0.0317	0.0317	0.0000
200	0.0309	0.0309	0.0000
201	0.0302	0.0302	0.0000
202	0.0296	0.0296	0.0000
203	0.0291	0.0291	0.0000
204	0.0286	0.0286	0.0000
205	0.0282	0.0282	0.0000
206	0.0279	0.0279	0.0000
207	0.0275	0.0275	0.0000
208	0.0272	0.0272	0.0000
209	0.0269	0.0269	0.0000
210	0.0266	0.0266	0.0000
211	0.0264	0.0264	0.0000
212	0.0261	0.0261	0.0000
213	0.0259	0.0259	0.0000
214	0.0257	0.0257	0.0000
215	0.0255	0.0255	0.0000
216	0.0253	0.0253	0.0000
217	0.0059	0.0059	0.0000
218	0.0057	0.0057	0.0000
219	0.0055	0.0055	0.0000
220	0.0054	0.0054	0.0000
221	0.0052	0.0052	0.0000
222	0.0051	0.0051	0.0000
223	0.0049	0.0049	0.0000
224	0.0048	0.0048	0.0000
225	0.0047	0.0047	0.0000
226	0.0046	0.0046	0.0000
227	0.0045	0.0045	0.0000
228	0.0044	0.0044	0.0000
229	0.0043	0.0043	0.0000
230	0.0042	0.0042	0.0000
231	0.0041	0.0041	0.0000
232	0.0040	0.0040	0.0000
233	0.0039	0.0039	0.0000
234	0.0038	0.0038	0.0000
235	0.0038	0.0038	0.0000
236	0.0037	0.0037	0.0000
237	0.0036	0.0036	0.0000
238	0.0036	0.0036	0.0000
239	0.0035	0.0035	0.0000
240	0.0034	0.0034	0.0000
241	0.0034	0.0034	0.0000
242	0.0033	0.0033	0.0000
243	0.0033	0.0033	0.0000
244	0.0032	0.0032	0.0000
245	0.0032	0.0032	0.0000
246	0.0031	0.0031	0.0000
247	0.0031	0.0031	0.0000
248	0.0030	0.0030	0.0000
249	0.0030	0.0030	0.0000
250	0.0030	0.0030	0.0000
251	0.0029	0.0029	0.0000
252	0.0029	0.0029	0.0000
253	0.0028	0.0028	0.0000
254	0.0028	0.0028	0.0000
255	0.0028	0.0028	0.0000
256	0.0027	0.0027	0.0000
257	0.0027	0.0027	0.0000
258	0.0027	0.0027	0.0000

259	0.0026	0.0026	0.0000
260	0.0026	0.0026	0.0000
261	0.0026	0.0026	0.0000
262	0.0025	0.0025	0.0000
263	0.0025	0.0025	0.0000
264	0.0025	0.0025	0.0000
265	0.0024	0.0024	0.0000
266	0.0024	0.0024	0.0000
267	0.0024	0.0024	0.0000
268	0.0024	0.0024	0.0000
269	0.0023	0.0023	0.0000
270	0.0023	0.0023	0.0000
271	0.0023	0.0023	0.0000
272	0.0023	0.0023	0.0000
273	0.0022	0.0022	0.0000
274	0.0022	0.0022	0.0000
275	0.0022	0.0022	0.0000
276	0.0022	0.0022	0.0000
277	0.0022	0.0022	0.0000
278	0.0021	0.0021	0.0000
279	0.0021	0.0021	0.0000
280	0.0021	0.0021	0.0000
281	0.0021	0.0021	0.0000
282	0.0021	0.0021	0.0000
283	0.0020	0.0020	0.0000
284	0.0020	0.0020	0.0000
285	0.0020	0.0020	0.0000
286	0.0020	0.0020	0.0000
287	0.0020	0.0020	0.0000
288	0.0020	0.0020	0.0000

Total soil rain loss = 2.71(In)
Total effective rainfall = 0.15(In)
Peak flow rate in flood hydrograph = 1.47(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	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0000	0.00	Q	|	|	|	|
0+40	0.0000	0.00	Q	|	|	|	|
0+45	0.0000	0.00	Q	|	|	|	|
0+50	0.0000	0.00	Q	|	|	|	|
0+55	0.0000	0.00	Q	|	|	|	|
1+ 0	0.0000	0.00	Q	|	|	|	|
1+ 5	0.0000	0.00	Q	|	|	|	|
1+10	0.0000	0.00	Q	|	|	|	|
1+15	0.0000	0.00	Q	|	|	|	|
1+20	0.0000	0.00	Q	|	|	|	|
1+25	0.0000	0.00	Q	|	|	|	|
1+30	0.0000	0.00	Q	|	|	|	|
1+35	0.0000	0.00	Q	|	|	|	|
1+40	0.0000	0.00	Q	|	|	|	|
1+45	0.0000	0.00	Q	|	|	|	|
1+50	0.0000	0.00	Q	|	|	|	|
1+55	0.0000	0.00	Q	|	|	|	|
2+ 0	0.0000	0.00	Q	|	|	|	|
2+ 5	0.0000	0.00	Q	|	|	|	|
2+10	0.0000	0.00	Q	|	|	|	|
2+15	0.0000	0.00	Q	|	|	|	|
2+20	0.0000	0.00	Q	|	|	|	|
2+25	0.0000	0.00	Q	|	|	|	|
2+30	0.0000	0.00	Q	|	|	|	|
2+35	0.0000	0.00	Q	|	|	|	|
2+40	0.0000	0.00	Q	|	|	|	|
2+45	0.0000	0.00	Q	|	|	|	|
2+50	0.0000	0.00	Q	|	|	|	|
2+55	0.0000	0.00	Q	|	|	|	|
3+ 0	0.0000	0.00	Q	|	|	|	|
3+ 5	0.0000	0.00	Q	|	|	|	|
3+10	0.0000	0.00	Q	|	|	|	|
3+15	0.0000	0.00	Q	|	|	|	|

3+20	0.0000	0.00	Q				
3+25	0.0000	0.00	Q				
3+30	0.0000	0.00	Q				
3+35	0.0000	0.00	Q				
3+40	0.0000	0.00	Q				
3+45	0.0000	0.00	Q				
3+50	0.0000	0.00	Q				
3+55	0.0000	0.00	Q				
4+ 0	0.0000	0.00	Q				
4+ 5	0.0000	0.00	Q				
4+10	0.0000	0.00	Q				
4+15	0.0000	0.00	Q				
4+20	0.0000	0.00	Q				
4+25	0.0000	0.00	Q				
4+30	0.0000	0.00	Q				
4+35	0.0000	0.00	Q				
4+40	0.0000	0.00	Q				
4+45	0.0000	0.00	Q				
4+50	0.0000	0.00	Q				
4+55	0.0000	0.00	Q				
5+ 0	0.0000	0.00	Q				
5+ 5	0.0000	0.00	Q				
5+10	0.0000	0.00	Q				
5+15	0.0000	0.00	Q				
5+20	0.0000	0.00	Q				
5+25	0.0000	0.00	Q				
5+30	0.0000	0.00	Q				
5+35	0.0000	0.00	Q				
5+40	0.0000	0.00	Q				
5+45	0.0000	0.00	Q				
5+50	0.0000	0.00	Q				
5+55	0.0000	0.00	Q				
6+ 0	0.0000	0.00	Q				
6+ 5	0.0000	0.00	Q				
6+10	0.0000	0.00	Q				
6+15	0.0000	0.00	Q				
6+20	0.0000	0.00	Q				
6+25	0.0000	0.00	Q				
6+30	0.0000	0.00	Q				
6+35	0.0000	0.00	Q				
6+40	0.0000	0.00	Q				
6+45	0.0000	0.00	Q				
6+50	0.0000	0.00	Q				
6+55	0.0000	0.00	Q				
7+ 0	0.0000	0.00	Q				
7+ 5	0.0000	0.00	Q				
7+10	0.0000	0.00	Q				
7+15	0.0000	0.00	Q				
7+20	0.0000	0.00	Q				
7+25	0.0000	0.00	Q				
7+30	0.0000	0.00	Q				
7+35	0.0000	0.00	Q				
7+40	0.0000	0.00	Q				
7+45	0.0000	0.00	Q				
7+50	0.0000	0.00	Q				
7+55	0.0000	0.00	Q				
8+ 0	0.0000	0.00	Q				
8+ 5	0.0000	0.00	Q				
8+10	0.0000	0.00	Q				
8+15	0.0000	0.00	Q				
8+20	0.0000	0.00	Q				
8+25	0.0000	0.00	Q				
8+30	0.0000	0.00	Q				
8+35	0.0000	0.00	Q				
8+40	0.0000	0.00	Q				
8+45	0.0000	0.00	Q				
8+50	0.0000	0.00	Q				
8+55	0.0000	0.00	Q				
9+ 0	0.0000	0.00	Q				
9+ 5	0.0000	0.00	Q				
9+10	0.0000	0.00	Q				
9+15	0.0000	0.00	Q				
9+20	0.0000	0.00	Q				
9+25	0.0000	0.00	Q				
9+30	0.0000	0.00	Q				
9+35	0.0000	0.00	Q				
9+40	0.0000	0.00	Q				
9+45	0.0000	0.00	Q				
9+50	0.0000	0.00	Q				
9+55	0.0000	0.00	Q				
10+ 0	0.0000	0.00	Q				
10+ 5	0.0000	0.00	Q				
10+10	0.0000	0.00	Q				
10+15	0.0000	0.00	Q				

10+20	0.0000	0.00	Q				
10+25	0.0000	0.00	Q				
10+30	0.0000	0.00	Q				
10+35	0.0000	0.00	Q				
10+40	0.0000	0.00	Q				
10+45	0.0000	0.00	Q				
10+50	0.0000	0.00	Q				
10+55	0.0000	0.00	Q				
11+ 0	0.0000	0.00	Q				
11+ 5	0.0000	0.00	Q				
11+10	0.0000	0.00	Q				
11+15	0.0000	0.00	Q				
11+20	0.0000	0.00	Q				
11+25	0.0000	0.00	Q				
11+30	0.0000	0.00	Q				
11+35	0.0000	0.00	Q				
11+40	0.0000	0.00	Q				
11+45	0.0000	0.00	Q				
11+50	0.0000	0.00	Q				
11+55	0.0000	0.00	Q				
12+ 0	0.0000	0.00	Q				
12+ 5	0.0000	0.00	Q				
12+10	0.0000	0.00	Q				
12+15	0.0000	0.00	Q				
12+20	0.0000	0.00	Q				
12+25	0.0000	0.00	Q				
12+30	0.0000	0.00	Q				
12+35	0.0000	0.00	Q				
12+40	0.0000	0.00	Q				
12+45	0.0000	0.00	Q				
12+50	0.0000	0.00	Q				
12+55	0.0000	0.00	Q				
13+ 0	0.0000	0.00	Q				
13+ 5	0.0000	0.00	Q				
13+10	0.0000	0.00	Q				
13+15	0.0000	0.00	Q				
13+20	0.0000	0.00	Q				
13+25	0.0000	0.00	Q				
13+30	0.0000	0.00	Q				
13+35	0.0000	0.00	Q				
13+40	0.0000	0.00	Q				
13+45	0.0000	0.00	Q				
13+50	0.0000	0.00	Q				
13+55	0.0000	0.00	Q				
14+ 0	0.0000	0.00	Q				
14+ 5	0.0000	0.00	Q				
14+10	0.0000	0.00	Q				
14+15	0.0000	0.00	Q				
14+20	0.0000	0.00	Q				
14+25	0.0000	0.00	Q				
14+30	0.0000	0.00	Q				
14+35	0.0000	0.00	Q				
14+40	0.0000	0.00	Q				
14+45	0.0000	0.00	Q				
14+50	0.0000	0.00	Q				
14+55	0.0000	0.00	Q				
15+ 0	0.0000	0.00	Q				
15+ 5	0.0000	0.00	Q				
15+10	0.0000	0.00	Q				
15+15	0.0000	0.00	Q				
15+20	0.0000	0.00	Q				
15+25	0.0000	0.00	Q				
15+30	0.0000	0.00	Q				
15+35	0.0000	0.00	Q				
15+40	0.0000	0.00	Q				
15+45	0.0000	0.00	Q				
15+50	0.0000	0.00	Q				
15+55	0.0000	0.00	Q				
16+ 0	0.0000	0.00	Q				
16+ 5	0.0101	1.47		Q		V	
16+10	0.0168	0.98		Q			V
16+15	0.0171	0.05	Q				V
16+20	0.0171	0.00	Q				V
16+25	0.0171	0.00	Q				V
16+30	0.0171	0.00	Q				V
16+35	0.0171	0.00	Q				V
16+40	0.0171	0.00	Q				V
16+45	0.0171	0.00	Q				V
16+50	0.0171	0.00	Q				V
16+55	0.0171	0.00	Q				V
17+ 0	0.0171	0.00	Q				V
17+ 5	0.0171	0.00	Q				V
17+10	0.0171	0.00	Q				V
17+15	0.0171	0.00	Q				V

17+20	0.0171	0.00	Q	|	|	|	V|
17+25	0.0171	0.00	Q	|	|	|	V|
17+30	0.0171	0.00	Q	|	|	|	V|
17+35	0.0171	0.00	Q	|	|	|	V|
17+40	0.0171	0.00	Q	|	|	|	V|
17+45	0.0171	0.00	Q	|	|	|	V|
17+50	0.0171	0.00	Q	|	|	|	V|
17+55	0.0171	0.00	Q	|	|	|	V|
18+ 0	0.0171	0.00	Q	|	|	|	V|
18+ 5	0.0171	0.00	Q	|	|	|	V|
18+10	0.0171	0.00	Q	|	|	|	V|
18+15	0.0171	0.00	Q	|	|	|	V|
18+20	0.0171	0.00	Q	|	|	|	V|
18+25	0.0171	0.00	Q	|	|	|	V|
18+30	0.0171	0.00	Q	|	|	|	V|
18+35	0.0171	0.00	Q	|	|	|	V|
18+40	0.0171	0.00	Q	|	|	|	V|
18+45	0.0171	0.00	Q	|	|	|	V|
18+50	0.0171	0.00	Q	|	|	|	V|
18+55	0.0171	0.00	Q	|	|	|	V|
19+ 0	0.0171	0.00	Q	|	|	|	V|
19+ 5	0.0171	0.00	Q	|	|	|	V|
19+10	0.0171	0.00	Q	|	|	|	V|
19+15	0.0171	0.00	Q	|	|	|	V|
19+20	0.0171	0.00	Q	|	|	|	V|
19+25	0.0171	0.00	Q	|	|	|	V|
19+30	0.0171	0.00	Q	|	|	|	V|
19+35	0.0171	0.00	Q	|	|	|	V|
19+40	0.0171	0.00	Q	|	|	|	V|
19+45	0.0171	0.00	Q	|	|	|	V|
19+50	0.0171	0.00	Q	|	|	|	V|
19+55	0.0171	0.00	Q	|	|	|	V|
20+ 0	0.0171	0.00	Q	|	|	|	V|
20+ 5	0.0171	0.00	Q	|	|	|	V|
20+10	0.0171	0.00	Q	|	|	|	V|
20+15	0.0171	0.00	Q	|	|	|	V|
20+20	0.0171	0.00	Q	|	|	|	V|
20+25	0.0171	0.00	Q	|	|	|	V|
20+30	0.0171	0.00	Q	|	|	|	V|
20+35	0.0171	0.00	Q	|	|	|	V|
20+40	0.0171	0.00	Q	|	|	|	V|
20+45	0.0171	0.00	Q	|	|	|	V|
20+50	0.0171	0.00	Q	|	|	|	V|
20+55	0.0171	0.00	Q	|	|	|	V|
21+ 0	0.0171	0.00	Q	|	|	|	V|
21+ 5	0.0171	0.00	Q	|	|	|	V|
21+10	0.0171	0.00	Q	|	|	|	V|
21+15	0.0171	0.00	Q	|	|	|	V|
21+20	0.0171	0.00	Q	|	|	|	V|
21+25	0.0171	0.00	Q	|	|	|	V|
21+30	0.0171	0.00	Q	|	|	|	V|
21+35	0.0171	0.00	Q	|	|	|	V|
21+40	0.0171	0.00	Q	|	|	|	V|
21+45	0.0171	0.00	Q	|	|	|	V|
21+50	0.0171	0.00	Q	|	|	|	V|
21+55	0.0171	0.00	Q	|	|	|	V|
22+ 0	0.0171	0.00	Q	|	|	|	V|
22+ 5	0.0171	0.00	Q	|	|	|	V|
22+10	0.0171	0.00	Q	|	|	|	V|
22+15	0.0171	0.00	Q	|	|	|	V|
22+20	0.0171	0.00	Q	|	|	|	V|
22+25	0.0171	0.00	Q	|	|	|	V|
22+30	0.0171	0.00	Q	|	|	|	V|
22+35	0.0171	0.00	Q	|	|	|	V|
22+40	0.0171	0.00	Q	|	|	|	V|
22+45	0.0171	0.00	Q	|	|	|	V|
22+50	0.0171	0.00	Q	|	|	|	V|
22+55	0.0171	0.00	Q	|	|	|	V|
23+ 0	0.0171	0.00	Q	|	|	|	V|
23+ 5	0.0171	0.00	Q	|	|	|	V|
23+10	0.0171	0.00	Q	|	|	|	V|
23+15	0.0171	0.00	Q	|	|	|	V|
23+20	0.0171	0.00	Q	|	|	|	V|
23+25	0.0171	0.00	Q	|	|	|	V|
23+30	0.0171	0.00	Q	|	|	|	V|
23+35	0.0171	0.00	Q	|	|	|	V|
23+40	0.0171	0.00	Q	|	|	|	V|
23+45	0.0171	0.00	Q	|	|	|	V|
23+50	0.0171	0.00	Q	|	|	|	V|
23+55	0.0171	0.00	Q	|	|	|	V|
24+ 0	0.0171	0.00	Q	|	|	|	V|

APPENDIX A.2: 2-YEAR/24-HOUR HYDROGRAPH CALCULATIONS BASED ON PROPOSED DEVELOPMENT

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA A
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
7.47	1	0.78
Rainfall data for year 2		
7.47	6	1.20
Rainfall data for year 2		
7.47	24	2.18
Rainfall data for year 100		
7.47	1	1.27
Rainfall data for year 100		
7.47	6	2.86
Rainfall data for year 100		
7.47	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
58.9	38.9	7.47	1.000	0.927	0.486	0.450

Area-averaged adjusted loss rate Fm (In/Hr) = 0.450

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
3.63	0.486	58.9	38.9	10.90	0.000
3.84	0.514	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.460
Area-averaged low loss fraction, Yb = 0.540

++
Watercourse length = 730.00(Ft.)
Length from concentration point to centroid = 280.00(Ft.)
Elevation difference along watercourse = 69.50(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 7.47(Ac.)
Catchment Lag time = 0.017 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 488.6316
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.450(In/Hr)
Average low loss rate fraction (Yb) = 0.540 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 7.47(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 90.34 (CFS))	
1	72.933	65.888
2	100.000	24.453

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2585	0.0485
3	0.2919	0.0334
4	0.3182	0.0263
5	0.3402	0.0220
6	0.3594	0.0191
7	0.3764	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4189	0.0130
11	0.4310	0.0122
12	0.4424	0.0114
13	0.4626	0.0202
14	0.4821	0.0195
15	0.5010	0.0189
16	0.5193	0.0183
17	0.5372	0.0178
18	0.5545	0.0174
19	0.5715	0.0170
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6201	0.0159
23	0.6357	0.0155
24	0.6509	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6950	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113

		AREAA
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAA
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5781	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039

		AREAA
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0018	0.0015
2	0.0033	0.0018	0.0015
3	0.0033	0.0018	0.0015
4	0.0033	0.0018	0.0015
5	0.0033	0.0018	0.0015
6	0.0033	0.0018	0.0015

7	0.0033	0.0018	0.0015
8	0.0033	0.0018	0.0015
9	0.0033	0.0018	0.0015
10	0.0034	0.0018	0.0015
11	0.0034	0.0018	0.0015
12	0.0034	0.0018	0.0016
13	0.0034	0.0018	0.0016
14	0.0034	0.0018	0.0016
15	0.0034	0.0018	0.0016
16	0.0034	0.0018	0.0016
17	0.0034	0.0019	0.0016
18	0.0034	0.0019	0.0016
19	0.0035	0.0019	0.0016
20	0.0035	0.0019	0.0016
21	0.0035	0.0019	0.0016
22	0.0035	0.0019	0.0016
23	0.0035	0.0019	0.0016
24	0.0035	0.0019	0.0016
25	0.0035	0.0019	0.0016
26	0.0035	0.0019	0.0016
27	0.0035	0.0019	0.0016
28	0.0036	0.0019	0.0016
29	0.0036	0.0019	0.0016
30	0.0036	0.0019	0.0016
31	0.0036	0.0019	0.0017
32	0.0036	0.0019	0.0017
33	0.0036	0.0020	0.0017
34	0.0036	0.0020	0.0017
35	0.0036	0.0020	0.0017
36	0.0037	0.0020	0.0017
37	0.0037	0.0020	0.0017
38	0.0037	0.0020	0.0017
39	0.0037	0.0020	0.0017
40	0.0037	0.0020	0.0017
41	0.0037	0.0020	0.0017
42	0.0037	0.0020	0.0017
43	0.0038	0.0020	0.0017
44	0.0038	0.0020	0.0017
45	0.0038	0.0020	0.0017
46	0.0038	0.0020	0.0017
47	0.0038	0.0021	0.0018
48	0.0038	0.0021	0.0018
49	0.0038	0.0021	0.0018
50	0.0039	0.0021	0.0018
51	0.0039	0.0021	0.0018
52	0.0039	0.0021	0.0018
53	0.0039	0.0021	0.0018
54	0.0039	0.0021	0.0018
55	0.0039	0.0021	0.0018
56	0.0040	0.0021	0.0018
57	0.0040	0.0021	0.0018
58	0.0040	0.0021	0.0018
59	0.0040	0.0022	0.0018
60	0.0040	0.0022	0.0018
61	0.0040	0.0022	0.0019
62	0.0041	0.0022	0.0019
63	0.0041	0.0022	0.0019
64	0.0041	0.0022	0.0019
65	0.0041	0.0022	0.0019
66	0.0041	0.0022	0.0019
67	0.0041	0.0022	0.0019
68	0.0042	0.0022	0.0019
69	0.0042	0.0023	0.0019
70	0.0042	0.0023	0.0019
71	0.0042	0.0023	0.0019
72	0.0042	0.0023	0.0020
73	0.0043	0.0023	0.0020
74	0.0043	0.0023	0.0020
75	0.0043	0.0023	0.0020
76	0.0043	0.0023	0.0020
77	0.0044	0.0023	0.0020
78	0.0044	0.0024	0.0020
79	0.0044	0.0024	0.0020
80	0.0044	0.0024	0.0020
81	0.0044	0.0024	0.0020
82	0.0045	0.0024	0.0021
83	0.0045	0.0024	0.0021
84	0.0045	0.0024	0.0021
85	0.0045	0.0024	0.0021
86	0.0045	0.0025	0.0021
87	0.0046	0.0025	0.0021
88	0.0046	0.0025	0.0021
89	0.0046	0.0025	0.0021
90	0.0046	0.0025	0.0021

91	0.0047	0.0025	0.0022
92	0.0047	0.0025	0.0022
93	0.0047	0.0026	0.0022
94	0.0048	0.0026	0.0022
95	0.0048	0.0026	0.0022
96	0.0048	0.0026	0.0022
97	0.0048	0.0026	0.0022
98	0.0049	0.0026	0.0022
99	0.0049	0.0026	0.0023
100	0.0049	0.0027	0.0023
101	0.0050	0.0027	0.0023
102	0.0050	0.0027	0.0023
103	0.0050	0.0027	0.0023
104	0.0051	0.0027	0.0023
105	0.0051	0.0027	0.0023
106	0.0051	0.0028	0.0024
107	0.0052	0.0028	0.0024
108	0.0052	0.0028	0.0024
109	0.0052	0.0028	0.0024
110	0.0053	0.0028	0.0024
111	0.0053	0.0029	0.0024
112	0.0053	0.0029	0.0025
113	0.0054	0.0029	0.0025
114	0.0054	0.0029	0.0025
115	0.0055	0.0029	0.0025
116	0.0055	0.0030	0.0025
117	0.0055	0.0030	0.0026
118	0.0056	0.0030	0.0026
119	0.0056	0.0030	0.0026
120	0.0057	0.0031	0.0026
121	0.0057	0.0031	0.0026
122	0.0057	0.0031	0.0026
123	0.0058	0.0031	0.0027
124	0.0058	0.0031	0.0027
125	0.0059	0.0032	0.0027
126	0.0059	0.0032	0.0027
127	0.0060	0.0032	0.0028
128	0.0060	0.0033	0.0028
129	0.0061	0.0033	0.0028
130	0.0061	0.0033	0.0028
131	0.0062	0.0034	0.0029
132	0.0063	0.0034	0.0029
133	0.0063	0.0034	0.0029
134	0.0064	0.0034	0.0029
135	0.0065	0.0035	0.0030
136	0.0065	0.0035	0.0030
137	0.0066	0.0036	0.0030
138	0.0066	0.0036	0.0031
139	0.0067	0.0036	0.0031
140	0.0068	0.0037	0.0031
141	0.0069	0.0037	0.0032
142	0.0069	0.0037	0.0032
143	0.0070	0.0038	0.0032
144	0.0071	0.0038	0.0033
145	0.0093	0.0050	0.0043
146	0.0094	0.0051	0.0043
147	0.0095	0.0051	0.0044
148	0.0095	0.0052	0.0044
149	0.0097	0.0052	0.0045
150	0.0097	0.0053	0.0045
151	0.0099	0.0053	0.0045
152	0.0099	0.0054	0.0046
153	0.0101	0.0054	0.0046
154	0.0102	0.0055	0.0047
155	0.0103	0.0056	0.0048
156	0.0104	0.0056	0.0048
157	0.0106	0.0057	0.0049
158	0.0107	0.0058	0.0049
159	0.0109	0.0059	0.0050
160	0.0110	0.0059	0.0050
161	0.0112	0.0060	0.0051
162	0.0113	0.0061	0.0052
163	0.0115	0.0062	0.0053
164	0.0116	0.0063	0.0053
165	0.0118	0.0064	0.0055
166	0.0120	0.0065	0.0055
167	0.0122	0.0066	0.0056
168	0.0124	0.0067	0.0057
169	0.0127	0.0069	0.0058
170	0.0129	0.0069	0.0059
171	0.0132	0.0071	0.0061
172	0.0134	0.0072	0.0062
173	0.0138	0.0074	0.0063
174	0.0140	0.0076	0.0064

175	0.0145	0.0078	0.0067
176	0.0147	0.0079	0.0068
177	0.0152	0.0082	0.0070
178	0.0155	0.0084	0.0072
179	0.0162	0.0087	0.0075
180	0.0166	0.0089	0.0076
181	0.0174	0.0094	0.0080
182	0.0178	0.0096	0.0082
183	0.0189	0.0102	0.0087
184	0.0195	0.0105	0.0090
185	0.0114	0.0062	0.0052
186	0.0122	0.0066	0.0056
187	0.0141	0.0076	0.0065
188	0.0154	0.0083	0.0071
189	0.0191	0.0103	0.0088
190	0.0220	0.0119	0.0101
191	0.0334	0.0180	0.0154
192	0.0485	0.0262	0.0223
193	0.2099	0.0375	0.1724
194	0.0263	0.0142	0.0121
195	0.0170	0.0092	0.0078
196	0.0130	0.0070	0.0060
197	0.0202	0.0109	0.0093
198	0.0183	0.0099	0.0084
199	0.0170	0.0091	0.0078
200	0.0159	0.0086	0.0073
201	0.0150	0.0081	0.0069
202	0.0142	0.0077	0.0065
203	0.0136	0.0073	0.0063
204	0.0130	0.0070	0.0060
205	0.0125	0.0068	0.0058
206	0.0121	0.0065	0.0056
207	0.0117	0.0063	0.0054
208	0.0114	0.0061	0.0052
209	0.0111	0.0060	0.0051
210	0.0108	0.0058	0.0050
211	0.0105	0.0057	0.0048
212	0.0103	0.0055	0.0047
213	0.0100	0.0054	0.0046
214	0.0098	0.0053	0.0045
215	0.0096	0.0052	0.0044
216	0.0094	0.0051	0.0043
217	0.0071	0.0039	0.0033
218	0.0070	0.0038	0.0032
219	0.0068	0.0037	0.0031
220	0.0067	0.0036	0.0031
221	0.0066	0.0035	0.0030
222	0.0064	0.0035	0.0030
223	0.0063	0.0034	0.0029
224	0.0062	0.0033	0.0028
225	0.0061	0.0033	0.0028
226	0.0060	0.0032	0.0027
227	0.0059	0.0032	0.0027
228	0.0058	0.0031	0.0027
229	0.0057	0.0031	0.0026
230	0.0056	0.0030	0.0026
231	0.0055	0.0030	0.0025
232	0.0054	0.0029	0.0025
233	0.0054	0.0029	0.0025
234	0.0053	0.0028	0.0024
235	0.0052	0.0028	0.0024
236	0.0051	0.0028	0.0024
237	0.0051	0.0027	0.0023
238	0.0050	0.0027	0.0023
239	0.0049	0.0027	0.0023
240	0.0049	0.0026	0.0022
241	0.0048	0.0026	0.0022
242	0.0048	0.0026	0.0022
243	0.0047	0.0025	0.0022
244	0.0047	0.0025	0.0021
245	0.0046	0.0025	0.0021
246	0.0046	0.0025	0.0021
247	0.0045	0.0024	0.0021
248	0.0045	0.0024	0.0021
249	0.0044	0.0024	0.0020
250	0.0044	0.0024	0.0020
251	0.0043	0.0023	0.0020
252	0.0043	0.0023	0.0020
253	0.0043	0.0023	0.0020
254	0.0042	0.0023	0.0019
255	0.0042	0.0023	0.0019
256	0.0041	0.0022	0.0019
257	0.0041	0.0022	0.0019
258	0.0041	0.0022	0.0019

259	0.0040	0.0022	0.0019
260	0.0040	0.0022	0.0018
261	0.0040	0.0021	0.0018
262	0.0039	0.0021	0.0018
263	0.0039	0.0021	0.0018
264	0.0039	0.0021	0.0018
265	0.0038	0.0021	0.0018
266	0.0038	0.0021	0.0018
267	0.0038	0.0020	0.0017
268	0.0037	0.0020	0.0017
269	0.0037	0.0020	0.0017
270	0.0037	0.0020	0.0017
271	0.0037	0.0020	0.0017
272	0.0036	0.0020	0.0017
273	0.0036	0.0019	0.0017
274	0.0036	0.0019	0.0017
275	0.0036	0.0019	0.0016
276	0.0035	0.0019	0.0016
277	0.0035	0.0019	0.0016
278	0.0035	0.0019	0.0016
279	0.0035	0.0019	0.0016
280	0.0034	0.0019	0.0016
281	0.0034	0.0018	0.0016
282	0.0034	0.0018	0.0016
283	0.0034	0.0018	0.0016
284	0.0034	0.0018	0.0015
285	0.0033	0.0018	0.0015
286	0.0033	0.0018	0.0015
287	0.0033	0.0018	0.0015
288	0.0033	0.0018	0.0015

Total soil rain loss = 1.10(In)
Total effective rainfall = 1.08(In)
Peak flow rate in flood hydrograph = 11.91(CFS)

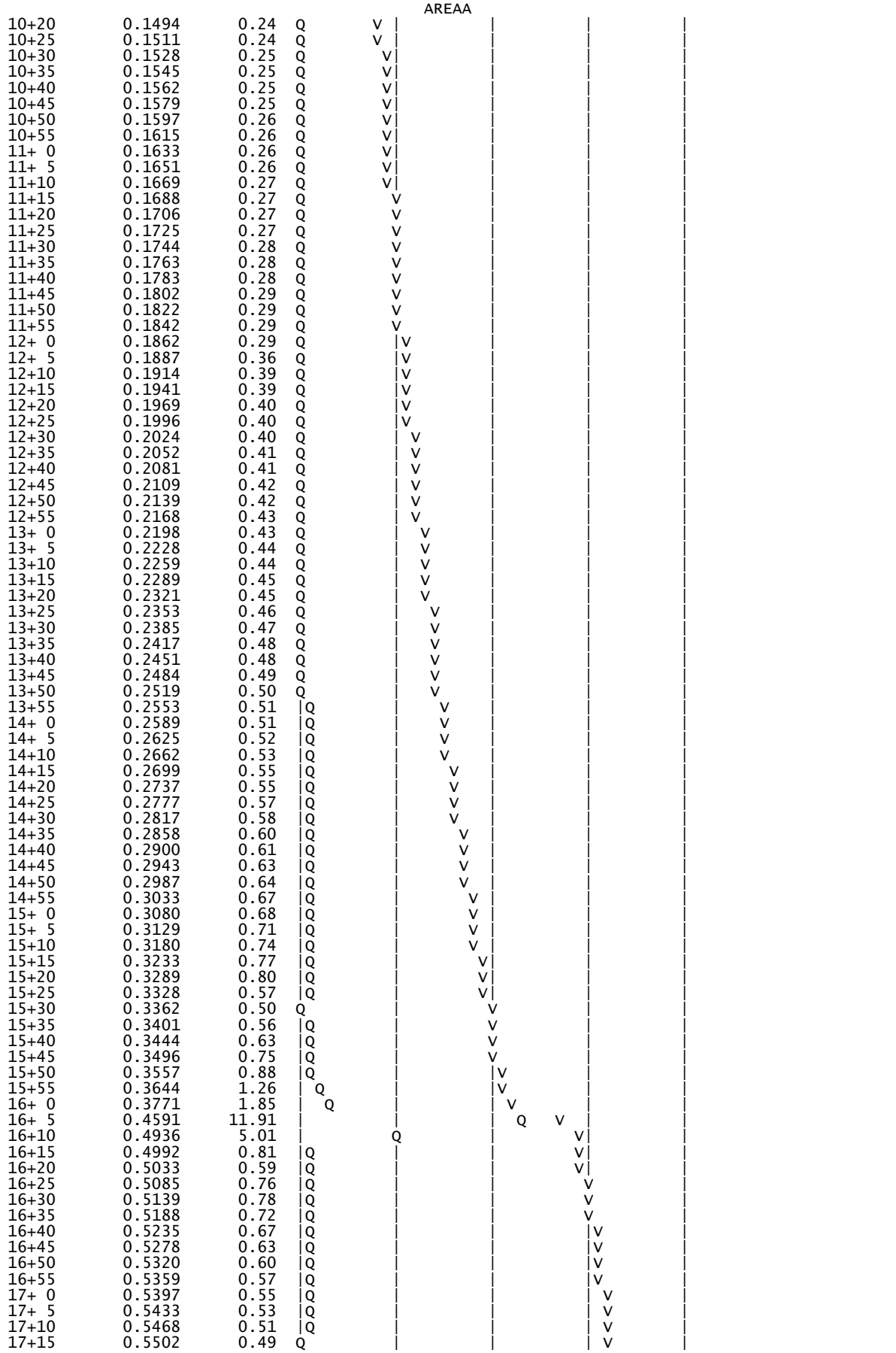
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0007	0.10	Q				
0+10	0.0016	0.14	Q				
0+15	0.0026	0.14	Q				
0+20	0.0035	0.14	Q				
0+25	0.0044	0.14	Q				
0+30	0.0054	0.14	Q				
0+35	0.0063	0.14	Q				
0+40	0.0073	0.14	Q				
0+45	0.0083	0.14	Q				
0+50	0.0092	0.14	Q				
0+55	0.0102	0.14	Q				
1+ 0	0.0111	0.14	Q				
1+ 5	0.0121	0.14	Q				
1+10	0.0131	0.14	Q				
1+15	0.0141	0.14	Q				
1+20	0.0150	0.14	Q				
1+25	0.0160	0.14	Q				
1+30	0.0170	0.14	QV				
1+35	0.0180	0.14	QV				
1+40	0.0190	0.14	QV				
1+45	0.0200	0.14	QV				
1+50	0.0210	0.14	QV				
1+55	0.0220	0.15	QV				
2+ 0	0.0230	0.15	QV				
2+ 5	0.0240	0.15	QV				
2+10	0.0250	0.15	QV				
2+15	0.0260	0.15	QV				
2+20	0.0270	0.15	QV				
2+25	0.0280	0.15	QV				
2+30	0.0291	0.15	QV				
2+35	0.0301	0.15	QV				
2+40	0.0311	0.15	QV				
2+45	0.0322	0.15	QV				
2+50	0.0332	0.15	QV				
2+55	0.0342	0.15	Q V				
3+ 0	0.0353	0.15	Q V				
3+ 5	0.0363	0.15	Q V				
3+10	0.0374	0.15	Q V				
3+15	0.0385	0.15	Q V				

3+20	0.0395	0.15	Q V				
3+25	0.0406	0.15	Q V				
3+30	0.0417	0.16	Q V				
3+35	0.0427	0.16	Q V				
3+40	0.0438	0.16	Q V				
3+45	0.0449	0.16	Q V				
3+50	0.0460	0.16	Q V				
3+55	0.0471	0.16	Q V				
4+ 0	0.0482	0.16	Q V				
4+ 5	0.0493	0.16	Q V				
4+10	0.0504	0.16	Q V				
4+15	0.0515	0.16	Q V				
4+20	0.0526	0.16	Q V				
4+25	0.0537	0.16	Q V				
4+30	0.0548	0.16	Q V				
4+35	0.0560	0.16	Q V				
4+40	0.0571	0.16	Q V				
4+45	0.0582	0.16	Q V				
4+50	0.0594	0.17	Q V				
4+55	0.0605	0.17	Q V				
5+ 0	0.0617	0.17	Q V				
5+ 5	0.0628	0.17	Q V				
5+10	0.0640	0.17	Q V				
5+15	0.0651	0.17	Q V				
5+20	0.0663	0.17	Q V				
5+25	0.0675	0.17	Q V				
5+30	0.0687	0.17	Q V				
5+35	0.0699	0.17	Q V				
5+40	0.0710	0.17	Q V				
5+45	0.0722	0.17	Q V				
5+50	0.0734	0.17	Q V				
5+55	0.0747	0.18	Q V				
6+ 0	0.0759	0.18	Q V				
6+ 5	0.0771	0.18	Q V				
6+10	0.0783	0.18	Q V				
6+15	0.0795	0.18	Q V				
6+20	0.0808	0.18	Q V				
6+25	0.0820	0.18	Q V				
6+30	0.0833	0.18	Q V				
6+35	0.0845	0.18	Q V				
6+40	0.0858	0.18	Q V				
6+45	0.0871	0.18	Q V				
6+50	0.0883	0.19	Q V				
6+55	0.0896	0.19	Q V				
7+ 0	0.0909	0.19	Q V				
7+ 5	0.0922	0.19	Q V				
7+10	0.0935	0.19	Q V				
7+15	0.0948	0.19	Q V				
7+20	0.0961	0.19	Q V				
7+25	0.0975	0.19	Q V				
7+30	0.0988	0.19	Q V				
7+35	0.1001	0.19	Q V				
7+40	0.1015	0.20	Q V				
7+45	0.1028	0.20	Q V				
7+50	0.1042	0.20	Q V				
7+55	0.1055	0.20	Q V				
8+ 0	0.1069	0.20	Q V				
8+ 5	0.1083	0.20	Q V				
8+10	0.1097	0.20	Q V				
8+15	0.1111	0.20	Q V				
8+20	0.1125	0.20	Q V				
8+25	0.1139	0.21	Q V				
8+30	0.1154	0.21	Q V				
8+35	0.1168	0.21	Q V				
8+40	0.1182	0.21	Q V				
8+45	0.1197	0.21	Q V				
8+50	0.1212	0.21	Q V				
8+55	0.1226	0.21	Q V				
9+ 0	0.1241	0.22	Q V				
9+ 5	0.1256	0.22	Q V				
9+10	0.1271	0.22	Q V				
9+15	0.1286	0.22	Q V				
9+20	0.1302	0.22	Q V				
9+25	0.1317	0.22	Q V				
9+30	0.1332	0.22	Q V				
9+35	0.1348	0.23	Q V				
9+40	0.1364	0.23	Q V				
9+45	0.1380	0.23	Q V				
9+50	0.1395	0.23	Q V				
9+55	0.1412	0.23	Q V				
10+ 0	0.1428	0.23	Q V				
10+ 5	0.1444	0.24	Q V				
10+10	0.1460	0.24	Q V				
10+15	0.1477	0.24	Q V				



10+20	0.1494	0.24	Q V
10+25	0.1511	0.24	Q V
10+30	0.1528	0.25	Q V
10+35	0.1545	0.25	Q V
10+40	0.1562	0.25	Q V
10+45	0.1579	0.25	Q V
10+50	0.1597	0.26	Q V
10+55	0.1615	0.26	Q V
11+ 0	0.1633	0.26	Q V
11+ 5	0.1651	0.26	Q V
11+10	0.1669	0.27	Q V
11+15	0.1688	0.27	Q V
11+20	0.1706	0.27	Q V
11+25	0.1725	0.27	Q V
11+30	0.1744	0.28	Q V
11+35	0.1763	0.28	Q V
11+40	0.1783	0.28	Q V
11+45	0.1802	0.29	Q V
11+50	0.1822	0.29	Q V
11+55	0.1842	0.29	Q V
12+ 0	0.1862	0.29	Q V
12+ 5	0.1887	0.36	Q V
12+10	0.1914	0.39	Q V
12+15	0.1941	0.39	Q V
12+20	0.1969	0.40	Q V
12+25	0.1996	0.40	Q V
12+30	0.2024	0.40	Q V
12+35	0.2052	0.41	Q V
12+40	0.2081	0.41	Q V
12+45	0.2109	0.42	Q V
12+50	0.2139	0.42	Q V
12+55	0.2168	0.43	Q V
13+ 0	0.2198	0.43	Q V
13+ 5	0.2228	0.44	Q V
13+10	0.2259	0.44	Q V
13+15	0.2289	0.45	Q V
13+20	0.2321	0.45	Q V
13+25	0.2353	0.46	Q V
13+30	0.2385	0.47	Q V
13+35	0.2417	0.48	Q V
13+40	0.2451	0.48	Q V
13+45	0.2484	0.49	Q V
13+50	0.2519	0.50	Q V
13+55	0.2553	0.51	Q V
14+ 0	0.2589	0.51	Q V
14+ 5	0.2625	0.52	Q V
14+10	0.2662	0.53	Q V
14+15	0.2699	0.55	Q V
14+20	0.2737	0.55	Q V
14+25	0.2777	0.57	Q V
14+30	0.2817	0.58	Q V
14+35	0.2858	0.60	Q V
14+40	0.2900	0.61	Q V
14+45	0.2943	0.63	Q V
14+50	0.2987	0.64	Q V
14+55	0.3033	0.67	Q V
15+ 0	0.3080	0.68	Q V
15+ 5	0.3129	0.71	Q V
15+10	0.3180	0.74	Q V
15+15	0.3233	0.77	Q V
15+20	0.3289	0.80	Q V
15+25	0.3328	0.57	Q V
15+30	0.3362	0.50	Q V
15+35	0.3401	0.56	Q V
15+40	0.3444	0.63	Q V
15+45	0.3496	0.75	Q V
15+50	0.3557	0.88	Q V
15+55	0.3644	1.26	Q V
16+ 0	0.3771	1.85	Q V
16+ 5	0.4591	11.91	Q V
16+10	0.4936	5.01	Q V
16+15	0.4992	0.81	Q V
16+20	0.5033	0.59	Q V
16+25	0.5085	0.76	Q V
16+30	0.5139	0.78	Q V
16+35	0.5188	0.72	Q V
16+40	0.5235	0.67	Q V
16+45	0.5278	0.63	Q V
16+50	0.5320	0.60	Q V
16+55	0.5359	0.57	Q V
17+ 0	0.5397	0.55	Q V
17+ 5	0.5433	0.53	Q V
17+10	0.5468	0.51	Q V
17+15	0.5502	0.49	Q V

				AREAA			
17+20	0.5535	0.48	Q	|	|	| V	|
17+25	0.5567	0.46	Q	|	|	| V	|
17+30	0.5598	0.45	Q	|	|	| V	|
17+35	0.5628	0.44	Q	|	|	| V	|
17+40	0.5658	0.43	Q	|	|	| V	|
17+45	0.5687	0.42	Q	|	|	| V	|
17+50	0.5715	0.41	Q	|	|	| V	|
17+55	0.5742	0.40	Q	|	|	| V	|
18+ 0	0.5770	0.39	Q	|	|	| V	|
18+ 5	0.5792	0.32	Q	|	|	| V	|
18+10	0.5812	0.29	Q	|	|	| V	|
18+15	0.5832	0.29	Q	|	|	| V	|
18+20	0.5851	0.28	Q	|	|	| V	|
18+25	0.5870	0.27	Q	|	|	| V	|
18+30	0.5888	0.27	Q	|	|	| V	|
18+35	0.5906	0.26	Q	|	|	| V	|
18+40	0.5924	0.26	Q	|	|	| V	|
18+45	0.5942	0.25	Q	|	|	| V	|
18+50	0.5959	0.25	Q	|	|	| V	|
18+55	0.5976	0.25	Q	|	|	| V	|
19+ 0	0.5992	0.24	Q	|	|	| V	|
19+ 5	0.6009	0.24	Q	|	|	| V	|
19+10	0.6025	0.23	Q	|	|	| V	|
19+15	0.6041	0.23	Q	|	|	| V	|
19+20	0.6056	0.23	Q	|	|	| V	|
19+25	0.6072	0.22	Q	|	|	| V	|
19+30	0.6087	0.22	Q	|	|	| V	|
19+35	0.6102	0.22	Q	|	|	| V	|
19+40	0.6117	0.21	Q	|	|	| V	|
19+45	0.6131	0.21	Q	|	|	| V	|
19+50	0.6146	0.21	Q	|	|	| V	|
19+55	0.6160	0.21	Q	|	|	| V	|
20+ 0	0.6174	0.20	Q	|	|	| V	|
20+ 5	0.6188	0.20	Q	|	|	| V	|
20+10	0.6202	0.20	Q	|	|	| V	|
20+15	0.6215	0.20	Q	|	|	| V	|
20+20	0.6229	0.19	Q	|	|	| V	|
20+25	0.6242	0.19	Q	|	|	| V	|
20+30	0.6255	0.19	Q	|	|	| V	|
20+35	0.6268	0.19	Q	|	|	| V	|
20+40	0.6281	0.19	Q	|	|	| V	|
20+45	0.6293	0.18	Q	|	|	| V	|
20+50	0.6306	0.18	Q	|	|	| V	|
20+55	0.6318	0.18	Q	|	|	| V	|
21+ 0	0.6331	0.18	Q	|	|	| V	|
21+ 5	0.6343	0.18	Q	|	|	| V	|
21+10	0.6355	0.18	Q	|	|	| V	|
21+15	0.6367	0.17	Q	|	|	| V	|
21+20	0.6379	0.17	Q	|	|	| V	|
21+25	0.6391	0.17	Q	|	|	| V	|
21+30	0.6402	0.17	Q	|	|	| V	|
21+35	0.6414	0.17	Q	|	|	| V	|
21+40	0.6425	0.17	Q	|	|	| V	|
21+45	0.6437	0.17	Q	|	|	| V	|
21+50	0.6448	0.16	Q	|	|	| V	|
21+55	0.6459	0.16	Q	|	|	| V	|
22+ 0	0.6470	0.16	Q	|	|	| V	|
22+ 5	0.6481	0.16	Q	|	|	| V	|
22+10	0.6492	0.16	Q	|	|	| V	|
22+15	0.6503	0.16	Q	|	|	| V	|
22+20	0.6514	0.16	Q	|	|	| V	|
22+25	0.6525	0.16	Q	|	|	| V	|
22+30	0.6535	0.15	Q	|	|	| V	|
22+35	0.6546	0.15	Q	|	|	| V	|
22+40	0.6556	0.15	Q	|	|	| V	|
22+45	0.6567	0.15	Q	|	|	| V	|
22+50	0.6577	0.15	Q	|	|	| V	|
22+55	0.6587	0.15	Q	|	|	| V	|
23+ 0	0.6597	0.15	Q	|	|	| V	|
23+ 5	0.6607	0.15	Q	|	|	| V	|
23+10	0.6617	0.15	Q	|	|	| V	|
23+15	0.6627	0.14	Q	|	|	| V	|
23+20	0.6637	0.14	Q	|	|	| V	|
23+25	0.6647	0.14	Q	|	|	| V	|
23+30	0.6657	0.14	Q	|	|	| V	|
23+35	0.6666	0.14	Q	|	|	| V	|
23+40	0.6676	0.14	Q	|	|	| V	|
23+45	0.6686	0.14	Q	|	|	| V	|
23+50	0.6695	0.14	Q	|	|	| V	|
23+55	0.6705	0.14	Q	|	|	| V	|
24+ 0	0.6714	0.14	Q	|	|	| V	|

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 06/19/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA B.1
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10	13.74	1	0.78
Rainfall data for year 2	13.74	6	1.20
Rainfall data for year 2	13.74	24	2.18
Rainfall data for year 100	13.74	1	1.27
Rainfall data for year 100	13.74	6	2.86
Rainfall data for year 100	13.74	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
77.0	59.4	13.74	1.000	0.688	0.652	0.449

Area-averaged adjusted loss rate Fm (In/Hr) = 0.449

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
8.96	0.652	77.0	59.4	6.84	0.040
4.78	0.348	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.338
Area-averaged low loss fraction, Yb = 0.662

++
Watercourse length = 1775.00(Ft.)
Length from concentration point to centroid = 520.00(Ft.)
Elevation difference along watercourse = 65.20(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 13.74(Ac.)
Catchment Lag time = 0.036 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 229.9329
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.449(In/Hr)
Average low loss rate fraction (Yb) = 0.662 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 13.74(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 166.17 (CFS))		
1	47.781	79.397
2	94.855	78.222
3	99.443	7.623
4	100.000	0.926

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3401	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4057	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5371	0.0178
18	0.5544	0.0174
19	0.5714	0.0170
20	0.5880	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115

		AREAB1
46	0.9351	0.0114
47	0.9463	0.0113
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9903	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.1999	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3146	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3335	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3941	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4514	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4735	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052

		AREAB1
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7633	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8631	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039

		AREAB1
214	1.9182	0.0039
215	1.9221	0.0039
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9971	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0404	0.0036
248	2.0440	0.0036
249	2.0475	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0616	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0022	0.0011
2	0.0033	0.0022	0.0011
3	0.0033	0.0022	0.0011
4	0.0033	0.0022	0.0011

5	0.0033	0.0022	0.0011
6	0.0033	0.0022	0.0011
7	0.0033	0.0022	0.0011
8	0.0033	0.0022	0.0011
9	0.0033	0.0022	0.0011
10	0.0034	0.0022	0.0011
11	0.0034	0.0022	0.0011
12	0.0034	0.0022	0.0011
13	0.0034	0.0022	0.0011
14	0.0034	0.0022	0.0011
15	0.0034	0.0023	0.0012
16	0.0034	0.0023	0.0012
17	0.0034	0.0023	0.0012
18	0.0034	0.0023	0.0012
19	0.0035	0.0023	0.0012
20	0.0035	0.0023	0.0012
21	0.0035	0.0023	0.0012
22	0.0035	0.0023	0.0012
23	0.0035	0.0023	0.0012
24	0.0035	0.0023	0.0012
25	0.0035	0.0023	0.0012
26	0.0035	0.0023	0.0012
27	0.0035	0.0023	0.0012
28	0.0036	0.0024	0.0012
29	0.0036	0.0024	0.0012
30	0.0036	0.0024	0.0012
31	0.0036	0.0024	0.0012
32	0.0036	0.0024	0.0012
33	0.0036	0.0024	0.0012
34	0.0036	0.0024	0.0012
35	0.0036	0.0024	0.0012
36	0.0037	0.0024	0.0012
37	0.0037	0.0024	0.0012
38	0.0037	0.0024	0.0012
39	0.0037	0.0025	0.0012
40	0.0037	0.0025	0.0013
41	0.0037	0.0025	0.0013
42	0.0037	0.0025	0.0013
43	0.0038	0.0025	0.0013
44	0.0038	0.0025	0.0013
45	0.0038	0.0025	0.0013
46	0.0038	0.0025	0.0013
47	0.0038	0.0025	0.0013
48	0.0038	0.0025	0.0013
49	0.0038	0.0025	0.0013
50	0.0039	0.0026	0.0013
51	0.0039	0.0026	0.0013
52	0.0039	0.0026	0.0013
53	0.0039	0.0026	0.0013
54	0.0039	0.0026	0.0013
55	0.0039	0.0026	0.0013
56	0.0040	0.0026	0.0013
57	0.0040	0.0026	0.0013
58	0.0040	0.0026	0.0013
59	0.0040	0.0027	0.0014
60	0.0040	0.0027	0.0014
61	0.0040	0.0027	0.0014
62	0.0041	0.0027	0.0014
63	0.0041	0.0027	0.0014
64	0.0041	0.0027	0.0014
65	0.0041	0.0027	0.0014
66	0.0041	0.0027	0.0014
67	0.0041	0.0027	0.0014
68	0.0042	0.0028	0.0014
69	0.0042	0.0028	0.0014
70	0.0042	0.0028	0.0014
71	0.0042	0.0028	0.0014
72	0.0042	0.0028	0.0014
73	0.0043	0.0028	0.0014
74	0.0043	0.0028	0.0014
75	0.0043	0.0029	0.0015
76	0.0043	0.0029	0.0015
77	0.0044	0.0029	0.0015
78	0.0044	0.0029	0.0015
79	0.0044	0.0029	0.0015
80	0.0044	0.0029	0.0015
81	0.0044	0.0029	0.0015
82	0.0045	0.0029	0.0015
83	0.0045	0.0030	0.0015
84	0.0045	0.0030	0.0015
85	0.0045	0.0030	0.0015
86	0.0045	0.0030	0.0015
87	0.0046	0.0030	0.0015
88	0.0046	0.0030	0.0016

		AREAB1	
89	0.0046	0.0031	0.0016
90	0.0046	0.0031	0.0016
91	0.0047	0.0031	0.0016
92	0.0047	0.0031	0.0016
93	0.0047	0.0031	0.0016
94	0.0048	0.0031	0.0016
95	0.0048	0.0032	0.0016
96	0.0048	0.0032	0.0016
97	0.0048	0.0032	0.0016
98	0.0049	0.0032	0.0016
99	0.0049	0.0032	0.0017
100	0.0049	0.0033	0.0017
101	0.0050	0.0033	0.0017
102	0.0050	0.0033	0.0017
103	0.0050	0.0033	0.0017
104	0.0051	0.0033	0.0017
105	0.0051	0.0034	0.0017
106	0.0051	0.0034	0.0017
107	0.0052	0.0034	0.0017
108	0.0052	0.0034	0.0018
109	0.0052	0.0035	0.0018
110	0.0053	0.0035	0.0018
111	0.0053	0.0035	0.0018
112	0.0053	0.0035	0.0018
113	0.0054	0.0036	0.0018
114	0.0054	0.0036	0.0018
115	0.0055	0.0036	0.0018
116	0.0055	0.0036	0.0019
117	0.0055	0.0037	0.0019
118	0.0056	0.0037	0.0019
119	0.0056	0.0037	0.0019
120	0.0057	0.0037	0.0019
121	0.0057	0.0038	0.0019
122	0.0057	0.0038	0.0019
123	0.0058	0.0038	0.0020
124	0.0058	0.0039	0.0020
125	0.0059	0.0039	0.0020
126	0.0059	0.0039	0.0020
127	0.0060	0.0040	0.0020
128	0.0060	0.0040	0.0020
129	0.0061	0.0040	0.0021
130	0.0061	0.0041	0.0021
131	0.0062	0.0041	0.0021
132	0.0063	0.0041	0.0021
133	0.0063	0.0042	0.0021
134	0.0064	0.0042	0.0022
135	0.0065	0.0043	0.0022
136	0.0065	0.0043	0.0022
137	0.0066	0.0044	0.0022
138	0.0066	0.0044	0.0022
139	0.0067	0.0045	0.0023
140	0.0068	0.0045	0.0023
141	0.0069	0.0046	0.0023
142	0.0069	0.0046	0.0023
143	0.0070	0.0047	0.0024
144	0.0071	0.0047	0.0024
145	0.0093	0.0062	0.0031
146	0.0094	0.0062	0.0032
147	0.0095	0.0063	0.0032
148	0.0095	0.0063	0.0032
149	0.0097	0.0064	0.0033
150	0.0097	0.0065	0.0033
151	0.0099	0.0065	0.0033
152	0.0099	0.0066	0.0034
153	0.0101	0.0067	0.0034
154	0.0102	0.0067	0.0034
155	0.0103	0.0068	0.0035
156	0.0104	0.0069	0.0035
157	0.0106	0.0070	0.0036
158	0.0107	0.0071	0.0036
159	0.0109	0.0072	0.0037
160	0.0110	0.0073	0.0037
161	0.0112	0.0074	0.0038
162	0.0113	0.0075	0.0038
163	0.0115	0.0076	0.0039
164	0.0116	0.0077	0.0039
165	0.0118	0.0078	0.0040
166	0.0120	0.0079	0.0040
167	0.0122	0.0081	0.0041
168	0.0124	0.0082	0.0042
169	0.0127	0.0084	0.0043
170	0.0129	0.0085	0.0043
171	0.0132	0.0088	0.0045
172	0.0134	0.0089	0.0045

173	0.0138	0.0091	0.0047
174	0.0140	0.0093	0.0047
175	0.0145	0.0096	0.0049
176	0.0147	0.0097	0.0050
177	0.0153	0.0101	0.0051
178	0.0155	0.0103	0.0052
179	0.0162	0.0107	0.0055
180	0.0166	0.0110	0.0056
181	0.0174	0.0115	0.0059
182	0.0178	0.0118	0.0060
183	0.0189	0.0125	0.0064
184	0.0195	0.0129	0.0066
185	0.0114	0.0075	0.0038
186	0.0121	0.0080	0.0041
187	0.0141	0.0093	0.0048
188	0.0154	0.0102	0.0052
189	0.0191	0.0127	0.0065
190	0.0220	0.0146	0.0074
191	0.0334	0.0221	0.0113
192	0.0485	0.0321	0.0164
193	0.2099	0.0374	0.1725
194	0.0263	0.0174	0.0089
195	0.0170	0.0113	0.0057
196	0.0130	0.0086	0.0044
197	0.0202	0.0134	0.0068
198	0.0183	0.0121	0.0062
199	0.0170	0.0112	0.0057
200	0.0159	0.0105	0.0054
201	0.0150	0.0099	0.0051
202	0.0142	0.0094	0.0048
203	0.0136	0.0090	0.0046
204	0.0130	0.0086	0.0044
205	0.0125	0.0083	0.0042
206	0.0121	0.0080	0.0041
207	0.0117	0.0078	0.0040
208	0.0114	0.0075	0.0038
209	0.0111	0.0073	0.0037
210	0.0108	0.0071	0.0036
211	0.0105	0.0070	0.0035
212	0.0103	0.0068	0.0035
213	0.0100	0.0066	0.0034
214	0.0098	0.0065	0.0033
215	0.0096	0.0064	0.0032
216	0.0094	0.0062	0.0032
217	0.0071	0.0047	0.0024
218	0.0070	0.0046	0.0024
219	0.0068	0.0045	0.0023
220	0.0067	0.0044	0.0023
221	0.0066	0.0043	0.0022
222	0.0064	0.0043	0.0022
223	0.0063	0.0042	0.0021
224	0.0062	0.0041	0.0021
225	0.0061	0.0040	0.0021
226	0.0060	0.0040	0.0020
227	0.0059	0.0039	0.0020
228	0.0058	0.0038	0.0019
229	0.0057	0.0038	0.0019
230	0.0056	0.0037	0.0019
231	0.0055	0.0037	0.0019
232	0.0054	0.0036	0.0018
233	0.0054	0.0035	0.0018
234	0.0053	0.0035	0.0018
235	0.0052	0.0034	0.0018
236	0.0051	0.0034	0.0017
237	0.0051	0.0034	0.0017
238	0.0050	0.0033	0.0017
239	0.0049	0.0033	0.0017
240	0.0049	0.0032	0.0016
241	0.0048	0.0032	0.0016
242	0.0048	0.0032	0.0016
243	0.0047	0.0031	0.0016
244	0.0047	0.0031	0.0016
245	0.0046	0.0031	0.0016
246	0.0046	0.0030	0.0015
247	0.0045	0.0030	0.0015
248	0.0045	0.0030	0.0015
249	0.0044	0.0029	0.0015
250	0.0044	0.0029	0.0015
251	0.0043	0.0029	0.0015
252	0.0043	0.0028	0.0014
253	0.0043	0.0028	0.0014
254	0.0042	0.0028	0.0014
255	0.0042	0.0028	0.0014
256	0.0041	0.0027	0.0014

257	0.0041	0.0027	0.0014
258	0.0041	0.0027	0.0014
259	0.0040	0.0027	0.0014
260	0.0040	0.0026	0.0013
261	0.0040	0.0026	0.0013
262	0.0039	0.0026	0.0013
263	0.0039	0.0026	0.0013
264	0.0039	0.0026	0.0013
265	0.0038	0.0025	0.0013
266	0.0038	0.0025	0.0013
267	0.0038	0.0025	0.0013
268	0.0037	0.0025	0.0013
269	0.0037	0.0025	0.0013
270	0.0037	0.0024	0.0012
271	0.0037	0.0024	0.0012
272	0.0036	0.0024	0.0012
273	0.0036	0.0024	0.0012
274	0.0036	0.0024	0.0012
275	0.0036	0.0024	0.0012
276	0.0035	0.0023	0.0012
277	0.0035	0.0023	0.0012
278	0.0035	0.0023	0.0012
279	0.0035	0.0023	0.0012
280	0.0034	0.0023	0.0012
281	0.0034	0.0023	0.0012
282	0.0034	0.0023	0.0011
283	0.0034	0.0022	0.0011
284	0.0034	0.0022	0.0011
285	0.0033	0.0022	0.0011
286	0.0033	0.0022	0.0011
287	0.0033	0.0022	0.0011
288	0.0033	0.0022	0.0011

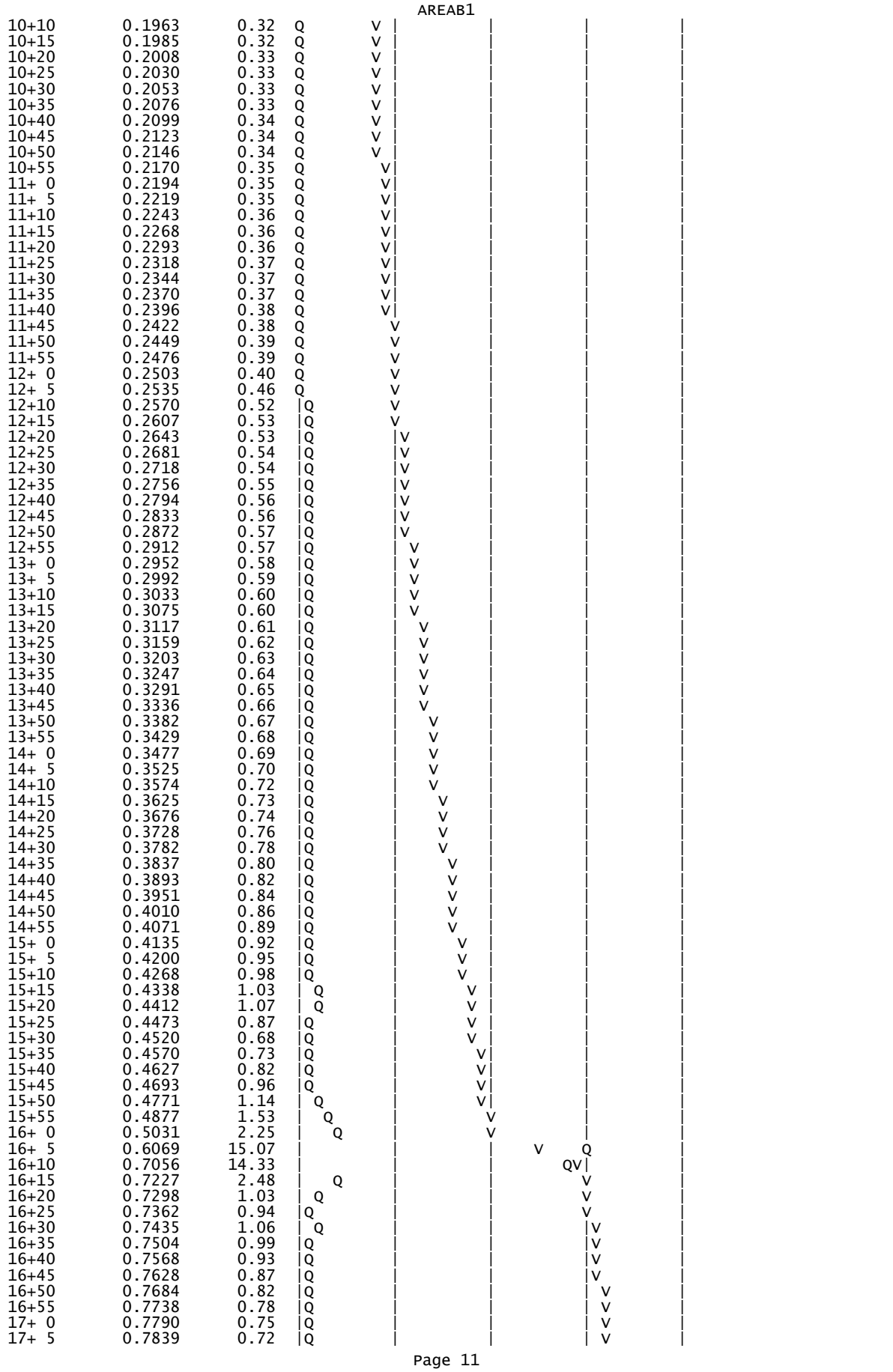
Total soil rain loss = 1.34(In)
Total effective rainfall = 0.84(In)
Peak flow rate in flood hydrograph = 15.07(CFS)

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	5.0	10.0	15.0	20.0
0+ 5	0.0006	0.09	Q				
0+10	0.0018	0.17	Q				
0+15	0.0031	0.18	Q				
0+20	0.0043	0.18	Q				
0+25	0.0056	0.18	Q				
0+30	0.0069	0.19	Q				
0+35	0.0082	0.19	Q				
0+40	0.0094	0.19	Q				
0+45	0.0107	0.19	Q				
0+50	0.0120	0.19	Q				
0+55	0.0133	0.19	Q				
1+ 0	0.0146	0.19	Q				
1+ 5	0.0159	0.19	Q				
1+10	0.0172	0.19	Q				
1+15	0.0185	0.19	Q				
1+20	0.0199	0.19	Q				
1+25	0.0212	0.19	Q				
1+30	0.0225	0.19	Q				
1+35	0.0238	0.19	Q				
1+40	0.0252	0.19	QV				
1+45	0.0265	0.19	QV				
1+50	0.0279	0.20	QV				
1+55	0.0292	0.20	QV				
2+ 0	0.0306	0.20	QV				
2+ 5	0.0319	0.20	QV				
2+10	0.0333	0.20	QV				
2+15	0.0346	0.20	QV				
2+20	0.0360	0.20	QV				
2+25	0.0374	0.20	QV				
2+30	0.0388	0.20	QV				
2+35	0.0402	0.20	QV				
2+40	0.0415	0.20	QV				
2+45	0.0429	0.20	QV				
2+50	0.0443	0.20	QV				
2+55	0.0457	0.20	QV				
3+ 0	0.0472	0.20	QV				
3+ 5	0.0486	0.21	Q V				

3+10	0.0500	0.21	Q V				
3+15	0.0514	0.21	Q V				
3+20	0.0529	0.21	Q V				
3+25	0.0543	0.21	Q V				
3+30	0.0557	0.21	Q V				
3+35	0.0572	0.21	Q V				
3+40	0.0586	0.21	Q V				
3+45	0.0601	0.21	Q V				
3+50	0.0616	0.21	Q V				
3+55	0.0630	0.21	Q V				
4+ 0	0.0645	0.21	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	0.0705	0.22	Q V				
4+25	0.0720	0.22	Q V				
4+30	0.0735	0.22	Q V				
4+35	0.0750	0.22	Q V				
4+40	0.0765	0.22	Q V				
4+45	0.0780	0.22	Q V				
4+50	0.0796	0.22	Q V				
4+55	0.0811	0.22	Q V				
5+ 0	0.0827	0.22	Q V				
5+ 5	0.0842	0.23	Q V				
5+10	0.0858	0.23	Q V				
5+15	0.0874	0.23	Q V				
5+20	0.0889	0.23	Q V				
5+25	0.0905	0.23	Q V				
5+30	0.0921	0.23	Q V				
5+35	0.0937	0.23	Q V				
5+40	0.0953	0.23	Q V				
5+45	0.0969	0.23	Q V				
5+50	0.0985	0.24	Q V				
5+55	0.1002	0.24	Q V				
6+ 0	0.1018	0.24	Q V				
6+ 5	0.1035	0.24	Q V				
6+10	0.1051	0.24	Q V				
6+15	0.1068	0.24	Q V				
6+20	0.1084	0.24	Q V				
6+25	0.1101	0.24	Q V				
6+30	0.1118	0.24	Q V				
6+35	0.1135	0.25	Q V				
6+40	0.1152	0.25	Q V				
6+45	0.1169	0.25	Q V				
6+50	0.1186	0.25	Q V				
6+55	0.1203	0.25	Q V				
7+ 0	0.1221	0.25	Q V				
7+ 5	0.1238	0.25	Q V				
7+10	0.1256	0.25	Q V				
7+15	0.1273	0.26	Q V				
7+20	0.1291	0.26	Q V				
7+25	0.1309	0.26	Q V				
7+30	0.1327	0.26	Q V				
7+35	0.1345	0.26	Q V				
7+40	0.1363	0.26	Q V				
7+45	0.1381	0.26	Q V				
7+50	0.1399	0.27	Q V				
7+55	0.1418	0.27	Q V				
8+ 0	0.1436	0.27	Q V				
8+ 5	0.1455	0.27	Q V				
8+10	0.1474	0.27	Q V				
8+15	0.1493	0.27	Q V				
8+20	0.1512	0.28	Q V				
8+25	0.1531	0.28	Q V				
8+30	0.1550	0.28	Q V				
8+35	0.1569	0.28	Q V				
8+40	0.1589	0.28	Q V				
8+45	0.1608	0.28	Q V				
8+50	0.1628	0.29	Q V				
8+55	0.1648	0.29	Q V				
9+ 0	0.1668	0.29	Q V				
9+ 5	0.1688	0.29	Q V				
9+10	0.1708	0.29	Q V				
9+15	0.1728	0.30	Q V				
9+20	0.1749	0.30	Q V				
9+25	0.1770	0.30	Q V				
9+30	0.1790	0.30	Q V				
9+35	0.1811	0.30	Q V				
9+40	0.1833	0.31	Q V				
9+45	0.1854	0.31	Q V				
9+50	0.1875	0.31	Q V				
9+55	0.1897	0.31	Q V				
10+ 0	0.1919	0.32	Q V				
10+ 5	0.1941	0.32	Q V				



10+10	0.1963	0.32	Q V
10+15	0.1985	0.32	Q V
10+20	0.2008	0.33	Q V
10+25	0.2030	0.33	Q V
10+30	0.2053	0.33	Q V
10+35	0.2076	0.33	Q V
10+40	0.2099	0.34	Q V
10+45	0.2123	0.34	Q V
10+50	0.2146	0.34	Q V
10+55	0.2170	0.35	Q V
11+ 0	0.2194	0.35	Q V
11+ 5	0.2219	0.35	Q V
11+10	0.2243	0.36	Q V
11+15	0.2268	0.36	Q V
11+20	0.2293	0.36	Q V
11+25	0.2318	0.37	Q V
11+30	0.2344	0.37	Q V
11+35	0.2370	0.37	Q V
11+40	0.2396	0.38	Q V
11+45	0.2422	0.38	Q V
11+50	0.2449	0.39	Q V
11+55	0.2476	0.39	Q V
12+ 0	0.2503	0.40	Q V
12+ 5	0.2535	0.46	Q V
12+10	0.2570	0.52	Q V
12+15	0.2607	0.53	Q V
12+20	0.2643	0.53	Q V
12+25	0.2681	0.54	Q V
12+30	0.2718	0.54	Q V
12+35	0.2756	0.55	Q V
12+40	0.2794	0.56	Q V
12+45	0.2833	0.56	Q V
12+50	0.2872	0.57	Q V
12+55	0.2912	0.57	Q V
13+ 0	0.2952	0.58	Q V
13+ 5	0.2992	0.59	Q V
13+10	0.3033	0.60	Q V
13+15	0.3075	0.60	Q V
13+20	0.3117	0.61	Q V
13+25	0.3159	0.62	Q V
13+30	0.3203	0.63	Q V
13+35	0.3247	0.64	Q V
13+40	0.3291	0.65	Q V
13+45	0.3336	0.66	Q V
13+50	0.3382	0.67	Q V
13+55	0.3429	0.68	Q V
14+ 0	0.3477	0.69	Q V
14+ 5	0.3525	0.70	Q V
14+10	0.3574	0.72	Q V
14+15	0.3625	0.73	Q V
14+20	0.3676	0.74	Q V
14+25	0.3728	0.76	Q V
14+30	0.3782	0.78	Q V
14+35	0.3837	0.80	Q V
14+40	0.3893	0.82	Q V
14+45	0.3951	0.84	Q V
14+50	0.4010	0.86	Q V
14+55	0.4071	0.89	Q V
15+ 0	0.4135	0.92	Q V
15+ 5	0.4200	0.95	Q V
15+10	0.4268	0.98	Q V
15+15	0.4338	1.03	Q V
15+20	0.4412	1.07	Q V
15+25	0.4473	0.87	Q V
15+30	0.4520	0.68	Q V
15+35	0.4570	0.73	Q V
15+40	0.4627	0.82	Q V
15+45	0.4693	0.96	Q V
15+50	0.4771	1.14	Q V
15+55	0.4877	1.53	Q V
16+ 0	0.5031	2.25	Q V
16+ 5	0.6069	15.07	V Q
16+10	0.7056	14.33	QV
16+15	0.7227	2.48	Q V
16+20	0.7298	1.03	Q V
16+25	0.7362	0.94	Q V
16+30	0.7435	1.06	Q V
16+35	0.7504	0.99	Q V
16+40	0.7568	0.93	Q V
16+45	0.7628	0.87	Q V
16+50	0.7684	0.82	Q V
16+55	0.7738	0.78	Q V
17+ 0	0.7790	0.75	Q V
17+ 5	0.7839	0.72	Q V

17+10	0.7887	0.69	Q			V	
17+15	0.7933	0.67	Q			V	
17+20	0.7978	0.65	Q			V	
17+25	0.8021	0.63	Q			V	
17+30	0.8064	0.61	Q			V	
17+35	0.8105	0.60	Q			V	
17+40	0.8145	0.58	Q			V	
17+45	0.8184	0.57	Q			V	
17+50	0.8223	0.56	Q			V	
17+55	0.8260	0.55	Q			V	
18+ 0	0.8297	0.53	Q			V	
18+ 5	0.8329	0.47	Q			V	
18+10	0.8357	0.40	Q			V	
18+15	0.8384	0.39	Q			V	
18+20	0.8410	0.38	Q			V	
18+25	0.8436	0.37	Q			V	
18+30	0.8461	0.36	Q			V	
18+35	0.8485	0.36	Q			V	
18+40	0.8510	0.35	Q			V	
18+45	0.8533	0.34	Q			V	
18+50	0.8557	0.34	Q			V	
18+55	0.8579	0.33	Q			V	
19+ 0	0.8602	0.33	Q			V	
19+ 5	0.8624	0.32	Q			V	
19+10	0.8646	0.32	Q			V	
19+15	0.8667	0.31	Q			V	
19+20	0.8689	0.31	Q			V	
19+25	0.8709	0.30	Q			V	
19+30	0.8730	0.30	Q			V	
19+35	0.8750	0.29	Q			V	
19+40	0.8770	0.29	Q			V	
19+45	0.8790	0.29	Q			V	
19+50	0.8810	0.28	Q			V	
19+55	0.8829	0.28	Q			V	
20+ 0	0.8848	0.28	Q			V	
20+ 5	0.8867	0.27	Q			V	
20+10	0.8885	0.27	Q			V	
20+15	0.8904	0.27	Q			V	
20+20	0.8922	0.26	Q			V	
20+25	0.8940	0.26	Q			V	
20+30	0.8957	0.26	Q			V	
20+35	0.8975	0.25	Q			V	
20+40	0.8992	0.25	Q			V	
20+45	0.9009	0.25	Q			V	
20+50	0.9026	0.25	Q			V	
20+55	0.9043	0.24	Q			V	
21+ 0	0.9060	0.24	Q			V	
21+ 5	0.9077	0.24	Q			V	
21+10	0.9093	0.24	Q			V	
21+15	0.9109	0.24	Q			V	
21+20	0.9125	0.23	Q			V	
21+25	0.9141	0.23	Q			V	
21+30	0.9157	0.23	Q			V	
21+35	0.9173	0.23	Q			V	
21+40	0.9188	0.23	Q			V	
21+45	0.9203	0.22	Q			V	
21+50	0.9219	0.22	Q			V	
21+55	0.9234	0.22	Q			V	
22+ 0	0.9249	0.22	Q			V	
22+ 5	0.9264	0.22	Q			V	
22+10	0.9278	0.21	Q			V	
22+15	0.9293	0.21	Q			V	
22+20	0.9308	0.21	Q			V	
22+25	0.9322	0.21	Q			V	
22+30	0.9336	0.21	Q			V	
22+35	0.9351	0.21	Q			V	
22+40	0.9365	0.20	Q			V	
22+45	0.9379	0.20	Q			V	
22+50	0.9393	0.20	Q			V	
22+55	0.9406	0.20	Q			V	
23+ 0	0.9420	0.20	Q			V	
23+ 5	0.9434	0.20	Q			V	
23+10	0.9447	0.20	Q			V	
23+15	0.9461	0.20	Q			V	
23+20	0.9474	0.19	Q			V	
23+25	0.9487	0.19	Q			V	
23+30	0.9501	0.19	Q			V	
23+35	0.9514	0.19	Q			V	
23+40	0.9527	0.19	Q			V	
23+45	0.9540	0.19	Q			V	
23+50	0.9553	0.19	Q			V	
23+55	0.9565	0.19	Q			V	
24+ 0	0.9578	0.18	Q			V	

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 06/19/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA B.2
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
12.45	1	0.78
Rainfall data for year 2		
12.45	6	1.20
Rainfall data for year 2		
12.45	24	2.18
Rainfall data for year 100		
12.45	1	1.27
Rainfall data for year 100		
12.45	6	2.86
Rainfall data for year 100		
12.45	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
71.6	52.9	12.45	1.000	0.774	0.600	0.464

Area-averaged adjusted loss rate Fm (In/Hr) = 0.464

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
7.47	0.600	71.6	52.9	8.90	0.008
4.98	0.400	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.363
Area-averaged low loss fraction, Yb = 0.637

++
Watercourse length = 1380.00(Ft.)
Length from concentration point to centroid = 320.00(Ft.)
Elevation difference along watercourse = 108.60(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 12.45(Ac.)
Catchment Lag time = 0.024 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 351.6722
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.464(In/Hr)
Average low loss rate fraction (Yb) = 0.637 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 12.45(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 150.57 (CFS))	
1	63.181	95.131
2	100.000	55.437

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3402	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4058	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5371	0.0178
18	0.5545	0.0174
19	0.5714	0.0170
20	0.5880	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9463	0.0113

		AREAB2
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3942	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAB2
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9182	0.0039
215	1.9221	0.0039

		AREAB2
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0021	0.0012
2	0.0033	0.0021	0.0012
3	0.0033	0.0021	0.0012
4	0.0033	0.0021	0.0012
5	0.0033	0.0021	0.0012
6	0.0033	0.0021	0.0012

		AREAB2	
7	0.0033	0.0021	0.0012
8	0.0033	0.0021	0.0012
9	0.0033	0.0021	0.0012
10	0.0034	0.0021	0.0012
11	0.0034	0.0021	0.0012
12	0.0034	0.0021	0.0012
13	0.0034	0.0022	0.0012
14	0.0034	0.0022	0.0012
15	0.0034	0.0022	0.0012
16	0.0034	0.0022	0.0012
17	0.0034	0.0022	0.0012
18	0.0034	0.0022	0.0012
19	0.0035	0.0022	0.0013
20	0.0035	0.0022	0.0013
21	0.0035	0.0022	0.0013
22	0.0035	0.0022	0.0013
23	0.0035	0.0022	0.0013
24	0.0035	0.0022	0.0013
25	0.0035	0.0022	0.0013
26	0.0035	0.0022	0.0013
27	0.0035	0.0023	0.0013
28	0.0036	0.0023	0.0013
29	0.0036	0.0023	0.0013
30	0.0036	0.0023	0.0013
31	0.0036	0.0023	0.0013
32	0.0036	0.0023	0.0013
33	0.0036	0.0023	0.0013
34	0.0036	0.0023	0.0013
35	0.0036	0.0023	0.0013
36	0.0037	0.0023	0.0013
37	0.0037	0.0023	0.0013
38	0.0037	0.0023	0.0013
39	0.0037	0.0024	0.0013
40	0.0037	0.0024	0.0013
41	0.0037	0.0024	0.0014
42	0.0037	0.0024	0.0014
43	0.0038	0.0024	0.0014
44	0.0038	0.0024	0.0014
45	0.0038	0.0024	0.0014
46	0.0038	0.0024	0.0014
47	0.0038	0.0024	0.0014
48	0.0038	0.0024	0.0014
49	0.0038	0.0024	0.0014
50	0.0039	0.0025	0.0014
51	0.0039	0.0025	0.0014
52	0.0039	0.0025	0.0014
53	0.0039	0.0025	0.0014
54	0.0039	0.0025	0.0014
55	0.0039	0.0025	0.0014
56	0.0040	0.0025	0.0014
57	0.0040	0.0025	0.0014
58	0.0040	0.0025	0.0014
59	0.0040	0.0026	0.0015
60	0.0040	0.0026	0.0015
61	0.0040	0.0026	0.0015
62	0.0041	0.0026	0.0015
63	0.0041	0.0026	0.0015
64	0.0041	0.0026	0.0015
65	0.0041	0.0026	0.0015
66	0.0041	0.0026	0.0015
67	0.0041	0.0026	0.0015
68	0.0042	0.0027	0.0015
69	0.0042	0.0027	0.0015
70	0.0042	0.0027	0.0015
71	0.0042	0.0027	0.0015
72	0.0042	0.0027	0.0015
73	0.0043	0.0027	0.0015
74	0.0043	0.0027	0.0016
75	0.0043	0.0027	0.0016
76	0.0043	0.0028	0.0016
77	0.0044	0.0028	0.0016
78	0.0044	0.0028	0.0016
79	0.0044	0.0028	0.0016
80	0.0044	0.0028	0.0016
81	0.0044	0.0028	0.0016
82	0.0045	0.0028	0.0016
83	0.0045	0.0029	0.0016
84	0.0045	0.0029	0.0016
85	0.0045	0.0029	0.0016
86	0.0045	0.0029	0.0017
87	0.0046	0.0029	0.0017
88	0.0046	0.0029	0.0017
89	0.0046	0.0029	0.0017
90	0.0046	0.0030	0.0017

		AREAB2	
91	0.0047	0.0030	0.0017
92	0.0047	0.0030	0.0017
93	0.0047	0.0030	0.0017
94	0.0048	0.0030	0.0017
95	0.0048	0.0031	0.0017
96	0.0048	0.0031	0.0017
97	0.0048	0.0031	0.0018
98	0.0049	0.0031	0.0018
99	0.0049	0.0031	0.0018
100	0.0049	0.0031	0.0018
101	0.0050	0.0032	0.0018
102	0.0050	0.0032	0.0018
103	0.0050	0.0032	0.0018
104	0.0051	0.0032	0.0018
105	0.0051	0.0032	0.0018
106	0.0051	0.0033	0.0019
107	0.0052	0.0033	0.0019
108	0.0052	0.0033	0.0019
109	0.0052	0.0033	0.0019
110	0.0053	0.0033	0.0019
111	0.0053	0.0034	0.0019
112	0.0053	0.0034	0.0019
113	0.0054	0.0034	0.0020
114	0.0054	0.0034	0.0020
115	0.0055	0.0035	0.0020
116	0.0055	0.0035	0.0020
117	0.0055	0.0035	0.0020
118	0.0056	0.0035	0.0020
119	0.0056	0.0036	0.0020
120	0.0057	0.0036	0.0021
121	0.0057	0.0036	0.0021
122	0.0057	0.0037	0.0021
123	0.0058	0.0037	0.0021
124	0.0058	0.0037	0.0021
125	0.0059	0.0038	0.0021
126	0.0059	0.0038	0.0022
127	0.0060	0.0038	0.0022
128	0.0060	0.0038	0.0022
129	0.0061	0.0039	0.0022
130	0.0061	0.0039	0.0022
131	0.0062	0.0040	0.0023
132	0.0063	0.0040	0.0023
133	0.0063	0.0040	0.0023
134	0.0064	0.0041	0.0023
135	0.0065	0.0041	0.0023
136	0.0065	0.0041	0.0024
137	0.0066	0.0042	0.0024
138	0.0066	0.0042	0.0024
139	0.0067	0.0043	0.0024
140	0.0068	0.0043	0.0025
141	0.0069	0.0044	0.0025
142	0.0069	0.0044	0.0025
143	0.0070	0.0045	0.0026
144	0.0071	0.0045	0.0026
145	0.0093	0.0059	0.0034
146	0.0094	0.0060	0.0034
147	0.0095	0.0060	0.0034
148	0.0095	0.0061	0.0035
149	0.0097	0.0062	0.0035
150	0.0097	0.0062	0.0035
151	0.0099	0.0063	0.0036
152	0.0099	0.0063	0.0036
153	0.0101	0.0064	0.0037
154	0.0102	0.0065	0.0037
155	0.0103	0.0066	0.0038
156	0.0104	0.0066	0.0038
157	0.0106	0.0067	0.0038
158	0.0107	0.0068	0.0039
159	0.0109	0.0069	0.0039
160	0.0110	0.0070	0.0040
161	0.0112	0.0071	0.0041
162	0.0113	0.0072	0.0041
163	0.0115	0.0073	0.0042
164	0.0116	0.0074	0.0042
165	0.0118	0.0075	0.0043
166	0.0120	0.0076	0.0043
167	0.0122	0.0078	0.0044
168	0.0124	0.0079	0.0045
169	0.0127	0.0081	0.0046
170	0.0129	0.0082	0.0047
171	0.0132	0.0084	0.0048
172	0.0134	0.0085	0.0049
173	0.0138	0.0088	0.0050
174	0.0140	0.0089	0.0051

		AREAB2	
175	0.0145	0.0092	0.0053
176	0.0147	0.0094	0.0053
177	0.0153	0.0097	0.0055
178	0.0155	0.0099	0.0056
179	0.0162	0.0103	0.0059
180	0.0166	0.0106	0.0060
181	0.0174	0.0111	0.0063
182	0.0178	0.0114	0.0065
183	0.0189	0.0120	0.0069
184	0.0195	0.0124	0.0071
185	0.0114	0.0073	0.0041
186	0.0121	0.0077	0.0044
187	0.0141	0.0090	0.0051
188	0.0154	0.0098	0.0056
189	0.0191	0.0122	0.0069
190	0.0220	0.0140	0.0080
191	0.0334	0.0213	0.0121
192	0.0485	0.0309	0.0176
193	0.2099	0.0387	0.1712
194	0.0263	0.0168	0.0096
195	0.0170	0.0108	0.0062
196	0.0130	0.0083	0.0047
197	0.0202	0.0128	0.0073
198	0.0183	0.0117	0.0067
199	0.0170	0.0108	0.0062
200	0.0159	0.0101	0.0058
201	0.0150	0.0095	0.0054
202	0.0142	0.0091	0.0052
203	0.0136	0.0087	0.0049
204	0.0130	0.0083	0.0047
205	0.0125	0.0080	0.0046
206	0.0121	0.0077	0.0044
207	0.0117	0.0075	0.0043
208	0.0114	0.0072	0.0041
209	0.0111	0.0070	0.0040
210	0.0108	0.0069	0.0039
211	0.0105	0.0067	0.0038
212	0.0103	0.0065	0.0037
213	0.0100	0.0064	0.0036
214	0.0098	0.0062	0.0036
215	0.0096	0.0061	0.0035
216	0.0094	0.0060	0.0034
217	0.0071	0.0046	0.0026
218	0.0070	0.0044	0.0025
219	0.0068	0.0044	0.0025
220	0.0067	0.0043	0.0024
221	0.0066	0.0042	0.0024
222	0.0064	0.0041	0.0023
223	0.0063	0.0040	0.0023
224	0.0062	0.0039	0.0022
225	0.0061	0.0039	0.0022
226	0.0060	0.0038	0.0022
227	0.0059	0.0037	0.0021
228	0.0058	0.0037	0.0021
229	0.0057	0.0036	0.0021
230	0.0056	0.0036	0.0020
231	0.0055	0.0035	0.0020
232	0.0054	0.0035	0.0020
233	0.0054	0.0034	0.0019
234	0.0053	0.0034	0.0019
235	0.0052	0.0033	0.0019
236	0.0051	0.0033	0.0019
237	0.0051	0.0032	0.0018
238	0.0050	0.0032	0.0018
239	0.0049	0.0031	0.0018
240	0.0049	0.0031	0.0018
241	0.0048	0.0031	0.0018
242	0.0048	0.0030	0.0017
243	0.0047	0.0030	0.0017
244	0.0047	0.0030	0.0017
245	0.0046	0.0029	0.0017
246	0.0046	0.0029	0.0017
247	0.0045	0.0029	0.0016
248	0.0045	0.0028	0.0016
249	0.0044	0.0028	0.0016
250	0.0044	0.0028	0.0016
251	0.0043	0.0028	0.0016
252	0.0043	0.0027	0.0016
253	0.0043	0.0027	0.0015
254	0.0042	0.0027	0.0015
255	0.0042	0.0027	0.0015
256	0.0041	0.0026	0.0015
257	0.0041	0.0026	0.0015
258	0.0041	0.0026	0.0015

259	0.0040	0.0026	0.0015
260	0.0040	0.0025	0.0015
261	0.0040	0.0025	0.0014
262	0.0039	0.0025	0.0014
263	0.0039	0.0025	0.0014
264	0.0039	0.0025	0.0014
265	0.0038	0.0024	0.0014
266	0.0038	0.0024	0.0014
267	0.0038	0.0024	0.0014
268	0.0037	0.0024	0.0014
269	0.0037	0.0024	0.0014
270	0.0037	0.0024	0.0013
271	0.0037	0.0023	0.0013
272	0.0036	0.0023	0.0013
273	0.0036	0.0023	0.0013
274	0.0036	0.0023	0.0013
275	0.0036	0.0023	0.0013
276	0.0035	0.0023	0.0013
277	0.0035	0.0022	0.0013
278	0.0035	0.0022	0.0013
279	0.0035	0.0022	0.0013
280	0.0034	0.0022	0.0013
281	0.0034	0.0022	0.0012
282	0.0034	0.0022	0.0012
283	0.0034	0.0022	0.0012
284	0.0034	0.0021	0.0012
285	0.0033	0.0021	0.0012
286	0.0033	0.0021	0.0012
287	0.0033	0.0021	0.0012
288	0.0033	0.0021	0.0012

Total soil rain loss = 1.29(In)
Total effective rainfall = 0.89(In)
Peak flow rate in flood hydrograph = 17.26(CFS)

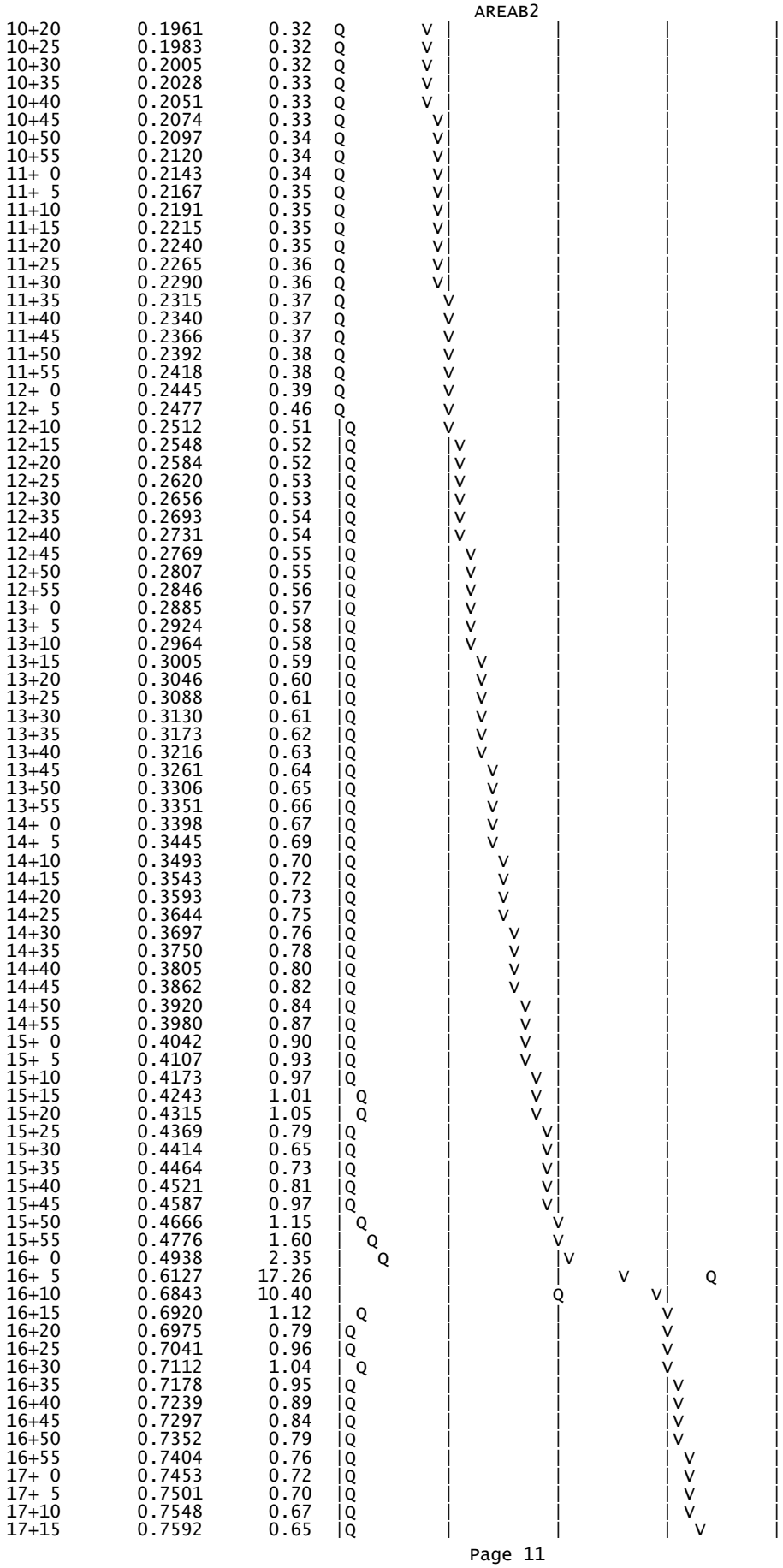
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0008	0.11	Q				
0+10	0.0020	0.18	Q				
0+15	0.0032	0.18	Q				
0+20	0.0045	0.18	Q				
0+25	0.0057	0.18	Q				
0+30	0.0070	0.18	Q				
0+35	0.0082	0.18	Q				
0+40	0.0095	0.18	Q				
0+45	0.0107	0.18	Q				
0+50	0.0120	0.18	Q				
0+55	0.0132	0.18	Q				
1+ 0	0.0145	0.18	Q				
1+ 5	0.0158	0.18	Q				
1+10	0.0171	0.19	Q				
1+15	0.0183	0.19	Q				
1+20	0.0196	0.19	Q				
1+25	0.0209	0.19	Q				
1+30	0.0222	0.19	Q				
1+35	0.0235	0.19	QV				
1+40	0.0248	0.19	QV				
1+45	0.0261	0.19	QV				
1+50	0.0274	0.19	QV				
1+55	0.0287	0.19	QV				
2+ 0	0.0301	0.19	QV				
2+ 5	0.0314	0.19	QV				
2+10	0.0327	0.19	QV				
2+15	0.0340	0.19	QV				
2+20	0.0354	0.19	QV				
2+25	0.0367	0.19	QV				
2+30	0.0381	0.20	QV				
2+35	0.0394	0.20	QV				
2+40	0.0408	0.20	QV				
2+45	0.0421	0.20	QV				
2+50	0.0435	0.20	QV				
2+55	0.0449	0.20	QV				
3+ 0	0.0462	0.20	Q V				
3+ 5	0.0476	0.20	Q V				
3+10	0.0490	0.20	Q V				
3+15	0.0504	0.20	Q V				

3+20	0.0518	0.20	Q	V			
3+25	0.0532	0.20	Q	V			
3+30	0.0546	0.20	Q	V			
3+35	0.0560	0.20	Q	V			
3+40	0.0574	0.21	Q	V			
3+45	0.0589	0.21	Q	V			
3+50	0.0603	0.21	Q	V			
3+55	0.0617	0.21	Q	V			
4+ 0	0.0632	0.21	Q	V			
4+ 5	0.0646	0.21	Q	V			
4+10	0.0661	0.21	Q	V			
4+15	0.0675	0.21	Q	V			
4+20	0.0690	0.21	Q	V			
4+25	0.0704	0.21	Q	V			
4+30	0.0719	0.21	Q	V			
4+35	0.0734	0.21	Q	V			
4+40	0.0749	0.22	Q	V			
4+45	0.0764	0.22	Q	V			
4+50	0.0779	0.22	Q	V			
4+55	0.0794	0.22	Q	V			
5+ 0	0.0809	0.22	Q	V			
5+ 5	0.0824	0.22	Q	V			
5+10	0.0839	0.22	Q	V			
5+15	0.0855	0.22	Q	V			
5+20	0.0870	0.22	Q	V			
5+25	0.0885	0.22	Q	V			
5+30	0.0901	0.23	Q	V			
5+35	0.0917	0.23	Q	V			
5+40	0.0932	0.23	Q	V			
5+45	0.0948	0.23	Q	V			
5+50	0.0964	0.23	Q	V			
5+55	0.0980	0.23	Q	V			
6+ 0	0.0996	0.23	Q	V			
6+ 5	0.1012	0.23	Q	V			
6+10	0.1028	0.23	Q	V			
6+15	0.1044	0.23	Q	V			
6+20	0.1060	0.24	Q	V			
6+25	0.1076	0.24	Q	V			
6+30	0.1093	0.24	Q	V			
6+35	0.1109	0.24	Q	V			
6+40	0.1126	0.24	Q	V			
6+45	0.1143	0.24	Q	V			
6+50	0.1159	0.24	Q	V			
6+55	0.1176	0.24	Q	V			
7+ 0	0.1193	0.25	Q	V			
7+ 5	0.1210	0.25	Q	V			
7+10	0.1227	0.25	Q	V			
7+15	0.1244	0.25	Q	V			
7+20	0.1262	0.25	Q	V			
7+25	0.1279	0.25	Q	V			
7+30	0.1297	0.25	Q	V			
7+35	0.1314	0.26	Q	V			
7+40	0.1332	0.26	Q	V			
7+45	0.1350	0.26	Q	V			
7+50	0.1367	0.26	Q	V			
7+55	0.1385	0.26	Q	V			
8+ 0	0.1403	0.26	Q	V			
8+ 5	0.1422	0.26	Q	V			
8+10	0.1440	0.27	Q	V			
8+15	0.1458	0.27	Q	V			
8+20	0.1477	0.27	Q	V			
8+25	0.1496	0.27	Q	V			
8+30	0.1514	0.27	Q	V			
8+35	0.1533	0.27	Q	V			
8+40	0.1552	0.28	Q	V			
8+45	0.1571	0.28	Q	V			
8+50	0.1591	0.28	Q	V			
8+55	0.1610	0.28	Q	V			
9+ 0	0.1629	0.28	Q	V			
9+ 5	0.1649	0.29	Q	V			
9+10	0.1669	0.29	Q	V			
9+15	0.1689	0.29	Q	V			
9+20	0.1709	0.29	Q	V			
9+25	0.1729	0.29	Q	V			
9+30	0.1749	0.29	Q	V			
9+35	0.1770	0.30	Q	V			
9+40	0.1790	0.30	Q	V			
9+45	0.1811	0.30	Q	V			
9+50	0.1832	0.30	Q	V			
9+55	0.1853	0.31	Q	V			
10+ 0	0.1874	0.31	Q	V			
10+ 5	0.1896	0.31	Q	V			
10+10	0.1917	0.31	Q	V			
10+15	0.1939	0.32	Q	V			



10+20	0.1961	0.32	Q V
10+25	0.1983	0.32	Q V
10+30	0.2005	0.32	Q V
10+35	0.2028	0.33	Q V
10+40	0.2051	0.33	Q V
10+45	0.2074	0.33	Q V
10+50	0.2097	0.34	Q V
10+55	0.2120	0.34	Q V
11+ 0	0.2143	0.34	Q V
11+ 5	0.2167	0.35	Q V
11+10	0.2191	0.35	Q V
11+15	0.2215	0.35	Q V
11+20	0.2240	0.35	Q V
11+25	0.2265	0.36	Q V
11+30	0.2290	0.36	Q V
11+35	0.2315	0.37	Q V
11+40	0.2340	0.37	Q V
11+45	0.2366	0.37	Q V
11+50	0.2392	0.38	Q V
11+55	0.2418	0.38	Q V
12+ 0	0.2445	0.39	Q V
12+ 5	0.2477	0.46	Q V
12+10	0.2512	0.51	Q V
12+15	0.2548	0.52	Q V
12+20	0.2584	0.52	Q V
12+25	0.2620	0.53	Q V
12+30	0.2656	0.53	Q V
12+35	0.2693	0.54	Q V
12+40	0.2731	0.54	Q V
12+45	0.2769	0.55	Q V
12+50	0.2807	0.55	Q V
12+55	0.2846	0.56	Q V
13+ 0	0.2885	0.57	Q V
13+ 5	0.2924	0.58	Q V
13+10	0.2964	0.58	Q V
13+15	0.3005	0.59	Q V
13+20	0.3046	0.60	Q V
13+25	0.3088	0.61	Q V
13+30	0.3130	0.61	Q V
13+35	0.3173	0.62	Q V
13+40	0.3216	0.63	Q V
13+45	0.3261	0.64	Q V
13+50	0.3306	0.65	Q V
13+55	0.3351	0.66	Q V
14+ 0	0.3398	0.67	Q V
14+ 5	0.3445	0.69	Q V
14+10	0.3493	0.70	Q V
14+15	0.3543	0.72	Q V
14+20	0.3593	0.73	Q V
14+25	0.3644	0.75	Q V
14+30	0.3697	0.76	Q V
14+35	0.3750	0.78	Q V
14+40	0.3805	0.80	Q V
14+45	0.3862	0.82	Q V
14+50	0.3920	0.84	Q V
14+55	0.3980	0.87	Q V
15+ 0	0.4042	0.90	Q V
15+ 5	0.4107	0.93	Q V
15+10	0.4173	0.97	Q V
15+15	0.4243	1.01	Q V
15+20	0.4315	1.05	Q V
15+25	0.4369	0.79	Q V
15+30	0.4414	0.65	Q V
15+35	0.4464	0.73	Q V
15+40	0.4521	0.81	Q V
15+45	0.4587	0.97	Q V
15+50	0.4666	1.15	Q V
15+55	0.4776	1.60	Q V
16+ 0	0.4938	2.35	Q V
16+ 5	0.6127	17.26	V Q
16+10	0.6843	10.40	Q V
16+15	0.6920	1.12	Q V
16+20	0.6975	0.79	Q V
16+25	0.7041	0.96	Q V
16+30	0.7112	1.04	Q V
16+35	0.7178	0.95	Q V
16+40	0.7239	0.89	Q V
16+45	0.7297	0.84	Q V
16+50	0.7352	0.79	Q V
16+55	0.7404	0.76	Q V
17+ 0	0.7453	0.72	Q V
17+ 5	0.7501	0.70	Q V
17+10	0.7548	0.67	Q V
17+15	0.7592	0.65	Q V

17+20	0.7636	0.63	Q			V
17+25	0.7678	0.61	Q			V
17+30	0.7719	0.59	Q			V
17+35	0.7758	0.58	Q			V
17+40	0.7797	0.57	Q			V
17+45	0.7835	0.55	Q			V
17+50	0.7873	0.54	Q			V
17+55	0.7909	0.53	Q			V
18+ 0	0.7945	0.52	Q			V
18+ 5	0.7975	0.44	Q			V
18+10	0.8001	0.39	Q			V
18+15	0.8027	0.38	Q			V
18+20	0.8053	0.37	Q			V
18+25	0.8078	0.36	Q			V
18+30	0.8102	0.35	Q			V
18+35	0.8126	0.35	Q			V
18+40	0.8149	0.34	Q			V
18+45	0.8172	0.33	Q			V
18+50	0.8195	0.33	Q			V
18+55	0.8217	0.32	Q			V
19+ 0	0.8239	0.32	Q			V
19+ 5	0.8261	0.31	Q			V
19+10	0.8282	0.31	Q			V
19+15	0.8303	0.30	Q			V
19+20	0.8323	0.30	Q			V
19+25	0.8343	0.29	Q			V
19+30	0.8363	0.29	Q			V
19+35	0.8383	0.29	Q			V
19+40	0.8403	0.28	Q			V
19+45	0.8422	0.28	Q			V
19+50	0.8441	0.28	Q			V
19+55	0.8459	0.27	Q			V
20+ 0	0.8478	0.27	Q			V
20+ 5	0.8496	0.27	Q			V
20+10	0.8514	0.26	Q			V
20+15	0.8532	0.26	Q			V
20+20	0.8550	0.26	Q			V
20+25	0.8567	0.25	Q			V
20+30	0.8584	0.25	Q			V
20+35	0.8601	0.25	Q			V
20+40	0.8618	0.25	Q			V
20+45	0.8635	0.24	Q			V
20+50	0.8652	0.24	Q			V
20+55	0.8668	0.24	Q			V
21+ 0	0.8684	0.24	Q			V
21+ 5	0.8700	0.23	Q			V
21+10	0.8716	0.23	Q			V
21+15	0.8732	0.23	Q			V
21+20	0.8748	0.23	Q			V
21+25	0.8763	0.22	Q			V
21+30	0.8778	0.22	Q			V
21+35	0.8794	0.22	Q			V
21+40	0.8809	0.22	Q			V
21+45	0.8824	0.22	Q			V
21+50	0.8839	0.22	Q			V
21+55	0.8853	0.21	Q			V
22+ 0	0.8868	0.21	Q			V
22+ 5	0.8882	0.21	Q			V
22+10	0.8897	0.21	Q			V
22+15	0.8911	0.21	Q			V
22+20	0.8925	0.21	Q			V
22+25	0.8939	0.20	Q			V
22+30	0.8953	0.20	Q			V
22+35	0.8967	0.20	Q			V
22+40	0.8981	0.20	Q			V
22+45	0.8994	0.20	Q			V
22+50	0.9008	0.20	Q			V
22+55	0.9021	0.20	Q			V
23+ 0	0.9035	0.19	Q			V
23+ 5	0.9048	0.19	Q			V
23+10	0.9061	0.19	Q			V
23+15	0.9074	0.19	Q			V
23+20	0.9087	0.19	Q			V
23+25	0.9100	0.19	Q			V
23+30	0.9113	0.19	Q			V
23+35	0.9126	0.19	Q			V
23+40	0.9138	0.18	Q			V
23+45	0.9151	0.18	Q			V
23+50	0.9163	0.18	Q			V
23+55	0.9176	0.18	Q			V
24+ 0	0.9188	0.18	Q			V

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA C
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
13.87	1	0.78
Rainfall data for year 2		
13.87	6	1.20
Rainfall data for year 2		
13.87	24	2.18
Rainfall data for year 100		
13.87	1	1.27
Rainfall data for year 100		
13.87	6	2.86
Rainfall data for year 100		
13.87	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
61.6	41.6	13.87	1.000	0.901	0.489	0.441

Area-averaged adjusted loss rate Fm (In/Hr) = 0.441

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
6.78	0.489	61.6	41.6	10.90	0.000
7.09	0.511	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.458
Area-averaged low loss fraction, Yb = 0.542

++
Watercourse length = 1690.00(Ft.)
Length from concentration point to centroid = 755.00(Ft.)
Elevation difference along watercourse = 102.90(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 13.87(Ac.)
Catchment Lag time = 0.037 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 223.8011
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.441(In/Hr)
Average low loss rate fraction (Yb) = 0.542 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 13.87(Ac.) (Ref: fig. E-4)

5-minute factor = 0.999 Adjusted rainfall = 0.210(In)
30-minute factor = 0.999 Adjusted rainfall = 0.359(In)
1-hour factor = 0.999 Adjusted rainfall = 0.442(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 167.74 (CFS))	
1	46.728	78.381
2	94.417	79.994
3	99.351	8.276
4	100.000	1.089

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2099	0.2099
2	0.2584	0.0485
3	0.2918	0.0334
4	0.3181	0.0263
5	0.3401	0.0220
6	0.3593	0.0191
7	0.3763	0.0170
8	0.3917	0.0154
9	0.4057	0.0141
10	0.4188	0.0130
11	0.4309	0.0121
12	0.4423	0.0114
13	0.4625	0.0202
14	0.4820	0.0195
15	0.5009	0.0189
16	0.5192	0.0183
17	0.5370	0.0178
18	0.5544	0.0174
19	0.5714	0.0170
20	0.5879	0.0166
21	0.6042	0.0162
22	0.6200	0.0159
23	0.6356	0.0155
24	0.6508	0.0153
25	0.6658	0.0150
26	0.6805	0.0147
27	0.6950	0.0145
28	0.7092	0.0142
29	0.7232	0.0140
30	0.7370	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7902	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8283	0.0125
38	0.8407	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8770	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115

		AREAC
46	0.9351	0.0114
47	0.9463	0.0113
48	0.9575	0.0112
49	0.9685	0.0111
50	0.9795	0.0110
51	0.9903	0.0109
52	1.0011	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0740	0.0102
60	1.0841	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1335	0.0097
66	1.1432	0.0097
67	1.1528	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1906	0.0094
72	1.1999	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2212	0.0070
76	1.2282	0.0070
77	1.2352	0.0069
78	1.2420	0.0069
79	1.2489	0.0068
80	1.2556	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2757	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3018	0.0065
88	1.3083	0.0064
89	1.3146	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3335	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3582	0.0061
97	1.3643	0.0061
98	1.3703	0.0060
99	1.3763	0.0060
100	1.3823	0.0060
101	1.3882	0.0059
102	1.3941	0.0059
103	1.4000	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4174	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4402	0.0057
111	1.4459	0.0056
112	1.4514	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4735	0.0055
117	1.4790	0.0055
118	1.4844	0.0054
119	1.4898	0.0054
120	1.4952	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5217	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5425	0.0052

		AREAC
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5629	0.0051
134	1.5680	0.0051
135	1.5730	0.0050
136	1.5780	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5929	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6076	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6460	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6601	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6924	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7060	0.0045
164	1.7105	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7239	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7503	0.0044
174	1.7547	0.0044
175	1.7590	0.0043
176	1.7633	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7762	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7974	0.0042
185	1.8016	0.0042
186	1.8058	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8224	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8429	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8591	0.0040
200	1.8631	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8751	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039

		AREAC
214	1.9182	0.0039
215	1.9221	0.0039
216	1.9259	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9563	0.0038
225	1.9601	0.0038
226	1.9638	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9750	0.0037
230	1.9787	0.0037
231	1.9824	0.0037
232	1.9861	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9971	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0153	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0297	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0404	0.0036
248	2.0440	0.0036
249	2.0475	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0581	0.0035
253	2.0616	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0721	0.0035
257	2.0756	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0860	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1100	0.0034
268	2.1134	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1370	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1470	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1734	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0018	0.0015
2	0.0033	0.0018	0.0015
3	0.0033	0.0018	0.0015
4	0.0033	0.0018	0.0015

5	0.0033	0.0018	0.0015
6	0.0033	0.0018	0.0015
7	0.0033	0.0018	0.0015
8	0.0033	0.0018	0.0015
9	0.0033	0.0018	0.0015
10	0.0034	0.0018	0.0015
11	0.0034	0.0018	0.0015
12	0.0034	0.0018	0.0015
13	0.0034	0.0018	0.0015
14	0.0034	0.0018	0.0016
15	0.0034	0.0018	0.0016
16	0.0034	0.0019	0.0016
17	0.0034	0.0019	0.0016
18	0.0034	0.0019	0.0016
19	0.0035	0.0019	0.0016
20	0.0035	0.0019	0.0016
21	0.0035	0.0019	0.0016
22	0.0035	0.0019	0.0016
23	0.0035	0.0019	0.0016
24	0.0035	0.0019	0.0016
25	0.0035	0.0019	0.0016
26	0.0035	0.0019	0.0016
27	0.0035	0.0019	0.0016
28	0.0036	0.0019	0.0016
29	0.0036	0.0019	0.0016
30	0.0036	0.0019	0.0016
31	0.0036	0.0019	0.0016
32	0.0036	0.0020	0.0016
33	0.0036	0.0020	0.0017
34	0.0036	0.0020	0.0017
35	0.0036	0.0020	0.0017
36	0.0037	0.0020	0.0017
37	0.0037	0.0020	0.0017
38	0.0037	0.0020	0.0017
39	0.0037	0.0020	0.0017
40	0.0037	0.0020	0.0017
41	0.0037	0.0020	0.0017
42	0.0037	0.0020	0.0017
43	0.0038	0.0020	0.0017
44	0.0038	0.0020	0.0017
45	0.0038	0.0021	0.0017
46	0.0038	0.0021	0.0017
47	0.0038	0.0021	0.0017
48	0.0038	0.0021	0.0018
49	0.0038	0.0021	0.0018
50	0.0039	0.0021	0.0018
51	0.0039	0.0021	0.0018
52	0.0039	0.0021	0.0018
53	0.0039	0.0021	0.0018
54	0.0039	0.0021	0.0018
55	0.0039	0.0021	0.0018
56	0.0040	0.0021	0.0018
57	0.0040	0.0022	0.0018
58	0.0040	0.0022	0.0018
59	0.0040	0.0022	0.0018
60	0.0040	0.0022	0.0018
61	0.0040	0.0022	0.0018
62	0.0041	0.0022	0.0019
63	0.0041	0.0022	0.0019
64	0.0041	0.0022	0.0019
65	0.0041	0.0022	0.0019
66	0.0041	0.0022	0.0019
67	0.0041	0.0023	0.0019
68	0.0042	0.0023	0.0019
69	0.0042	0.0023	0.0019
70	0.0042	0.0023	0.0019
71	0.0042	0.0023	0.0019
72	0.0042	0.0023	0.0019
73	0.0043	0.0023	0.0020
74	0.0043	0.0023	0.0020
75	0.0043	0.0023	0.0020
76	0.0043	0.0023	0.0020
77	0.0044	0.0024	0.0020
78	0.0044	0.0024	0.0020
79	0.0044	0.0024	0.0020
80	0.0044	0.0024	0.0020
81	0.0044	0.0024	0.0020
82	0.0045	0.0024	0.0020
83	0.0045	0.0024	0.0021
84	0.0045	0.0024	0.0021
85	0.0045	0.0025	0.0021
86	0.0045	0.0025	0.0021
87	0.0046	0.0025	0.0021
88	0.0046	0.0025	0.0021

89	0.0046	0.0025	0.0021
90	0.0046	0.0025	0.0021
91	0.0047	0.0025	0.0021
92	0.0047	0.0025	0.0022
93	0.0047	0.0026	0.0022
94	0.0048	0.0026	0.0022
95	0.0048	0.0026	0.0022
96	0.0048	0.0026	0.0022
97	0.0048	0.0026	0.0022
98	0.0049	0.0026	0.0022
99	0.0049	0.0027	0.0022
100	0.0049	0.0027	0.0023
101	0.0050	0.0027	0.0023
102	0.0050	0.0027	0.0023
103	0.0050	0.0027	0.0023
104	0.0051	0.0027	0.0023
105	0.0051	0.0028	0.0023
106	0.0051	0.0028	0.0023
107	0.0052	0.0028	0.0024
108	0.0052	0.0028	0.0024
109	0.0052	0.0028	0.0024
110	0.0053	0.0028	0.0024
111	0.0053	0.0029	0.0024
112	0.0053	0.0029	0.0024
113	0.0054	0.0029	0.0025
114	0.0054	0.0029	0.0025
115	0.0055	0.0030	0.0025
116	0.0055	0.0030	0.0025
117	0.0055	0.0030	0.0025
118	0.0056	0.0030	0.0025
119	0.0056	0.0030	0.0026
120	0.0057	0.0031	0.0026
121	0.0057	0.0031	0.0026
122	0.0057	0.0031	0.0026
123	0.0058	0.0031	0.0027
124	0.0058	0.0032	0.0027
125	0.0059	0.0032	0.0027
126	0.0059	0.0032	0.0027
127	0.0060	0.0033	0.0027
128	0.0060	0.0033	0.0028
129	0.0061	0.0033	0.0028
130	0.0061	0.0033	0.0028
131	0.0062	0.0034	0.0028
132	0.0063	0.0034	0.0029
133	0.0063	0.0034	0.0029
134	0.0064	0.0035	0.0029
135	0.0065	0.0035	0.0030
136	0.0065	0.0035	0.0030
137	0.0066	0.0036	0.0030
138	0.0066	0.0036	0.0030
139	0.0067	0.0037	0.0031
140	0.0068	0.0037	0.0031
141	0.0069	0.0037	0.0032
142	0.0069	0.0038	0.0032
143	0.0070	0.0038	0.0032
144	0.0071	0.0038	0.0032
145	0.0093	0.0050	0.0043
146	0.0094	0.0051	0.0043
147	0.0095	0.0051	0.0043
148	0.0095	0.0052	0.0044
149	0.0097	0.0052	0.0044
150	0.0097	0.0053	0.0045
151	0.0099	0.0054	0.0045
152	0.0099	0.0054	0.0046
153	0.0101	0.0055	0.0046
154	0.0102	0.0055	0.0047
155	0.0103	0.0056	0.0047
156	0.0104	0.0056	0.0048
157	0.0106	0.0057	0.0048
158	0.0107	0.0058	0.0049
159	0.0109	0.0059	0.0050
160	0.0110	0.0059	0.0050
161	0.0112	0.0060	0.0051
162	0.0113	0.0061	0.0052
163	0.0115	0.0062	0.0053
164	0.0116	0.0063	0.0053
165	0.0118	0.0064	0.0054
166	0.0120	0.0065	0.0055
167	0.0122	0.0066	0.0056
168	0.0124	0.0067	0.0057
169	0.0127	0.0069	0.0058
170	0.0129	0.0070	0.0059
171	0.0132	0.0072	0.0060
172	0.0134	0.0073	0.0061

173	0.0138	0.0075	0.0063
174	0.0140	0.0076	0.0064
175	0.0145	0.0078	0.0066
176	0.0147	0.0080	0.0067
177	0.0153	0.0083	0.0070
178	0.0155	0.0084	0.0071
179	0.0162	0.0088	0.0074
180	0.0166	0.0090	0.0076
181	0.0174	0.0094	0.0080
182	0.0178	0.0097	0.0082
183	0.0189	0.0102	0.0086
184	0.0195	0.0106	0.0089
185	0.0114	0.0062	0.0052
186	0.0121	0.0066	0.0056
187	0.0141	0.0076	0.0064
188	0.0154	0.0083	0.0070
189	0.0191	0.0104	0.0088
190	0.0220	0.0119	0.0101
191	0.0334	0.0181	0.0153
192	0.0485	0.0263	0.0222
193	0.2099	0.0367	0.1731
194	0.0263	0.0143	0.0120
195	0.0170	0.0092	0.0078
196	0.0130	0.0071	0.0060
197	0.0202	0.0109	0.0092
198	0.0183	0.0099	0.0084
199	0.0170	0.0092	0.0078
200	0.0159	0.0086	0.0073
201	0.0150	0.0081	0.0069
202	0.0142	0.0077	0.0065
203	0.0136	0.0074	0.0062
204	0.0130	0.0071	0.0060
205	0.0125	0.0068	0.0057
206	0.0121	0.0066	0.0055
207	0.0117	0.0064	0.0054
208	0.0114	0.0062	0.0052
209	0.0111	0.0060	0.0051
210	0.0108	0.0058	0.0049
211	0.0105	0.0057	0.0048
212	0.0103	0.0056	0.0047
213	0.0100	0.0054	0.0046
214	0.0098	0.0053	0.0045
215	0.0096	0.0052	0.0044
216	0.0094	0.0051	0.0043
217	0.0071	0.0039	0.0033
218	0.0070	0.0038	0.0032
219	0.0068	0.0037	0.0031
220	0.0067	0.0036	0.0031
221	0.0066	0.0036	0.0030
222	0.0064	0.0035	0.0029
223	0.0063	0.0034	0.0029
224	0.0062	0.0034	0.0028
225	0.0061	0.0033	0.0028
226	0.0060	0.0032	0.0027
227	0.0059	0.0032	0.0027
228	0.0058	0.0031	0.0026
229	0.0057	0.0031	0.0026
230	0.0056	0.0030	0.0026
231	0.0055	0.0030	0.0025
232	0.0054	0.0029	0.0025
233	0.0054	0.0029	0.0025
234	0.0053	0.0029	0.0024
235	0.0052	0.0028	0.0024
236	0.0051	0.0028	0.0024
237	0.0051	0.0028	0.0023
238	0.0050	0.0027	0.0023
239	0.0049	0.0027	0.0023
240	0.0049	0.0026	0.0022
241	0.0048	0.0026	0.0022
242	0.0048	0.0026	0.0022
243	0.0047	0.0026	0.0022
244	0.0047	0.0025	0.0021
245	0.0046	0.0025	0.0021
246	0.0046	0.0025	0.0021
247	0.0045	0.0024	0.0021
248	0.0045	0.0024	0.0020
249	0.0044	0.0024	0.0020
250	0.0044	0.0024	0.0020
251	0.0043	0.0024	0.0020
252	0.0043	0.0023	0.0020
253	0.0043	0.0023	0.0019
254	0.0042	0.0023	0.0019
255	0.0042	0.0023	0.0019
256	0.0041	0.0022	0.0019

257	0.0041	0.0022	0.0019
258	0.0041	0.0022	0.0019
259	0.0040	0.0022	0.0018
260	0.0040	0.0022	0.0018
261	0.0040	0.0021	0.0018
262	0.0039	0.0021	0.0018
263	0.0039	0.0021	0.0018
264	0.0039	0.0021	0.0018
265	0.0038	0.0021	0.0018
266	0.0038	0.0021	0.0017
267	0.0038	0.0020	0.0017
268	0.0037	0.0020	0.0017
269	0.0037	0.0020	0.0017
270	0.0037	0.0020	0.0017
271	0.0037	0.0020	0.0017
272	0.0036	0.0020	0.0017
273	0.0036	0.0020	0.0017
274	0.0036	0.0019	0.0016
275	0.0036	0.0019	0.0016
276	0.0035	0.0019	0.0016
277	0.0035	0.0019	0.0016
278	0.0035	0.0019	0.0016
279	0.0035	0.0019	0.0016
280	0.0034	0.0019	0.0016
281	0.0034	0.0019	0.0016
282	0.0034	0.0018	0.0016
283	0.0034	0.0018	0.0015
284	0.0034	0.0018	0.0015
285	0.0033	0.0018	0.0015
286	0.0033	0.0018	0.0015
287	0.0033	0.0018	0.0015
288	0.0033	0.0018	0.0015

Total soil rain loss = 1.10(In)
Total effective rainfall = 1.07(In)
Peak flow rate in flood hydrograph = 15.49(CFS)

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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	0.0008	0.12	Q				
0+10	0.0024	0.24	Q				
0+15	0.0042	0.25	Q				
0+20	0.0059	0.25	Q				
0+25	0.0076	0.25	Q				
0+30	0.0094	0.25	Q				
0+35	0.0111	0.25	Q				
0+40	0.0129	0.26	Q				
0+45	0.0147	0.26	Q				
0+50	0.0164	0.26	Q				
0+55	0.0182	0.26	Q				
1+ 0	0.0200	0.26	Q				
1+ 5	0.0218	0.26	Q				
1+10	0.0236	0.26	Q				
1+15	0.0254	0.26	Q				
1+20	0.0272	0.26	Q				
1+25	0.0290	0.26	Q				
1+30	0.0308	0.26	Q				
1+35	0.0326	0.26	QV				
1+40	0.0344	0.27	QV				
1+45	0.0363	0.27	QV				
1+50	0.0381	0.27	QV				
1+55	0.0400	0.27	QV				
2+ 0	0.0418	0.27	QV				
2+ 5	0.0437	0.27	QV				
2+10	0.0455	0.27	QV				
2+15	0.0474	0.27	QV				
2+20	0.0493	0.27	QV				
2+25	0.0512	0.27	QV				
2+30	0.0530	0.27	QV				
2+35	0.0549	0.28	QV				
2+40	0.0568	0.28	QV				
2+45	0.0588	0.28	QV				
2+50	0.0607	0.28	QV				
2+55	0.0626	0.28	Q V				
3+ 0	0.0645	0.28	Q V				
3+ 5	0.0665	0.28	Q V				

3+10	0.0684	0.28	Q V				
3+15	0.0704	0.28	Q V				
3+20	0.0723	0.28	Q V				
3+25	0.0743	0.29	Q V				
3+30	0.0763	0.29	Q V				
3+35	0.0782	0.29	Q V				
3+40	0.0802	0.29	Q V				
3+45	0.0822	0.29	Q V				
3+50	0.0842	0.29	Q V				
3+55	0.0862	0.29	Q V				
4+ 0	0.0883	0.29	Q V				
4+ 5	0.0903	0.29	Q V				
4+10	0.0923	0.30	Q V				
4+15	0.0944	0.30	Q V				
4+20	0.0964	0.30	Q V				
4+25	0.0985	0.30	Q V				
4+30	0.1005	0.30	Q V				
4+35	0.1026	0.30	Q V				
4+40	0.1047	0.30	Q V				
4+45	0.1068	0.30	Q V				
4+50	0.1089	0.31	Q V				
4+55	0.1110	0.31	Q V				
5+ 0	0.1131	0.31	Q V				
5+ 5	0.1153	0.31	Q V				
5+10	0.1174	0.31	Q V				
5+15	0.1195	0.31	Q V				
5+20	0.1217	0.31	Q V				
5+25	0.1239	0.31	Q V				
5+30	0.1260	0.32	Q V				
5+35	0.1282	0.32	Q V				
5+40	0.1304	0.32	Q V				
5+45	0.1326	0.32	Q V				
5+50	0.1349	0.32	Q V				
5+55	0.1371	0.32	Q V				
6+ 0	0.1393	0.32	Q V				
6+ 5	0.1416	0.33	Q V				
6+10	0.1438	0.33	Q V				
6+15	0.1461	0.33	Q V				
6+20	0.1484	0.33	Q V				
6+25	0.1507	0.33	Q V				
6+30	0.1530	0.33	Q V				
6+35	0.1553	0.34	Q V				
6+40	0.1576	0.34	Q V				
6+45	0.1600	0.34	Q V				
6+50	0.1623	0.34	Q V				
6+55	0.1647	0.34	Q V				
7+ 0	0.1670	0.34	Q V				
7+ 5	0.1694	0.35	Q V				
7+10	0.1718	0.35	Q V				
7+15	0.1742	0.35	Q V				
7+20	0.1767	0.35	Q V				
7+25	0.1791	0.35	Q V				
7+30	0.1816	0.36	Q V				
7+35	0.1840	0.36	Q V				
7+40	0.1865	0.36	Q V				
7+45	0.1890	0.36	Q V				
7+50	0.1915	0.36	Q V				
7+55	0.1940	0.37	Q V				
8+ 0	0.1966	0.37	Q V				
8+ 5	0.1991	0.37	Q V				
8+10	0.2017	0.37	Q V				
8+15	0.2043	0.37	Q V				
8+20	0.2069	0.38	Q V				
8+25	0.2095	0.38	Q V				
8+30	0.2121	0.38	Q V				
8+35	0.2147	0.38	Q V				
8+40	0.2174	0.39	Q V				
8+45	0.2201	0.39	Q V				
8+50	0.2228	0.39	Q V				
8+55	0.2255	0.39	Q V				
9+ 0	0.2282	0.40	Q V				
9+ 5	0.2310	0.40	Q V				
9+10	0.2338	0.40	Q V				
9+15	0.2365	0.41	Q V				
9+20	0.2394	0.41	Q V				
9+25	0.2422	0.41	Q V				
9+30	0.2450	0.41	Q V				
9+35	0.2479	0.42	Q V				
9+40	0.2508	0.42	Q V				
9+45	0.2537	0.42	Q V				
9+50	0.2566	0.43	Q V				
9+55	0.2596	0.43	Q V				
10+ 0	0.2626	0.43	Q V				
10+ 5	0.2656	0.44	Q V				

10+10	0.2686	0.44	Q V | | | |
10+15	0.2717	0.44	Q V | | | |
10+20	0.2747	0.45	Q V | | | |
10+25	0.2778	0.45	Q V | | | |
10+30	0.2810	0.45	Q V| | | |
10+35	0.2841	0.46	Q V| | | |
10+40	0.2873	0.46	Q V| | | |
10+45	0.2905	0.47	Q V| | | |
10+50	0.2938	0.47	Q V| | | |
10+55	0.2970	0.47	Q V| | | |
11+ 0	0.3003	0.48	Q V| | | |
11+ 5	0.3037	0.48	Q V| | | |
11+10	0.3070	0.49	Q V| | | |
11+15	0.3104	0.49	Q V| | | |
11+20	0.3138	0.50	Q V | | |
11+25	0.3173	0.50	|Q V | | |
11+30	0.3208	0.51	|Q V | | |
11+35	0.3243	0.51	|Q V | | |
11+40	0.3279	0.52	|Q V | | |
11+45	0.3315	0.52	|Q V | | |
11+50	0.3352	0.53	|Q V | | |
11+55	0.3388	0.54	|Q V | | |
12+ 0	0.3426	0.54	|Q |V | | |
12+ 5	0.3469	0.62	|Q |V | | |
12+10	0.3517	0.71	|Q |V | | |
12+15	0.3567	0.72	|Q |V | | |
12+20	0.3617	0.73	|Q |V | | |
12+25	0.3668	0.74	|Q |V | | |
12+30	0.3720	0.74	|Q |V | | |
12+35	0.3771	0.75	|Q | V | | |
12+40	0.3824	0.76	|Q | V | | |
12+45	0.3877	0.77	|Q | V | | |
12+50	0.3930	0.78	|Q | V | | |
12+55	0.3984	0.79	|Q | V | | |
13+ 0	0.4039	0.80	|Q | V | | |
13+ 5	0.4095	0.81	|Q | V | | |
13+10	0.4151	0.82	|Q | V | | |
13+15	0.4208	0.83	|Q | V | | |
13+20	0.4265	0.84	|Q | V | | |
13+25	0.4324	0.85	|Q | V | | |
13+30	0.4383	0.86	|Q | V | | |
13+35	0.4443	0.87	|Q | V | | |
13+40	0.4504	0.88	|Q | V | | |
13+45	0.4566	0.90	|Q | V | | |
13+50	0.4629	0.91	|Q | V | | |
13+55	0.4693	0.93	|Q | V | | |
14+ 0	0.4758	0.94	|Q | V | | |
14+ 5	0.4824	0.96	|Q | V | | |
14+10	0.4891	0.98	|Q | V | | |
14+15	0.4960	1.00	|Q | V | | |
14+20	0.5030	1.02	| Q | V | | |
14+25	0.5102	1.04	| Q | V | | |
14+30	0.5175	1.06	| Q | V | | |
14+35	0.5251	1.09	| Q | V | | |
14+40	0.5328	1.12	| Q | V | | |
14+45	0.5407	1.15	| Q | V | | |
14+50	0.5488	1.18	| Q | V | | |
14+55	0.5572	1.22	| Q | V | | |
15+ 0	0.5658	1.25	| Q | V | | |
15+ 5	0.5747	1.30	| Q | V | | |
15+10	0.5840	1.35	| Q | V | | |
15+15	0.5937	1.41	| Q | V| | |
15+20	0.6038	1.47	| Q | V| | |
15+25	0.6121	1.20	| Q | V| | |
15+30	0.6185	0.94	|Q | V| | |
15+35	0.6254	1.00	| Q | V | | |
15+40	0.6332	1.12	| Q | V | | |
15+45	0.6422	1.31	| Q | V | | |
15+50	0.6529	1.56	| Q | |V | |
15+55	0.6672	2.09	| Q | |V | |
16+ 0	0.6883	3.06	| Q | | V | |
16+ 5	0.7950	15.49	| | | V Q |
16+10	0.8982	15.00	| | | VQ| |
16+15	0.9191	3.03	| Q | | V| |
16+20	0.9286	1.38	| Q | | V| |
16+25	0.9374	1.28	| Q | | V |
16+30	0.9474	1.45	| Q | | V |
16+35	0.9568	1.36	| Q | | V |
16+40	0.9655	1.27	| Q | | |V |
16+45	0.9738	1.19	| Q | | |V |
16+50	0.9815	1.13	| Q | | |V |
16+55	0.9889	1.07	| Q | | |V |
17+ 0	0.9960	1.03	| Q | | | V |
17+ 5	1.0028	0.99	|Q | | | V |

17+10	1.0093	0.95	Q			V
17+15	1.0156	0.92	Q			V
17+20	1.0218	0.89	Q			V
17+25	1.0277	0.86	Q			V
17+30	1.0335	0.84	Q			V
17+35	1.0391	0.82	Q			V
17+40	1.0446	0.80	Q			V
17+45	1.0500	0.78	Q			V
17+50	1.0552	0.76	Q			V
17+55	1.0604	0.75	Q			V
18+ 0	1.0654	0.73	Q			V
18+ 5	1.0699	0.64	Q			V
18+10	1.0737	0.55	Q			V
18+15	1.0773	0.53	Q			V
18+20	1.0809	0.52	Q			V
18+25	1.0844	0.51	Q			V
18+30	1.0879	0.50	Q			V
18+35	1.0912	0.49	Q			V
18+40	1.0945	0.48	Q			V
18+45	1.0978	0.47	Q			V
18+50	1.1010	0.46	Q			V
18+55	1.1041	0.46	Q			V
19+ 0	1.1072	0.45	Q			V
19+ 5	1.1102	0.44	Q			V
19+10	1.1132	0.43	Q			V
19+15	1.1162	0.43	Q			V
19+20	1.1191	0.42	Q			V
19+25	1.1219	0.41	Q			V
19+30	1.1247	0.41	Q			V
19+35	1.1275	0.40	Q			V
19+40	1.1303	0.40	Q			V
19+45	1.1330	0.39	Q			V
19+50	1.1356	0.39	Q			V
19+55	1.1383	0.38	Q			V
20+ 0	1.1409	0.38	Q			V
20+ 5	1.1434	0.37	Q			V
20+10	1.1460	0.37	Q			V
20+15	1.1485	0.36	Q			V
20+20	1.1510	0.36	Q			V
20+25	1.1534	0.36	Q			V
20+30	1.1559	0.35	Q			V
20+35	1.1583	0.35	Q			V
20+40	1.1606	0.35	Q			V
20+45	1.1630	0.34	Q			V
20+50	1.1653	0.34	Q			V
20+55	1.1676	0.33	Q			V
21+ 0	1.1699	0.33	Q			V
21+ 5	1.1722	0.33	Q			V
21+10	1.1744	0.33	Q			V
21+15	1.1766	0.32	Q			V
21+20	1.1788	0.32	Q			V
21+25	1.1810	0.32	Q			V
21+30	1.1832	0.31	Q			V
21+35	1.1853	0.31	Q			V
21+40	1.1874	0.31	Q			V
21+45	1.1895	0.31	Q			V
21+50	1.1916	0.30	Q			V
21+55	1.1937	0.30	Q			V
22+ 0	1.1958	0.30	Q			V
22+ 5	1.1978	0.30	Q			V
22+10	1.1998	0.29	Q			V
22+15	1.2018	0.29	Q			V
22+20	1.2038	0.29	Q			V
22+25	1.2058	0.29	Q			V
22+30	1.2077	0.28	Q			V
22+35	1.2097	0.28	Q			V
22+40	1.2116	0.28	Q			V
22+45	1.2135	0.28	Q			V
22+50	1.2154	0.28	Q			V
22+55	1.2173	0.27	Q			V
23+ 0	1.2192	0.27	Q			V
23+ 5	1.2211	0.27	Q			V
23+10	1.2229	0.27	Q			V
23+15	1.2248	0.27	Q			V
23+20	1.2266	0.27	Q			V
23+25	1.2284	0.26	Q			V
23+30	1.2302	0.26	Q			V
23+35	1.2320	0.26	Q			V
23+40	1.2338	0.26	Q			V
23+45	1.2356	0.26	Q			V
23+50	1.2373	0.26	Q			V
23+55	1.2391	0.25	Q			V
24+ 0	1.2408	0.25	Q			V

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA D
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
4.42	1	0.78
Rainfall data for year 2		
4.42	6	1.20
Rainfall data for year 2		
4.42	24	2.18
Rainfall data for year 100		
4.42	1	1.27
Rainfall data for year 100		
4.42	6	2.86
Rainfall data for year 100		
4.42	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
69.0	49.8	4.42	1.000	0.812	0.036	0.029

Area-averaged adjusted loss rate Fm (In/Hr) = 0.029

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
0.16	0.036	69.0	49.8	10.08	0.001
4.26	0.964	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.864
Area-averaged low loss fraction, Yb = 0.136

++
Watercourse length = 1155.00(Ft.)
Length from concentration point to centroid = 490.00(Ft.)
Elevation difference along watercourse = 108.50(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 4.42(Ac.)
Catchment Lag time = 0.025 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 330.9816
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.029(In/Hr)
Average low loss rate fraction (Yb) = 0.136 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 4.42(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 53.45 (CFS))	
1	61.143	32.684
2	98.623	20.034
3	100.000	0.736

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2100	0.2100
2	0.2585	0.0485
3	0.2919	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3594	0.0191
7	0.3764	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4190	0.0130
11	0.4311	0.0122
12	0.4425	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5372	0.0178
18	0.5546	0.0174
19	0.5715	0.0170
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6509	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7506	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9006	0.0117
44	0.9122	0.0116
45	0.9237	0.0115
46	0.9351	0.0114

		AREAD
47	0.9464	0.0113
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0536	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2823	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4570	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052
130	1.5477	0.0051

		AREAD
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5830	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7932	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8870	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039

		AREAD
215	1.9221	0.0039
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0117	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1066	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0004	0.0028
2	0.0033	0.0004	0.0028
3	0.0033	0.0004	0.0028
4	0.0033	0.0004	0.0028
5	0.0033	0.0005	0.0029

6	0.0033	0.0005	0.0029
7	0.0033	0.0005	0.0029
8	0.0033	0.0005	0.0029
9	0.0033	0.0005	0.0029
10	0.0034	0.0005	0.0029
11	0.0034	0.0005	0.0029
12	0.0034	0.0005	0.0029
13	0.0034	0.0005	0.0029
14	0.0034	0.0005	0.0029
15	0.0034	0.0005	0.0029
16	0.0034	0.0005	0.0029
17	0.0034	0.0005	0.0030
18	0.0034	0.0005	0.0030
19	0.0035	0.0005	0.0030
20	0.0035	0.0005	0.0030
21	0.0035	0.0005	0.0030
22	0.0035	0.0005	0.0030
23	0.0035	0.0005	0.0030
24	0.0035	0.0005	0.0030
25	0.0035	0.0005	0.0030
26	0.0035	0.0005	0.0030
27	0.0035	0.0005	0.0031
28	0.0036	0.0005	0.0031
29	0.0036	0.0005	0.0031
30	0.0036	0.0005	0.0031
31	0.0036	0.0005	0.0031
32	0.0036	0.0005	0.0031
33	0.0036	0.0005	0.0031
34	0.0036	0.0005	0.0031
35	0.0036	0.0005	0.0031
36	0.0037	0.0005	0.0032
37	0.0037	0.0005	0.0032
38	0.0037	0.0005	0.0032
39	0.0037	0.0005	0.0032
40	0.0037	0.0005	0.0032
41	0.0037	0.0005	0.0032
42	0.0037	0.0005	0.0032
43	0.0038	0.0005	0.0032
44	0.0038	0.0005	0.0033
45	0.0038	0.0005	0.0033
46	0.0038	0.0005	0.0033
47	0.0038	0.0005	0.0033
48	0.0038	0.0005	0.0033
49	0.0038	0.0005	0.0033
50	0.0039	0.0005	0.0033
51	0.0039	0.0005	0.0033
52	0.0039	0.0005	0.0034
53	0.0039	0.0005	0.0034
54	0.0039	0.0005	0.0034
55	0.0039	0.0005	0.0034
56	0.0040	0.0005	0.0034
57	0.0040	0.0005	0.0034
58	0.0040	0.0005	0.0034
59	0.0040	0.0005	0.0035
60	0.0040	0.0005	0.0035
61	0.0040	0.0006	0.0035
62	0.0041	0.0006	0.0035
63	0.0041	0.0006	0.0035
64	0.0041	0.0006	0.0035
65	0.0041	0.0006	0.0036
66	0.0041	0.0006	0.0036
67	0.0041	0.0006	0.0036
68	0.0042	0.0006	0.0036
69	0.0042	0.0006	0.0036
70	0.0042	0.0006	0.0036
71	0.0042	0.0006	0.0037
72	0.0042	0.0006	0.0037
73	0.0043	0.0006	0.0037
74	0.0043	0.0006	0.0037
75	0.0043	0.0006	0.0037
76	0.0043	0.0006	0.0037
77	0.0044	0.0006	0.0038
78	0.0044	0.0006	0.0038
79	0.0044	0.0006	0.0038
80	0.0044	0.0006	0.0038
81	0.0044	0.0006	0.0038
82	0.0045	0.0006	0.0038
83	0.0045	0.0006	0.0039
84	0.0045	0.0006	0.0039
85	0.0045	0.0006	0.0039
86	0.0045	0.0006	0.0039
87	0.0046	0.0006	0.0040
88	0.0046	0.0006	0.0040
89	0.0046	0.0006	0.0040

90	0.0046	0.0006	0.0040
91	0.0047	0.0006	0.0040
92	0.0047	0.0006	0.0041
93	0.0047	0.0006	0.0041
94	0.0048	0.0006	0.0041
95	0.0048	0.0007	0.0041
96	0.0048	0.0007	0.0042
97	0.0048	0.0007	0.0042
98	0.0049	0.0007	0.0042
99	0.0049	0.0007	0.0042
100	0.0049	0.0007	0.0043
101	0.0050	0.0007	0.0043
102	0.0050	0.0007	0.0043
103	0.0050	0.0007	0.0043
104	0.0051	0.0007	0.0044
105	0.0051	0.0007	0.0044
106	0.0051	0.0007	0.0044
107	0.0052	0.0007	0.0045
108	0.0052	0.0007	0.0045
109	0.0052	0.0007	0.0045
110	0.0053	0.0007	0.0045
111	0.0053	0.0007	0.0046
112	0.0053	0.0007	0.0046
113	0.0054	0.0007	0.0046
114	0.0054	0.0007	0.0047
115	0.0055	0.0007	0.0047
116	0.0055	0.0007	0.0047
117	0.0055	0.0008	0.0048
118	0.0056	0.0008	0.0048
119	0.0056	0.0008	0.0049
120	0.0057	0.0008	0.0049
121	0.0057	0.0008	0.0049
122	0.0057	0.0008	0.0050
123	0.0058	0.0008	0.0050
124	0.0058	0.0008	0.0050
125	0.0059	0.0008	0.0051
126	0.0059	0.0008	0.0051
127	0.0060	0.0008	0.0052
128	0.0060	0.0008	0.0052
129	0.0061	0.0008	0.0053
130	0.0061	0.0008	0.0053
131	0.0062	0.0008	0.0054
132	0.0063	0.0009	0.0054
133	0.0063	0.0009	0.0055
134	0.0064	0.0009	0.0055
135	0.0065	0.0009	0.0056
136	0.0065	0.0009	0.0056
137	0.0066	0.0009	0.0057
138	0.0066	0.0009	0.0057
139	0.0067	0.0009	0.0058
140	0.0068	0.0009	0.0059
141	0.0069	0.0009	0.0059
142	0.0069	0.0009	0.0060
143	0.0070	0.0010	0.0061
144	0.0071	0.0010	0.0061
145	0.0093	0.0013	0.0080
146	0.0094	0.0013	0.0081
147	0.0095	0.0013	0.0082
148	0.0095	0.0013	0.0082
149	0.0097	0.0013	0.0084
150	0.0097	0.0013	0.0084
151	0.0099	0.0013	0.0085
152	0.0099	0.0014	0.0086
153	0.0101	0.0014	0.0087
154	0.0102	0.0014	0.0088
155	0.0103	0.0014	0.0089
156	0.0104	0.0014	0.0090
157	0.0106	0.0014	0.0091
158	0.0107	0.0015	0.0092
159	0.0109	0.0015	0.0094
160	0.0110	0.0015	0.0095
161	0.0112	0.0015	0.0096
162	0.0113	0.0015	0.0097
163	0.0115	0.0016	0.0099
164	0.0116	0.0016	0.0100
165	0.0118	0.0016	0.0102
166	0.0120	0.0016	0.0103
167	0.0122	0.0017	0.0106
168	0.0124	0.0017	0.0107
169	0.0127	0.0017	0.0110
170	0.0129	0.0018	0.0111
171	0.0132	0.0018	0.0114
172	0.0134	0.0018	0.0116
173	0.0138	0.0019	0.0119

174	0.0140	0.0019	0.0121
175	0.0145	0.0020	0.0125
176	0.0147	0.0020	0.0127
177	0.0152	0.0021	0.0132
178	0.0155	0.0021	0.0134
179	0.0162	0.0022	0.0140
180	0.0166	0.0023	0.0143
181	0.0174	0.0024	0.0150
182	0.0178	0.0024	0.0154
183	0.0189	0.0024	0.0164
184	0.0195	0.0024	0.0171
185	0.0114	0.0016	0.0098
186	0.0122	0.0017	0.0105
187	0.0141	0.0019	0.0122
188	0.0154	0.0021	0.0133
189	0.0191	0.0024	0.0167
190	0.0220	0.0024	0.0196
191	0.0334	0.0024	0.0310
192	0.0485	0.0024	0.0461
193	0.2100	0.0024	0.2075
194	0.0263	0.0024	0.0239
195	0.0170	0.0023	0.0147
196	0.0130	0.0018	0.0113
197	0.0202	0.0024	0.0177
198	0.0183	0.0024	0.0159
199	0.0170	0.0023	0.0146
200	0.0159	0.0022	0.0137
201	0.0150	0.0020	0.0129
202	0.0142	0.0019	0.0123
203	0.0136	0.0019	0.0117
204	0.0130	0.0018	0.0113
205	0.0125	0.0017	0.0108
206	0.0121	0.0017	0.0105
207	0.0117	0.0016	0.0101
208	0.0114	0.0016	0.0098
209	0.0111	0.0015	0.0095
210	0.0108	0.0015	0.0093
211	0.0105	0.0014	0.0091
212	0.0103	0.0014	0.0089
213	0.0100	0.0014	0.0087
214	0.0098	0.0013	0.0085
215	0.0096	0.0013	0.0083
216	0.0094	0.0013	0.0081
217	0.0071	0.0010	0.0062
218	0.0070	0.0010	0.0060
219	0.0068	0.0009	0.0059
220	0.0067	0.0009	0.0058
221	0.0066	0.0009	0.0057
222	0.0064	0.0009	0.0055
223	0.0063	0.0009	0.0054
224	0.0062	0.0008	0.0053
225	0.0061	0.0008	0.0052
226	0.0060	0.0008	0.0052
227	0.0059	0.0008	0.0051
228	0.0058	0.0008	0.0050
229	0.0057	0.0008	0.0049
230	0.0056	0.0008	0.0048
231	0.0055	0.0008	0.0048
232	0.0054	0.0007	0.0047
233	0.0054	0.0007	0.0046
234	0.0053	0.0007	0.0046
235	0.0052	0.0007	0.0045
236	0.0051	0.0007	0.0044
237	0.0051	0.0007	0.0044
238	0.0050	0.0007	0.0043
239	0.0049	0.0007	0.0043
240	0.0049	0.0007	0.0042
241	0.0048	0.0007	0.0042
242	0.0048	0.0007	0.0041
243	0.0047	0.0006	0.0041
244	0.0047	0.0006	0.0040
245	0.0046	0.0006	0.0040
246	0.0046	0.0006	0.0039
247	0.0045	0.0006	0.0039
248	0.0045	0.0006	0.0039
249	0.0044	0.0006	0.0038
250	0.0044	0.0006	0.0038
251	0.0043	0.0006	0.0037
252	0.0043	0.0006	0.0037
253	0.0043	0.0006	0.0037
254	0.0042	0.0006	0.0036
255	0.0042	0.0006	0.0036
256	0.0041	0.0006	0.0036
257	0.0041	0.0006	0.0035

258	0.0041	0.0006	0.0035
259	0.0040	0.0005	0.0035
260	0.0040	0.0005	0.0035
261	0.0040	0.0005	0.0034
262	0.0039	0.0005	0.0034
263	0.0039	0.0005	0.0034
264	0.0039	0.0005	0.0033
265	0.0038	0.0005	0.0033
266	0.0038	0.0005	0.0033
267	0.0038	0.0005	0.0033
268	0.0037	0.0005	0.0032
269	0.0037	0.0005	0.0032
270	0.0037	0.0005	0.0032
271	0.0037	0.0005	0.0032
272	0.0036	0.0005	0.0031
273	0.0036	0.0005	0.0031
274	0.0036	0.0005	0.0031
275	0.0036	0.0005	0.0031
276	0.0035	0.0005	0.0031
277	0.0035	0.0005	0.0030
278	0.0035	0.0005	0.0030
279	0.0035	0.0005	0.0030
280	0.0034	0.0005	0.0030
281	0.0034	0.0005	0.0030
282	0.0034	0.0005	0.0029
283	0.0034	0.0005	0.0029
284	0.0034	0.0005	0.0029
285	0.0033	0.0005	0.0029
286	0.0033	0.0005	0.0029
287	0.0033	0.0004	0.0028
288	0.0033	0.0004	0.0028

Total soil rain loss = 0.26(In)
Total effective rainfall = 1.92(In)
Peak flow rate in flood hydrograph = 7.73(CFS)

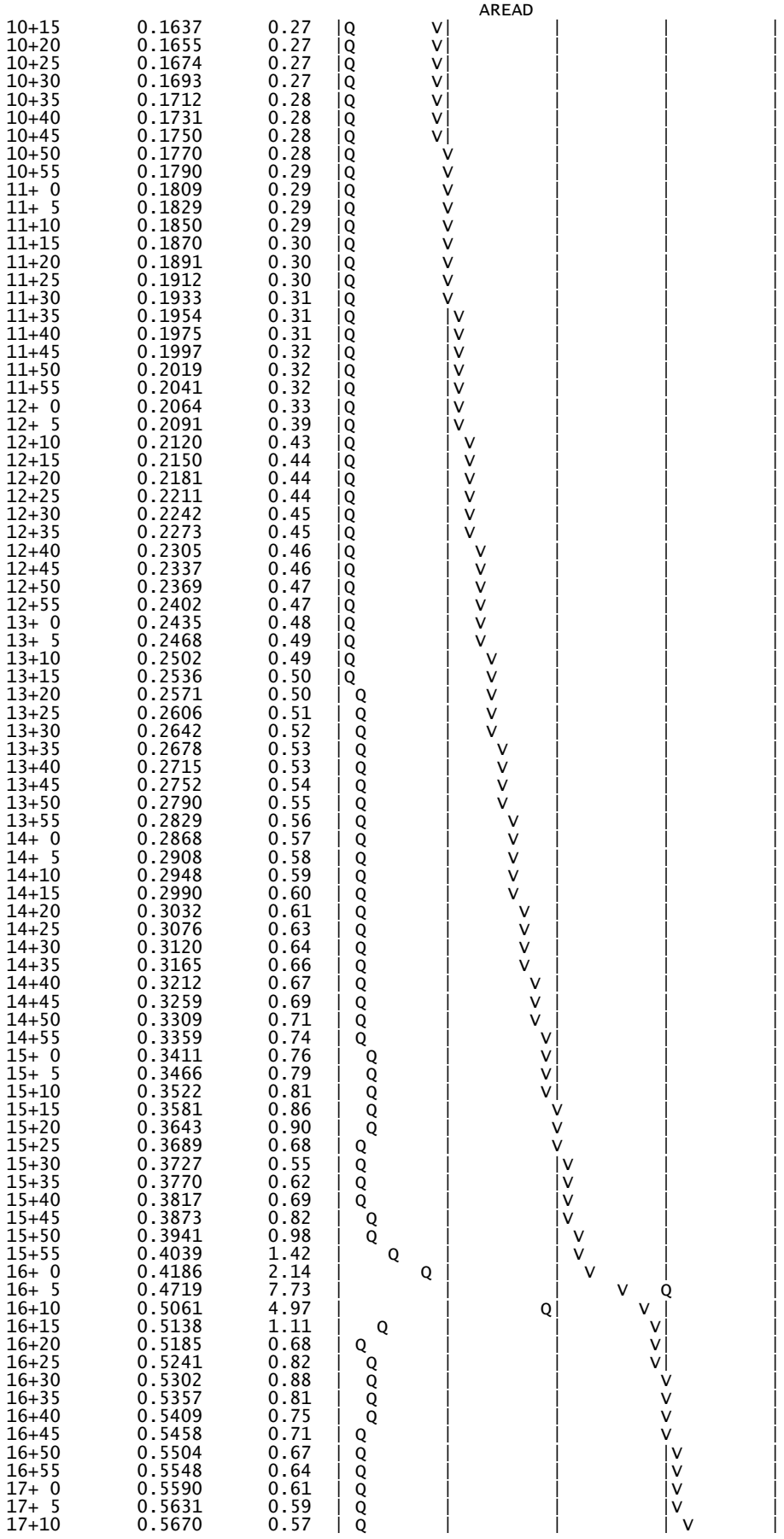
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0006	0.09	Q				
0+10	0.0017	0.15	Q				
0+15	0.0027	0.15	Q				
0+20	0.0037	0.15	Q				
0+25	0.0048	0.15	Q				
0+30	0.0058	0.15	Q				
0+35	0.0069	0.15	Q				
0+40	0.0080	0.15	Q				
0+45	0.0090	0.15	Q				
0+50	0.0101	0.15	Q				
0+55	0.0112	0.16	Q				
1+ 0	0.0122	0.16	Q				
1+ 5	0.0133	0.16	Q				
1+10	0.0144	0.16	Q				
1+15	0.0155	0.16	Q				
1+20	0.0165	0.16	Q				
1+25	0.0176	0.16	Q				
1+30	0.0187	0.16	QV				
1+35	0.0198	0.16	QV				
1+40	0.0209	0.16	QV				
1+45	0.0220	0.16	QV				
1+50	0.0231	0.16	QV				
1+55	0.0242	0.16	QV				
2+ 0	0.0253	0.16	QV				
2+ 5	0.0265	0.16	QV				
2+10	0.0276	0.16	QV				
2+15	0.0287	0.16	QV				
2+20	0.0298	0.16	QV				
2+25	0.0310	0.16	QV				
2+30	0.0321	0.17	QV				
2+35	0.0332	0.17	QV				
2+40	0.0344	0.17	QV				
2+45	0.0355	0.17	Q V				
2+50	0.0367	0.17	Q V				
2+55	0.0379	0.17	Q V				
3+ 0	0.0390	0.17	Q V				
3+ 5	0.0402	0.17	Q V				
3+10	0.0413	0.17	Q V				

3+15	0.0425	0.17	Q V	|	|	|	|
3+20	0.0437	0.17	Q V	|	|	|	|
3+25	0.0449	0.17	Q V	|	|	|	|
3+30	0.0461	0.17	Q V	|	|	|	|
3+35	0.0473	0.17	Q V	|	|	|	|
3+40	0.0485	0.17	Q V	|	|	|	|
3+45	0.0497	0.17	Q V	|	|	|	|
3+50	0.0509	0.18	Q V	|	|	|	|
3+55	0.0521	0.18	Q V	|	|	|	|
4+ 0	0.0533	0.18	Q V	|	|	|	|
4+ 5	0.0545	0.18	Q V	|	|	|	|
4+10	0.0557	0.18	Q V	|	|	|	|
4+15	0.0570	0.18	Q V	|	|	|	|
4+20	0.0582	0.18	Q V	|	|	|	|
4+25	0.0594	0.18	Q V	|	|	|	|
4+30	0.0607	0.18	Q V	|	|	|	|
4+35	0.0619	0.18	Q V	|	|	|	|
4+40	0.0632	0.18	Q V	|	|	|	|
4+45	0.0644	0.18	Q V	|	|	|	|
4+50	0.0657	0.18	Q V	|	|	|	|
4+55	0.0670	0.18	Q V	|	|	|	|
5+ 0	0.0683	0.19	Q V	|	|	|	|
5+ 5	0.0695	0.19	Q V	|	|	|	|
5+10	0.0708	0.19	Q V	|	|	|	|
5+15	0.0721	0.19	Q V	|	|	|	|
5+20	0.0734	0.19	Q V	|	|	|	|
5+25	0.0747	0.19	Q V	|	|	|	|
5+30	0.0760	0.19	Q V	|	|	|	|
5+35	0.0773	0.19	Q V	|	|	|	|
5+40	0.0787	0.19	Q V	|	|	|	|
5+45	0.0800	0.19	Q V	|	|	|	|
5+50	0.0813	0.19	Q V	|	|	|	|
5+55	0.0827	0.19	Q V	|	|	|	|
6+ 0	0.0840	0.20	Q V	|	|	|	|
6+ 5	0.0854	0.20	Q V	|	|	|	|
6+10	0.0867	0.20	Q V	|	|	|	|
6+15	0.0881	0.20	Q V	|	|	|	|
6+20	0.0895	0.20	Q V	|	|	|	|
6+25	0.0908	0.20	Q V	|	|	|	|
6+30	0.0922	0.20	Q V	|	|	|	|
6+35	0.0936	0.20	Q V	|	|	|	|
6+40	0.0950	0.20	Q V	|	|	|	|
6+45	0.0964	0.20	Q V	|	|	|	|
6+50	0.0978	0.21	Q V	|	|	|	|
6+55	0.0993	0.21	Q V	|	|	|	|
7+ 0	0.1007	0.21	Q V	|	|	|	|
7+ 5	0.1021	0.21	Q V	|	|	|	|
7+10	0.1036	0.21	Q V	|	|	|	|
7+15	0.1050	0.21	Q V	|	|	|	|
7+20	0.1065	0.21	Q V	|	|	|	|
7+25	0.1080	0.21	Q V	|	|	|	|
7+30	0.1094	0.21	Q V	|	|	|	|
7+35	0.1109	0.22	Q V	|	|	|	|
7+40	0.1124	0.22	Q V	|	|	|	|
7+45	0.1139	0.22	Q V	|	|	|	|
7+50	0.1154	0.22	Q V	|	|	|	|
7+55	0.1169	0.22	Q V	|	|	|	|
8+ 0	0.1185	0.22	Q V	|	|	|	|
8+ 5	0.1200	0.22	Q V	|	|	|	|
8+10	0.1215	0.22	Q V	|	|	|	|
8+15	0.1231	0.23	Q V	|	|	|	|
8+20	0.1247	0.23	Q V	|	|	|	|
8+25	0.1262	0.23	Q V	|	|	|	|
8+30	0.1278	0.23	Q V	|	|	|	|
8+35	0.1294	0.23	Q V	|	|	|	|
8+40	0.1310	0.23	Q V	|	|	|	|
8+45	0.1326	0.23	Q V	|	|	|	|
8+50	0.1343	0.24	Q V	|	|	|	|
8+55	0.1359	0.24	Q V	|	|	|	|
9+ 0	0.1375	0.24	Q V	|	|	|	|
9+ 5	0.1392	0.24	Q V	|	|	|	|
9+10	0.1409	0.24	Q V	|	|	|	|
9+15	0.1425	0.24	Q V	|	|	|	|
9+20	0.1442	0.25	Q V	|	|	|	|
9+25	0.1459	0.25	Q V	|	|	|	|
9+30	0.1476	0.25	Q V	|	|	|	|
9+35	0.1494	0.25	|Q V	|	|	|	|
9+40	0.1511	0.25	|Q V	|	|	|	|
9+45	0.1529	0.25	|Q V	|	|	|	|
9+50	0.1546	0.26	|Q V	|	|	|	|
9+55	0.1564	0.26	|Q V	|	|	|	|
10+ 0	0.1582	0.26	|Q V	|	|	|	|
10+ 5	0.1600	0.26	|Q V|	|	|	|	|
10+10	0.1618	0.26	|Q V|	|	|	|	|



10+15	0.1637	0.27	
10+20	0.1655	0.27	
10+25	0.1674	0.27	
10+30	0.1693	0.27	
10+35	0.1712	0.28	
10+40	0.1731	0.28	
10+45	0.1750	0.28	
10+50	0.1770	0.28	
10+55	0.1790	0.29	
11+ 0	0.1809	0.29	
11+ 5	0.1829	0.29	
11+10	0.1850	0.29	
11+15	0.1870	0.30	
11+20	0.1891	0.30	
11+25	0.1912	0.30	
11+30	0.1933	0.31	
11+35	0.1954	0.31	
11+40	0.1975	0.31	
11+45	0.1997	0.32	
11+50	0.2019	0.32	
11+55	0.2041	0.32	
12+ 0	0.2064	0.33	
12+ 5	0.2091	0.39	
12+10	0.2120	0.43	
12+15	0.2150	0.44	
12+20	0.2181	0.44	
12+25	0.2211	0.44	
12+30	0.2242	0.45	
12+35	0.2273	0.45	
12+40	0.2305	0.46	
12+45	0.2337	0.46	
12+50	0.2369	0.47	
12+55	0.2402	0.47	
13+ 0	0.2435	0.48	
13+ 5	0.2468	0.49	
13+10	0.2502	0.49	
13+15	0.2536	0.50	
13+20	0.2571	0.50	
13+25	0.2606	0.51	
13+30	0.2642	0.52	
13+35	0.2678	0.53	
13+40	0.2715	0.53	
13+45	0.2752	0.54	
13+50	0.2790	0.55	
13+55	0.2829	0.56	
14+ 0	0.2868	0.57	
14+ 5	0.2908	0.58	
14+10	0.2948	0.59	
14+15	0.2990	0.60	
14+20	0.3032	0.61	
14+25	0.3076	0.63	
14+30	0.3120	0.64	
14+35	0.3165	0.66	
14+40	0.3212	0.67	
14+45	0.3259	0.69	
14+50	0.3309	0.71	
14+55	0.3359	0.74	
15+ 0	0.3411	0.76	
15+ 5	0.3466	0.79	
15+10	0.3522	0.81	
15+15	0.3581	0.86	
15+20	0.3643	0.90	
15+25	0.3689	0.68	
15+30	0.3727	0.55	
15+35	0.3770	0.62	
15+40	0.3817	0.69	
15+45	0.3873	0.82	
15+50	0.3941	0.98	
15+55	0.4039	1.42	
16+ 0	0.4186	2.14	
16+ 5	0.4719	7.73	
16+10	0.5061	4.97	
16+15	0.5138	1.11	
16+20	0.5185	0.68	
16+25	0.5241	0.82	
16+30	0.5302	0.88	
16+35	0.5357	0.81	
16+40	0.5409	0.75	
16+45	0.5458	0.71	
16+50	0.5504	0.67	
16+55	0.5548	0.64	
17+ 0	0.5590	0.61	
17+ 5	0.5631	0.59	
17+10	0.5670	0.57	

17+15	0.5707	0.55	Q			V
17+20	0.5744	0.53	Q			V
17+25	0.5780	0.52	Q			V
17+30	0.5814	0.50	Q			V
17+35	0.5848	0.49	Q			V
17+40	0.5881	0.48	Q			V
17+45	0.5913	0.47	Q			V
17+50	0.5944	0.46	Q			V
17+55	0.5975	0.45	Q			V
18+ 0	0.6005	0.44	Q			V
18+ 5	0.6031	0.37	Q			V
18+10	0.6054	0.33	Q			V
18+15	0.6075	0.32	Q			V
18+20	0.6097	0.31	Q			V
18+25	0.6118	0.31	Q			V
18+30	0.6138	0.30	Q			V
18+35	0.6159	0.29	Q			V
18+40	0.6178	0.29	Q			V
18+45	0.6198	0.28	Q			V
18+50	0.6217	0.28	Q			V
18+55	0.6236	0.27	Q			V
19+ 0	0.6254	0.27	Q			V
19+ 5	0.6273	0.26	Q			V
19+10	0.6290	0.26	Q			V
19+15	0.6308	0.26	Q			V
19+20	0.6325	0.25	Q			V
19+25	0.6343	0.25	Q			V
19+30	0.6359	0.25	Q			V
19+35	0.6376	0.24	Q			V
19+40	0.6393	0.24	Q			V
19+45	0.6409	0.24	Q			V
19+50	0.6425	0.23	Q			V
19+55	0.6441	0.23	Q			V
20+ 0	0.6456	0.23	Q			V
20+ 5	0.6472	0.22	Q			V
20+10	0.6487	0.22	Q			V
20+15	0.6502	0.22	Q			V
20+20	0.6517	0.22	Q			V
20+25	0.6531	0.21	Q			V
20+30	0.6546	0.21	Q			V
20+35	0.6560	0.21	Q			V
20+40	0.6575	0.21	Q			V
20+45	0.6589	0.21	Q			V
20+50	0.6603	0.20	Q			V
20+55	0.6617	0.20	Q			V
21+ 0	0.6630	0.20	Q			V
21+ 5	0.6644	0.20	Q			V
21+10	0.6657	0.20	Q			V
21+15	0.6671	0.19	Q			V
21+20	0.6684	0.19	Q			V
21+25	0.6697	0.19	Q			V
21+30	0.6710	0.19	Q			V
21+35	0.6723	0.19	Q			V
21+40	0.6736	0.19	Q			V
21+45	0.6748	0.18	Q			V
21+50	0.6761	0.18	Q			V
21+55	0.6773	0.18	Q			V
22+ 0	0.6786	0.18	Q			V
22+ 5	0.6798	0.18	Q			V
22+10	0.6810	0.18	Q			V
22+15	0.6822	0.17	Q			V
22+20	0.6834	0.17	Q			V
22+25	0.6846	0.17	Q			V
22+30	0.6857	0.17	Q			V
22+35	0.6869	0.17	Q			V
22+40	0.6881	0.17	Q			V
22+45	0.6892	0.17	Q			V
22+50	0.6904	0.17	Q			V
22+55	0.6915	0.16	Q			V
23+ 0	0.6926	0.16	Q			V
23+ 5	0.6938	0.16	Q			V
23+10	0.6949	0.16	Q			V
23+15	0.6960	0.16	Q			V
23+20	0.6971	0.16	Q			V
23+25	0.6982	0.16	Q			V
23+30	0.6992	0.16	Q			V
23+35	0.7003	0.16	Q			V
23+40	0.7014	0.16	Q			V
23+45	0.7025	0.15	Q			V
23+50	0.7035	0.15	Q			V
23+55	0.7046	0.15	Q			V
24+ 0	0.7056	0.15	Q			V

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA E
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
1.20	1	0.78
Rainfall data for year 2		
1.20	6	1.20
Rainfall data for year 2		
1.20	24	2.18
Rainfall data for year 100		
1.20	1	1.27
Rainfall data for year 100		
1.20	6	2.86
Rainfall data for year 100		
1.20	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
44.0	26.2	1.20	1.000	0.999	0.046	0.046

Area-averaged adjusted loss rate Fm (In/Hr) = 0.046

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
0.06	0.046	44.0	26.2	10.90	0.000
1.14	0.954	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.855
Area-averaged low loss fraction, Yb = 0.145

++
Watercourse length = 650.00(Ft.)
Length from concentration point to centroid = 120.00(Ft.)
Elevation difference along watercourse = 57.30(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 1.20(Ac.)
Catchment Lag time = 0.012 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 694.4138
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.046(In/Hr)
Average low loss rate fraction (Yb) = 0.145 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 1.20(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 14.51 (CFS))	
1	80.821	11.729
2	100.000	2.783

Mday RAINFALL MASS RATIOS
Rainfall Duration Ratio To Peak 24 Hours
PEAK 24 HOURS 1
PEAK 48 TO 24 HOURS 0.360

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
STORM DAY 1	Ratio to Peak 24 Hours: 0.360	
STORM DAY 1	Total Rainfall = 0.7848 (In)	
1	0.0756	0.0756
2	0.0931	0.0175
3	0.1051	0.0120
4	0.1146	0.0095
5	0.1225	0.0079
6	0.1294	0.0069
7	0.1355	0.0061
8	0.1411	0.0055
9	0.1462	0.0051
10	0.1508	0.0047
11	0.1552	0.0044
12	0.1593	0.0041
13	0.1666	0.0073
14	0.1736	0.0070
15	0.1804	0.0068
16	0.1870	0.0066
17	0.1934	0.0064
18	0.1997	0.0063
19	0.2058	0.0061
20	0.2117	0.0060
21	0.2176	0.0058
22	0.2233	0.0057
23	0.2289	0.0056
24	0.2344	0.0055
25	0.2397	0.0054
26	0.2450	0.0053
27	0.2502	0.0052
28	0.2554	0.0051
29	0.2604	0.0050
30	0.2654	0.0050
31	0.2702	0.0049
32	0.2751	0.0048
33	0.2798	0.0048
34	0.2845	0.0047
35	0.2891	0.0046
36	0.2937	0.0046
37	0.2982	0.0045
38	0.3027	0.0045
39	0.3071	0.0044
40	0.3114	0.0044

		AREAE
41	0.3158	0.0043
42	0.3200	0.0043
43	0.3242	0.0042
44	0.3284	0.0042
45	0.3325	0.0041
46	0.3366	0.0041
47	0.3407	0.0041
48	0.3447	0.0040
49	0.3487	0.0040
50	0.3526	0.0039
51	0.3565	0.0039
52	0.3604	0.0039
53	0.3643	0.0038
54	0.3681	0.0038
55	0.3719	0.0038
56	0.3756	0.0037
57	0.3793	0.0037
58	0.3830	0.0037
59	0.3867	0.0037
60	0.3903	0.0036
61	0.3939	0.0036
62	0.3975	0.0036
63	0.4011	0.0036
64	0.4046	0.0035
65	0.4081	0.0035
66	0.4116	0.0035
67	0.4150	0.0035
68	0.4185	0.0034
69	0.4219	0.0034
70	0.4253	0.0034
71	0.4286	0.0034
72	0.4320	0.0034
73	0.4346	0.0026
74	0.4371	0.0026
75	0.4397	0.0025
76	0.4422	0.0025
77	0.4447	0.0025
78	0.4471	0.0025
79	0.4496	0.0025
80	0.4521	0.0024
81	0.4545	0.0024
82	0.4569	0.0024
83	0.4593	0.0024
84	0.4616	0.0024
85	0.4640	0.0024
86	0.4664	0.0023
87	0.4687	0.0023
88	0.4710	0.0023
89	0.4733	0.0023
90	0.4756	0.0023
91	0.4778	0.0023
92	0.4801	0.0023
93	0.4823	0.0022
94	0.4846	0.0022
95	0.4868	0.0022
96	0.4890	0.0022
97	0.4912	0.0022
98	0.4933	0.0022
99	0.4955	0.0022
100	0.4976	0.0021
101	0.4998	0.0021
102	0.5019	0.0021
103	0.5040	0.0021
104	0.5061	0.0021
105	0.5082	0.0021
106	0.5103	0.0021
107	0.5124	0.0021
108	0.5144	0.0021
109	0.5165	0.0020
110	0.5185	0.0020
111	0.5205	0.0020
112	0.5225	0.0020
113	0.5245	0.0020
114	0.5265	0.0020
115	0.5285	0.0020
116	0.5305	0.0020
117	0.5325	0.0020
118	0.5344	0.0020
119	0.5364	0.0019
120	0.5383	0.0019
121	0.5402	0.0019
122	0.5421	0.0019
123	0.5441	0.0019
124	0.5460	0.0019

		AREAE
125	0.5478	0.0019
126	0.5497	0.0019
127	0.5516	0.0019
128	0.5535	0.0019
129	0.5553	0.0019
130	0.5572	0.0018
131	0.5590	0.0018
132	0.5608	0.0018
133	0.5627	0.0018
134	0.5645	0.0018
135	0.5663	0.0018
136	0.5681	0.0018
137	0.5699	0.0018
138	0.5717	0.0018
139	0.5735	0.0018
140	0.5752	0.0018
141	0.5770	0.0018
142	0.5788	0.0018
143	0.5805	0.0018
144	0.5823	0.0017
145	0.5840	0.0017
146	0.5857	0.0017
147	0.5875	0.0017
148	0.5892	0.0017
149	0.5909	0.0017
150	0.5926	0.0017
151	0.5943	0.0017
152	0.5960	0.0017
153	0.5977	0.0017
154	0.5993	0.0017
155	0.6010	0.0017
156	0.6027	0.0017
157	0.6043	0.0017
158	0.6060	0.0017
159	0.6076	0.0016
160	0.6093	0.0016
161	0.6109	0.0016
162	0.6126	0.0016
163	0.6142	0.0016
164	0.6158	0.0016
165	0.6174	0.0016
166	0.6190	0.0016
167	0.6206	0.0016
168	0.6222	0.0016
169	0.6238	0.0016
170	0.6254	0.0016
171	0.6270	0.0016
172	0.6286	0.0016
173	0.6301	0.0016
174	0.6317	0.0016
175	0.6333	0.0016
176	0.6348	0.0016
177	0.6364	0.0016
178	0.6379	0.0015
179	0.6395	0.0015
180	0.6410	0.0015
181	0.6425	0.0015
182	0.6441	0.0015
183	0.6456	0.0015
184	0.6471	0.0015
185	0.6486	0.0015
186	0.6501	0.0015
187	0.6516	0.0015
188	0.6531	0.0015
189	0.6546	0.0015
190	0.6561	0.0015
191	0.6576	0.0015
192	0.6591	0.0015
193	0.6605	0.0015
194	0.6620	0.0015
195	0.6635	0.0015
196	0.6649	0.0015
197	0.6664	0.0015
198	0.6679	0.0015
199	0.6693	0.0015
200	0.6707	0.0014
201	0.6722	0.0014
202	0.6736	0.0014
203	0.6751	0.0014
204	0.6765	0.0014
205	0.6779	0.0014
206	0.6793	0.0014
207	0.6808	0.0014
208	0.6822	0.0014

		AREAE
209	0.6836	0.0014
210	0.6850	0.0014
211	0.6864	0.0014
212	0.6878	0.0014
213	0.6892	0.0014
214	0.6906	0.0014
215	0.6920	0.0014
216	0.6934	0.0014
217	0.6947	0.0014
218	0.6961	0.0014
219	0.6975	0.0014
220	0.6989	0.0014
221	0.7002	0.0014
222	0.7016	0.0014
223	0.7029	0.0014
224	0.7043	0.0014
225	0.7056	0.0014
226	0.7070	0.0013
227	0.7083	0.0013
228	0.7097	0.0013
229	0.7110	0.0013
230	0.7124	0.0013
231	0.7137	0.0013
232	0.7150	0.0013
233	0.7163	0.0013
234	0.7177	0.0013
235	0.7190	0.0013
236	0.7203	0.0013
237	0.7216	0.0013
238	0.7229	0.0013
239	0.7242	0.0013
240	0.7255	0.0013
241	0.7268	0.0013
242	0.7281	0.0013
243	0.7294	0.0013
244	0.7307	0.0013
245	0.7320	0.0013
246	0.7333	0.0013
247	0.7346	0.0013
248	0.7359	0.0013
249	0.7371	0.0013
250	0.7384	0.0013
251	0.7397	0.0013
252	0.7409	0.0013
253	0.7422	0.0013
254	0.7435	0.0013
255	0.7447	0.0013
256	0.7460	0.0013
257	0.7472	0.0013
258	0.7485	0.0013
259	0.7497	0.0012
260	0.7510	0.0012
261	0.7522	0.0012
262	0.7535	0.0012
263	0.7547	0.0012
264	0.7559	0.0012
265	0.7572	0.0012
266	0.7584	0.0012
267	0.7596	0.0012
268	0.7608	0.0012
269	0.7621	0.0012
270	0.7633	0.0012
271	0.7645	0.0012
272	0.7657	0.0012
273	0.7669	0.0012
274	0.7681	0.0012
275	0.7693	0.0012
276	0.7705	0.0012
277	0.7717	0.0012
278	0.7729	0.0012
279	0.7741	0.0012
280	0.7753	0.0012
281	0.7765	0.0012
282	0.7777	0.0012
283	0.7789	0.0012
284	0.7801	0.0012
285	0.7813	0.0012
286	0.7824	0.0012
287	0.7836	0.0012
288	0.7848	0.0012

STORM DAY 2 Ratio to Peak 24 Hours: 1.000

STORM DAY 2 Total Rainfall = 2.1800 (In)

1	0.2100	0.2100
2	0.2585	0.0485

		AREAE
3	0.2920	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3595	0.0191
7	0.3765	0.0170
8	0.3919	0.0154
9	0.4060	0.0141
10	0.4190	0.0130
11	0.4312	0.0122
12	0.4426	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5373	0.0178
18	0.5547	0.0174
19	0.5716	0.0169
20	0.5882	0.0166
21	0.6044	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6510	0.0152
25	0.6660	0.0150
26	0.6807	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7507	0.0136
32	0.7641	0.0134
33	0.7773	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9007	0.0117
44	0.9123	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113
48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0537	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1042	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1433	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2824	0.0066
85	1.2889	0.0066
86	1.2954	0.0065

		AREAE
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3522	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3824	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4571	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4791	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5113	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052
130	1.5477	0.0051
131	1.5528	0.0051
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5831	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6126	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6414	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7016	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7151	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044

		AREAE
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7933	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8471	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8871	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9028	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9375	0.0038
220	1.9413	0.0038
221	1.9451	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9899	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0118	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0334	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0547	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035

		AREAE
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0930	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1067	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1169	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1304	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
STORM DAY 1			
1	0.0012	0.0002	0.0010
2	0.0012	0.0002	0.0010
3	0.0012	0.0002	0.0010
4	0.0012	0.0002	0.0010
5	0.0012	0.0002	0.0010
6	0.0012	0.0002	0.0010
7	0.0012	0.0002	0.0010
8	0.0012	0.0002	0.0010
9	0.0012	0.0002	0.0010
10	0.0012	0.0002	0.0010
11	0.0012	0.0002	0.0010
12	0.0012	0.0002	0.0010
13	0.0012	0.0002	0.0010
14	0.0012	0.0002	0.0010
15	0.0012	0.0002	0.0010
16	0.0012	0.0002	0.0011
17	0.0012	0.0002	0.0011
18	0.0012	0.0002	0.0011
19	0.0012	0.0002	0.0011
20	0.0012	0.0002	0.0011
21	0.0013	0.0002	0.0011
22	0.0013	0.0002	0.0011
23	0.0013	0.0002	0.0011
24	0.0013	0.0002	0.0011
25	0.0013	0.0002	0.0011
26	0.0013	0.0002	0.0011
27	0.0013	0.0002	0.0011
28	0.0013	0.0002	0.0011
29	0.0013	0.0002	0.0011
30	0.0013	0.0002	0.0011
31	0.0013	0.0002	0.0011
32	0.0013	0.0002	0.0011
33	0.0013	0.0002	0.0011
34	0.0013	0.0002	0.0011
35	0.0013	0.0002	0.0011
36	0.0013	0.0002	0.0011
37	0.0013	0.0002	0.0011
38	0.0013	0.0002	0.0011
39	0.0013	0.0002	0.0011
40	0.0013	0.0002	0.0011
41	0.0013	0.0002	0.0011
42	0.0013	0.0002	0.0011
43	0.0014	0.0002	0.0012
44	0.0014	0.0002	0.0012

45	0.0014	0.0002	0.0012
46	0.0014	0.0002	0.0012
47	0.0014	0.0002	0.0012
48	0.0014	0.0002	0.0012
49	0.0014	0.0002	0.0012
50	0.0014	0.0002	0.0012
51	0.0014	0.0002	0.0012
52	0.0014	0.0002	0.0012
53	0.0014	0.0002	0.0012
54	0.0014	0.0002	0.0012
55	0.0014	0.0002	0.0012
56	0.0014	0.0002	0.0012
57	0.0014	0.0002	0.0012
58	0.0014	0.0002	0.0012
59	0.0014	0.0002	0.0012
60	0.0014	0.0002	0.0012
61	0.0015	0.0002	0.0012
62	0.0015	0.0002	0.0012
63	0.0015	0.0002	0.0013
64	0.0015	0.0002	0.0013
65	0.0015	0.0002	0.0013
66	0.0015	0.0002	0.0013
67	0.0015	0.0002	0.0013
68	0.0015	0.0002	0.0013
69	0.0015	0.0002	0.0013
70	0.0015	0.0002	0.0013
71	0.0015	0.0002	0.0013
72	0.0015	0.0002	0.0013
73	0.0015	0.0002	0.0013
74	0.0015	0.0002	0.0013
75	0.0016	0.0002	0.0013
76	0.0016	0.0002	0.0013
77	0.0016	0.0002	0.0013
78	0.0016	0.0002	0.0013
79	0.0016	0.0002	0.0014
80	0.0016	0.0002	0.0014
81	0.0016	0.0002	0.0014
82	0.0016	0.0002	0.0014
83	0.0016	0.0002	0.0014
84	0.0016	0.0002	0.0014
85	0.0016	0.0002	0.0014
86	0.0016	0.0002	0.0014
87	0.0016	0.0002	0.0014
88	0.0017	0.0002	0.0014
89	0.0017	0.0002	0.0014
90	0.0017	0.0002	0.0014
91	0.0017	0.0002	0.0014
92	0.0017	0.0002	0.0014
93	0.0017	0.0002	0.0015
94	0.0017	0.0002	0.0015
95	0.0017	0.0003	0.0015
96	0.0017	0.0003	0.0015
97	0.0017	0.0003	0.0015
98	0.0018	0.0003	0.0015
99	0.0018	0.0003	0.0015
100	0.0018	0.0003	0.0015
101	0.0018	0.0003	0.0015
102	0.0018	0.0003	0.0015
103	0.0018	0.0003	0.0015
104	0.0018	0.0003	0.0016
105	0.0018	0.0003	0.0016
106	0.0018	0.0003	0.0016
107	0.0019	0.0003	0.0016
108	0.0019	0.0003	0.0016
109	0.0019	0.0003	0.0016
110	0.0019	0.0003	0.0016
111	0.0019	0.0003	0.0016
112	0.0019	0.0003	0.0016
113	0.0019	0.0003	0.0017
114	0.0019	0.0003	0.0017
115	0.0020	0.0003	0.0017
116	0.0020	0.0003	0.0017
117	0.0020	0.0003	0.0017
118	0.0020	0.0003	0.0017
119	0.0020	0.0003	0.0017
120	0.0020	0.0003	0.0017
121	0.0021	0.0003	0.0018
122	0.0021	0.0003	0.0018
123	0.0021	0.0003	0.0018
124	0.0021	0.0003	0.0018
125	0.0021	0.0003	0.0018
126	0.0021	0.0003	0.0018
127	0.0022	0.0003	0.0018
128	0.0022	0.0003	0.0019

129	0.0022	0.0003	0.0019
130	0.0022	0.0003	0.0019
131	0.0022	0.0003	0.0019
132	0.0023	0.0003	0.0019
133	0.0023	0.0003	0.0020
134	0.0023	0.0003	0.0020
135	0.0023	0.0003	0.0020
136	0.0023	0.0003	0.0020
137	0.0024	0.0003	0.0020
138	0.0024	0.0003	0.0020
139	0.0024	0.0004	0.0021
140	0.0024	0.0004	0.0021
141	0.0025	0.0004	0.0021
142	0.0025	0.0004	0.0021
143	0.0025	0.0004	0.0022
144	0.0026	0.0004	0.0022
145	0.0034	0.0005	0.0029
146	0.0034	0.0005	0.0029
147	0.0034	0.0005	0.0029
148	0.0034	0.0005	0.0029
149	0.0035	0.0005	0.0030
150	0.0035	0.0005	0.0030
151	0.0036	0.0005	0.0030
152	0.0036	0.0005	0.0031
153	0.0036	0.0005	0.0031
154	0.0037	0.0005	0.0031
155	0.0037	0.0005	0.0032
156	0.0037	0.0005	0.0032
157	0.0038	0.0006	0.0033
158	0.0038	0.0006	0.0033
159	0.0039	0.0006	0.0033
160	0.0039	0.0006	0.0034
161	0.0040	0.0006	0.0034
162	0.0041	0.0006	0.0035
163	0.0041	0.0006	0.0035
164	0.0042	0.0006	0.0036
165	0.0043	0.0006	0.0036
166	0.0043	0.0006	0.0037
167	0.0044	0.0006	0.0038
168	0.0045	0.0006	0.0038
169	0.0046	0.0007	0.0039
170	0.0046	0.0007	0.0040
171	0.0048	0.0007	0.0041
172	0.0048	0.0007	0.0041
173	0.0050	0.0007	0.0042
174	0.0050	0.0007	0.0043
175	0.0052	0.0008	0.0044
176	0.0053	0.0008	0.0045
177	0.0055	0.0008	0.0047
178	0.0056	0.0008	0.0048
179	0.0058	0.0008	0.0050
180	0.0060	0.0009	0.0051
181	0.0063	0.0009	0.0053
182	0.0064	0.0009	0.0055
183	0.0068	0.0010	0.0058
184	0.0070	0.0010	0.0060
185	0.0041	0.0006	0.0035
186	0.0044	0.0006	0.0037
187	0.0051	0.0007	0.0043
188	0.0055	0.0008	0.0047
189	0.0069	0.0010	0.0059
190	0.0079	0.0012	0.0068
191	0.0120	0.0018	0.0103
192	0.0175	0.0025	0.0149
193	0.0756	0.0038	0.0718
194	0.0095	0.0014	0.0081
195	0.0061	0.0009	0.0052
196	0.0047	0.0007	0.0040
197	0.0073	0.0011	0.0062
198	0.0066	0.0010	0.0056
199	0.0061	0.0009	0.0052
200	0.0057	0.0008	0.0049
201	0.0054	0.0008	0.0046
202	0.0051	0.0007	0.0044
203	0.0049	0.0007	0.0042
204	0.0047	0.0007	0.0040
205	0.0045	0.0007	0.0039
206	0.0044	0.0006	0.0037
207	0.0042	0.0006	0.0036
208	0.0041	0.0006	0.0035
209	0.0040	0.0006	0.0034
210	0.0039	0.0006	0.0033
211	0.0038	0.0005	0.0032
212	0.0037	0.0005	0.0032

213	0.0036	0.0005	0.0031
214	0.0035	0.0005	0.0030
215	0.0035	0.0005	0.0030
216	0.0034	0.0005	0.0029
217	0.0026	0.0004	0.0022
218	0.0025	0.0004	0.0021
219	0.0025	0.0004	0.0021
220	0.0024	0.0004	0.0021
221	0.0024	0.0003	0.0020
222	0.0023	0.0003	0.0020
223	0.0023	0.0003	0.0019
224	0.0022	0.0003	0.0019
225	0.0022	0.0003	0.0019
226	0.0021	0.0003	0.0018
227	0.0021	0.0003	0.0018
228	0.0021	0.0003	0.0018
229	0.0020	0.0003	0.0017
230	0.0020	0.0003	0.0017
231	0.0020	0.0003	0.0017
232	0.0020	0.0003	0.0017
233	0.0019	0.0003	0.0016
234	0.0019	0.0003	0.0016
235	0.0019	0.0003	0.0016
236	0.0018	0.0003	0.0016
237	0.0018	0.0003	0.0016
238	0.0018	0.0003	0.0015
239	0.0018	0.0003	0.0015
240	0.0018	0.0003	0.0015
241	0.0017	0.0003	0.0015
242	0.0017	0.0002	0.0015
243	0.0017	0.0002	0.0015
244	0.0017	0.0002	0.0014
245	0.0017	0.0002	0.0014
246	0.0016	0.0002	0.0014
247	0.0016	0.0002	0.0014
248	0.0016	0.0002	0.0014
249	0.0016	0.0002	0.0014
250	0.0016	0.0002	0.0013
251	0.0016	0.0002	0.0013
252	0.0015	0.0002	0.0013
253	0.0015	0.0002	0.0013
254	0.0015	0.0002	0.0013
255	0.0015	0.0002	0.0013
256	0.0015	0.0002	0.0013
257	0.0015	0.0002	0.0013
258	0.0015	0.0002	0.0013
259	0.0015	0.0002	0.0012
260	0.0014	0.0002	0.0012
261	0.0014	0.0002	0.0012
262	0.0014	0.0002	0.0012
263	0.0014	0.0002	0.0012
264	0.0014	0.0002	0.0012
265	0.0014	0.0002	0.0012
266	0.0014	0.0002	0.0012
267	0.0014	0.0002	0.0012
268	0.0013	0.0002	0.0012
269	0.0013	0.0002	0.0011
270	0.0013	0.0002	0.0011
271	0.0013	0.0002	0.0011
272	0.0013	0.0002	0.0011
273	0.0013	0.0002	0.0011
274	0.0013	0.0002	0.0011
275	0.0013	0.0002	0.0011
276	0.0013	0.0002	0.0011
277	0.0013	0.0002	0.0011
278	0.0013	0.0002	0.0011
279	0.0012	0.0002	0.0011
280	0.0012	0.0002	0.0011
281	0.0012	0.0002	0.0011
282	0.0012	0.0002	0.0010
283	0.0012	0.0002	0.0010
284	0.0012	0.0002	0.0010
285	0.0012	0.0002	0.0010
286	0.0012	0.0002	0.0010
287	0.0012	0.0002	0.0010
288	0.0012	0.0002	0.0010
STORM DAY 2			
289	0.0033	0.0005	0.0028
290	0.0033	0.0005	0.0028
291	0.0033	0.0005	0.0028
292	0.0033	0.0005	0.0028
293	0.0033	0.0005	0.0028
294	0.0033	0.0005	0.0028
295	0.0033	0.0005	0.0028

296	0.0033	0.0005	0.0028
297	0.0033	0.0005	0.0029
298	0.0034	0.0005	0.0029
299	0.0034	0.0005	0.0029
300	0.0034	0.0005	0.0029
301	0.0034	0.0005	0.0029
302	0.0034	0.0005	0.0029
303	0.0034	0.0005	0.0029
304	0.0034	0.0005	0.0029
305	0.0034	0.0005	0.0029
306	0.0034	0.0005	0.0029
307	0.0035	0.0005	0.0029
308	0.0035	0.0005	0.0030
309	0.0035	0.0005	0.0030
310	0.0035	0.0005	0.0030
311	0.0035	0.0005	0.0030
312	0.0035	0.0005	0.0030
313	0.0035	0.0005	0.0030
314	0.0035	0.0005	0.0030
315	0.0035	0.0005	0.0030
316	0.0036	0.0005	0.0030
317	0.0036	0.0005	0.0031
318	0.0036	0.0005	0.0031
319	0.0036	0.0005	0.0031
320	0.0036	0.0005	0.0031
321	0.0036	0.0005	0.0031
322	0.0036	0.0005	0.0031
323	0.0036	0.0005	0.0031
324	0.0037	0.0005	0.0031
325	0.0037	0.0005	0.0031
326	0.0037	0.0005	0.0031
327	0.0037	0.0005	0.0032
328	0.0037	0.0005	0.0032
329	0.0037	0.0005	0.0032
330	0.0037	0.0005	0.0032
331	0.0038	0.0005	0.0032
332	0.0038	0.0005	0.0032
333	0.0038	0.0006	0.0032
334	0.0038	0.0006	0.0032
335	0.0038	0.0006	0.0033
336	0.0038	0.0006	0.0033
337	0.0038	0.0006	0.0033
338	0.0039	0.0006	0.0033
339	0.0039	0.0006	0.0033
340	0.0039	0.0006	0.0033
341	0.0039	0.0006	0.0033
342	0.0039	0.0006	0.0033
343	0.0039	0.0006	0.0034
344	0.0040	0.0006	0.0034
345	0.0040	0.0006	0.0034
346	0.0040	0.0006	0.0034
347	0.0040	0.0006	0.0034
348	0.0040	0.0006	0.0034
349	0.0040	0.0006	0.0035
350	0.0041	0.0006	0.0035
351	0.0041	0.0006	0.0035
352	0.0041	0.0006	0.0035
353	0.0041	0.0006	0.0035
354	0.0041	0.0006	0.0035
355	0.0041	0.0006	0.0035
356	0.0042	0.0006	0.0036
357	0.0042	0.0006	0.0036
358	0.0042	0.0006	0.0036
359	0.0042	0.0006	0.0036
360	0.0042	0.0006	0.0036
361	0.0043	0.0006	0.0036
362	0.0043	0.0006	0.0037
363	0.0043	0.0006	0.0037
364	0.0043	0.0006	0.0037
365	0.0044	0.0006	0.0037
366	0.0044	0.0006	0.0037
367	0.0044	0.0006	0.0038
368	0.0044	0.0006	0.0038
369	0.0044	0.0006	0.0038
370	0.0045	0.0006	0.0038
371	0.0045	0.0007	0.0038
372	0.0045	0.0007	0.0038
373	0.0045	0.0007	0.0039
374	0.0045	0.0007	0.0039
375	0.0046	0.0007	0.0039
376	0.0046	0.0007	0.0039
377	0.0046	0.0007	0.0040
378	0.0046	0.0007	0.0040
379	0.0047	0.0007	0.0040

380	0.0047	0.0007	0.0040
381	0.0047	0.0007	0.0040
382	0.0048	0.0007	0.0041
383	0.0048	0.0007	0.0041
384	0.0048	0.0007	0.0041
385	0.0048	0.0007	0.0041
386	0.0049	0.0007	0.0042
387	0.0049	0.0007	0.0042
388	0.0049	0.0007	0.0042
389	0.0050	0.0007	0.0042
390	0.0050	0.0007	0.0043
391	0.0050	0.0007	0.0043
392	0.0051	0.0007	0.0043
393	0.0051	0.0007	0.0044
394	0.0051	0.0007	0.0044
395	0.0052	0.0008	0.0044
396	0.0052	0.0008	0.0044
397	0.0052	0.0008	0.0045
398	0.0053	0.0008	0.0045
399	0.0053	0.0008	0.0045
400	0.0053	0.0008	0.0046
401	0.0054	0.0008	0.0046
402	0.0054	0.0008	0.0046
403	0.0055	0.0008	0.0047
404	0.0055	0.0008	0.0047
405	0.0055	0.0008	0.0047
406	0.0056	0.0008	0.0048
407	0.0056	0.0008	0.0048
408	0.0057	0.0008	0.0048
409	0.0057	0.0008	0.0049
410	0.0057	0.0008	0.0049
411	0.0058	0.0008	0.0050
412	0.0058	0.0008	0.0050
413	0.0059	0.0009	0.0050
414	0.0059	0.0009	0.0051
415	0.0060	0.0009	0.0051
416	0.0060	0.0009	0.0052
417	0.0061	0.0009	0.0052
418	0.0061	0.0009	0.0053
419	0.0062	0.0009	0.0053
420	0.0063	0.0009	0.0054
421	0.0063	0.0009	0.0054
422	0.0064	0.0009	0.0055
423	0.0065	0.0009	0.0055
424	0.0065	0.0009	0.0056
425	0.0066	0.0010	0.0056
426	0.0066	0.0010	0.0057
427	0.0067	0.0010	0.0058
428	0.0068	0.0010	0.0058
429	0.0069	0.0010	0.0059
430	0.0069	0.0010	0.0059
431	0.0070	0.0010	0.0060
432	0.0071	0.0010	0.0061
433	0.0093	0.0014	0.0080
434	0.0094	0.0014	0.0080
435	0.0095	0.0014	0.0081
436	0.0095	0.0014	0.0082
437	0.0097	0.0014	0.0083
438	0.0097	0.0014	0.0083
439	0.0099	0.0014	0.0084
440	0.0099	0.0014	0.0085
441	0.0101	0.0015	0.0086
442	0.0102	0.0015	0.0087
443	0.0103	0.0015	0.0088
444	0.0104	0.0015	0.0089
445	0.0106	0.0015	0.0090
446	0.0107	0.0016	0.0091
447	0.0109	0.0016	0.0093
448	0.0110	0.0016	0.0094
449	0.0112	0.0016	0.0095
450	0.0113	0.0016	0.0096
451	0.0115	0.0017	0.0098
452	0.0116	0.0017	0.0099
453	0.0118	0.0017	0.0101
454	0.0120	0.0017	0.0102
455	0.0122	0.0018	0.0105
456	0.0124	0.0018	0.0106
457	0.0127	0.0018	0.0108
458	0.0129	0.0019	0.0110
459	0.0132	0.0019	0.0113
460	0.0134	0.0019	0.0114
461	0.0138	0.0020	0.0118
462	0.0140	0.0020	0.0120
463	0.0145	0.0021	0.0124

464	0.0147	0.0021	0.0126
465	0.0152	0.0022	0.0130
466	0.0155	0.0023	0.0133
467	0.0162	0.0024	0.0138
468	0.0166	0.0024	0.0142
469	0.0174	0.0025	0.0148
470	0.0178	0.0026	0.0152
471	0.0189	0.0027	0.0161
472	0.0195	0.0028	0.0167
473	0.0114	0.0017	0.0097
474	0.0122	0.0018	0.0104
475	0.0141	0.0020	0.0120
476	0.0154	0.0022	0.0132
477	0.0191	0.0028	0.0164
478	0.0220	0.0032	0.0188
479	0.0334	0.0038	0.0296
480	0.0485	0.0038	0.0447
481	0.2100	0.0038	0.2062
482	0.0263	0.0038	0.0225
483	0.0170	0.0025	0.0145
484	0.0130	0.0019	0.0111
485	0.0202	0.0029	0.0172
486	0.0183	0.0027	0.0157
487	0.0169	0.0025	0.0145
488	0.0159	0.0023	0.0136
489	0.0150	0.0022	0.0128
490	0.0142	0.0021	0.0121
491	0.0136	0.0020	0.0116
492	0.0130	0.0019	0.0111
493	0.0125	0.0018	0.0107
494	0.0121	0.0018	0.0103
495	0.0117	0.0017	0.0100
496	0.0114	0.0017	0.0097
497	0.0111	0.0016	0.0094
498	0.0108	0.0016	0.0092
499	0.0105	0.0015	0.0090
500	0.0103	0.0015	0.0088
501	0.0100	0.0015	0.0086
502	0.0098	0.0014	0.0084
503	0.0096	0.0014	0.0082
504	0.0094	0.0014	0.0081
505	0.0071	0.0010	0.0061
506	0.0070	0.0010	0.0060
507	0.0068	0.0010	0.0058
508	0.0067	0.0010	0.0057
509	0.0066	0.0010	0.0056
510	0.0064	0.0009	0.0055
511	0.0063	0.0009	0.0054
512	0.0062	0.0009	0.0053
513	0.0061	0.0009	0.0052
514	0.0060	0.0009	0.0051
515	0.0059	0.0009	0.0050
516	0.0058	0.0008	0.0049
517	0.0057	0.0008	0.0049
518	0.0056	0.0008	0.0048
519	0.0055	0.0008	0.0047
520	0.0054	0.0008	0.0046
521	0.0054	0.0008	0.0046
522	0.0053	0.0008	0.0045
523	0.0052	0.0008	0.0045
524	0.0051	0.0007	0.0044
525	0.0051	0.0007	0.0043
526	0.0050	0.0007	0.0043
527	0.0049	0.0007	0.0042
528	0.0049	0.0007	0.0042
529	0.0048	0.0007	0.0041
530	0.0048	0.0007	0.0041
531	0.0047	0.0007	0.0040
532	0.0047	0.0007	0.0040
533	0.0046	0.0007	0.0039
534	0.0046	0.0007	0.0039
535	0.0045	0.0007	0.0039
536	0.0045	0.0006	0.0038
537	0.0044	0.0006	0.0038
538	0.0044	0.0006	0.0037
539	0.0043	0.0006	0.0037
540	0.0043	0.0006	0.0037
541	0.0043	0.0006	0.0036
542	0.0042	0.0006	0.0036
543	0.0042	0.0006	0.0036
544	0.0041	0.0006	0.0035
545	0.0041	0.0006	0.0035
546	0.0041	0.0006	0.0035
547	0.0040	0.0006	0.0034

548	0.0040	0.0006	0.0034
549	0.0040	0.0006	0.0034
550	0.0039	0.0006	0.0034
551	0.0039	0.0006	0.0033
552	0.0039	0.0006	0.0033
553	0.0038	0.0006	0.0033
554	0.0038	0.0006	0.0033
555	0.0038	0.0005	0.0032
556	0.0037	0.0005	0.0032
557	0.0037	0.0005	0.0032
558	0.0037	0.0005	0.0032
559	0.0037	0.0005	0.0031
560	0.0036	0.0005	0.0031
561	0.0036	0.0005	0.0031
562	0.0036	0.0005	0.0031
563	0.0036	0.0005	0.0030
564	0.0035	0.0005	0.0030
565	0.0035	0.0005	0.0030
566	0.0035	0.0005	0.0030
567	0.0035	0.0005	0.0030
568	0.0034	0.0005	0.0029
569	0.0034	0.0005	0.0029
570	0.0034	0.0005	0.0029
571	0.0034	0.0005	0.0029
572	0.0034	0.0005	0.0029
573	0.0033	0.0005	0.0029
574	0.0033	0.0005	0.0028
575	0.0033	0.0005	0.0028
576	0.0033	0.0005	0.0028

Total soil rain loss = 0.39(In)
Total effective rainfall = 2.57(In)
Peak flow rate in flood hydrograph = 2.54(CFS)

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48 - 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	0.0002	0.01	Q	|	|	|	|
0+15	0.0003	0.01	Q	|	|	|	|
0+20	0.0004	0.01	Q	|	|	|	|
0+25	0.0005	0.01	Q	|	|	|	|
0+30	0.0006	0.01	Q	|	|	|	|
0+35	0.0007	0.01	Q	|	|	|	|
0+40	0.0008	0.01	Q	|	|	|	|
0+45	0.0009	0.01	Q	|	|	|	|
0+50	0.0010	0.01	Q	|	|	|	|
0+55	0.0011	0.02	Q	|	|	|	|
1+ 0	0.0012	0.02	Q	|	|	|	|
1+ 5	0.0013	0.02	Q	|	|	|	|
1+10	0.0014	0.02	Q	|	|	|	|
1+15	0.0015	0.02	Q	|	|	|	|
1+20	0.0016	0.02	Q	|	|	|	|
1+25	0.0017	0.02	Q	|	|	|	|
1+30	0.0018	0.02	Q	|	|	|	|
1+35	0.0019	0.02	Q	|	|	|	|
1+40	0.0020	0.02	Q	|	|	|	|
1+45	0.0022	0.02	Q	|	|	|	|
1+50	0.0023	0.02	Q	|	|	|	|
1+55	0.0024	0.02	Q	|	|	|	|
2+ 0	0.0025	0.02	Q	|	|	|	|
2+ 5	0.0026	0.02	Q	|	|	|	|
2+10	0.0027	0.02	Q	|	|	|	|
2+15	0.0028	0.02	Q	|	|	|	|
2+20	0.0029	0.02	Q	|	|	|	|
2+25	0.0030	0.02	Q	|	|	|	|
2+30	0.0031	0.02	Q	|	|	|	|
2+35	0.0032	0.02	Q	|	|	|	|
2+40	0.0033	0.02	Q	|	|	|	|
2+45	0.0035	0.02	Q	|	|	|	|
2+50	0.0036	0.02	Q	|	|	|	|
2+55	0.0037	0.02	Q	|	|	|	|
3+ 0	0.0038	0.02	Q	|	|	|	|
3+ 5	0.0039	0.02	Q	|	|	|	|
3+10	0.0040	0.02	Q	|	|	|	|
3+15	0.0041	0.02	Q	|	|	|	|
3+20	0.0043	0.02	Q	|	|	|	|

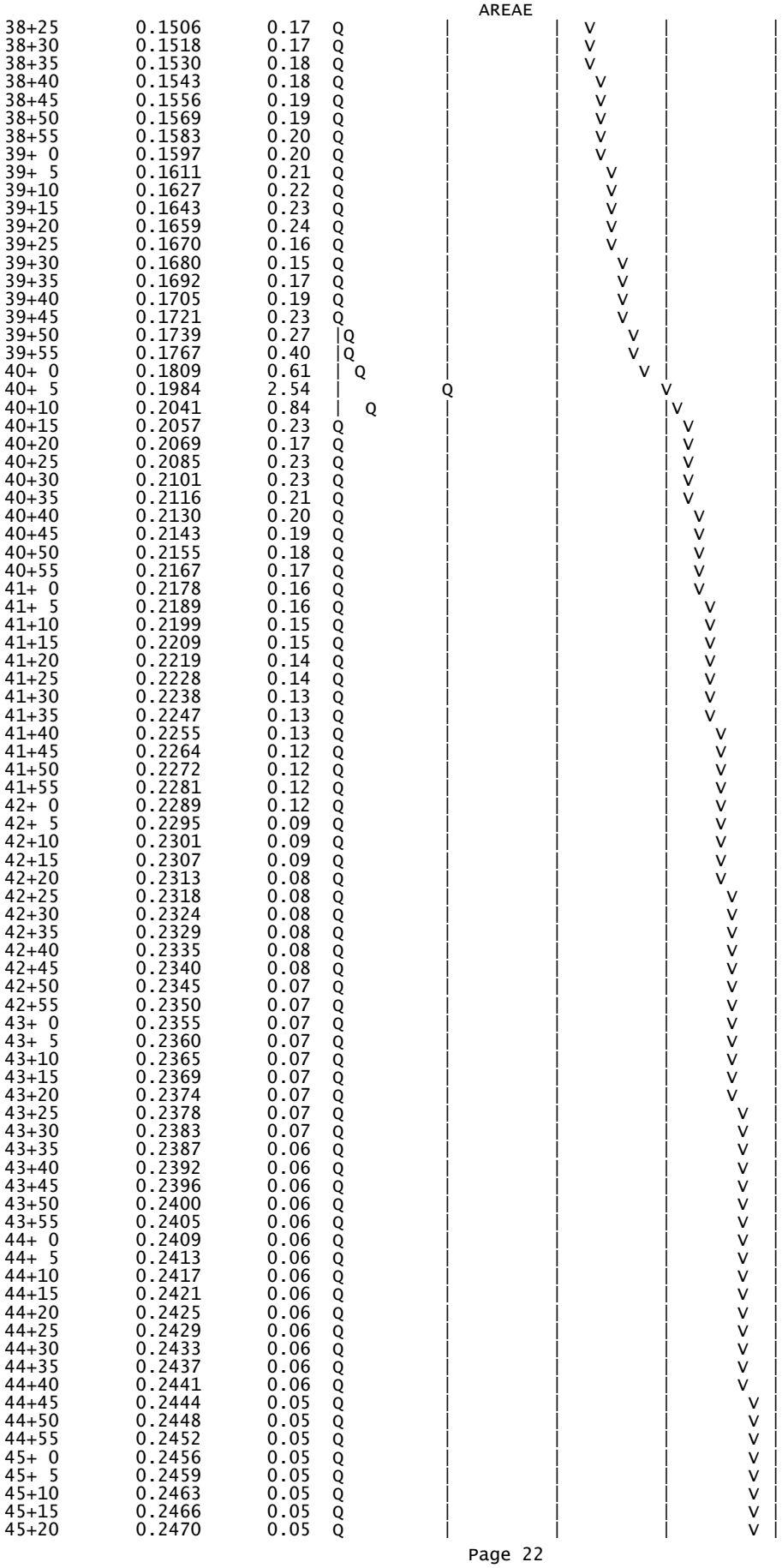
3+25	0.0044	0.02	Q				
3+30	0.0045	0.02	Q				
3+35	0.0046	0.02	Q				
3+40	0.0047	0.02	Q				
3+45	0.0048	0.02	Q				
3+50	0.0049	0.02	Q				
3+55	0.0051	0.02	Q				
4+ 0	0.0052	0.02	Q				
4+ 5	0.0053	0.02	Q				
4+10	0.0054	0.02	Q				
4+15	0.0055	0.02	Q				
4+20	0.0057	0.02	Q				
4+25	0.0058	0.02	Q				
4+30	0.0059	0.02	Q				
4+35	0.0060	0.02	Q				
4+40	0.0061	0.02	Q				
4+45	0.0063	0.02	Q				
4+50	0.0064	0.02	Q				
4+55	0.0065	0.02	QV				
5+ 0	0.0066	0.02	QV				
5+ 5	0.0068	0.02	QV				
5+10	0.0069	0.02	QV				
5+15	0.0070	0.02	QV				
5+20	0.0071	0.02	QV				
5+25	0.0073	0.02	QV				
5+30	0.0074	0.02	QV				
5+35	0.0075	0.02	QV				
5+40	0.0076	0.02	QV				
5+45	0.0078	0.02	QV				
5+50	0.0079	0.02	QV				
5+55	0.0080	0.02	QV				
6+ 0	0.0082	0.02	QV				
6+ 5	0.0083	0.02	QV				
6+10	0.0084	0.02	QV				
6+15	0.0085	0.02	QV				
6+20	0.0087	0.02	QV				
6+25	0.0088	0.02	QV				
6+30	0.0089	0.02	QV				
6+35	0.0091	0.02	QV				
6+40	0.0092	0.02	QV				
6+45	0.0094	0.02	QV				
6+50	0.0095	0.02	QV				
6+55	0.0096	0.02	QV				
7+ 0	0.0098	0.02	QV				
7+ 5	0.0099	0.02	QV				
7+10	0.0100	0.02	QV				
7+15	0.0102	0.02	QV				
7+20	0.0103	0.02	QV				
7+25	0.0105	0.02	QV				
7+30	0.0106	0.02	QV				
7+35	0.0108	0.02	QV				
7+40	0.0109	0.02	QV				
7+45	0.0110	0.02	QV				
7+50	0.0112	0.02	QV				
7+55	0.0113	0.02	QV				
8+ 0	0.0115	0.02	QV				
8+ 5	0.0116	0.02	QV				
8+10	0.0118	0.02	QV				
8+15	0.0119	0.02	QV				
8+20	0.0121	0.02	QV				
8+25	0.0122	0.02	QV				
8+30	0.0124	0.02	QV				
8+35	0.0125	0.02	QV				
8+40	0.0127	0.02	QV				
8+45	0.0129	0.02	Q V				
8+50	0.0130	0.02	Q V				
8+55	0.0132	0.02	Q V				
9+ 0	0.0133	0.02	Q V				
9+ 5	0.0135	0.02	Q V				
9+10	0.0137	0.02	Q V				
9+15	0.0138	0.02	Q V				
9+20	0.0140	0.02	Q V				
9+25	0.0141	0.02	Q V				
9+30	0.0143	0.02	Q V				
9+35	0.0145	0.02	Q V				
9+40	0.0147	0.02	Q V				
9+45	0.0148	0.02	Q V				
9+50	0.0150	0.02	Q V				
9+55	0.0152	0.03	Q V				
10+ 0	0.0153	0.03	Q V				
10+ 5	0.0155	0.03	Q V				
10+10	0.0157	0.03	Q V				
10+15	0.0159	0.03	Q V				
10+20	0.0160	0.03	Q V				

10+25	0.0162	0.03	Q V	|	|	|	|
10+30	0.0164	0.03	Q V	|	|	|	|
10+35	0.0166	0.03	Q V	|	|	|	|
10+40	0.0168	0.03	Q V	|	|	|	|
10+45	0.0170	0.03	Q V	|	|	|	|
10+50	0.0172	0.03	Q V	|	|	|	|
10+55	0.0173	0.03	Q V	|	|	|	|
11+ 0	0.0175	0.03	Q V	|	|	|	|
11+ 5	0.0177	0.03	Q V	|	|	|	|
11+10	0.0179	0.03	Q V	|	|	|	|
11+15	0.0181	0.03	Q V	|	|	|	|
11+20	0.0183	0.03	Q V	|	|	|	|
11+25	0.0185	0.03	Q V	|	|	|	|
11+30	0.0187	0.03	Q V	|	|	|	|
11+35	0.0189	0.03	Q V	|	|	|	|
11+40	0.0192	0.03	Q V	|	|	|	|
11+45	0.0194	0.03	Q V	|	|	|	|
11+50	0.0196	0.03	Q V	|	|	|	|
11+55	0.0198	0.03	Q V	|	|	|	|
12+ 0	0.0200	0.03	Q V	|	|	|	|
12+ 5	0.0203	0.04	Q V	|	|	|	|
12+10	0.0206	0.04	Q V	|	|	|	|
12+15	0.0209	0.04	Q V	|	|	|	|
12+20	0.0212	0.04	Q V	|	|	|	|
12+25	0.0214	0.04	Q V	|	|	|	|
12+30	0.0217	0.04	Q V	|	|	|	|
12+35	0.0221	0.04	Q V	|	|	|	|
12+40	0.0224	0.04	Q V	|	|	|	|
12+45	0.0227	0.04	Q V	|	|	|	|
12+50	0.0230	0.05	Q V	|	|	|	|
12+55	0.0233	0.05	Q V	|	|	|	|
13+ 0	0.0236	0.05	Q V	|	|	|	|
13+ 5	0.0239	0.05	Q V	|	|	|	|
13+10	0.0243	0.05	Q V	|	|	|	|
13+15	0.0246	0.05	Q V	|	|	|	|
13+20	0.0249	0.05	Q V	|	|	|	|
13+25	0.0253	0.05	Q V	|	|	|	|
13+30	0.0256	0.05	Q V	|	|	|	|
13+35	0.0260	0.05	Q V	|	|	|	|
13+40	0.0263	0.05	Q V	|	|	|	|
13+45	0.0267	0.05	Q V	|	|	|	|
13+50	0.0271	0.05	Q V	|	|	|	|
13+55	0.0274	0.05	Q V	|	|	|	|
14+ 0	0.0278	0.06	Q V	|	|	|	|
14+ 5	0.0282	0.06	Q V	|	|	|	|
14+10	0.0286	0.06	Q V	|	|	|	|
14+15	0.0290	0.06	Q V	|	|	|	|
14+20	0.0294	0.06	Q V	|	|	|	|
14+25	0.0298	0.06	Q V	|	|	|	|
14+30	0.0303	0.06	Q V	|	|	|	|
14+35	0.0307	0.06	Q V	|	|	|	|
14+40	0.0312	0.07	Q V	|	|	|	|
14+45	0.0316	0.07	Q V	|	|	|	|
14+50	0.0321	0.07	Q V	|	|	|	|
14+55	0.0326	0.07	Q V	|	|	|	|
15+ 0	0.0331	0.07	Q V	|	|	|	|
15+ 5	0.0336	0.08	Q V	|	|	|	|
15+10	0.0342	0.08	Q V	|	|	|	|
15+15	0.0347	0.08	Q V	|	|	|	|
15+20	0.0353	0.09	Q V	|	|	|	|
15+25	0.0357	0.06	Q V	|	|	|	|
15+30	0.0361	0.05	Q V	|	|	|	|
15+35	0.0365	0.06	Q V	|	|	|	|
15+40	0.0370	0.07	Q V	|	|	|	|
15+45	0.0376	0.08	Q V	|	|	|	|
15+50	0.0382	0.10	Q V	|	|	|	|
15+55	0.0392	0.14	Q V	|	|	|	|
16+ 0	0.0406	0.20	Q V	|	|	|	|
16+ 5	0.0467	0.88	| Q V	|	|	|	|
16+10	0.0487	0.29	|Q V	|	|	|	|
16+15	0.0493	0.08	Q V	|	|	|	|
16+20	0.0497	0.06	Q V	|	|	|	|
16+25	0.0503	0.08	Q V	|	|	|	|
16+30	0.0509	0.08	Q V	|	|	|	|
16+35	0.0514	0.08	Q V	|	|	|	|
16+40	0.0519	0.07	Q V	|	|	|	|
16+45	0.0523	0.07	Q V	|	|	|	|
16+50	0.0528	0.06	Q V	|	|	|	|
16+55	0.0532	0.06	Q V	|	|	|	|
17+ 0	0.0536	0.06	Q V	|	|	|	|
17+ 5	0.0540	0.06	Q V	|	|	|	|
17+10	0.0544	0.05	Q V	|	|	|	|
17+15	0.0547	0.05	Q V	|	|	|	|
17+20	0.0551	0.05	Q V	|	|	|	|

17+25	0.0554	0.05	Q	V				
17+30	0.0558	0.05	Q	V				
17+35	0.0561	0.05	Q	V				
17+40	0.0564	0.05	Q	V				
17+45	0.0567	0.04	Q	V				
17+50	0.0570	0.04	Q	V				
17+55	0.0573	0.04	Q	V				
18+ 0	0.0576	0.04	Q	V				
18+ 5	0.0578	0.03	Q	V				
18+10	0.0581	0.03	Q	V				
18+15	0.0583	0.03	Q	V				
18+20	0.0585	0.03	Q	V				
18+25	0.0587	0.03	Q	V				
18+30	0.0589	0.03	Q	V				
18+35	0.0591	0.03	Q	V				
18+40	0.0593	0.03	Q	V				
18+45	0.0594	0.03	Q	V				
18+50	0.0596	0.03	Q	V				
18+55	0.0598	0.03	Q	V				
19+ 0	0.0600	0.03	Q	V				
19+ 5	0.0602	0.03	Q	V				
19+10	0.0603	0.03	Q	V				
19+15	0.0605	0.02	Q	V				
19+20	0.0607	0.02	Q	V				
19+25	0.0608	0.02	Q	V				
19+30	0.0610	0.02	Q	V				
19+35	0.0612	0.02	Q	V				
19+40	0.0613	0.02	Q	V				
19+45	0.0615	0.02	Q	V				
19+50	0.0616	0.02	Q	V				
19+55	0.0618	0.02	Q	V				
20+ 0	0.0619	0.02	Q	V				
20+ 5	0.0621	0.02	Q	V				
20+10	0.0622	0.02	Q	V				
20+15	0.0624	0.02	Q	V				
20+20	0.0625	0.02	Q	V				
20+25	0.0627	0.02	Q	V				
20+30	0.0628	0.02	Q	V				
20+35	0.0629	0.02	Q	V				
20+40	0.0631	0.02	Q	V				
20+45	0.0632	0.02	Q	V				
20+50	0.0634	0.02	Q	V				
20+55	0.0635	0.02	Q	V				
21+ 0	0.0636	0.02	Q	V				
21+ 5	0.0638	0.02	Q	V				
21+10	0.0639	0.02	Q	V				
21+15	0.0640	0.02	Q	V				
21+20	0.0641	0.02	Q	V				
21+25	0.0643	0.02	Q	V				
21+30	0.0644	0.02	Q	V				
21+35	0.0645	0.02	Q	V				
21+40	0.0646	0.02	Q	V				
21+45	0.0648	0.02	Q	V				
21+50	0.0649	0.02	Q	V				
21+55	0.0650	0.02	Q	V				
22+ 0	0.0651	0.02	Q	V				
22+ 5	0.0652	0.02	Q	V				
22+10	0.0654	0.02	Q	V				
22+15	0.0655	0.02	Q	V				
22+20	0.0656	0.02	Q	V				
22+25	0.0657	0.02	Q	V				
22+30	0.0658	0.02	Q	V				
22+35	0.0659	0.02	Q	V				
22+40	0.0660	0.02	Q	V				
22+45	0.0661	0.02	Q	V				
22+50	0.0663	0.02	Q	V				
22+55	0.0664	0.02	Q	V				
23+ 0	0.0665	0.02	Q	V				
23+ 5	0.0666	0.02	Q	V				
23+10	0.0667	0.02	Q	V				
23+15	0.0668	0.02	Q	V				
23+20	0.0669	0.02	Q	V				
23+25	0.0670	0.02	Q	V				
23+30	0.0671	0.02	Q	V				
23+35	0.0672	0.02	Q	V				
23+40	0.0673	0.02	Q	V				
23+45	0.0674	0.01	Q	V				
23+50	0.0675	0.01	Q	V				
23+55	0.0676	0.01	Q	V				
24+ 0	0.0677	0.01	Q	V				
24+ 5	0.0680	0.03	Q	V				
24+10	0.0682	0.04	Q	V				
24+15	0.0685	0.04	Q	V				
24+20	0.0688	0.04	Q	V				

24+25	0.0691	0.04	Q	V	|	|	|
24+30	0.0694	0.04	Q	V	|	|	|
24+35	0.0696	0.04	Q	V	|	|	|
24+40	0.0699	0.04	Q	V	|	|	|
24+45	0.0702	0.04	Q	V	|	|	|
24+50	0.0705	0.04	Q	V	|	|	|
24+55	0.0708	0.04	Q	|V	|	|	|
25+ 0	0.0711	0.04	Q	|V	|	|	|
25+ 5	0.0714	0.04	Q	|V	|	|	|
25+10	0.0717	0.04	Q	|V	|	|	|
25+15	0.0719	0.04	Q	|V	|	|	|
25+20	0.0722	0.04	Q	|V	|	|	|
25+25	0.0725	0.04	Q	|V	|	|	|
25+30	0.0728	0.04	Q	|V	|	|	|
25+35	0.0731	0.04	Q	|V	|	|	|
25+40	0.0734	0.04	Q	|V	|	|	|
25+45	0.0737	0.04	Q	|V	|	|	|
25+50	0.0740	0.04	Q	|V	|	|	|
25+55	0.0743	0.04	Q	|V	|	|	|
26+ 0	0.0746	0.04	Q	|V	|	|	|
26+ 5	0.0749	0.04	Q	|V	|	|	|
26+10	0.0752	0.04	Q	|V	|	|	|
26+15	0.0755	0.04	Q	|V	|	|	|
26+20	0.0758	0.04	Q	|V	|	|	|
26+25	0.0761	0.04	Q	|V	|	|	|
26+30	0.0764	0.04	Q	|V	|	|	|
26+35	0.0767	0.04	Q	|V	|	|	|
26+40	0.0770	0.04	Q	|V	|	|	|
26+45	0.0773	0.04	Q	| V	|	|	|
26+50	0.0777	0.04	Q	| V	|	|	|
26+55	0.0780	0.05	Q	| V	|	|	|
27+ 0	0.0783	0.05	Q	| V	|	|	|
27+ 5	0.0786	0.05	Q	| V	|	|	|
27+10	0.0789	0.05	Q	| V	|	|	|
27+15	0.0792	0.05	Q	| V	|	|	|
27+20	0.0795	0.05	Q	| V	|	|	|
27+25	0.0799	0.05	Q	| V	|	|	|
27+30	0.0802	0.05	Q	| V	|	|	|
27+35	0.0805	0.05	Q	| V	|	|	|
27+40	0.0808	0.05	Q	| V	|	|	|
27+45	0.0811	0.05	Q	| V	|	|	|
27+50	0.0815	0.05	Q	| V	|	|	|
27+55	0.0818	0.05	Q	| V	|	|	|
28+ 0	0.0821	0.05	Q	| V	|	|	|
28+ 5	0.0824	0.05	Q	| V	|	|	|
28+10	0.0828	0.05	Q	| V	|	|	|
28+15	0.0831	0.05	Q	| V	|	|	|
28+20	0.0834	0.05	Q	| V	|	|	|
28+25	0.0838	0.05	Q	| V	|	|	|
28+30	0.0841	0.05	Q	| V	|	|	|
28+35	0.0844	0.05	Q	| V	|	|	|
28+40	0.0848	0.05	Q	| V	|	|	|
28+45	0.0851	0.05	Q	| V	|	|	|
28+50	0.0855	0.05	Q	| V	|	|	|
28+55	0.0858	0.05	Q	| V	|	|	|
29+ 0	0.0861	0.05	Q	| V	|	|	|
29+ 5	0.0865	0.05	Q	| V	|	|	|
29+10	0.0868	0.05	Q	| V	|	|	|
29+15	0.0872	0.05	Q	| V	|	|	|
29+20	0.0875	0.05	Q	| V	|	|	|
29+25	0.0879	0.05	Q	| V	|	|	|
29+30	0.0882	0.05	Q	| V	|	|	|
29+35	0.0886	0.05	Q	| V	|	|	|
29+40	0.0889	0.05	Q	| V	|	|	|
29+45	0.0893	0.05	Q	| V	|	|	|
29+50	0.0897	0.05	Q	| V	|	|	|
29+55	0.0900	0.05	Q	| V	|	|	|
30+ 0	0.0904	0.05	Q	| V	|	|	|
30+ 5	0.0907	0.05	Q	| V	|	|	|
30+10	0.0911	0.05	Q	| V	|	|	|
30+15	0.0915	0.05	Q	| V	|	|	|
30+20	0.0918	0.05	Q	| V	|	|	|
30+25	0.0922	0.05	Q	| V	|	|	|
30+30	0.0926	0.05	Q	| V	|	|	|
30+35	0.0930	0.05	Q	| V	|	|	|
30+40	0.0933	0.05	Q	| V	|	|	|
30+45	0.0937	0.05	Q	| V	|	|	|
30+50	0.0941	0.06	Q	| V	|	|	|
30+55	0.0945	0.06	Q	| V	|	|	|
31+ 0	0.0949	0.06	Q	| V	|	|	|
31+ 5	0.0953	0.06	Q	| V	|	|	|
31+10	0.0956	0.06	Q	| V	|	|	|
31+15	0.0960	0.06	Q	| V	|	|	|
31+20	0.0964	0.06	Q	| V	|	|	|

31+25	0.0968	0.06	Q	V			
31+30	0.0972	0.06	Q	V			
31+35	0.0976	0.06	Q	V			
31+40	0.0980	0.06	Q	V			
31+45	0.0984	0.06	Q	V			
31+50	0.0988	0.06	Q	V			
31+55	0.0992	0.06	Q	V			
32+ 0	0.0996	0.06	Q	V			
32+ 5	0.1001	0.06	Q	V			
32+10	0.1005	0.06	Q	V			
32+15	0.1009	0.06	Q	V			
32+20	0.1013	0.06	Q	V			
32+25	0.1017	0.06	Q	V			
32+30	0.1022	0.06	Q	V			
32+35	0.1026	0.06	Q	V			
32+40	0.1030	0.06	Q	V			
32+45	0.1035	0.06	Q	V			
32+50	0.1039	0.06	Q	V			
32+55	0.1043	0.06	Q	V			
33+ 0	0.1048	0.06	Q	V			
33+ 5	0.1052	0.06	Q	V			
33+10	0.1057	0.07	Q	V			
33+15	0.1061	0.07	Q	V			
33+20	0.1066	0.07	Q	V			
33+25	0.1070	0.07	Q	V			
33+30	0.1075	0.07	Q	V			
33+35	0.1080	0.07	Q	V			
33+40	0.1084	0.07	Q	V			
33+45	0.1089	0.07	Q	V			
33+50	0.1094	0.07	Q	V			
33+55	0.1099	0.07	Q	V			
34+ 0	0.1103	0.07	Q	V			
34+ 5	0.1108	0.07	Q	V			
34+10	0.1113	0.07	Q	V			
34+15	0.1118	0.07	Q	V			
34+20	0.1123	0.07	Q	V			
34+25	0.1128	0.07	Q	V			
34+30	0.1133	0.07	Q	V			
34+35	0.1138	0.07	Q	V			
34+40	0.1143	0.07	Q	V			
34+45	0.1149	0.08	Q	V			
34+50	0.1154	0.08	Q	V			
34+55	0.1159	0.08	Q	V			
35+ 0	0.1165	0.08	Q	V			
35+ 5	0.1170	0.08	Q	V			
35+10	0.1175	0.08	Q	V			
35+15	0.1181	0.08	Q	V			
35+20	0.1186	0.08	Q	V			
35+25	0.1192	0.08	Q	V			
35+30	0.1198	0.08	Q	V			
35+35	0.1203	0.08	Q	V			
35+40	0.1209	0.08	Q	V			
35+45	0.1215	0.09	Q	V			
35+50	0.1221	0.09	Q	V			
35+55	0.1227	0.09	Q	V			
36+ 0	0.1233	0.09	Q	V			
36+ 5	0.1241	0.11	Q	V			
36+10	0.1249	0.12	Q	V			
36+15	0.1257	0.12	Q	V			
36+20	0.1265	0.12	Q	V			
36+25	0.1273	0.12	Q	V			
36+30	0.1281	0.12	Q	V			
36+35	0.1290	0.12	Q	V			
36+40	0.1298	0.12	Q	V			
36+45	0.1307	0.12	Q	V			
36+50	0.1316	0.13	Q	V			
36+55	0.1324	0.13	Q	V			
37+ 0	0.1333	0.13	Q	V			
37+ 5	0.1342	0.13	Q	V			
37+10	0.1351	0.13	Q	V			
37+15	0.1361	0.13	Q	V			
37+20	0.1370	0.14	Q	V			
37+25	0.1379	0.14	Q	V			
37+30	0.1389	0.14	Q	V			
37+35	0.1399	0.14	Q	V			
37+40	0.1409	0.14	Q	V			
37+45	0.1419	0.15	Q	V			
37+50	0.1429	0.15	Q	V			
37+55	0.1439	0.15	Q	V			
38+ 0	0.1450	0.15	Q	V			
38+ 5	0.1461	0.16	Q	V			
38+10	0.1472	0.16	Q	V			
38+15	0.1483	0.16	Q	V			
38+20	0.1494	0.17	Q	V			



38+25	0.1506	0.17	Q	
38+30	0.1518	0.17	Q	
38+35	0.1530	0.18	Q	
38+40	0.1543	0.18	Q	
38+45	0.1556	0.19	Q	
38+50	0.1569	0.19	Q	
38+55	0.1583	0.20	Q	
39+ 0	0.1597	0.20	Q	
39+ 5	0.1611	0.21	Q	
39+10	0.1627	0.22	Q	
39+15	0.1643	0.23	Q	
39+20	0.1659	0.24	Q	
39+25	0.1670	0.16	Q	
39+30	0.1680	0.15	Q	
39+35	0.1692	0.17	Q	
39+40	0.1705	0.19	Q	
39+45	0.1721	0.23	Q	
39+50	0.1739	0.27	Q	
39+55	0.1767	0.40	Q	
40+ 0	0.1809	0.61	Q	
40+ 5	0.1984	2.54	Q	
40+10	0.2041	0.84	Q	
40+15	0.2057	0.23	Q	
40+20	0.2069	0.17	Q	
40+25	0.2085	0.23	Q	
40+30	0.2101	0.23	Q	
40+35	0.2116	0.21	Q	
40+40	0.2130	0.20	Q	
40+45	0.2143	0.19	Q	
40+50	0.2155	0.18	Q	
40+55	0.2167	0.17	Q	
41+ 0	0.2178	0.16	Q	
41+ 5	0.2189	0.16	Q	
41+10	0.2199	0.15	Q	
41+15	0.2209	0.15	Q	
41+20	0.2219	0.14	Q	
41+25	0.2228	0.14	Q	
41+30	0.2238	0.13	Q	
41+35	0.2247	0.13	Q	
41+40	0.2255	0.13	Q	
41+45	0.2264	0.12	Q	
41+50	0.2272	0.12	Q	
41+55	0.2281	0.12	Q	
42+ 0	0.2289	0.12	Q	
42+ 5	0.2295	0.09	Q	
42+10	0.2301	0.09	Q	
42+15	0.2307	0.09	Q	
42+20	0.2313	0.08	Q	
42+25	0.2318	0.08	Q	
42+30	0.2324	0.08	Q	
42+35	0.2329	0.08	Q	
42+40	0.2335	0.08	Q	
42+45	0.2340	0.08	Q	
42+50	0.2345	0.07	Q	
42+55	0.2350	0.07	Q	
43+ 0	0.2355	0.07	Q	
43+ 5	0.2360	0.07	Q	
43+10	0.2365	0.07	Q	
43+15	0.2369	0.07	Q	
43+20	0.2374	0.07	Q	
43+25	0.2378	0.07	Q	
43+30	0.2383	0.07	Q	
43+35	0.2387	0.06	Q	
43+40	0.2392	0.06	Q	
43+45	0.2396	0.06	Q	
43+50	0.2400	0.06	Q	
43+55	0.2405	0.06	Q	
44+ 0	0.2409	0.06	Q	
44+ 5	0.2413	0.06	Q	
44+10	0.2417	0.06	Q	
44+15	0.2421	0.06	Q	
44+20	0.2425	0.06	Q	
44+25	0.2429	0.06	Q	
44+30	0.2433	0.06	Q	
44+35	0.2437	0.06	Q	
44+40	0.2441	0.06	Q	
44+45	0.2444	0.05	Q	
44+50	0.2448	0.05	Q	
44+55	0.2452	0.05	Q	
45+ 0	0.2456	0.05	Q	
45+ 5	0.2459	0.05	Q	
45+10	0.2463	0.05	Q	
45+15	0.2466	0.05	Q	
45+20	0.2470	0.05	Q	

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45+25	0.2473	0.05	Q				V
45+30	0.2477	0.05	Q				V
45+35	0.2480	0.05	Q				V
45+40	0.2484	0.05	Q				V
45+45	0.2487	0.05	Q				V
45+50	0.2491	0.05	Q				V
45+55	0.2494	0.05	Q				V
46+ 0	0.2497	0.05	Q				V
46+ 5	0.2500	0.05	Q				V
46+10	0.2504	0.05	Q				V
46+15	0.2507	0.05	Q				V
46+20	0.2510	0.05	Q				V
46+25	0.2513	0.05	Q				V
46+30	0.2517	0.05	Q				V
46+35	0.2520	0.05	Q				V
46+40	0.2523	0.05	Q				V
46+45	0.2526	0.04	Q				V
46+50	0.2529	0.04	Q				V
46+55	0.2532	0.04	Q				V
47+ 0	0.2535	0.04	Q				V
47+ 5	0.2538	0.04	Q				V
47+10	0.2541	0.04	Q				V
47+15	0.2544	0.04	Q				V
47+20	0.2547	0.04	Q				V
47+25	0.2550	0.04	Q				V
47+30	0.2553	0.04	Q				V
47+35	0.2556	0.04	Q				V
47+40	0.2558	0.04	Q				V
47+45	0.2561	0.04	Q				V
47+50	0.2564	0.04	Q				V
47+55	0.2567	0.04	Q				V
48+ 0	0.2570	0.04	Q				V
48+ 5	0.2570	0.01	Q				V

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA F
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
3.38	1	0.78
Rainfall data for year 2		
3.38	6	1.20
Rainfall data for year 2		
3.38	24	2.18
Rainfall data for year 100		
3.38	1	1.27
Rainfall data for year 100		
3.38	6	2.86
Rainfall data for year 100		
3.38	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
44.0	26.2	3.38	1.000	0.999	0.019	0.019

Area-averaged adjusted loss rate Fm (In/Hr) = 0.019

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
0.06	0.019	44.0	26.2	10.90	0.000
3.32	0.981	98.0	98.0	0.20	0.896

Area-averaged catchment yield fraction, Y = 0.879
Area-averaged low loss fraction, Yb = 0.121

++
Watercourse length = 940.00(Ft.)
Length from concentration point to centroid = 210.00(Ft.)
Elevation difference along watercourse = 102.80(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 3.38(Ac.)
Catchment Lag time = 0.016 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 508.3595
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.019(In/Hr)
Average low loss rate fraction (Yb) = 0.121 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.210(In)
Computed peak 30-minute rainfall = 0.360(In)
Specified peak 1-hour rainfall = 0.443(In)
Computed peak 3-hour rainfall = 0.816(In)
Specified peak 6-hour rainfall = 1.200(In)
Specified peak 24-hour rainfall = 2.180(In)

Rainfall depth area reduction factors:
Using a total area of 3.38(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.210(In)
30-minute factor = 1.000 Adjusted rainfall = 0.359(In)
1-hour factor = 1.000 Adjusted rainfall = 0.443(In)
3-hour factor = 1.000 Adjusted rainfall = 0.816(In)
6-hour factor = 1.000 Adjusted rainfall = 1.200(In)
24-hour factor = 1.000 Adjusted rainfall = 2.180(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 = 40.88 (CFS))		
1	73.943	30.226
2	100.000	10.651

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2100	0.2100
2	0.2585	0.0485
3	0.2920	0.0334
4	0.3183	0.0263
5	0.3403	0.0220
6	0.3594	0.0191
7	0.3765	0.0170
8	0.3918	0.0154
9	0.4059	0.0141
10	0.4190	0.0130
11	0.4311	0.0122
12	0.4425	0.0114
13	0.4627	0.0202
14	0.4822	0.0195
15	0.5011	0.0189
16	0.5194	0.0183
17	0.5372	0.0178
18	0.5546	0.0174
19	0.5716	0.0169
20	0.5881	0.0166
21	0.6043	0.0162
22	0.6202	0.0159
23	0.6357	0.0155
24	0.6510	0.0152
25	0.6659	0.0150
26	0.6806	0.0147
27	0.6951	0.0145
28	0.7093	0.0142
29	0.7233	0.0140
30	0.7371	0.0138
31	0.7507	0.0136
32	0.7640	0.0134
33	0.7772	0.0132
34	0.7903	0.0130
35	0.8031	0.0129
36	0.8158	0.0127
37	0.8284	0.0125
38	0.8408	0.0124
39	0.8530	0.0122
40	0.8651	0.0121
41	0.8771	0.0120
42	0.8889	0.0118
43	0.9007	0.0117
44	0.9123	0.0116
45	0.9237	0.0115
46	0.9351	0.0114
47	0.9464	0.0113

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48	0.9575	0.0112
49	0.9686	0.0111
50	0.9795	0.0110
51	0.9904	0.0109
52	1.0012	0.0108
53	1.0118	0.0107
54	1.0224	0.0106
55	1.0329	0.0105
56	1.0433	0.0104
57	1.0537	0.0103
58	1.0639	0.0103
59	1.0741	0.0102
60	1.0842	0.0101
61	1.0942	0.0100
62	1.1041	0.0099
63	1.1140	0.0099
64	1.1238	0.0098
65	1.1336	0.0097
66	1.1432	0.0097
67	1.1529	0.0096
68	1.1624	0.0095
69	1.1719	0.0095
70	1.1813	0.0094
71	1.1907	0.0094
72	1.2000	0.0093
73	1.2071	0.0071
74	1.2142	0.0071
75	1.2213	0.0070
76	1.2283	0.0070
77	1.2352	0.0069
78	1.2421	0.0069
79	1.2489	0.0068
80	1.2557	0.0068
81	1.2624	0.0067
82	1.2691	0.0067
83	1.2758	0.0066
84	1.2824	0.0066
85	1.2889	0.0066
86	1.2954	0.0065
87	1.3019	0.0065
88	1.3083	0.0064
89	1.3147	0.0064
90	1.3210	0.0063
91	1.3273	0.0063
92	1.3336	0.0063
93	1.3398	0.0062
94	1.3460	0.0062
95	1.3521	0.0061
96	1.3583	0.0061
97	1.3643	0.0061
98	1.3704	0.0060
99	1.3764	0.0060
100	1.3823	0.0060
101	1.3883	0.0059
102	1.3942	0.0059
103	1.4001	0.0059
104	1.4059	0.0058
105	1.4117	0.0058
106	1.4175	0.0058
107	1.4232	0.0057
108	1.4289	0.0057
109	1.4346	0.0057
110	1.4403	0.0057
111	1.4459	0.0056
112	1.4515	0.0056
113	1.4571	0.0056
114	1.4626	0.0055
115	1.4681	0.0055
116	1.4736	0.0055
117	1.4790	0.0055
118	1.4845	0.0054
119	1.4899	0.0054
120	1.4953	0.0054
121	1.5006	0.0054
122	1.5059	0.0053
123	1.5112	0.0053
124	1.5165	0.0053
125	1.5218	0.0053
126	1.5270	0.0052
127	1.5322	0.0052
128	1.5374	0.0052
129	1.5426	0.0052
130	1.5477	0.0051
131	1.5528	0.0051

		AREAF
132	1.5579	0.0051
133	1.5630	0.0051
134	1.5680	0.0051
135	1.5731	0.0050
136	1.5781	0.0050
137	1.5831	0.0050
138	1.5880	0.0050
139	1.5930	0.0049
140	1.5979	0.0049
141	1.6028	0.0049
142	1.6077	0.0049
143	1.6125	0.0049
144	1.6174	0.0048
145	1.6222	0.0048
146	1.6270	0.0048
147	1.6318	0.0048
148	1.6366	0.0048
149	1.6413	0.0048
150	1.6461	0.0047
151	1.6508	0.0047
152	1.6555	0.0047
153	1.6602	0.0047
154	1.6648	0.0047
155	1.6695	0.0046
156	1.6741	0.0046
157	1.6787	0.0046
158	1.6833	0.0046
159	1.6879	0.0046
160	1.6925	0.0046
161	1.6970	0.0045
162	1.7015	0.0045
163	1.7061	0.0045
164	1.7106	0.0045
165	1.7150	0.0045
166	1.7195	0.0045
167	1.7240	0.0045
168	1.7284	0.0044
169	1.7328	0.0044
170	1.7372	0.0044
171	1.7416	0.0044
172	1.7460	0.0044
173	1.7504	0.0044
174	1.7547	0.0044
175	1.7591	0.0043
176	1.7634	0.0043
177	1.7677	0.0043
178	1.7720	0.0043
179	1.7763	0.0043
180	1.7805	0.0043
181	1.7848	0.0043
182	1.7890	0.0042
183	1.7933	0.0042
184	1.7975	0.0042
185	1.8017	0.0042
186	1.8059	0.0042
187	1.8100	0.0042
188	1.8142	0.0042
189	1.8183	0.0041
190	1.8225	0.0041
191	1.8266	0.0041
192	1.8307	0.0041
193	1.8348	0.0041
194	1.8389	0.0041
195	1.8430	0.0041
196	1.8470	0.0041
197	1.8511	0.0041
198	1.8551	0.0040
199	1.8592	0.0040
200	1.8632	0.0040
201	1.8672	0.0040
202	1.8712	0.0040
203	1.8752	0.0040
204	1.8791	0.0040
205	1.8831	0.0040
206	1.8871	0.0040
207	1.8910	0.0039
208	1.8949	0.0039
209	1.8988	0.0039
210	1.9027	0.0039
211	1.9066	0.0039
212	1.9105	0.0039
213	1.9144	0.0039
214	1.9183	0.0039
215	1.9221	0.0039

		AREAF
216	1.9260	0.0038
217	1.9298	0.0038
218	1.9336	0.0038
219	1.9374	0.0038
220	1.9412	0.0038
221	1.9450	0.0038
222	1.9488	0.0038
223	1.9526	0.0038
224	1.9564	0.0038
225	1.9601	0.0038
226	1.9639	0.0037
227	1.9676	0.0037
228	1.9713	0.0037
229	1.9751	0.0037
230	1.9788	0.0037
231	1.9825	0.0037
232	1.9862	0.0037
233	1.9898	0.0037
234	1.9935	0.0037
235	1.9972	0.0037
236	2.0008	0.0037
237	2.0045	0.0036
238	2.0081	0.0036
239	2.0118	0.0036
240	2.0154	0.0036
241	2.0190	0.0036
242	2.0226	0.0036
243	2.0262	0.0036
244	2.0298	0.0036
245	2.0333	0.0036
246	2.0369	0.0036
247	2.0405	0.0036
248	2.0440	0.0036
249	2.0476	0.0035
250	2.0511	0.0035
251	2.0546	0.0035
252	2.0582	0.0035
253	2.0617	0.0035
254	2.0652	0.0035
255	2.0687	0.0035
256	2.0722	0.0035
257	2.0757	0.0035
258	2.0791	0.0035
259	2.0826	0.0035
260	2.0861	0.0035
261	2.0895	0.0035
262	2.0929	0.0034
263	2.0964	0.0034
264	2.0998	0.0034
265	2.1032	0.0034
266	2.1067	0.0034
267	2.1101	0.0034
268	2.1135	0.0034
269	2.1168	0.0034
270	2.1202	0.0034
271	2.1236	0.0034
272	2.1270	0.0034
273	2.1303	0.0034
274	2.1337	0.0034
275	2.1371	0.0034
276	2.1404	0.0033
277	2.1437	0.0033
278	2.1471	0.0033
279	2.1504	0.0033
280	2.1537	0.0033
281	2.1570	0.0033
282	2.1603	0.0033
283	2.1636	0.0033
284	2.1669	0.0033
285	2.1702	0.0033
286	2.1735	0.0033
287	2.1767	0.0033
288	2.1800	0.0033

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0033	0.0004	0.0029
2	0.0033	0.0004	0.0029
3	0.0033	0.0004	0.0029
4	0.0033	0.0004	0.0029
5	0.0033	0.0004	0.0029
6	0.0033	0.0004	0.0029

	AREAF		
7	0.0033	0.0004	0.0029
8	0.0033	0.0004	0.0029
9	0.0033	0.0004	0.0029
10	0.0034	0.0004	0.0029
11	0.0034	0.0004	0.0030
12	0.0034	0.0004	0.0030
13	0.0034	0.0004	0.0030
14	0.0034	0.0004	0.0030
15	0.0034	0.0004	0.0030
16	0.0034	0.0004	0.0030
17	0.0034	0.0004	0.0030
18	0.0034	0.0004	0.0030
19	0.0035	0.0004	0.0030
20	0.0035	0.0004	0.0030
21	0.0035	0.0004	0.0031
22	0.0035	0.0004	0.0031
23	0.0035	0.0004	0.0031
24	0.0035	0.0004	0.0031
25	0.0035	0.0004	0.0031
26	0.0035	0.0004	0.0031
27	0.0035	0.0004	0.0031
28	0.0036	0.0004	0.0031
29	0.0036	0.0004	0.0031
30	0.0036	0.0004	0.0031
31	0.0036	0.0004	0.0032
32	0.0036	0.0004	0.0032
33	0.0036	0.0004	0.0032
34	0.0036	0.0004	0.0032
35	0.0036	0.0004	0.0032
36	0.0037	0.0004	0.0032
37	0.0037	0.0004	0.0032
38	0.0037	0.0004	0.0032
39	0.0037	0.0004	0.0033
40	0.0037	0.0004	0.0033
41	0.0037	0.0005	0.0033
42	0.0037	0.0005	0.0033
43	0.0038	0.0005	0.0033
44	0.0038	0.0005	0.0033
45	0.0038	0.0005	0.0033
46	0.0038	0.0005	0.0033
47	0.0038	0.0005	0.0034
48	0.0038	0.0005	0.0034
49	0.0038	0.0005	0.0034
50	0.0039	0.0005	0.0034
51	0.0039	0.0005	0.0034
52	0.0039	0.0005	0.0034
53	0.0039	0.0005	0.0034
54	0.0039	0.0005	0.0034
55	0.0039	0.0005	0.0035
56	0.0040	0.0005	0.0035
57	0.0040	0.0005	0.0035
58	0.0040	0.0005	0.0035
59	0.0040	0.0005	0.0035
60	0.0040	0.0005	0.0035
61	0.0040	0.0005	0.0036
62	0.0041	0.0005	0.0036
63	0.0041	0.0005	0.0036
64	0.0041	0.0005	0.0036
65	0.0041	0.0005	0.0036
66	0.0041	0.0005	0.0036
67	0.0041	0.0005	0.0036
68	0.0042	0.0005	0.0037
69	0.0042	0.0005	0.0037
70	0.0042	0.0005	0.0037
71	0.0042	0.0005	0.0037
72	0.0042	0.0005	0.0037
73	0.0043	0.0005	0.0037
74	0.0043	0.0005	0.0038
75	0.0043	0.0005	0.0038
76	0.0043	0.0005	0.0038
77	0.0044	0.0005	0.0038
78	0.0044	0.0005	0.0038
79	0.0044	0.0005	0.0039
80	0.0044	0.0005	0.0039
81	0.0044	0.0005	0.0039
82	0.0045	0.0005	0.0039
83	0.0045	0.0005	0.0039
84	0.0045	0.0005	0.0040
85	0.0045	0.0005	0.0040
86	0.0045	0.0006	0.0040
87	0.0046	0.0006	0.0040
88	0.0046	0.0006	0.0040
89	0.0046	0.0006	0.0041
90	0.0046	0.0006	0.0041

	AREAF		
91	0.0047	0.0006	0.0041
92	0.0047	0.0006	0.0041
93	0.0047	0.0006	0.0042
94	0.0048	0.0006	0.0042
95	0.0048	0.0006	0.0042
96	0.0048	0.0006	0.0042
97	0.0048	0.0006	0.0043
98	0.0049	0.0006	0.0043
99	0.0049	0.0006	0.0043
100	0.0049	0.0006	0.0043
101	0.0050	0.0006	0.0044
102	0.0050	0.0006	0.0044
103	0.0050	0.0006	0.0044
104	0.0051	0.0006	0.0044
105	0.0051	0.0006	0.0045
106	0.0051	0.0006	0.0045
107	0.0052	0.0006	0.0045
108	0.0052	0.0006	0.0046
109	0.0052	0.0006	0.0046
110	0.0053	0.0006	0.0046
111	0.0053	0.0006	0.0047
112	0.0053	0.0006	0.0047
113	0.0054	0.0007	0.0047
114	0.0054	0.0007	0.0047
115	0.0055	0.0007	0.0048
116	0.0055	0.0007	0.0048
117	0.0055	0.0007	0.0049
118	0.0056	0.0007	0.0049
119	0.0056	0.0007	0.0049
120	0.0057	0.0007	0.0050
121	0.0057	0.0007	0.0050
122	0.0057	0.0007	0.0050
123	0.0058	0.0007	0.0051
124	0.0058	0.0007	0.0051
125	0.0059	0.0007	0.0052
126	0.0059	0.0007	0.0052
127	0.0060	0.0007	0.0053
128	0.0060	0.0007	0.0053
129	0.0061	0.0007	0.0054
130	0.0061	0.0007	0.0054
131	0.0062	0.0008	0.0055
132	0.0063	0.0008	0.0055
133	0.0063	0.0008	0.0056
134	0.0064	0.0008	0.0056
135	0.0065	0.0008	0.0057
136	0.0065	0.0008	0.0057
137	0.0066	0.0008	0.0058
138	0.0066	0.0008	0.0058
139	0.0067	0.0008	0.0059
140	0.0068	0.0008	0.0060
141	0.0069	0.0008	0.0060
142	0.0069	0.0008	0.0061
143	0.0070	0.0009	0.0062
144	0.0071	0.0009	0.0062
145	0.0093	0.0011	0.0082
146	0.0094	0.0011	0.0082
147	0.0095	0.0011	0.0083
148	0.0095	0.0012	0.0084
149	0.0097	0.0012	0.0085
150	0.0097	0.0012	0.0086
151	0.0099	0.0012	0.0087
152	0.0099	0.0012	0.0087
153	0.0101	0.0012	0.0089
154	0.0102	0.0012	0.0089
155	0.0103	0.0013	0.0091
156	0.0104	0.0013	0.0092
157	0.0106	0.0013	0.0093
158	0.0107	0.0013	0.0094
159	0.0109	0.0013	0.0095
160	0.0110	0.0013	0.0096
161	0.0112	0.0014	0.0098
162	0.0113	0.0014	0.0099
163	0.0115	0.0014	0.0101
164	0.0116	0.0014	0.0102
165	0.0118	0.0014	0.0104
166	0.0120	0.0015	0.0105
167	0.0122	0.0015	0.0108
168	0.0124	0.0015	0.0109
169	0.0127	0.0015	0.0112
170	0.0129	0.0016	0.0113
171	0.0132	0.0016	0.0116
172	0.0134	0.0016	0.0118
173	0.0138	0.0016	0.0122
174	0.0140	0.0016	0.0124

175	0.0145	0.0016	0.0129
176	0.0147	0.0016	0.0131
177	0.0152	0.0016	0.0137
178	0.0155	0.0016	0.0140
179	0.0162	0.0016	0.0146
180	0.0166	0.0016	0.0150
181	0.0174	0.0016	0.0158
182	0.0178	0.0016	0.0162
183	0.0189	0.0016	0.0173
184	0.0195	0.0016	0.0179
185	0.0114	0.0014	0.0100
186	0.0122	0.0015	0.0107
187	0.0141	0.0016	0.0125
188	0.0154	0.0016	0.0138
189	0.0191	0.0016	0.0176
190	0.0220	0.0016	0.0205
191	0.0334	0.0016	0.0319
192	0.0485	0.0016	0.0470
193	0.2100	0.0016	0.2084
194	0.0263	0.0016	0.0247
195	0.0170	0.0016	0.0154
196	0.0130	0.0016	0.0115
197	0.0202	0.0016	0.0186
198	0.0183	0.0016	0.0168
199	0.0169	0.0016	0.0154
200	0.0159	0.0016	0.0143
201	0.0150	0.0016	0.0134
202	0.0142	0.0016	0.0126
203	0.0136	0.0016	0.0120
204	0.0130	0.0016	0.0114
205	0.0125	0.0015	0.0110
206	0.0121	0.0015	0.0106
207	0.0117	0.0014	0.0103
208	0.0114	0.0014	0.0100
209	0.0111	0.0013	0.0097
210	0.0108	0.0013	0.0095
211	0.0105	0.0013	0.0092
212	0.0103	0.0012	0.0090
213	0.0100	0.0012	0.0088
214	0.0098	0.0012	0.0086
215	0.0096	0.0012	0.0084
216	0.0094	0.0011	0.0083
217	0.0071	0.0009	0.0063
218	0.0070	0.0008	0.0061
219	0.0068	0.0008	0.0060
220	0.0067	0.0008	0.0059
221	0.0066	0.0008	0.0058
222	0.0064	0.0008	0.0056
223	0.0063	0.0008	0.0055
224	0.0062	0.0007	0.0054
225	0.0061	0.0007	0.0053
226	0.0060	0.0007	0.0052
227	0.0059	0.0007	0.0052
228	0.0058	0.0007	0.0051
229	0.0057	0.0007	0.0050
230	0.0056	0.0007	0.0049
231	0.0055	0.0007	0.0048
232	0.0054	0.0007	0.0048
233	0.0054	0.0006	0.0047
234	0.0053	0.0006	0.0046
235	0.0052	0.0006	0.0046
236	0.0051	0.0006	0.0045
237	0.0051	0.0006	0.0045
238	0.0050	0.0006	0.0044
239	0.0049	0.0006	0.0043
240	0.0049	0.0006	0.0043
241	0.0048	0.0006	0.0042
242	0.0048	0.0006	0.0042
243	0.0047	0.0006	0.0041
244	0.0047	0.0006	0.0041
245	0.0046	0.0006	0.0041
246	0.0046	0.0006	0.0040
247	0.0045	0.0005	0.0040
248	0.0045	0.0005	0.0039
249	0.0044	0.0005	0.0039
250	0.0044	0.0005	0.0038
251	0.0043	0.0005	0.0038
252	0.0043	0.0005	0.0038
253	0.0043	0.0005	0.0037
254	0.0042	0.0005	0.0037
255	0.0042	0.0005	0.0037
256	0.0041	0.0005	0.0036
257	0.0041	0.0005	0.0036
258	0.0041	0.0005	0.0036

		AREAF	
259	0.0040	0.0005	0.0035
260	0.0040	0.0005	0.0035
261	0.0040	0.0005	0.0035
262	0.0039	0.0005	0.0035
263	0.0039	0.0005	0.0034
264	0.0039	0.0005	0.0034
265	0.0038	0.0005	0.0034
266	0.0038	0.0005	0.0033
267	0.0038	0.0005	0.0033
268	0.0037	0.0005	0.0033
269	0.0037	0.0005	0.0033
270	0.0037	0.0004	0.0032
271	0.0037	0.0004	0.0032
272	0.0036	0.0004	0.0032
273	0.0036	0.0004	0.0032
274	0.0036	0.0004	0.0032
275	0.0036	0.0004	0.0031
276	0.0035	0.0004	0.0031
277	0.0035	0.0004	0.0031
278	0.0035	0.0004	0.0031
279	0.0035	0.0004	0.0030
280	0.0034	0.0004	0.0030
281	0.0034	0.0004	0.0030
282	0.0034	0.0004	0.0030
283	0.0034	0.0004	0.0030
284	0.0034	0.0004	0.0030
285	0.0033	0.0004	0.0029
286	0.0033	0.0004	0.0029
287	0.0033	0.0004	0.0029
288	0.0033	0.0004	0.0029

Total soil rain loss = 0.22(In)
Total effective rainfall = 1.96(In)
Peak flow rate in flood hydrograph = 6.80(CFS)

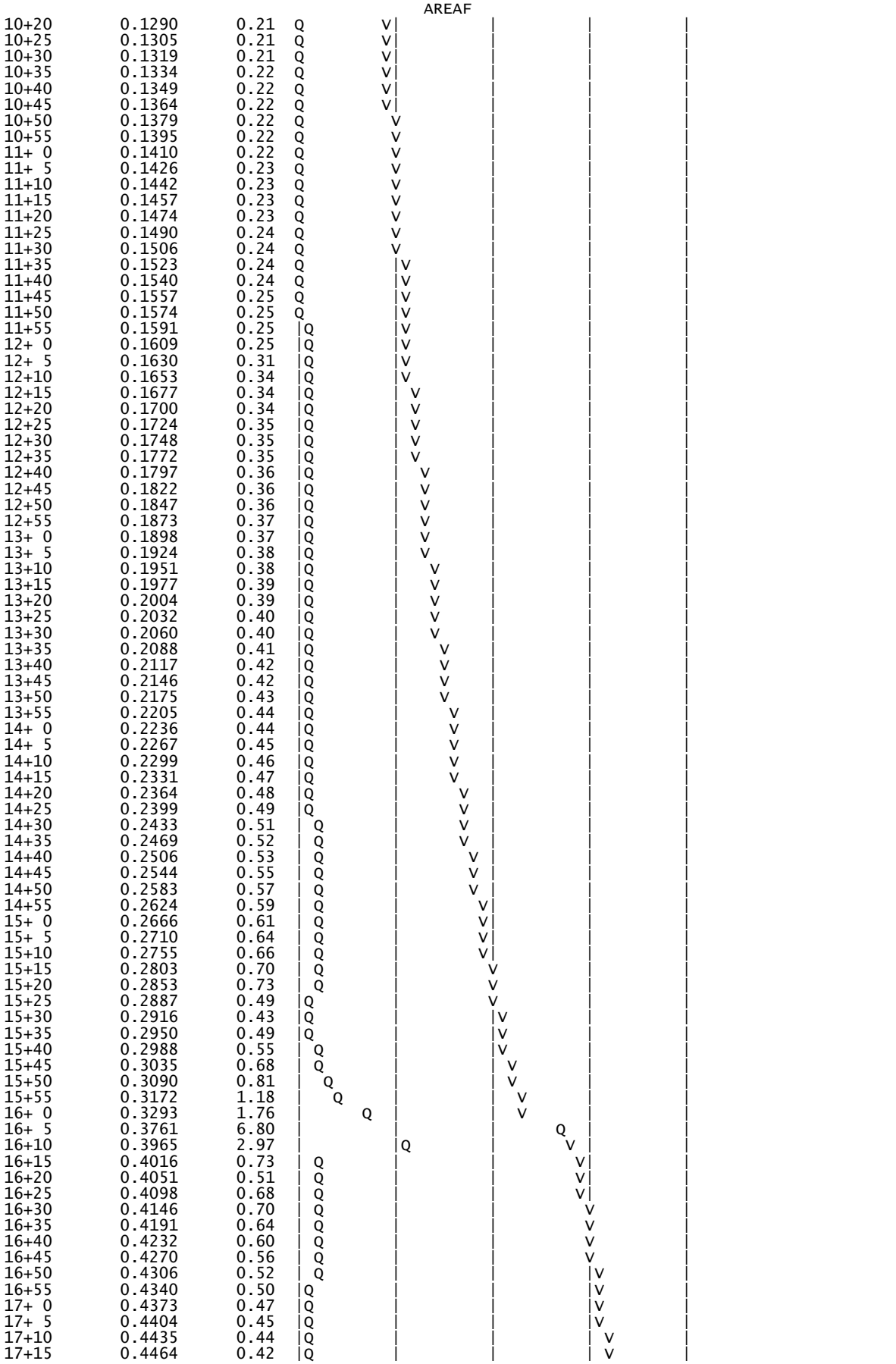
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.0006	0.09	Q				
0+10	0.0014	0.12	Q				
0+15	0.0022	0.12	Q				
0+20	0.0030	0.12	Q				
0+25	0.0038	0.12	Q				
0+30	0.0047	0.12	Q				
0+35	0.0055	0.12	Q				
0+40	0.0063	0.12	Q				
0+45	0.0071	0.12	Q				
0+50	0.0080	0.12	Q				
0+55	0.0088	0.12	Q				
1+ 0	0.0096	0.12	Q				
1+ 5	0.0105	0.12	Q				
1+10	0.0113	0.12	Q				
1+15	0.0121	0.12	Q				
1+20	0.0130	0.12	Q				
1+25	0.0138	0.12	QV				
1+30	0.0147	0.12	QV				
1+35	0.0155	0.12	QV				
1+40	0.0164	0.12	QV				
1+45	0.0173	0.12	QV				
1+50	0.0181	0.13	QV				
1+55	0.0190	0.13	QV				
2+ 0	0.0198	0.13	QV				
2+ 5	0.0207	0.13	QV				
2+10	0.0216	0.13	QV				
2+15	0.0225	0.13	QV				
2+20	0.0233	0.13	QV				
2+25	0.0242	0.13	QV				
2+30	0.0251	0.13	QV				
2+35	0.0260	0.13	QV				
2+40	0.0269	0.13	QV				
2+45	0.0278	0.13	Q V				
2+50	0.0287	0.13	Q V				
2+55	0.0296	0.13	Q V				
3+ 0	0.0305	0.13	Q V				
3+ 5	0.0314	0.13	Q V				
3+10	0.0323	0.13	Q V				
3+15	0.0332	0.13	Q V				

3+20	0.0341	0.13	Q V				
3+25	0.0351	0.13	Q V				
3+30	0.0360	0.13	Q V				
3+35	0.0369	0.13	Q V				
3+40	0.0378	0.14	Q V				
3+45	0.0388	0.14	Q V				
3+50	0.0397	0.14	Q V				
3+55	0.0407	0.14	Q V				
4+ 0	0.0416	0.14	Q V				
4+ 5	0.0426	0.14	Q V				
4+10	0.0435	0.14	Q V				
4+15	0.0445	0.14	Q V				
4+20	0.0454	0.14	Q V				
4+25	0.0464	0.14	Q V				
4+30	0.0474	0.14	Q V				
4+35	0.0483	0.14	Q V				
4+40	0.0493	0.14	Q V				
4+45	0.0503	0.14	Q V				
4+50	0.0513	0.14	Q V				
4+55	0.0523	0.14	Q V				
5+ 0	0.0533	0.14	Q V				
5+ 5	0.0543	0.14	Q V				
5+10	0.0553	0.15	Q V				
5+15	0.0563	0.15	Q V				
5+20	0.0573	0.15	Q V				
5+25	0.0583	0.15	Q V				
5+30	0.0593	0.15	Q V				
5+35	0.0603	0.15	Q V				
5+40	0.0614	0.15	Q V				
5+45	0.0624	0.15	Q V				
5+50	0.0634	0.15	Q V				
5+55	0.0645	0.15	Q V				
6+ 0	0.0655	0.15	Q V				
6+ 5	0.0666	0.15	Q V				
6+10	0.0676	0.15	Q V				
6+15	0.0687	0.15	Q V				
6+20	0.0698	0.16	Q V				
6+25	0.0708	0.16	Q V				
6+30	0.0719	0.16	Q V				
6+35	0.0730	0.16	Q V				
6+40	0.0741	0.16	Q V				
6+45	0.0752	0.16	Q V				
6+50	0.0763	0.16	Q V				
6+55	0.0774	0.16	Q V				
7+ 0	0.0785	0.16	Q V				
7+ 5	0.0796	0.16	Q V				
7+10	0.0808	0.16	Q V				
7+15	0.0819	0.16	Q V				
7+20	0.0830	0.16	Q V				
7+25	0.0842	0.17	Q V				
7+30	0.0853	0.17	Q V				
7+35	0.0865	0.17	Q V				
7+40	0.0876	0.17	Q V				
7+45	0.0888	0.17	Q V				
7+50	0.0900	0.17	Q V				
7+55	0.0912	0.17	Q V				
8+ 0	0.0924	0.17	Q V				
8+ 5	0.0935	0.17	Q V				
8+10	0.0947	0.17	Q V				
8+15	0.0960	0.18	Q V				
8+20	0.0972	0.18	Q V				
8+25	0.0984	0.18	Q V				
8+30	0.0996	0.18	Q V				
8+35	0.1009	0.18	Q V				
8+40	0.1021	0.18	Q V				
8+45	0.1034	0.18	Q V				
8+50	0.1046	0.18	Q V				
8+55	0.1059	0.18	Q V				
9+ 0	0.1072	0.19	Q V				
9+ 5	0.1085	0.19	Q V				
9+10	0.1098	0.19	Q V				
9+15	0.1111	0.19	Q V				
9+20	0.1124	0.19	Q V				
9+25	0.1137	0.19	Q V				
9+30	0.1151	0.19	Q V				
9+35	0.1164	0.20	Q V				
9+40	0.1178	0.20	Q V				
9+45	0.1191	0.20	Q V				
9+50	0.1205	0.20	Q V				
9+55	0.1219	0.20	Q V				
10+ 0	0.1233	0.20	Q V				
10+ 5	0.1247	0.20	Q V				
10+10	0.1261	0.21	Q V				
10+15	0.1276	0.21	Q V				



10+20	0.1290	0.21	
10+25	0.1305	0.21	
10+30	0.1319	0.21	
10+35	0.1334	0.22	
10+40	0.1349	0.22	
10+45	0.1364	0.22	
10+50	0.1379	0.22	
10+55	0.1395	0.22	
11+ 0	0.1410	0.22	
11+ 5	0.1426	0.23	
11+10	0.1442	0.23	
11+15	0.1457	0.23	
11+20	0.1474	0.23	
11+25	0.1490	0.24	
11+30	0.1506	0.24	
11+35	0.1523	0.24	
11+40	0.1540	0.24	
11+45	0.1557	0.25	
11+50	0.1574	0.25	
11+55	0.1591	0.25	
12+ 0	0.1609	0.25	
12+ 5	0.1630	0.31	
12+10	0.1653	0.34	
12+15	0.1677	0.34	
12+20	0.1700	0.34	
12+25	0.1724	0.35	
12+30	0.1748	0.35	
12+35	0.1772	0.35	
12+40	0.1797	0.36	
12+45	0.1822	0.36	
12+50	0.1847	0.36	
12+55	0.1873	0.37	
13+ 0	0.1898	0.37	
13+ 5	0.1924	0.38	
13+10	0.1951	0.38	
13+15	0.1977	0.39	
13+20	0.2004	0.39	
13+25	0.2032	0.40	
13+30	0.2060	0.40	
13+35	0.2088	0.41	
13+40	0.2117	0.42	
13+45	0.2146	0.42	
13+50	0.2175	0.43	
13+55	0.2205	0.44	
14+ 0	0.2236	0.44	
14+ 5	0.2267	0.45	
14+10	0.2299	0.46	
14+15	0.2331	0.47	
14+20	0.2364	0.48	
14+25	0.2399	0.49	
14+30	0.2433	0.51	
14+35	0.2469	0.52	
14+40	0.2506	0.53	
14+45	0.2544	0.55	
14+50	0.2583	0.57	
14+55	0.2624	0.59	
15+ 0	0.2666	0.61	
15+ 5	0.2710	0.64	
15+10	0.2755	0.66	
15+15	0.2803	0.70	
15+20	0.2853	0.73	
15+25	0.2887	0.49	
15+30	0.2916	0.43	
15+35	0.2950	0.49	
15+40	0.2988	0.55	
15+45	0.3035	0.68	
15+50	0.3090	0.81	
15+55	0.3172	1.18	
16+ 0	0.3293	1.76	
16+ 5	0.3761	6.80	
16+10	0.3965	2.97	
16+15	0.4016	0.73	
16+20	0.4051	0.51	
16+25	0.4098	0.68	
16+30	0.4146	0.70	
16+35	0.4191	0.64	
16+40	0.4232	0.60	
16+45	0.4270	0.56	
16+50	0.4306	0.52	
16+55	0.4340	0.50	
17+ 0	0.4373	0.47	
17+ 5	0.4404	0.45	
17+10	0.4435	0.44	
17+15	0.4464	0.42	

17+20	0.4492	0.41	|Q	|	|	| V |
17+25	0.4520	0.40	|Q	|	|	| V |
17+30	0.4547	0.39	|Q	|	|	| V |
17+35	0.4573	0.38	|Q	|	|	| V |
17+40	0.4598	0.37	|Q	|	|	| V |
17+45	0.4623	0.36	|Q	|	|	| V |
17+50	0.4648	0.35	|Q	|	|	| V |
17+55	0.4671	0.35	|Q	|	|	| V |
18+ 0	0.4695	0.34	|Q	|	|	| V |
18+ 5	0.4714	0.28	|Q	|	|	| V |
18+10	0.4731	0.25	|Q	|	|	| V |
18+15	0.4748	0.25	Q	|	|	| V |
18+20	0.4765	0.24	Q	|	|	| V |
18+25	0.4781	0.24	Q	|	|	| V |
18+30	0.4797	0.23	Q	|	|	| V |
18+35	0.4813	0.23	Q	|	|	| V |
18+40	0.4828	0.22	Q	|	|	| V |
18+45	0.4844	0.22	Q	|	|	| V |
18+50	0.4858	0.22	Q	|	|	| V |
18+55	0.4873	0.21	Q	|	|	| V |
19+ 0	0.4887	0.21	Q	|	|	| V |
19+ 5	0.4901	0.21	Q	|	|	| V |
19+10	0.4915	0.20	Q	|	|	| V |
19+15	0.4929	0.20	Q	|	|	| V |
19+20	0.4942	0.20	Q	|	|	| V |
19+25	0.4956	0.19	Q	|	|	| V |
19+30	0.4969	0.19	Q	|	|	| V |
19+35	0.4982	0.19	Q	|	|	| V |
19+40	0.4995	0.19	Q	|	|	| V |
19+45	0.5007	0.18	Q	|	|	| V |
19+50	0.5020	0.18	Q	|	|	| V |
19+55	0.5032	0.18	Q	|	|	| V |
20+ 0	0.5044	0.18	Q	|	|	| V |
20+ 5	0.5056	0.17	Q	|	|	| V |
20+10	0.5068	0.17	Q	|	|	| V |
20+15	0.5080	0.17	Q	|	|	| V |
20+20	0.5091	0.17	Q	|	|	| V |
20+25	0.5103	0.17	Q	|	|	| V |
20+30	0.5114	0.16	Q	|	|	| V |
20+35	0.5125	0.16	Q	|	|	| V |
20+40	0.5136	0.16	Q	|	|	| V |
20+45	0.5147	0.16	Q	|	|	| V |
20+50	0.5158	0.16	Q	|	|	| V |
20+55	0.5169	0.16	Q	|	|	| V |
21+ 0	0.5179	0.15	Q	|	|	| V |
21+ 5	0.5190	0.15	Q	|	|	| V |
21+10	0.5200	0.15	Q	|	|	| V |
21+15	0.5211	0.15	Q	|	|	| V |
21+20	0.5221	0.15	Q	|	|	| V |
21+25	0.5231	0.15	Q	|	|	| V |
21+30	0.5241	0.15	Q	|	|	| V |
21+35	0.5251	0.15	Q	|	|	| V |
21+40	0.5261	0.14	Q	|	|	| V |
21+45	0.5271	0.14	Q	|	|	| V |
21+50	0.5281	0.14	Q	|	|	| V |
21+55	0.5290	0.14	Q	|	|	| V |
22+ 0	0.5300	0.14	Q	|	|	| V |
22+ 5	0.5309	0.14	Q	|	|	| V |
22+10	0.5319	0.14	Q	|	|	| V |
22+15	0.5328	0.14	Q	|	|	| V |
22+20	0.5338	0.13	Q	|	|	| V |
22+25	0.5347	0.13	Q	|	|	| V |
22+30	0.5356	0.13	Q	|	|	| V |
22+35	0.5365	0.13	Q	|	|	| V |
22+40	0.5374	0.13	Q	|	|	| V |
22+45	0.5383	0.13	Q	|	|	| V |
22+50	0.5392	0.13	Q	|	|	| V |
22+55	0.5401	0.13	Q	|	|	| V |
23+ 0	0.5409	0.13	Q	|	|	| V |
23+ 5	0.5418	0.13	Q	|	|	| V |
23+10	0.5427	0.13	Q	|	|	| V |
23+15	0.5435	0.12	Q	|	|	| V |
23+20	0.5444	0.12	Q	|	|	| V |
23+25	0.5452	0.12	Q	|	|	| V |
23+30	0.5461	0.12	Q	|	|	| V |
23+35	0.5469	0.12	Q	|	|	| V |
23+40	0.5478	0.12	Q	|	|	| V |
23+45	0.5486	0.12	Q	|	|	| V |
23+50	0.5494	0.12	Q	|	|	| V |
23+55	0.5502	0.12	Q	|	|	| V |
24+ 0	0.5510	0.12	Q	|	|	| V |

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 03/16/20

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

TRI-8 Builders - S/N 615

TRACT NO. 20320 (TERRACINA PROJECT)
ONSITE-PROPOSED CONDITION
AREA G
2YR-24HR

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 (Ac.)	Duration (hours)	Isohyetal (In)
Rainfall data for year 10		
1.36	1	0.78
Rainfall data for year 2		
1.36	6	2.18
Rainfall data for year 2		
1.36	24	2.86
Rainfall data for year 100		
1.36	1	1.20
Rainfall data for year 100		
1.36	6	1.27
Rainfall data for year 100		
1.36	24	5.15

++

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

SCS curve No.(AMCII)	SCS curve NO.(AMC 1)	Area (Ac.)	Area Fraction	Fp(Fig C6) (In/Hr)	Ap (dec.)	Fm (In/Hr)
44.0	26.2	1.36	1.000	0.999	0.036	0.036

Area-averaged adjusted loss rate Fm (In/Hr) = 0.036

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

Area (Ac.)	Area Fract	SCS CN (AMC2)	SCS CN (AMC1)	S	Pervious Yield Fr
0.05	0.036	44.0	26.2	14.30	0.000
1.31	0.964	98.0	98.0	0.20	0.919

Area-averaged catchment yield fraction, Y = 0.886
Area-averaged low loss fraction, Yb = 0.114

++
Watercourse length = 650.00(Ft.)
Length from concentration point to centroid = 200.00(Ft.)
Elevation difference along watercourse = 87.70(Ft.)
Mannings friction factor along watercourse = 0.015
Watershed area = 1.36(Ac.)
Catchment Lag time = 0.013 hours

Unit interval = 5.000 minutes
Unit interval percentage of lag time = 620.0638
Hydrograph baseflow = 0.00(CFS)
Average maximum watershed loss rate(Fm) = 0.036(In/Hr)
Average low loss rate fraction (Yb) = 0.114 (decimal)
FOOTHILL S-Graph Selected
Computed peak 5-minute rainfall = 0.233(In)
Computed peak 30-minute rainfall = 0.399(In)
Specified peak 1-hour rainfall = 0.492(In)
Computed peak 3-hour rainfall = 1.225(In)
Specified peak 6-hour rainfall = 2.180(In)
Specified peak 24-hour rainfall = 2.860(In)

Rainfall depth area reduction factors:
Using a total area of 1.36(Ac.) (Ref: fig. E-4)

5-minute factor = 1.000 Adjusted rainfall = 0.233(In)
30-minute factor = 1.000 Adjusted rainfall = 0.399(In)
1-hour factor = 1.000 Adjusted rainfall = 0.491(In)
3-hour factor = 1.000 Adjusted rainfall = 1.225(In)
6-hour factor = 1.000 Adjusted rainfall = 2.180(In)
24-hour factor = 1.000 Adjusted rainfall = 2.860(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 = 16.45 (CFS))	
1	78.533	12.917
2	100.000	3.531

Peak Unit Number	Adjusted mass rainfall (In)	Unit rainfall (In)
1	0.2332	0.2332
2	0.2871	0.0539
3	0.3243	0.0371
4	0.3535	0.0292
5	0.3780	0.0245
6	0.3992	0.0212
7	0.4181	0.0189
8	0.4352	0.0171
9	0.4509	0.0157
10	0.4653	0.0145
11	0.4788	0.0135
12	0.4915	0.0127
13	0.5253	0.0338
14	0.5587	0.0334
15	0.5917	0.0330
16	0.6243	0.0326
17	0.6566	0.0323
18	0.6885	0.0320
19	0.7202	0.0317
20	0.7516	0.0314
21	0.7827	0.0311
22	0.8135	0.0309
23	0.8442	0.0306
24	0.8746	0.0304
25	0.9048	0.0302
26	0.9348	0.0300
27	0.9645	0.0298
28	0.9942	0.0296
29	1.0236	0.0294
30	1.0528	0.0293
31	1.0819	0.0291
32	1.1109	0.0289
33	1.1397	0.0288
34	1.1683	0.0286
35	1.1968	0.0285
36	1.2252	0.0284
37	1.2534	0.0282
38	1.2815	0.0281
39	1.3095	0.0280
40	1.3373	0.0279
41	1.3651	0.0277
42	1.3927	0.0276
43	1.4202	0.0275
44	1.4476	0.0274
45	1.4749	0.0273
46	1.5021	0.0272
47	1.5292	0.0271

		AREAG
48	1.5562	0.0270
49	1.5831	0.0269
50	1.6099	0.0268
51	1.6366	0.0267
52	1.6633	0.0266
53	1.6898	0.0265
54	1.7163	0.0265
55	1.7427	0.0264
56	1.7690	0.0263
57	1.7952	0.0262
58	1.8213	0.0261
59	1.8474	0.0261
60	1.8734	0.0260
61	1.8993	0.0259
62	1.9252	0.0258
63	1.9509	0.0258
64	1.9766	0.0257
65	2.0023	0.0256
66	2.0279	0.0256
67	2.0534	0.0255
68	2.0788	0.0254
69	2.1042	0.0254
70	2.1295	0.0253
71	2.1548	0.0253
72	2.1800	0.0252
73	2.1859	0.0059
74	2.1917	0.0058
75	2.1975	0.0058
76	2.2032	0.0057
77	2.2088	0.0056
78	2.2144	0.0056
79	2.2200	0.0055
80	2.2254	0.0055
81	2.2309	0.0054
82	2.2362	0.0054
83	2.2415	0.0053
84	2.2468	0.0053
85	2.2520	0.0052
86	2.2572	0.0052
87	2.2623	0.0051
88	2.2674	0.0051
89	2.2724	0.0050
90	2.2774	0.0050
91	2.2823	0.0049
92	2.2872	0.0049
93	2.2920	0.0048
94	2.2968	0.0048
95	2.3016	0.0048
96	2.3063	0.0047
97	2.3110	0.0047
98	2.3157	0.0046
99	2.3203	0.0046
100	2.3249	0.0046
101	2.3294	0.0045
102	2.3339	0.0045
103	2.3384	0.0045
104	2.3428	0.0044
105	2.3472	0.0044
106	2.3515	0.0044
107	2.3559	0.0043
108	2.3602	0.0043
109	2.3644	0.0043
110	2.3687	0.0042
111	2.3729	0.0042
112	2.3770	0.0042
113	2.3812	0.0041
114	2.3853	0.0041
115	2.3894	0.0041
116	2.3934	0.0041
117	2.3974	0.0040
118	2.4014	0.0040
119	2.4054	0.0040
120	2.4094	0.0039
121	2.4133	0.0039
122	2.4172	0.0039
123	2.4210	0.0039
124	2.4249	0.0038
125	2.4287	0.0038
126	2.4325	0.0038
127	2.4363	0.0038
128	2.4400	0.0037
129	2.4437	0.0037
130	2.4474	0.0037
131	2.4511	0.0037

		AREAG
132	2.4548	0.0037
133	2.4584	0.0036
134	2.4620	0.0036
135	2.4656	0.0036
136	2.4692	0.0036
137	2.4727	0.0035
138	2.4762	0.0035
139	2.4797	0.0035
140	2.4832	0.0035
141	2.4867	0.0035
142	2.4901	0.0034
143	2.4935	0.0034
144	2.4970	0.0034
145	2.5003	0.0034
146	2.5037	0.0034
147	2.5071	0.0033
148	2.5104	0.0033
149	2.5137	0.0033
150	2.5170	0.0033
151	2.5203	0.0033
152	2.5235	0.0033
153	2.5268	0.0032
154	2.5300	0.0032
155	2.5332	0.0032
156	2.5364	0.0032
157	2.5396	0.0032
158	2.5427	0.0032
159	2.5459	0.0031
160	2.5490	0.0031
161	2.5521	0.0031
162	2.5552	0.0031
163	2.5583	0.0031
164	2.5614	0.0031
165	2.5644	0.0031
166	2.5675	0.0030
167	2.5705	0.0030
168	2.5735	0.0030
169	2.5765	0.0030
170	2.5795	0.0030
171	2.5824	0.0030
172	2.5854	0.0030
173	2.5883	0.0029
174	2.5912	0.0029
175	2.5941	0.0029
176	2.5970	0.0029
177	2.5999	0.0029
178	2.6028	0.0029
179	2.6056	0.0029
180	2.6085	0.0028
181	2.6113	0.0028
182	2.6141	0.0028
183	2.6169	0.0028
184	2.6197	0.0028
185	2.6225	0.0028
186	2.6253	0.0028
187	2.6281	0.0028
188	2.6308	0.0027
189	2.6335	0.0027
190	2.6363	0.0027
191	2.6390	0.0027
192	2.6417	0.0027
193	2.6444	0.0027
194	2.6470	0.0027
195	2.6497	0.0027
196	2.6524	0.0027
197	2.6550	0.0026
198	2.6576	0.0026
199	2.6603	0.0026
200	2.6629	0.0026
201	2.6655	0.0026
202	2.6681	0.0026
203	2.6707	0.0026
204	2.6732	0.0026
205	2.6758	0.0026
206	2.6783	0.0026
207	2.6809	0.0025
208	2.6834	0.0025
209	2.6859	0.0025
210	2.6884	0.0025
211	2.6909	0.0025
212	2.6934	0.0025
213	2.6959	0.0025
214	2.6984	0.0025
215	2.7009	0.0025

		AREAG
216	2.7033	0.0025
217	2.7058	0.0024
218	2.7082	0.0024
219	2.7106	0.0024
220	2.7130	0.0024
221	2.7155	0.0024
222	2.7179	0.0024
223	2.7203	0.0024
224	2.7226	0.0024
225	2.7250	0.0024
226	2.7274	0.0024
227	2.7297	0.0024
228	2.7321	0.0024
229	2.7344	0.0023
230	2.7368	0.0023
231	2.7391	0.0023
232	2.7414	0.0023
233	2.7437	0.0023
234	2.7460	0.0023
235	2.7483	0.0023
236	2.7506	0.0023
237	2.7529	0.0023
238	2.7552	0.0023
239	2.7574	0.0023
240	2.7597	0.0023
241	2.7619	0.0022
242	2.7642	0.0022
243	2.7664	0.0022
244	2.7686	0.0022
245	2.7708	0.0022
246	2.7731	0.0022
247	2.7753	0.0022
248	2.7775	0.0022
249	2.7796	0.0022
250	2.7818	0.0022
251	2.7840	0.0022
252	2.7862	0.0022
253	2.7883	0.0022
254	2.7905	0.0022
255	2.7926	0.0021
256	2.7948	0.0021
257	2.7969	0.0021
258	2.7990	0.0021
259	2.8012	0.0021
260	2.8033	0.0021
261	2.8054	0.0021
262	2.8075	0.0021
263	2.8096	0.0021
264	2.8117	0.0021
265	2.8138	0.0021
266	2.8158	0.0021
267	2.8179	0.0021
268	2.8200	0.0021
269	2.8220	0.0021
270	2.8241	0.0021
271	2.8261	0.0020
272	2.8282	0.0020
273	2.8302	0.0020
274	2.8322	0.0020
275	2.8342	0.0020
276	2.8363	0.0020
277	2.8383	0.0020
278	2.8403	0.0020
279	2.8423	0.0020
280	2.8443	0.0020
281	2.8462	0.0020
282	2.8482	0.0020
283	2.8502	0.0020
284	2.8522	0.0020
285	2.8541	0.0020
286	2.8561	0.0020
287	2.8580	0.0020
288	2.8600	0.0019

Unit Period (number)	Unit Rainfall (In)	Unit Soil-Loss (In)	Effective Rainfall (In)
1	0.0019	0.0002	0.0017
2	0.0020	0.0002	0.0017
3	0.0020	0.0002	0.0017
4	0.0020	0.0002	0.0017
5	0.0020	0.0002	0.0018
6	0.0020	0.0002	0.0018

7	0.0020	0.0002	0.0018
8	0.0020	0.0002	0.0018
9	0.0020	0.0002	0.0018
10	0.0020	0.0002	0.0018
11	0.0020	0.0002	0.0018
12	0.0020	0.0002	0.0018
13	0.0021	0.0002	0.0018
14	0.0021	0.0002	0.0018
15	0.0021	0.0002	0.0018
16	0.0021	0.0002	0.0018
17	0.0021	0.0002	0.0019
18	0.0021	0.0002	0.0019
19	0.0021	0.0002	0.0019
20	0.0021	0.0002	0.0019
21	0.0021	0.0002	0.0019
22	0.0021	0.0002	0.0019
23	0.0021	0.0002	0.0019
24	0.0022	0.0002	0.0019
25	0.0022	0.0002	0.0019
26	0.0022	0.0002	0.0019
27	0.0022	0.0002	0.0019
28	0.0022	0.0003	0.0019
29	0.0022	0.0003	0.0020
30	0.0022	0.0003	0.0020
31	0.0022	0.0003	0.0020
32	0.0022	0.0003	0.0020
33	0.0023	0.0003	0.0020
34	0.0023	0.0003	0.0020
35	0.0023	0.0003	0.0020
36	0.0023	0.0003	0.0020
37	0.0023	0.0003	0.0020
38	0.0023	0.0003	0.0020
39	0.0023	0.0003	0.0021
40	0.0023	0.0003	0.0021
41	0.0024	0.0003	0.0021
42	0.0024	0.0003	0.0021
43	0.0024	0.0003	0.0021
44	0.0024	0.0003	0.0021
45	0.0024	0.0003	0.0021
46	0.0024	0.0003	0.0021
47	0.0024	0.0003	0.0022
48	0.0024	0.0003	0.0022
49	0.0025	0.0003	0.0022
50	0.0025	0.0003	0.0022
51	0.0025	0.0003	0.0022
52	0.0025	0.0003	0.0022
53	0.0025	0.0003	0.0022
54	0.0025	0.0003	0.0022
55	0.0025	0.0003	0.0023
56	0.0026	0.0003	0.0023
57	0.0026	0.0003	0.0023
58	0.0026	0.0003	0.0023
59	0.0026	0.0003	0.0023
60	0.0026	0.0003	0.0023
61	0.0026	0.0003	0.0023
62	0.0026	0.0003	0.0023
63	0.0027	0.0003	0.0024
64	0.0027	0.0003	0.0024
65	0.0027	0.0003	0.0024
66	0.0027	0.0003	0.0024
67	0.0027	0.0003	0.0024
68	0.0027	0.0003	0.0024
69	0.0028	0.0003	0.0025
70	0.0028	0.0003	0.0025
71	0.0028	0.0003	0.0025
72	0.0028	0.0003	0.0025
73	0.0028	0.0003	0.0025
74	0.0029	0.0003	0.0025
75	0.0029	0.0003	0.0026
76	0.0029	0.0003	0.0026
77	0.0029	0.0003	0.0026
78	0.0029	0.0003	0.0026
79	0.0030	0.0003	0.0026
80	0.0030	0.0003	0.0026
81	0.0030	0.0003	0.0027
82	0.0030	0.0003	0.0027
83	0.0031	0.0003	0.0027
84	0.0031	0.0003	0.0027
85	0.0031	0.0004	0.0027
86	0.0031	0.0004	0.0028
87	0.0031	0.0004	0.0028
88	0.0032	0.0004	0.0028
89	0.0032	0.0004	0.0028
90	0.0032	0.0004	0.0028

91	0.0032	0.0004	0.0029
92	0.0033	0.0004	0.0029
93	0.0033	0.0004	0.0029
94	0.0033	0.0004	0.0029
95	0.0033	0.0004	0.0030
96	0.0034	0.0004	0.0030
97	0.0034	0.0004	0.0030
98	0.0034	0.0004	0.0030
99	0.0035	0.0004	0.0031
100	0.0035	0.0004	0.0031
101	0.0035	0.0004	0.0031
102	0.0035	0.0004	0.0031
103	0.0036	0.0004	0.0032
104	0.0036	0.0004	0.0032
105	0.0037	0.0004	0.0032
106	0.0037	0.0004	0.0033
107	0.0037	0.0004	0.0033
108	0.0037	0.0004	0.0033
109	0.0038	0.0004	0.0034
110	0.0038	0.0004	0.0034
111	0.0039	0.0004	0.0034
112	0.0039	0.0004	0.0034
113	0.0039	0.0004	0.0035
114	0.0040	0.0005	0.0035
115	0.0040	0.0005	0.0036
116	0.0041	0.0005	0.0036
117	0.0041	0.0005	0.0036
118	0.0041	0.0005	0.0037
119	0.0042	0.0005	0.0037
120	0.0042	0.0005	0.0038
121	0.0043	0.0005	0.0038
122	0.0043	0.0005	0.0038
123	0.0044	0.0005	0.0039
124	0.0044	0.0005	0.0039
125	0.0045	0.0005	0.0040
126	0.0045	0.0005	0.0040
127	0.0046	0.0005	0.0041
128	0.0046	0.0005	0.0041
129	0.0047	0.0005	0.0042
130	0.0048	0.0005	0.0042
131	0.0048	0.0006	0.0043
132	0.0049	0.0006	0.0043
133	0.0050	0.0006	0.0044
134	0.0050	0.0006	0.0045
135	0.0051	0.0006	0.0045
136	0.0052	0.0006	0.0046
137	0.0053	0.0006	0.0047
138	0.0053	0.0006	0.0047
139	0.0054	0.0006	0.0048
140	0.0055	0.0006	0.0049
141	0.0056	0.0006	0.0050
142	0.0056	0.0006	0.0050
143	0.0058	0.0007	0.0051
144	0.0058	0.0007	0.0052
145	0.0252	0.0029	0.0223
146	0.0253	0.0029	0.0224
147	0.0254	0.0029	0.0225
148	0.0254	0.0029	0.0225
149	0.0256	0.0029	0.0227
150	0.0256	0.0029	0.0227
151	0.0258	0.0029	0.0228
152	0.0258	0.0029	0.0229
153	0.0260	0.0030	0.0230
154	0.0261	0.0030	0.0231
155	0.0262	0.0030	0.0232
156	0.0263	0.0030	0.0233
157	0.0265	0.0030	0.0235
158	0.0265	0.0030	0.0236
159	0.0267	0.0030	0.0237
160	0.0268	0.0030	0.0238
161	0.0270	0.0030	0.0240
162	0.0271	0.0030	0.0241
163	0.0273	0.0030	0.0243
164	0.0274	0.0030	0.0244
165	0.0276	0.0030	0.0246
166	0.0277	0.0030	0.0247
167	0.0280	0.0030	0.0250
168	0.0281	0.0030	0.0251
169	0.0284	0.0030	0.0254
170	0.0285	0.0030	0.0255
171	0.0288	0.0030	0.0258
172	0.0289	0.0030	0.0259
173	0.0293	0.0030	0.0263
174	0.0294	0.0030	0.0264

175	0.0298	0.0030	0.0268
176	0.0300	0.0030	0.0270
177	0.0304	0.0030	0.0274
178	0.0306	0.0030	0.0276
179	0.0311	0.0030	0.0281
180	0.0314	0.0030	0.0284
181	0.0320	0.0030	0.0290
182	0.0323	0.0030	0.0293
183	0.0330	0.0030	0.0300
184	0.0334	0.0030	0.0304
185	0.0127	0.0014	0.0112
186	0.0135	0.0015	0.0120
187	0.0157	0.0018	0.0139
188	0.0171	0.0019	0.0151
189	0.0212	0.0024	0.0188
190	0.0245	0.0028	0.0217
191	0.0371	0.0030	0.0341
192	0.0539	0.0030	0.0509
193	0.2332	0.0030	0.2302
194	0.0292	0.0030	0.0262
195	0.0189	0.0022	0.0167
196	0.0145	0.0016	0.0128
197	0.0338	0.0030	0.0308
198	0.0326	0.0030	0.0296
199	0.0317	0.0030	0.0287
200	0.0309	0.0030	0.0279
201	0.0302	0.0030	0.0272
202	0.0296	0.0030	0.0266
203	0.0291	0.0030	0.0261
204	0.0286	0.0030	0.0256
205	0.0282	0.0030	0.0252
206	0.0279	0.0030	0.0249
207	0.0275	0.0030	0.0245
208	0.0272	0.0030	0.0242
209	0.0269	0.0030	0.0239
210	0.0266	0.0030	0.0236
211	0.0264	0.0030	0.0234
212	0.0261	0.0030	0.0232
213	0.0259	0.0030	0.0230
214	0.0257	0.0029	0.0228
215	0.0255	0.0029	0.0226
216	0.0253	0.0029	0.0224
217	0.0059	0.0007	0.0052
218	0.0057	0.0007	0.0051
219	0.0055	0.0006	0.0049
220	0.0054	0.0006	0.0048
221	0.0052	0.0006	0.0046
222	0.0051	0.0006	0.0045
223	0.0049	0.0006	0.0044
224	0.0048	0.0005	0.0043
225	0.0047	0.0005	0.0042
226	0.0046	0.0005	0.0041
227	0.0045	0.0005	0.0040
228	0.0044	0.0005	0.0039
229	0.0043	0.0005	0.0038
230	0.0042	0.0005	0.0037
231	0.0041	0.0005	0.0036
232	0.0040	0.0005	0.0035
233	0.0039	0.0004	0.0035
234	0.0038	0.0004	0.0034
235	0.0038	0.0004	0.0033
236	0.0037	0.0004	0.0033
237	0.0036	0.0004	0.0032
238	0.0036	0.0004	0.0032
239	0.0035	0.0004	0.0031
240	0.0034	0.0004	0.0031
241	0.0034	0.0004	0.0030
242	0.0033	0.0004	0.0030
243	0.0033	0.0004	0.0029
244	0.0032	0.0004	0.0029
245	0.0032	0.0004	0.0028
246	0.0031	0.0004	0.0028
247	0.0031	0.0004	0.0027
248	0.0030	0.0003	0.0027
249	0.0030	0.0003	0.0027
250	0.0030	0.0003	0.0026
251	0.0029	0.0003	0.0026
252	0.0029	0.0003	0.0025
253	0.0028	0.0003	0.0025
254	0.0028	0.0003	0.0025
255	0.0028	0.0003	0.0024
256	0.0027	0.0003	0.0024
257	0.0027	0.0003	0.0024
258	0.0027	0.0003	0.0024

259	0.0026	0.0003	0.0023
260	0.0026	0.0003	0.0023
261	0.0026	0.0003	0.0023
262	0.0025	0.0003	0.0022
263	0.0025	0.0003	0.0022
264	0.0025	0.0003	0.0022
265	0.0024	0.0003	0.0022
266	0.0024	0.0003	0.0021
267	0.0024	0.0003	0.0021
268	0.0024	0.0003	0.0021
269	0.0023	0.0003	0.0021
270	0.0023	0.0003	0.0021
271	0.0023	0.0003	0.0020
272	0.0023	0.0003	0.0020
273	0.0022	0.0003	0.0020
274	0.0022	0.0003	0.0020
275	0.0022	0.0003	0.0020
276	0.0022	0.0002	0.0019
277	0.0022	0.0002	0.0019
278	0.0021	0.0002	0.0019
279	0.0021	0.0002	0.0019
280	0.0021	0.0002	0.0019
281	0.0021	0.0002	0.0018
282	0.0021	0.0002	0.0018
283	0.0020	0.0002	0.0018
284	0.0020	0.0002	0.0018
285	0.0020	0.0002	0.0018
286	0.0020	0.0002	0.0018
287	0.0020	0.0002	0.0018
288	0.0020	0.0002	0.0017

Total soil rain loss = 0.28(In)
Total effective rainfall = 2.58(In)
Peak flow rate in flood hydrograph = 3.15(CFS)

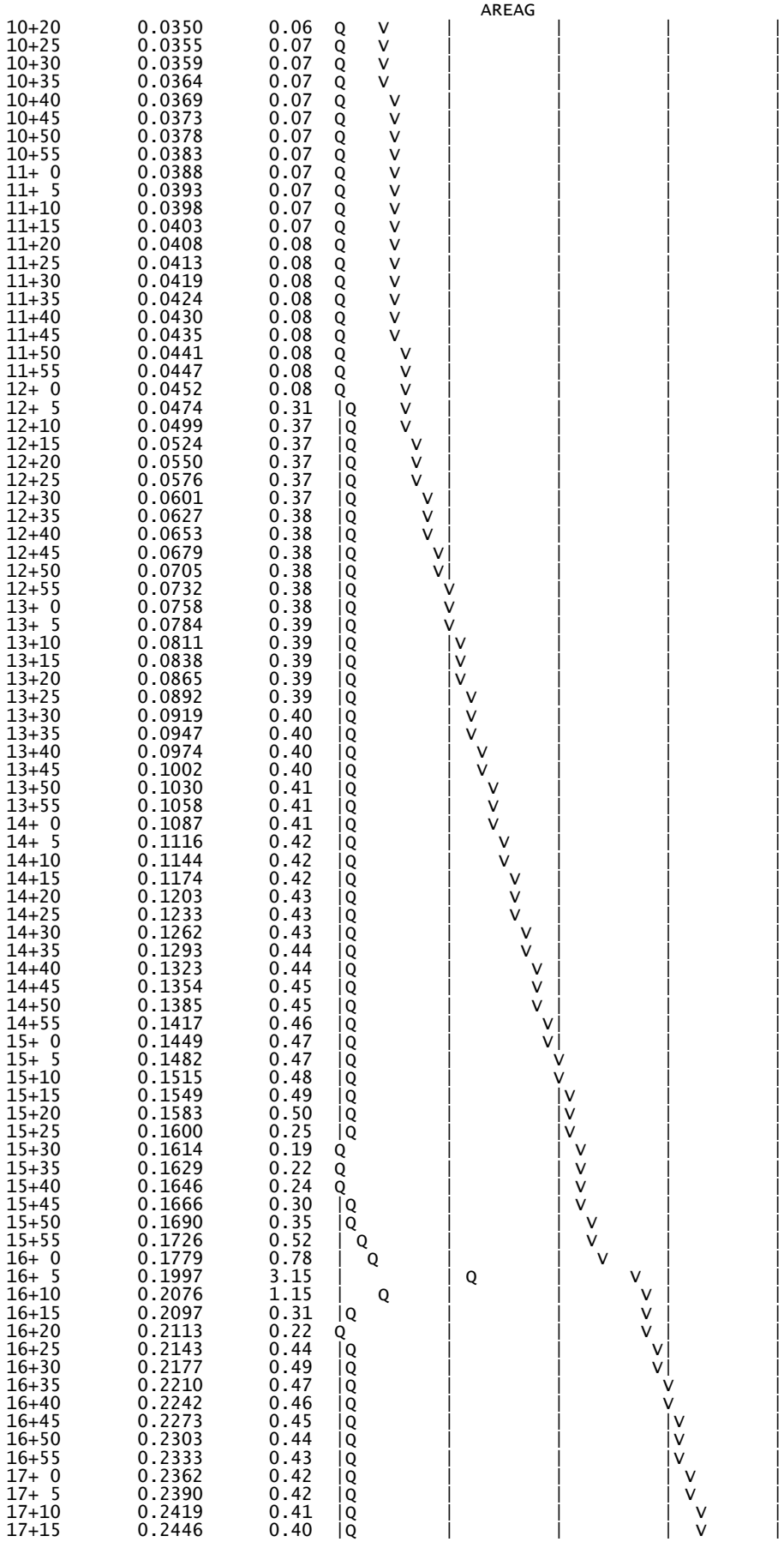
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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

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	0.02	Q				
0+10	0.0003	0.03	Q				
0+15	0.0005	0.03	Q				
0+20	0.0007	0.03	Q				
0+25	0.0009	0.03	Q				
0+30	0.0011	0.03	Q				
0+35	0.0013	0.03	Q				
0+40	0.0015	0.03	Q				
0+45	0.0017	0.03	Q				
0+50	0.0019	0.03	Q				
0+55	0.0022	0.03	Q				
1+ 0	0.0024	0.03	Q				
1+ 5	0.0026	0.03	Q				
1+10	0.0028	0.03	Q				
1+15	0.0030	0.03	Q				
1+20	0.0032	0.03	Q				
1+25	0.0034	0.03	Q				
1+30	0.0036	0.03	Q				
1+35	0.0038	0.03	Q				
1+40	0.0040	0.03	Q				
1+45	0.0042	0.03	Q				
1+50	0.0045	0.03	Q				
1+55	0.0047	0.03	Q				
2+ 0	0.0049	0.03	Q				
2+ 5	0.0051	0.03	Q				
2+10	0.0053	0.03	Q				
2+15	0.0055	0.03	Q				
2+20	0.0058	0.03	Q				
2+25	0.0060	0.03	Q				
2+30	0.0062	0.03	Q				
2+35	0.0064	0.03	Q				
2+40	0.0067	0.03	Q				
2+45	0.0069	0.03	Q				
2+50	0.0071	0.03	Q				
2+55	0.0073	0.03	QV				
3+ 0	0.0076	0.03	QV				
3+ 5	0.0078	0.03	QV				
3+10	0.0080	0.03	QV				
3+15	0.0083	0.03	QV				

3+20	0.0085	0.03	QV				
3+25	0.0087	0.03	QV				
3+30	0.0090	0.03	QV				
3+35	0.0092	0.03	QV				
3+40	0.0094	0.03	QV				
3+45	0.0097	0.03	QV				
3+50	0.0099	0.04	QV				
3+55	0.0102	0.04	QV				
4+ 0	0.0104	0.04	QV				
4+ 5	0.0107	0.04	QV				
4+10	0.0109	0.04	QV				
4+15	0.0112	0.04	QV				
4+20	0.0114	0.04	QV				
4+25	0.0117	0.04	QV				
4+30	0.0119	0.04	QV				
4+35	0.0122	0.04	QV				
4+40	0.0124	0.04	QV				
4+45	0.0127	0.04	QV				
4+50	0.0129	0.04	QV				
4+55	0.0132	0.04	QV				
5+ 0	0.0135	0.04	QV				
5+ 5	0.0137	0.04	QV				
5+10	0.0140	0.04	QV				
5+15	0.0143	0.04	QV				
5+20	0.0145	0.04	QV				
5+25	0.0148	0.04	Q V				
5+30	0.0151	0.04	Q V				
5+35	0.0153	0.04	Q V				
5+40	0.0156	0.04	Q V				
5+45	0.0159	0.04	Q V				
5+50	0.0162	0.04	Q V				
5+55	0.0165	0.04	Q V				
6+ 0	0.0167	0.04	Q V				
6+ 5	0.0170	0.04	Q V				
6+10	0.0173	0.04	Q V				
6+15	0.0176	0.04	Q V				
6+20	0.0179	0.04	Q V				
6+25	0.0182	0.04	Q V				
6+30	0.0185	0.04	Q V				
6+35	0.0188	0.04	Q V				
6+40	0.0191	0.04	Q V				
6+45	0.0194	0.04	Q V				
6+50	0.0197	0.04	Q V				
6+55	0.0200	0.04	Q V				
7+ 0	0.0203	0.04	Q V				
7+ 5	0.0206	0.05	Q V				
7+10	0.0209	0.05	Q V				
7+15	0.0212	0.05	Q V				
7+20	0.0215	0.05	Q V				
7+25	0.0219	0.05	Q V				
7+30	0.0222	0.05	Q V				
7+35	0.0225	0.05	Q V				
7+40	0.0228	0.05	Q V				
7+45	0.0232	0.05	Q V				
7+50	0.0235	0.05	Q V				
7+55	0.0238	0.05	Q V				
8+ 0	0.0242	0.05	Q V				
8+ 5	0.0245	0.05	Q V				
8+10	0.0249	0.05	Q V				
8+15	0.0252	0.05	Q V				
8+20	0.0256	0.05	Q V				
8+25	0.0259	0.05	Q V				
8+30	0.0263	0.05	Q V				
8+35	0.0266	0.05	Q V				
8+40	0.0270	0.05	Q V				
8+45	0.0273	0.05	Q V				
8+50	0.0277	0.05	Q V				
8+55	0.0281	0.05	Q V				
9+ 0	0.0285	0.05	Q V				
9+ 5	0.0288	0.06	Q V				
9+10	0.0292	0.06	Q V				
9+15	0.0296	0.06	Q V				
9+20	0.0300	0.06	Q V				
9+25	0.0304	0.06	Q V				
9+30	0.0308	0.06	Q V				
9+35	0.0312	0.06	Q V				
9+40	0.0316	0.06	Q V				
9+45	0.0320	0.06	Q V				
9+50	0.0324	0.06	Q V				
9+55	0.0329	0.06	Q V				
10+ 0	0.0333	0.06	Q V				
10+ 5	0.0337	0.06	Q V				
10+10	0.0341	0.06	Q V				
10+15	0.0346	0.06	Q V				



10+20	0.0350	0.06	
10+25	0.0355	0.07	
10+30	0.0359	0.07	
10+35	0.0364	0.07	
10+40	0.0369	0.07	
10+45	0.0373	0.07	
10+50	0.0378	0.07	
10+55	0.0383	0.07	
11+ 0	0.0388	0.07	
11+ 5	0.0393	0.07	
11+10	0.0398	0.07	
11+15	0.0403	0.07	
11+20	0.0408	0.08	
11+25	0.0413	0.08	
11+30	0.0419	0.08	
11+35	0.0424	0.08	
11+40	0.0430	0.08	
11+45	0.0435	0.08	
11+50	0.0441	0.08	
11+55	0.0447	0.08	
12+ 0	0.0452	0.08	
12+ 5	0.0474	0.31	
12+10	0.0499	0.37	
12+15	0.0524	0.37	
12+20	0.0550	0.37	
12+25	0.0576	0.37	
12+30	0.0601	0.37	
12+35	0.0627	0.38	
12+40	0.0653	0.38	
12+45	0.0679	0.38	
12+50	0.0705	0.38	
12+55	0.0732	0.38	
13+ 0	0.0758	0.38	
13+ 5	0.0784	0.39	
13+10	0.0811	0.39	
13+15	0.0838	0.39	
13+20	0.0865	0.39	
13+25	0.0892	0.39	
13+30	0.0919	0.40	
13+35	0.0947	0.40	
13+40	0.0974	0.40	
13+45	0.1002	0.40	
13+50	0.1030	0.41	
13+55	0.1058	0.41	
14+ 0	0.1087	0.41	
14+ 5	0.1116	0.42	
14+10	0.1144	0.42	
14+15	0.1174	0.42	
14+20	0.1203	0.43	
14+25	0.1233	0.43	
14+30	0.1262	0.43	
14+35	0.1293	0.44	
14+40	0.1323	0.44	
14+45	0.1354	0.45	
14+50	0.1385	0.45	
14+55	0.1417	0.46	
15+ 0	0.1449	0.47	
15+ 5	0.1482	0.47	
15+10	0.1515	0.48	
15+15	0.1549	0.49	
15+20	0.1583	0.50	
15+25	0.1600	0.25	
15+30	0.1614	0.19	
15+35	0.1629	0.22	
15+40	0.1646	0.24	
15+45	0.1666	0.30	
15+50	0.1690	0.35	
15+55	0.1726	0.52	
16+ 0	0.1779	0.78	
16+ 5	0.1997	3.15	
16+10	0.2076	1.15	
16+15	0.2097	0.31	
16+20	0.2113	0.22	
16+25	0.2143	0.44	
16+30	0.2177	0.49	
16+35	0.2210	0.47	
16+40	0.2242	0.46	
16+45	0.2273	0.45	
16+50	0.2303	0.44	
16+55	0.2333	0.43	
17+ 0	0.2362	0.42	
17+ 5	0.2390	0.42	
17+10	0.2419	0.41	
17+15	0.2446	0.40	

17+20	0.2474	0.40	|Q	|	|	V |
17+25	0.2501	0.39	|Q	|	|	V |
17+30	0.2528	0.39	|Q	|	|	V |
17+35	0.2554	0.39	|Q	|	|	V |
17+40	0.2581	0.38	|Q	|	|	V |
17+45	0.2607	0.38	|Q	|	|	V |
17+50	0.2633	0.38	|Q	|	|	V |
17+55	0.2658	0.37	|Q	|	|	V |
18+ 0	0.2684	0.37	|Q	|	|	V |
18+ 5	0.2694	0.15	Q	|	|	V |
18+10	0.2700	0.08	Q	|	|	V |
18+15	0.2705	0.08	Q	|	|	V |
18+20	0.2711	0.08	Q	|	|	V |
18+25	0.2716	0.08	Q	|	|	V |
18+30	0.2721	0.07	Q	|	|	V |
18+35	0.2726	0.07	Q	|	|	V |
18+40	0.2731	0.07	Q	|	|	V |
18+45	0.2736	0.07	Q	|	|	V |
18+50	0.2740	0.07	Q	|	|	V |
18+55	0.2745	0.07	Q	|	|	V |
19+ 0	0.2749	0.06	Q	|	|	V |
19+ 5	0.2753	0.06	Q	|	|	V |
19+10	0.2758	0.06	Q	|	|	V |
19+15	0.2762	0.06	Q	|	|	V |
19+20	0.2766	0.06	Q	|	|	V |
19+25	0.2770	0.06	Q	|	|	V |
19+30	0.2774	0.06	Q	|	|	V |
19+35	0.2777	0.06	Q	|	|	V |
19+40	0.2781	0.05	Q	|	|	V |
19+45	0.2785	0.05	Q	|	|	V |
19+50	0.2788	0.05	Q	|	|	V |
19+55	0.2792	0.05	Q	|	|	V |
20+ 0	0.2795	0.05	Q	|	|	V |
20+ 5	0.2799	0.05	Q	|	|	V |
20+10	0.2802	0.05	Q	|	|	V |
20+15	0.2805	0.05	Q	|	|	V |
20+20	0.2809	0.05	Q	|	|	V |
20+25	0.2812	0.05	Q	|	|	V |
20+30	0.2815	0.05	Q	|	|	V |
20+35	0.2818	0.05	Q	|	|	V |
20+40	0.2821	0.04	Q	|	|	V |
20+45	0.2824	0.04	Q	|	|	V |
20+50	0.2827	0.04	Q	|	|	V |
20+55	0.2830	0.04	Q	|	|	V |
21+ 0	0.2833	0.04	Q	|	|	V |
21+ 5	0.2836	0.04	Q	|	|	V |
21+10	0.2839	0.04	Q	|	|	V |
21+15	0.2841	0.04	Q	|	|	V |
21+20	0.2844	0.04	Q	|	|	V |
21+25	0.2847	0.04	Q	|	|	V|
21+30	0.2850	0.04	Q	|	|	V|
21+35	0.2852	0.04	Q	|	|	V|
21+40	0.2855	0.04	Q	|	|	V|
21+45	0.2857	0.04	Q	|	|	V|
21+50	0.2860	0.04	Q	|	|	V|
21+55	0.2862	0.04	Q	|	|	V|
22+ 0	0.2865	0.04	Q	|	|	V|
22+ 5	0.2867	0.04	Q	|	|	V|
22+10	0.2870	0.04	Q	|	|	V|
22+15	0.2872	0.03	Q	|	|	V|
22+20	0.2875	0.03	Q	|	|	V|
22+25	0.2877	0.03	Q	|	|	V|
22+30	0.2879	0.03	Q	|	|	V|
22+35	0.2882	0.03	Q	|	|	V|
22+40	0.2884	0.03	Q	|	|	V|
22+45	0.2886	0.03	Q	|	|	V|
22+50	0.2888	0.03	Q	|	|	V|
22+55	0.2891	0.03	Q	|	|	V|
23+ 0	0.2893	0.03	Q	|	|	V|
23+ 5	0.2895	0.03	Q	|	|	V|
23+10	0.2897	0.03	Q	|	|	V|
23+15	0.2899	0.03	Q	|	|	V|
23+20	0.2901	0.03	Q	|	|	V|
23+25	0.2904	0.03	Q	|	|	V|
23+30	0.2906	0.03	Q	|	|	V|
23+35	0.2908	0.03	Q	|	|	V|
23+40	0.2910	0.03	Q	|	|	V|
23+45	0.2912	0.03	Q	|	|	V|
23+50	0.2914	0.03	Q	|	|	V|
23+55	0.2916	0.03	Q	|	|	V|
24+ 0	0.2918	0.03	Q	|	|	V|

APPENDIX A.3: ABOVE-GROUND INFILTRATION BASIN CAPACITY CALCULATIONS

Terracina Basin "A" Volume Storage Data							
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Notes
1799.7	0.000		3222	0.07	0.000	0.000	Bottom of Basin
		2.57					
1802.27	2.570		6,328	0.15	0.277	0.277	Top of WQ Volume/Top of Riser
		0.73					
1803.00	3.300		7,287	0.17	0.114	0.391	
		1.00					
1804.00	4.300		8,657	0.20	0.183	0.573	
		1.00					
1805.00	5.300		10,090	0.23	0.215	0.788	
		0.50					
1805.50	5.800		10,831	0.25	0.120	0.908	Top of Basin

Terracina Basin "B.1" Volume Storage Data							
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Notes
1804	0.000		5513.09	0.13	0.000	0.000	Bottom of Basin
		2.87					
1806.87	2.870		9,091	0.21	0.476	0.476	Top of WQ Volume/Top of Riser
		1.13					
1808.00	4.000		10,627	0.24	0.255	0.732	
		1.00					
1809.00	5.000		12,047	0.28	0.260	0.992	
		1.00					
1810.00	6.000		13,523	0.31	0.293	1.285	Top of Basin

Terracina Basin "B.2" Volume Storage Data							
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Notes
1760	0.000		4389	0.10	0.000	0.000	Bottom of Basin
		3.05					
1763.05	3.050		7,172	0.16	0.401	0.401	Top of WQ Volume/Top of Riser
		0.95					
1764.00	4.000		8,146	0.19	0.167	0.568	
		1.00					
1765.00	5.000		9,227	0.21	0.199	0.767	
		1.00					
1766.00	6.000		10,364	0.24	0.225	0.992	Top of Basin

Terracina Basin "C" Volume Storage Data							
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Notes
1824.6	0.000		5843	0.13	0.000	0.000	Bottom of Basin
		3.01					
1827.61	3.010		9,766	0.22	0.534	0.534	Top of WQ Volume/Top of Riser
		0.89					
1828.50	3.900			0.00	0.067	0.600	Top of Basin

APPENDIX A.4: IMPERVIOUS AREA CALCULATIONS

Appendix A.4: Impervious Area Calculations

Area ID	Project Area (Acres)	Project Area (Square Feet)	Street Areas (Square Feet)	Lots and Misc. Areas (Square Feet)	Street Impervious Percentage	Lot Impervious Percentage	Total Impervious Percentage
A	7.47	325,393	73,717	251,676	90.0%	32.0%	45.1%
B.1	13.74	598,514	131,834	466,680	90.0%	28.0%	41.7%
B.2	12.45	542,322	62,908	479,414	90.0%	31.0%	37.8%
C	13.87	604,177	133,178	470,999	90.0%	35.0%	47.1%
D	4.42	192,535	70,180	122,355	90.0%	30.0%	51.9%
E	1.20	52,272	23,868	28,404	90.0%	20.0%	52.0%
F	3.38	147,233	27,279	119,954	90.0%	20.0%	33.0%
G	1.36	59,242	21,108	38,133	90.0%	20.0%	44.9%

APPENDIX A.5: DCV CALCULATIONS

Appendix A.5: DCV Calculations

Area ID	Project Area (Acres)	Project Area (Square Feet)	Street Areas (Square Feet)	Lots and Misc. Areas (Square Feet)	Street Impervious Percentage	Lots and Misc. Areas Impervious Percentage	Total Impervious Percentage	Runoff Coefficient (Rc)	1-hr Rainfall Value for 2-year Event (inches)	Mean 6-hour Rainfall Value (inches)	C1			Drawdown Rate		Design Capture Volume (CF)	Design Capture Volume*1.2 (CF)	Note
											Valley	Mountain	Desert	24-hour	48-hour			
A	7.47	325,393	73,717	251,676	90.0%	32.0%	45.1%	0.31	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	12,070	-	Area tributary to Basin "A"
B.1	13.74	598,514	131,834	466,680	90.0%	28.0%	41.7%	0.29	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	20,745	-	Area tributary to Basin "B.1"
B.2	12.45	542,322	62,908	479,414	90.0%	31.0%	37.8%	0.27	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	17,407	-	Area tributary to Basin "B.2"
C	13.87	604,177	133,178	470,999	90.0%	35.0%	47.1%	0.32	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	23,276	-	Area tributary to Basin "C"
D	4.42	192,535	70,180	122,355	90.0%	30.0%	51.9%	0.35	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	8,111	9,733	Area tributary to Underground Chamber DA-D
E	1.20	52,272	23,868	28,404	90.0%	20.0%	52.0%	0.35	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	2,206	2,647	Area tributary to Underground Chamber DA-E
F	3.38	147,233	27,279	119,954	90.0%	20.0%	33.0%	0.24	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	4,257	5,108	Area tributary to Underground Chamber DA-F
G	1.36	59,242	21,108	38,133	90.0%	20.0%	44.9%	0.31	0.495	0.73	1.4807	1.909	1.2371	1.582	1.963	2,189	2,627	Area tributary to Underground Chamber DA-G

APPENDIX A.6: FORM 4.3-3 CALCULATIONS

Appendix A.6: Form 4.3-3 Infiltration LID BMP Calculations

Basin "A"

DCV	Field Infiltration Rate - Item 2	Factor of Safety - Item 3	Design Percolation Rate - Item 4	Ponded Water Drawdown Time - Item 5	Maximum Ponding Depth per TGD - Item 6	Calculated Ponding Depth	Ponding Depth (Min. of Calculated vs. Item 6) - Item 7	Calculated Infiltration Surface Area - Item 8	Actual Infiltration Surface Area - Item 8	Amended Soil Depth - Item 9	Amended Soil Porosity - Item 10	Gravel Depth - Item 11	Gravel Porosity - Item 12	Duration of Storm - Item 13	Above Ground Retention Volume - Item 14	Underground Retention Volume - Item 15	Total Retention Volume - Item 16	Fraction of DCV Achieved with Infiltration BMP - Item 17
12,070	2.00	2.00	1.00	48	8.0	4.0	4.0	3,017	3,222	0	0	0	0	3	13,694	0	13,694	**113%**

Basin "B.1"

DCV	Field Infiltration Rate - Item 2	Factor of Safety - Item 3	Design Percolation Rate - Item 4	Ponded Water Drawdown Time - Item 5	Maximum Ponding Depth per TGD - Item 6	Calculated Ponding Depth	Ponding Depth (Min. of Calculated vs. Item 6) - Item 7	Calculated Infiltration Surface Area - Item 8	Actual Infiltration Surface Area - Item 8	Amended Soil Depth - Item 9	Amended Soil Porosity - Item 10	Gravel Depth - Item 11	Gravel Porosity - Item 12	Duration of Storm - Item 13	Above Ground Retention Volume - Item 14	Underground Retention Volume - Item 15	Total Retention Volume - Item 16	Fraction of DCV Achieved with Infiltration BMP - Item 17
20,745	2.00	2.00	1.00	48	8.0	4.0	4.0	5,186	5,495	0	0	0	0	3	23,354	0	23,354	**113%**

Basin "B.2"

DCV	Field Infiltration Rate - Item 2	Factor of Safety - Item 3	Design Percolation Rate - Item 4	Ponded Water Drawdown Time - Item 5	Maximum Ponding Depth per TGD - Item 6	Calculated Ponding Depth	Ponding Depth (Min. of Calculated vs. Item 6) - Item 7	Calculated Infiltration Surface Area - Item 8	Actual Infiltration Surface Area - Item 8	Amended Soil Depth - Item 9	Amended Soil Porosity - Item 10	Gravel Depth - Item 11	Gravel Porosity - Item 12	Duration of Storm - Item 13	Above Ground Retention Volume - Item 14	Underground Retention Volume - Item 15	Total Retention Volume - Item 16	Fraction of DCV Achieved with Infiltration BMP - Item 17
17,407	2.00	2.00	1.00	48	8.0	4.0	4.0	4,352	4,389	0	0	0	0	3	18,653	0	18,653	**107%**

Basin "C"

DCV	Field Infiltration Rate - Item 2	Factor of Safety - Item 3	Design Percolation Rate - Item 4	Ponded Water Drawdown Time - Item 5	Maximum Ponding Depth per TGD - Item 6	Calculated Ponding Depth	Ponding Depth (Min. of Calculated vs. Item 6) - Item 7	Calculated Infiltration Surface Area - Item 8	Actual Infiltration Surface Area - Item 8	Amended Soil Depth - Item 9	Amended Soil Porosity - Item 10	Gravel Depth - Item 11	Gravel Porosity - Item 12	Duration of Storm - Item 13	Above Ground Retention Volume - Item 14	Underground Retention Volume - Item 15	Total Retention Volume - Item 16	Fraction of DCV Achieved with Infiltration BMP - Item 17
23,276	2.00	2.00	1.00	48	8.0	4.0	4.0	5,819	5,843	0	0	0	0	3	24,833	0	24,833	**107%**

APPENDIX A.7: DEBRIS PRODUCTION CALCULATIONS

APPENDIX "A.7": 100-YEAR DEBRIS YIELD AT CP 203 FOR DRAINAGE AREA B.1/B.3 BASED ON 4-YEAR BURN RECOVERY FACTOR

100-YEAR DEBRIS YIELD AT CP 203 FOR DRAINAGE AREA B.1/B.3 USING EQN 1 AND BASED ON 4-YEAR BURN RECOVERY FACTOR AND A/T OF 1.0												
Debris Yield (Dy)	**Dy Value**	**P (INCHES)**	**P X 100 (INCHES)**	**U/S ELEV**	**D/S ELEV**	**LENGTH (FT)**	**LENGTH (MI)**	**SLOPE**	**D.A. (Ac)**	**D.A. (SM)**	**F.F. (4-year Burn Recovery)**	**A/T**
Log Dy	3.8119	1.3	127.0	2,140.0	1,907.3	2,915.00	0.55	421.49	34.62	0.05	4.5	1.0
Dy (CY)	6,485											
Adj. Dy (CY)	351											
Dy plus FS (CY)	**421**											
Dy plus FS (AF)	**0.3**											

APPENDIX "A.7": 100-YEAR DEBRIS YIELD AT CP 207 FOR DRAINAGE AREA B.4/B.5 BASED ON 4-YEAR BURN RECOVERY FACTOR

100-YEAR DEBRIS YIELD AT CP 207 FOR DRAINAGE AREA B.4/B.5 USING EQN 1 AND BASED ON 4-YEAR BURN RECOVERY FACTOR AND A/T OF 1.0												
Debris Yield (Dy)	**Dy Value**	**P (INCHES)**	**P X 100 (INCHES)**	**U/S ELEV**	**D/S ELEV**	**LENGTH (FT)**	**LENGTH (MI)**	**SLOPE**	**D.A. (Ac)**	**D.A. (SM)**	**F.F. (4-year Burn Recovery)**	**A/T**
Log Dy	3.7640	1.3	127.0	2,050.0	1,924.1	1,645.00	0.31	404.10	21.68	0.03	4.5	1.0
Dy (CY)	5,807											
Adj. Dy (CY)	197											
Dy plus FS (CY)	**236**											
Dy plus FS (AF)	**0.1**											

APPENDIX A.8: DEBRIS BASIN CAPACITY CALCULATIONS

Terracina Debris Basin "D" Volume Storage Data								
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Volume Total (CY)	Notes
1907.00	0.000		18.64	0.00	0.000	0.000	0.000	Bottom of Basin
		1.00						
1908.00	1.000		350.72	0.01	0.003	0.003	6	
		1.00						
1909.00	2.000		910.76	0.02	0.014	0.017	28	
		1.00						
1910.00	3.000		1620.42	0.04	0.029	0.046	74	
		1.00						
1911.00	4.000		2521.39	0.06	0.047	0.093	150	
		5.00						
1912.00	5.000		3628.30	0.08	0.149	0.243	392	
		1.00						
1913.00	6.000		4876.51	0.11	0.097	0.340	549	
		1.00						
1914.00	7.000		6269.29	0.14	0.128	0.468	754	
		1.00						
1915.00	8.000		7772.82	0.18	0.161	0.628	1014	Top of Basin

Terracina Debris Basin "E" Volume Storage Data								
Elevation	Basin Height (FT)	Depth Between Elevations (FT)	Area (SF)	Area (AC)	Volume (AF)	Volume Total (AF)	Volume Total (CY)	Notes
1920	0.000		2573.45	0.06	0.000	0.000	0	Bottom of Basin
		4.00						
1921.00	1.000		3196.69	0.07	0.000	0.000	0	
		1.00						
1922.00	2.000		3876.48	0.09	0.081	0.081	131	
		1.00						
1923.00	3.000		4612.81	0.11	0.097	0.178	288	
		1.00						
1924.00	4.000		5405.70	0.12	0.358	0.537	866	
		1.00						
1925.00	5.000		6255.13	0.14	0.134	0.671	1082	
		0.70						
1925.70	5.700		6883.38	0.16	0.106	0.776	1252	Top of Basin

APPENDIX A.9: NOAA PRECIPITATION DATA

NOAA Atlas 14, Volume 6, Version 2
Location name: Redlands, California, USA*
Latitude: 34.0375°, Longitude: -117.1382°
Elevation: 1919.58 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.103** (0.086-0.125)	**0.134** (0.112-0.163)	**0.177** (0.146-0.215)	**0.212** (0.175-0.261)	**0.263** (0.209-0.334)	**0.303** (0.236-0.394)	**0.346** (0.262-0.461)	**0.391** (0.288-0.536)	**0.456** (0.322-0.652)	**0.508** (0.346-0.753)
10-min	**0.148** (0.123-0.179)	**0.192** (0.160-0.234)	**0.253** (0.210-0.308)	**0.304** (0.250-0.374)	**0.377** (0.299-0.479)	**0.435** (0.338-0.565)	**0.496** (0.376-0.660)	**0.561** (0.413-0.769)	**0.653** (0.461-0.934)	**0.728** (0.496-1.08)
15-min	**0.178** (0.149-0.217)	**0.233** (0.193-0.283)	**0.306** (0.254-0.373)	**0.368** (0.303-0.452)	**0.456** (0.362-0.579)	**0.526** (0.409-0.683)	**0.600** (0.455-0.799)	**0.678** (0.500-0.930)	**0.790** (0.558-1.13)	**0.880** (0.600-1.31)
30-min	**0.264** (0.220-0.321)	**0.344** (0.286-0.418)	**0.453** (0.376-0.552)	**0.545** (0.448-0.670)	**0.675** (0.536-0.858)	**0.778** (0.605-1.01)	**0.887** (0.673-1.18)	**1.00** (0.740-1.38)	**1.17** (0.826-1.67)	**1.30** (0.888-1.93)
60-min	**0.380** (0.316-0.461)	**0.495** (0.412-0.601)	**0.651** (0.540-0.794)	**0.783** (0.644-0.962)	**0.970** (0.770-1.23)	**1.12** (0.870-1.45)	**1.27** (0.967-1.70)	**1.44** (1.06-1.98)	**1.68** (1.19-2.40)	**1.87** (1.28-2.78)
2-hr	**0.544** (0.453-0.660)	**0.702** (0.584-0.852)	**0.913** (0.757-1.11)	**1.09** (0.896-1.34)	**1.34** (1.06-1.70)	**1.53** (1.19-1.99)	**1.74** (1.32-2.31)	**1.95** (1.44-2.67)	**2.25** (1.59-3.22)	**2.49** (1.70-3.69)
3-hr	**0.670** (0.557-0.812)	**0.859** (0.714-1.04)	**1.11** (0.923-1.36)	**1.32** (1.09-1.63)	**1.62** (1.28-2.06)	**1.85** (1.44-2.40)	**2.09** (1.58-2.78)	**2.34** (1.72-3.20)	**2.69** (1.90-3.84)	**2.96** (2.02-4.39)
6-hr	**0.942** (0.784-1.14)	**1.20** (1.00-1.46)	**1.55** (1.29-1.89)	**1.84** (1.51-2.26)	**2.23** (1.77-2.84)	**2.54** (1.98-3.30)	**2.86** (2.17-3.81)	**3.19** (2.35-4.37)	**3.64** (2.57-5.21)	**4.00** (2.73-5.93)
12-hr	**1.26** (1.05-1.54)	**1.62** (1.35-1.97)	**2.08** (1.73-2.54)	**2.47** (2.03-3.03)	**2.99** (2.37-3.80)	**3.39** (2.64-4.40)	**3.80** (2.88-5.06)	**4.23** (3.11-5.79)	**4.81** (3.39-6.88)	**5.26** (3.59-7.80)
24-hr	**1.69** (1.50-1.95)	**2.18** (1.93-2.52)	**2.82** (2.49-3.26)	**3.34** (2.93-3.90)	**4.05** (3.43-4.88)	**4.60** (3.81-5.65)	**5.15** (4.17-6.49)	**5.72** (4.51-7.41)	**6.50** (4.92-8.76)	**7.10** (5.19-9.90)
2-day	**2.06** (1.83-2.38)	**2.70** (2.38-3.11)	**3.54** (3.12-4.09)	**4.22** (3.70-4.93)	**5.17** (4.38-6.23)	**5.90** (4.90-7.26)	**6.66** (5.39-8.38)	**7.44** (5.86-9.63)	**8.51** (6.44-11.5)	**9.35** (6.84-13.0)
3-day	**2.21** (1.96-2.55)	**2.93** (2.59-3.38)	**3.90** (3.44-4.51)	**4.70** (4.11-5.48)	**5.81** (4.92-7.00)	**6.68** (5.55-8.22)	**7.59** (6.15-9.56)	**8.54** (6.73-11.1)	**9.86** (7.46-13.3)	**10.9** (7.98-15.2)
4-day	**2.39** (2.11-2.75)	**3.19** (2.82-3.68)	**4.27** (3.77-4.94)	**5.17** (4.53-6.03)	**6.43** (5.45-7.75)	**7.43** (6.17-9.14)	**8.47** (6.86-10.7)	**9.56** (7.54-12.4)	**11.1** (8.40-15.0)	**12.3** (9.01-17.2)
7-day	**2.76** (2.44-3.18)	**3.71** (3.29-4.29)	**5.00** (4.41-5.79)	**6.08** (5.32-7.09)	**7.58** (6.42-9.14)	**8.77** (7.28-10.8)	**10.0** (8.11-12.6)	**11.3** (8.92-14.6)	**13.1** (9.94-17.7)	**14.6** (10.7-20.3)
10-day	**2.98** (2.64-3.44)	**4.04** (3.57-4.66)	**5.46** (4.82-6.32)	**6.65** (5.82-7.76)	**8.31** (7.04-10.0)	**9.63** (7.99-11.8)	**11.0** (8.91-13.8)	**12.4** (9.80-16.1)	**14.4** (10.9-19.5)	**16.0** (11.7-22.4)
20-day	**3.70** (3.28-4.26)	**5.05** (4.47-5.83)	**6.87** (6.06-7.95)	**8.40** (7.35-9.80)	**10.5** (8.93-12.7)	**12.2** (10.2-15.1)	**14.0** (11.3-17.6)	**15.9** (12.5-20.5)	**18.5** (14.0-24.9)	**20.6** (15.1-28.7)
30-day	**4.39** (3.88-5.05)	**6.00** (5.30-6.92)	**8.17** (7.21-9.46)	**10.0** (8.75-11.7)	**12.6** (10.6-15.1)	**14.6** (12.1-18.0)	**16.7** (13.6-21.1)	**19.0** (15.0-24.6)	**22.2** (16.8-29.9)	**24.7** (18.1-34.4)
45-day	**5.26** (4.65-6.06)	**7.16** (6.33-8.26)	**9.74** (8.59-11.3)	**11.9** (10.4-13.9)	**15.0** (12.7-18.0)	**17.4** (14.4-21.4)	**20.0** (16.2-25.1)	**22.7** (17.9-29.3)	**26.5** (20.0-35.7)	**29.5** (21.6-41.1)
60-day	**6.18** (5.47-7.12)	**8.35** (7.39-9.64)	**11.3** (9.98-13.1)	**13.8** (12.1-16.1)	**17.3** (14.7-20.9)	**20.1** (16.7-24.8)	**23.1** (18.7-29.0)	**26.2** (20.6-33.9)	**30.6** (23.1-41.2)	**34.1** (24.9-47.5)

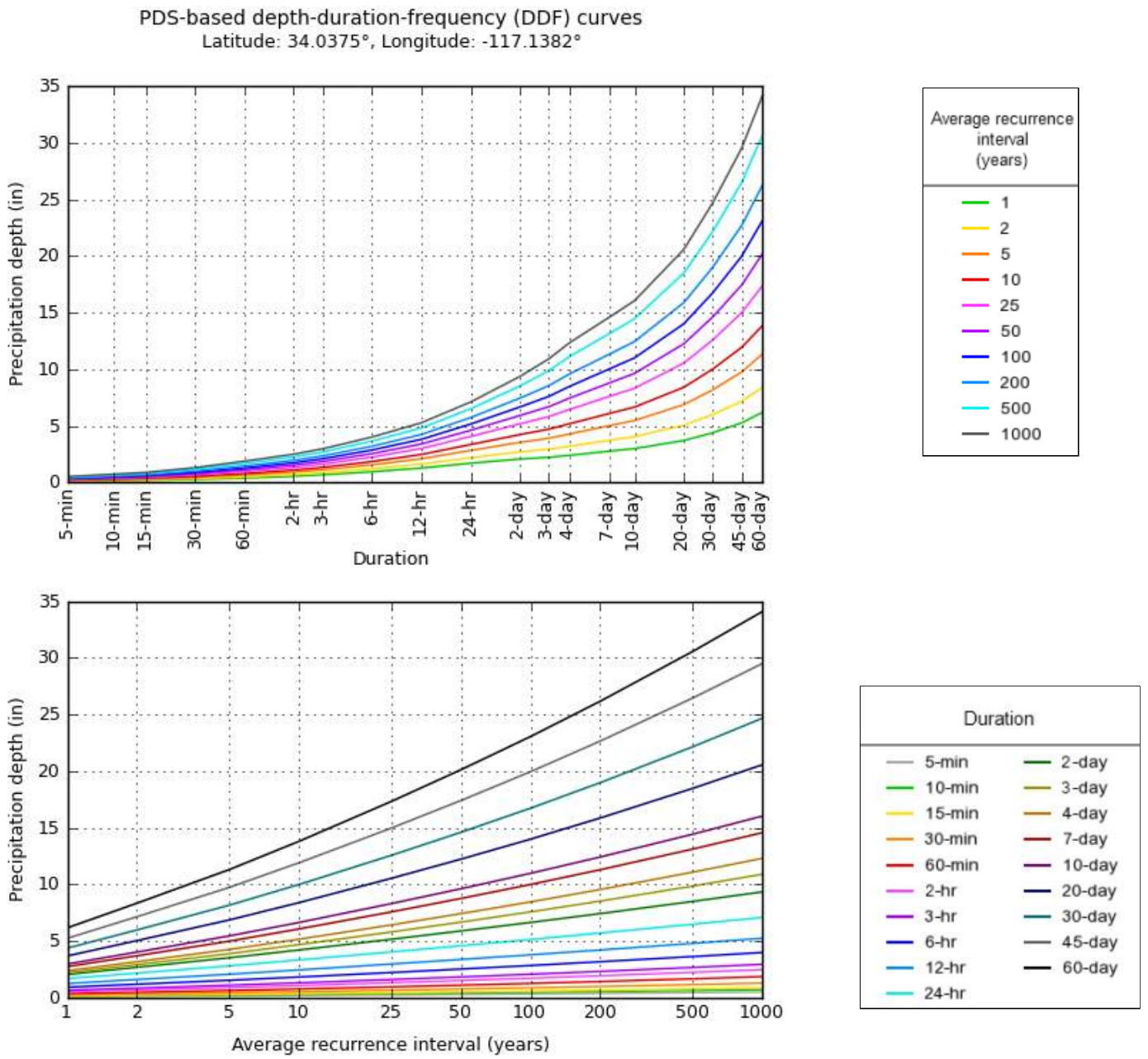
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Thu Aug 16 16:51:18 2018

Back to Top

Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

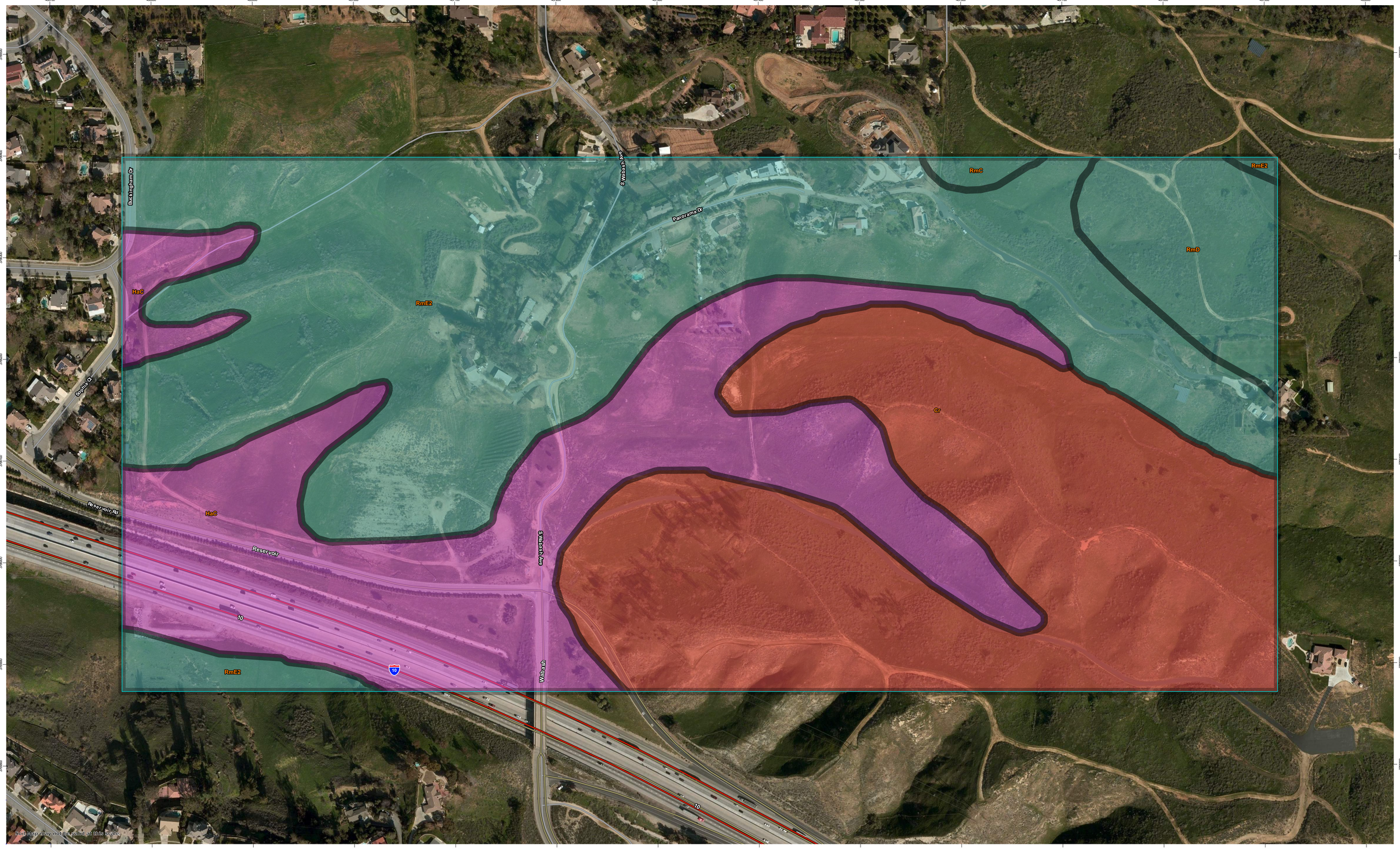


Back to Top

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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX A.10: WEBSOIL SURVEY HYDROLOGICAL SOIL GROUP DATA


HaC
RmE2
RmC
RmE2
RmD
Cr
HaC
RmE2
Buckingham Dr
Sophia Ct
Reservoir Rd
Reservoir
10
S Wabash Ave
Panorama Dr
S Wabash Ave
10
10
Soil Map may not be sharp at this scale.

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- 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 10, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 5, 2015—Mar 5, 2015

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Cr	Cieneba-Rock outcrop complex, 30 to 50 percent slopes, MLRA 20	D	44.5	30.0%
HaC	Hanford coarse sandy loam, 2 to 9 percent slopes	A	37.4	25.1%
RmC	Ramona sandy loam, 2 to 9 percent slopes, MLRA 19	C	0.7	0.4%
RmD	Ramona sandy loam, 9 to 15 percent slopes	C	7.8	5.2%
RmE2	Ramona sandy loam, 15 to 30 percent slopes, eroded	C	58.3	39.2%
Totals for Area of Interest			**148.6**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

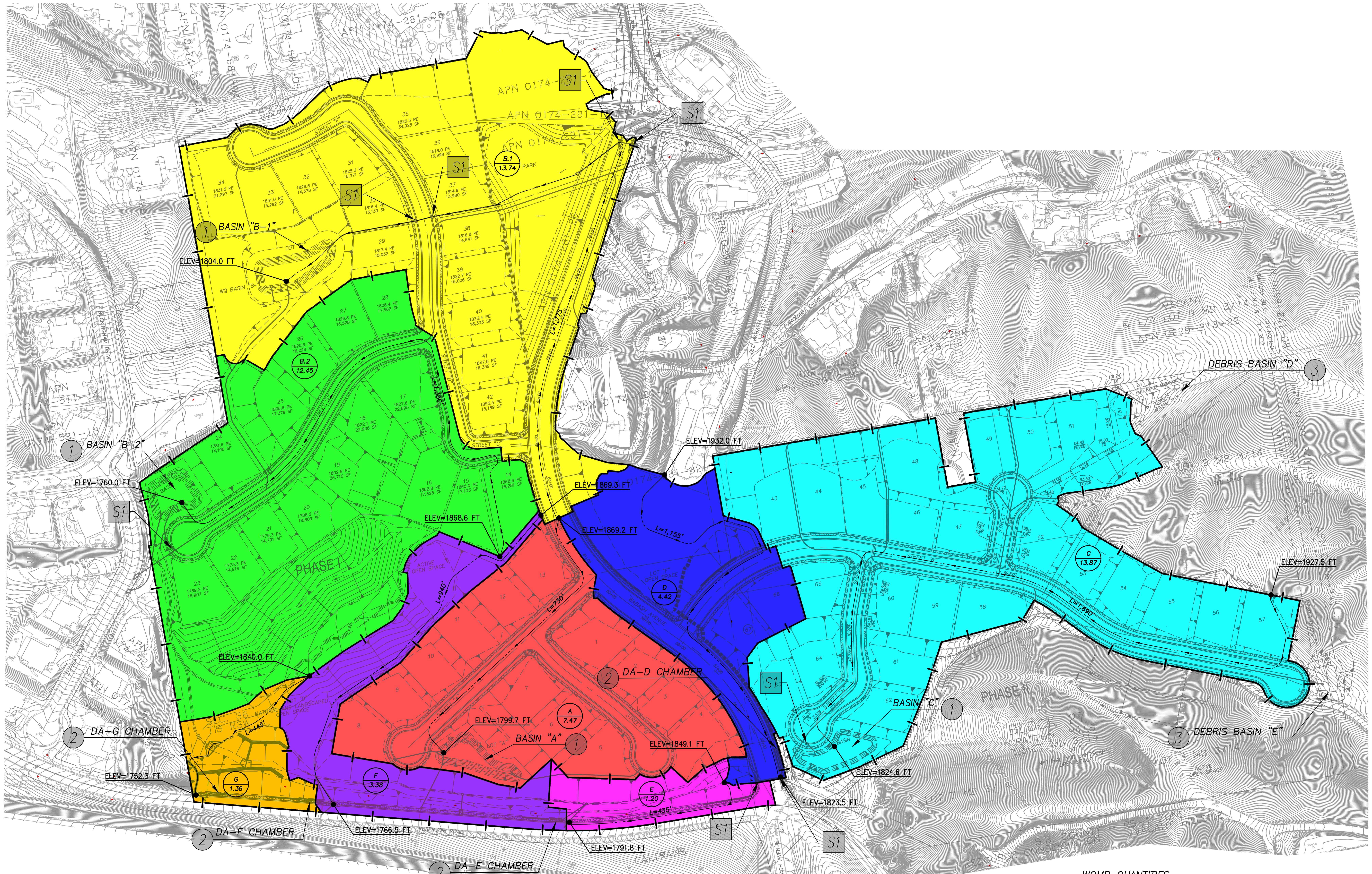
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX B: MAPS

APPENDIX B.1: WQMP SITE PLAN

TENTATIVE TRACT MAP NO. 20320 (TERRACINA)
WATER QUALITY MANAGEMENT PLAN SITE PLAN
CITY OF REDLANDS, CA



STRUCTURAL BMPS

(1) ABOVE-GROUND INFILTRATION BASINS (TC-11)

*NOTE
- STRUCTURAL DESIGN AND DESIGN DETAILS OF THE PROPOSED INFILTRATION BASINS WILL BE INCLUDED DURING FINAL ENGINEERING.
- INFILTRATION BASINS SHALL BE FULLY OPERATIONAL PRIOR TO SHOWING OF MODELS AND SELLING OF HOMES.
- INFILTRATION BASINS SHALL NOT BE USED AS A CONSTRUCTION PHASE BMP DURING ANY STAGE OF CONSTRUCTION.
- RUNOFF FROM UNSTABLIZED AREAS WILL NOT BE DISCHARGED INTO INFILTRATION BASINS.

(2) UNDERGROUND STORMWATER CHAMBER

*NOTE
- STRUCTURAL DESIGN AND DESIGN DETAILS OF THE PROPOSED UNDERGROUND STORMWATER CHAMBERS WILL BE INCLUDED DURING FINAL ENGINEERING.
- UNDERGROUND STORMWATER CHAMBERS SHALL BE FULLY OPERATIONAL PRIOR TO SHOWING OF MODELS AND SELLING OF HOMES.
- UNDERGROUND STORMWATER CHAMBERS SHALL NOT BE USED AS A CONSTRUCTION PHASE BMP DURING ANY STAGE OF CONSTRUCTION.
- RUNOFF FROM UNSTABLIZED AREAS WILL NOT BE DISCHARGED INTO UNDERGROUND STORMWATER CHAMBERS.

(3) DEBRIS BASINS (SE-2)

*NOTE
- STRUCTURAL DESIGN AND DESIGN DETAILS OF THE PROPOSED DEBRIS BASINS WILL BE INCLUDED DURING FINAL ENGINEERING.

SOURCE CONTROL BMPS

S1	STORM DRAIN STENCILING AND SIGNAGE
S3	TRASH AND WASTE STORAGE AREAS
S4	SMART IRRGATION
S5	FINISH GRADE OF LANDSCAPED MIN. OF 1-2 INCHES BELOW FINISHED SURFACES
S6	PROTECTS SLOPES AND CHANNELS (ENERGY DISSIPATION)

WQMP QUANTITIES

DRAINAGE AREA	BMP	DCV WATER QUALITY (CF)
A	INFILTRATION BASIN	12,070
B.1	INFILTRATION BASIN	20,745
B.2	INFILTRATION BASIN	17,407
C	INFILTRATION BASIN	23,276
D	STORMWATER CHAMBER	9,733
E	STORMWATER CHAMBER	2,647
F	STORMWATER CHAMBER	5,108
G	STORMWATER CHAMBER	2,627

LEGEND:

XX / X.XX — DRAINAGE AREA / TRIBUTARY AREA, ACRES

WATERSHED BOUNDARY

FLOW PATH

N

GRAPHIC SCALE

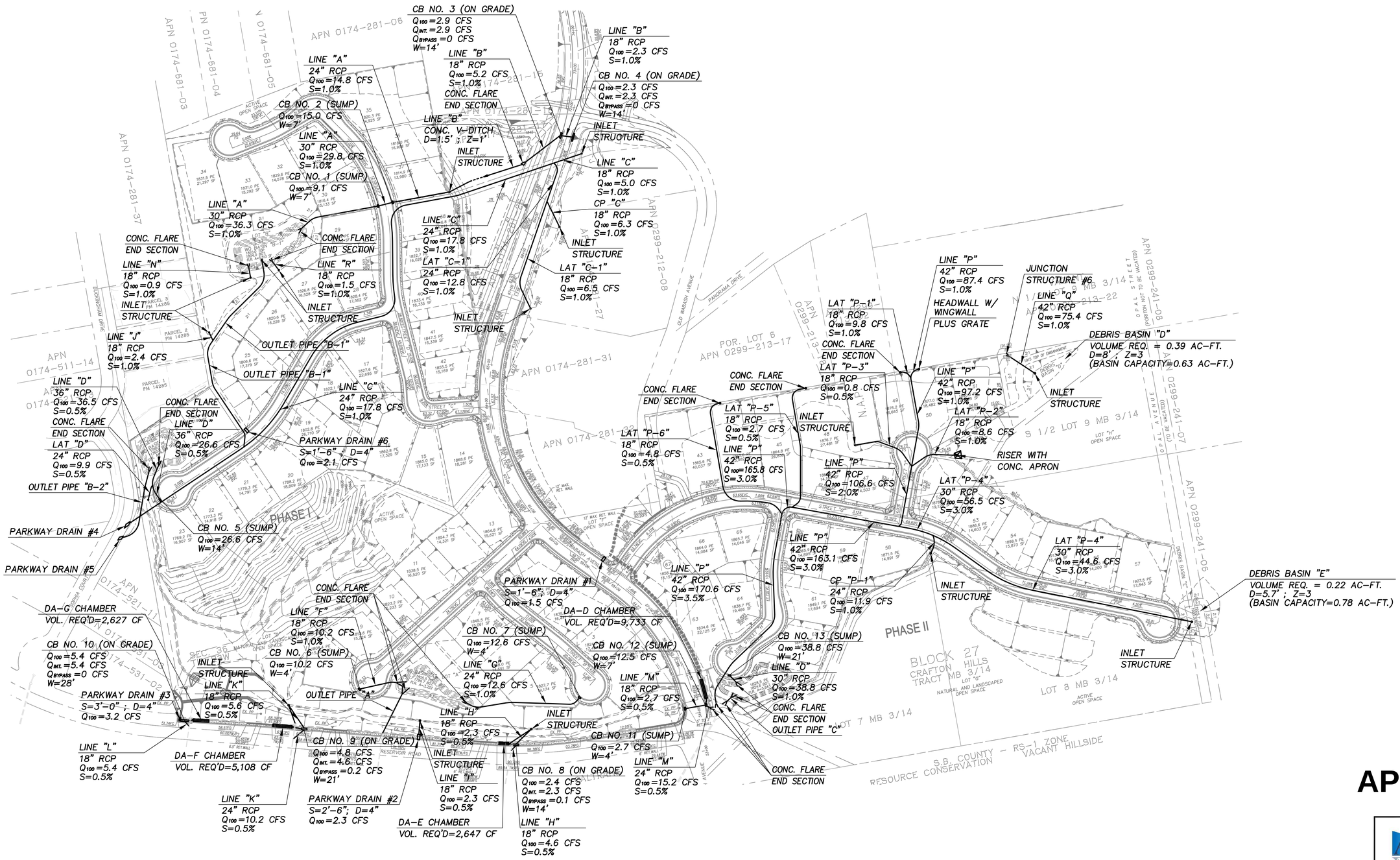
120 0 60 120 240

1" = 120'

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RIVERSIDE, CA 92507
PH. (951) 300-1431 FAX (951) 300-1435

APPENDIX B.2: PRELIMINARY DRAINAGE PLAN

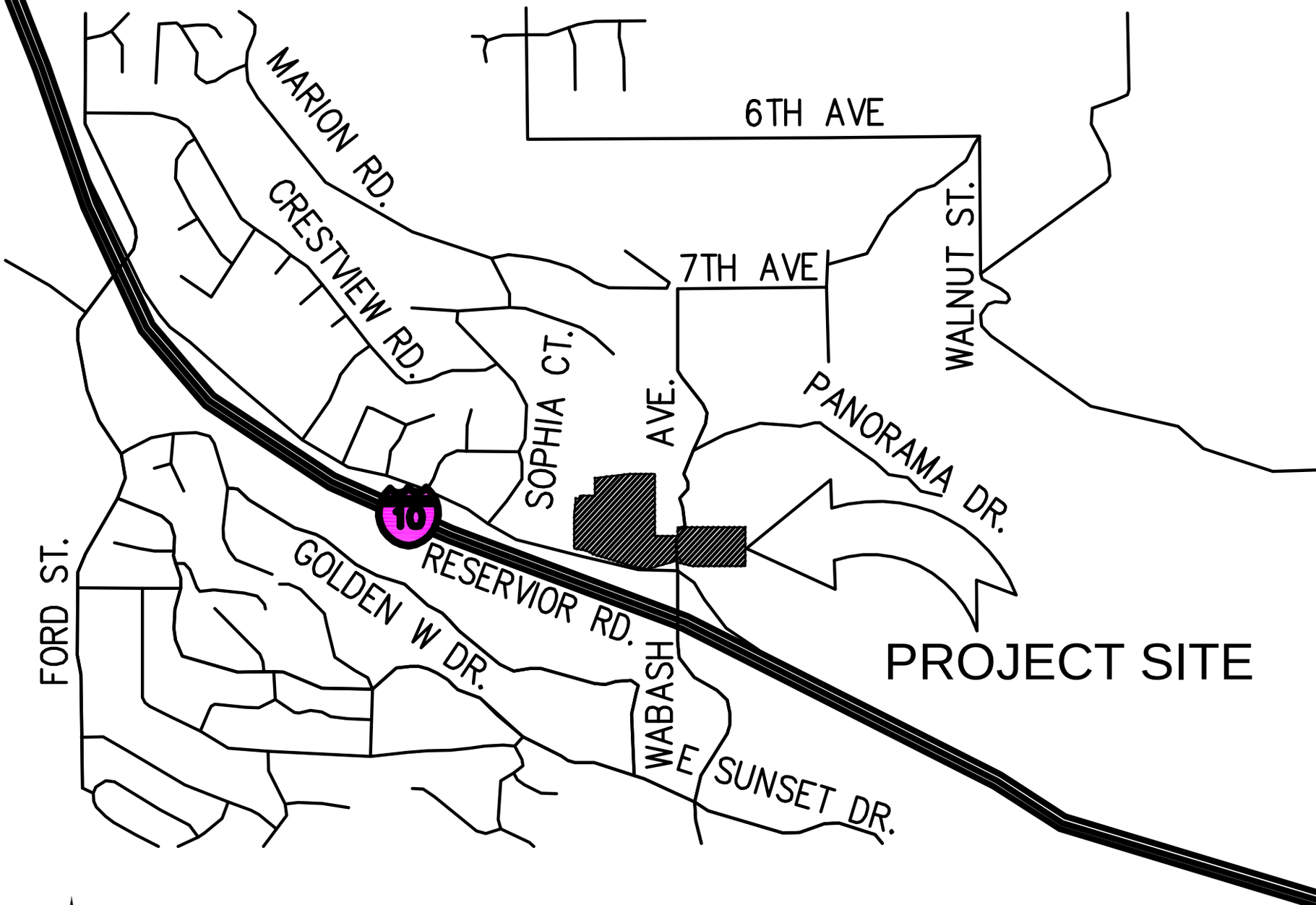
TRACT MAP NO. 20320, CUP XXX (TERRACINA PROJECT)
PRELIMINARY DRAINAGE PLAN
CITY OF REDLANDS, CA



APPENDIX B.2

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APPENDIX B.3: VICINITY MAP



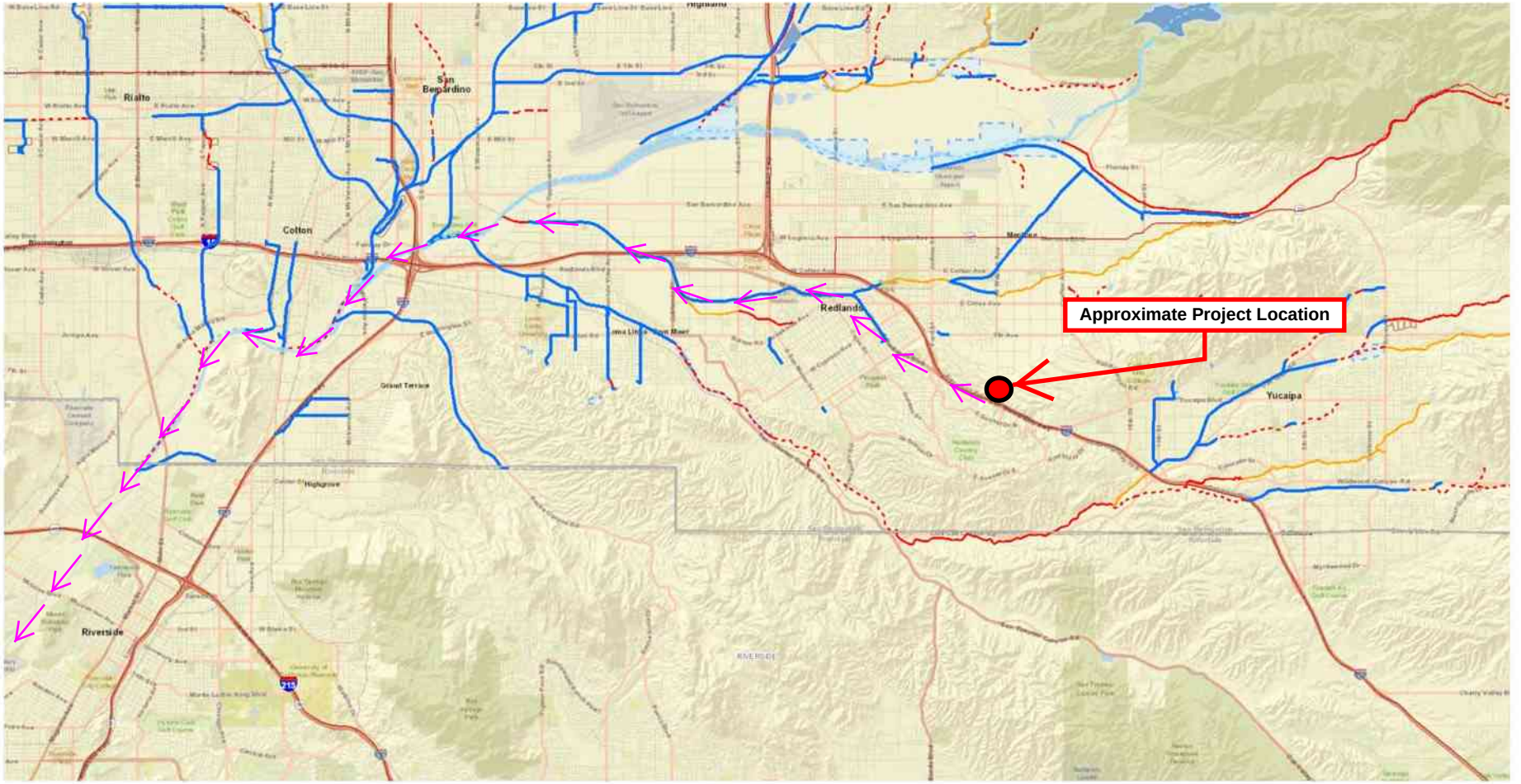
N

NTS

Map © Rand McNally & Company R.L. 09-S-09

VICINITY MAP

APPENDIX B.4: RECEIVING WATERS MAP



2 Miles

Receiving Waters Direction

RBF CONSULTING GIS

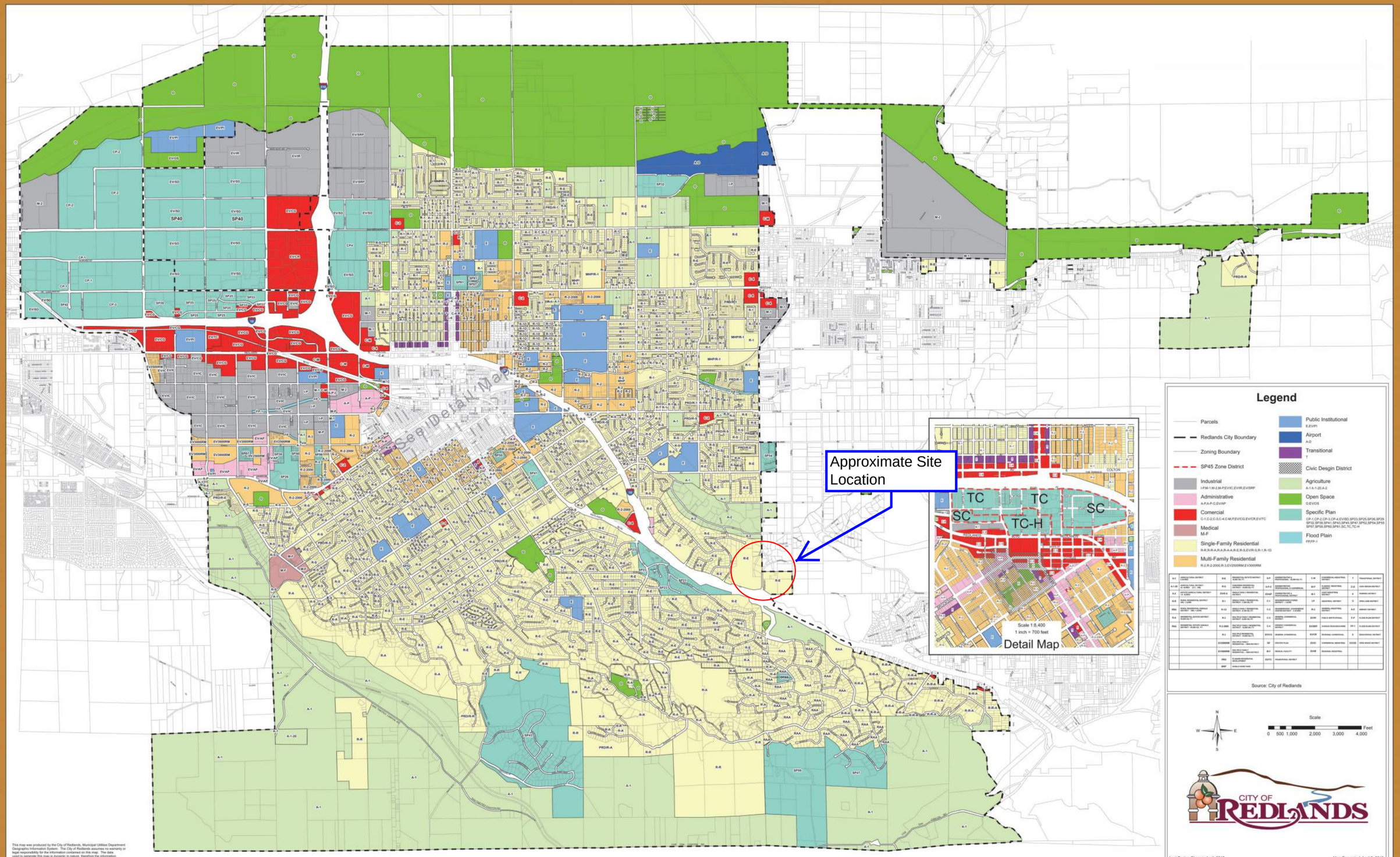
Site Address: permitrack.sbcounty.gov/wap

County of San Bernardino
Stormwater Facility Mapping

Stormwater Map

APPENDIX B.5: CITY OF REDLANDS ZONING MAP

City of Redlands Zoning Map

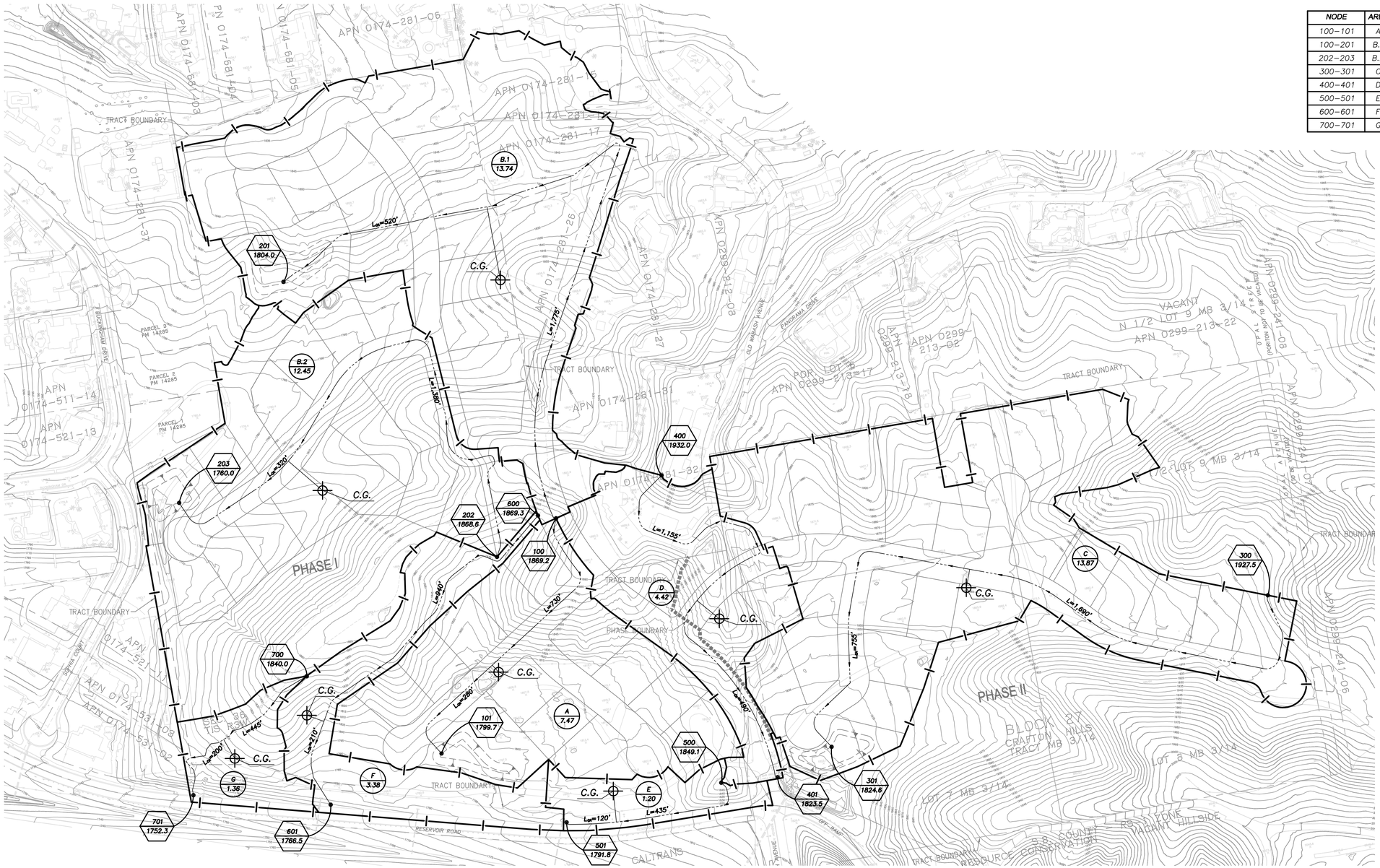


APPENDIX B.6: ONSITE UNIT HYDROGRAPH MAP (EXISTING CONDITION)

TRACT MAP NO. 20320, CUP XXX (TERRACINA PROJECT)
ONSITE HYDROLOGY MAP BASED ON EXISTING CONDITION
UNIT HYDROGRAPH METHOD
CITY OF REDLANDS, CA

HYDROLOGY SUMMARY TABLE

NODE	AREA	AREA SIZE (AC)	Q2(CFS)	V2-24HR(AC-FT)	Q100(CFS)	V100-24HR(AC-FT)
100–101	A	7.47	6.5	0.09	31.4	2.37
100–201	B.1	13.74	13.6	0.31	58.6	5.12
202–203	B.2	12.45	11.9	0.22	51.6	4.45
300–301	C	13.87	13.0	0.16	55.6	4.09
400–401	D	4.42	4.2	0.06	18.4	1.48
500–501	E	1.20	1.2	0.01	5.6	0.25
600–601	F	3.38	2.7	0.04	13.6	0.70
700–701	G	1.36	1.5	0.02	5.7	0.28



LEGEND:

- XXX.X / XXXX — NODE/CONCENTRATION POINT / FLOWLINE ELEVATION
- XXX / X.X — SUB AREA / ACRES
- L=XXX' — MAIN FLOW PATH
- L_{CG}=XXX' — FLOW DISTANCE MEASURED UPSTREAM TO POINT OF CENTROID
- C.G. — MAIN CENTROID
- FLOW PATH
- WATERSHED BOUNDARY

GRAPHIC SCALE
120 0 60 120 240
1" = 120'

APPENDIX B.6

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RIVERSIDE, CA 92507
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APPENDIX B.7: ONSITE UNIT HYDROGRAPH MAP (PROPOSED CONDITION)

TRACT MAP NO. 20320, CUP XXX (TERRACINA PROJECT)
ONSITE HYDROLOGY MAP BASED ON PROPOSED CONDITION
UNIT HYDROGRAPH METHOD
CITY OF REDLANDS, CA



HYDROLOGY SUMMARY TABLE

NODE	AREA	AREA SIZE (AC)	Q2(CFS)	V2-24HR(AC-FT)	Q100(CFS)	V100-24HR(AC-FT)
100–101	A	7.47	11.9	0.67	41.6	2.53
100–201	B.1	13.74	15.1	0.96	58.1	5.23
202–203	B.2	12.45	17.3	0.92	63.3	4.54
300–301	C	13.87	15.5	1.24	56.7	4.79
400–401	D	4.42	7.7	0.71	22.5	1.83
500–501	E	1.20	2.5	0.26	7.4	0.48
600–601	F	3.38	6.8	0.55	19.7	1.39
700–701	G	1.36	3.2	0.29	7.8	0.55

LEGEND:

- XXX.X / XXXX — NODE/CONCENTRATION POINT / FLOWLINE ELEVATION
- XXX / X.X — SUB AREA / ACRES
- L=XXX' — MAIN FLOW PATH
- L_{DS}=XXX' — FLOW DISTANCE MEASURED UPSTREAM TO POINT OF CENTROID
- C.G. — MAIN CENTROID
- FLOW PATH
- WATERSHED BOUNDARY

GRAPHIC SCALE
120 0 60 120 240
1" = 120'

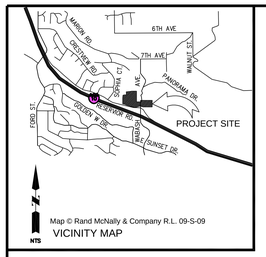
APPENDIX B.7

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RIVERSIDE, CA 92507
PH. (951) 300-1431 FAX (951) 300-1435

APPENDIX B.8: TENTATIVE TRACT MAP

TENTATIVE TRACT MAP NO. 20320

IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO ESTATE OF CALIFORNIA
BEING A SUBDIVISION OF LOT 8, AND A PORTION OF LOTS 7 AND 9 OF BLOCK 27 OF CRAFTON TRACT, M.B. 3/14
AND A PORTION OF THE EAST HALF OF THE SOUTHEAST 1/4 OF SECTION 36, T1S, R3W, S.B.M.
AGUILAR CONSULTING INC.
JULY, 2020



Map © Rand McNally & Company R.L. 09-S-09

VICINITY MAP

OWNER\APPLICANT:

TERRACINA RECOVERY, LLC
690 E GREEN ST.
SUITE 200
PASADENA, CA 91101
ATTN: MOHAMAD YOUNES
PHONE: (323) 874-8000
FAX: (323) 874-8800
CITY OF REDLANDS BUSINESS
LICENSE NUMBER: 1007205,

ENGINEER/MAP PREPARER:

AGUILAR CONSULTING INC.
2155 CHICAGO AVENUE, SUITE 304
RIVERSIDE, CA. 92507
PH: (951) 300-1431

SURVEYOR'S NOTES:

THAT PORTION EAST OF EASTLINE, SEC. 36 LIES WITHIN IMPROVMENT ZONE "P-7" OF COUNTY SERVICE AREA 70 PER RESOLUTION RECORDED MAY 23, 1991, INST. NO.. 91-177020.

NO ACCESS RIGHTS TO 10 FWY BUT ACCESS TO RESERVOIR ROAD IS ALLOWED.

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1: (APN: 299-213-11 AND 12)

LOT 8 AND THE SOUTH 1/2 OF LOT 9 IN BLOCK 27 OF CRAFTON TRACT, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 3, PAGE 14 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL 2: (APN: 299-213-13)

LOT 7 IN BLOCK 27 OF CRAFTON TRACT, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 3, PAGE 14 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THEREFROM THAT PORTION OF SAID LOT 7 AS MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 1 1/2 INCH IRON PIPE MARKING THE SOUTHWEST CORNER OF SAID LOT 7;

THENCE ALONG THE SOUTH LINE OF SAID LOT 7, NORTH 89° 35' 25" EAST, 342.92 FEET;

THENCE COURSE "A" NORTH 56° 11' 13" WEST, 361.92 FEET;

THENCE NORTH 0° 30' 18" WEST, 103.42 FEET;

THENCE SOUTH 89° 29' 42" WEST, 44.00 FEET TO THE WEST LINE OF SAID LOT 7, DISTANT ALONG SAID WEST LINE NORTH 0° 30' 18" WEST, 306.90 FEET FROM THE POINT OF BEGINNING;

THENCE ALONG SAID WEST LINE SOUTH 0° 30' 18" EAST, 306.90 FEET TO THE POINT OF BEGINNING.

PARCEL 3: (APN: 174-281-13)

ALL THAT PORTION OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 36, TOWNSHIP 1 SOUTH, RANGE 3 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT OF SAID LAND, APPROVED BY THE SURVEYOR GENERAL, FEBRUARY 24, 1869, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THENCE NORTH 0° 12' 18" WEST ALONG SAID EAST LINE 451.6 FEET TO THE SOUTHEAST CORNER OF THE PROPERTY CONVEYED TO GEORGE E. GRAY ET UX, BY DEED RECORDED APRIL 18, 1947 IN BOOK 2050 PAGE 113, OFFICIAL RECORDS;

THENCE ALONG THE SOUTH LINE OF THE GRAY PROPERTY NORTH 89° 59' 30" WEST, 387.95 FEET;

THENCE ALONG THE WEST LINE OF THE GRAY PROPERTY, NORTH 0° 00' 30" EAST, 857.47 FEET TO AN ANGLE POINT ON THE SOUTHERLY LINE OF A 40 FOOT ROAD EASEMENT;

THENCE ALONG THE NORTH LINE OF THE GRAY PROPERTY, NORTH 81° 20' EAST 392.44 FEET TO A POINT ON THE EAST LINE OF SAID SECTION 36; THENCE NORTH ALONG EAST LINE OF SAID SECTION 36, 20 FEET TO THE SOUTHEAST CORNER OF THE PROPERTY CONVEYED TO JOSEPH E. LOGWOOD, ET UX., BY DEED RECORDED APRIL 2, 1946 IN BOOK 1880, PAGE 324, OFFICIAL RECORDS;

THENCE ALONG THE SOUTH LINE OF THE LOGWOOD PROPERTY, SOUTH 81° 20' WEST 400.35 FEET;

THENCE ALONG THE WEST LINE OF THE LOGWOOD PROPERTY, NORTH 22° 20' WEST, 20.58 FEET TO A POINT ON THE NORTH LINE OF A 40 FOOT ROAD; THENCE ALONG THE WEST LINE OF THE LOGWOOD PROPERTY, NORTH 0° 30' EAST, 332.91 FEET,

MORE OR LESS TO THE SOUTHEAST CORNER OF THAT PROPERTY CONVEYED TO RICHARD CORWIN MONTGOMERY, ET UX., BY DEED RECORDED JULY 6, 1948, IN BOOK 2256 PAGE 521, OFFICIAL RECORDS;

THENCE ALONG THE SOUTH LINE OF THE MONTGOMERY PROPERTY, WEST 321.20 FEET TO A POINT IN THE CENTER LINE OF A 40 FOOT ROAD; THENCE ALONG THE SOUTH LINE OF THE PROPERTY CONVEYED TO STANLEY G. WEST, SOUTH 70° 00' 30" WEST, 377.17 FEET THE EAST LINE OF THE PROPERTY CONVEYED TO ROBERT L. WINANA, ET UX., BY DEED RECORDED APRIL 2, 1946, IN BOOK 1895 PAGE 42, OFFICIAL RECORDS;

THENCE ALONG THE EAST LINE OF THE WINANA PROPERTY, SOUTH 667.94 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE ALONG THE SOUTHERLY LINE OF THE WINANA PROPERTY, SOUTH 66° 20' WEST, 251.12 FEET TO THE WEST LINE OF SAID EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 36;

THENCE SOUTH ALONG SAID WEST LINE, 677.38 FEET, MORE OR LESS, TO THE NORTHWEST CORNER OF SAID PARCEL 49, AS DESCRIBED IN THAT LIS PENDENS RECORDED AUGUST 17, 1960, IN BOOK 5215, PAGE 420, OFFICIAL RECORDS;

THENCE ALONG THE NORTH LINE OF SAID PARCEL 49, SOUTH 80° 44' 16" EAST, 164.76 FEET; THENCE SOUTH 64° 06' 10" EAST, 131.80 FEET; THENCE SOUTH 74° 16' 17" EAST, 620.15 FEET; THENCE SOUTH 79° 42' 28" EAST, 210.61 FEET; THENCE NORTH 81° 49' 08" EAST, 299.62 FEET; THENCE NORTH 0° 30' 18" WEST, 69.33 FEET; THENCE NORTH 89° 29' 42" EAST, 44.00 FEET TO THE POINT OF BEGINNING.

PARCEL 4: PARCEL A: (APN: 0299-213-21-000 -PORTION) THE WEST 66.00 FEET OF THE EAST 396.00 FEET OF THE NORTH 160.00 FEET OF THE SOUTH 320.00 FEET OF LOT 6, BLOCK 27, CRAFTON TRACT, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 3, PAGE 14 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

PARCEL B: (APN: 0299-213-21-000 -PORTION)

THE SOUTH 1/2 OF LOT 6, BLOCK 27, CRAFTON TRACT, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 3, PAGE 14 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPT THEREFROM THE NORTH 160.00 FEET OF THE SOUTH 320.00 FEET OF THE WEST 66.00 FEET OF THE EAST 132.00 FEET THEREOF.

ALSO EXCEPT THEREFROM THE WEST 66.00 FEET OF THE EAST 330.00 FEET OF THE SOUTH 150.00 FEET THEREOF.

ALSO EXCEPT THEREFROM THE WEST 66.00 FEET OF THE EAST 396.00 FEET OF THE NORTH 160.00 FEET OF THE SOUTH 320.00 FEET.

ALSO EXCEPT THEREFROM ANY PORTION LYING WITHIN WABASH AVENUE.

PARCEL 5: (APN: 0299-213-14-000)

THE WEST 66.00 FEET OF THE EAST 330.00 FEET OF THE SOUTH 150.00 FEET OF LOT 6, BLOCK 27, CRAFTON TRACT, IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO, STATE OF CALIFORNIA, AS SHOWN BY MAP ON FILE IN BOOK 3 OF MAPS, PAGE 14, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

COMPANIES AND AGENCIES SERVICING THIS PROJECT ARE AS FOLLOWS:

WATER/SEWER:
CITY OF REDLANDS
MUNICIPAL UTILITIES &
ENGINEERING DEPARTMENT
35 CAJON STREET
REDLANDS, CA 92373
PH: (909) 798-7585

ELECTRIC:
SOUTHERN CALIFORNIA EDISON CO.
287 TENNESSEE STREET
REDLANDS, CA. 92373
PH: (909) 307-6788

GAS:
SOUTHERN CALIFORNIA GAS CO.
1981 W. LUGONIA AVENUE
REDLANDS, CA 92374
PH: (800) 427-2200

TELEPHONE:
VERIZON
1980 ORANGE TREE LANE,
SUITE 100
REDLANDS, CA 92374
PH: (909) 748-6640

CABLE:
TIME WARNER CABLE
100 CAJON STREET
REDLANDS, CA 92373
PH: (866) 582-4617

PHASES:

PHASE I	*LOTS 1-42 & LETTERED LOT A, B, C & D*
PHASE II	*LOTS 43-67 & LETTERED LOT E, F, G, H & I*

EASEMENTS

1. *EASEMENT FOR PIPELINES IN 03/25/1886 BK45 PG404 OF DEEDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*
2. *EASEMENT FOR LAYS PIPES IN 07/09/1888 BK78 PG356 OF DEEDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*
3. *EASEMENT FOR RIGHT OF WAY IN 07/07/1900 BK287 PG201 OF DEEDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*
4. *EASEMENT FOR PIPELINES IN 07/07/1900 BK287 PG205 OF DEEDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*
5. *EASEMENT FOR STEEL PIPE LINES IN 04/25/1934 BK954 PG284 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
6. *EASEMENT FOR PUBLIC UTILITIES IN 07/21/1947 BK2074 PG73 OF OFFICIAL RECORDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*
7. *EASEMENT FOR POLE LINES AND RIGHTS IN 04/23/1948 BK2218 PG41 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT (CENTERLINE UNDISCLOSED WIDTH).*
8. *EASEMENT FOR PUBLIC UTILITIES IN 06/04/1948 BK2240 PG154 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
9. *EASEMENT FOR PUBLIC UTILITIES IN 02/18/1960 BK5059 PG397 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
10. *EASEMENT FOR PUBLIC UTILITIES IN 03/03/1960 BK5072 PG23 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
11. *EASEMENT FOR HIGHWAY IN 12/16/1960 BK5306 PG558 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
12. *EASEMENT FOR POLE LINES & CONDUITS IN 09/21/1960 BK5240 PG471 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
13. *EASEMENT FOR PUBLIC UTILITIES IN 07/11/1973 BK8222 PG708 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
14. *EASEMENT FOR PUBLIC UTILITIES IN 03/19/1982 INST #82-054453 OF OFFICIAL RECORDS AFFECTS SAID PORTION AS DESCRIBED IN THE DOCUMENT.*
15. *EASEMENT FOR DELIVERY OF MULTI-CHANNEL VIDEO IN 06/11/2008 INST #2008-0266092 OF OFFICIAL RECORDS THE EXACT LOCATION OF THE EASEMENT CANNOT BE DETERMINED AND IS NOT PLOTTABLE.*

LAND USE AND ZONING:

GENERAL PLAN DESIGNATION: VLDR & NEIGHBORHOOD SHOPPING
EXISTING LAND USE: VACANT
PROPOSED LAND USE: RES./PRD
EXISTING ZONING: RE/(RS-1 S.B. CO.)
PROPOSED ZONING: RE/PRD

GENERAL NOTES:

1. *TOTAL NUMBER OF PARCELS: 67.*
2. *TOTAL ACRES: 64.56 GROSS AC.±*
3. *STREET DEDICATION: 9.17 AC.*
4. *NET ACREAGE: 55.39 AC.*
5. *GROSS DENSITY: 1.05 DU/AC.*
6. *USABLE PAD AREA 27.41 AC.*
7. *MINIMUM LOT SIZE 14,027 SF (LOT 47).*
8. *AVERAGE LOT SIZE 0.41 AC. 17,911 SF.*
9. *TOTAL OPEN SPACE (ACTIVE COMMON & PRIVATE) 28.0 AC.*
10. *SINGLE FAMILY PRD.*
11. *LOT "A", LOT "B", LOT "C", AND LOT "E" SHALL BE FOR BASIN DRAINAGE PURPOSES.*
12. *LOT "D", LOT "F", LOT "G" AND LOT "H" ARE NATURAL AND LANDSCAPED OPEN SPACE SET ASIDE FOR PUBLIC RECREATIONAL PURPOSES.*
13. *LOT "I" IS NATURAL OPEN AREA FOR FUTURE STREET RIGHT-OF-WAY EXTENSION TO THE EAST.*
14. *PROJECT IS DESIGNATED AS ZONE "X" ON FLOOD INSURANCE MAPS (NOT WITHIN 500 YEAR FLOOD PLAIN).*
15. *NO RETAINING WALL TO BE HIGHER THAN 12'.*
16. *DISEASED TREES TO BE REMOVED.*
17. *STRUCTURES AND TREES TO BE REMOVED IN GRADED AREAS.*
18. *THE RESERVOIR FAULT WAS TRENCHED AND LOCATED AND DEEMED INACTIVE BY THE SAN BERNARDINO COUNTY GEOLOGIST AS WELL AS REPRESENTATIVES OF THE U.S.G.S.. SEE ATTACHED LETTER PREPARED BY GORIAN AND ASSOCIATES DATED MAY 11, 2004 FOR FINDINGS AND CONCLUSIONS.*
19. *THIS MAP WILL BE PHASED PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.*

LOT AREA TABLE

PHASE I 14,000 S.F.		PHASE II 14,000 S.F.	
LOT #	S.F.	LOT #	S.F.
1	20,359	43	40,037
2	16,441	44	23,982
3	15,993	45	26,856
4	21,987	46	14,097
5	18,766	47	14,027
6	14,651	48	28,092
7	15,110	49	16,665
8	15,395	50	18,482
9	15,224	51	22,665
10	15,233	52	19,174
11	16,520	53	16,253
12	14,321	54	15,875
13	15,674	55	16,409
14	18,333	56	14,200
15	17,133	57	17,843
16	17,325	58	14,991
17	23,835	59	14,165
18	22,908	60	14,926
19	26,710	61	17,692
20	18,809	62	14,148
21	14,791	63	22,125
22	14,918	64	19,487
23	16,907	65	14,102
24	14,196	66	14,084
25	16,987	67	16,211
26	16,228	TOTAL	466,586
27	16,528	AVE.	18,663
28	17,602		
29	15,052		
30	15,133		
31	16,371		
32	14,578		
33	15,292		
34	21,649		
35	34,823		
36	16,952		
37	14,129		
38	14,641		
39	16,026		
40	18,335		
41	16,339		
42	15,221		
TOTAL	733,425		
AVE.	17,463		

PHASE I LETTERED LOTS	
LOT #	S.F.
A	36,050
B	130,446
C	24,588
D	370,896
TOTAL	561,980

PHASE II LETTERED LOTS	
LOT #	S.F.
E	21,673
F	19,944
G	380,647
H	232,803
I	3,661
TOTAL	658,728

TENTATIVE TRACT MAP NO. 20320 (PHASES I AND II)
GRADING QUANTITY ESTIMATE

RAW CUT (PHASE I)	442,467	RAW FILL (PHASE I)	389,473
RAW CUT (PHASE II)	134,671	RAW FILL (PHASE II)	81,751
OVER EXCAVATION	257,133		257,133
SUBSIDENCE			9,164
SHRINKAGE			100,113
TOTAL EARTHWORKS	**834,271 CY**		**837,634 CY**
USE: TOTAL CUT	**834,000 CY**	**TOTAL FILL**	**834,000 CY**

LEGEND

- EXISTING WALL
- PROPOSED WALL
- EXISTING CURB/GUTTER
- PROPOSED CURB/GUTTER
- PROPOSED STORM DRAIN PIPES
- EXISTING STORM DRAIN PIPES
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOWLINES
- PROPOSED EASEMENTS
- EXISTING EASEMENTS
- EXISTING R/W
- PROPOSED R/W
- PROPERTY LINES
- PROPERTY STREET C/L
- TRACT BOUNDARY
- DAYLIGHT LINE
- PROPOSED SLOPE
- TOP/TOE OF SLOPE
- EXISTING UTILITY LINE
- PHASE BOUNDARY

GRAPHIC SCALE
80 0 40 80 160
1" = 80'

REGISTERED PROFESSIONAL ENGINEER
CEZAR V. AGUILAR
No. 41679
EXP. 03/31/20
CIVIL
STATE OF CALIFORNIA

PREPARED FOR:
TERRACINA RECOVERY, LLC

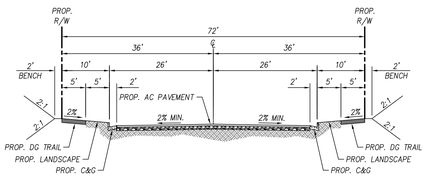
PREPARED BY:
AGUILAR CONSULTING INC.
2155 CHICAGO AVENUE, SUITE 304
RIVERSIDE, CA 92507
PH. (951) 300-1431 FAX (951) 300-1435

TENTATIVE TRACT MAP NO. 20320
CITY OF REDLANDS

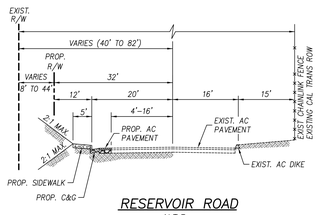
DATE: 07/2020
SHEET 1 OF 2
PROJECT NO.

TENTATIVE TRACT MAP NO. 20320

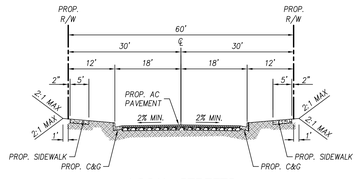
IN THE CITY OF REDLANDS, COUNTY OF SAN BERNARDINO ESTATE OF CALIFORNIA
BEING A SUBDIVISION OF LOT 8, AND A PORTION OF LOTS 7 AND 9 OF BLOCK 27 OF CRAFTON TRACT, M.B. 3/14
AND A PORTION OF THE EAST HALF OF THE SOUTHEAST 1/4 OF SECTION 36, T1S, R3W, S.B.M.
AGUILAR CONSULTING INC.
JULY, 2020



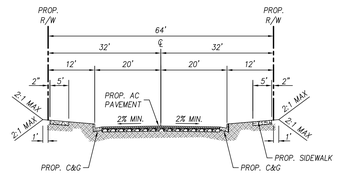
WABASH AVENUE
FROM RESERVOIR ROAD TO STA 66+80.75 (PUBLIC)
N.T.S.



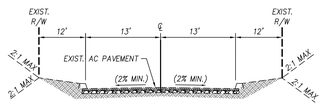
RESERVOIR ROAD
N.T.S.



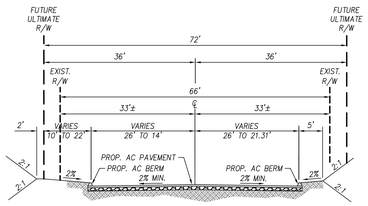
LOCAL STREETS
(STREET A,B,C,D,E,F,H&I)
N.T.S.



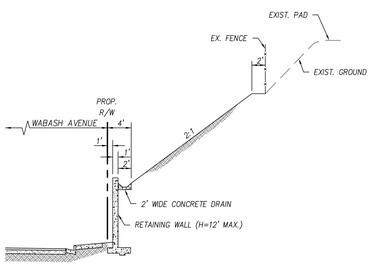
LOCAL STREETS
(STREET G)
N.T.S.



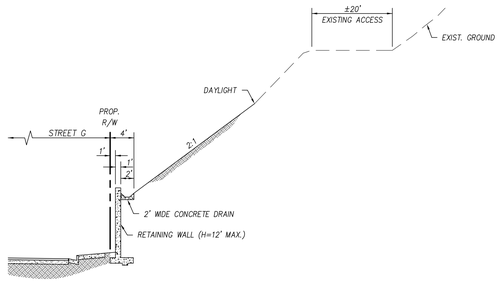
OLD WABASH AVENUE
FROM SOUTH OF RESERVOIR ROAD TO RESERVOIR ROAD
STA 75+50.00 TO GOING NORTH
N.T.S.



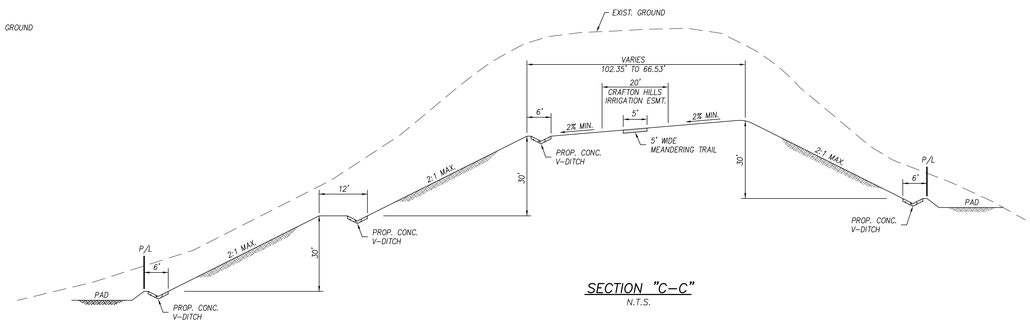
WABASH AVENUE
STA 66+80.75 TO STA 68+20.75 (PUBLIC)
N.T.S.



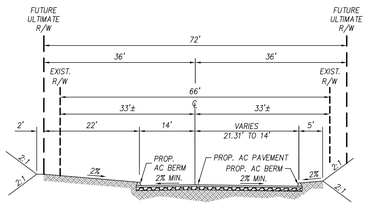
SECTION "A–A"
N.T.S.



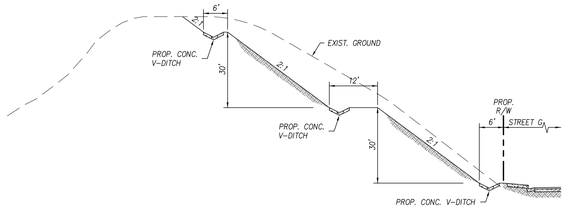
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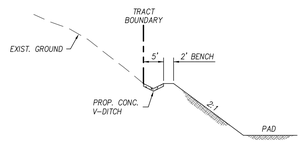
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N.T.S.



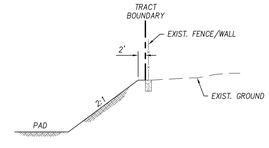
WABASH AVENUE
STA 68+20.75 TO STA 70+40.75 (PUBLIC)
N.T.S.



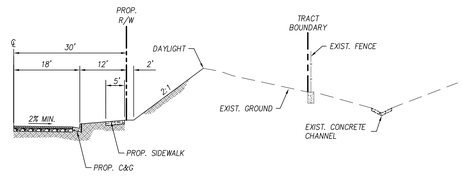
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N.T.S.



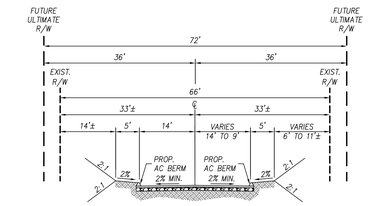
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N.T.S.



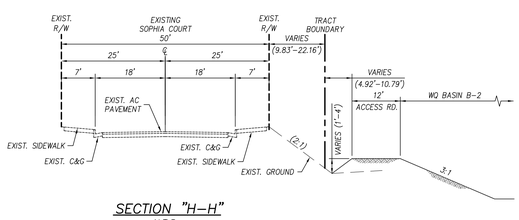
SECTION "F–F"
N.T.S.



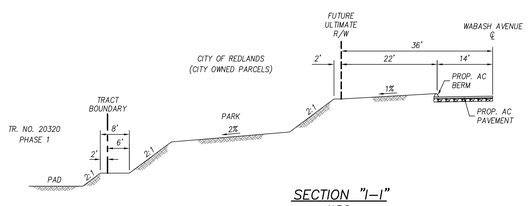
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N.T.S.



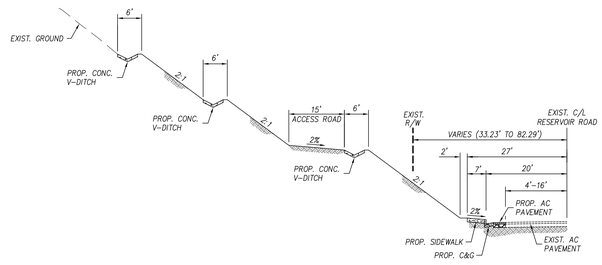
WABASH AVENUE
STA 70+40.75 TO STA 72+06.13 (PUBLIC)
N.T.S.



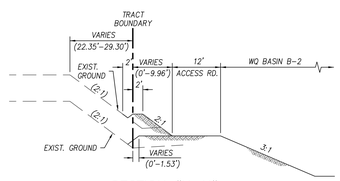
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N.T.S.



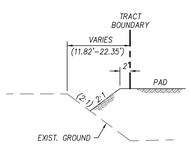
SECTION "I–I"
N.T.S.



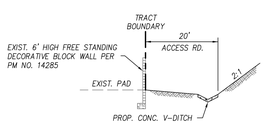
SECTION "J–J"
N.T.S.



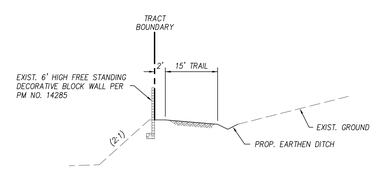
SECTION "K–K"
N.T.S.



SECTION "L–L"
N.T.S.



SECTION "M–M"
N.T.S.



SECTION "N–N"
N.T.S.

REGISTERED PROFESSIONAL ENGINEER
CEZAR V. AGUILAR
No. 41679
Exp. 03/31/20
CIVIL
STATE OF CALIFORNIA

PREPARED FOR:
TERRACINA RECOVERY, LLC

PREPARED BY:
ACI
AGUILAR CONSULTING INC.
2155 CHICAGO AVENUE, SUITE 304
RIVERSIDE, CA 92507
PH. (951) 300-1431 FAX (951) 300-1435

TENTATIVE TRACT MAP NO. 20320
CITY OF REDLANDS

DATE: 07/2020
SHEET 2
OF 2
PROJECT NO.

APPENDIX C: GEOTECHNICAL RECOMMENDATIONS

APPENDIX D: OPERATIONS AND MAINTENANCE PLAN (TO BE PROVIDED DURING FINAL ENGINEERING)

APPENDIX E: SUPPORTING DOCUMENTS

APPENDIX E.1: PROJECT PHOTOGRAPHS



PHOTO #1: Looking westerly at DA-A, DA-E, DA-F, and DA-G from the southeast corner of Wabash Avenue and Reservoir Road. The existing Reservoir Road is to the left in the photo.



PHOTO #2: Looking north westerly from the southeast corner of the Wabash Avenue and Reservoir Road.



PHOTO #3: Looking northerly at DA-B and DA-D from the southeast corner of the Project Site.



PHOTO #4: Looking northeasterly towards DA-C and DA-D from the southeast corner of Wabash Avenue and Reservoir Road. The existing Wabash Avenue is to the right in the photo.



PHOTO #5: Looking northeasterly towards DA-C and DA-D from the southeast corner of Wabash Avenue and Reservoir Road. The existing Wabash Avenue is in the center of the photo.

APPENDIX E.2: CONDITIONS OF APPROVAL

APPENDIX E.3: CC&RS, COVENANT AND AGREEMENTS, BMP MAINTENANCE AGREEMENTS AND/OR OTHER MECHANISMS FOR ENSURING ONGOING OPERATION, MAINTENANCE, FUNDING AND TRANSFER OF REQUIREMENTS FOR THIS PROJECT-SPECIFIC WQMP