# THE TERRACES

# MURRIETA

# Preliminary Drainage Report

MURRIETA, CA 92562

## DP-2022-2518

PROJECT NO.: 195120004
APN: 910-310-001, 910-310-002, 910-310-003, 910-310-004, 910-310-005, 910-310-007, 910-310-008, 910-310-009, 910-310-010, 910-310-015, 910-310-017, 910-310-018, 910-310-021, 910-310-022, 910-310-023, 910-310-024, 910-310-025, 910-310-026, 949-190-011, 949-190-012, 949-190-013, 949-190-014, 949-190-015, 949-190-016, 949-190-017, 949-190-018, 949-190-019

**DECEMBER 2022**

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This Drainage Report has been prepared by Kimley-Horn and Associates, Inc. under the direct supervision of the following Registered Civil engineer. The undersigned attests to the technical data contained in this study, and to the qualifications of technical specialists providing engineering computations upon which the recommendations and conclusions are based.

| | |
|---|---|
| | 12/07/2022 |
| Registered Civil Engineer | Date |

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Appendix D Existing 100 YR Unit Hydrograph

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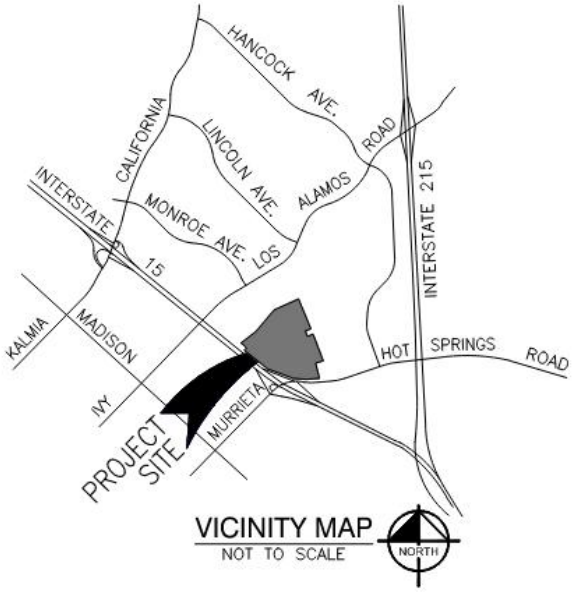
# 1 PROJECT DESCRIPTION

## 1.1 PROJECT DESCRIPTION

The Terraces project site will be a residential development and is approximately 38.7 AC within the City of Murrieta. Offsite flows that contribute to proposed infrastructure were included in this analysis, encompassing a total area of 56.2 acres. See **Figure 1-1** for Vicinity Map. The proposed project includes the construction of +/- 900 unit multifamily development with associated parking, landscaping, and sidewalk.

Figure 1–1 Vicinity Map



# 2 HYDROLOGIC ANALYSIS

## 2.1 ASSUMPTIONS

Contour information, aerial photographs and site observations were used to delineate the watershed boundary and drainage sub-basins for the project.

## 2.2 METHODOLOGY

The City of Murrieta is located within Riverside County. Drainage calculations comply with the requirements outlined in the Riverside County Flood Control and Water Conservation District's Hydrology Manual (RCFC & WCD) dated April 1978. Runoff values were calculated based on the 100-year storm event using the Modified Rational Method. The Rational Method was used to analyze the hydrology for the project. This methodology is typically used for small basins less than 500 acres in size because a uniform rainfall distribution is assumed for the entire duration.

Basin boundaries, initial subareas, and flow paths were delineated for each basin with AutoCAD Civil 3D software. These hydrologic parameters are shown for existing conditions and proposed conditions in **Exhibit A** and **Exhibit B** attached. Elevations, flow path slopes, and estimated shape of routing reaches was determined for each basin.

The RCFC & WCD Hydrology Manual was used to calculate loss rates and subsequent runoff coefficients for each basin based on land use type, hydrologic soil group, and Antecedent Moisture Condition (AMC). The AMC is a commonly used index used to describe how saturated a soil is before the design storm occurs. AMC III describes a watershed soil that is already saturated, typically used for the 100-year storm analysis. AMC II, a moderately wet condition, was used for the 10-year storm analysis.

Hydrologic soil group B was used for the entire project. Runoff coefficients for the project were determined using Plate D-5.7 of the RCFC & WCD Hydrology Manual.

Runoff calculations for the 100-year storm were performed using the rational method computer program Advanced Engineering Software (AES), 2011 version. This method calculates time of concentration and runoff rates using criteria as specified in the Hydrology Manual. This report will identify that proposed runoff leaving the site will be less than existing conditions. See **Appendix B and C** for AES rational method results.

The Unit Hydrograph Method was used to analyze the existing and proposed runoff volume from the site. Civil Design software was utilized to determine the pre- and post-development runoff volumes for the 10-year and 100-year storm event. This report will identify that the detla of proposed runoff volume produced on site and existing conditions will be stored using underground detention systems. See **Appendix C and D** for Civil Design Unit Hydrograph results.

Excerpts from the Hydrology Manual are contained in **Appendix A**.

### 2.2.1 EXISTING SITE HYDROLOGY

The existing site is undeveloped with hills, slopes and natural drainage courses. The topography of the site generally slopes to the southwest. There is no existing stormwater system on site. Runoff sheet flows to four separate discharge locations. Existing storm drain infrastructure for the project area is within Sparkman Ct. The lowest point is at the southwest corner where stormwater collects in a vegetated area along Murrieta Hot Springs Road.

The offsite and onsite tributary areas have been defined on the attached **Existing Drainage Exhibit**. Refer to **Table 2-1** for the calculated discharge to associated inlets from the existing project site.

Table 2–1 Existing Hydrology Conditions

| DMA | Runoff Coefficient | plot (acres) | $T_c$ (min) | 100Yr Intensity | Flow Rate 100 Year (cfs) |
|---|---|---|---|---|---|
| Discharge to Outfall A | | | | | |
| A | 0.68 | 16.45 | 18.23 | 2.50 | 28.52 |
| Discharge to Outfall B | | | | | |
| B | 0.63 | 20.1 | 18.23 | 2.50 | 32.02 |
| Discharge to Outfall C | | | | | |
| C | 0.73 | 15.5 | 11.28 | 3.26 | 39.64 |
| Discharge to Outfall D | | | | | |
| D | 0.66 | 4.43 | 13.89 | 2.90 | 8.56 |
| | | | | | |
| Total | - | 56.5 | - | - | 109.24 |

### 2.2.2 PROPOSED SITE HYDROLOGY

The area of disturbance for the proposed multi-family development is approximately 37.8 acres. 56.5 acres were analyzed in total to reflect offsite flows as well and ensure existing drainage patterns are maintained. The total site area was divided into four drainage management areas as shown on the attached **Proposed Drainage Exhibit**. The project proposes storm drain infrastructure to convey project runoff to existing discharge locations. **Table 2-3** below summarizes the total calculated discharge at the outlets for each DMA.

The project area had an anticipated total flow of 145.93 cfs.

Table 2–2 Proposed Hydrology Conditions

| DMA | Runoff Coefficient | Area (acres) | $T_c$ (min) | 100Yr Intensity | Flow Rate 100 Year (cfs) |
|---|---|---|---|---|---|
| Discharge to Location 1 | | | | | |
| A | 0.72 | 14.79 | 10.90 | 3.32 | 40.23 |
| Discharge to Location 2 | | | | | |
| B | 0.84 | 19.1 | 10.08 | 3.86 | 38.07 |
| Discharge to Location 3 | | | | | |
| C | 0.75 | 10.16 | 8.09 | 3.45 | 47.67 |
| Discharge to Location 4 | | | | | |
| D | 0.83 | 6.9 | 10.41 | 3.52 | 19.96 |
| | | | | | |
| Total | - | 56.5 | - | - | 145.93 |

The proposed project will reduce runoff to existing conditions as discussed in Section 3.2.

# 3 HYDRAULIC ANALYSIS

## 3.1 STORM DRAIN SIZE

During the preliminary phase of the project, storm drains are sized within the software program AES During final engineering, detailed hydraulic analyses will be performed for the proposed final storm drain alignments.

## 3.2 DETENTION BASIN

During the preliminary phase of the project, a delta of existing and proposed storm volume was used for detention sizing. The required volume to be stored for increased runoff mitigation was determined by taking the sum of the delta volume differences from proposed improvement areas between the post-project and pre-project unit hydrographs for the 100-year storm. The existing and proposed unit hydrograph storm volumes were determined using a computer program developed by Civil Design. Civil Design was used to estimate the 100-year peak flow rates and volumes over a 24-hour period for the proposed condition. These unit hydrograph calculations are included in this report as **Appendix D**. This method calculates a unit hydrograph using lag time, maximum watershed loss rates, low lost fraction and an S-graph as specified in the Hydrology Manual. The maximum watershed loss rate was obtained directly from the rational unit hydrographs that were prepared using the methodology described in Section E of the Hydrology Manual. The existing and proposed site unit hydrograph was used to initially size the detention basin.

Prior to discharge, runoff will be detained with underground basins. Existing and Proposed Unit Hydrographs are in **Appendix D and Appendix E**.

Table 3-1 Storage Summary

| Basin ID | Existing 100-Year Volume (ac-ft) | Proposed 100-Year Volume (ac-ft) | Delta (Existing-Proposed) (ac-ft) | Total Proposed Storage (ac-ft) |
|---|---|---|---|---|
| A | 3.01 | 2.16 | -0.85 | N/A |
| B | 3.68 | 6.34 | +2.66 | 3.35 |
| C | 2.83 | 3.54 | +0.71 | 1.32 |
| D | 0.81 | 2.29 | +1.48 | 1.49 |

# 4 RESULTS

## 4.1 DRAINAGE IMPROVEMENTS

Hydrology and hydraulic analyses were performed for the preliminary site layout. Drainage improvements include inlets, storm drain, and detention basin. The proposed drainage facilities will be designed to adequately convey the 100-year flow rates. The detention basins will provide storage to reduce discharge to existing conditions.

## 4.2 CEQA

- The proposed project will discharge runoff at existing locations and runoff rates.
- The proposed improvements will have no negative impacts to any adjacent properties.
- The proposed project is subject to the requirements as set forth in the general permit.
- The project is subject to Regional Board Order No. R9-2013-0001 as amended by Order No. R9-2015-0001 and Order No. R9-2015-0100

# APPENDICES

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# APPENDIX A

## HYDROLOGY EXHIBITS

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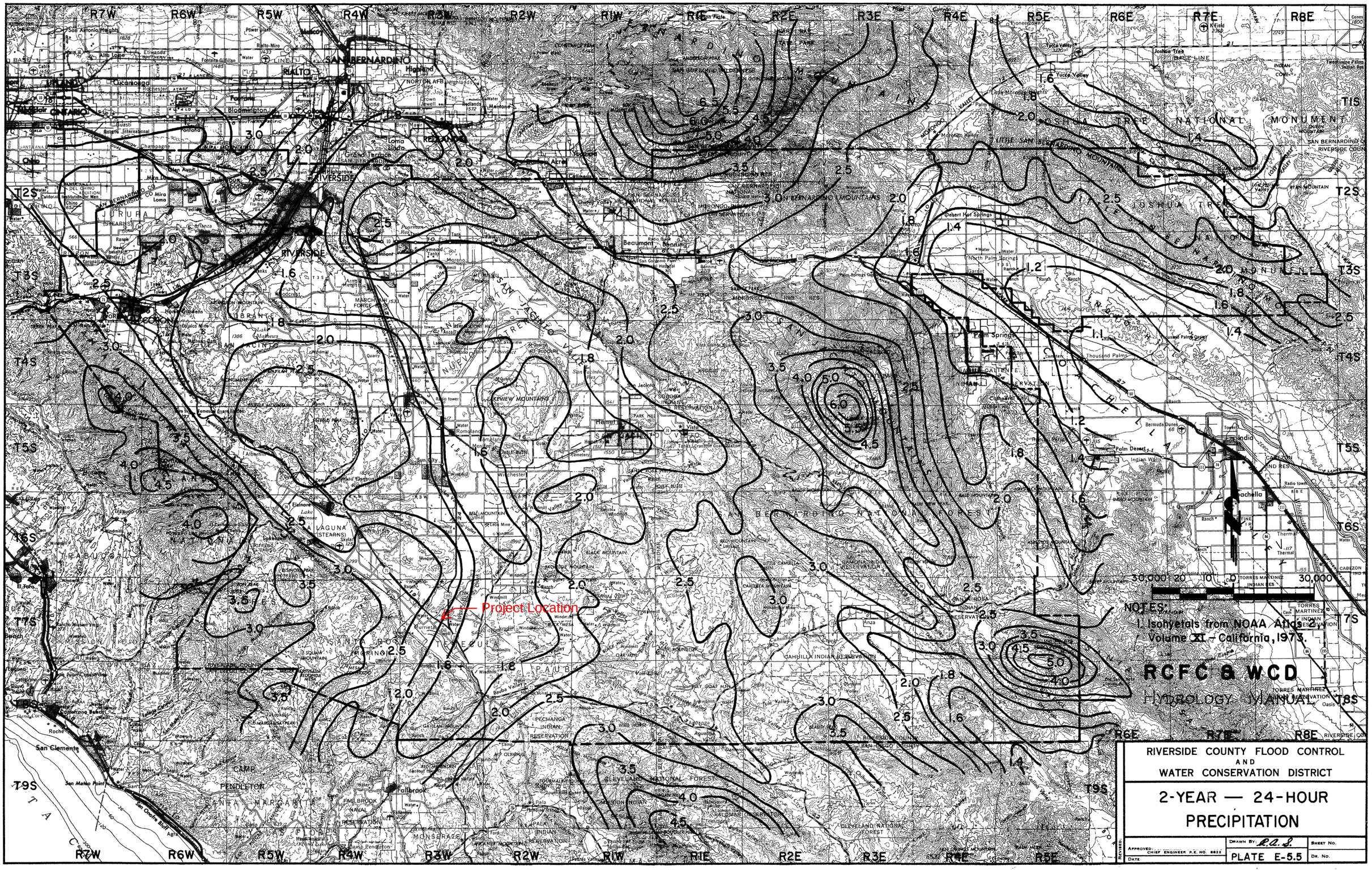
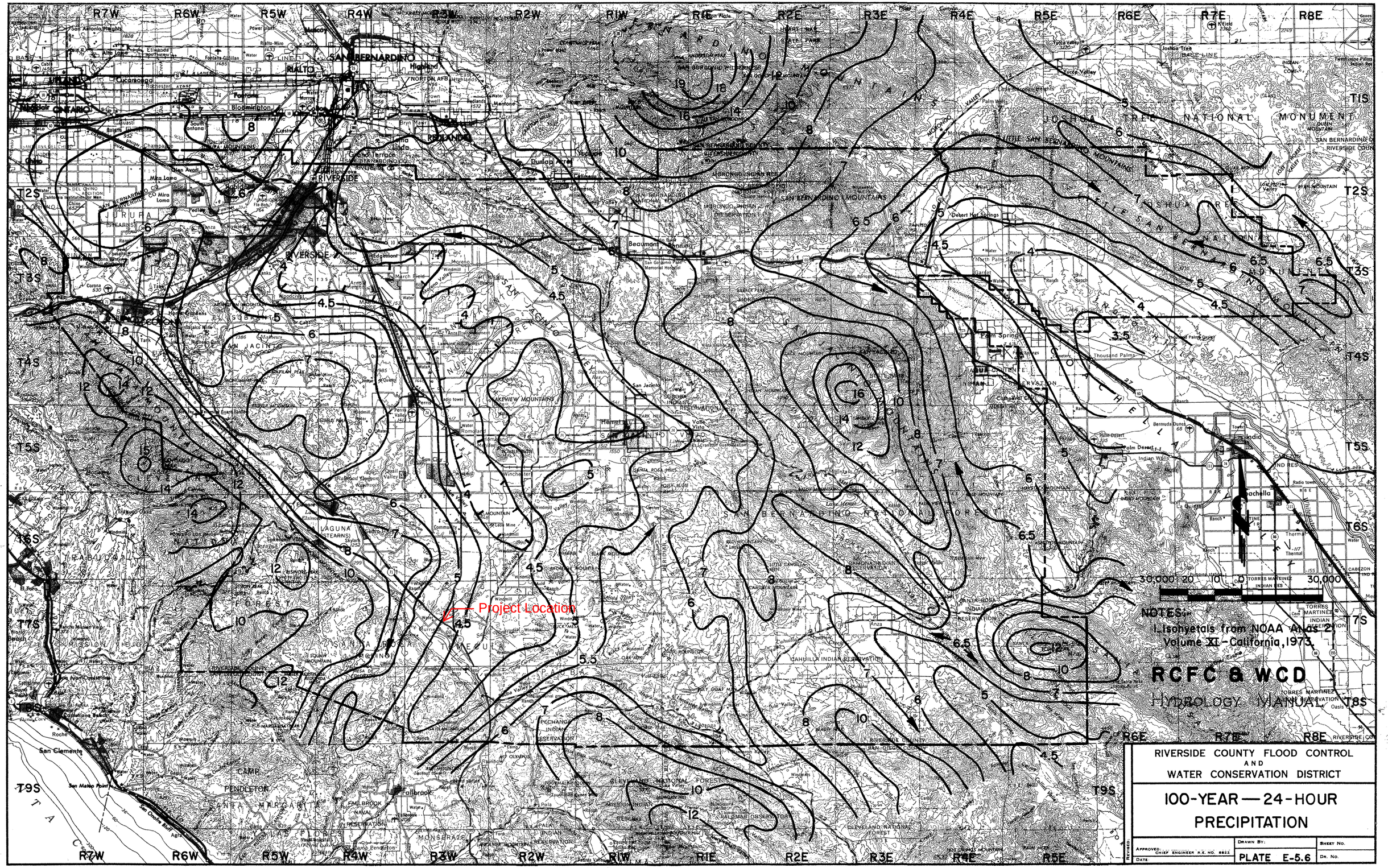


Project Location
NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 24-HOUR
PRECIPITATION
PLATE E-5.5


Project Location
NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR PRECIPITATION
PLATE E-5.6
APPROVED: CHIEF ENGINEER R.E. NO. 8822
DATE
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SHEET NO.
DR. NO.
REVISED
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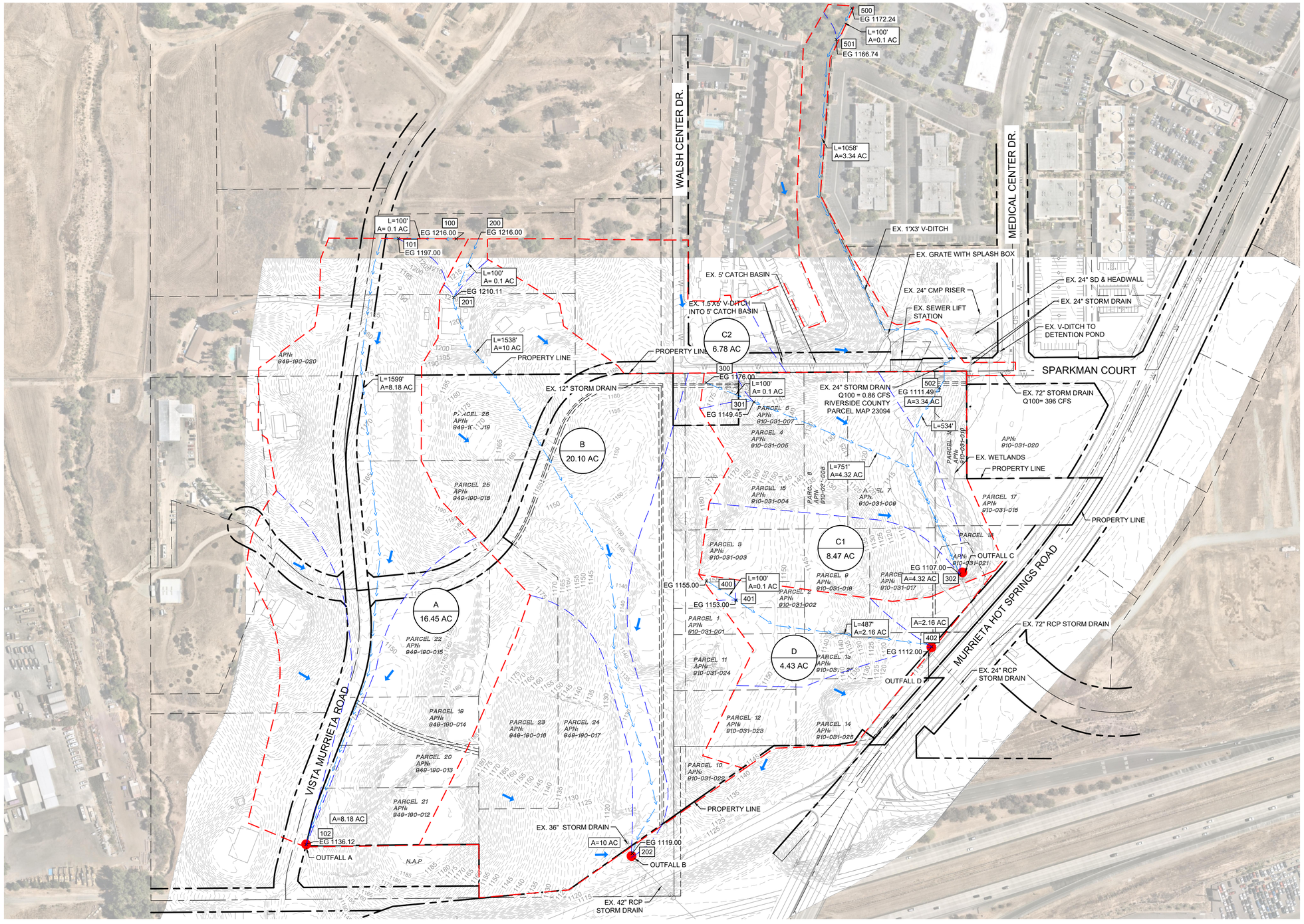


## LEGEND

| | |
|---|---|
| DMA / AREA | ID / ACRES |
| 100 | NODE |
| | DMA BOUNDARY |
| | DMA SUB BOUNDARY |
| | OVERLAND FLOW DIRECTION |
| | PROPERTY LINE/RIGHT-OF-WAY |
| | DISCHARGE LOCATION |
| SD | EXISTING STORM DRAIN |

RATIONAL METHOD SUMMARY TABLE - EXISTING CONDITIONS

| DMA ID | AREA (AC) | Q100 (CFS) |
|---|---|---|
| A | 16.45 | 28.52 |
| B | 20.1 | 32.02 |
| C | 15.5 | 39.64 |
| D | 4.43 | 8.56 |

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0 60 120 240

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# EXISTING DRAINAGE EXHIBIT
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CITY OF MURRIETA CA

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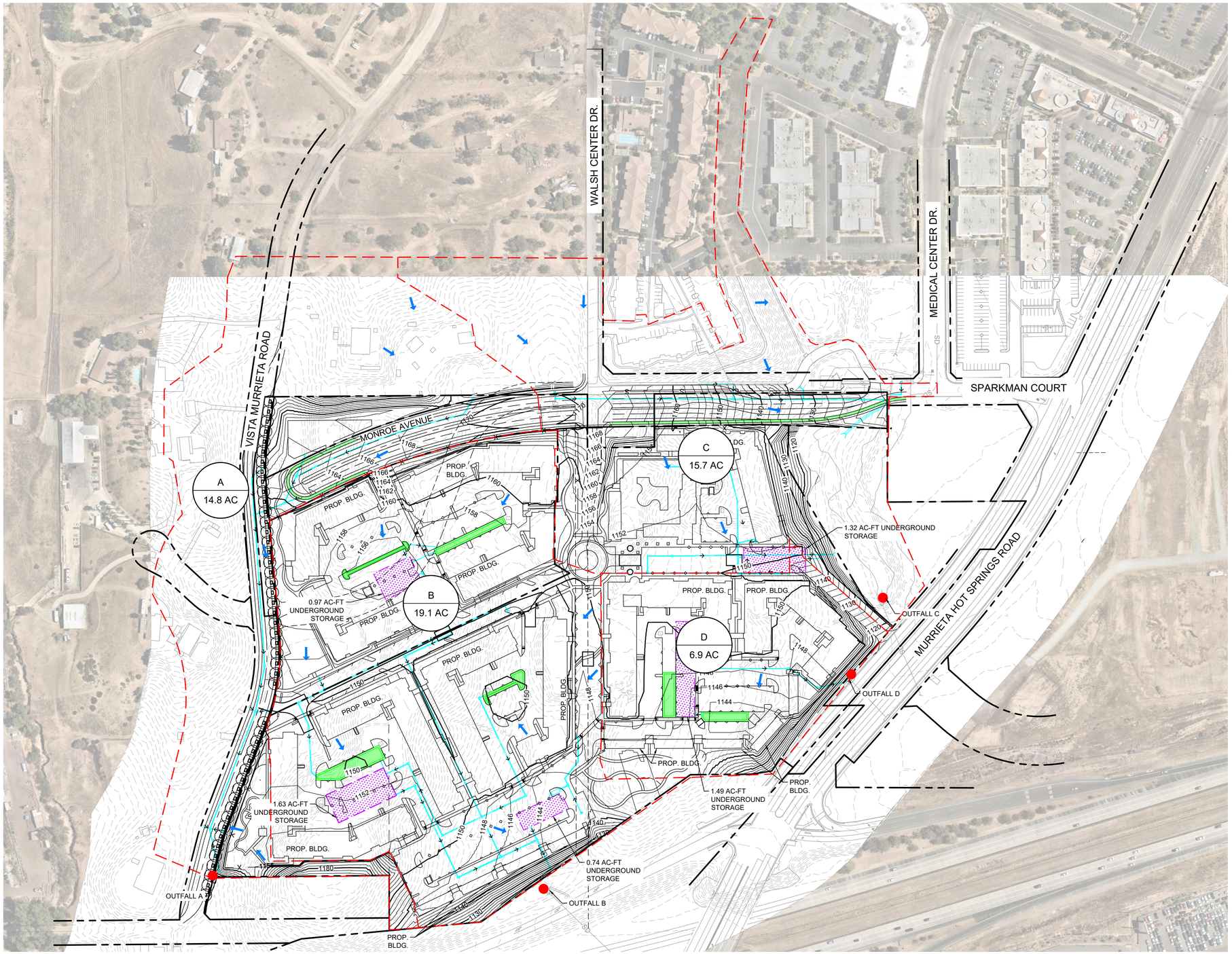


## LEGEND

| | |
|---|---|
| DMA | ID |
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| | DMA BOUNDARY |
| | OVERLAND FLOW DIRECTION |
| | PROPERTY LINE/RIGHT-OF-WAY |
| | DISCHARGE LOCATION |
| | PROPOSED STORAGE VAULT |
| | PROPOSED BIORETENTION BASIN |
| | PROPOSED STORM DRAIN |
| SD | EXISTING STORM DRAIN |

RATIONAL METHOD CONFLUENCE SUMMARY TABLE

| DMA ID | PROPOSED TOTAL AREA (AC) | EXISTING Q100 (CFS) | PROPOSED Q100 (CFS) | PROPOSED MITIGATED Q100 (CFS) |
|---|---|---|---|---|
| A | 14.8 | 28.52 | 40.23 | 28.0 |
| B | 19.1 | 32.02 | 38.07 | 32.0 |
| C | 15.7 | 39.64 | 47.67 | 39.0 |
| D | 6.9 | 8.56 | 20.14 | 8.0 |

HYDROGRAPH CONFLUENCE SUMMARY TABLE

| DMA | EXISTING 100-YEAR VOLUME (AC-FT) | PROPOSED 100-YEAR VOLUME (AC-FT) | DETLA | PROPOSED STORAGE (AC-FT) |
|---|---|---|---|---|
| A | 3.01 | 2.16 | -0.85 | N/A |
| B | 3.68 | 6.34 | 2.66 | 3.35 |
| C | 2.83 | 3.54 | 0.71 | 1.32 |
| D | 0.81 | 2.29 | 1.48 | 1.49 |

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# DRAINAGE HYDROGRAPH EXHIBIT
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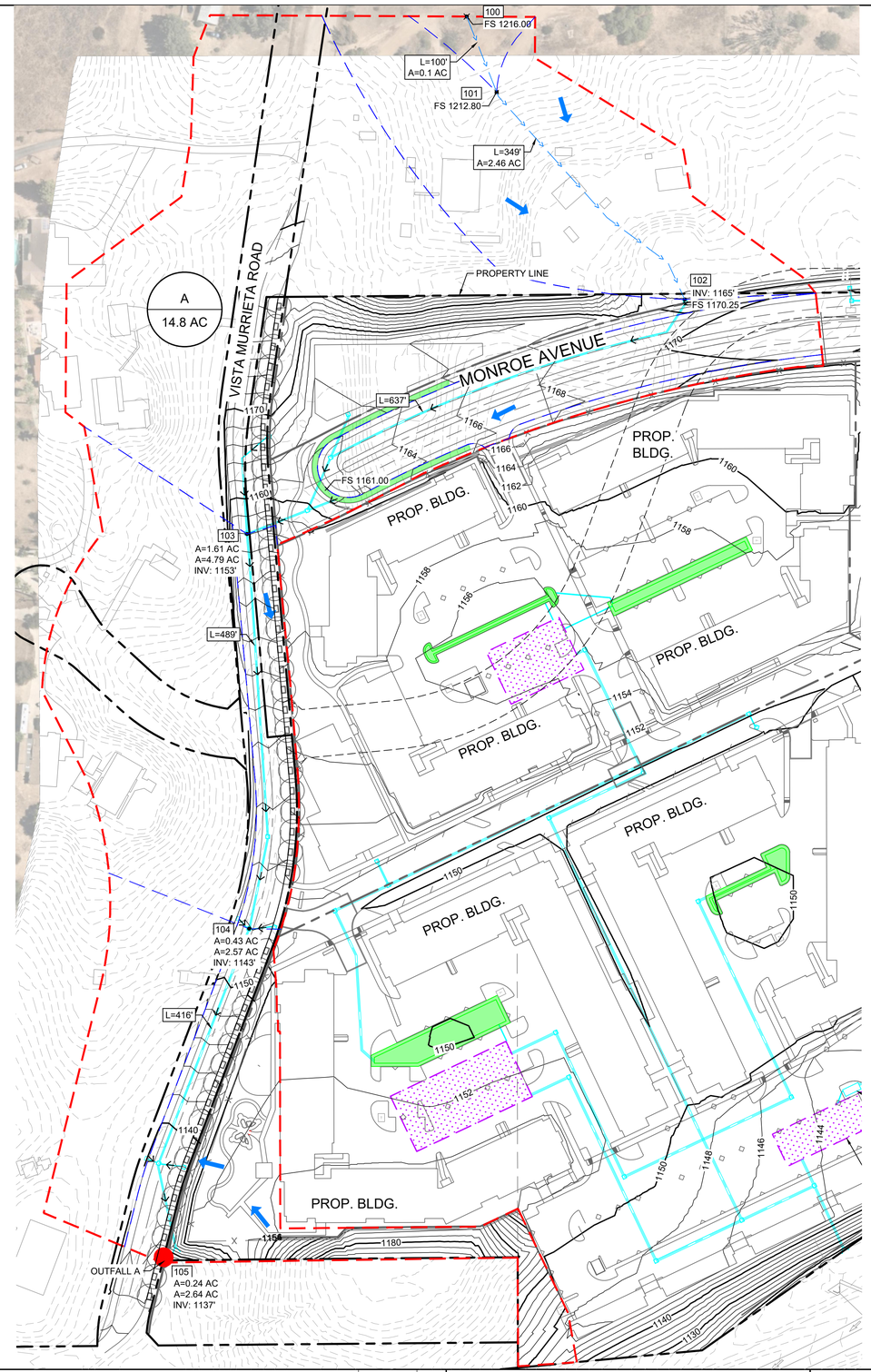


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|---|---|
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| | BMP SUB BOUNDARY |
| | DMA BOUNDARY |
| | OVERLAND FLOW DIRECTION |
| | PROPERTY LINE/RIGHT-OF-WAY |
| | DISCHARGE LOCATION |
| | PROPOSED STORAGE VAULT |
| | PROPOSED BIORETENTION BASIN |
| | PROPOSED STORM DRAIN |
| SD | EXISTING STORM DRAIN |

RATIONAL METHOD SUMMARY TABLE - PROPOSED CONDITIONS

| DMA ID | AREA (AC) | Q100 (CFS) |
|---|---|---|
| A | 14.8 | 40.23 |
| B1 | 5.7 | 18.03 |
| B2 | 6.4 | 11.88 |
| B3 | 2.8 | 7.36 |
| B4 | 4.2 | 13.95 |
| C1 | 7.3 | 23.61 |
| C2 | 8.4 | 26.66 |
| D | 6.9 | 20.14 |

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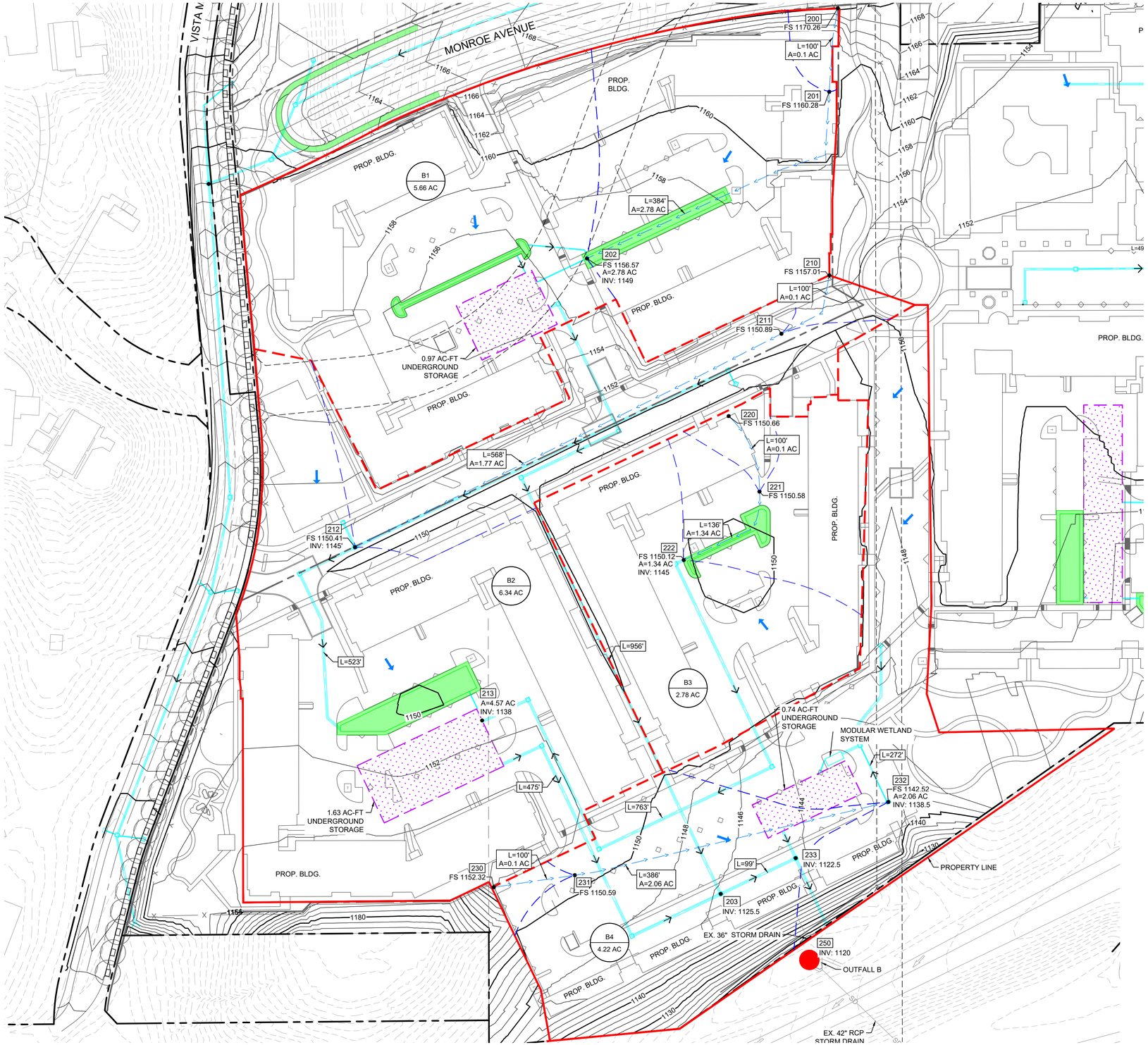


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| | DMA SUBAREA BOUNDARY |
| | BMP SUB BOUNDARY |
| | DMA BOUNDARY |
| | OVERLAND FLOW DIRECTION |
| | PROPERTY LINE/RIGHT-OF-WAY |
| | DISCHARGE LOCATION |
| | PROPOSED STORAGE VAULT |
| | PROPOSED BIORETENTION BASIN |
| | PROPOSED STORM DRAIN |
| SD | EXISTING STORM DRAIN |

RATIONAL METHOD SUMMARY TABLE - PROPOSED CONDITIONS

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|---|---|---|
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| B2 | 6.4 | 11.88 |
| B3 | 2.8 | 7.36 |
| B4 | 4.2 | 13.95 |
| C1 | 7.3 | 23.61 |
| C2 | 8.4 | 26.66 |
| D | 6.9 | 20.14 |

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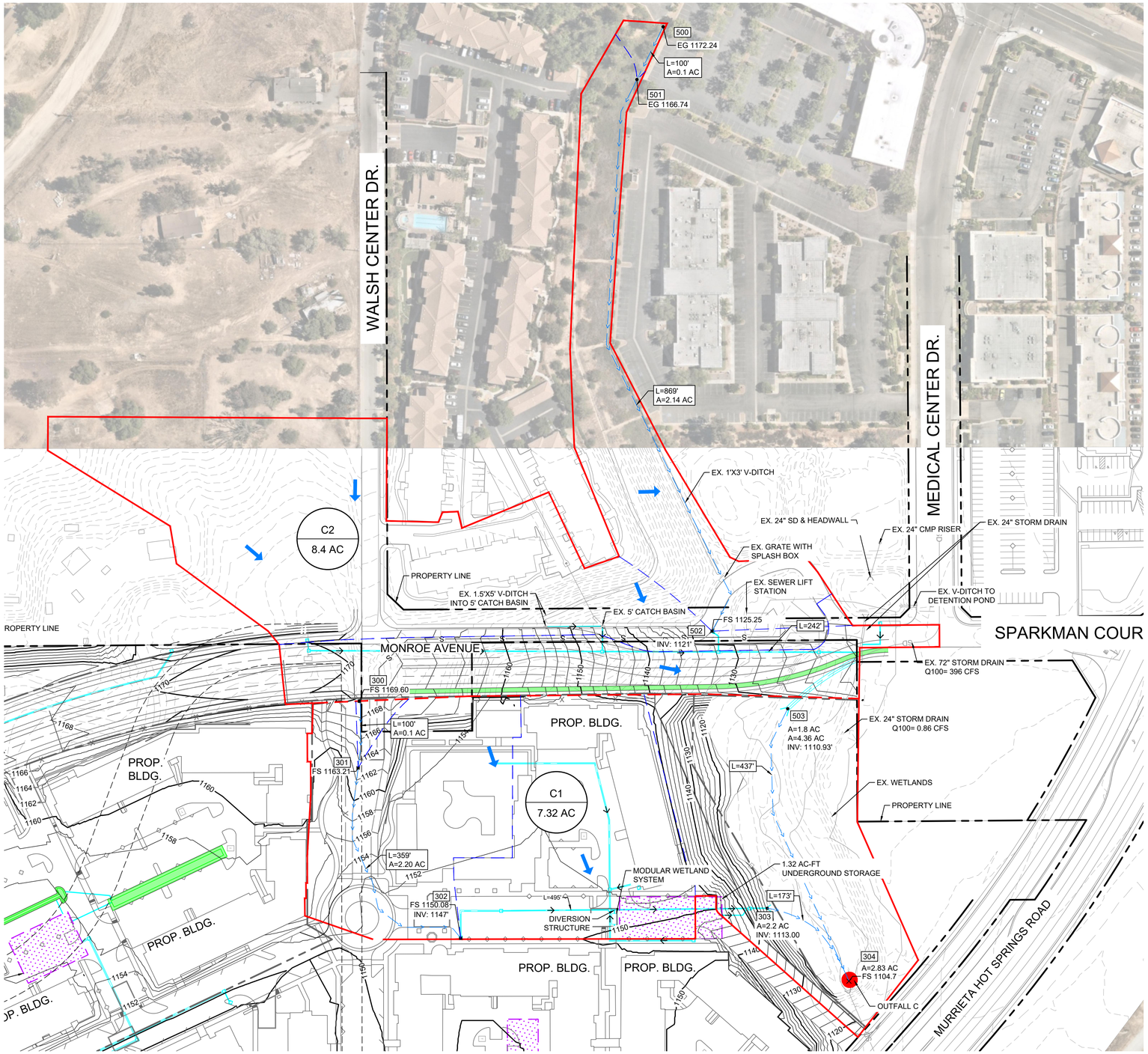


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| | DMA SUBAREA BOUNDARY |
| | BMP SUB BOUNDARY |
| | DMA BOUNDARY |
| | OVERLAND FLOW DIRECTION |
| | PROPERTY LINE/RIGHT-OF-WAY |
| | DISCHARGE LOCATION |
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| B4 | 4.2 | 13.95 |
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# PROPOSED DRAINAGE EXHIBIT - DMA C
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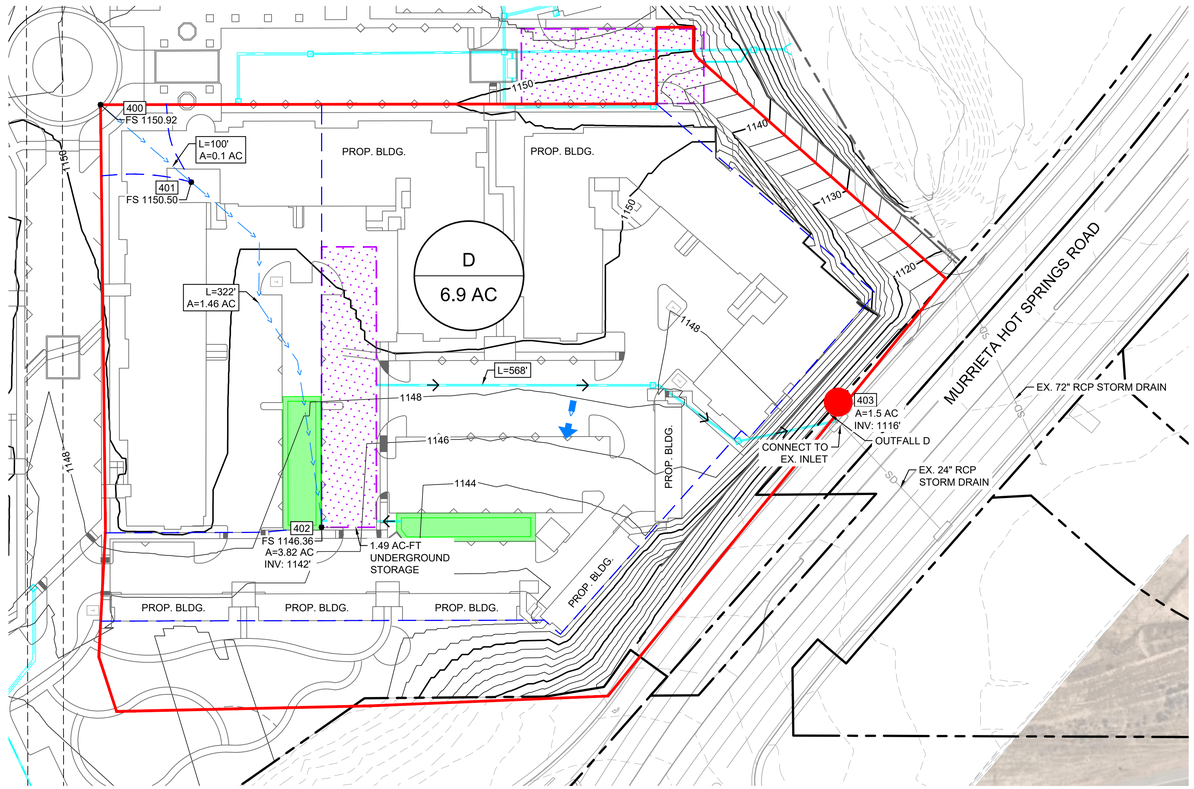


## LEGEND

| | |
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| | BMP SUB BOUNDARY |
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| | DISCHARGE LOCATION |
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| SD | EXISTING STORM DRAIN |

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| B4 | 4.2 | 13.95 |
| C1 | 7.3 | 23.61 |
| C2 | 8.4 | 26.66 |
| D | 6.9 | 19.96 |

NORTH

GRAPHIC SCALE IN FEET
0 30 60 120

| No. | REVISIONS | DATE | BY |
|---|---|---|---|

Kimley»Horn

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KHA PROJECT 195120004
DATE 12/7/2022
SCALE AS SHOWN
DESIGNED BY ___
DRAWN BY ___
CHECKED BY ___

# PROPOSED DRAINAGE EXHIBIT - DMA D
FOR
# THE TERRACES MURRIETA

CITY OF MURRIETA CA

SHEET NUMBER
5 OF 5

Plotted By: O'Brien, Rachel Sheet Set: Kha Layout: PROPOSED DRAINAGE EXHIBIT December 07, 2022 10:26:37am K:\SND_LDEV\195120004 - The Terraces Murrieta\Drainage\Drainage Study\Exhibit\PROPOSED DRAINAGE EXHIBIT - DMA D.dwg
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# APPENDIX B

## EXISTING RATIONAL METHOD

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****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
        RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
                      (RCFC&WCD)  1978 HYDROLOGY MANUAL
         (c) Copyright 1982-2011 Advanced Engineering Software (aes)
                      (Rational Tabling Version 18.0)
                   Release Date: 07/01/2011  License ID 1499

                           Analysis prepared by:

                      Kimley-Horn and Associates, Inc.
                             765 The City Drive
                                 Suite 200
                              Orange, CA 92868

 ************************** DESCRIPTION OF STUDY **************************
* THE TERRACES - MURRIETA                                                  *
* EXISTING 100-YEAR                                                        *
* 12/06/2022 RRO                                                           *
 ***************************************************************************

  FILE NAME: TMEX100.DAT
  TIME/DATE OF STUDY: 11:44 12/06/2022
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.300
  SLOPE OF INTENSITY DURATION CURVE = 0.5496
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS SINGLE FAMILY(1-ACRE LOTS)
```

```
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1216.00
  DOWNSTREAM ELEVATION(FEET) =   1197.00
  ELEVATION DIFFERENCE(FEET) =     19.00
  TC = 0.469*[(  100.00**3)/(    19.00)]**.2 =    4.128
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7772
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.40
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.40

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1197.00  DOWNSTREAM(FEET) =   1137.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1599.91   CHANNEL SLOPE =  0.0375
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.502
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .6875
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       8.08
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.02
  AVERAGE FLOW DEPTH(FEET) =   0.20   TRAVEL TIME(MIN.) =  13.23
  Tc(MIN.) =   18.23
  SUBAREA AREA(ACRES) =     8.18       SUBAREA RUNOFF(CFS) =   14.06
  TOTAL AREA(ACRES) =        8.3         PEAK FLOW RATE(CFS) =      14.46

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.25   FLOW VELOCITY(FEET/SEC.) =   2.39
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =    1699.91 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    102.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.502
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .6875
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    8.18   SUBAREA RUNOFF(CFS) =   14.06
  TOTAL AREA(ACRES) =       16.5   TOTAL RUNOFF(CFS) =     28.52
  TC(MIN.) =   18.23

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1216.00
  DOWNSTREAM ELEVATION(FEET) =   1210.11
  ELEVATION DIFFERENCE(FEET) =      5.89
  TC = 0.709*[(  100.00**3)/(     5.89)]**.2 =    7.886
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.965
```

```
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7119
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1210.11  DOWNSTREAM(FEET) =   1119.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1538.00   CHANNEL SLOPE =  0.0592
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.502
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6344
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       8.66
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.48
  AVERAGE FLOW DEPTH(FEET) =   0.19   TRAVEL TIME(MIN.) =  10.34
  Tc(MIN.) =   18.23
  SUBAREA AREA(ACRES) =    10.00       SUBAREA RUNOFF(CFS) =   15.87
  TOTAL AREA(ACRES) =       10.1         PEAK FLOW RATE(CFS) =      16.15

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.24   FLOW VELOCITY(FEET/SEC.) =   2.85
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1638.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.502
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6344
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =   10.00   SUBAREA RUNOFF(CFS) =   15.87
  TOTAL AREA(ACRES) =       20.1   TOTAL RUNOFF(CFS) =      32.02
  TC(MIN.) =   18.23

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1176.00
  DOWNSTREAM ELEVATION(FEET) =   1149.45
  ELEVATION DIFFERENCE(FEET) =     26.55
  TC = 0.709*[(  100.00**3)/(    26.55)]**.2 =    5.836
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.679
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7353
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.34
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  51
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1149.45  DOWNSTREAM(FEET) =   1107.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   751.00   CHANNEL SLOPE =  0.0565
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.211
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6786
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.21
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.18
  AVERAGE FLOW DEPTH(FEET) =   0.16   TRAVEL TIME(MIN.) =   5.74
  Tc(MIN.) =   11.58
  SUBAREA AREA(ACRES) =     4.32       SUBAREA RUNOFF(CFS) =    9.41
  TOTAL AREA(ACRES) =        4.4         PEAK FLOW RATE(CFS) =       9.76

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.20   FLOW VELOCITY(FEET/SEC.) =   2.58
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =     851.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    302.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
================================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.211
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6786
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.32   SUBAREA RUNOFF(CFS) =    9.41
  TOTAL AREA(ACRES) =        8.7   TOTAL RUNOFF(CFS) =      19.17
  TC(MIN.) =   11.58

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    302.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   11.58
  RAINFALL INTENSITY(INCH/HR) =   3.21
  TOTAL STREAM AREA(ACRES) =     8.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.17

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS SINGLE FAMILY(1-ACRE LOTS)
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1172.24
  DOWNSTREAM ELEVATION(FEET) =   1166.74
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.469*[(  100.00**3)/(     5.50)]**.2 =    5.289
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.939
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7740
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.38
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.38
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    502.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1166.74  DOWNSTREAM(FEET) =   1111.49
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1058.00   CHANNEL SLOPE =  0.0522
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   2.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.092
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7533
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.58
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.18
  AVERAGE FLOW DEPTH(FEET) =   0.34   TRAVEL TIME(MIN.) =   2.16
  Tc(MIN.) =    7.45
  SUBAREA AREA(ACRES) =     3.34       SUBAREA RUNOFF(CFS) =   10.30
  TOTAL AREA(ACRES) =        3.4         PEAK FLOW RATE(CFS) =      10.68

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.46   FLOW VELOCITY(FEET/SEC.) =   9.73
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    502.00 =    1158.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    502.00 TO NODE    502.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.092
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7533
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.34   SUBAREA RUNOFF(CFS) =   10.30
  TOTAL AREA(ACRES) =        6.8   TOTAL RUNOFF(CFS) =      20.97
  TC(MIN.) =    7.45

****************************************************************************
  FLOW PROCESS FROM NODE    502.00 TO NODE    302.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1111.49  DOWNSTREAM(FEET) =   1107.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   534.00   CHANNEL SLOPE =  0.0084
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  14.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  CHANNEL FLOW THRU SUBAREA(CFS) =      20.97
  FLOW VELOCITY(FEET/SEC.) =   2.32   FLOW DEPTH(FEET) =   0.52
  TRAVEL TIME(MIN.) =   3.83   Tc(MIN.) =   11.28
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    302.00 =    1692.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    302.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   11.28
  RAINFALL INTENSITY(INCH/HR) =   3.26
  TOTAL STREAM AREA(ACRES) =     6.78
```

```
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     20.97

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       19.17    11.58        3.211          8.74
      2       20.97    11.28        3.258          6.78

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       39.64    11.28       3.258
      2       39.84    11.58       3.211

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      39.64   Tc(MIN.) =   11.28
  TOTAL AREA(ACRES) =       15.5
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    302.00 =    1692.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS: UNDEVELOPED WITH FAIR COVER
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1155.00
  DOWNSTREAM ELEVATION(FEET) =   1153.00
  ELEVATION DIFFERENCE(FEET) =      2.00
  TC = 0.709*[(  100.00**3)/(     2.00)]**.2 =    9.788
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.521
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6936
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.24
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.24

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1153.00  DOWNSTREAM(FEET) =   1112.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   487.00   CHANNEL SLOPE =  0.0842
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.905
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6614
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.35
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.98
  AVERAGE FLOW DEPTH(FEET) =   0.11   TRAVEL TIME(MIN.) =   4.11
```

```
  Tc(MIN.) =   13.89
  SUBAREA AREA(ACRES) =     2.16       SUBAREA RUNOFF(CFS) =    4.16
  TOTAL AREA(ACRES) =        2.3         PEAK FLOW RATE(CFS) =       4.40

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.13   FLOW VELOCITY(FEET/SEC.) =   2.46
  LONGEST FLOWPATH FROM NODE    400.00 TO NODE    402.00 =     587.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    402.00 TO NODE    402.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.905
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6614
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.16   SUBAREA RUNOFF(CFS) =    4.16
  TOTAL AREA(ACRES) =        4.4   TOTAL RUNOFF(CFS) =       8.56
  TC(MIN.) =   13.89
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        4.4  TC(MIN.) =     13.89
  PEAK FLOW RATE(CFS)   =       8.56
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

# APPENDIX C

## PROPOSED RATIONAL METHOD

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```
****************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
        RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
                      (RCFC&WCD)  1978 HYDROLOGY MANUAL
         (c) Copyright 1982-2011 Advanced Engineering Software (aes)
                      (Rational Tabling Version 18.0)
                   Release Date: 07/01/2011  License ID 1499

                         Analysis prepared by:

                      Kimley-Horn and Associates, Inc.
                             765 The City Drive
                                 Suite 200
                              Orange, CA 92868

 ************************** DESCRIPTION OF STUDY **************************
* THE TERRACES - MURRIETA                                                  *
* PROPOSED 100-YEAR                                                        *
* 12/06/2022 RRO                                                           *
 ***************************************************************************

  FILE NAME: TMPR100.DAT
  TIME/DATE OF STUDY: 11:25 12/06/2022
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  12.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.360
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.880
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.480
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.300
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.5505732
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.5495536
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.300
  SLOPE OF INTENSITY DURATION CURVE = 0.5496
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS SINGLE FAMILY(1-ACRE LOTS)
```

```
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1216.00
  DOWNSTREAM ELEVATION(FEET) =   1212.80
  ELEVATION DIFFERENCE(FEET) =      3.20
  TC = 0.469*[(  100.00**3)/(     3.20)]**.2 =    5.894
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.653
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7677
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.36

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1212.80  DOWNSTREAM(FEET) =   1170.25
  CHANNEL LENGTH THRU SUBAREA(FEET) =   349.00   CHANNEL SLOPE =  0.1219
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.892
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7473
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       3.97
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.57
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   2.26
  Tc(MIN.) =    8.16
  SUBAREA AREA(ACRES) =     2.46       SUBAREA RUNOFF(CFS) =    7.16
  TOTAL AREA(ACRES) =        2.6         PEAK FLOW RATE(CFS) =       7.51

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   3.14
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     449.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1165.00  DOWNSTREAM(FEET) =  1153.00
  FLOW LENGTH(FEET) =   637.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.94
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.51
  PIPE TRAVEL TIME(MIN.) =   1.34    Tc(MIN.) =    9.49
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    103.00 =    1086.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.581
  *USER SPECIFIED(SUBAREA):
  SINGLE-FAMILY(1/4 ACRE LOT) RUNOFF COEFFICIENT = .9000
  SUBAREA AREA(ACRES) =    1.61   SUBAREA RUNOFF(CFS) =    5.19
  TOTAL AREA(ACRES) =        4.2   TOTAL RUNOFF(CFS) =      12.70
  TC(MIN.) =    9.49
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    103.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.581
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7370
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.79   SUBAREA RUNOFF(CFS) =   12.64
  TOTAL AREA(ACRES) =        9.0   TOTAL RUNOFF(CFS) =      25.34
  TC(MIN.) =    9.49

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1153.00  DOWNSTREAM(FEET) =  1143.00
  FLOW LENGTH(FEET) =   489.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  16.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.16
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.34
  PIPE TRAVEL TIME(MIN.) =   0.73    Tc(MIN.) =   10.22
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    104.00 =    1575.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    104.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.438
  *USER SPECIFIED(SUBAREA):
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .9000
  SUBAREA AREA(ACRES) =    0.43   SUBAREA RUNOFF(CFS) =    1.33
  TOTAL AREA(ACRES) =        9.4   TOTAL RUNOFF(CFS) =      26.67
  TC(MIN.) =   10.22

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    104.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.438
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7318
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.57   SUBAREA RUNOFF(CFS) =    6.47
  TOTAL AREA(ACRES) =       12.0   TOTAL RUNOFF(CFS) =      33.14
  TC(MIN.) =   10.22

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1143.00  DOWNSTREAM(FEET) =  1137.00
  FLOW LENGTH(FEET) =   418.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  20.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.31
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      33.14
```

```
  PIPE TRAVEL TIME(MIN.) =   0.68    Tc(MIN.) =   10.90
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    105.00 =    1993.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    105.00 TO NODE    105.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.319
  *USER SPECIFIED(SUBAREA):
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .9000
  SUBAREA AREA(ACRES) =    0.24   SUBAREA RUNOFF(CFS) =    0.72
  TOTAL AREA(ACRES) =       12.2   TOTAL RUNOFF(CFS) =      33.86
  TC(MIN.) =   10.90

****************************************************************************
  FLOW PROCESS FROM NODE    105.00 TO NODE    105.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.319
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7273
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.64   SUBAREA RUNOFF(CFS) =    6.37
  TOTAL AREA(ACRES) =       14.8   TOTAL RUNOFF(CFS) =      40.23
  TC(MIN.) =   10.90

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1170.26
  DOWNSTREAM ELEVATION(FEET) =   1160.28
  ELEVATION DIFFERENCE(FEET) =      9.98
  TC = 0.359*[(  100.00**3)/(     9.98)]**.2 =    3.593
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8463
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1160.28  DOWNSTREAM(FEET) =   1156.57
  CHANNEL LENGTH THRU SUBAREA(FEET) =   384.00   CHANNEL SLOPE =  0.0097
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.804
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8320
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       4.92
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.83
  AVERAGE FLOW DEPTH(FEET) =   0.16   TRAVEL TIME(MIN.) =   3.50
```

```
  Tc(MIN.) =    8.50
  SUBAREA AREA(ACRES) =     2.78       SUBAREA RUNOFF(CFS) =    8.80
  TOTAL AREA(ACRES) =        2.9         PEAK FLOW RATE(CFS) =       9.23

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.21   FLOW VELOCITY(FEET/SEC.) =   2.14
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     484.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.804
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8320
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.78   SUBAREA RUNOFF(CFS) =    8.80
  TOTAL AREA(ACRES) =        5.7   TOTAL RUNOFF(CFS) =     18.03
  TC(MIN.) =    8.50

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1149.00  DOWNSTREAM(FEET) =  1125.50
  FLOW LENGTH(FEET) =   956.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  13.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.03
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      18.03
  PIPE TRAVEL TIME(MIN.) =   1.44    Tc(MIN.) =    9.95
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    1440.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  13
----------------------------------------------------------------------------
  >>>>>CLEAR THE MAIN-STREAM MEMORY<<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    210.00 TO NODE    211.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1157.01
  DOWNSTREAM ELEVATION(FEET) =   1150.89
  ELEVATION DIFFERENCE(FEET) =      6.12
  TC = 0.359*[(  100.00**3)/(     6.12)]**.2 =    3.963
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8463
```

```
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1150.89  DOWNSTREAM(FEET) =   1150.41
  CHANNEL LENGTH THRU SUBAREA(FEET) =   568.00   CHANNEL SLOPE =  0.0008
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.319
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8020
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.20
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   0.59
  AVERAGE FLOW DEPTH(FEET) =   0.19   TRAVEL TIME(MIN.) =  15.94
  Tc(MIN.) =   20.94
  SUBAREA AREA(ACRES) =     1.77       SUBAREA RUNOFF(CFS) =    3.29
  TOTAL AREA(ACRES) =        1.9         PEAK FLOW RATE(CFS) =       3.72

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.23   FLOW VELOCITY(FEET/SEC.) =   0.69
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =     668.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1145.00  DOWNSTREAM(FEET) =  1138.00
  FLOW LENGTH(FEET) =   523.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.81
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.72
  PIPE TRAVEL TIME(MIN.) =   1.50    Tc(MIN.) =   22.44
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    213.00 =    1191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    213.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.232
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .7994
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.57   SUBAREA RUNOFF(CFS) =    8.15
  TOTAL AREA(ACRES) =        6.4   TOTAL RUNOFF(CFS) =      11.88
  TC(MIN.) =   22.44

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    213.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   22.44
```

```
  RAINFALL INTENSITY(INCH/HR) =   2.23
  TOTAL STREAM AREA(ACRES) =     6.44
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.88

****************************************************************************
  FLOW PROCESS FROM NODE    220.00 TO NODE    221.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1150.66
  DOWNSTREAM ELEVATION(FEET) =   1150.58
  ELEVATION DIFFERENCE(FEET) =      0.08
  TC = 0.359*[(  100.00**3)/(     0.08)]**.2 =    9.433
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.594
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8289
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.30
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.30

****************************************************************************
  FLOW PROCESS FROM NODE    221.00 TO NODE    222.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1150.58  DOWNSTREAM(FEET) =   1150.12
  CHANNEL LENGTH THRU SUBAREA(FEET) =   136.00   CHANNEL SLOPE =  0.0034
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.203
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8224
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.06
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.03
  AVERAGE FLOW DEPTH(FEET) =   0.14   TRAVEL TIME(MIN.) =   2.20
  Tc(MIN.) =   11.63
  SUBAREA AREA(ACRES) =     1.34       SUBAREA RUNOFF(CFS) =    3.53
  TOTAL AREA(ACRES) =        1.4         PEAK FLOW RATE(CFS) =       3.83

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.18   FLOW VELOCITY(FEET/SEC.) =   1.19
  LONGEST FLOWPATH FROM NODE    220.00 TO NODE    222.00 =     236.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    222.00 TO NODE    222.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.203
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8224
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.34   SUBAREA RUNOFF(CFS) =    3.53
  TOTAL AREA(ACRES) =        2.8   TOTAL RUNOFF(CFS) =      7.36
  TC(MIN.) =   11.63

****************************************************************************
  FLOW PROCESS FROM NODE    222.00 TO NODE    213.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1145.00  DOWNSTREAM(FEET) =  1138.00
  FLOW LENGTH(FEET) =   763.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.09
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.36
  PIPE TRAVEL TIME(MIN.) =   2.09    Tc(MIN.) =   13.72
  LONGEST FLOWPATH FROM NODE    220.00 TO NODE    213.00 =     999.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    213.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   13.72
  RAINFALL INTENSITY(INCH/HR) =   2.93
  TOTAL STREAM AREA(ACRES) =     2.78
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.36

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.88    22.44        2.232          6.44
      2        7.36    13.72        2.925          2.78

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       14.62    13.72       2.925
      2       17.49    22.44       2.232

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      17.49   Tc(MIN.) =   22.44
  TOTAL AREA(ACRES) =        9.2
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    213.00 =    1191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    203.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
==============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1138.00  DOWNSTREAM(FEET) =  1125.50
  FLOW LENGTH(FEET) =   475.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.9 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.26
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      17.49
  PIPE TRAVEL TIME(MIN.) =   0.70    Tc(MIN.) =   23.14
```

```
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    203.00 =    1666.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       17.49    23.14       2.195        9.22
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    203.00 =    1666.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       18.03     9.95       3.490        5.66
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    1440.00 FEET.

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      25.55       9.95        3.490
      2      28.83      23.14        2.195

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      25.55   Tc(MIN.) =    9.95
  TOTAL AREA(ACRES) =       14.9

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    233.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1125.50  DOWNSTREAM(FEET) =  1122.50
  FLOW LENGTH(FEET) =    99.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  16.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.72
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.55
  PIPE TRAVEL TIME(MIN.) =   0.13    Tc(MIN.) =   10.08
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    233.00 =    1765.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    233.00 TO NODE    233.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   10.08
  RAINFALL INTENSITY(INCH/HR) =   3.47
  TOTAL STREAM AREA(ACRES) =    14.88
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     25.55
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    230.00 TO NODE    231.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1152.32
  DOWNSTREAM ELEVATION(FEET) =   1150.59
  ELEVATION DIFFERENCE(FEET) =      1.73
  TC = 0.359*[(  100.00**3)/(     1.73)]**.2 =    5.102
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.037
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8458
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    231.00 TO NODE    232.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1150.59  DOWNSTREAM(FEET) =   1142.52
  CHANNEL LENGTH THRU SUBAREA(FEET) =   386.00   CHANNEL SLOPE =  0.0209
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.938
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8338
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       3.88
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.23
  AVERAGE FLOW DEPTH(FEET) =   0.13   TRAVEL TIME(MIN.) =   2.88
  Tc(MIN.) =    7.99
  SUBAREA AREA(ACRES) =     2.06       SUBAREA RUNOFF(CFS) =    6.76
  TOTAL AREA(ACRES) =        2.2         PEAK FLOW RATE(CFS) =       7.19

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   2.73
  LONGEST FLOWPATH FROM NODE    230.00 TO NODE    232.00 =     486.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    232.00 TO NODE    232.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.938
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8338
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.06   SUBAREA RUNOFF(CFS) =    6.76
  TOTAL AREA(ACRES) =        4.2   TOTAL RUNOFF(CFS) =     13.95
  TC(MIN.) =    7.99

****************************************************************************
  FLOW PROCESS FROM NODE    232.00 TO NODE    233.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1142.52  DOWNSTREAM(FEET) =  1122.50
  FLOW LENGTH(FEET) =   272.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.52
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      13.95
  PIPE TRAVEL TIME(MIN.) =   0.29    Tc(MIN.) =    8.28
  LONGEST FLOWPATH FROM NODE    230.00 TO NODE    233.00 =     758.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    233.00 TO NODE    233.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    8.28
  RAINFALL INTENSITY(INCH/HR) =   3.86
  TOTAL STREAM AREA(ACRES) =     4.22
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     13.95

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       25.55    10.08        3.465         14.88
      2       13.95     8.28        3.861          4.22

 ********************************WARNING*********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ****************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       34.94     8.28       3.861
      2       38.07    10.08       3.465

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      38.07   Tc(MIN.) =   10.08
  TOTAL AREA(ACRES) =       19.1
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    233.00 =    1765.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    233.00 TO NODE    250.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1122.50  DOWNSTREAM(FEET) =  1120.00
  FLOW LENGTH(FEET) =    84.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  27.0 INCH PIPE IS  17.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.30
  ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      38.07
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =   10.18
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    250.00 =    1849.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1169.60
  DOWNSTREAM ELEVATION(FEET) =   1163.21
  ELEVATION DIFFERENCE(FEET) =      6.39
  TC = 0.359*[(  100.00**3)/(     6.39)]**.2 =    3.929
  COMPUTED TIME OF CONCENTRATION INCREASED TO 5 MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.093
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8463
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.43
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.43

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1163.21  DOWNSTREAM(FEET) =   1147.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   359.00   CHANNEL SLOPE =  0.0452
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.284
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8381
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       4.40
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.23
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   1.85
  Tc(MIN.) =    6.85
  SUBAREA AREA(ACRES) =     2.20       SUBAREA RUNOFF(CFS) =    7.90
  TOTAL AREA(ACRES) =        2.3         PEAK FLOW RATE(CFS) =       8.33

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.15   FLOW VELOCITY(FEET/SEC.) =   3.75
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =     459.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1147.00  DOWNSTREAM(FEET) =  1113.00
  FLOW LENGTH(FEET) =   495.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.13
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       8.33
  PIPE TRAVEL TIME(MIN.) =   0.63    Tc(MIN.) =    7.48
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =     954.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    303.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.082
```

```
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8357
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.20   SUBAREA RUNOFF(CFS) =    7.50
  TOTAL AREA(ACRES) =        4.5   TOTAL RUNOFF(CFS) =      15.83
  TC(MIN.) =    7.48

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1113.00  DOWNSTREAM(FEET) =   1104.70
  CHANNEL LENGTH THRU SUBAREA(FEET) =   173.00   CHANNEL SLOPE =  0.0480
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  14.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  CHANNEL FLOW THRU SUBAREA(CFS) =      15.83
  FLOW VELOCITY(FEET/SEC.) =   3.97   FLOW DEPTH(FEET) =   0.29
  TRAVEL TIME(MIN.) =   0.73   Tc(MIN.) =    8.21
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =    1127.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    304.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.879
  UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .7086
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    2.83   SUBAREA RUNOFF(CFS) =    7.78
  TOTAL AREA(ACRES) =        7.3   TOTAL RUNOFF(CFS) =      23.61
  TC(MIN.) =    8.21

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    304.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    8.21
  RAINFALL INTENSITY(INCH/HR) =   3.88
  TOTAL STREAM AREA(ACRES) =     7.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     23.61

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS SINGLE FAMILY(1-ACRE LOTS)
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1172.24
  DOWNSTREAM ELEVATION(FEET) =   1166.74
  ELEVATION DIFFERENCE(FEET) =      5.50
  TC = 0.469*[(  100.00**3)/(     5.50)]**.2 =    5.289
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.939
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7740
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.38
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.38
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    501.00 TO NODE    502.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1166.74  DOWNSTREAM(FEET) =   1125.25
  CHANNEL LENGTH THRU SUBAREA(FEET) =   869.00   CHANNEL SLOPE =  0.0477
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   2.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.126
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7542
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       3.74
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.08
  AVERAGE FLOW DEPTH(FEET) =   0.29   TRAVEL TIME(MIN.) =   2.05
  Tc(MIN.) =    7.34
  SUBAREA AREA(ACRES) =     2.14       SUBAREA RUNOFF(CFS) =    6.66
  TOTAL AREA(ACRES) =        2.2         PEAK FLOW RATE(CFS) =       7.04

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.39   FLOW VELOCITY(FEET/SEC.) =   8.45
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    502.00 =     969.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    502.00 TO NODE    503.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1121.00  DOWNSTREAM(FEET) =  1110.93
  FLOW LENGTH(FEET) =   242.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.28
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       7.04
  PIPE TRAVEL TIME(MIN.) =   0.39    Tc(MIN.) =    7.73
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    503.00 =    1211.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    503.00 TO NODE    503.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.009
  *USER SPECIFIED(SUBAREA):
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .9000
  SUBAREA AREA(ACRES) =    1.80   SUBAREA RUNOFF(CFS) =    6.50
  TOTAL AREA(ACRES) =        4.0   TOTAL RUNOFF(CFS) =      13.54
  TC(MIN.) =    7.73

****************************************************************************
  FLOW PROCESS FROM NODE    503.00 TO NODE    503.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.009
  SINGLE-FAMILY(1-ACRE LOT) RUNOFF COEFFICIENT = .7508
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    4.36   SUBAREA RUNOFF(CFS) =   13.13
  TOTAL AREA(ACRES) =        8.4   TOTAL RUNOFF(CFS) =      26.66
  TC(MIN.) =    7.73
```

```
****************************************************************************
  FLOW PROCESS FROM NODE    503.00 TO NODE    304.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1110.93  DOWNSTREAM(FEET) =   1104.70
  CHANNEL LENGTH THRU SUBAREA(FEET) =   437.00   CHANNEL SLOPE =  0.0143
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  14.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.00
  CHANNEL FLOW THRU SUBAREA(CFS) =      26.66
  FLOW VELOCITY(FEET/SEC.) =   3.00   FLOW DEPTH(FEET) =   0.52
  TRAVEL TIME(MIN.) =   2.43   Tc(MIN.) =   10.16
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    304.00 =    1648.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    304.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   10.16
  RAINFALL INTENSITY(INCH/HR) =   3.45
  TOTAL STREAM AREA(ACRES) =     8.40
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     26.66

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       23.61     8.21        3.879          7.33
      2       26.66    10.16        3.451          8.40

 **********************************WARNING**********************************
  IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
  ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
  WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ***************************************************************************

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       45.16     8.21       3.879
      2       47.67    10.16       3.451

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      47.67   Tc(MIN.) =   10.16
  TOTAL AREA(ACRES) =       15.7
  LONGEST FLOWPATH FROM NODE    500.00 TO NODE    304.00 =    1648.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
          ASSUMED INITIAL SUBAREA UNIFORM
          DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
```

```
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =   1150.92
  DOWNSTREAM ELEVATION(FEET) =   1150.50
  ELEVATION DIFFERENCE(FEET) =      0.42
  TC = 0.359*[(  100.00**3)/(     0.42)]**.2 =    6.771
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.312
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8384
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      0.36
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.36

****************************************************************************
  FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   1150.50  DOWNSTREAM(FEET) =   1146.36
  CHANNEL LENGTH THRU SUBAREA(FEET) =   322.00   CHANNEL SLOPE =  0.0129
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =  99.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.523
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8278
  SOIL CLASSIFICATION IS "B"
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.51
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.78
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   3.01
  Tc(MIN.) =    9.78
  SUBAREA AREA(ACRES) =     1.46       SUBAREA RUNOFF(CFS) =    4.26
  TOTAL AREA(ACRES) =        1.6         PEAK FLOW RATE(CFS) =       4.62

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.15   FLOW VELOCITY(FEET/SEC.) =   2.08
  LONGEST FLOWPATH FROM NODE    400.00 TO NODE    402.00 =     422.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    402.00 TO NODE    402.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.523
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8278
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    3.82   SUBAREA RUNOFF(CFS) =   11.14
  TOTAL AREA(ACRES) =        5.4   TOTAL RUNOFF(CFS) =      15.76
  TC(MIN.) =    9.78

****************************************************************************
  FLOW PROCESS FROM NODE    402.00 TO NODE    403.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =  1142.00  DOWNSTREAM(FEET) =  1116.00
  FLOW LENGTH(FEET) =   568.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.49
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      15.76
  PIPE TRAVEL TIME(MIN.) =   0.70    Tc(MIN.) =   10.48
  LONGEST FLOWPATH FROM NODE    400.00 TO NODE    403.00 =     990.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    403.00 TO NODE    403.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.391
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8257
  SOIL CLASSIFICATION IS "B"
  SUBAREA AREA(ACRES) =    1.50   SUBAREA RUNOFF(CFS) =    4.20
  TOTAL AREA(ACRES) =        6.9   TOTAL RUNOFF(CFS) =      19.96
  TC(MIN.) =   10.48
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        6.9  TC(MIN.) =     10.48
  PEAK FLOW RATE(CFS)   =      19.96
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

# APPENDIX D

EXISTING UNIT HYDROGRAPH

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  06/07/22 File: EXISTINGA24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
EXISTING BASIN A
06/07/2022 RRO

-------------------------------------------------------------------
Drainage Area =      16.45(Ac.)  =      0.026 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      16.45(Ac.)  =
0.026 Sq. Mi.
Length along longest watercourse =    1699.91(Ft.)
Length along longest watercourse measured to centroid =     887.10(Ft.)
Length along longest watercourse =      0.322 Mi.
Length along longest watercourse measured to centroid =      0.168 Mi.
Difference in elevation =      79.00(Ft.)
Slope along watercourse =    245.3777 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.084 Hr.
Lag time =     5.01 Min.
25% of lag time =     1.25 Min.
40% of lag time =     2.00 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 16.45 | 2.00 | 32.90 |

100 YEAR Area rainfall data:

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 16.45 | 5.00 | 82.25 |

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.000(In)

Sub-Area Data:

| Area(Ac.) | Runoff Index | Impervious % |
|---|---|---|
| 16.450 | 69.00 | 0.010 |

Total Area Entered = 16.45(Ac.)

| RI AMC2 | RI AMC-3 | Infil. Rate (In/Hr) | Impervious (Dec.%) | Adj. Infil. Rate (In/Hr) | Area% (Dec.) | F (In/Hr) |
|---|---|---|---|---|---|---|
| 69.0 | 84.4 | 0.194 | 0.010 | 0.192 | 1.000 | 0.192 |
| | | | | | Sum (F) = | 0.192 |

Area averaged mean soil loss (F) (In/Hr) = 0.192
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

---

U n i t H y d r o g r a p h
VALLEY S-Curve

---

Unit Hydrograph Data

| Unit time period (hrs) | | Time % of lag | Distribution Graph % | Unit Hydrograph (CFS) |
|---|---|---|---|---|
| 1 | 0.083 | 99.762 | 19.127 | 3.171 |
| 2 | 0.167 | 199.524 | 48.384 | 8.021 |
| 3 | 0.250 | 299.286 | 15.671 | 2.598 |
| 4 | 0.333 | 399.048 | 7.075 | 1.173 |
| 5 | 0.417 | 498.810 | 3.985 | 0.661 |
| 6 | 0.500 | 598.572 | 2.582 | 0.428 |
| 7 | 0.583 | 698.334 | 1.608 | 0.267 |
| 8 | 0.667 | 798.096 | 1.051 | 0.174 |
| 9 | 0.750 | 897.858 | 0.518 | 0.086 |
| | | | Sum = 100.000 | Sum= 16.579 |

---

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.341) | 0.036 | 0.004 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.339) | 0.036 | 0.004 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.338) | 0.036 | 0.004 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.337) | 0.054 | 0.006 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.335) | 0.054 | 0.006 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.334) | 0.054 | 0.006 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.333) | 0.054 | 0.006 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.331) | 0.054 | 0.006 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.330) | 0.054 | 0.006 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.329) | 0.072 | 0.008 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.327) | 0.072 | 0.008 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.326) | 0.072 | 0.008 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.325) | 0.054 | 0.006 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.324) | 0.054 | 0.006 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.322) | 0.054 | 0.006 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.321) | 0.054 | 0.006 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.320) | 0.054 | 0.006 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.318) | 0.054 | 0.006 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.317) | 0.054 | 0.006 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.316) | 0.054 | 0.006 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.315) | 0.054 | 0.006 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.313) | 0.072 | 0.008 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.312) | 0.072 | 0.008 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.311) | 0.072 | 0.008 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.310) | 0.072 | 0.008 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.308) | 0.072 | 0.008 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.307) | 0.072 | 0.008 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.306) | 0.072 | 0.008 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.305) | 0.072 | 0.008 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.303) | 0.072 | 0.008 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.302) | 0.090 | 0.010 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.301) | 0.090 | 0.010 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.300) | 0.090 | 0.010 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.298) | 0.090 | 0.010 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.297) | 0.090 | 0.010 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.296) | 0.090 | 0.010 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.295) | 0.090 | 0.010 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.294) | 0.090 | 0.010 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.292) | 0.090 | 0.010 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.291) | 0.090 | 0.010 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.290) | 0.090 | 0.010 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.289) | 0.090 | 0.010 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.287) | 0.090 | 0.010 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 44 | 3.67 | 0.17 | 0.100 | ( 0.286) | 0.090 | 0.010 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.285) | 0.090 | 0.010 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.284) | 0.108 | 0.012 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.283) | 0.108 | 0.012 |
| 48 | 4.00 | 0.20 | 0.120 | ( 0.281) | 0.108 | 0.012 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.280) | 0.108 | 0.012 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.279) | 0.108 | 0.012 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.278) | 0.108 | 0.012 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.277) | 0.126 | 0.014 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.275) | 0.126 | 0.014 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.274) | 0.126 | 0.014 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.273) | 0.126 | 0.014 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.272) | 0.126 | 0.014 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.271) | 0.126 | 0.014 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.270) | 0.144 | 0.016 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.268) | 0.144 | 0.016 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.267) | 0.144 | 0.016 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.266) | 0.108 | 0.012 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.265) | 0.108 | 0.012 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.264) | 0.108 | 0.012 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.263) | 0.126 | 0.014 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.262) | 0.126 | 0.014 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.260) | 0.126 | 0.014 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.259) | 0.144 | 0.016 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.258) | 0.144 | 0.016 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.257) | 0.144 | 0.016 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.256) | 0.144 | 0.016 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.255) | 0.144 | 0.016 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.254) | 0.144 | 0.016 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.252) | 0.162 | 0.018 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.251) | 0.162 | 0.018 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.250) | 0.162 | 0.018 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.249) | 0.162 | 0.018 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.248) | 0.162 | 0.018 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.247) | 0.162 | 0.018 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.246) | 0.180 | 0.020 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.245) | 0.180 | 0.020 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.244) | 0.180 | 0.020 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.242) | 0.180 | 0.020 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.241) | 0.180 | 0.020 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.240) | 0.180 | 0.020 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.239) | 0.180 | 0.020 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.238) | 0.180 | 0.020 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.237) | 0.180 | 0.020 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.236) | 0.198 | 0.022 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.235) | 0.198 | 0.022 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.234) | 0.198 | 0.022 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.233) | 0.216 | 0.024 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.232) | 0.216 | 0.024 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.231) | 0.216 | 0.024 |
| 94 | 7.83 | 0.43 | 0.260 | 0.229 | ( 0.234) | 0.031 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 95 | 7.92 | 0.43 | 0.260 | 0.228 | ( | 0.234) | 0.032 |
| 96 | 8.00 | 0.43 | 0.260 | 0.227 | ( | 0.234) | 0.033 |
| 97 | 8.08 | 0.50 | 0.300 | 0.226 | ( | 0.270) | 0.074 |
| 98 | 8.17 | 0.50 | 0.300 | 0.225 | ( | 0.270) | 0.075 |
| 99 | 8.25 | 0.50 | 0.300 | 0.224 | ( | 0.270) | 0.076 |
| 100 | 8.33 | 0.50 | 0.300 | 0.223 | ( | 0.270) | 0.077 |
| 101 | 8.42 | 0.50 | 0.300 | 0.222 | ( | 0.270) | 0.078 |
| 102 | 8.50 | 0.50 | 0.300 | 0.221 | ( | 0.270) | 0.079 |
| 103 | 8.58 | 0.53 | 0.320 | 0.220 | ( | 0.288) | 0.100 |
| 104 | 8.67 | 0.53 | 0.320 | 0.219 | ( | 0.288) | 0.101 |
| 105 | 8.75 | 0.53 | 0.320 | 0.218 | ( | 0.288) | 0.102 |
| 106 | 8.83 | 0.57 | 0.340 | 0.217 | ( | 0.306) | 0.123 |
| 107 | 8.92 | 0.57 | 0.340 | 0.216 | ( | 0.306) | 0.124 |
| 108 | 9.00 | 0.57 | 0.340 | 0.215 | ( | 0.306) | 0.125 |
| 109 | 9.08 | 0.63 | 0.380 | 0.214 | ( | 0.342) | 0.166 |
| 110 | 9.17 | 0.63 | 0.380 | 0.213 | ( | 0.342) | 0.167 |
| 111 | 9.25 | 0.63 | 0.380 | 0.212 | ( | 0.342) | 0.168 |
| 112 | 9.33 | 0.67 | 0.400 | 0.211 | ( | 0.360) | 0.189 |
| 113 | 9.42 | 0.67 | 0.400 | 0.210 | ( | 0.360) | 0.190 |
| 114 | 9.50 | 0.67 | 0.400 | 0.209 | ( | 0.360) | 0.191 |
| 115 | 9.58 | 0.70 | 0.420 | 0.208 | ( | 0.378) | 0.212 |
| 116 | 9.67 | 0.70 | 0.420 | 0.207 | ( | 0.378) | 0.213 |
| 117 | 9.75 | 0.70 | 0.420 | 0.206 | ( | 0.378) | 0.214 |
| 118 | 9.83 | 0.73 | 0.440 | 0.205 | ( | 0.396) | 0.235 |
| 119 | 9.92 | 0.73 | 0.440 | 0.204 | ( | 0.396) | 0.236 |
| 120 | 10.00 | 0.73 | 0.440 | 0.203 | ( | 0.396) | 0.237 |
| 121 | 10.08 | 0.50 | 0.300 | 0.202 | ( | 0.270) | 0.098 |
| 122 | 10.17 | 0.50 | 0.300 | 0.201 | ( | 0.270) | 0.099 |
| 123 | 10.25 | 0.50 | 0.300 | 0.200 | ( | 0.270) | 0.100 |
| 124 | 10.33 | 0.50 | 0.300 | 0.199 | ( | 0.270) | 0.101 |
| 125 | 10.42 | 0.50 | 0.300 | 0.198 | ( | 0.270) | 0.102 |
| 126 | 10.50 | 0.50 | 0.300 | 0.197 | ( | 0.270) | 0.103 |
| 127 | 10.58 | 0.67 | 0.400 | 0.196 | ( | 0.360) | 0.204 |
| 128 | 10.67 | 0.67 | 0.400 | 0.195 | ( | 0.360) | 0.205 |
| 129 | 10.75 | 0.67 | 0.400 | 0.194 | ( | 0.360) | 0.206 |
| 130 | 10.83 | 0.67 | 0.400 | 0.193 | ( | 0.360) | 0.207 |
| 131 | 10.92 | 0.67 | 0.400 | 0.192 | ( | 0.360) | 0.208 |
| 132 | 11.00 | 0.67 | 0.400 | 0.191 | ( | 0.360) | 0.209 |
| 133 | 11.08 | 0.63 | 0.380 | 0.190 | ( | 0.342) | 0.190 |
| 134 | 11.17 | 0.63 | 0.380 | 0.189 | ( | 0.342) | 0.191 |
| 135 | 11.25 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 136 | 11.33 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 137 | 11.42 | 0.63 | 0.380 | 0.187 | ( | 0.342) | 0.193 |
| 138 | 11.50 | 0.63 | 0.380 | 0.186 | ( | 0.342) | 0.194 |
| 139 | 11.58 | 0.57 | 0.340 | 0.185 | ( | 0.306) | 0.155 |
| 140 | 11.67 | 0.57 | 0.340 | 0.184 | ( | 0.306) | 0.156 |
| 141 | 11.75 | 0.57 | 0.340 | 0.183 | ( | 0.306) | 0.157 |
| 142 | 11.83 | 0.60 | 0.360 | 0.182 | ( | 0.324) | 0.178 |
| 143 | 11.92 | 0.60 | 0.360 | 0.181 | ( | 0.324) | 0.179 |
| 144 | 12.00 | 0.60 | 0.360 | 0.180 | ( | 0.324) | 0.180 |
| 145 | 12.08 | 0.83 | 0.500 | 0.179 | ( | 0.450) | 0.321 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 146 | 12.17 | 0.83 | 0.500 | 0.178 | ( 0.450) | 0.322 |
| 147 | 12.25 | 0.83 | 0.500 | 0.178 | ( 0.450) | 0.322 |
| 148 | 12.33 | 0.87 | 0.520 | 0.177 | ( 0.468) | 0.343 |
| 149 | 12.42 | 0.87 | 0.520 | 0.176 | ( 0.468) | 0.344 |
| 150 | 12.50 | 0.87 | 0.520 | 0.175 | ( 0.468) | 0.345 |
| 151 | 12.58 | 0.93 | 0.560 | 0.174 | ( 0.504) | 0.386 |
| 152 | 12.67 | 0.93 | 0.560 | 0.173 | ( 0.504) | 0.387 |
| 153 | 12.75 | 0.93 | 0.560 | 0.172 | ( 0.504) | 0.388 |
| 154 | 12.83 | 0.97 | 0.580 | 0.171 | ( 0.522) | 0.409 |
| 155 | 12.92 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.409 |
| 156 | 13.00 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.410 |
| 157 | 13.08 | 1.13 | 0.680 | 0.169 | ( 0.612) | 0.511 |
| 158 | 13.17 | 1.13 | 0.680 | 0.168 | ( 0.612) | 0.512 |
| 159 | 13.25 | 1.13 | 0.680 | 0.167 | ( 0.612) | 0.513 |
| 160 | 13.33 | 1.13 | 0.680 | 0.166 | ( 0.612) | 0.514 |
| 161 | 13.42 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 162 | 13.50 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 163 | 13.58 | 0.77 | 0.460 | 0.164 | ( 0.414) | 0.296 |
| 164 | 13.67 | 0.77 | 0.460 | 0.163 | ( 0.414) | 0.297 |
| 165 | 13.75 | 0.77 | 0.460 | 0.162 | ( 0.414) | 0.298 |
| 166 | 13.83 | 0.77 | 0.460 | 0.161 | ( 0.414) | 0.299 |
| 167 | 13.92 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 168 | 14.00 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 169 | 14.08 | 0.90 | 0.540 | 0.159 | ( 0.486) | 0.381 |
| 170 | 14.17 | 0.90 | 0.540 | 0.158 | ( 0.486) | 0.382 |
| 171 | 14.25 | 0.90 | 0.540 | 0.157 | ( 0.486) | 0.383 |
| 172 | 14.33 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 173 | 14.42 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 174 | 14.50 | 0.87 | 0.520 | 0.155 | ( 0.468) | 0.365 |
| 175 | 14.58 | 0.87 | 0.520 | 0.154 | ( 0.468) | 0.366 |
| 176 | 14.67 | 0.87 | 0.520 | 0.153 | ( 0.468) | 0.367 |
| 177 | 14.75 | 0.87 | 0.520 | 0.152 | ( 0.468) | 0.368 |
| 178 | 14.83 | 0.83 | 0.500 | 0.152 | ( 0.450) | 0.348 |
| 179 | 14.92 | 0.83 | 0.500 | 0.151 | ( 0.450) | 0.349 |
| 180 | 15.00 | 0.83 | 0.500 | 0.150 | ( 0.450) | 0.350 |
| 181 | 15.08 | 0.80 | 0.480 | 0.149 | ( 0.432) | 0.331 |
| 182 | 15.17 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.331 |
| 183 | 15.25 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.332 |
| 184 | 15.33 | 0.77 | 0.460 | 0.147 | ( 0.414) | 0.313 |
| 185 | 15.42 | 0.77 | 0.460 | 0.146 | ( 0.414) | 0.314 |
| 186 | 15.50 | 0.77 | 0.460 | 0.145 | ( 0.414) | 0.315 |
| 187 | 15.58 | 0.63 | 0.380 | 0.145 | ( 0.342) | 0.235 |
| 188 | 15.67 | 0.63 | 0.380 | 0.144 | ( 0.342) | 0.236 |
| 189 | 15.75 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 190 | 15.83 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 191 | 15.92 | 0.63 | 0.380 | 0.142 | ( 0.342) | 0.238 |
| 192 | 16.00 | 0.63 | 0.380 | 0.141 | ( 0.342) | 0.239 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.139) | 0.072 | 0.008 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 197 | 16.42 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.137) | 0.072 | 0.008 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.136) | 0.054 | 0.006 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 201 | 16.75 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.134) | 0.054 | 0.006 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.132) | 0.090 | 0.010 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.130) | 0.090 | 0.010 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.128) | 0.090 | 0.010 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.125) | 0.072 | 0.008 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.122) | 0.072 | 0.008 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.121) | 0.072 | 0.008 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.121) | 0.054 | 0.006 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.119) | 0.036 | 0.004 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.116) | 0.054 | 0.006 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.116) | 0.072 | 0.008 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.113) | 0.054 | 0.006 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.113) | 0.036 | 0.004 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 248 | 20.67 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.107) | 0.054 | 0.006 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.107) | 0.036 | 0.004 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 252 | 21.00 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.106) | 0.054 | 0.006 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.102) | 0.054 | 0.006 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.101) | 0.036 | 0.004 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.100) | 0.054 | 0.006 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 26.4

Flood volume = Effective rainfall 2.20(In)
times area 16.4(Ac.)/[(In)/(Ft.)] = 3.0(Ac.Ft)
Total soil loss = 2.80(In)
Total soil loss = 3.841(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 131252.4 Cubic Feet
Total soil loss = 167305.5 Cubic Feet

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Peak flow rate of this hydrograph = 8.476(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

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Hydrograph in 5 Minute intervals ((CFS))

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| 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 | 0.0004 | 0.04 | Q | \| | \| | \| | \| |
| 0+15 | 0.0008 | 0.06 | Q | \| | \| | \| | \| |
| 0+20 | 0.0012 | 0.07 | Q | \| | \| | \| | \| |
| 0+25 | 0.0018 | 0.08 | Q | \| | \| | \| | \| |
| 0+30 | 0.0024 | 0.09 | Q | \| | \| | \| | \| |
| 0+35 | 0.0031 | 0.10 | Q | \| | \| | \| | \| |
| 0+40 | 0.0038 | 0.10 | Q | \| | \| | \| | \| |
| 0+45 | 0.0045 | 0.10 | Q | \| | \| | \| | \| |
| 0+50 | 0.0052 | 0.11 | Q | \| | \| | \| | \| |
| 0+55 | 0.0060 | 0.12 | Q | \| | \| | \| | \| |
| 1+ 0 | 0.0069 | 0.13 | Q | \| | \| | \| | \| |
| 1+ 5 | 0.0077 | 0.12 | Q | \| | \| | \| | \| |
| 1+10 | 0.0085 | 0.11 | Q | \| | \| | \| | \| |
| 1+15 | 0.0092 | 0.10 | Q | \| | \| | \| | \| |
| 1+20 | 0.0099 | 0.10 | Q | \| | \| | \| | \| |
| 1+25 | 0.0106 | 0.10 | Q | \| | \| | \| | \| |
| 1+30 | 0.0113 | 0.10 | Q | \| | \| | \| | \| |
| 1+35 | 0.0120 | 0.10 | Q | \| | \| | \| | \| |
| 1+40 | 0.0127 | 0.10 | Q | \| | \| | \| | \| |
| 1+45 | 0.0134 | 0.10 | Q | \| | \| | \| | \| |
| 1+50 | 0.0141 | 0.11 | Q | \| | \| | \| | \| |
| 1+55 | 0.0149 | 0.12 | Q | \| | \| | \| | \| |
| 2+ 0 | 0.0158 | 0.13 | Q | \| | \| | \| | \| |
| 2+ 5 | 0.0167 | 0.13 | Q | \| | \| | \| | \| |
| 2+10 | 0.0176 | 0.13 | Q | \| | \| | \| | \| |
| 2+15 | 0.0185 | 0.13 | Q | \| | \| | \| | \| |
| 2+20 | 0.0194 | 0.13 | Q | \| | \| | \| | \| |
| 2+25 | 0.0203 | 0.13 | Q | \| | \| | \| | \| |
| 2+30 | 0.0212 | 0.13 | Q | \| | \| | \| | \| |
| 2+35 | 0.0222 | 0.14 | Q | \| | \| | \| | \| |
| 2+40 | 0.0233 | 0.16 | Q | \| | \| | \| | \| |
| 2+45 | 0.0244 | 0.16 | Q | \| | \| | \| | \| |
| 2+50 | 0.0255 | 0.16 | Q | \| | \| | \| | \| |
| 2+55 | 0.0266 | 0.16 | Q | \| | \| | \| | \| |
| 3+ 0 | 0.0278 | 0.16 | Q | \| | \| | \| | \| |
| 3+ 5 | 0.0289 | 0.17 | Q | \| | \| | \| | \| |
| 3+10 | 0.0300 | 0.17 | Q | \| | \| | \| | \| |
| 3+15 | 0.0312 | 0.17 | Q | \| | \| | \| | \| |
| 3+20 | 0.0323 | 0.17 | Q | \| | \| | \| | \| |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+25 | 0.0335 | 0.17 | Q | \| | \| | \| | \| |
| 3+30 | 0.0346 | 0.17 | Q | \| | \| | \| | \| |
| 3+35 | 0.0357 | 0.17 | Q | \| | \| | \| | \| |
| 3+40 | 0.0369 | 0.17 | Q | \| | \| | \| | \| |
| 3+45 | 0.0380 | 0.17 | Q | \| | \| | \| | \| |
| 3+50 | 0.0392 | 0.17 | Q | \| | \| | \| | \| |
| 3+55 | 0.0405 | 0.19 | Q | \| | \| | \| | \| |
| 4+ 0 | 0.0418 | 0.19 | Q | \| | \| | \| | \| |
| 4+ 5 | 0.0432 | 0.20 | Q | \| | \| | \| | \| |
| 4+10 | 0.0445 | 0.20 | Q | \| | \| | \| | \| |
| 4+15 | 0.0459 | 0.20 | Q | \| | \| | \| | \| |
| 4+20 | 0.0473 | 0.20 | Q | \| | \| | \| | \| |
| 4+25 | 0.0488 | 0.22 | Q | \| | \| | \| | \| |
| 4+30 | 0.0504 | 0.23 | Q | \| | \| | \| | \| |
| 4+35 | 0.0520 | 0.23 | Q | \| | \| | \| | \| |
| 4+40 | 0.0536 | 0.23 | Q | \| | \| | \| | \| |
| 4+45 | 0.0552 | 0.23 | Q | \| | \| | \| | \| |
| 4+50 | 0.0568 | 0.24 | Q | \| | \| | \| | \| |
| 4+55 | 0.0586 | 0.25 | VQ | \| | \| | \| | \| |
| 5+ 0 | 0.0603 | 0.26 | VQ | \| | \| | \| | \| |
| 5+ 5 | 0.0621 | 0.25 | Q | \| | \| | \| | \| |
| 5+10 | 0.0636 | 0.22 | Q | \| | \| | \| | \| |
| 5+15 | 0.0650 | 0.21 | Q | \| | \| | \| | \| |
| 5+20 | 0.0665 | 0.21 | Q | \| | \| | \| | \| |
| 5+25 | 0.0680 | 0.23 | Q | \| | \| | \| | \| |
| 5+30 | 0.0696 | 0.23 | Q | \| | \| | \| | \| |
| 5+35 | 0.0712 | 0.24 | Q | \| | \| | \| | \| |
| 5+40 | 0.0730 | 0.25 | VQ | \| | \| | \| | \| |
| 5+45 | 0.0747 | 0.26 | VQ | \| | \| | \| | \| |
| 5+50 | 0.0765 | 0.26 | \|Q | \| | \| | \| | \| |
| 5+55 | 0.0784 | 0.26 | \|Q | \| | \| | \| | \| |
| 6+ 0 | 0.0802 | 0.26 | \|Q | \| | \| | \| | \| |
| 6+ 5 | 0.0820 | 0.27 | \|Q | \| | \| | \| | \| |
| 6+10 | 0.0840 | 0.29 | \|Q | \| | \| | \| | \| |
| 6+15 | 0.0860 | 0.29 | \|Q | \| | \| | \| | \| |
| 6+20 | 0.0881 | 0.30 | \|Q | \| | \| | \| | \| |
| 6+25 | 0.0901 | 0.30 | \|Q | \| | \| | \| | \| |
| 6+30 | 0.0922 | 0.30 | \|Q | \| | \| | \| | \| |
| 6+35 | 0.0943 | 0.30 | \|Q | \| | \| | \| | \| |
| 6+40 | 0.0965 | 0.32 | \|Q | \| | \| | \| | \| |
| 6+45 | 0.0987 | 0.33 | \|Q | \| | \| | \| | \| |
| 6+50 | 0.1010 | 0.33 | \|Q | \| | \| | \| | \| |
| 6+55 | 0.1033 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+ 0 | 0.1055 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+ 5 | 0.1078 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+10 | 0.1101 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+15 | 0.1124 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+20 | 0.1147 | 0.34 | \|Q | \| | \| | \| | \| |
| 7+25 | 0.1172 | 0.35 | \|Q | \| | \| | \| | \| |
| 7+30 | 0.1196 | 0.36 | \|Q | \| | \| | \| | \| |
| 7+35 | 0.1222 | 0.37 | \|Q | \| | \| | \| | \| |

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 7+40       0.1248      0.39  |Q         |          |          |          |
 7+45       0.1275      0.39  |Q         |          |          |          |
 7+50       0.1304      0.42  |Q         |          |          |          |
 7+55       0.1336      0.47  |Q         |          |          |          |
 8+ 0       0.1371      0.50  |VQ        |          |          |          |
 8+ 5       0.1416      0.65  |VQ        |          |          |          |
 8+10       0.1484      0.99  |V Q       |          |          |          |
 8+15       0.1561      1.12  | V Q      |          |          |          |
 8+20       0.1643      1.18  | V Q      |          |          |          |
 8+25       0.1727      1.23  | V Q      |          |          |          |
 8+30       0.1814      1.26  | V  Q     |          |          |          |
 8+35       0.1907      1.35  | V  Q     |          |          |          |
 8+40       0.2013      1.54  | V   Q    |          |          |          |
 8+45       0.2124      1.61  | V   Q    |          |          |          |
 8+50       0.2242      1.71  | V   Q    |          |          |          |
 8+55       0.2373      1.91  |  V   Q   |          |          |          |
 9+ 0       0.2510      1.98  |  V   Q   |          |          |          |
 9+ 5       0.2659      2.16  |  V    Q  |          |          |          |
 9+10       0.2831      2.51  |  V      Q          |          |          |
 9+15       0.3013      2.64  |   V     Q          |          |          |
 9+20       0.3204      2.77  |   V     |Q         |          |          |
 9+25       0.3410      2.98  |   V     |Q         |          |          |
 9+30       0.3621      3.07  |   V     | Q        |          |          |
 9+35       0.3840      3.18  |    V    | Q        |          |          |
 9+40       0.4073      3.38  |    V    |  Q       |          |          |
 9+45       0.4312      3.46  |    V    |  Q       |          |          |
 9+50       0.4558      3.57  |     V   |   Q      |          |          |
 9+55       0.4817      3.76  |     V   |    Q     |          |          |
10+ 0       0.5081      3.84  |     V   |    Q     |          |          |
10+ 5       0.5318      3.44  |      V  |  Q       |          |          |
10+10       0.5481      2.35  |      V Q|          |          |          |
10+15       0.5619      2.02  |      VQ |          |          |          |
10+20       0.5748      1.87  |      Q  |          |          |          |
10+25       0.5872      1.80  |      Q  |          |          |          |
10+30       0.5993      1.76  |      Q  |          |          |          |
10+35       0.6135      2.05  |       Q |          |          |          |
10+40       0.6331      2.85  |       V |Q         |          |          |
10+45       0.6545      3.11  |       V | Q        |          |          |
10+50       0.6769      3.24  |       V | Q        |          |          |
10+55       0.6998      3.33  |        V|  Q       |          |          |
11+ 0       0.7231      3.39  |        V|  Q       |          |          |
11+ 5       0.7462      3.36  |        V|  Q       |          |          |
11+10       0.7685      3.24  |         V Q        |          |          |
11+15       0.7906      3.21  |         V Q        |          |          |
11+20       0.8127      3.20  |         V Q        |          |          |
11+25       0.8347      3.20  |         |VQ        |          |          |
11+30       0.8569      3.21  |         |VQ        |          |          |
11+35       0.8782      3.09  |         |VQ        |          |          |
11+40       0.8973      2.78  |         |Q         |          |          |
11+45       0.9159      2.69  |         Q V        |          |          |
11+50       0.9346      2.73  |         Q V        |          |          |
```

```
11+55       0.9544      2.87  |          |QV       |         |         |
12+ 0       0.9746      2.92  |          |QV       |         |         |
12+ 5       0.9980      3.40  |          |  Q      |         |         |
12+10       1.0293      4.54  |          |  V    Q |         |         |
12+15       1.0632      4.93  |          |   V    Q|         |         |
12+20       1.0988      5.17  |          |   V     Q         |         |
12+25       1.1363      5.44  |          |    V    |Q        |         |
12+30       1.1747      5.57  |          |    V    | Q       |         |
12+35       1.2144      5.78  |          |     V   |  Q      |         |
12+40       1.2568      6.15  |          |     V   |   Q     |         |
12+45       1.3001      6.29  |          |      V  |    Q    |         |
12+50       1.3443      6.42  |          |      V  |    Q    |         |
12+55       1.3899      6.62  |          |       V |     Q   |         |
13+ 0       1.4361      6.71  |          |        V|     Q   |         |
13+ 5       1.4848      7.07  |          |        V|       Q |         |
13+10       1.5393      7.91  |          |         V         |Q        |
13+15       1.5958      8.20  |          |         |V        | Q       |
13+20       1.6531      8.33  |          |         |V        |  Q      |
13+25       1.7111      8.42  |          |         | V       |  Q      |
13+30       1.7695      8.48  |          |         |  V      |  Q      |
13+35       1.8233      7.82  |          |         |   V     |Q        |
13+40       1.8652      6.08  |          |         |   Q     |         |
13+45       1.9034      5.53  |          |         | Q  V    |         |
13+50       1.9398      5.29  |          |         |Q   V    |         |
13+55       1.9753      5.16  |          |         Q     V   |         |
14+ 0       2.0103      5.08  |          |         Q     V   |         |
14+ 5       2.0467      5.29  |          |         |Q     V  |         |
14+10       2.0874      5.90  |          |         |  Q   V  |         |
14+15       2.1294      6.11  |          |         |   Q   V |         |
14+20       2.1718      6.15  |          |         |   Q   V |         |
14+25       2.2135      6.06  |          |         |   Q    V|         |
14+30       2.2552      6.05  |          |         |   Q    V|         |
14+35       2.2969      6.06  |          |         |   Q     V         |
14+40       2.3388      6.08  |          |         |   Q     |V        |
14+45       2.3807      6.09  |          |         |   Q     |V        |
14+50       2.4223      6.03  |          |         |   Q     | V       |
14+55       2.4628      5.88  |          |         |  Q      | V       |
15+ 0       2.5030      5.84  |          |         |  Q      |  V      |
15+ 5       2.5427      5.77  |          |         |  Q      |  V      |
15+10       2.5813      5.61  |          |         | Q       |   V     |
15+15       2.6196      5.56  |          |         | Q       |   V     |
15+20       2.6574      5.48  |          |         |Q        |    V    |
15+25       2.6940      5.31  |          |         |Q        |    V    |
15+30       2.7302      5.26  |          |         |Q        |     V   |
15+35       2.7646      4.99  |          |        Q|         |     V   |
15+40       2.7945      4.35  |          |      Q  |         |      V  |
15+45       2.8231      4.14  |          |     Q   |         |      V  |
15+50       2.8510      4.05  |          |     Q   |         |      V  |
15+55       2.8786      4.01  |          |     Q   |         |       V |
16+ 0       2.9061      3.99  |          |    Q    |         |       V |
16+ 5       2.9284      3.24  |          | Q       |         |       V |
```

```
16+10       2.9379      1.38  |    Q    |         |         |        V|
16+15       2.9432      0.77  |  Q      |         |         |        V|
16+20       2.9467      0.50  | Q       |         |         |        V|
16+25       2.9491      0.35  |Q        |         |         |        V|
16+30       2.9509      0.25  |Q        |         |         |        V|
16+35       2.9522      0.19  Q         |         |         |        V|
16+40       2.9531      0.13  Q         |         |         |        V|
16+45       2.9538      0.11  Q         |         |         |        V|
16+50       2.9545      0.10  Q         |         |         |        V|
16+55       2.9552      0.10  Q         |         |         |        V|
17+ 0       2.9559      0.10  Q         |         |         |        V|
17+ 5       2.9567      0.11  Q         |         |         |        V|
17+10       2.9577      0.14  Q         |         |         |        V|
17+15       2.9587      0.15  Q         |         |         |        V|
17+20       2.9598      0.16  Q         |         |         |        V|
17+25       2.9610      0.16  Q         |         |         |        V|
17+30       2.9621      0.16  Q         |         |         |        V|
17+35       2.9632      0.16  Q         |         |         |        V|
17+40       2.9644      0.17  Q         |         |         |        V|
17+45       2.9655      0.17  Q         |         |         |        V|
17+50       2.9666      0.16  Q         |         |         |        V|
17+55       2.9676      0.14  Q         |         |         |        V|
18+ 0       2.9685      0.14  Q         |         |         |        V|
18+ 5       2.9695      0.14  Q         |         |         |        V|
18+10       2.9704      0.13  Q         |         |         |        V|
18+15       2.9713      0.13  Q         |         |         |        V|
18+20       2.9722      0.13  Q         |         |         |        V|
18+25       2.9732      0.13  Q         |         |         |        V|
18+30       2.9741      0.13  Q         |         |         |        V|
18+35       2.9749      0.13  Q         |         |         |        V|
18+40       2.9757      0.11  Q         |         |         |        V|
18+45       2.9764      0.11  Q         |         |         |        V|
18+50       2.9771      0.10  Q         |         |         |        V|
18+55       2.9776      0.08  Q         |         |         |        V|
19+ 0       2.9781      0.07  Q         |         |         |        V|
19+ 5       2.9787      0.08  Q         |         |         |        V|
19+10       2.9793      0.09  Q         |         |         |        V|
19+15       2.9799      0.09  Q         |         |         |        V|
19+20       2.9806      0.10  Q         |         |         |        V|
19+25       2.9815      0.12  Q         |         |         |        V|
19+30       2.9823      0.13  Q         |         |         |        V|
19+35       2.9832      0.12  Q         |         |         |        V|
19+40       2.9839      0.11  Q         |         |         |        V|
19+45       2.9846      0.10  Q         |         |         |        V|
19+50       2.9853      0.10  Q         |         |         |        V|
19+55       2.9859      0.08  Q         |         |         |        V|
20+ 0       2.9864      0.07  Q         |         |         |        V|
20+ 5       2.9869      0.08  Q         |         |         |        V|
20+10       2.9875      0.09  Q         |         |         |        V|
20+15       2.9882      0.09  Q         |         |         |        V|
20+20       2.9888      0.10  Q         |         |         |        V|
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 20+25 | 2.9895 | 0.10 | Q | \| | \| | \| | V\| |
| 20+30 | 2.9902 | 0.10 | Q | \| | \| | \| | V\| |
| 20+35 | 2.9909 | 0.10 | Q | \| | \| | \| | V\| |
| 20+40 | 2.9915 | 0.10 | Q | \| | \| | \| | V\| |
| 20+45 | 2.9922 | 0.10 | Q | \| | \| | \| | V\| |
| 20+50 | 2.9929 | 0.09 | Q | \| | \| | \| | V\| |
| 20+55 | 2.9934 | 0.08 | Q | \| | \| | \| | V\| |
| 21+ 0 | 2.9939 | 0.07 | Q | \| | \| | \| | V\| |
| 21+ 5 | 2.9944 | 0.08 | Q | \| | \| | \| | V\| |
| 21+10 | 2.9950 | 0.09 | Q | \| | \| | \| | V\| |
| 21+15 | 2.9957 | 0.09 | Q | \| | \| | \| | V\| |
| 21+20 | 2.9963 | 0.09 | Q | \| | \| | \| | V\| |
| 21+25 | 2.9968 | 0.08 | Q | \| | \| | \| | V\| |
| 21+30 | 2.9973 | 0.07 | Q | \| | \| | \| | V\| |
| 21+35 | 2.9978 | 0.08 | Q | \| | \| | \| | V\| |
| 21+40 | 2.9985 | 0.09 | Q | \| | \| | \| | V\| |
| 21+45 | 2.9991 | 0.09 | Q | \| | \| | \| | V\| |
| 21+50 | 2.9997 | 0.09 | Q | \| | \| | \| | V\| |
| 21+55 | 3.0003 | 0.08 | Q | \| | \| | \| | V\| |
| 22+ 0 | 3.0008 | 0.07 | Q | \| | \| | \| | V\| |
| 22+ 5 | 3.0013 | 0.08 | Q | \| | \| | \| | V\| |
| 22+10 | 3.0019 | 0.09 | Q | \| | \| | \| | V\| |
| 22+15 | 3.0026 | 0.09 | Q | \| | \| | \| | V\| |
| 22+20 | 3.0032 | 0.09 | Q | \| | \| | \| | V\| |
| 22+25 | 3.0037 | 0.08 | Q | \| | \| | \| | V\| |
| 22+30 | 3.0042 | 0.07 | Q | \| | \| | \| | V\| |
| 22+35 | 3.0047 | 0.07 | Q | \| | \| | \| | V\| |
| 22+40 | 3.0051 | 0.07 | Q | \| | \| | \| | V\| |
| 22+45 | 3.0056 | 0.07 | Q | \| | \| | \| | V\| |
| 22+50 | 3.0061 | 0.07 | Q | \| | \| | \| | V\| |
| 22+55 | 3.0065 | 0.07 | Q | \| | \| | \| | V\| |
| 23+ 0 | 3.0070 | 0.07 | Q | \| | \| | \| | V\| |
| 23+ 5 | 3.0074 | 0.07 | Q | \| | \| | \| | V\| |
| 23+10 | 3.0079 | 0.07 | Q | \| | \| | \| | V\| |
| 23+15 | 3.0083 | 0.07 | Q | \| | \| | \| | V\| |
| 23+20 | 3.0088 | 0.07 | Q | \| | \| | \| | V\| |
| 23+25 | 3.0093 | 0.07 | Q | \| | \| | \| | V\| |
| 23+30 | 3.0097 | 0.07 | Q | \| | \| | \| | V\| |
| 23+35 | 3.0102 | 0.07 | Q | \| | \| | \| | V\| |
| 23+40 | 3.0106 | 0.07 | Q | \| | \| | \| | V\| |
| 23+45 | 3.0111 | 0.07 | Q | \| | \| | \| | V\| |
| 23+50 | 3.0115 | 0.07 | Q | \| | \| | \| | V\| |
| 23+55 | 3.0120 | 0.07 | Q | \| | \| | \| | V\| |
| 24+ 0 | 3.0125 | 0.07 | Q | \| | \| | \| | V\| |
| 24+ 5 | 3.0128 | 0.05 | Q | \| | \| | \| | V\| |
| 24+10 | 3.0130 | 0.02 | Q | \| | \| | \| | V\| |
| 24+15 | 3.0130 | 0.01 | Q | \| | \| | \| | V\| |
| 24+20 | 3.0131 | 0.01 | Q | \| | \| | \| | V\| |
| 24+25 | 3.0131 | 0.00 | Q | \| | \| | \| | V\| |
| 24+30 | 3.0131 | 0.00 | Q | \| | \| | \| | V\| |
| 24+35 | 3.0131 | 0.00 | Q | \| | \| | \| | V\| |

```
   24+40       3.0131      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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  06/07/22 File: EXISTINGB24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
EXISTING BASIN B
06/07/2022 RRO

-------------------------------------------------------------------
Drainage Area =      20.10(Ac.)  =      0.031 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      20.10(Ac.)  =
0.031 Sq. Mi.
Length along longest watercourse =    1638.58(Ft.)
Length along longest watercourse measured to centroid =    1001.90(Ft.)
Length along longest watercourse =      0.310 Mi.
Length along longest watercourse measured to centroid =      0.190 Mi.
Difference in elevation =      97.00(Ft.)
Slope along watercourse =    312.5633 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.082 Hr.
Lag time =     4.94 Min.
25% of lag time =     1.24 Min.
40% of lag time =     1.98 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

```
Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       20.10            2.00                   40.20

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       20.10            5.00                  100.50

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.000(In)
Area Averaged 100-Year Rainfall =    5.000(In)

Point rain (area averaged) =    5.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    5.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    20.100           69.00         0.010
 Total Area Entered =     20.10(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-3     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
69.0  84.4      0.194     0.010        0.192       1.000      0.192
                                                  Sum (F) =   0.192
Area averaged mean soil loss (F) (In/Hr) =  0.192
Minimum soil loss rate ((In/Hr)) =  0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
-----------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
----------------------------------------------------------------------
                Unit Hydrograph Data
-----------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------------
    1   0.083        101.138         19.550              3.960
    2   0.167        202.276         48.484              9.821
    3   0.250        303.415         15.465              3.133
    4   0.333        404.553          7.003              1.419
    5   0.417        505.691          3.930              0.796
    6   0.500        606.829          2.541              0.515
    7   0.583        707.968          1.564              0.317
    8   0.667        809.106          1.463              0.296
                                Sum = 100.000   Sum=      20.257
-----------------------------------------------------------------------
```

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.341) | 0.036 | 0.004 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.339) | 0.036 | 0.004 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.338) | 0.036 | 0.004 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.337) | 0.054 | 0.006 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.335) | 0.054 | 0.006 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.334) | 0.054 | 0.006 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.333) | 0.054 | 0.006 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.331) | 0.054 | 0.006 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.330) | 0.054 | 0.006 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.329) | 0.072 | 0.008 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.327) | 0.072 | 0.008 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.326) | 0.072 | 0.008 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.325) | 0.054 | 0.006 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.324) | 0.054 | 0.006 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.322) | 0.054 | 0.006 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.321) | 0.054 | 0.006 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.320) | 0.054 | 0.006 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.318) | 0.054 | 0.006 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.317) | 0.054 | 0.006 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.316) | 0.054 | 0.006 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.315) | 0.054 | 0.006 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.313) | 0.072 | 0.008 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.312) | 0.072 | 0.008 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.311) | 0.072 | 0.008 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.310) | 0.072 | 0.008 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.308) | 0.072 | 0.008 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.307) | 0.072 | 0.008 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.306) | 0.072 | 0.008 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.305) | 0.072 | 0.008 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.303) | 0.072 | 0.008 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.302) | 0.090 | 0.010 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.301) | 0.090 | 0.010 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.300) | 0.090 | 0.010 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.298) | 0.090 | 0.010 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.297) | 0.090 | 0.010 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.296) | 0.090 | 0.010 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.295) | 0.090 | 0.010 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.294) | 0.090 | 0.010 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.292) | 0.090 | 0.010 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.291) | 0.090 | 0.010 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.290) | 0.090 | 0.010 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.289) | 0.090 | 0.010 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.287) | 0.090 | 0.010 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.286) | 0.090 | 0.010 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 45 | 3.75 | 0.17 | 0.100 | ( 0.285) | 0.090 | 0.010 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.284) | 0.108 | 0.012 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.283) | 0.108 | 0.012 |
| 48 | 4.00 | 0.20 | 0.120 | ( 0.281) | 0.108 | 0.012 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.280) | 0.108 | 0.012 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.279) | 0.108 | 0.012 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.278) | 0.108 | 0.012 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.277) | 0.126 | 0.014 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.275) | 0.126 | 0.014 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.274) | 0.126 | 0.014 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.273) | 0.126 | 0.014 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.272) | 0.126 | 0.014 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.271) | 0.126 | 0.014 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.270) | 0.144 | 0.016 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.268) | 0.144 | 0.016 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.267) | 0.144 | 0.016 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.266) | 0.108 | 0.012 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.265) | 0.108 | 0.012 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.264) | 0.108 | 0.012 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.263) | 0.126 | 0.014 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.262) | 0.126 | 0.014 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.260) | 0.126 | 0.014 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.259) | 0.144 | 0.016 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.258) | 0.144 | 0.016 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.257) | 0.144 | 0.016 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.256) | 0.144 | 0.016 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.255) | 0.144 | 0.016 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.254) | 0.144 | 0.016 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.252) | 0.162 | 0.018 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.251) | 0.162 | 0.018 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.250) | 0.162 | 0.018 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.249) | 0.162 | 0.018 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.248) | 0.162 | 0.018 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.247) | 0.162 | 0.018 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.246) | 0.180 | 0.020 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.245) | 0.180 | 0.020 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.244) | 0.180 | 0.020 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.242) | 0.180 | 0.020 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.241) | 0.180 | 0.020 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.240) | 0.180 | 0.020 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.239) | 0.180 | 0.020 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.238) | 0.180 | 0.020 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.237) | 0.180 | 0.020 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.236) | 0.198 | 0.022 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.235) | 0.198 | 0.022 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.234) | 0.198 | 0.022 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.233) | 0.216 | 0.024 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.232) | 0.216 | 0.024 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.231) | 0.216 | 0.024 |
| 94 | 7.83 | 0.43 | 0.260 | 0.229 | ( 0.234) | 0.031 |
| 95 | 7.92 | 0.43 | 0.260 | 0.228 | ( 0.234) | 0.032 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 96 | 8.00 | 0.43 | 0.260 | 0.227 | ( | 0.234) | 0.033 |
| 97 | 8.08 | 0.50 | 0.300 | 0.226 | ( | 0.270) | 0.074 |
| 98 | 8.17 | 0.50 | 0.300 | 0.225 | ( | 0.270) | 0.075 |
| 99 | 8.25 | 0.50 | 0.300 | 0.224 | ( | 0.270) | 0.076 |
| 100 | 8.33 | 0.50 | 0.300 | 0.223 | ( | 0.270) | 0.077 |
| 101 | 8.42 | 0.50 | 0.300 | 0.222 | ( | 0.270) | 0.078 |
| 102 | 8.50 | 0.50 | 0.300 | 0.221 | ( | 0.270) | 0.079 |
| 103 | 8.58 | 0.53 | 0.320 | 0.220 | ( | 0.288) | 0.100 |
| 104 | 8.67 | 0.53 | 0.320 | 0.219 | ( | 0.288) | 0.101 |
| 105 | 8.75 | 0.53 | 0.320 | 0.218 | ( | 0.288) | 0.102 |
| 106 | 8.83 | 0.57 | 0.340 | 0.217 | ( | 0.306) | 0.123 |
| 107 | 8.92 | 0.57 | 0.340 | 0.216 | ( | 0.306) | 0.124 |
| 108 | 9.00 | 0.57 | 0.340 | 0.215 | ( | 0.306) | 0.125 |
| 109 | 9.08 | 0.63 | 0.380 | 0.214 | ( | 0.342) | 0.166 |
| 110 | 9.17 | 0.63 | 0.380 | 0.213 | ( | 0.342) | 0.167 |
| 111 | 9.25 | 0.63 | 0.380 | 0.212 | ( | 0.342) | 0.168 |
| 112 | 9.33 | 0.67 | 0.400 | 0.211 | ( | 0.360) | 0.189 |
| 113 | 9.42 | 0.67 | 0.400 | 0.210 | ( | 0.360) | 0.190 |
| 114 | 9.50 | 0.67 | 0.400 | 0.209 | ( | 0.360) | 0.191 |
| 115 | 9.58 | 0.70 | 0.420 | 0.208 | ( | 0.378) | 0.212 |
| 116 | 9.67 | 0.70 | 0.420 | 0.207 | ( | 0.378) | 0.213 |
| 117 | 9.75 | 0.70 | 0.420 | 0.206 | ( | 0.378) | 0.214 |
| 118 | 9.83 | 0.73 | 0.440 | 0.205 | ( | 0.396) | 0.235 |
| 119 | 9.92 | 0.73 | 0.440 | 0.204 | ( | 0.396) | 0.236 |
| 120 | 10.00 | 0.73 | 0.440 | 0.203 | ( | 0.396) | 0.237 |
| 121 | 10.08 | 0.50 | 0.300 | 0.202 | ( | 0.270) | 0.098 |
| 122 | 10.17 | 0.50 | 0.300 | 0.201 | ( | 0.270) | 0.099 |
| 123 | 10.25 | 0.50 | 0.300 | 0.200 | ( | 0.270) | 0.100 |
| 124 | 10.33 | 0.50 | 0.300 | 0.199 | ( | 0.270) | 0.101 |
| 125 | 10.42 | 0.50 | 0.300 | 0.198 | ( | 0.270) | 0.102 |
| 126 | 10.50 | 0.50 | 0.300 | 0.197 | ( | 0.270) | 0.103 |
| 127 | 10.58 | 0.67 | 0.400 | 0.196 | ( | 0.360) | 0.204 |
| 128 | 10.67 | 0.67 | 0.400 | 0.195 | ( | 0.360) | 0.205 |
| 129 | 10.75 | 0.67 | 0.400 | 0.194 | ( | 0.360) | 0.206 |
| 130 | 10.83 | 0.67 | 0.400 | 0.193 | ( | 0.360) | 0.207 |
| 131 | 10.92 | 0.67 | 0.400 | 0.192 | ( | 0.360) | 0.208 |
| 132 | 11.00 | 0.67 | 0.400 | 0.191 | ( | 0.360) | 0.209 |
| 133 | 11.08 | 0.63 | 0.380 | 0.190 | ( | 0.342) | 0.190 |
| 134 | 11.17 | 0.63 | 0.380 | 0.189 | ( | 0.342) | 0.191 |
| 135 | 11.25 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 136 | 11.33 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 137 | 11.42 | 0.63 | 0.380 | 0.187 | ( | 0.342) | 0.193 |
| 138 | 11.50 | 0.63 | 0.380 | 0.186 | ( | 0.342) | 0.194 |
| 139 | 11.58 | 0.57 | 0.340 | 0.185 | ( | 0.306) | 0.155 |
| 140 | 11.67 | 0.57 | 0.340 | 0.184 | ( | 0.306) | 0.156 |
| 141 | 11.75 | 0.57 | 0.340 | 0.183 | ( | 0.306) | 0.157 |
| 142 | 11.83 | 0.60 | 0.360 | 0.182 | ( | 0.324) | 0.178 |
| 143 | 11.92 | 0.60 | 0.360 | 0.181 | ( | 0.324) | 0.179 |
| 144 | 12.00 | 0.60 | 0.360 | 0.180 | ( | 0.324) | 0.180 |
| 145 | 12.08 | 0.83 | 0.500 | 0.179 | ( | 0.450) | 0.321 |
| 146 | 12.17 | 0.83 | 0.500 | 0.178 | ( | 0.450) | 0.322 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 147 | 12.25 | 0.83 | 0.500 | 0.178 | ( 0.450) | 0.322 |
| 148 | 12.33 | 0.87 | 0.520 | 0.177 | ( 0.468) | 0.343 |
| 149 | 12.42 | 0.87 | 0.520 | 0.176 | ( 0.468) | 0.344 |
| 150 | 12.50 | 0.87 | 0.520 | 0.175 | ( 0.468) | 0.345 |
| 151 | 12.58 | 0.93 | 0.560 | 0.174 | ( 0.504) | 0.386 |
| 152 | 12.67 | 0.93 | 0.560 | 0.173 | ( 0.504) | 0.387 |
| 153 | 12.75 | 0.93 | 0.560 | 0.172 | ( 0.504) | 0.388 |
| 154 | 12.83 | 0.97 | 0.580 | 0.171 | ( 0.522) | 0.409 |
| 155 | 12.92 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.409 |
| 156 | 13.00 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.410 |
| 157 | 13.08 | 1.13 | 0.680 | 0.169 | ( 0.612) | 0.511 |
| 158 | 13.17 | 1.13 | 0.680 | 0.168 | ( 0.612) | 0.512 |
| 159 | 13.25 | 1.13 | 0.680 | 0.167 | ( 0.612) | 0.513 |
| 160 | 13.33 | 1.13 | 0.680 | 0.166 | ( 0.612) | 0.514 |
| 161 | 13.42 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 162 | 13.50 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 163 | 13.58 | 0.77 | 0.460 | 0.164 | ( 0.414) | 0.296 |
| 164 | 13.67 | 0.77 | 0.460 | 0.163 | ( 0.414) | 0.297 |
| 165 | 13.75 | 0.77 | 0.460 | 0.162 | ( 0.414) | 0.298 |
| 166 | 13.83 | 0.77 | 0.460 | 0.161 | ( 0.414) | 0.299 |
| 167 | 13.92 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 168 | 14.00 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 169 | 14.08 | 0.90 | 0.540 | 0.159 | ( 0.486) | 0.381 |
| 170 | 14.17 | 0.90 | 0.540 | 0.158 | ( 0.486) | 0.382 |
| 171 | 14.25 | 0.90 | 0.540 | 0.157 | ( 0.486) | 0.383 |
| 172 | 14.33 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 173 | 14.42 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 174 | 14.50 | 0.87 | 0.520 | 0.155 | ( 0.468) | 0.365 |
| 175 | 14.58 | 0.87 | 0.520 | 0.154 | ( 0.468) | 0.366 |
| 176 | 14.67 | 0.87 | 0.520 | 0.153 | ( 0.468) | 0.367 |
| 177 | 14.75 | 0.87 | 0.520 | 0.152 | ( 0.468) | 0.368 |
| 178 | 14.83 | 0.83 | 0.500 | 0.152 | ( 0.450) | 0.348 |
| 179 | 14.92 | 0.83 | 0.500 | 0.151 | ( 0.450) | 0.349 |
| 180 | 15.00 | 0.83 | 0.500 | 0.150 | ( 0.450) | 0.350 |
| 181 | 15.08 | 0.80 | 0.480 | 0.149 | ( 0.432) | 0.331 |
| 182 | 15.17 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.331 |
| 183 | 15.25 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.332 |
| 184 | 15.33 | 0.77 | 0.460 | 0.147 | ( 0.414) | 0.313 |
| 185 | 15.42 | 0.77 | 0.460 | 0.146 | ( 0.414) | 0.314 |
| 186 | 15.50 | 0.77 | 0.460 | 0.145 | ( 0.414) | 0.315 |
| 187 | 15.58 | 0.63 | 0.380 | 0.145 | ( 0.342) | 0.235 |
| 188 | 15.67 | 0.63 | 0.380 | 0.144 | ( 0.342) | 0.236 |
| 189 | 15.75 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 190 | 15.83 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 191 | 15.92 | 0.63 | 0.380 | 0.142 | ( 0.342) | 0.238 |
| 192 | 16.00 | 0.63 | 0.380 | 0.141 | ( 0.342) | 0.239 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.139) | 0.072 | 0.008 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 198 | 16.50 | 0.13 | 0.080 | ( 0.137) | 0.072 | 0.008 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.136) | 0.054 | 0.006 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 201 | 16.75 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.134) | 0.054 | 0.006 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.132) | 0.090 | 0.010 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.130) | 0.090 | 0.010 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.128) | 0.090 | 0.010 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.125) | 0.072 | 0.008 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.122) | 0.072 | 0.008 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.121) | 0.072 | 0.008 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.121) | 0.054 | 0.006 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.119) | 0.036 | 0.004 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.116) | 0.054 | 0.006 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.116) | 0.072 | 0.008 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.113) | 0.054 | 0.006 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.113) | 0.036 | 0.004 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 249 | 20.75 | 0.10 | 0.060 | ( 0.107) | 0.054 | 0.006 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.107) | 0.036 | 0.004 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 252 | 21.00 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.106) | 0.054 | 0.006 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.102) | 0.054 | 0.006 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.101) | 0.036 | 0.004 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.100) | 0.054 | 0.006 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 26.4

Flood volume = Effective rainfall 2.20(In)
times area 20.1(Ac.)/[(In)/(Ft.)] = 3.7(Ac.Ft)
Total soil loss = 2.80(In)
Total soil loss = 4.693(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 160373.4 Cubic Feet
Total soil loss = 204427.3 Cubic Feet

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Peak flow rate of this hydrograph = 10.360(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       0.0001      0.02  Q         |         |         |         |
  0+10       0.0005      0.06  Q         |         |         |         |
  0+15       0.0010      0.07  Q         |         |         |         |
  0+20       0.0015      0.08  Q         |         |         |         |
  0+25       0.0022      0.10  Q         |         |         |         |
  0+30       0.0030      0.11  Q         |         |         |         |
  0+35       0.0038      0.12  Q         |         |         |         |
  0+40       0.0046      0.12  Q         |         |         |         |
  0+45       0.0055      0.12  Q         |         |         |         |
  0+50       0.0063      0.13  Q         |         |         |         |
  0+55       0.0074      0.15  Q         |         |         |         |
  1+ 0       0.0084      0.16  Q         |         |         |         |
  1+ 5       0.0095      0.15  Q         |         |         |         |
  1+10       0.0104      0.13  Q         |         |         |         |
  1+15       0.0113      0.13  Q         |         |         |         |
  1+20       0.0121      0.12  Q         |         |         |         |
  1+25       0.0130      0.12  Q         |         |         |         |
  1+30       0.0138      0.12  Q         |         |         |         |
  1+35       0.0147      0.12  Q         |         |         |         |
  1+40       0.0155      0.12  Q         |         |         |         |
  1+45       0.0163      0.12  Q         |         |         |         |
  1+50       0.0172      0.13  Q         |         |         |         |
  1+55       0.0183      0.15  Q         |         |         |         |
  2+ 0       0.0193      0.16  Q         |         |         |         |
  2+ 5       0.0204      0.16  Q         |         |         |         |
  2+10       0.0215      0.16  Q         |         |         |         |
  2+15       0.0226      0.16  Q         |         |         |         |
  2+20       0.0237      0.16  Q         |         |         |         |
  2+25       0.0249      0.16  Q         |         |         |         |
  2+30       0.0260      0.16  Q         |         |         |         |
  2+35       0.0271      0.17  Q         |         |         |         |
  2+40       0.0285      0.19  Q         |         |         |         |
  2+45       0.0298      0.20  Q         |         |         |         |
  2+50       0.0312      0.20  Q         |         |         |         |
  2+55       0.0326      0.20  Q         |         |         |         |
  3+ 0       0.0339      0.20  Q         |         |         |         |
  3+ 5       0.0353      0.20  Q         |         |         |         |
  3+10       0.0367      0.20  Q         |         |         |         |
  3+15       0.0381      0.20  Q         |         |         |         |
  3+20       0.0395      0.20  Q         |         |         |         |
  3+25       0.0409      0.20  Q         |         |         |         |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+30 | 0.0423 | 0.20 | Q | | | | |
| 3+35 | 0.0437 | 0.20 | Q | | | | |
| 3+40 | 0.0451 | 0.20 | Q | | | | |
| 3+45 | 0.0465 | 0.20 | Q | | | | |
| 3+50 | 0.0480 | 0.21 | Q | | | | |
| 3+55 | 0.0495 | 0.23 | Q | | | | |
| 4+ 0 | 0.0512 | 0.24 | Q | | | | |
| 4+ 5 | 0.0528 | 0.24 | Q | | | | |
| 4+10 | 0.0545 | 0.24 | Q | | | | |
| 4+15 | 0.0561 | 0.24 | Q | | | | |
| 4+20 | 0.0579 | 0.25 | Q | | | | |
| 4+25 | 0.0597 | 0.27 | Q | | | | |
| 4+30 | 0.0616 | 0.28 | Q | | | | |
| 4+35 | 0.0636 | 0.28 | Q | | | | |
| 4+40 | 0.0655 | 0.28 | Q | | | | |
| 4+45 | 0.0675 | 0.28 | Q | | | | |
| 4+50 | 0.0695 | 0.29 | Q | | | | |
| 4+55 | 0.0716 | 0.31 | Q | | | | |
| 5+ 0 | 0.0738 | 0.32 | Q | | | | |
| 5+ 5 | 0.0759 | 0.30 | Q | | | | |
| 5+10 | 0.0777 | 0.27 | Q | | | | |
| 5+15 | 0.0795 | 0.26 | Q | | | | |
| 5+20 | 0.0813 | 0.26 | Q | | | | |
| 5+25 | 0.0832 | 0.28 | Q | | | | |
| 5+30 | 0.0851 | 0.28 | Q | | | | |
| 5+35 | 0.0871 | 0.29 | Q | | | | |
| 5+40 | 0.0892 | 0.31 | Q | | | | |
| 5+45 | 0.0914 | 0.32 | Q | | | | |
| 5+50 | 0.0936 | 0.32 | QV | | | | |
| 5+55 | 0.0958 | 0.32 | QV | | | | |
| 6+ 0 | 0.0980 | 0.32 | QV | | | | |
| 6+ 5 | 0.1003 | 0.33 | QV | | | | |
| 6+10 | 0.1027 | 0.35 | QV | | | | |
| 6+15 | 0.1052 | 0.36 | QV | | | | |
| 6+20 | 0.1077 | 0.36 | QV | | | | |
| 6+25 | 0.1102 | 0.36 | QV | | | | |
| 6+30 | 0.1127 | 0.36 | QV | | | | |
| 6+35 | 0.1152 | 0.37 | QV | | | | |
| 6+40 | 0.1179 | 0.39 | QV | | | | |
| 6+45 | 0.1207 | 0.40 | QV | | | | |
| 6+50 | 0.1235 | 0.40 | QV | | | | |
| 6+55 | 0.1262 | 0.40 | QV | | | | |
| 7+ 0 | 0.1290 | 0.40 | QV | | | | |
| 7+ 5 | 0.1318 | 0.40 | QV | | | | |
| 7+10 | 0.1346 | 0.41 | QV | | | | |
| 7+15 | 0.1374 | 0.41 | QV | | | | |
| 7+20 | 0.1402 | 0.41 | QV | | | | |
| 7+25 | 0.1432 | 0.43 | QV | | | | |
| 7+30 | 0.1462 | 0.44 | QV | | | | |
| 7+35 | 0.1493 | 0.45 | QV | | | | |
| 7+40 | 0.1526 | 0.47 | QV | | | | |

```
 7+45       0.1559      0.48  QV        |         |         |         |
 7+50       0.1594      0.51  |Q        |         |         |         |
 7+55       0.1634      0.58  |Q        |         |         |         |
 8+ 0       0.1676      0.61  |Q        |         |         |         |
 8+ 5       0.1731      0.80  |Q        |         |         |         |
 8+10       0.1815      1.22  |VQ       |         |         |         |
 8+15       0.1909      1.37  | Q       |         |         |         |
 8+20       0.2009      1.45  | Q       |         |         |         |
 8+25       0.2112      1.50  | VQ      |         |         |         |
 8+30       0.2219      1.54  | VQ      |         |         |         |
 8+35       0.2333      1.66  | VQ      |         |         |         |
 8+40       0.2463      1.89  | VQ      |         |         |         |
 8+45       0.2598      1.97  | VQ      |         |         |         |
 8+50       0.2743      2.10  | V Q     |         |         |         |
 8+55       0.2904      2.33  |  VQ     |         |         |         |
 9+ 0       0.3071      2.43  |  VQ     |         |         |         |
 9+ 5       0.3252      2.64  |  V Q    |         |         |         |
 9+10       0.3464      3.08  |  V  Q   |         |         |         |
 9+15       0.3687      3.23  |   V Q   |         |         |         |
 9+20       0.3921      3.39  |   V Q   |         |         |         |
 9+25       0.4172      3.65  |   V  Q  |         |         |         |
 9+30       0.4430      3.75  |   V  Q  |         |         |         |
 9+35       0.4699      3.89  |    V Q  |         |         |         |
 9+40       0.4984      4.14  |    V  Q |         |         |         |
 9+45       0.5275      4.23  |    V  Q |         |         |         |
 9+50       0.5576      4.37  |     V Q |         |         |         |
 9+55       0.5893      4.60  |     V  Q|         |         |         |
10+ 0       0.6216      4.70  |     V  Q|         |         |         |
10+ 5       0.6505      4.20  |      VQ |         |         |         |
10+10       0.6703      2.86  |    Q V  |         |         |         |
10+15       0.6872      2.45  |   Q  V  |         |         |         |
10+20       0.7029      2.28  |   Q  V  |         |         |         |
10+25       0.7180      2.20  |   Q  V  |         |         |         |
10+30       0.7328      2.14  |   Q  V  |         |         |         |
10+35       0.7501      2.52  |    Q  V |         |         |         |
10+40       0.7740      3.48  |     Q V |         |         |         |
10+45       0.8003      3.81  |      QV |         |         |         |
10+50       0.8276      3.97  |      QV |         |         |         |
10+55       0.8556      4.07  |       QV|         |         |         |
11+ 0       0.8841      4.14  |       QV|         |         |         |
11+ 5       0.9124      4.11  |       QV|         |         |         |
11+10       0.9397      3.96  |      Q  V         |         |         |
11+15       0.9667      3.92  |      Q  V         |         |         |
11+20       0.9937      3.91  |      Q  V         |         |         |
11+25       1.0206      3.91  |      Q  |V        |         |         |
11+30       1.0476      3.92  |      Q  |V        |         |         |
11+35       1.0736      3.78  |      Q  |V        |         |         |
11+40       1.0970      3.40  |     Q   |V        |         |         |
11+45       1.1197      3.29  |     Q   | V       |         |         |
11+50       1.1426      3.33  |     Q   | V       |         |         |
11+55       1.1668      3.51  |      Q  | V       |         |         |
```

```
12+ 0       1.1914      3.57  |      Q  | V       |         |         |
12+ 5       1.2201      4.16  |       Q |  V      |         |         |
12+10       1.2584      5.56  |         |Q V      |         |         |
12+15       1.2999      6.03  |         | Q V     |         |         |
12+20       1.3435      6.33  |         | Q V     |         |         |
12+25       1.3894      6.66  |         |  Q V    |         |         |
12+30       1.4363      6.82  |         |  Q V    |         |         |
12+35       1.4850      7.06  |         |   Q V   |         |         |
12+40       1.5369      7.53  |         |    QV   |         |         |
12+45       1.5898      7.69  |         |    Q V  |         |         |
12+50       1.6438      7.85  |         |    Q V  |         |         |
12+55       1.6996      8.10  |         |     Q V |         |         |
13+ 0       1.7561      8.20  |         |     Q  V|         |         |
13+ 5       1.8157      8.65  |         |      Q V|         |         |
13+10       1.8823      9.68  |         |        QV         |         |
13+15       1.9514     10.02  |         |         QV        |         |
13+20       2.0215     10.19  |         |         QV        |         |
13+25       2.0924     10.29  |         |         Q V       |         |
13+30       2.1638     10.36  |         |         Q  V      |         |
13+35       2.2294      9.54  |         |        Q|   V     |         |
13+40       2.2806      7.42  |         |   Q     |   V     |         |
13+45       2.3270      6.75  |         |  Q      |    V    |         |
13+50       2.3715      6.45  |         | Q       |    V    |         |
13+55       2.4149      6.30  |         | Q       |     V   |         |
14+ 0       2.4575      6.20  |         | Q       |     V   |         |
14+ 5       2.5021      6.46  |         | Q       |      V  |         |
14+10       2.5516      7.20  |         |   Q     |      V  |         |
14+15       2.6031      7.47  |         |   Q     |       V |         |
14+20       2.6548      7.52  |         |    Q    |       V |         |
14+25       2.7058      7.40  |         |   Q     |        V|         |
14+30       2.7568      7.40  |         |   Q     |        V|         |
14+35       2.8078      7.41  |         |   Q     |         V         |
14+40       2.8590      7.43  |         |   Q     |         |V        |
14+45       2.9102      7.44  |         |   Q     |         |V        |
14+50       2.9610      7.37  |         |   Q     |         | V       |
14+55       3.0104      7.18  |         |   Q     |         | V       |
15+ 0       3.0596      7.14  |         |   Q     |         |  V      |
15+ 5       3.1081      7.04  |         |   Q     |         |  V      |
15+10       3.1553      6.85  |         |  Q      |         |   V     |
15+15       3.2020      6.79  |         |  Q      |         |   V     |
15+20       3.2481      6.69  |         |  Q      |         |    V    |
15+25       3.2928      6.49  |         | Q       |         |    V    |
15+30       3.3371      6.43  |         | Q       |         |     V   |
15+35       3.3791      6.09  |         | Q       |         |     V   |
15+40       3.4156      5.30  |         Q         |         |      V  |
15+45       3.4504      5.06  |         Q         |         |      V  |
15+50       3.4845      4.95  |        Q|         |         |      V  |
15+55       3.5182      4.90  |        Q|         |         |       V |
16+ 0       3.5517      4.87  |        Q|         |         |       V |
16+ 5       3.5789      3.94  |      Q  |         |         |       V |
16+10       3.5903      1.65  |  Q      |         |         |        V|
```

```
16+15       3.5967      0.93  |Q        |         |         |        V|
16+20       3.6008      0.61  |Q        |         |         |        V|
16+25       3.6037      0.42  Q         |         |         |        V|
16+30       3.6058      0.30  Q         |         |         |        V|
16+35       3.6074      0.22  Q         |         |         |        V|
16+40       3.6083      0.13  Q         |         |         |        V|
16+45       3.6092      0.13  Q         |         |         |        V|
16+50       3.6100      0.13  Q         |         |         |        V|
16+55       3.6109      0.12  Q         |         |         |        V|
17+ 0       3.6117      0.12  Q         |         |         |        V|
17+ 5       3.6127      0.14  Q         |         |         |        V|
17+10       3.6139      0.18  Q         |         |         |        V|
17+15       3.6152      0.19  Q         |         |         |        V|
17+20       3.6166      0.19  Q         |         |         |        V|
17+25       3.6179      0.20  Q         |         |         |        V|
17+30       3.6193      0.20  Q         |         |         |        V|
17+35       3.6207      0.20  Q         |         |         |        V|
17+40       3.6221      0.20  Q         |         |         |        V|
17+45       3.6235      0.20  Q         |         |         |        V|
17+50       3.6248      0.19  Q         |         |         |        V|
17+55       3.6260      0.18  Q         |         |         |        V|
18+ 0       3.6272      0.17  Q         |         |         |        V|
18+ 5       3.6283      0.17  Q         |         |         |        V|
18+10       3.6295      0.16  Q         |         |         |        V|
18+15       3.6306      0.16  Q         |         |         |        V|
18+20       3.6317      0.16  Q         |         |         |        V|
18+25       3.6328      0.16  Q         |         |         |        V|
18+30       3.6339      0.16  Q         |         |         |        V|
18+35       3.6350      0.15  Q         |         |         |        V|
18+40       3.6359      0.13  Q         |         |         |        V|
18+45       3.6368      0.13  Q         |         |         |        V|
18+50       3.6376      0.12  Q         |         |         |        V|
18+55       3.6383      0.10  Q         |         |         |        V|
19+ 0       3.6389      0.09  Q         |         |         |        V|
19+ 5       3.6395      0.09  Q         |         |         |        V|
19+10       3.6403      0.11  Q         |         |         |        V|
19+15       3.6411      0.12  Q         |         |         |        V|
19+20       3.6420      0.13  Q         |         |         |        V|
19+25       3.6430      0.15  Q         |         |         |        V|
19+30       3.6441      0.15  Q         |         |         |        V|
19+35       3.6451      0.15  Q         |         |         |        V|
19+40       3.6460      0.13  Q         |         |         |        V|
19+45       3.6469      0.13  Q         |         |         |        V|
19+50       3.6477      0.12  Q         |         |         |        V|
19+55       3.6483      0.10  Q         |         |         |        V|
20+ 0       3.6490      0.09  Q         |         |         |        V|
20+ 5       3.6496      0.09  Q         |         |         |        V|
20+10       3.6504      0.11  Q         |         |         |        V|
20+15       3.6512      0.12  Q         |         |         |        V|
20+20       3.6520      0.12  Q         |         |         |        V|
20+25       3.6528      0.12  Q         |         |         |        V|
```

```
  20+30       3.6536      0.12  Q          |          |          |         V|
  20+35       3.6545      0.12  Q          |          |          |         V|
  20+40       3.6553      0.12  Q          |          |          |         V|
  20+45       3.6561      0.12  Q          |          |          |         V|
  20+50       3.6569      0.11  Q          |          |          |         V|
  20+55       3.6576      0.09  Q          |          |          |         V|
  21+ 0       3.6582      0.09  Q          |          |          |         V|
  21+ 5       3.6588      0.09  Q          |          |          |         V|
  21+10       3.6596      0.11  Q          |          |          |         V|
  21+15       3.6604      0.12  Q          |          |          |         V|
  21+20       3.6611      0.11  Q          |          |          |         V|
  21+25       3.6618      0.09  Q          |          |          |         V|
  21+30       3.6624      0.09  Q          |          |          |         V|
  21+35       3.6630      0.09  Q          |          |          |         V|
  21+40       3.6638      0.11  Q          |          |          |         V|
  21+45       3.6646      0.12  Q          |          |          |         V|
  21+50       3.6653      0.11  Q          |          |          |         V|
  21+55       3.6660      0.09  Q          |          |          |         V|
  22+ 0       3.6666      0.09  Q          |          |          |         V|
  22+ 5       3.6672      0.09  Q          |          |          |         V|
  22+10       3.6679      0.11  Q          |          |          |         V|
  22+15       3.6687      0.12  Q          |          |          |         V|
  22+20       3.6695      0.11  Q          |          |          |         V|
  22+25       3.6701      0.09  Q          |          |          |         V|
  22+30       3.6707      0.09  Q          |          |          |         V|
  22+35       3.6713      0.08  Q          |          |          |         V|
  22+40       3.6719      0.08  Q          |          |          |         V|
  22+45       3.6725      0.08  Q          |          |          |         V|
  22+50       3.6730      0.08  Q          |          |          |         V|
  22+55       3.6736      0.08  Q          |          |          |         V|
  23+ 0       3.6741      0.08  Q          |          |          |         V|
  23+ 5       3.6747      0.08  Q          |          |          |         V|
  23+10       3.6753      0.08  Q          |          |          |         V|
  23+15       3.6758      0.08  Q          |          |          |         V|
  23+20       3.6764      0.08  Q          |          |          |         V|
  23+25       3.6769      0.08  Q          |          |          |         V|
  23+30       3.6775      0.08  Q          |          |          |         V|
  23+35       3.6780      0.08  Q          |          |          |         V|
  23+40       3.6786      0.08  Q          |          |          |         V|
  23+45       3.6792      0.08  Q          |          |          |         V|
  23+50       3.6797      0.08  Q          |          |          |         V|
  23+55       3.6803      0.08  Q          |          |          |         V|
  24+ 0       3.6808      0.08  Q          |          |          |         V|
  24+ 5       3.6813      0.07  Q          |          |          |         V|
  24+10       3.6815      0.03  Q          |          |          |         V|
  24+15       3.6816      0.01  Q          |          |          |         V|
  24+20       3.6816      0.01  Q          |          |          |         V|
  24+25       3.6816      0.00  Q          |          |          |         V|
  24+30       3.6817      0.00  Q          |          |          |         V|
  24+35       3.6817      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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  12/06/22 File: existinge24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
EXISTING BASIN C
12/06/2022

-------------------------------------------------------------------
Drainage Area =      15.50(Ac.)  =      0.024 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      15.50(Ac.)  =
0.024 Sq. Mi.
Length along longest watercourse =    1692.00(Ft.)
Length along longest watercourse measured to centroid =     846.00(Ft.)
Length along longest watercourse =      0.320 Mi.
Length along longest watercourse measured to centroid =      0.160 Mi.
Difference in elevation =      65.00(Ft.)
Slope along watercourse =    202.8369 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.085 Hr.
Lag time =     5.09 Min.
25% of lag time =     1.27 Min.
40% of lag time =     2.04 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 15.50 | 2.00 | 31.00 |

100 YEAR Area rainfall data:

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 15.50 | 5.00 | 77.50 |

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.000(In)

Sub-Area Data:

| Area(Ac.) | Runoff Index | Impervious % |
|---|---|---|
| 15.500 | 69.00 | 0.010 |

Total Area Entered = 15.50(Ac.)

| RI AMC2 | RI AMC-3 | Infil. Rate (In/Hr) | Impervious (Dec.%) | Adj. Infil. Rate (In/Hr) | Area% (Dec.) | F (In/Hr) |
|---|---|---|---|---|---|---|
| 69.0 | 84.4 | 0.194 | 0.010 | 0.192 | 1.000 | 0.192 |
| | | | | | Sum (F) = | 0.192 |

Area averaged mean soil loss (F) (In/Hr) = 0.192
Minimum soil loss rate ((In/Hr)) = 0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.900

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U n i t H y d r o g r a p h
VALLEY S-Curve

---

Unit Hydrograph Data

| Unit time period (hrs) | Time % of lag | Distribution Graph % | Unit Hydrograph (CFS) |
|---|---|---|---|
| 1 | 0.083 | 98.142 | 18.629 | 2.910 |
| 2 | 0.167 | 196.283 | 48.244 | 7.536 |
| 3 | 0.250 | 294.425 | 15.925 | 2.488 |
| 4 | 0.333 | 392.566 | 7.162 | 1.119 |
| 5 | 0.417 | 490.708 | 4.052 | 0.633 |
| 6 | 0.500 | 588.850 | 2.629 | 0.411 |
| 7 | 0.583 | 686.991 | 1.660 | 0.259 |
| 8 | 0.667 | 785.133 | 1.060 | 0.166 |
| 9 | 0.750 | 883.274 | 0.639 | 0.100 |
| | | Sum = | 100.000 | Sum= 15.621 |

---

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.341) | 0.036 | 0.004 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.339) | 0.036 | 0.004 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.338) | 0.036 | 0.004 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.337) | 0.054 | 0.006 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.335) | 0.054 | 0.006 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.334) | 0.054 | 0.006 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.333) | 0.054 | 0.006 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.331) | 0.054 | 0.006 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.330) | 0.054 | 0.006 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.329) | 0.072 | 0.008 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.327) | 0.072 | 0.008 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.326) | 0.072 | 0.008 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.325) | 0.054 | 0.006 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.324) | 0.054 | 0.006 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.322) | 0.054 | 0.006 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.321) | 0.054 | 0.006 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.320) | 0.054 | 0.006 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.318) | 0.054 | 0.006 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.317) | 0.054 | 0.006 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.316) | 0.054 | 0.006 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.315) | 0.054 | 0.006 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.313) | 0.072 | 0.008 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.312) | 0.072 | 0.008 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.311) | 0.072 | 0.008 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.310) | 0.072 | 0.008 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.308) | 0.072 | 0.008 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.307) | 0.072 | 0.008 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.306) | 0.072 | 0.008 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.305) | 0.072 | 0.008 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.303) | 0.072 | 0.008 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.302) | 0.090 | 0.010 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.301) | 0.090 | 0.010 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.300) | 0.090 | 0.010 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.298) | 0.090 | 0.010 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.297) | 0.090 | 0.010 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.296) | 0.090 | 0.010 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.295) | 0.090 | 0.010 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.294) | 0.090 | 0.010 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.292) | 0.090 | 0.010 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.291) | 0.090 | 0.010 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.290) | 0.090 | 0.010 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.289) | 0.090 | 0.010 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.287) | 0.090 | 0.010 |

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| 44 | 3.67 | 0.17 | 0.100 | ( 0.286) | 0.090 | 0.010 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.285) | 0.090 | 0.010 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.284) | 0.108 | 0.012 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.283) | 0.108 | 0.012 |
| 48 | 4.00 | 0.20 | 0.120 | ( 0.281) | 0.108 | 0.012 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.280) | 0.108 | 0.012 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.279) | 0.108 | 0.012 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.278) | 0.108 | 0.012 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.277) | 0.126 | 0.014 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.275) | 0.126 | 0.014 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.274) | 0.126 | 0.014 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.273) | 0.126 | 0.014 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.272) | 0.126 | 0.014 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.271) | 0.126 | 0.014 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.270) | 0.144 | 0.016 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.268) | 0.144 | 0.016 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.267) | 0.144 | 0.016 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.266) | 0.108 | 0.012 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.265) | 0.108 | 0.012 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.264) | 0.108 | 0.012 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.263) | 0.126 | 0.014 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.262) | 0.126 | 0.014 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.260) | 0.126 | 0.014 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.259) | 0.144 | 0.016 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.258) | 0.144 | 0.016 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.257) | 0.144 | 0.016 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.256) | 0.144 | 0.016 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.255) | 0.144 | 0.016 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.254) | 0.144 | 0.016 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.252) | 0.162 | 0.018 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.251) | 0.162 | 0.018 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.250) | 0.162 | 0.018 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.249) | 0.162 | 0.018 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.248) | 0.162 | 0.018 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.247) | 0.162 | 0.018 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.246) | 0.180 | 0.020 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.245) | 0.180 | 0.020 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.244) | 0.180 | 0.020 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.242) | 0.180 | 0.020 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.241) | 0.180 | 0.020 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.240) | 0.180 | 0.020 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.239) | 0.180 | 0.020 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.238) | 0.180 | 0.020 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.237) | 0.180 | 0.020 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.236) | 0.198 | 0.022 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.235) | 0.198 | 0.022 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.234) | 0.198 | 0.022 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.233) | 0.216 | 0.024 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.232) | 0.216 | 0.024 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.231) | 0.216 | 0.024 |
| 94 | 7.83 | 0.43 | 0.260 | 0.229 | ( 0.234) | 0.031 |

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| 95 | 7.92 | 0.43 | 0.260 | 0.228 | ( | 0.234) | 0.032 |
| 96 | 8.00 | 0.43 | 0.260 | 0.227 | ( | 0.234) | 0.033 |
| 97 | 8.08 | 0.50 | 0.300 | 0.226 | ( | 0.270) | 0.074 |
| 98 | 8.17 | 0.50 | 0.300 | 0.225 | ( | 0.270) | 0.075 |
| 99 | 8.25 | 0.50 | 0.300 | 0.224 | ( | 0.270) | 0.076 |
| 100 | 8.33 | 0.50 | 0.300 | 0.223 | ( | 0.270) | 0.077 |
| 101 | 8.42 | 0.50 | 0.300 | 0.222 | ( | 0.270) | 0.078 |
| 102 | 8.50 | 0.50 | 0.300 | 0.221 | ( | 0.270) | 0.079 |
| 103 | 8.58 | 0.53 | 0.320 | 0.220 | ( | 0.288) | 0.100 |
| 104 | 8.67 | 0.53 | 0.320 | 0.219 | ( | 0.288) | 0.101 |
| 105 | 8.75 | 0.53 | 0.320 | 0.218 | ( | 0.288) | 0.102 |
| 106 | 8.83 | 0.57 | 0.340 | 0.217 | ( | 0.306) | 0.123 |
| 107 | 8.92 | 0.57 | 0.340 | 0.216 | ( | 0.306) | 0.124 |
| 108 | 9.00 | 0.57 | 0.340 | 0.215 | ( | 0.306) | 0.125 |
| 109 | 9.08 | 0.63 | 0.380 | 0.214 | ( | 0.342) | 0.166 |
| 110 | 9.17 | 0.63 | 0.380 | 0.213 | ( | 0.342) | 0.167 |
| 111 | 9.25 | 0.63 | 0.380 | 0.212 | ( | 0.342) | 0.168 |
| 112 | 9.33 | 0.67 | 0.400 | 0.211 | ( | 0.360) | 0.189 |
| 113 | 9.42 | 0.67 | 0.400 | 0.210 | ( | 0.360) | 0.190 |
| 114 | 9.50 | 0.67 | 0.400 | 0.209 | ( | 0.360) | 0.191 |
| 115 | 9.58 | 0.70 | 0.420 | 0.208 | ( | 0.378) | 0.212 |
| 116 | 9.67 | 0.70 | 0.420 | 0.207 | ( | 0.378) | 0.213 |
| 117 | 9.75 | 0.70 | 0.420 | 0.206 | ( | 0.378) | 0.214 |
| 118 | 9.83 | 0.73 | 0.440 | 0.205 | ( | 0.396) | 0.235 |
| 119 | 9.92 | 0.73 | 0.440 | 0.204 | ( | 0.396) | 0.236 |
| 120 | 10.00 | 0.73 | 0.440 | 0.203 | ( | 0.396) | 0.237 |
| 121 | 10.08 | 0.50 | 0.300 | 0.202 | ( | 0.270) | 0.098 |
| 122 | 10.17 | 0.50 | 0.300 | 0.201 | ( | 0.270) | 0.099 |
| 123 | 10.25 | 0.50 | 0.300 | 0.200 | ( | 0.270) | 0.100 |
| 124 | 10.33 | 0.50 | 0.300 | 0.199 | ( | 0.270) | 0.101 |
| 125 | 10.42 | 0.50 | 0.300 | 0.198 | ( | 0.270) | 0.102 |
| 126 | 10.50 | 0.50 | 0.300 | 0.197 | ( | 0.270) | 0.103 |
| 127 | 10.58 | 0.67 | 0.400 | 0.196 | ( | 0.360) | 0.204 |
| 128 | 10.67 | 0.67 | 0.400 | 0.195 | ( | 0.360) | 0.205 |
| 129 | 10.75 | 0.67 | 0.400 | 0.194 | ( | 0.360) | 0.206 |
| 130 | 10.83 | 0.67 | 0.400 | 0.193 | ( | 0.360) | 0.207 |
| 131 | 10.92 | 0.67 | 0.400 | 0.192 | ( | 0.360) | 0.208 |
| 132 | 11.00 | 0.67 | 0.400 | 0.191 | ( | 0.360) | 0.209 |
| 133 | 11.08 | 0.63 | 0.380 | 0.190 | ( | 0.342) | 0.190 |
| 134 | 11.17 | 0.63 | 0.380 | 0.189 | ( | 0.342) | 0.191 |
| 135 | 11.25 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 136 | 11.33 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 137 | 11.42 | 0.63 | 0.380 | 0.187 | ( | 0.342) | 0.193 |
| 138 | 11.50 | 0.63 | 0.380 | 0.186 | ( | 0.342) | 0.194 |
| 139 | 11.58 | 0.57 | 0.340 | 0.185 | ( | 0.306) | 0.155 |
| 140 | 11.67 | 0.57 | 0.340 | 0.184 | ( | 0.306) | 0.156 |
| 141 | 11.75 | 0.57 | 0.340 | 0.183 | ( | 0.306) | 0.157 |
| 142 | 11.83 | 0.60 | 0.360 | 0.182 | ( | 0.324) | 0.178 |
| 143 | 11.92 | 0.60 | 0.360 | 0.181 | ( | 0.324) | 0.179 |
| 144 | 12.00 | 0.60 | 0.360 | 0.180 | ( | 0.324) | 0.180 |
| 145 | 12.08 | 0.83 | 0.500 | 0.179 | ( | 0.450) | 0.321 |

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| 146 | 12.17 | 0.83 | 0.500 | 0.178 | ( 0.450) | 0.322 |
| 147 | 12.25 | 0.83 | 0.500 | 0.178 | ( 0.450) | 0.322 |
| 148 | 12.33 | 0.87 | 0.520 | 0.177 | ( 0.468) | 0.343 |
| 149 | 12.42 | 0.87 | 0.520 | 0.176 | ( 0.468) | 0.344 |
| 150 | 12.50 | 0.87 | 0.520 | 0.175 | ( 0.468) | 0.345 |
| 151 | 12.58 | 0.93 | 0.560 | 0.174 | ( 0.504) | 0.386 |
| 152 | 12.67 | 0.93 | 0.560 | 0.173 | ( 0.504) | 0.387 |
| 153 | 12.75 | 0.93 | 0.560 | 0.172 | ( 0.504) | 0.388 |
| 154 | 12.83 | 0.97 | 0.580 | 0.171 | ( 0.522) | 0.409 |
| 155 | 12.92 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.409 |
| 156 | 13.00 | 0.97 | 0.580 | 0.170 | ( 0.522) | 0.410 |
| 157 | 13.08 | 1.13 | 0.680 | 0.169 | ( 0.612) | 0.511 |
| 158 | 13.17 | 1.13 | 0.680 | 0.168 | ( 0.612) | 0.512 |
| 159 | 13.25 | 1.13 | 0.680 | 0.167 | ( 0.612) | 0.513 |
| 160 | 13.33 | 1.13 | 0.680 | 0.166 | ( 0.612) | 0.514 |
| 161 | 13.42 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 162 | 13.50 | 1.13 | 0.680 | 0.165 | ( 0.612) | 0.515 |
| 163 | 13.58 | 0.77 | 0.460 | 0.164 | ( 0.414) | 0.296 |
| 164 | 13.67 | 0.77 | 0.460 | 0.163 | ( 0.414) | 0.297 |
| 165 | 13.75 | 0.77 | 0.460 | 0.162 | ( 0.414) | 0.298 |
| 166 | 13.83 | 0.77 | 0.460 | 0.161 | ( 0.414) | 0.299 |
| 167 | 13.92 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 168 | 14.00 | 0.77 | 0.460 | 0.160 | ( 0.414) | 0.300 |
| 169 | 14.08 | 0.90 | 0.540 | 0.159 | ( 0.486) | 0.381 |
| 170 | 14.17 | 0.90 | 0.540 | 0.158 | ( 0.486) | 0.382 |
| 171 | 14.25 | 0.90 | 0.540 | 0.157 | ( 0.486) | 0.383 |
| 172 | 14.33 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 173 | 14.42 | 0.87 | 0.520 | 0.156 | ( 0.468) | 0.364 |
| 174 | 14.50 | 0.87 | 0.520 | 0.155 | ( 0.468) | 0.365 |
| 175 | 14.58 | 0.87 | 0.520 | 0.154 | ( 0.468) | 0.366 |
| 176 | 14.67 | 0.87 | 0.520 | 0.153 | ( 0.468) | 0.367 |
| 177 | 14.75 | 0.87 | 0.520 | 0.152 | ( 0.468) | 0.368 |
| 178 | 14.83 | 0.83 | 0.500 | 0.152 | ( 0.450) | 0.348 |
| 179 | 14.92 | 0.83 | 0.500 | 0.151 | ( 0.450) | 0.349 |
| 180 | 15.00 | 0.83 | 0.500 | 0.150 | ( 0.450) | 0.350 |
| 181 | 15.08 | 0.80 | 0.480 | 0.149 | ( 0.432) | 0.331 |
| 182 | 15.17 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.331 |
| 183 | 15.25 | 0.80 | 0.480 | 0.148 | ( 0.432) | 0.332 |
| 184 | 15.33 | 0.77 | 0.460 | 0.147 | ( 0.414) | 0.313 |
| 185 | 15.42 | 0.77 | 0.460 | 0.146 | ( 0.414) | 0.314 |
| 186 | 15.50 | 0.77 | 0.460 | 0.145 | ( 0.414) | 0.315 |
| 187 | 15.58 | 0.63 | 0.380 | 0.145 | ( 0.342) | 0.235 |
| 188 | 15.67 | 0.63 | 0.380 | 0.144 | ( 0.342) | 0.236 |
| 189 | 15.75 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 190 | 15.83 | 0.63 | 0.380 | 0.143 | ( 0.342) | 0.237 |
| 191 | 15.92 | 0.63 | 0.380 | 0.142 | ( 0.342) | 0.238 |
| 192 | 16.00 | 0.63 | 0.380 | 0.141 | ( 0.342) | 0.239 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.140) | 0.072 | 0.008 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.139) | 0.072 | 0.008 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |

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| 197 | 16.42 | 0.13 | 0.080 | ( 0.138) | 0.072 | 0.008 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.137) | 0.072 | 0.008 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.136) | 0.054 | 0.006 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 201 | 16.75 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.134) | 0.054 | 0.006 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.132) | 0.090 | 0.010 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.130) | 0.090 | 0.010 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.128) | 0.090 | 0.010 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.125) | 0.072 | 0.008 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.122) | 0.072 | 0.008 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.121) | 0.072 | 0.008 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.121) | 0.054 | 0.006 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.119) | 0.036 | 0.004 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.116) | 0.054 | 0.006 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.116) | 0.072 | 0.008 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.113) | 0.054 | 0.006 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.113) | 0.036 | 0.004 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |

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| 248 | 20.67 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.107) | 0.054 | 0.006 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.107) | 0.036 | 0.004 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 252 | 21.00 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.106) | 0.054 | 0.006 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.102) | 0.054 | 0.006 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.101) | 0.036 | 0.004 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.100) | 0.054 | 0.006 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 26.4

Flood volume = Effective rainfall 2.20(In)
times area 15.5(Ac.)/[(In)/(Ft.)] = 2.8(Ac.Ft)
Total soil loss = 2.80(In)
Total soil loss = 3.619(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 123672.9 Cubic Feet
Total soil loss = 157643.6 Cubic Feet

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Peak flow rate of this hydrograph = 7.983(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

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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 | 0.0004 | 0.04 | Q | \| | \| | \| | \| |
| 0+15 | 0.0007 | 0.05 | Q | \| | \| | \| | \| |
| 0+20 | 0.0012 | 0.06 | Q | \| | \| | \| | \| |
| 0+25 | 0.0017 | 0.08 | Q | \| | \| | \| | \| |
| 0+30 | 0.0023 | 0.09 | Q | \| | \| | \| | \| |
| 0+35 | 0.0029 | 0.09 | Q | \| | \| | \| | \| |
| 0+40 | 0.0035 | 0.09 | Q | \| | \| | \| | \| |
| 0+45 | 0.0042 | 0.09 | Q | \| | \| | \| | \| |
| 0+50 | 0.0049 | 0.10 | Q | \| | \| | \| | \| |
| 0+55 | 0.0057 | 0.11 | Q | \| | \| | \| | \| |
| 1+ 0 | 0.0065 | 0.12 | Q | \| | \| | \| | \| |
| 1+ 5 | 0.0073 | 0.12 | Q | \| | \| | \| | \| |
| 1+10 | 0.0080 | 0.10 | Q | \| | \| | \| | \| |
| 1+15 | 0.0087 | 0.10 | Q | \| | \| | \| | \| |
| 1+20 | 0.0093 | 0.10 | Q | \| | \| | \| | \| |
| 1+25 | 0.0100 | 0.10 | Q | \| | \| | \| | \| |
| 1+30 | 0.0106 | 0.09 | Q | \| | \| | \| | \| |
| 1+35 | 0.0113 | 0.09 | Q | \| | \| | \| | \| |
| 1+40 | 0.0119 | 0.09 | Q | \| | \| | \| | \| |
| 1+45 | 0.0126 | 0.09 | Q | \| | \| | \| | \| |
| 1+50 | 0.0133 | 0.10 | Q | \| | \| | \| | \| |
| 1+55 | 0.0140 | 0.11 | Q | \| | \| | \| | \| |
| 2+ 0 | 0.0149 | 0.12 | Q | \| | \| | \| | \| |
| 2+ 5 | 0.0157 | 0.12 | Q | \| | \| | \| | \| |
| 2+10 | 0.0166 | 0.12 | Q | \| | \| | \| | \| |
| 2+15 | 0.0174 | 0.12 | Q | \| | \| | \| | \| |
| 2+20 | 0.0183 | 0.12 | Q | \| | \| | \| | \| |
| 2+25 | 0.0191 | 0.12 | Q | \| | \| | \| | \| |
| 2+30 | 0.0200 | 0.13 | Q | \| | \| | \| | \| |
| 2+35 | 0.0209 | 0.13 | Q | \| | \| | \| | \| |
| 2+40 | 0.0219 | 0.15 | Q | \| | \| | \| | \| |
| 2+45 | 0.0229 | 0.15 | Q | \| | \| | \| | \| |
| 2+50 | 0.0240 | 0.15 | Q | \| | \| | \| | \| |
| 2+55 | 0.0251 | 0.15 | Q | \| | \| | \| | \| |
| 3+ 0 | 0.0261 | 0.16 | Q | \| | \| | \| | \| |
| 3+ 5 | 0.0272 | 0.16 | Q | \| | \| | \| | \| |
| 3+10 | 0.0283 | 0.16 | Q | \| | \| | \| | \| |
| 3+15 | 0.0293 | 0.16 | Q | \| | \| | \| | \| |
| 3+20 | 0.0304 | 0.16 | Q | \| | \| | \| | \| |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+25 | 0.0315 | 0.16 | Q | \| | \| | \| | \| |
| 3+30 | 0.0326 | 0.16 | Q | \| | \| | \| | \| |
| 3+35 | 0.0337 | 0.16 | Q | \| | \| | \| | \| |
| 3+40 | 0.0347 | 0.16 | Q | \| | \| | \| | \| |
| 3+45 | 0.0358 | 0.16 | Q | \| | \| | \| | \| |
| 3+50 | 0.0369 | 0.16 | Q | \| | \| | \| | \| |
| 3+55 | 0.0381 | 0.18 | Q | \| | \| | \| | \| |
| 4+ 0 | 0.0394 | 0.18 | Q | \| | \| | \| | \| |
| 4+ 5 | 0.0407 | 0.18 | Q | \| | \| | \| | \| |
| 4+10 | 0.0419 | 0.19 | Q | \| | \| | \| | \| |
| 4+15 | 0.0432 | 0.19 | Q | \| | \| | \| | \| |
| 4+20 | 0.0446 | 0.19 | Q | \| | \| | \| | \| |
| 4+25 | 0.0460 | 0.21 | Q | \| | \| | \| | \| |
| 4+30 | 0.0475 | 0.21 | Q | \| | \| | \| | \| |
| 4+35 | 0.0489 | 0.22 | Q | \| | \| | \| | \| |
| 4+40 | 0.0504 | 0.22 | Q | \| | \| | \| | \| |
| 4+45 | 0.0519 | 0.22 | Q | \| | \| | \| | \| |
| 4+50 | 0.0535 | 0.22 | Q | \| | \| | \| | \| |
| 4+55 | 0.0551 | 0.24 | Q | \| | \| | \| | \| |
| 5+ 0 | 0.0568 | 0.24 | Q | \| | \| | \| | \| |
| 5+ 5 | 0.0584 | 0.24 | Q | \| | \| | \| | \| |
| 5+10 | 0.0599 | 0.21 | Q | \| | \| | \| | \| |
| 5+15 | 0.0612 | 0.20 | Q | \| | \| | \| | \| |
| 5+20 | 0.0626 | 0.20 | Q | \| | \| | \| | \| |
| 5+25 | 0.0641 | 0.21 | Q | \| | \| | \| | \| |
| 5+30 | 0.0655 | 0.22 | Q | \| | \| | \| | \| |
| 5+35 | 0.0671 | 0.22 | Q | \| | \| | \| | \| |
| 5+40 | 0.0687 | 0.24 | Q | \| | \| | \| | \| |
| 5+45 | 0.0704 | 0.24 | Q | \| | \| | \| | \| |
| 5+50 | 0.0721 | 0.25 | QV | \| | \| | \| | \| |
| 5+55 | 0.0738 | 0.25 | QV | \| | \| | \| | \| |
| 6+ 0 | 0.0755 | 0.25 | QV | \| | \| | \| | \| |
| 6+ 5 | 0.0773 | 0.26 | \|Q | \| | \| | \| | \| |
| 6+10 | 0.0791 | 0.27 | \|Q | \| | \| | \| | \| |
| 6+15 | 0.0810 | 0.28 | \|Q | \| | \| | \| | \| |
| 6+20 | 0.0829 | 0.28 | \|Q | \| | \| | \| | \| |
| 6+25 | 0.0849 | 0.28 | \|Q | \| | \| | \| | \| |
| 6+30 | 0.0868 | 0.28 | \|Q | \| | \| | \| | \| |
| 6+35 | 0.0888 | 0.29 | \|Q | \| | \| | \| | \| |
| 6+40 | 0.0909 | 0.30 | \|Q | \| | \| | \| | \| |
| 6+45 | 0.0930 | 0.31 | \|Q | \| | \| | \| | \| |
| 6+50 | 0.0951 | 0.31 | \|Q | \| | \| | \| | \| |
| 6+55 | 0.0972 | 0.31 | \|Q | \| | \| | \| | \| |
| 7+ 0 | 0.0994 | 0.31 | \|Q | \| | \| | \| | \| |
| 7+ 5 | 0.1015 | 0.31 | \|Q | \| | \| | \| | \| |
| 7+10 | 0.1037 | 0.31 | \|Q | \| | \| | \| | \| |
| 7+15 | 0.1058 | 0.31 | \|Q | \| | \| | \| | \| |
| 7+20 | 0.1080 | 0.32 | \|Q | \| | \| | \| | \| |
| 7+25 | 0.1103 | 0.33 | \|Q | \| | \| | \| | \| |
| 7+30 | 0.1127 | 0.34 | \|Q | \| | \| | \| | \| |
| 7+35 | 0.1150 | 0.35 | \|Q | \| | \| | \| | \| |

```
 7+40       0.1175      0.36  |Q        |         |         |         |
 7+45       0.1201      0.37  |Q        |         |         |         |
 7+50       0.1228      0.39  |Q        |         |         |         |
 7+55       0.1258      0.44  |Q        |         |         |         |
 8+ 0       0.1291      0.47  |Q        |         |         |         |
 8+ 5       0.1333      0.61  |VQ       |         |         |         |
 8+10       0.1397      0.93  |V Q      |         |         |         |
 8+15       0.1469      1.05  | V Q     |         |         |         |
 8+20       0.1546      1.11  | V Q     |         |         |         |
 8+25       0.1626      1.15  | V Q     |         |         |         |
 8+30       0.1707      1.19  | V Q     |         |         |         |
 8+35       0.1795      1.27  | V  Q    |         |         |         |
 8+40       0.1895      1.45  | V  Q    |         |         |         |
 8+45       0.1999      1.52  | V   Q   |         |         |         |
 8+50       0.2110      1.61  | V   Q   |         |         |         |
 8+55       0.2234      1.79  |  V   Q  |         |         |         |
 9+ 0       0.2362      1.87  |  V   Q  |         |         |         |
 9+ 5       0.2502      2.03  |  V    Q |         |         |         |
 9+10       0.2664      2.36  |  V     Q|         |         |         |
 9+15       0.2835      2.49  |  V     Q|         |         |         |
 9+20       0.3015      2.61  |   V     Q         |         |         |
 9+25       0.3208      2.81  |   V     |Q        |         |         |
 9+30       0.3407      2.89  |   V     |Q        |         |         |
 9+35       0.3614      3.00  |    V    |Q        |         |         |
 9+40       0.3833      3.18  |    V    | Q       |         |         |
 9+45       0.4057      3.26  |    V    |  Q      |         |         |
 9+50       0.4289      3.36  |     V   |  Q      |         |         |
 9+55       0.4533      3.54  |     V   |   Q     |         |         |
10+ 0       0.4782      3.62  |     V   |   Q     |         |         |
10+ 5       0.5006      3.25  |      V  |  Q      |         |         |
10+10       0.5160      2.23  |      VQ |         |         |         |
10+15       0.5291      1.91  |      Q  |         |         |         |
10+20       0.5413      1.77  |      Q  |         |         |         |
10+25       0.5530      1.70  |     QV  |         |         |         |
10+30       0.5644      1.66  |     QV  |         |         |         |
10+35       0.5777      1.93  |      QV |         |         |         |
10+40       0.5961      2.68  |       V Q         |         |         |
10+45       0.6163      2.93  |       V |Q        |         |         |
10+50       0.6373      3.05  |       V | Q       |         |         |
10+55       0.6589      3.13  |        V| Q       |         |         |
11+ 0       0.6808      3.19  |        V| Q       |         |         |
11+ 5       0.7026      3.17  |        V| Q       |         |         |
11+10       0.7236      3.05  |         V Q       |         |         |
11+15       0.7445      3.02  |         V Q       |         |         |
11+20       0.7652      3.02  |         V Q       |         |         |
11+25       0.7860      3.02  |         |VQ       |         |         |
11+30       0.8069      3.02  |         |VQ       |         |         |
11+35       0.8269      2.92  |         |Q        |         |         |
11+40       0.8450      2.63  |         QV        |         |         |
11+45       0.8625      2.54  |         Q V       |         |         |
11+50       0.8802      2.57  |         Q V       |         |         |
```

```
11+55       0.8989      2.71  |          Q V       |         |         |
12+ 0       0.9178      2.76  |          |QV       |         |         |
12+ 5       0.9398      3.19  |          | QV      |         |         |
12+10       0.9692      4.26  |          |  V   Q  |         |         |
12+15       1.0011      4.63  |          |   V   Q |         |         |
12+20       1.0346      4.87  |          |   V    Q|         |         |
12+25       1.0699      5.12  |          |    V    Q         |         |
12+30       1.1060      5.25  |          |    V    Q         |         |
12+35       1.1434      5.43  |          |     V   |Q        |         |
12+40       1.1833      5.79  |          |     V   |  Q      |         |
12+45       1.2240      5.92  |          |      V  |  Q      |         |
12+50       1.2657      6.04  |          |      V  |   Q     |         |
12+55       1.3086      6.24  |          |       V |   Q     |         |
13+ 0       1.3521      6.32  |          |        V|    Q    |         |
13+ 5       1.3979      6.66  |          |        V|     Q   |         |
13+10       1.4492      7.44  |          |         V        Q|         |
13+15       1.5023      7.72  |          |         |V        Q         |
13+20       1.5564      7.85  |          |         |V        |Q        |
13+25       1.6110      7.93  |          |         | V       |Q        |
13+30       1.6660      7.98  |          |         |  V      |Q        |
13+35       1.7168      7.38  |          |         |   V    Q|         |
13+40       1.7564      5.75  |          |         |  QV     |         |
13+45       1.7924      5.23  |          |         Q    V    |         |
13+50       1.8268      4.99  |          |        Q|    V    |         |
13+55       1.8604      4.87  |          |        Q|     V   |         |
14+ 0       1.8934      4.79  |          |        Q|     V   |         |
14+ 5       1.9277      4.98  |          |        Q|      V  |         |
14+10       1.9659      5.56  |          |         | Q    V  |         |
14+15       2.0055      5.75  |          |         | Q     V |         |
14+20       2.0454      5.79  |          |         |  Q    V |         |
14+25       2.0847      5.71  |          |         | Q      V|         |
14+30       2.1240      5.70  |          |         | Q      V|         |
14+35       2.1633      5.71  |          |         | Q       V         |
14+40       2.2028      5.73  |          |         | Q       |V        |
14+45       2.2423      5.74  |          |         | Q       |V        |
14+50       2.2814      5.69  |          |         | Q       | V       |
14+55       2.3196      5.54  |          |         | Q       | V       |
15+ 0       2.3575      5.50  |          |         | Q       |  V      |
15+ 5       2.3950      5.44  |          |         |Q        |  V      |
15+10       2.4314      5.28  |          |         |Q        |   V     |
15+15       2.4674      5.24  |          |         Q         |   V     |
15+20       2.5030      5.16  |          |         Q         |    V    |
15+25       2.5375      5.01  |          |         Q         |    V    |
15+30       2.5717      4.96  |          |        Q|         |     V   |
15+35       2.6041      4.71  |          |       Q |         |     V   |
15+40       2.6324      4.11  |          |     Q   |         |      V  |
15+45       2.6593      3.91  |          |    Q    |         |      V  |
15+50       2.6857      3.82  |          |    Q    |         |      V  |
15+55       2.7117      3.78  |          |    Q    |         |       V |
16+ 0       2.7376      3.76  |          |    Q    |         |       V |
16+ 5       2.7588      3.07  |          | Q       |         |       V |
```

```
16+10       2.7679      1.32  |    Q    |         |         |       V |
16+15       2.7730      0.74  | Q       |         |         |        V|
16+20       2.7764      0.49  |Q        |         |         |        V|
16+25       2.7787      0.34  |Q        |         |         |        V|
16+30       2.7804      0.25  Q         |         |         |        V|
16+35       2.7816      0.18  Q         |         |         |        V|
16+40       2.7825      0.13  Q         |         |         |        V|
16+45       2.7832      0.10  Q         |         |         |        V|
16+50       2.7839      0.10  Q         |         |         |        V|
16+55       2.7845      0.10  Q         |         |         |        V|
17+ 0       2.7852      0.09  Q         |         |         |        V|
17+ 5       2.7859      0.11  Q         |         |         |        V|
17+10       2.7869      0.14  Q         |         |         |        V|
17+15       2.7879      0.15  Q         |         |         |        V|
17+20       2.7889      0.15  Q         |         |         |        V|
17+25       2.7899      0.15  Q         |         |         |        V|
17+30       2.7910      0.15  Q         |         |         |        V|
17+35       2.7921      0.16  Q         |         |         |        V|
17+40       2.7931      0.16  Q         |         |         |        V|
17+45       2.7942      0.16  Q         |         |         |        V|
17+50       2.7953      0.15  Q         |         |         |        V|
17+55       2.7962      0.14  Q         |         |         |        V|
18+ 0       2.7971      0.13  Q         |         |         |        V|
18+ 5       2.7980      0.13  Q         |         |         |        V|
18+10       2.7988      0.13  Q         |         |         |        V|
18+15       2.7997      0.13  Q         |         |         |        V|
18+20       2.8006      0.13  Q         |         |         |        V|
18+25       2.8014      0.13  Q         |         |         |        V|
18+30       2.8023      0.13  Q         |         |         |        V|
18+35       2.8031      0.12  Q         |         |         |        V|
18+40       2.8038      0.10  Q         |         |         |        V|
18+45       2.8045      0.10  Q         |         |         |        V|
18+50       2.8051      0.09  Q         |         |         |        V|
18+55       2.8057      0.07  Q         |         |         |        V|
19+ 0       2.8061      0.07  Q         |         |         |        V|
19+ 5       2.8066      0.07  Q         |         |         |        V|
19+10       2.8072      0.09  Q         |         |         |        V|
19+15       2.8078      0.09  Q         |         |         |        V|
19+20       2.8085      0.10  Q         |         |         |        V|
19+25       2.8093      0.11  Q         |         |         |        V|
19+30       2.8101      0.12  Q         |         |         |        V|
19+35       2.8109      0.12  Q         |         |         |        V|
19+40       2.8116      0.10  Q         |         |         |        V|
19+45       2.8123      0.10  Q         |         |         |        V|
19+50       2.8129      0.09  Q         |         |         |        V|
19+55       2.8134      0.07  Q         |         |         |        V|
20+ 0       2.8139      0.07  Q         |         |         |        V|
20+ 5       2.8144      0.07  Q         |         |         |        V|
20+10       2.8150      0.09  Q         |         |         |        V|
20+15       2.8156      0.09  Q         |         |         |        V|
20+20       2.8162      0.09  Q         |         |         |        V|
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 20+25 | 2.8168 | 0.09 | Q | \| | \| | \| | V\| |
| 20+30 | 2.8175 | 0.09 | Q | \| | \| | \| | V\| |
| 20+35 | 2.8181 | 0.09 | Q | \| | \| | \| | V\| |
| 20+40 | 2.8188 | 0.09 | Q | \| | \| | \| | V\| |
| 20+45 | 2.8194 | 0.09 | Q | \| | \| | \| | V\| |
| 20+50 | 2.8200 | 0.09 | Q | \| | \| | \| | V\| |
| 20+55 | 2.8205 | 0.07 | Q | \| | \| | \| | V\| |
| 21+ 0 | 2.8210 | 0.07 | Q | \| | \| | \| | V\| |
| 21+ 5 | 2.8215 | 0.07 | Q | \| | \| | \| | V\| |
| 21+10 | 2.8221 | 0.09 | Q | \| | \| | \| | V\| |
| 21+15 | 2.8227 | 0.09 | Q | \| | \| | \| | V\| |
| 21+20 | 2.8233 | 0.09 | Q | \| | \| | \| | V\| |
| 21+25 | 2.8238 | 0.07 | Q | \| | \| | \| | V\| |
| 21+30 | 2.8242 | 0.07 | Q | \| | \| | \| | V\| |
| 21+35 | 2.8247 | 0.07 | Q | \| | \| | \| | V\| |
| 21+40 | 2.8253 | 0.09 | Q | \| | \| | \| | V\| |
| 21+45 | 2.8259 | 0.09 | Q | \| | \| | \| | V\| |
| 21+50 | 2.8265 | 0.09 | Q | \| | \| | \| | V\| |
| 21+55 | 2.8270 | 0.07 | Q | \| | \| | \| | V\| |
| 22+ 0 | 2.8275 | 0.07 | Q | \| | \| | \| | V\| |
| 22+ 5 | 2.8279 | 0.07 | Q | \| | \| | \| | V\| |
| 22+10 | 2.8285 | 0.09 | Q | \| | \| | \| | V\| |
| 22+15 | 2.8291 | 0.09 | Q | \| | \| | \| | V\| |
| 22+20 | 2.8297 | 0.09 | Q | \| | \| | \| | V\| |
| 22+25 | 2.8302 | 0.07 | Q | \| | \| | \| | V\| |
| 22+30 | 2.8307 | 0.07 | Q | \| | \| | \| | V\| |
| 22+35 | 2.8311 | 0.07 | Q | \| | \| | \| | V\| |
| 22+40 | 2.8316 | 0.06 | Q | \| | \| | \| | V\| |
| 22+45 | 2.8320 | 0.06 | Q | \| | \| | \| | V\| |
| 22+50 | 2.8324 | 0.06 | Q | \| | \| | \| | V\| |
| 22+55 | 2.8329 | 0.06 | Q | \| | \| | \| | V\| |
| 23+ 0 | 2.8333 | 0.06 | Q | \| | \| | \| | V\| |
| 23+ 5 | 2.8337 | 0.06 | Q | \| | \| | \| | V\| |
| 23+10 | 2.8342 | 0.06 | Q | \| | \| | \| | V\| |
| 23+15 | 2.8346 | 0.06 | Q | \| | \| | \| | V\| |
| 23+20 | 2.8350 | 0.06 | Q | \| | \| | \| | V\| |
| 23+25 | 2.8355 | 0.06 | Q | \| | \| | \| | V\| |
| 23+30 | 2.8359 | 0.06 | Q | \| | \| | \| | V\| |
| 23+35 | 2.8363 | 0.06 | Q | \| | \| | \| | V\| |
| 23+40 | 2.8368 | 0.06 | Q | \| | \| | \| | V\| |
| 23+45 | 2.8372 | 0.06 | Q | \| | \| | \| | V\| |
| 23+50 | 2.8376 | 0.06 | Q | \| | \| | \| | V\| |
| 23+55 | 2.8380 | 0.06 | Q | \| | \| | \| | V\| |
| 24+ 0 | 2.8385 | 0.06 | Q | \| | \| | \| | V\| |
| 24+ 5 | 2.8388 | 0.05 | Q | \| | \| | \| | V\| |
| 24+10 | 2.8390 | 0.02 | Q | \| | \| | \| | V\| |
| 24+15 | 2.8390 | 0.01 | Q | \| | \| | \| | V\| |
| 24+20 | 2.8391 | 0.01 | Q | \| | \| | \| | V\| |
| 24+25 | 2.8391 | 0.00 | Q | \| | \| | \| | V\| |
| 24+30 | 2.8391 | 0.00 | Q | \| | \| | \| | V\| |
| 24+35 | 2.8391 | 0.00 | Q | \| | \| | \| | V\| |

```
   24+40        2.8391      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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  06/07/22 File: EXISTINGD24100.out


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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
EXISTING BASIN D
06/07/2022 RRO

-------------------------------------------------------------------
Drainage Area =       4.43(Ac.)  =      0.007 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       4.43(Ac.)  =
0.007 Sq. Mi.
Length along longest watercourse =     745.70(Ft.)
Length along longest watercourse measured to centroid =     481.80(Ft.)
Length along longest watercourse =      0.141 Mi.
Length along longest watercourse measured to centroid =      0.091 Mi.
Difference in elevation =      43.00(Ft.)
Slope along watercourse =    304.4656 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time =    0.046 Hr.
Lag time =     2.79 Min.
25% of lag time =     0.70 Min.
40% of lag time =     1.12 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

```
Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.43            2.00                    8.86

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        4.43            5.00                   22.15

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.000(In)
Area Averaged 100-Year Rainfall =    5.000(In)

Point rain (area averaged) =    5.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    5.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     4.430           69.00         0.010
 Total Area Entered =      4.43(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-3     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
69.0  84.4      0.194     0.010        0.192       1.000      0.192
                                                  Sum (F) =   0.192
Area averaged mean soil loss (F) (In/Hr) =  0.192
Minimum soil loss rate ((In/Hr)) =  0.096
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.900
-----------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-----------------------------------------------------------------------
                Unit Hydrograph Data
-----------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------------
    1   0.083        179.265         39.577              1.767
    2   0.167        358.531         44.839              2.002
    3   0.250        537.796          9.693              0.433
    4   0.333        717.062          3.980              0.178
    5   0.417        896.327          1.911              0.085
                                Sum = 100.000   Sum=       4.465
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
```

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.341) | 0.036 | 0.004 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.339) | 0.036 | 0.004 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.338) | 0.036 | 0.004 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.337) | 0.054 | 0.006 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.335) | 0.054 | 0.006 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.334) | 0.054 | 0.006 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.333) | 0.054 | 0.006 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.331) | 0.054 | 0.006 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.330) | 0.054 | 0.006 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.329) | 0.072 | 0.008 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.327) | 0.072 | 0.008 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.326) | 0.072 | 0.008 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.325) | 0.054 | 0.006 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.324) | 0.054 | 0.006 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.322) | 0.054 | 0.006 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.321) | 0.054 | 0.006 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.320) | 0.054 | 0.006 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.318) | 0.054 | 0.006 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.317) | 0.054 | 0.006 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.316) | 0.054 | 0.006 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.315) | 0.054 | 0.006 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.313) | 0.072 | 0.008 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.312) | 0.072 | 0.008 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.311) | 0.072 | 0.008 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.310) | 0.072 | 0.008 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.308) | 0.072 | 0.008 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.307) | 0.072 | 0.008 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.306) | 0.072 | 0.008 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.305) | 0.072 | 0.008 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.303) | 0.072 | 0.008 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.302) | 0.090 | 0.010 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.301) | 0.090 | 0.010 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.300) | 0.090 | 0.010 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.298) | 0.090 | 0.010 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.297) | 0.090 | 0.010 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.296) | 0.090 | 0.010 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.295) | 0.090 | 0.010 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.294) | 0.090 | 0.010 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.292) | 0.090 | 0.010 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.291) | 0.090 | 0.010 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.290) | 0.090 | 0.010 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.289) | 0.090 | 0.010 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.287) | 0.090 | 0.010 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.286) | 0.090 | 0.010 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.285) | 0.090 | 0.010 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.284) | 0.108 | 0.012 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.283) | 0.108 | 0.012 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 48 | 4.00 | 0.20 | 0.120 | ( 0.281) | 0.108 | 0.012 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.280) | 0.108 | 0.012 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.279) | 0.108 | 0.012 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.278) | 0.108 | 0.012 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.277) | 0.126 | 0.014 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.275) | 0.126 | 0.014 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.274) | 0.126 | 0.014 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.273) | 0.126 | 0.014 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.272) | 0.126 | 0.014 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.271) | 0.126 | 0.014 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.270) | 0.144 | 0.016 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.268) | 0.144 | 0.016 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.267) | 0.144 | 0.016 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.266) | 0.108 | 0.012 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.265) | 0.108 | 0.012 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.264) | 0.108 | 0.012 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.263) | 0.126 | 0.014 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.262) | 0.126 | 0.014 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.260) | 0.126 | 0.014 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.259) | 0.144 | 0.016 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.258) | 0.144 | 0.016 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.257) | 0.144 | 0.016 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.256) | 0.144 | 0.016 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.255) | 0.144 | 0.016 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.254) | 0.144 | 0.016 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.252) | 0.162 | 0.018 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.251) | 0.162 | 0.018 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.250) | 0.162 | 0.018 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.249) | 0.162 | 0.018 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.248) | 0.162 | 0.018 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.247) | 0.162 | 0.018 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.246) | 0.180 | 0.020 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.245) | 0.180 | 0.020 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.244) | 0.180 | 0.020 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.242) | 0.180 | 0.020 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.241) | 0.180 | 0.020 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.240) | 0.180 | 0.020 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.239) | 0.180 | 0.020 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.238) | 0.180 | 0.020 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.237) | 0.180 | 0.020 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.236) | 0.198 | 0.022 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.235) | 0.198 | 0.022 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.234) | 0.198 | 0.022 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.233) | 0.216 | 0.024 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.232) | 0.216 | 0.024 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.231) | 0.216 | 0.024 |
| 94 | 7.83 | 0.43 | 0.260 | 0.229 | ( 0.234) | 0.031 |
| 95 | 7.92 | 0.43 | 0.260 | 0.228 | ( 0.234) | 0.032 |
| 96 | 8.00 | 0.43 | 0.260 | 0.227 | ( 0.234) | 0.033 |
| 97 | 8.08 | 0.50 | 0.300 | 0.226 | ( 0.270) | 0.074 |
| 98 | 8.17 | 0.50 | 0.300 | 0.225 | ( 0.270) | 0.075 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 99 | 8.25 | 0.50 | 0.300 | 0.224 | ( | 0.270) | 0.076 |
| 100 | 8.33 | 0.50 | 0.300 | 0.223 | ( | 0.270) | 0.077 |
| 101 | 8.42 | 0.50 | 0.300 | 0.222 | ( | 0.270) | 0.078 |
| 102 | 8.50 | 0.50 | 0.300 | 0.221 | ( | 0.270) | 0.079 |
| 103 | 8.58 | 0.53 | 0.320 | 0.220 | ( | 0.288) | 0.100 |
| 104 | 8.67 | 0.53 | 0.320 | 0.219 | ( | 0.288) | 0.101 |
| 105 | 8.75 | 0.53 | 0.320 | 0.218 | ( | 0.288) | 0.102 |
| 106 | 8.83 | 0.57 | 0.340 | 0.217 | ( | 0.306) | 0.123 |
| 107 | 8.92 | 0.57 | 0.340 | 0.216 | ( | 0.306) | 0.124 |
| 108 | 9.00 | 0.57 | 0.340 | 0.215 | ( | 0.306) | 0.125 |
| 109 | 9.08 | 0.63 | 0.380 | 0.214 | ( | 0.342) | 0.166 |
| 110 | 9.17 | 0.63 | 0.380 | 0.213 | ( | 0.342) | 0.167 |
| 111 | 9.25 | 0.63 | 0.380 | 0.212 | ( | 0.342) | 0.168 |
| 112 | 9.33 | 0.67 | 0.400 | 0.211 | ( | 0.360) | 0.189 |
| 113 | 9.42 | 0.67 | 0.400 | 0.210 | ( | 0.360) | 0.190 |
| 114 | 9.50 | 0.67 | 0.400 | 0.209 | ( | 0.360) | 0.191 |
| 115 | 9.58 | 0.70 | 0.420 | 0.208 | ( | 0.378) | 0.212 |
| 116 | 9.67 | 0.70 | 0.420 | 0.207 | ( | 0.378) | 0.213 |
| 117 | 9.75 | 0.70 | 0.420 | 0.206 | ( | 0.378) | 0.214 |
| 118 | 9.83 | 0.73 | 0.440 | 0.205 | ( | 0.396) | 0.235 |
| 119 | 9.92 | 0.73 | 0.440 | 0.204 | ( | 0.396) | 0.236 |
| 120 | 10.00 | 0.73 | 0.440 | 0.203 | ( | 0.396) | 0.237 |
| 121 | 10.08 | 0.50 | 0.300 | 0.202 | ( | 0.270) | 0.098 |
| 122 | 10.17 | 0.50 | 0.300 | 0.201 | ( | 0.270) | 0.099 |
| 123 | 10.25 | 0.50 | 0.300 | 0.200 | ( | 0.270) | 0.100 |
| 124 | 10.33 | 0.50 | 0.300 | 0.199 | ( | 0.270) | 0.101 |
| 125 | 10.42 | 0.50 | 0.300 | 0.198 | ( | 0.270) | 0.102 |
| 126 | 10.50 | 0.50 | 0.300 | 0.197 | ( | 0.270) | 0.103 |
| 127 | 10.58 | 0.67 | 0.400 | 0.196 | ( | 0.360) | 0.204 |
| 128 | 10.67 | 0.67 | 0.400 | 0.195 | ( | 0.360) | 0.205 |
| 129 | 10.75 | 0.67 | 0.400 | 0.194 | ( | 0.360) | 0.206 |
| 130 | 10.83 | 0.67 | 0.400 | 0.193 | ( | 0.360) | 0.207 |
| 131 | 10.92 | 0.67 | 0.400 | 0.192 | ( | 0.360) | 0.208 |
| 132 | 11.00 | 0.67 | 0.400 | 0.191 | ( | 0.360) | 0.209 |
| 133 | 11.08 | 0.63 | 0.380 | 0.190 | ( | 0.342) | 0.190 |
| 134 | 11.17 | 0.63 | 0.380 | 0.189 | ( | 0.342) | 0.191 |
| 135 | 11.25 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 136 | 11.33 | 0.63 | 0.380 | 0.188 | ( | 0.342) | 0.192 |
| 137 | 11.42 | 0.63 | 0.380 | 0.187 | ( | 0.342) | 0.193 |
| 138 | 11.50 | 0.63 | 0.380 | 0.186 | ( | 0.342) | 0.194 |
| 139 | 11.58 | 0.57 | 0.340 | 0.185 | ( | 0.306) | 0.155 |
| 140 | 11.67 | 0.57 | 0.340 | 0.184 | ( | 0.306) | 0.156 |
| 141 | 11.75 | 0.57 | 0.340 | 0.183 | ( | 0.306) | 0.157 |
| 142 | 11.83 | 0.60 | 0.360 | 0.182 | ( | 0.324) | 0.178 |
| 143 | 11.92 | 0.60 | 0.360 | 0.181 | ( | 0.324) | 0.179 |
| 144 | 12.00 | 0.60 | 0.360 | 0.180 | ( | 0.324) | 0.180 |
| 145 | 12.08 | 0.83 | 0.500 | 0.179 | ( | 0.450) | 0.321 |
| 146 | 12.17 | 0.83 | 0.500 | 0.178 | ( | 0.450) | 0.322 |
| 147 | 12.25 | 0.83 | 0.500 | 0.178 | ( | 0.450) | 0.322 |
| 148 | 12.33 | 0.87 | 0.520 | 0.177 | ( | 0.468) | 0.343 |
| 149 | 12.42 | 0.87 | 0.520 | 0.176 | ( | 0.468) | 0.344 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | 12.50 | 0.87 | 0.520 | 0.175 | ( | 0.468) | 0.345 |
| 151 | 12.58 | 0.93 | 0.560 | 0.174 | ( | 0.504) | 0.386 |
| 152 | 12.67 | 0.93 | 0.560 | 0.173 | ( | 0.504) | 0.387 |
| 153 | 12.75 | 0.93 | 0.560 | 0.172 | ( | 0.504) | 0.388 |
| 154 | 12.83 | 0.97 | 0.580 | 0.171 | ( | 0.522) | 0.409 |
| 155 | 12.92 | 0.97 | 0.580 | 0.170 | ( | 0.522) | 0.409 |
| 156 | 13.00 | 0.97 | 0.580 | 0.170 | ( | 0.522) | 0.410 |
| 157 | 13.08 | 1.13 | 0.680 | 0.169 | ( | 0.612) | 0.511 |
| 158 | 13.17 | 1.13 | 0.680 | 0.168 | ( | 0.612) | 0.512 |
| 159 | 13.25 | 1.13 | 0.680 | 0.167 | ( | 0.612) | 0.513 |
| 160 | 13.33 | 1.13 | 0.680 | 0.166 | ( | 0.612) | 0.514 |
| 161 | 13.42 | 1.13 | 0.680 | 0.165 | ( | 0.612) | 0.515 |
| 162 | 13.50 | 1.13 | 0.680 | 0.165 | ( | 0.612) | 0.515 |
| 163 | 13.58 | 0.77 | 0.460 | 0.164 | ( | 0.414) | 0.296 |
| 164 | 13.67 | 0.77 | 0.460 | 0.163 | ( | 0.414) | 0.297 |
| 165 | 13.75 | 0.77 | 0.460 | 0.162 | ( | 0.414) | 0.298 |
| 166 | 13.83 | 0.77 | 0.460 | 0.161 | ( | 0.414) | 0.299 |
| 167 | 13.92 | 0.77 | 0.460 | 0.160 | ( | 0.414) | 0.300 |
| 168 | 14.00 | 0.77 | 0.460 | 0.160 | ( | 0.414) | 0.300 |
| 169 | 14.08 | 0.90 | 0.540 | 0.159 | ( | 0.486) | 0.381 |
| 170 | 14.17 | 0.90 | 0.540 | 0.158 | ( | 0.486) | 0.382 |
| 171 | 14.25 | 0.90 | 0.540 | 0.157 | ( | 0.486) | 0.383 |
| 172 | 14.33 | 0.87 | 0.520 | 0.156 | ( | 0.468) | 0.364 |
| 173 | 14.42 | 0.87 | 0.520 | 0.156 | ( | 0.468) | 0.364 |
| 174 | 14.50 | 0.87 | 0.520 | 0.155 | ( | 0.468) | 0.365 |
| 175 | 14.58 | 0.87 | 0.520 | 0.154 | ( | 0.468) | 0.366 |
| 176 | 14.67 | 0.87 | 0.520 | 0.153 | ( | 0.468) | 0.367 |
| 177 | 14.75 | 0.87 | 0.520 | 0.152 | ( | 0.468) | 0.368 |
| 178 | 14.83 | 0.83 | 0.500 | 0.152 | ( | 0.450) | 0.348 |
| 179 | 14.92 | 0.83 | 0.500 | 0.151 | ( | 0.450) | 0.349 |
| 180 | 15.00 | 0.83 | 0.500 | 0.150 | ( | 0.450) | 0.350 |
| 181 | 15.08 | 0.80 | 0.480 | 0.149 | ( | 0.432) | 0.331 |
| 182 | 15.17 | 0.80 | 0.480 | 0.148 | ( | 0.432) | 0.331 |
| 183 | 15.25 | 0.80 | 0.480 | 0.148 | ( | 0.432) | 0.332 |
| 184 | 15.33 | 0.77 | 0.460 | 0.147 | ( | 0.414) | 0.313 |
| 185 | 15.42 | 0.77 | 0.460 | 0.146 | ( | 0.414) | 0.314 |
| 186 | 15.50 | 0.77 | 0.460 | 0.145 | ( | 0.414) | 0.315 |
| 187 | 15.58 | 0.63 | 0.380 | 0.145 | ( | 0.342) | 0.235 |
| 188 | 15.67 | 0.63 | 0.380 | 0.144 | ( | 0.342) | 0.236 |
| 189 | 15.75 | 0.63 | 0.380 | 0.143 | ( | 0.342) | 0.237 |
| 190 | 15.83 | 0.63 | 0.380 | 0.143 | ( | 0.342) | 0.237 |
| 191 | 15.92 | 0.63 | 0.380 | 0.142 | ( | 0.342) | 0.238 |
| 192 | 16.00 | 0.63 | 0.380 | 0.141 | ( | 0.342) | 0.239 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.140) | | 0.072 | 0.008 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.140) | | 0.072 | 0.008 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.139) | | 0.072 | 0.008 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.138) | | 0.072 | 0.008 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.138) | | 0.072 | 0.008 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.137) | | 0.072 | 0.008 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.136) | | 0.054 | 0.006 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.135) | | 0.054 | 0.006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 201 | 16.75 | 0.10 | 0.060 | ( 0.135) | 0.054 | 0.006 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.134) | 0.054 | 0.006 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.133) | 0.054 | 0.006 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.132) | 0.090 | 0.010 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.131) | 0.090 | 0.010 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.130) | 0.090 | 0.010 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.129) | 0.090 | 0.010 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.128) | 0.090 | 0.010 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.127) | 0.090 | 0.010 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.126) | 0.072 | 0.008 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.125) | 0.072 | 0.008 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.124) | 0.072 | 0.008 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.123) | 0.072 | 0.008 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.122) | 0.072 | 0.008 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.121) | 0.072 | 0.008 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.121) | 0.054 | 0.006 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.120) | 0.054 | 0.006 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.119) | 0.036 | 0.004 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.118) | 0.036 | 0.004 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.117) | 0.054 | 0.006 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.116) | 0.054 | 0.006 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.116) | 0.072 | 0.008 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.115) | 0.072 | 0.008 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.114) | 0.054 | 0.006 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.113) | 0.054 | 0.006 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.113) | 0.036 | 0.004 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.112) | 0.036 | 0.004 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.111) | 0.054 | 0.006 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.110) | 0.054 | 0.006 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.109) | 0.054 | 0.006 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.108) | 0.054 | 0.006 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.107) | 0.054 | 0.006 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.107) | 0.036 | 0.004 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 252 | 21.00 | 0.07 | 0.040 | ( 0.106) | 0.036 | 0.004 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.106) | 0.054 | 0.006 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.105) | 0.054 | 0.006 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.104) | 0.036 | 0.004 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.103) | 0.054 | 0.006 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.102) | 0.054 | 0.006 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.102) | 0.036 | 0.004 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.101) | 0.036 | 0.004 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.101) | 0.054 | 0.006 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.100) | 0.054 | 0.006 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.100) | 0.036 | 0.004 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.099) | 0.036 | 0.004 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.098) | 0.036 | 0.004 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.097) | 0.036 | 0.004 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.096) | 0.036 | 0.004 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 26.4

Flood volume = Effective rainfall 2.20(In)
times area 4.4(Ac.)/[(In)/(Ft.)] = 0.8(Ac.Ft)
Total soil loss = 2.80(In)
Total soil loss = 1.034(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 35347.8 Cubic Feet
Total soil loss = 45056.0 Cubic Feet

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Peak flow rate of this hydrograph = 2.299(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 | 0.01 | Q | \| | \| | \| | \| |
| 0+10 | 0.0002 | 0.02 | Q | \| | \| | \| | \| |
| 0+15 | 0.0003 | 0.02 | Q | \| | \| | \| | \| |
| 0+20 | 0.0004 | 0.02 | Q | \| | \| | \| | \| |
| 0+25 | 0.0006 | 0.03 | Q | \| | \| | \| | \| |
| 0+30 | 0.0008 | 0.03 | Q | \| | \| | \| | \| |
| 0+35 | 0.0010 | 0.03 | Q | \| | \| | \| | \| |
| 0+40 | 0.0011 | 0.03 | Q | \| | \| | \| | \| |
| 0+45 | 0.0013 | 0.03 | Q | \| | \| | \| | \| |
| 0+50 | 0.0015 | 0.03 | Q | \| | \| | \| | \| |
| 0+55 | 0.0018 | 0.03 | Q | \| | \| | \| | \| |
| 1+ 0 | 0.0020 | 0.04 | Q | \| | \| | \| | \| |
| 1+ 5 | 0.0022 | 0.03 | Q | \| | \| | \| | \| |
| 1+10 | 0.0024 | 0.03 | Q | \| | \| | \| | \| |
| 1+15 | 0.0026 | 0.03 | Q | \| | \| | \| | \| |
| 1+20 | 0.0028 | 0.03 | Q | \| | \| | \| | \| |
| 1+25 | 0.0030 | 0.03 | Q | \| | \| | \| | \| |
| 1+30 | 0.0032 | 0.03 | Q | \| | \| | \| | \| |
| 1+35 | 0.0034 | 0.03 | Q | \| | \| | \| | \| |
| 1+40 | 0.0035 | 0.03 | Q | \| | \| | \| | \| |
| 1+45 | 0.0037 | 0.03 | Q | \| | \| | \| | \| |
| 1+50 | 0.0039 | 0.03 | Q | \| | \| | \| | \| |
| 1+55 | 0.0042 | 0.03 | Q | \| | \| | \| | \| |
| 2+ 0 | 0.0044 | 0.04 | Q | \| | \| | \| | \| |
| 2+ 5 | 0.0047 | 0.04 | Q | \| | \| | \| | \| |
| 2+10 | 0.0049 | 0.04 | Q | \| | \| | \| | \| |
| 2+15 | 0.0051 | 0.04 | Q | \| | \| | \| | \| |
| 2+20 | 0.0054 | 0.04 | Q | \| | \| | \| | \| |
| 2+25 | 0.0056 | 0.04 | Q | \| | \| | \| | \| |
| 2+30 | 0.0059 | 0.04 | Q | \| | \| | \| | \| |
| 2+35 | 0.0062 | 0.04 | Q | \| | \| | \| | \| |
| 2+40 | 0.0065 | 0.04 | Q | \| | \| | \| | \| |
| 2+45 | 0.0068 | 0.04 | Q | \| | \| | \| | \| |
| 2+50 | 0.0071 | 0.04 | Q | \| | \| | \| | \| |
| 2+55 | 0.0074 | 0.04 | Q | \| | \| | \| | \| |
| 3+ 0 | 0.0077 | 0.04 | Q | \| | \| | \| | \| |
| 3+ 5 | 0.0080 | 0.04 | Q | \| | \| | \| | \| |
| 3+10 | 0.0083 | 0.04 | Q | \| | \| | \| | \| |
| 3+15 | 0.0086 | 0.04 | Q | \| | \| | \| | \| |
| 3+20 | 0.0089 | 0.04 | Q | \| | \| | \| | \| |
| 3+25 | 0.0092 | 0.04 | Q | \| | \| | \| | \| |
| 3+30 | 0.0095 | 0.04 | Q | \| | \| | \| | \| |
| 3+35 | 0.0098 | 0.04 | Q | \| | \| | \| | \| |
| 3+40 | 0.0101 | 0.04 | Q | \| | \| | \| | \| |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+45 | 0.0104 | 0.04 | Q | \| | \| | \| | \| |
| 3+50 | 0.0108 | 0.05 | Q | \| | \| | \| | \| |
| 3+55 | 0.0111 | 0.05 | Q | \| | \| | \| | \| |
| 4+ 0 | 0.0115 | 0.05 | Q | \| | \| | \| | \| |
| 4+ 5 | 0.0119 | 0.05 | Q | \| | \| | \| | \| |
| 4+10 | 0.0122 | 0.05 | Q | \| | \| | \| | \| |
| 4+15 | 0.0126 | 0.05 | Q | \| | \| | \| | \| |
| 4+20 | 0.0130 | 0.06 | Q | \| | \| | \| | \| |
| 4+25 | 0.0134 | 0.06 | Q | \| | \| | \| | \| |
| 4+30 | 0.0139 | 0.06 | Q | \| | \| | \| | \| |
| 4+35 | 0.0143 | 0.06 | Q | \| | \| | \| | \| |
| 4+40 | 0.0147 | 0.06 | Q | \| | \| | \| | \| |
| 4+45 | 0.0151 | 0.06 | Q | \| | \| | \| | \| |
| 4+50 | 0.0156 | 0.07 | Q | \| | \| | \| | \| |
| 4+55 | 0.0161 | 0.07 | Q | \| | \| | \| | \| |
| 5+ 0 | 0.0166 | 0.07 | Q | \| | \| | \| | \| |
| 5+ 5 | 0.0170 | 0.06 | Q | \| | \| | \| | \| |
| 5+10 | 0.0174 | 0.06 | Q | \| | \| | \| | \| |
| 5+15 | 0.0178 | 0.05 | Q | \| | \| | \| | \| |
| 5+20 | 0.0182 | 0.06 | Q | \| | \| | \| | \| |
| 5+25 | 0.0186 | 0.06 | Q | \| | \| | \| | \| |
| 5+30 | 0.0190 | 0.06 | Q | \| | \| | \| | \| |
| 5+35 | 0.0195 | 0.07 | Q | \| | \| | \| | \| |
| 5+40 | 0.0200 | 0.07 | Q | \| | \| | \| | \| |
| 5+45 | 0.0204 | 0.07 | QV | \| | \| | \| | \| |
| 5+50 | 0.0209 | 0.07 | QV | \| | \| | \| | \| |
| 5+55 | 0.0214 | 0.07 | QV | \| | \| | \| | \| |
| 6+ 0 | 0.0219 | 0.07 | QV | \| | \| | \| | \| |
| 6+ 5 | 0.0224 | 0.08 | QV | \| | \| | \| | \| |
| 6+10 | 0.0230 | 0.08 | QV | \| | \| | \| | \| |
| 6+15 | 0.0235 | 0.08 | QV | \| | \| | \| | \| |
| 6+20 | 0.0241 | 0.08 | QV | \| | \| | \| | \| |
| 6+25 | 0.0246 | 0.08 | QV | \| | \| | \| | \| |
| 6+30 | 0.0252 | 0.08 | QV | \| | \| | \| | \| |
| 6+35 | 0.0258 | 0.08 | QV | \| | \| | \| | \| |
| 6+40 | 0.0264 | 0.09 | QV | \| | \| | \| | \| |
| 6+45 | 0.0270 | 0.09 | QV | \| | \| | \| | \| |
| 6+50 | 0.0276 | 0.09 | QV | \| | \| | \| | \| |
| 6+55 | 0.0282 | 0.09 | QV | \| | \| | \| | \| |
| 7+ 0 | 0.0288 | 0.09 | QV | \| | \| | \| | \| |
| 7+ 5 | 0.0294 | 0.09 | QV | \| | \| | \| | \| |
| 7+10 | 0.0301 | 0.09 | QV | \| | \| | \| | \| |
| 7+15 | 0.0307 | 0.09 | QV | \| | \| | \| | \| |
| 7+20 | 0.0313 | 0.09 | QV | \| | \| | \| | \| |
| 7+25 | 0.0320 | 0.10 | QV | \| | \| | \| | \| |
| 7+30 | 0.0327 | 0.10 | QV | \| | \| | \| | \| |
| 7+35 | 0.0334 | 0.10 | QV | \| | \| | \| | \| |
| 7+40 | 0.0341 | 0.11 | QV | \| | \| | \| | \| |
| 7+45 | 0.0348 | 0.11 | QV | \| | \| | \| | \| |
| 7+50 | 0.0356 | 0.12 | QV | \| | \| | \| | \| |
| 7+55 | 0.0366 | 0.13 | QV | \| | \| | \| | \| |

```
 8+ 0       0.0375      0.14  QV        |         |         |         |
 8+ 5       0.0390      0.22  QV        |         |         |         |
 8+10       0.0411      0.30  |QV       |         |         |         |
 8+15       0.0433      0.32  |QV       |         |         |         |
 8+20       0.0457      0.34  |QV       |         |         |         |
 8+25       0.0480      0.34  |QV       |         |         |         |
 8+30       0.0504      0.35  |QV       |         |         |         |
 8+35       0.0531      0.39  |QV       |         |         |         |
 8+40       0.0561      0.43  |QV       |         |         |         |
 8+45       0.0592      0.45  |QV       |         |         |         |
 8+50       0.0625      0.49  |Q V      |         |         |         |
 8+55       0.0662      0.54  | QV      |         |         |         |
 9+ 0       0.0700      0.55  | QV      |         |         |         |
 9+ 5       0.0743      0.63  | QV      |         |         |         |
 9+10       0.0793      0.72  | QV      |         |         |         |
 9+15       0.0843      0.74  | Q V     |         |         |         |
 9+20       0.0897      0.78  |  QV     |         |         |         |
 9+25       0.0955      0.83  |  QV     |         |         |         |
 9+30       0.1013      0.85  |  QV     |         |         |         |
 9+35       0.1074      0.89  |  Q V    |         |         |         |
 9+40       0.1139      0.93  |  Q V    |         |         |         |
 9+45       0.1204      0.95  |  Q V    |         |         |         |
 9+50       0.1272      0.99  |  Q  V   |         |         |         |
 9+55       0.1343      1.04  |   Q V   |         |         |         |
10+ 0       0.1416      1.05  |   Q V   |         |         |         |
10+ 5       0.1472      0.81  |  Q   V  |         |         |         |
10+10       0.1509      0.54  | Q    V  |         |         |         |
10+15       0.1542      0.48  |Q     V  |         |         |         |
10+20       0.1573      0.46  |Q     V  |         |         |         |
10+25       0.1604      0.45  |Q     V  |         |         |         |
10+30       0.1636      0.46  |Q      V |         |         |         |
10+35       0.1680      0.64  | Q     V |         |         |         |
10+40       0.1738      0.84  |  Q    V |         |         |         |
10+45       0.1799      0.89  |  Q    V |         |         |         |
10+50       0.1862      0.91  |  Q     V|         |         |         |
10+55       0.1926      0.92  |  Q     V|         |         |         |
11+ 0       0.1989      0.93  |  Q     V|         |         |         |
11+ 5       0.2051      0.90  |  Q      V         |         |         |
11+10       0.2111      0.86  |  Q      V         |         |         |
11+15       0.2170      0.86  |  Q      V         |         |         |
11+20       0.2229      0.86  |  Q      V         |         |         |
11+25       0.2288      0.86  |  Q      |V        |         |         |
11+30       0.2348      0.86  |  Q      |V        |         |         |
11+35       0.2403      0.80  |  Q      |V        |         |         |
11+40       0.2452      0.72  | Q       | V       |         |         |
11+45       0.2501      0.71  | Q       | V       |         |         |
11+50       0.2552      0.74  | Q       | V       |         |         |
11+55       0.2606      0.78  |  Q      | V       |         |         |
12+ 0       0.2661      0.79  |  Q      |  V      |         |         |
12+ 5       0.2733      1.05  |   Q     |  V      |         |         |
12+10       0.2825      1.34  |    Q    |  V      |         |         |
```

```
12+15       0.2921      1.40  |    Q    |   V     |         |         |
12+20       0.3022      1.46  |    Q    |   V     |         |         |
12+25       0.3127      1.52  |     Q   |    V    |         |         |
12+30       0.3232      1.53  |     Q   |    V    |         |         |
12+35       0.3343      1.61  |     Q   |     V   |         |         |
12+40       0.3460      1.70  |     Q   |      V  |         |         |
12+45       0.3579      1.72  |     Q   |      V  |         |         |
12+50       0.3700      1.76  |      Q  |       V |         |         |
12+55       0.3825      1.81  |      Q  |       V |         |         |
13+ 0       0.3951      1.82  |      Q  |        V|         |         |
13+ 5       0.4089      2.01  |       Q |         V         |         |
13+10       0.4242      2.21  |       Q |         V         |         |
13+15       0.4397      2.26  |        Q|         |V        |         |
13+20       0.4555      2.28  |        Q|         | V       |         |
13+25       0.4713      2.30  |        Q|         |  V      |         |
13+30       0.4871      2.30  |        Q|         |   V     |         |
13+35       0.5003      1.91  |      Q  |         |   V     |         |
13+40       0.5105      1.48  |    Q    |         |    V    |         |
13+45       0.5200      1.39  |    Q    |         |    V    |         |
13+50       0.5293      1.35  |    Q    |         |     V   |         |
13+55       0.5385      1.34  |    Q    |         |     V   |         |
14+ 0       0.5477      1.34  |    Q    |         |     V   |         |
14+ 5       0.5579      1.48  |    Q    |         |      V  |         |
14+10       0.5693      1.65  |     Q   |         |       V |         |
14+15       0.5809      1.69  |     Q   |         |       V |         |
14+20       0.5924      1.67  |     Q   |         |        V|         |
14+25       0.6037      1.64  |     Q   |         |        V|         |
14+30       0.6149      1.63  |     Q   |         |         V         |
14+35       0.6262      1.63  |     Q   |         |         V         |
14+40       0.6374      1.64  |     Q   |         |         |V        |
14+45       0.6487      1.64  |     Q   |         |         |V        |
14+50       0.6598      1.61  |     Q   |         |         | V       |
14+55       0.6706      1.57  |     Q   |         |         |  V      |
15+ 0       0.6814      1.57  |     Q   |         |         |  V      |
15+ 5       0.6919      1.53  |     Q   |         |         |   V     |
15+10       0.7022      1.49  |    Q    |         |         |   V     |
15+15       0.7125      1.49  |    Q    |         |         |    V    |
15+20       0.7225      1.45  |    Q    |         |         |    V    |
15+25       0.7322      1.41  |    Q    |         |         |     V   |
15+30       0.7419      1.41  |    Q    |         |         |     V   |
15+35       0.7506      1.27  |    Q    |         |         |     V   |
15+40       0.7582      1.11  |   Q     |         |         |      V  |
15+45       0.7656      1.08  |   Q     |         |         |      V  |
15+50       0.7730      1.06  |   Q     |         |         |       V |
15+55       0.7803      1.06  |   Q     |         |         |       V |
16+ 0       0.7876      1.06  |   Q     |         |         |       V |
16+ 5       0.7921      0.66  | Q       |         |         |        V|
16+10       0.7935      0.20  Q         |         |         |        V|
16+15       0.7942      0.10  Q         |         |         |        V|
16+20       0.7945      0.06  Q         |         |         |        V|
16+25       0.7948      0.04  Q         |         |         |        V|
```

```
16+30       0.7950      0.04  Q          |          |          |         V|
16+35       0.7952      0.03  Q          |          |          |         V|
16+40       0.7954      0.03  Q          |          |          |         V|
16+45       0.7956      0.03  Q          |          |          |         V|
16+50       0.7958      0.03  Q          |          |          |         V|
16+55       0.7960      0.03  Q          |          |          |         V|
17+ 0       0.7962      0.03  Q          |          |          |         V|
17+ 5       0.7964      0.03  Q          |          |          |         V|
17+10       0.7967      0.04  Q          |          |          |         V|
17+15       0.7970      0.04  Q          |          |          |         V|
17+20       0.7973      0.04  Q          |          |          |         V|
17+25       0.7976      0.04  Q          |          |          |         V|
17+30       0.7979      0.04  Q          |          |          |         V|
17+35       0.7982      0.04  Q          |          |          |         V|
17+40       0.7985      0.04  Q          |          |          |         V|
17+45       0.7988      0.04  Q          |          |          |         V|
17+50       0.7991      0.04  Q          |          |          |         V|
17+55       0.7994      0.04  Q          |          |          |         V|
18+ 0       0.7996      0.04  Q          |          |          |         V|
18+ 5       0.7999      0.04  Q          |          |          |         V|
18+10       0.8001      0.04  Q          |          |          |         V|
18+15       0.8004      0.04  Q          |          |          |         V|
18+20       0.8006      0.04  Q          |          |          |         V|
18+25       0.8009      0.04  Q          |          |          |         V|
18+30       0.8011      0.04  Q          |          |          |         V|
18+35       0.8013      0.03  Q          |          |          |         V|
18+40       0.8015      0.03  Q          |          |          |         V|
18+45       0.8017      0.03  Q          |          |          |         V|
18+50       0.8019      0.02  Q          |          |          |         V|
18+55       0.8020      0.02  Q          |          |          |         V|
19+ 0       0.8021      0.02  Q          |          |          |         V|
19+ 5       0.8023      0.02  Q          |          |          |         V|
19+10       0.8025      0.03  Q          |          |          |         V|
19+15       0.8026      0.03  Q          |          |          |         V|
19+20       0.8029      0.03  Q          |          |          |         V|
19+25       0.8031      0.03  Q          |          |          |         V|
19+30       0.8033      0.04  Q          |          |          |         V|
19+35       0.8036      0.03  Q          |          |          |         V|
19+40       0.8037      0.03  Q          |          |          |         V|
19+45       0.8039      0.03  Q          |          |          |         V|
19+50       0.8041      0.02  Q          |          |          |         V|
19+55       0.8042      0.02  Q          |          |          |         V|
20+ 0       0.8044      0.02  Q          |          |          |         V|
20+ 5       0.8045      0.02  Q          |          |          |         V|
20+10       0.8047      0.03  Q          |          |          |         V|
20+15       0.8049      0.03  Q          |          |          |         V|
20+20       0.8050      0.03  Q          |          |          |         V|
20+25       0.8052      0.03  Q          |          |          |         V|
20+30       0.8054      0.03  Q          |          |          |         V|
20+35       0.8056      0.03  Q          |          |          |         V|
20+40       0.8058      0.03  Q          |          |          |         V|
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   20+45       0.8060      0.03  Q          |          |          |         V|
   20+50       0.8061      0.02  Q          |          |          |         V|
   20+55       0.8063      0.02  Q          |          |          |         V|
   21+ 0       0.8064      0.02  Q          |          |          |         V|
   21+ 5       0.8065      0.02  Q          |          |          |         V|
   21+10       0.8067      0.03  Q          |          |          |         V|
   21+15       0.8069      0.03  Q          |          |          |         V|
   21+20       0.8070      0.02  Q          |          |          |         V|
   21+25       0.8072      0.02  Q          |          |          |         V|
   21+30       0.8073      0.02  Q          |          |          |         V|
   21+35       0.8075      0.02  Q          |          |          |         V|
   21+40       0.8076      0.03  Q          |          |          |         V|
   21+45       0.8078      0.03  Q          |          |          |         V|
   21+50       0.8080      0.02  Q          |          |          |         V|
   21+55       0.8081      0.02  Q          |          |          |         V|
   22+ 0       0.8082      0.02  Q          |          |          |         V|
   22+ 5       0.8084      0.02  Q          |          |          |         V|
   22+10       0.8086      0.03  Q          |          |          |         V|
   22+15       0.8087      0.03  Q          |          |          |         V|
   22+20       0.8089      0.02  Q          |          |          |         V|
   22+25       0.8090      0.02  Q          |          |          |         V|
   22+30       0.8092      0.02  Q          |          |          |         V|
   22+35       0.8093      0.02  Q          |          |          |         V|
   22+40       0.8094      0.02  Q          |          |          |         V|
   22+45       0.8095      0.02  Q          |          |          |         V|
   22+50       0.8096      0.02  Q          |          |          |         V|
   22+55       0.8098      0.02  Q          |          |          |         V|
   23+ 0       0.8099      0.02  Q          |          |          |         V|
   23+ 5       0.8100      0.02  Q          |          |          |         V|
   23+10       0.8101      0.02  Q          |          |          |         V|
   23+15       0.8103      0.02  Q          |          |          |         V|
   23+20       0.8104      0.02  Q          |          |          |         V|
   23+25       0.8105      0.02  Q          |          |          |         V|
   23+30       0.8106      0.02  Q          |          |          |         V|
   23+35       0.8108      0.02  Q          |          |          |         V|
   23+40       0.8109      0.02  Q          |          |          |         V|
   23+45       0.8110      0.02  Q          |          |          |         V|
   23+50       0.8111      0.02  Q          |          |          |         V|
   23+55       0.8112      0.02  Q          |          |          |         V|
   24+ 0       0.8114      0.02  Q          |          |          |         V|
   24+ 5       0.8114      0.01  Q          |          |          |         V|
   24+10       0.8115      0.00  Q          |          |          |         V|
   24+15       0.8115      0.00  Q          |          |          |         V|
   24+20       0.8115      0.00  Q          |          |          |          V
----------------------------------------------------------------------------
```

# APPENDIX E

PROPOSED UNIT HYDROGRAPH

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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  12/02/22 File: proposeda24100.out


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
PROPOSED BASIN A
12/02/2022

-------------------------------------------------------------------
Drainage Area =      14.80(Ac.)  =      0.023 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      14.80(Ac.)  =
0.023 Sq. Mi.
Length along longest watercourse =    1993.00(Ft.)
Length along longest watercourse measured to centroid =     996.50(Ft.)
Length along longest watercourse =      0.377 Mi.
Length along longest watercourse measured to centroid =      0.189 Mi.
Difference in elevation =      79.00(Ft.)
Slope along watercourse =    209.2925 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.048 Hr.
Lag time =     2.87 Min.
25% of lag time =     0.72 Min.
40% of lag time =     1.15 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

```
Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.80            2.00                   29.60

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.80            5.00                   74.00

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.000(In)
Area Averaged 100-Year Rainfall =    5.000(In)

Point rain (area averaged) =    5.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    5.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    14.800           56.00         0.100
 Total Area Entered =     14.80(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-3     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  74.8      0.305     0.100        0.278       1.000      0.278
                                                  Sum (F) =   0.278
Area averaged mean soil loss (F) (In/Hr) =  0.278
Minimum soil loss rate ((In/Hr)) =  0.139
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.820
---------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
--------------------------------------------------------------------
                Unit Hydrograph Data
---------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
---------------------------------------------------------------------
    1   0.083        174.352         38.591              5.756
    2   0.167        348.704         45.196              6.741
    3   0.250        523.056          9.928              1.481
    4   0.333        697.408          4.126              0.615
    5   0.417        871.760          2.159              0.322
                                Sum = 100.000   Sum=      14.916
-------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
```

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.493) | 0.033 | 0.007 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.491) | 0.033 | 0.007 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.489) | 0.033 | 0.007 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.487) | 0.049 | 0.011 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.485) | 0.049 | 0.011 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.483) | 0.049 | 0.011 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.481) | 0.049 | 0.011 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.479) | 0.049 | 0.011 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.477) | 0.049 | 0.011 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.476) | 0.066 | 0.014 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.474) | 0.066 | 0.014 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.472) | 0.066 | 0.014 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.470) | 0.049 | 0.011 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.468) | 0.049 | 0.011 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.466) | 0.049 | 0.011 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.464) | 0.049 | 0.011 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.463) | 0.049 | 0.011 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.461) | 0.049 | 0.011 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.459) | 0.049 | 0.011 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.457) | 0.049 | 0.011 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.455) | 0.049 | 0.011 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.453) | 0.066 | 0.014 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.452) | 0.066 | 0.014 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.450) | 0.066 | 0.014 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.448) | 0.066 | 0.014 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.446) | 0.066 | 0.014 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.444) | 0.066 | 0.014 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.442) | 0.066 | 0.014 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.441) | 0.066 | 0.014 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.439) | 0.066 | 0.014 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.437) | 0.082 | 0.018 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.435) | 0.082 | 0.018 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.433) | 0.082 | 0.018 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.432) | 0.082 | 0.018 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.430) | 0.082 | 0.018 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.428) | 0.082 | 0.018 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.426) | 0.082 | 0.018 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.425) | 0.082 | 0.018 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.423) | 0.082 | 0.018 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.421) | 0.082 | 0.018 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.419) | 0.082 | 0.018 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.418) | 0.082 | 0.018 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.416) | 0.082 | 0.018 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.414) | 0.082 | 0.018 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.412) | 0.082 | 0.018 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.411) | 0.098 | 0.022 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.409) | 0.098 | 0.022 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 48 | 4.00 | 0.20 | 0.120 | ( 0.407) | 0.098 | 0.022 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.405) | 0.098 | 0.022 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.404) | 0.098 | 0.022 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.402) | 0.098 | 0.022 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.400) | 0.115 | 0.025 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.399) | 0.115 | 0.025 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.397) | 0.115 | 0.025 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.395) | 0.115 | 0.025 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.393) | 0.115 | 0.025 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.392) | 0.115 | 0.025 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.390) | 0.131 | 0.029 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.388) | 0.131 | 0.029 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.387) | 0.131 | 0.029 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.385) | 0.098 | 0.022 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.383) | 0.098 | 0.022 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.382) | 0.098 | 0.022 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.380) | 0.115 | 0.025 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.378) | 0.115 | 0.025 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.377) | 0.115 | 0.025 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.375) | 0.131 | 0.029 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.373) | 0.131 | 0.029 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.372) | 0.131 | 0.029 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.370) | 0.131 | 0.029 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.368) | 0.131 | 0.029 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.367) | 0.131 | 0.029 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.365) | 0.148 | 0.032 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.364) | 0.148 | 0.032 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.362) | 0.148 | 0.032 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.360) | 0.148 | 0.032 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.359) | 0.148 | 0.032 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.357) | 0.148 | 0.032 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.355) | 0.164 | 0.036 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.354) | 0.164 | 0.036 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.352) | 0.164 | 0.036 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.351) | 0.164 | 0.036 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.349) | 0.164 | 0.036 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.348) | 0.164 | 0.036 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.346) | 0.164 | 0.036 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.344) | 0.164 | 0.036 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.343) | 0.164 | 0.036 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.341) | 0.180 | 0.040 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.340) | 0.180 | 0.040 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.338) | 0.180 | 0.040 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.337) | 0.197 | 0.043 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.335) | 0.197 | 0.043 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.333) | 0.197 | 0.043 |
| 94 | 7.83 | 0.43 | 0.260 | ( 0.332) | 0.213 | 0.047 |
| 95 | 7.92 | 0.43 | 0.260 | ( 0.330) | 0.213 | 0.047 |
| 96 | 8.00 | 0.43 | 0.260 | ( 0.329) | 0.213 | 0.047 |
| 97 | 8.08 | 0.50 | 0.300 | ( 0.327) | 0.246 | 0.054 |
| 98 | 8.17 | 0.50 | 0.300 | ( 0.326) | 0.246 | 0.054 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 99 | 8.25 | 0.50 | 0.300 | ( 0.324) | 0.246 | 0.054 |
| 100 | 8.33 | 0.50 | 0.300 | ( 0.323) | 0.246 | 0.054 |
| 101 | 8.42 | 0.50 | 0.300 | ( 0.321) | 0.246 | 0.054 |
| 102 | 8.50 | 0.50 | 0.300 | ( 0.320) | 0.246 | 0.054 |
| 103 | 8.58 | 0.53 | 0.320 | ( 0.318) | 0.262 | 0.058 |
| 104 | 8.67 | 0.53 | 0.320 | ( 0.317) | 0.262 | 0.058 |
| 105 | 8.75 | 0.53 | 0.320 | ( 0.315) | 0.262 | 0.058 |
| 106 | 8.83 | 0.57 | 0.340 | ( 0.314) | 0.279 | 0.061 |
| 107 | 8.92 | 0.57 | 0.340 | ( 0.312) | 0.279 | 0.061 |
| 108 | 9.00 | 0.57 | 0.340 | ( 0.311) | 0.279 | 0.061 |
| 109 | 9.08 | 0.63 | 0.380 | 0.309 | ( 0.312) | 0.071 |
| 110 | 9.17 | 0.63 | 0.380 | 0.308 | ( 0.312) | 0.072 |
| 111 | 9.25 | 0.63 | 0.380 | 0.306 | ( 0.312) | 0.074 |
| 112 | 9.33 | 0.67 | 0.400 | 0.305 | ( 0.328) | 0.095 |
| 113 | 9.42 | 0.67 | 0.400 | 0.304 | ( 0.328) | 0.096 |
| 114 | 9.50 | 0.67 | 0.400 | 0.302 | ( 0.328) | 0.098 |
| 115 | 9.58 | 0.70 | 0.420 | 0.301 | ( 0.344) | 0.119 |
| 116 | 9.67 | 0.70 | 0.420 | 0.299 | ( 0.344) | 0.121 |
| 117 | 9.75 | 0.70 | 0.420 | 0.298 | ( 0.344) | 0.122 |
| 118 | 9.83 | 0.73 | 0.440 | 0.296 | ( 0.361) | 0.144 |
| 119 | 9.92 | 0.73 | 0.440 | 0.295 | ( 0.361) | 0.145 |
| 120 | 10.00 | 0.73 | 0.440 | 0.293 | ( 0.361) | 0.147 |
| 121 | 10.08 | 0.50 | 0.300 | ( 0.292) | 0.246 | 0.054 |
| 122 | 10.17 | 0.50 | 0.300 | ( 0.291) | 0.246 | 0.054 |
| 123 | 10.25 | 0.50 | 0.300 | ( 0.289) | 0.246 | 0.054 |
| 124 | 10.33 | 0.50 | 0.300 | ( 0.288) | 0.246 | 0.054 |
| 125 | 10.42 | 0.50 | 0.300 | ( 0.286) | 0.246 | 0.054 |
| 126 | 10.50 | 0.50 | 0.300 | ( 0.285) | 0.246 | 0.054 |
| 127 | 10.58 | 0.67 | 0.400 | 0.284 | ( 0.328) | 0.116 |
| 128 | 10.67 | 0.67 | 0.400 | 0.282 | ( 0.328) | 0.118 |
| 129 | 10.75 | 0.67 | 0.400 | 0.281 | ( 0.328) | 0.119 |
| 130 | 10.83 | 0.67 | 0.400 | 0.279 | ( 0.328) | 0.121 |
| 131 | 10.92 | 0.67 | 0.400 | 0.278 | ( 0.328) | 0.122 |
| 132 | 11.00 | 0.67 | 0.400 | 0.277 | ( 0.328) | 0.123 |
| 133 | 11.08 | 0.63 | 0.380 | 0.275 | ( 0.312) | 0.105 |
| 134 | 11.17 | 0.63 | 0.380 | 0.274 | ( 0.312) | 0.106 |
| 135 | 11.25 | 0.63 | 0.380 | 0.273 | ( 0.312) | 0.107 |
| 136 | 11.33 | 0.63 | 0.380 | 0.271 | ( 0.312) | 0.109 |
| 137 | 11.42 | 0.63 | 0.380 | 0.270 | ( 0.312) | 0.110 |
| 138 | 11.50 | 0.63 | 0.380 | 0.269 | ( 0.312) | 0.111 |
| 139 | 11.58 | 0.57 | 0.340 | 0.267 | ( 0.279) | 0.073 |
| 140 | 11.67 | 0.57 | 0.340 | 0.266 | ( 0.279) | 0.074 |
| 141 | 11.75 | 0.57 | 0.340 | 0.265 | ( 0.279) | 0.075 |
| 142 | 11.83 | 0.60 | 0.360 | 0.263 | ( 0.295) | 0.097 |
| 143 | 11.92 | 0.60 | 0.360 | 0.262 | ( 0.295) | 0.098 |
| 144 | 12.00 | 0.60 | 0.360 | 0.261 | ( 0.295) | 0.099 |
| 145 | 12.08 | 0.83 | 0.500 | 0.259 | ( 0.410) | 0.241 |
| 146 | 12.17 | 0.83 | 0.500 | 0.258 | ( 0.410) | 0.242 |
| 147 | 12.25 | 0.83 | 0.500 | 0.257 | ( 0.410) | 0.243 |
| 148 | 12.33 | 0.87 | 0.520 | 0.256 | ( 0.426) | 0.264 |
| 149 | 12.42 | 0.87 | 0.520 | 0.254 | ( 0.426) | 0.266 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 150 | 12.50 | 0.87 | 0.520 | 0.253 | ( 0.426) | 0.267 |
| 151 | 12.58 | 0.93 | 0.560 | 0.252 | ( 0.459) | 0.308 |
| 152 | 12.67 | 0.93 | 0.560 | 0.250 | ( 0.459) | 0.310 |
| 153 | 12.75 | 0.93 | 0.560 | 0.249 | ( 0.459) | 0.311 |
| 154 | 12.83 | 0.97 | 0.580 | 0.248 | ( 0.476) | 0.332 |
| 155 | 12.92 | 0.97 | 0.580 | 0.247 | ( 0.476) | 0.333 |
| 156 | 13.00 | 0.97 | 0.580 | 0.245 | ( 0.476) | 0.335 |
| 157 | 13.08 | 1.13 | 0.680 | 0.244 | ( 0.558) | 0.436 |
| 158 | 13.17 | 1.13 | 0.680 | 0.243 | ( 0.558) | 0.437 |
| 159 | 13.25 | 1.13 | 0.680 | 0.242 | ( 0.558) | 0.438 |
| 160 | 13.33 | 1.13 | 0.680 | 0.240 | ( 0.558) | 0.440 |
| 161 | 13.42 | 1.13 | 0.680 | 0.239 | ( 0.558) | 0.441 |
| 162 | 13.50 | 1.13 | 0.680 | 0.238 | ( 0.558) | 0.442 |
| 163 | 13.58 | 0.77 | 0.460 | 0.237 | ( 0.377) | 0.223 |
| 164 | 13.67 | 0.77 | 0.460 | 0.236 | ( 0.377) | 0.224 |
| 165 | 13.75 | 0.77 | 0.460 | 0.234 | ( 0.377) | 0.226 |
| 166 | 13.83 | 0.77 | 0.460 | 0.233 | ( 0.377) | 0.227 |
| 167 | 13.92 | 0.77 | 0.460 | 0.232 | ( 0.377) | 0.228 |
| 168 | 14.00 | 0.77 | 0.460 | 0.231 | ( 0.377) | 0.229 |
| 169 | 14.08 | 0.90 | 0.540 | 0.230 | ( 0.443) | 0.310 |
| 170 | 14.17 | 0.90 | 0.540 | 0.228 | ( 0.443) | 0.312 |
| 171 | 14.25 | 0.90 | 0.540 | 0.227 | ( 0.443) | 0.313 |
| 172 | 14.33 | 0.87 | 0.520 | 0.226 | ( 0.426) | 0.294 |
| 173 | 14.42 | 0.87 | 0.520 | 0.225 | ( 0.426) | 0.295 |
| 174 | 14.50 | 0.87 | 0.520 | 0.224 | ( 0.426) | 0.296 |
| 175 | 14.58 | 0.87 | 0.520 | 0.223 | ( 0.426) | 0.297 |
| 176 | 14.67 | 0.87 | 0.520 | 0.222 | ( 0.426) | 0.298 |
| 177 | 14.75 | 0.87 | 0.520 | 0.220 | ( 0.426) | 0.300 |
| 178 | 14.83 | 0.83 | 0.500 | 0.219 | ( 0.410) | 0.281 |
| 179 | 14.92 | 0.83 | 0.500 | 0.218 | ( 0.410) | 0.282 |
| 180 | 15.00 | 0.83 | 0.500 | 0.217 | ( 0.410) | 0.283 |
| 181 | 15.08 | 0.80 | 0.480 | 0.216 | ( 0.394) | 0.264 |
| 182 | 15.17 | 0.80 | 0.480 | 0.215 | ( 0.394) | 0.265 |
| 183 | 15.25 | 0.80 | 0.480 | 0.214 | ( 0.394) | 0.266 |
| 184 | 15.33 | 0.77 | 0.460 | 0.213 | ( 0.377) | 0.247 |
| 185 | 15.42 | 0.77 | 0.460 | 0.212 | ( 0.377) | 0.248 |
| 186 | 15.50 | 0.77 | 0.460 | 0.210 | ( 0.377) | 0.250 |
| 187 | 15.58 | 0.63 | 0.380 | 0.209 | ( 0.312) | 0.171 |
| 188 | 15.67 | 0.63 | 0.380 | 0.208 | ( 0.312) | 0.172 |
| 189 | 15.75 | 0.63 | 0.380 | 0.207 | ( 0.312) | 0.173 |
| 190 | 15.83 | 0.63 | 0.380 | 0.206 | ( 0.312) | 0.174 |
| 191 | 15.92 | 0.63 | 0.380 | 0.205 | ( 0.312) | 0.175 |
| 192 | 16.00 | 0.63 | 0.380 | 0.204 | ( 0.312) | 0.176 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.203) | 0.066 | 0.014 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.202) | 0.066 | 0.014 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.201) | 0.066 | 0.014 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.200) | 0.066 | 0.014 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.199) | 0.066 | 0.014 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.198) | 0.066 | 0.014 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.197) | 0.049 | 0.011 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.196) | 0.049 | 0.011 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 201 | 16.75 | 0.10 | 0.060 | ( 0.195) | 0.049 | 0.011 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.194) | 0.049 | 0.011 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.193) | 0.049 | 0.011 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.192) | 0.049 | 0.011 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.191) | 0.082 | 0.018 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.190) | 0.082 | 0.018 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.189) | 0.082 | 0.018 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.188) | 0.082 | 0.018 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.187) | 0.082 | 0.018 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.186) | 0.082 | 0.018 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.185) | 0.082 | 0.018 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.184) | 0.082 | 0.018 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.183) | 0.082 | 0.018 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.183) | 0.066 | 0.014 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.182) | 0.066 | 0.014 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.181) | 0.066 | 0.014 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.180) | 0.066 | 0.014 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.179) | 0.066 | 0.014 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.178) | 0.066 | 0.014 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.177) | 0.066 | 0.014 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.176) | 0.066 | 0.014 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.176) | 0.066 | 0.014 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.175) | 0.049 | 0.011 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.174) | 0.049 | 0.011 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.173) | 0.049 | 0.011 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.172) | 0.033 | 0.007 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.171) | 0.033 | 0.007 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.171) | 0.033 | 0.007 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.170) | 0.049 | 0.011 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.169) | 0.049 | 0.011 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.168) | 0.049 | 0.011 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.167) | 0.066 | 0.014 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.167) | 0.066 | 0.014 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.166) | 0.066 | 0.014 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.165) | 0.049 | 0.011 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.164) | 0.049 | 0.011 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.164) | 0.049 | 0.011 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.163) | 0.033 | 0.007 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.162) | 0.033 | 0.007 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.161) | 0.033 | 0.007 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.161) | 0.049 | 0.011 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.160) | 0.049 | 0.011 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.159) | 0.049 | 0.011 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.159) | 0.049 | 0.011 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.158) | 0.049 | 0.011 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.157) | 0.049 | 0.011 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.157) | 0.049 | 0.011 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.156) | 0.049 | 0.011 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.155) | 0.049 | 0.011 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.155) | 0.033 | 0.007 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.154) | 0.033 | 0.007 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 252 | 21.00 | 0.07 | 0.040 | ( 0.153) | 0.033 | 0.007 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.153) | 0.049 | 0.011 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.152) | 0.049 | 0.011 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.152) | 0.049 | 0.011 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.151) | 0.033 | 0.007 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.150) | 0.033 | 0.007 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.150) | 0.033 | 0.007 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.149) | 0.049 | 0.011 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.149) | 0.049 | 0.011 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.148) | 0.049 | 0.011 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.148) | 0.033 | 0.007 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.147) | 0.033 | 0.007 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.147) | 0.033 | 0.007 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.146) | 0.049 | 0.011 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.146) | 0.049 | 0.011 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.145) | 0.049 | 0.011 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.145) | 0.033 | 0.007 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.144) | 0.033 | 0.007 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.144) | 0.033 | 0.007 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.144) | 0.033 | 0.007 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.143) | 0.033 | 0.007 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.143) | 0.033 | 0.007 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.142) | 0.033 | 0.007 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.142) | 0.033 | 0.007 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.142) | 0.033 | 0.007 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.141) | 0.033 | 0.007 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.141) | 0.033 | 0.007 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.141) | 0.033 | 0.007 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.140) | 0.033 | 0.007 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.140) | 0.033 | 0.007 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.140) | 0.033 | 0.007 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.140) | 0.033 | 0.007 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.140) | 0.033 | 0.007 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.139) | 0.033 | 0.007 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.139) | 0.033 | 0.007 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.139) | 0.033 | 0.007 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.139) | 0.033 | 0.007 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 21.0

Flood volume = Effective rainfall 1.75(In)
times area 14.8(Ac.)/[(In)/(Ft.)] = 2.2(Ac.Ft)
Total soil loss = 3.25(In)
Total soil loss = 4.006(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 94129.3 Cubic Feet
Total soil loss = 174482.9 Cubic Feet

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Peak flow rate of this hydrograph = 6.580(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 | 0.0003 | 0.04 | Q | \| | \| | \| | \| |
| 0+10 | 0.0009 | 0.09 | Q | \| | \| | \| | \| |
| 0+15 | 0.0016 | 0.10 | Q | \| | \| | \| | \| |
| 0+20 | 0.0025 | 0.13 | Q | \| | \| | \| | \| |
| 0+25 | 0.0035 | 0.15 | Q | \| | \| | \| | \| |
| 0+30 | 0.0046 | 0.16 | Q | \| | \| | \| | \| |
| 0+35 | 0.0057 | 0.16 | Q | \| | \| | \| | \| |
| 0+40 | 0.0068 | 0.16 | Q | \| | \| | \| | \| |
| 0+45 | 0.0079 | 0.16 | Q | \| | \| | \| | \| |
| 0+50 | 0.0092 | 0.18 | Q | \| | \| | \| | \| |
| 0+55 | 0.0106 | 0.21 | Q | \| | \| | \| | \| |
| 1+ 0 | 0.0121 | 0.21 | Q | \| | \| | \| | \| |
| 1+ 5 | 0.0134 | 0.19 | Q | \| | \| | \| | \| |
| 1+10 | 0.0146 | 0.17 | Q | \| | \| | \| | \| |
| 1+15 | 0.0157 | 0.16 | Q | \| | \| | \| | \| |
| 1+20 | 0.0168 | 0.16 | Q | \| | \| | \| | \| |
| 1+25 | 0.0179 | 0.16 | Q | \| | \| | \| | \| |
| 1+30 | 0.0190 | 0.16 | Q | \| | \| | \| | \| |
| 1+35 | 0.0201 | 0.16 | Q | \| | \| | \| | \| |
| 1+40 | 0.0212 | 0.16 | Q | \| | \| | \| | \| |
| 1+45 | 0.0224 | 0.16 | Q | \| | \| | \| | \| |
| 1+50 | 0.0236 | 0.18 | Q | \| | \| | \| | \| |
| 1+55 | 0.0250 | 0.21 | Q | \| | \| | \| | \| |
| 2+ 0 | 0.0265 | 0.21 | Q | \| | \| | \| | \| |
| 2+ 5 | 0.0280 | 0.21 | Q | \| | \| | \| | \| |
| 2+10 | 0.0294 | 0.21 | Q | \| | \| | \| | \| |
| 2+15 | 0.0309 | 0.21 | Q | \| | \| | \| | \| |
| 2+20 | 0.0324 | 0.21 | Q | \| | \| | \| | \| |
| 2+25 | 0.0339 | 0.21 | Q | \| | \| | \| | \| |
| 2+30 | 0.0354 | 0.21 | Q | \| | \| | \| | \| |
| 2+35 | 0.0370 | 0.24 | Q | \| | \| | \| | \| |
| 2+40 | 0.0388 | 0.26 | VQ | \| | \| | \| | \| |
| 2+45 | 0.0406 | 0.27 | VQ | \| | \| | \| | \| |
| 2+50 | 0.0424 | 0.27 | VQ | \| | \| | \| | \| |
| 2+55 | 0.0443 | 0.27 | VQ | \| | \| | \| | \| |
| 3+ 0 | 0.0461 | 0.27 | VQ | \| | \| | \| | \| |
| 3+ 5 | 0.0480 | 0.27 | VQ | \| | \| | \| | \| |
| 3+10 | 0.0498 | 0.27 | VQ | \| | \| | \| | \| |
| 3+15 | 0.0517 | 0.27 | VQ | \| | \| | \| | \| |
| 3+20 | 0.0535 | 0.27 | VQ | \| | \| | \| | \| |
| 3+25 | 0.0554 | 0.27 | \|Q | \| | \| | \| | \| |
| 3+30 | 0.0572 | 0.27 | \|Q | \| | \| | \| | \| |
| 3+35 | 0.0591 | 0.27 | \|Q | \| | \| | \| | \| |
| 3+40 | 0.0609 | 0.27 | \|Q | \| | \| | \| | \| |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+45 | 0.0628 | 0.27 | Q | | | | |
| 3+50 | 0.0648 | 0.29 | Q | | | | |
| 3+55 | 0.0669 | 0.31 | Q | | | | |
| 4+ 0 | 0.0691 | 0.32 | Q | | | | |
| 4+ 5 | 0.0713 | 0.32 | Q | | | | |
| 4+10 | 0.0736 | 0.32 | Q | | | | |
| 4+15 | 0.0758 | 0.32 | Q | | | | |
| 4+20 | 0.0781 | 0.34 | Q | | | | |
| 4+25 | 0.0807 | 0.37 | Q | | | | |
| 4+30 | 0.0832 | 0.37 | Q | | | | |
| 4+35 | 0.0858 | 0.37 | Q | | | | |
| 4+40 | 0.0884 | 0.38 | Q | | | | |
| 4+45 | 0.0910 | 0.38 | Q | | | | |
| 4+50 | 0.0937 | 0.40 | Q | | | | |
| 4+55 | 0.0966 | 0.42 | Q | | | | |
| 5+ 0 | 0.0996 | 0.43 | Q | | | | |
| 5+ 5 | 0.1022 | 0.39 | Q | | | | |
| 5+10 | 0.1046 | 0.34 | Q | | | | |
| 5+15 | 0.1069 | 0.33 | Q | | | | |
| 5+20 | 0.1092 | 0.35 | QV | | | | |
| 5+25 | 0.1118 | 0.37 | QV | | | | |
| 5+30 | 0.1143 | 0.37 | QV | | | | |
| 5+35 | 0.1171 | 0.40 | QV | | | | |
| 5+40 | 0.1200 | 0.42 | QV | | | | |
| 5+45 | 0.1229 | 0.43 | QV | | | | |
| 5+50 | 0.1258 | 0.43 | QV | | | | |
| 5+55 | 0.1288 | 0.43 | QV | | | | |
| 6+ 0 | 0.1318 | 0.43 | QV | | | | |
| 6+ 5 | 0.1349 | 0.45 | QV | | | | |
| 6+10 | 0.1381 | 0.47 | QV | | | | |
| 6+15 | 0.1414 | 0.48 | QV | | | | |
| 6+20 | 0.1448 | 0.48 | QV | | | | |
| 6+25 | 0.1481 | 0.48 | QV | | | | |
| 6+30 | 0.1514 | 0.48 | QV | | | | |
| 6+35 | 0.1549 | 0.50 | Q | | | | |
| 6+40 | 0.1585 | 0.53 | Q | | | | |
| 6+45 | 0.1622 | 0.53 | QV | | | | |
| 6+50 | 0.1659 | 0.54 | QV | | | | |
| 6+55 | 0.1696 | 0.54 | QV | | | | |
| 7+ 0 | 0.1733 | 0.54 | QV | | | | |
| 7+ 5 | 0.1770 | 0.54 | QV | | | | |
| 7+10 | 0.1807 | 0.54 | QV | | | | |
| 7+15 | 0.1844 | 0.54 | QV | | | | |
| 7+20 | 0.1882 | 0.56 | QV | | | | |
| 7+25 | 0.1923 | 0.58 | QV | | | | |
| 7+30 | 0.1963 | 0.59 | QV | | | | |
| 7+35 | 0.2005 | 0.61 | QV | | | | |
| 7+40 | 0.2049 | 0.64 | QV | | | | |
| 7+45 | 0.2093 | 0.64 | QV | | | | |
| 7+50 | 0.2139 | 0.66 | QV | | | | |
| 7+55 | 0.2186 | 0.69 | Q V | | | | |

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 8+ 0       0.2234      0.70  | Q V     |         |         |         |
 8+ 5       0.2285      0.74  | Q V     |         |         |         |
 8+10       0.2339      0.79  |  QV     |         |         |         |
 8+15       0.2394      0.80  |  QV     |         |         |         |
 8+20       0.2450      0.80  |  QV     |         |         |         |
 8+25       0.2505      0.81  |  QV     |         |         |         |
 8+30       0.2561      0.81  |  QV     |         |         |         |
 8+35       0.2618      0.83  |  QV     |         |         |         |
 8+40       0.2676      0.85  |  QV     |         |         |         |
 8+45       0.2735      0.86  |  Q V    |         |         |         |
 8+50       0.2796      0.88  |  Q V    |         |         |         |
 8+55       0.2858      0.90  |  Q V    |         |         |         |
 9+ 0       0.2921      0.91  |  Q V    |         |         |         |
 9+ 5       0.2987      0.97  |  Q V    |         |         |         |
 9+10       0.3059      1.04  |   QV    |         |         |         |
 9+15       0.3133      1.07  |   QV    |         |         |         |
 9+20       0.3216      1.21  |   QV    |         |         |         |
 9+25       0.3311      1.37  |    QV   |         |         |         |
 9+30       0.3409      1.42  |    QV   |         |         |         |
 9+35       0.3517      1.57  |     Q   |         |         |         |
 9+40       0.3637      1.74  |     Q   |         |         |         |
 9+45       0.3760      1.79  |     VQ  |         |         |         |
 9+50       0.3893      1.94  |      Q  |         |         |         |
 9+55       0.4038      2.10  |      VQ |         |         |         |
10+ 0       0.4186      2.15  |      VQ |         |         |         |
10+ 5       0.4299      1.64  |     QV  |         |         |         |
10+10       0.4370      1.03  |   Q   V |         |         |         |
10+15       0.4431      0.89  |  Q    V |         |         |         |
10+20       0.4489      0.84  |  Q    V |         |         |         |
10+25       0.4544      0.81  |  Q    V |         |         |         |
10+30       0.4600      0.81  |  Q    V |         |         |         |
10+35       0.4680      1.17  |   Q   V |         |         |         |
10+40       0.4790      1.59  |     Q V |         |         |         |
10+45       0.4907      1.70  |     Q  V|         |         |         |
10+50       0.5028      1.76  |      Q V|         |         |         |
10+55       0.5152      1.80  |      Q V|         |         |         |
11+ 0       0.5278      1.82  |      Q V|         |         |         |
11+ 5       0.5397      1.73  |     Q  V|         |         |         |
11+10       0.5508      1.61  |     Q   V         |         |         |
11+15       0.5618      1.60  |     Q   V         |         |         |
11+20       0.5729      1.61  |     Q   V         |         |         |
11+25       0.5841      1.62  |     Q   V         |         |         |
11+30       0.5955      1.64  |     Q   |V        |         |         |
11+35       0.6053      1.43  |    Q    |V        |         |         |
11+40       0.6135      1.18  |   Q     |V        |         |         |
11+45       0.6214      1.15  |   Q     |V        |         |         |
11+50       0.6300      1.26  |    Q    |V        |         |         |
11+55       0.6396      1.40  |    Q    |V        |         |         |
12+ 0       0.6496      1.45  |    Q    | V       |         |         |
12+ 5       0.6653      2.28  |        Q| V       |         |         |
12+10       0.6877      3.25  |         | VQ      |         |         |
```

```
12+15       0.7117      3.48  |         |  Q      |         |         |
12+20       0.7372      3.70  |         |  VQ     |         |         |
12+25       0.7641      3.90  |         |   VQ    |         |         |
12+30       0.7913      3.95  |         |   VQ    |         |         |
12+35       0.8203      4.21  |         |    VQ   |         |         |
12+40       0.8513      4.51  |         |    V  Q |         |         |
12+45       0.8829      4.58  |         |     V Q |         |         |
12+50       0.9156      4.74  |         |     V Q |         |         |
12+55       0.9494      4.91  |         |      V Q|         |         |
13+ 0       0.9835      4.96  |         |       VQ|         |         |
13+ 5       1.0219      5.57  |         |       V | Q       |         |
13+10       1.0650      6.26  |         |        V|    Q    |         |
13+15       1.1093      6.43  |         |         V    Q    |         |
13+20       1.1542      6.51  |         |         |V    Q   |         |
13+25       1.1993      6.56  |         |         | V   Q   |         |
13+30       1.2447      6.58  |         |         |  V  Q   |         |
13+35       1.2814      5.33  |         |         |Q V      |         |
13+40       1.3080      3.87  |         |    Q    |   V     |         |
13+45       1.3325      3.56  |         |   Q     |   V     |         |
13+50       1.3562      3.44  |         |  Q      |    V    |         |
13+55       1.3795      3.39  |         |  Q      |    V    |         |
14+ 0       1.4030      3.40  |         |  Q      |    V    |         |
14+ 5       1.4297      3.88  |         |    Q    |     V   |         |
14+10       1.4603      4.44  |         |      Q  |      V  |         |
14+15       1.4918      4.58  |         |       Q |      V  |         |
14+20       1.5230      4.53  |         |       Q |       V |         |
14+25       1.5535      4.44  |         |      Q  |       V |         |
14+30       1.5840      4.42  |         |      Q  |        V|         |
14+35       1.6145      4.43  |         |      Q  |        V|         |
14+40       1.6451      4.44  |         |      Q  |         V         |
14+45       1.6758      4.46  |         |      Q  |         |V        |
14+50       1.7058      4.36  |         |      Q  |         |V        |
14+55       1.7350      4.24  |         |     Q   |         | V       |
15+ 0       1.7641      4.23  |         |     Q   |         | V       |
15+ 5       1.7924      4.12  |         |     Q   |         |  V      |
15+10       1.8199      3.99  |         |    Q    |         |  V      |
15+15       1.8473      3.98  |         |    Q    |         |   V     |
15+20       1.8740      3.87  |         |    Q    |         |   V     |
15+25       1.8997      3.74  |         |   Q     |         |    V    |
15+30       1.9254      3.73  |         |   Q     |         |    V    |
15+35       1.9479      3.27  |         |  Q      |         |     V   |
15+40       1.9668      2.74  |         Q         |         |     V   |
15+45       1.9850      2.64  |         Q         |         |     V   |
15+50       2.0030      2.61  |         Q         |         |      V  |
15+55       2.0208      2.60  |         Q         |         |      V  |
16+ 0       2.0388      2.61  |         Q         |         |      V  |
16+ 5       2.0505      1.69  |     Q   |         |         |      V  |
16+10       2.0546      0.60  | Q       |         |         |       V |
16+15       2.0572      0.37  |Q        |         |         |       V |
16+20       2.0590      0.27  |Q        |         |         |       V |
16+25       2.0605      0.21  Q         |         |         |       V |
```

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16+30       2.0620      0.21  Q          |          |          |        V |
16+35       2.0633      0.19  Q          |          |          |        V |
16+40       2.0645      0.17  Q          |          |          |        V |
16+45       2.0656      0.16  Q          |          |          |        V |
16+50       2.0667      0.16  Q          |          |          |        V |
16+55       2.0678      0.16  Q          |          |          |        V |
17+ 0       2.0689      0.16  Q          |          |          |        V |
17+ 5       2.0703      0.20  Q          |          |          |        V |
17+10       2.0721      0.25  |Q         |          |          |        V |
17+15       2.0739      0.26  |Q         |          |          |        V |
17+20       2.0757      0.27  |Q         |          |          |        V |
17+25       2.0776      0.27  |Q         |          |          |        V |
17+30       2.0794      0.27  |Q         |          |          |        V |
17+35       2.0813      0.27  |Q         |          |          |        V |
17+40       2.0831      0.27  |Q         |          |          |        V |
17+45       2.0850      0.27  |Q         |          |          |        V |
17+50       2.0867      0.25  Q          |          |          |        V |
17+55       2.0882      0.22  Q          |          |          |        V |
18+ 0       2.0897      0.22  Q          |          |          |        V |
18+ 5       2.0912      0.22  Q          |          |          |        V |
18+10       2.0927      0.21  Q          |          |          |        V |
18+15       2.0942      0.21  Q          |          |          |        V |
18+20       2.0956      0.21  Q          |          |          |        V |
18+25       2.0971      0.21  Q          |          |          |        V |
18+30       2.0986      0.21  Q          |          |          |        V |
18+35       2.0999      0.19  Q          |          |          |        V |
18+40       2.1011      0.17  Q          |          |          |        V |
18+45       2.1022      0.16  Q          |          |          |        V |
18+50       2.1032      0.14  Q          |          |          |        V |
18+55       2.1040      0.12  Q          |          |          |        V |
19+ 0       2.1048      0.11  Q          |          |          |        V |
19+ 5       2.1057      0.13  Q          |          |          |        V |
19+10       2.1067      0.15  Q          |          |          |        V |
19+15       2.1078      0.16  Q          |          |          |         V|
19+20       2.1090      0.18  Q          |          |          |         V|
19+25       2.1105      0.21  Q          |          |          |         V|
19+30       2.1119      0.21  Q          |          |          |         V|
19+35       2.1132      0.19  Q          |          |          |         V|
19+40       2.1144      0.17  Q          |          |          |         V|
19+45       2.1156      0.16  Q          |          |          |         V|
19+50       2.1165      0.14  Q          |          |          |         V|
19+55       2.1173      0.12  Q          |          |          |         V|
20+ 0       2.1181      0.11  Q          |          |          |         V|
20+ 5       2.1190      0.13  Q          |          |          |         V|
20+10       2.1200      0.15  Q          |          |          |         V|
20+15       2.1211      0.16  Q          |          |          |         V|
20+20       2.1222      0.16  Q          |          |          |         V|
20+25       2.1233      0.16  Q          |          |          |         V|
20+30       2.1244      0.16  Q          |          |          |         V|
20+35       2.1255      0.16  Q          |          |          |         V|
20+40       2.1267      0.16  Q          |          |          |         V|
```

```
   20+45       2.1278      0.16  Q          |          |          |         V|
   20+50       2.1287      0.14  Q          |          |          |         V|
   20+55       2.1295      0.12  Q          |          |          |         V|
   21+ 0       2.1303      0.11  Q          |          |          |         V|
   21+ 5       2.1312      0.13  Q          |          |          |         V|
   21+10       2.1322      0.15  Q          |          |          |         V|
   21+15       2.1333      0.16  Q          |          |          |         V|
   21+20       2.1343      0.14  Q          |          |          |         V|
   21+25       2.1351      0.12  Q          |          |          |         V|
   21+30       2.1358      0.11  Q          |          |          |         V|
   21+35       2.1367      0.13  Q          |          |          |         V|
   21+40       2.1378      0.15  Q          |          |          |         V|
   21+45       2.1389      0.16  Q          |          |          |         V|
   21+50       2.1398      0.14  Q          |          |          |         V|
   21+55       2.1406      0.12  Q          |          |          |         V|
   22+ 0       2.1414      0.11  Q          |          |          |         V|
   22+ 5       2.1423      0.13  Q          |          |          |         V|
   22+10       2.1433      0.15  Q          |          |          |         V|
   22+15       2.1444      0.16  Q          |          |          |         V|
   22+20       2.1454      0.14  Q          |          |          |         V|
   22+25       2.1462      0.12  Q          |          |          |         V|
   22+30       2.1469      0.11  Q          |          |          |         V|
   22+35       2.1477      0.11  Q          |          |          |         V|
   22+40       2.1484      0.11  Q          |          |          |         V|
   22+45       2.1492      0.11  Q          |          |          |         V|
   22+50       2.1499      0.11  Q          |          |          |         V|
   22+55       2.1507      0.11  Q          |          |          |         V|
   23+ 0       2.1514      0.11  Q          |          |          |         V|
   23+ 5       2.1521      0.11  Q          |          |          |         V|
   23+10       2.1529      0.11  Q          |          |          |         V|
   23+15       2.1536      0.11  Q          |          |          |         V|
   23+20       2.1544      0.11  Q          |          |          |         V|
   23+25       2.1551      0.11  Q          |          |          |         V|
   23+30       2.1558      0.11  Q          |          |          |         V|
   23+35       2.1566      0.11  Q          |          |          |         V|
   23+40       2.1573      0.11  Q          |          |          |         V|
   23+45       2.1581      0.11  Q          |          |          |         V|
   23+50       2.1588      0.11  Q          |          |          |         V|
   23+55       2.1595      0.11  Q          |          |          |         V|
   24+ 0       2.1603      0.11  Q          |          |          |         V|
   24+ 5       2.1607      0.07  Q          |          |          |         V|
   24+10       2.1608      0.02  Q          |          |          |         V|
   24+15       2.1609      0.01  Q          |          |          |         V|
   24+20       2.1609      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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  12/02/22 File: proposedb24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
PROPOSED BASIN B
12/02/2022

-------------------------------------------------------------------
Drainage Area =      19.10(Ac.)  =      0.030 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      19.10(Ac.)  =
0.030 Sq. Mi.
Length along longest watercourse =    1849.00(Ft.)
Length along longest watercourse measured to centroid =     924.50(Ft.)
Length along longest watercourse =      0.350 Mi.
Length along longest watercourse measured to centroid =      0.175 Mi.
Difference in elevation =      37.00(Ft.)
Slope along watercourse =    105.6571 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.051 Hr.
Lag time =     3.08 Min.
25% of lag time =     0.77 Min.
40% of lag time =     1.23 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

```
Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       19.10            2.00                   38.20

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       19.10            5.00                   95.50

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.000(In)
Area Averaged 100-Year Rainfall =    5.000(In)

Point rain (area averaged) =    5.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    5.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    19.100           56.00         0.800
 Total Area Entered =     19.10(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-3     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  74.8      0.305     0.800        0.086       1.000      0.086
                                                  Sum (F) =   0.086
Area averaged mean soil loss (F) (In/Hr) =  0.086
Minimum soil loss rate ((In/Hr)) =  0.043
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.260
-----------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-----------------------------------------------------------------------
                Unit Hydrograph Data
-----------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------------
    1   0.083        162.098         35.979              6.926
    2   0.167        324.196         46.110              8.876
    3   0.250        486.295         10.525              2.026
    4   0.333        648.393          4.514              0.869
    5   0.417        810.491          2.871              0.553
                                Sum = 100.000   Sum=      19.249
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
```

rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.152) | 0.010 | 0.030 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.151) | 0.010 | 0.030 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.150) | 0.010 | 0.030 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.150) | 0.016 | 0.044 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.149) | 0.016 | 0.044 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.149) | 0.016 | 0.044 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.148) | 0.016 | 0.044 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.147) | 0.016 | 0.044 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.147) | 0.016 | 0.044 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.146) | 0.021 | 0.059 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.146) | 0.021 | 0.059 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.145) | 0.021 | 0.059 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.145) | 0.016 | 0.044 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.144) | 0.016 | 0.044 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.143) | 0.016 | 0.044 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.143) | 0.016 | 0.044 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.142) | 0.016 | 0.044 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.142) | 0.016 | 0.044 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.141) | 0.016 | 0.044 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.141) | 0.016 | 0.044 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.140) | 0.016 | 0.044 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.139) | 0.021 | 0.059 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.139) | 0.021 | 0.059 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.138) | 0.021 | 0.059 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.138) | 0.021 | 0.059 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.137) | 0.021 | 0.059 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.137) | 0.021 | 0.059 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.136) | 0.021 | 0.059 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.136) | 0.021 | 0.059 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.135) | 0.021 | 0.059 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.134) | 0.026 | 0.074 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.134) | 0.026 | 0.074 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.133) | 0.026 | 0.074 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.133) | 0.026 | 0.074 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.132) | 0.026 | 0.074 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.132) | 0.026 | 0.074 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.131) | 0.026 | 0.074 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.131) | 0.026 | 0.074 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.130) | 0.026 | 0.074 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.130) | 0.026 | 0.074 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.129) | 0.026 | 0.074 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.128) | 0.026 | 0.074 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.128) | 0.026 | 0.074 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.127) | 0.026 | 0.074 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.127) | 0.026 | 0.074 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.126) | 0.031 | 0.089 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.126) | 0.031 | 0.089 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 48 | 4.00 | 0.20 | 0.120 | ( 0.125) | 0.031 | 0.089 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.125) | 0.031 | 0.089 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.124) | 0.031 | 0.089 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.124) | 0.031 | 0.089 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.123) | 0.036 | 0.104 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.123) | 0.036 | 0.104 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.122) | 0.036 | 0.104 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.122) | 0.036 | 0.104 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.121) | 0.036 | 0.104 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.121) | 0.036 | 0.104 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.120) | 0.042 | 0.118 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.119) | 0.042 | 0.118 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.119) | 0.042 | 0.118 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.118) | 0.031 | 0.089 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.118) | 0.031 | 0.089 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.117) | 0.031 | 0.089 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.117) | 0.036 | 0.104 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.116) | 0.036 | 0.104 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.116) | 0.036 | 0.104 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.115) | 0.042 | 0.118 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.115) | 0.042 | 0.118 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.114) | 0.042 | 0.118 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.114) | 0.042 | 0.118 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.113) | 0.042 | 0.118 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.113) | 0.042 | 0.118 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.112) | 0.047 | 0.133 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.112) | 0.047 | 0.133 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.111) | 0.047 | 0.133 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.111) | 0.047 | 0.133 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.110) | 0.047 | 0.133 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.110) | 0.047 | 0.133 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.109) | 0.052 | 0.148 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.109) | 0.052 | 0.148 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.108) | 0.052 | 0.148 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.108) | 0.052 | 0.148 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.107) | 0.052 | 0.148 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.107) | 0.052 | 0.148 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.106) | 0.052 | 0.148 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.106) | 0.052 | 0.148 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.105) | 0.052 | 0.148 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.105) | 0.057 | 0.163 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.105) | 0.057 | 0.163 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.104) | 0.057 | 0.163 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.104) | 0.062 | 0.178 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.103) | 0.062 | 0.178 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.103) | 0.062 | 0.178 |
| 94 | 7.83 | 0.43 | 0.260 | ( 0.102) | 0.068 | 0.192 |
| 95 | 7.92 | 0.43 | 0.260 | ( 0.102) | 0.068 | 0.192 |
| 96 | 8.00 | 0.43 | 0.260 | ( 0.101) | 0.068 | 0.192 |
| 97 | 8.08 | 0.50 | 0.300 | ( 0.101) | 0.078 | 0.222 |
| 98 | 8.17 | 0.50 | 0.300 | ( 0.100) | 0.078 | 0.222 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 99 | 8.25 | 0.50 | 0.300 | ( 0.100) | 0.078 | 0.222 |
| 100 | 8.33 | 0.50 | 0.300 | ( 0.099) | 0.078 | 0.222 |
| 101 | 8.42 | 0.50 | 0.300 | ( 0.099) | 0.078 | 0.222 |
| 102 | 8.50 | 0.50 | 0.300 | ( 0.098) | 0.078 | 0.222 |
| 103 | 8.58 | 0.53 | 0.320 | ( 0.098) | 0.083 | 0.237 |
| 104 | 8.67 | 0.53 | 0.320 | ( 0.097) | 0.083 | 0.237 |
| 105 | 8.75 | 0.53 | 0.320 | ( 0.097) | 0.083 | 0.237 |
| 106 | 8.83 | 0.57 | 0.340 | ( 0.097) | 0.088 | 0.252 |
| 107 | 8.92 | 0.57 | 0.340 | ( 0.096) | 0.088 | 0.252 |
| 108 | 9.00 | 0.57 | 0.340 | ( 0.096) | 0.088 | 0.252 |
| 109 | 9.08 | 0.63 | 0.380 | 0.095 | ( 0.099) | 0.285 |
| 110 | 9.17 | 0.63 | 0.380 | 0.095 | ( 0.099) | 0.285 |
| 111 | 9.25 | 0.63 | 0.380 | 0.094 | ( 0.099) | 0.286 |
| 112 | 9.33 | 0.67 | 0.400 | 0.094 | ( 0.104) | 0.306 |
| 113 | 9.42 | 0.67 | 0.400 | 0.093 | ( 0.104) | 0.307 |
| 114 | 9.50 | 0.67 | 0.400 | 0.093 | ( 0.104) | 0.307 |
| 115 | 9.58 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.327 |
| 116 | 9.67 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.328 |
| 117 | 9.75 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.328 |
| 118 | 9.83 | 0.73 | 0.440 | 0.091 | ( 0.114) | 0.349 |
| 119 | 9.92 | 0.73 | 0.440 | 0.091 | ( 0.114) | 0.349 |
| 120 | 10.00 | 0.73 | 0.440 | 0.090 | ( 0.114) | 0.350 |
| 121 | 10.08 | 0.50 | 0.300 | ( 0.090) | 0.078 | 0.222 |
| 122 | 10.17 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 123 | 10.25 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 124 | 10.33 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 125 | 10.42 | 0.50 | 0.300 | ( 0.088) | 0.078 | 0.222 |
| 126 | 10.50 | 0.50 | 0.300 | ( 0.088) | 0.078 | 0.222 |
| 127 | 10.58 | 0.67 | 0.400 | 0.087 | ( 0.104) | 0.313 |
| 128 | 10.67 | 0.67 | 0.400 | 0.087 | ( 0.104) | 0.313 |
| 129 | 10.75 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 130 | 10.83 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 131 | 10.92 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 132 | 11.00 | 0.67 | 0.400 | 0.085 | ( 0.104) | 0.315 |
| 133 | 11.08 | 0.63 | 0.380 | 0.085 | ( 0.099) | 0.295 |
| 134 | 11.17 | 0.63 | 0.380 | 0.084 | ( 0.099) | 0.296 |
| 135 | 11.25 | 0.63 | 0.380 | 0.084 | ( 0.099) | 0.296 |
| 136 | 11.33 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 137 | 11.42 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 138 | 11.50 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 139 | 11.58 | 0.57 | 0.340 | 0.082 | ( 0.088) | 0.258 |
| 140 | 11.67 | 0.57 | 0.340 | 0.082 | ( 0.088) | 0.258 |
| 141 | 11.75 | 0.57 | 0.340 | 0.081 | ( 0.088) | 0.259 |
| 142 | 11.83 | 0.60 | 0.360 | 0.081 | ( 0.094) | 0.279 |
| 143 | 11.92 | 0.60 | 0.360 | 0.081 | ( 0.094) | 0.279 |
| 144 | 12.00 | 0.60 | 0.360 | 0.080 | ( 0.094) | 0.280 |
| 145 | 12.08 | 0.83 | 0.500 | 0.080 | ( 0.130) | 0.420 |
| 146 | 12.17 | 0.83 | 0.500 | 0.079 | ( 0.130) | 0.421 |
| 147 | 12.25 | 0.83 | 0.500 | 0.079 | ( 0.130) | 0.421 |
| 148 | 12.33 | 0.87 | 0.520 | 0.079 | ( 0.135) | 0.441 |
| 149 | 12.42 | 0.87 | 0.520 | 0.078 | ( 0.135) | 0.442 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 150 | 12.50 | 0.87 | 0.520 | 0.078 | ( | 0.135) | 0.442 |
| 151 | 12.58 | 0.93 | 0.560 | 0.077 | ( | 0.146) | 0.483 |
| 152 | 12.67 | 0.93 | 0.560 | 0.077 | ( | 0.146) | 0.483 |
| 153 | 12.75 | 0.93 | 0.560 | 0.077 | ( | 0.146) | 0.483 |
| 154 | 12.83 | 0.97 | 0.580 | 0.076 | ( | 0.151) | 0.504 |
| 155 | 12.92 | 0.97 | 0.580 | 0.076 | ( | 0.151) | 0.504 |
| 156 | 13.00 | 0.97 | 0.580 | 0.076 | ( | 0.151) | 0.504 |
| 157 | 13.08 | 1.13 | 0.680 | 0.075 | ( | 0.177) | 0.605 |
| 158 | 13.17 | 1.13 | 0.680 | 0.075 | ( | 0.177) | 0.605 |
| 159 | 13.25 | 1.13 | 0.680 | 0.074 | ( | 0.177) | 0.606 |
| 160 | 13.33 | 1.13 | 0.680 | 0.074 | ( | 0.177) | 0.606 |
| 161 | 13.42 | 1.13 | 0.680 | 0.074 | ( | 0.177) | 0.606 |
| 162 | 13.50 | 1.13 | 0.680 | 0.073 | ( | 0.177) | 0.607 |
| 163 | 13.58 | 0.77 | 0.460 | 0.073 | ( | 0.120) | 0.387 |
| 164 | 13.67 | 0.77 | 0.460 | 0.072 | ( | 0.120) | 0.387 |
| 165 | 13.75 | 0.77 | 0.460 | 0.072 | ( | 0.120) | 0.388 |
| 166 | 13.83 | 0.77 | 0.460 | 0.072 | ( | 0.120) | 0.388 |
| 167 | 13.92 | 0.77 | 0.460 | 0.071 | ( | 0.120) | 0.389 |
| 168 | 14.00 | 0.77 | 0.460 | 0.071 | ( | 0.120) | 0.389 |
| 169 | 14.08 | 0.90 | 0.540 | 0.071 | ( | 0.140) | 0.469 |
| 170 | 14.17 | 0.90 | 0.540 | 0.070 | ( | 0.140) | 0.470 |
| 171 | 14.25 | 0.90 | 0.540 | 0.070 | ( | 0.140) | 0.470 |
| 172 | 14.33 | 0.87 | 0.520 | 0.070 | ( | 0.135) | 0.450 |
| 173 | 14.42 | 0.87 | 0.520 | 0.069 | ( | 0.135) | 0.451 |
| 174 | 14.50 | 0.87 | 0.520 | 0.069 | ( | 0.135) | 0.451 |
| 175 | 14.58 | 0.87 | 0.520 | 0.069 | ( | 0.135) | 0.451 |
| 176 | 14.67 | 0.87 | 0.520 | 0.068 | ( | 0.135) | 0.452 |
| 177 | 14.75 | 0.87 | 0.520 | 0.068 | ( | 0.135) | 0.452 |
| 178 | 14.83 | 0.83 | 0.500 | 0.067 | ( | 0.130) | 0.433 |
| 179 | 14.92 | 0.83 | 0.500 | 0.067 | ( | 0.130) | 0.433 |
| 180 | 15.00 | 0.83 | 0.500 | 0.067 | ( | 0.130) | 0.433 |
| 181 | 15.08 | 0.80 | 0.480 | 0.066 | ( | 0.125) | 0.414 |
| 182 | 15.17 | 0.80 | 0.480 | 0.066 | ( | 0.125) | 0.414 |
| 183 | 15.25 | 0.80 | 0.480 | 0.066 | ( | 0.125) | 0.414 |
| 184 | 15.33 | 0.77 | 0.460 | 0.065 | ( | 0.120) | 0.395 |
| 185 | 15.42 | 0.77 | 0.460 | 0.065 | ( | 0.120) | 0.395 |
| 186 | 15.50 | 0.77 | 0.460 | 0.065 | ( | 0.120) | 0.395 |
| 187 | 15.58 | 0.63 | 0.380 | 0.064 | ( | 0.099) | 0.316 |
| 188 | 15.67 | 0.63 | 0.380 | 0.064 | ( | 0.099) | 0.316 |
| 189 | 15.75 | 0.63 | 0.380 | 0.064 | ( | 0.099) | 0.316 |
| 190 | 15.83 | 0.63 | 0.380 | 0.063 | ( | 0.099) | 0.317 |
| 191 | 15.92 | 0.63 | 0.380 | 0.063 | ( | 0.099) | 0.317 |
| 192 | 16.00 | 0.63 | 0.380 | 0.063 | ( | 0.099) | 0.317 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.062) | | 0.021 | 0.059 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.062) | | 0.021 | 0.059 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.062) | | 0.021 | 0.059 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.062) | | 0.021 | 0.059 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.061) | | 0.021 | 0.059 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.061) | | 0.021 | 0.059 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.061) | | 0.016 | 0.044 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.060) | | 0.016 | 0.044 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 201 | 16.75 | 0.10 | 0.060 | ( 0.060) | 0.016 | 0.044 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.060) | 0.016 | 0.044 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.059) | 0.016 | 0.044 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.059) | 0.016 | 0.044 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.059) | 0.026 | 0.074 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.056) | 0.026 | 0.074 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.054) | 0.021 | 0.059 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.054) | 0.021 | 0.059 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.054) | 0.016 | 0.044 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.053) | 0.016 | 0.044 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.053) | 0.016 | 0.044 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.053) | 0.010 | 0.030 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.053) | 0.010 | 0.030 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.052) | 0.010 | 0.030 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.051) | 0.016 | 0.044 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.051) | 0.016 | 0.044 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.050) | 0.016 | 0.044 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.048) | 0.010 | 0.030 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.047) | 0.010 | 0.030 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 252 | 21.00 | 0.07 | 0.040 | ( 0.047) | 0.010 | 0.030 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 47.8

Flood volume = Effective rainfall 3.99(In)
times area 19.1(Ac.)/[(In)/(Ft.)] = 6.3(Ac.Ft)
Total soil loss = 1.01(In)
Total soil loss = 1.615(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 276316.4 Cubic Feet
Total soil loss = 70335.6 Cubic Feet

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Peak flow rate of this hydrograph = 11.679(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 | 0.0014 | 0.21 | Q | \| | \| | \| | \| |
| 0+10 | 0.0046 | 0.47 | Q | \| | \| | \| | \| |
| 0+15 | 0.0083 | 0.53 | VQ | \| | \| | \| | \| |
| 0+20 | 0.0128 | 0.66 | VQ | \| | \| | \| | \| |
| 0+25 | 0.0183 | 0.80 | VQ | \| | \| | \| | \| |
| 0+30 | 0.0241 | 0.83 | VQ | \| | \| | \| | \| |
| 0+35 | 0.0299 | 0.85 | VQ | \| | \| | \| | \| |
| 0+40 | 0.0358 | 0.86 | VQ | \| | \| | \| | \| |
| 0+45 | 0.0417 | 0.86 | VQ | \| | \| | \| | \| |
| 0+50 | 0.0483 | 0.96 | VQ | \| | \| | \| | \| |
| 0+55 | 0.0558 | 1.09 | V Q | \| | \| | \| | \| |
| 1+ 0 | 0.0635 | 1.12 | V Q | \| | \| | \| | \| |
| 1+ 5 | 0.0706 | 1.03 | V Q | \| | \| | \| | \| |
| 1+10 | 0.0768 | 0.91 | VQ | \| | \| | \| | \| |
| 1+15 | 0.0828 | 0.88 | VQ | \| | \| | \| | \| |
| 1+20 | 0.0888 | 0.86 | VQ | \| | \| | \| | \| |
| 1+25 | 0.0947 | 0.86 | VQ | \| | \| | \| | \| |
| 1+30 | 0.1006 | 0.86 | VQ | \| | \| | \| | \| |
| 1+35 | 0.1065 | 0.86 | VQ | \| | \| | \| | \| |
| 1+40 | 0.1124 | 0.86 | VQ | \| | \| | \| | \| |
| 1+45 | 0.1182 | 0.86 | VQ | \| | \| | \| | \| |
| 1+50 | 0.1248 | 0.96 | VQ | \| | \| | \| | \| |
| 1+55 | 0.1323 | 1.09 | V Q | \| | \| | \| | \| |
| 2+ 0 | 0.1400 | 1.12 | V Q | \| | \| | \| | \| |
| 2+ 5 | 0.1478 | 1.13 | V Q | \| | \| | \| | \| |
| 2+10 | 0.1557 | 1.14 | V Q | \| | \| | \| | \| |
| 2+15 | 0.1635 | 1.14 | \|VQ | \| | \| | \| | \| |
| 2+20 | 0.1714 | 1.14 | \|VQ | \| | \| | \| | \| |
| 2+25 | 0.1792 | 1.14 | \|VQ | \| | \| | \| | \| |
| 2+30 | 0.1871 | 1.14 | \|VQ | \| | \| | \| | \| |
| 2+35 | 0.1957 | 1.24 | \|VQ | \| | \| | \| | \| |
| 2+40 | 0.2051 | 1.37 | \|VQ | \| | \| | \| | \| |
| 2+45 | 0.2148 | 1.40 | \|VQ | \| | \| | \| | \| |
| 2+50 | 0.2245 | 1.42 | \|VQ | \| | \| | \| | \| |
| 2+55 | 0.2344 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+ 0 | 0.2442 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+ 5 | 0.2540 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+10 | 0.2638 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+15 | 0.2736 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+20 | 0.2834 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+25 | 0.2933 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+30 | 0.3031 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+35 | 0.3129 | 1.43 | \|VQ | \| | \| | \| | \| |
| 3+40 | 0.3227 | 1.43 | \| Q | \| | \| | \| | \| |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3+45 | 0.3325 | 1.43 | Q | | | |
| 3+50 | 0.3430 | 1.53 | VQ | | | |
| 3+55 | 0.3545 | 1.66 | VQ | | | |
| 4+ 0 | 0.3661 | 1.69 | VQ | | | |
| 4+ 5 | 0.3778 | 1.70 | VQ | | | |
| 4+10 | 0.3896 | 1.71 | VQ | | | |
| 4+15 | 0.4014 | 1.71 | VQ | | | |
| 4+20 | 0.4139 | 1.81 | VQ | | | |
| 4+25 | 0.4272 | 1.94 | VQ | | | |
| 4+30 | 0.4408 | 1.97 | VQ | | | |
| 4+35 | 0.4545 | 1.99 | VQ | | | |
| 4+40 | 0.4683 | 2.00 | VQ | | | |
| 4+45 | 0.4820 | 2.00 | Q | | | |
| 4+50 | 0.4965 | 2.10 | VQ | | | |
| 4+55 | 0.5118 | 2.23 | VQ | | | |
| 5+ 0 | 0.5274 | 2.26 | VQ | | | |
| 5+ 5 | 0.5416 | 2.07 | VQ | | | |
| 5+10 | 0.5541 | 1.81 | Q | | | |
| 5+15 | 0.5661 | 1.75 | Q | | | |
| 5+20 | 0.5787 | 1.83 | Q | | | |
| 5+25 | 0.5921 | 1.94 | Q | | | |
| 5+30 | 0.6057 | 1.97 | Q | | | |
| 5+35 | 0.6201 | 2.09 | VQ | | | |
| 5+40 | 0.6355 | 2.23 | Q | | | |
| 5+45 | 0.6510 | 2.26 | Q | | | |
| 5+50 | 0.6667 | 2.27 | Q | | | |
| 5+55 | 0.6824 | 2.28 | Q | | | |
| 6+ 0 | 0.6981 | 2.28 | Q | | | |
| 6+ 5 | 0.7145 | 2.38 | Q | | | |
| 6+10 | 0.7318 | 2.51 | VQ | | | |
| 6+15 | 0.7493 | 2.54 | VQ | | | |
| 6+20 | 0.7669 | 2.56 | VQ | | | |
| 6+25 | 0.7846 | 2.57 | VQ | | | |
| 6+30 | 0.8023 | 2.57 | Q | | | |
| 6+35 | 0.8206 | 2.67 | Q | | | |
| 6+40 | 0.8399 | 2.80 | Q | | | |
| 6+45 | 0.8594 | 2.83 | Q | | | |
| 6+50 | 0.8790 | 2.84 | Q | | | |
| 6+55 | 0.8986 | 2.85 | Q | | | |
| 7+ 0 | 0.9182 | 2.85 | Q | | | |
| 7+ 5 | 0.9379 | 2.85 | Q | | | |
| 7+10 | 0.9575 | 2.85 | QV | | | |
| 7+15 | 0.9771 | 2.85 | QV | | | |
| 7+20 | 0.9975 | 2.95 | QV | | | |
| 7+25 | 1.0187 | 3.08 | Q | | | |
| 7+30 | 1.0402 | 3.11 | Q | | | |
| 7+35 | 1.0624 | 3.23 | Q | | | |
| 7+40 | 1.0856 | 3.37 | Q | | | |
| 7+45 | 1.1090 | 3.40 | Q | | | |
| 7+50 | 1.1332 | 3.51 | Q | | | |
| 7+55 | 1.1584 | 3.65 | Q | | | |

```
 8+ 0       1.1838      3.68  |      Q  |          |          |          |
 8+ 5       1.2106      3.90  |      Q  |          |          |          |
 8+10       1.2394      4.17  |      VQ |          |          |          |
 8+15       1.2685      4.23  |      VQ |          |          |          |
 8+20       1.2979      4.26  |       Q |          |          |          |
 8+25       1.3273      4.28  |       Q |          |          |          |
 8+30       1.3568      4.28  |       Q |          |          |          |
 8+35       1.3869      4.38  |       Q |          |          |          |
 8+40       1.4180      4.51  |       VQ|          |          |          |
 8+45       1.4492      4.54  |        Q|          |          |          |
 8+50       1.4813      4.65  |        Q|          |          |          |
 8+55       1.5143      4.79  |        Q|          |          |          |
 9+ 0       1.5475      4.82  |        Q|          |          |          |
 9+ 5       1.5824      5.07  |        VQ          |          |          |
 9+10       1.6194      5.37  |         Q          |          |          |
 9+15       1.6570      5.45  |         Q          |          |          |
 9+20       1.6957      5.62  |         VQ         |          |          |
 9+25       1.7358      5.83  |         VQ         |          |          |
 9+30       1.7763      5.88  |         |Q         |          |          |
 9+35       1.8179      6.04  |         |VQ        |          |          |
 9+40       1.8609      6.24  |         |VQ        |          |          |
 9+45       1.9042      6.29  |         | Q        |          |          |
 9+50       1.9486      6.45  |         | Q        |          |          |
 9+55       1.9944      6.65  |         | VQ       |          |          |
10+ 0       2.0406      6.70  |         | VQ       |          |          |
10+ 5       2.0807      5.84  |         |Q V       |          |          |
10+10       2.1132      4.72  |        Q|  V       |          |          |
10+15       2.1439      4.46  |       Q |  V       |          |          |
10+20       2.1738      4.35  |       Q |  V       |          |          |
10+25       2.2033      4.28  |       Q |  V       |          |          |
10+30       2.2327      4.28  |       Q |   V      |          |          |
10+35       2.2665      4.90  |        Q|   V      |          |          |
10+40       2.3059      5.71  |         |Q  V      |          |          |
10+45       2.3465      5.90  |         |Q  V      |          |          |
10+50       2.3878      5.99  |         |Q   V     |          |          |
10+55       2.4294      6.05  |         | Q  V     |          |          |
11+ 0       2.4711      6.06  |         | Q  V     |          |          |
11+ 5       2.5119      5.93  |         |Q   V     |          |          |
11+10       2.5516      5.76  |         |Q    V    |          |          |
11+15       2.5910      5.72  |         |Q    V    |          |          |
11+20       2.6303      5.71  |         |Q    V    |          |          |
11+25       2.6697      5.71  |         |Q    V    |          |          |
11+30       2.7091      5.72  |         |Q     V   |          |          |
11+35       2.7466      5.45  |         Q      V   |          |          |
11+40       2.7817      5.10  |         Q      V   |          |          |
11+45       2.8164      5.03  |         Q      V   |          |          |
11+50       2.8518      5.14  |         Q      V   |          |          |
11+55       2.8883      5.30  |         Q       V  |          |          |
12+ 0       2.9252      5.35  |         Q       V  |          |          |
12+ 5       2.9689      6.35  |         | Q     V  |          |          |
12+10       3.0213      7.61  |         |    Q   V|          |          |
```

```
12+15       3.0757      7.90  |          |    Q   V|          |          |
12+20       3.1320      8.17  |          |     Q  V|          |          |
12+25       3.1901      8.43  |          |     Q   V          |          |
12+30       3.2485      8.48  |          |     Q   V          |          |
12+35       3.3089      8.78  |          |      Q  V          |          |
12+40       3.3720      9.16  |          |       Q |V         |          |
12+45       3.4357      9.24  |          |       Q |V         |          |
12+50       3.5006      9.43  |          |       Q | V        |          |
12+55       3.5669      9.63  |          |        Q| V        |          |
13+ 0       3.6336      9.68  |          |        Q| V        |          |
13+ 5       3.7052     10.40  |          |         Q  V       |          |
13+10       3.7831     11.30  |          |         | QV       |          |
13+15       3.8624     11.51  |          |         |  QV      |          |
13+20       3.9423     11.61  |          |         |  QV      |          |
13+25       4.0227     11.67  |          |         |  Q V     |          |
13+30       4.1031     11.68  |          |         |  Q V     |          |
13+35       4.1731     10.16  |          |         Q     V    |          |
13+40       4.2297      8.22  |          |     Q   |     V    |          |
13+45       4.2832      7.78  |          |    Q    |      V   |          |
13+50       4.3355      7.59  |          |    Q    |      V   |          |
13+55       4.3870      7.48  |          |   Q     |      V   |          |
14+ 0       4.4386      7.48  |          |   Q     |      V   |          |
14+ 5       4.4940      8.05  |          |     Q   |       V  |          |
14+10       4.5543      8.76  |          |      Q  |       V  |          |
14+15       4.6159      8.93  |          |      Q  |        V|          |
14+20       4.6769      8.87  |          |      Q  |        V|          |
14+25       4.7372      8.74  |          |      Q  |        V|          |
14+30       4.7972      8.71  |          |      Q  |         V          |
14+35       4.8571      8.70  |          |      Q  |         V          |
14+40       4.9170      8.70  |          |      Q  |         |V         |
14+45       4.9769      8.70  |          |      Q  |         |V         |
14+50       5.0359      8.57  |          |      Q  |         |V         |
14+55       5.0938      8.40  |          |     Q   |         | V        |
15+ 0       5.1514      8.37  |          |     Q   |         | V        |
15+ 5       5.2080      8.22  |          |     Q   |         | V        |
15+10       5.2633      8.03  |          |     Q   |         |  V       |
15+15       5.3184      8.00  |          |     Q   |         |  V       |
15+20       5.3724      7.85  |          |    Q    |         |  V       |
15+25       5.4253      7.67  |          |    Q    |         |   V      |
15+30       5.4778      7.63  |          |    Q    |         |   V      |
15+35       5.5265      7.07  |          |   Q     |         |   V      |
15+40       5.5703      6.35  |         | Q       |         |    V     |
15+45       5.6130      6.20  |         | Q       |         |    V     |
15+50       5.6552      6.13  |         | Q       |         |    V     |
15+55       5.6972      6.10  |         | Q       |         |    V     |
16+ 0       5.7392      6.10  |         | Q       |         |     V    |
16+ 5       5.7690      4.32  |       Q |         |         |     V    |
16+10       5.7830      2.03  |   Q     |         |         |     V    |
16+15       5.7933      1.51  |  Q      |         |         |     V    |
16+20       5.8022      1.28  | Q       |         |         |     V    |
16+25       5.8100      1.14  | Q       |         |         |     V    |
```

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16+30       5.8179      1.14  | Q       |         |         |     V   |
16+35       5.8250      1.04  | Q       |         |         |     V   |
16+40       5.8313      0.91  |Q        |         |         |     V   |
16+45       5.8373      0.88  |Q        |         |         |     V   |
16+50       5.8433      0.86  |Q        |         |         |     V   |
16+55       5.8491      0.86  |Q        |         |         |     V   |
17+ 0       5.8550      0.86  |Q        |         |         |     V   |
17+ 5       5.8623      1.06  | Q       |         |         |     V   |
17+10       5.8714      1.32  | Q       |         |         |      V  |
17+15       5.8810      1.38  | Q       |         |         |      V  |
17+20       5.8907      1.41  | Q       |         |         |      V  |
17+25       5.9005      1.43  | Q       |         |         |      V  |
17+30       5.9103      1.43  | Q       |         |         |      V  |
17+35       5.9201      1.43  | Q       |         |         |      V  |
17+40       5.9299      1.43  | Q       |         |         |      V  |
17+45       5.9397      1.43  | Q       |         |         |      V  |
17+50       5.9489      1.32  | Q       |         |         |      V  |
17+55       5.9571      1.19  | Q       |         |         |      V  |
18+ 0       5.9651      1.16  | Q       |         |         |      V  |
18+ 5       5.9730      1.15  | Q       |         |         |      V  |
18+10       5.9808      1.14  | Q       |         |         |      V  |
18+15       5.9887      1.14  | Q       |         |         |      V  |
18+20       5.9965      1.14  | Q       |         |         |      V  |
18+25       6.0044      1.14  | Q       |         |         |      V  |
18+30       6.0122      1.14  | Q       |         |         |      V  |
18+35       6.0194      1.04  | Q       |         |         |      V  |
18+40       6.0256      0.91  |Q        |         |         |      V  |
18+45       6.0316      0.88  |Q        |         |         |       V |
18+50       6.0369      0.76  |Q        |         |         |       V |
18+55       6.0412      0.62  |Q        |         |         |       V |
19+ 0       6.0452      0.59  |Q        |         |         |       V |
19+ 5       6.0499      0.68  |Q        |         |         |       V |
19+10       6.0555      0.80  |Q        |         |         |       V |
19+15       6.0612      0.83  |Q        |         |         |       V |
19+20       6.0677      0.95  |Q        |         |         |       V |
19+25       6.0752      1.09  | Q       |         |         |       V |
19+30       6.0829      1.12  | Q       |         |         |       V |
19+35       6.0900      1.03  | Q       |         |         |       V |
19+40       6.0963      0.91  |Q        |         |         |       V |
19+45       6.1023      0.88  |Q        |         |         |       V |
19+50       6.1075      0.76  |Q        |         |         |       V |
19+55       6.1118      0.62  |Q        |         |         |       V |
20+ 0       6.1159      0.59  |Q        |         |         |       V |
20+ 5       6.1206      0.68  |Q        |         |         |       V |
20+10       6.1261      0.80  |Q        |         |         |       V |
20+15       6.1319      0.83  |Q        |         |         |       V |
20+20       6.1377      0.85  |Q        |         |         |       V |
20+25       6.1436      0.86  |Q        |         |         |       V |
20+30       6.1495      0.86  |Q        |         |         |       V |
20+35       6.1554      0.86  |Q        |         |         |       V |
20+40       6.1613      0.86  |Q        |         |         |       V |
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```
   20+45       6.1671      0.86  |Q         |          |          |        V |
   20+50       6.1723      0.75  |Q         |          |          |        V |
   20+55       6.1766      0.62  |Q         |          |          |        V |
   21+ 0       6.1807      0.59  |Q         |          |          |        V |
   21+ 5       6.1854      0.68  |Q         |          |          |         V|
   21+10       6.1909      0.80  |Q         |          |          |         V|
   21+15       6.1966      0.83  |Q         |          |          |         V|
   21+20       6.2018      0.74  |Q         |          |          |         V|
   21+25       6.2060      0.62  |Q         |          |          |         V|
   21+30       6.2101      0.59  |Q         |          |          |         V|
   21+35       6.2148      0.68  |Q         |          |          |         V|
   21+40       6.2203      0.80  |Q         |          |          |         V|
   21+45       6.2261      0.83  |Q         |          |          |         V|
   21+50       6.2312      0.74  |Q         |          |          |         V|
   21+55       6.2355      0.62  |Q         |          |          |         V|
   22+ 0       6.2396      0.59  |Q         |          |          |         V|
   22+ 5       6.2443      0.68  |Q         |          |          |         V|
   22+10       6.2498      0.80  |Q         |          |          |         V|
   22+15       6.2555      0.83  |Q         |          |          |         V|
   22+20       6.2607      0.74  |Q         |          |          |         V|
   22+25       6.2649      0.62  |Q         |          |          |         V|
   22+30       6.2690      0.59  |Q         |          |          |         V|
   22+35       6.2730      0.58  |Q         |          |          |         V|
   22+40       6.2769      0.57  |Q         |          |          |         V|
   22+45       6.2808      0.57  |Q         |          |          |         V|
   22+50       6.2848      0.57  |Q         |          |          |         V|
   22+55       6.2887      0.57  |Q         |          |          |         V|
   23+ 0       6.2926      0.57  |Q         |          |          |         V|
   23+ 5       6.2965      0.57  |Q         |          |          |         V|
   23+10       6.3005      0.57  |Q         |          |          |         V|
   23+15       6.3044      0.57  |Q         |          |          |         V|
   23+20       6.3083      0.57  |Q         |          |          |         V|
   23+25       6.3123      0.57  |Q         |          |          |         V|
   23+30       6.3162      0.57  |Q         |          |          |         V|
   23+35       6.3201      0.57  |Q         |          |          |         V|
   23+40       6.3240      0.57  |Q         |          |          |         V|
   23+45       6.3280      0.57  |Q         |          |          |         V|
   23+50       6.3319      0.57  |Q         |          |          |         V|
   23+55       6.3358      0.57  |Q         |          |          |         V|
   24+ 0       6.3397      0.57  |Q         |          |          |         V|
   24+ 5       6.3422      0.36  Q          |          |          |         V|
   24+10       6.3429      0.10  Q          |          |          |         V|
   24+15       6.3432      0.04  Q          |          |          |         V|
   24+20       6.3434      0.02  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  12/06/22 File: proposedc24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
PROPOSED BASIN C
12/06/2022

-------------------------------------------------------------------
Drainage Area =      15.70(Ac.)  =      0.025 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =      15.70(Ac.)  =
0.025 Sq. Mi.
Length along longest watercourse =    1648.00(Ft.)
Length along longest watercourse measured to centroid =     824.00(Ft.)
Length along longest watercourse =      0.312 Mi.
Length along longest watercourse measured to centroid =      0.156 Mi.
Difference in elevation =      68.00(Ft.)
Slope along watercourse =    217.8641 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.041 Hr.
Lag time =     2.46 Min.
25% of lag time =     0.62 Min.
40% of lag time =     0.99 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 15.70 | 2.00 | 31.40 |

100 YEAR Area rainfall data:

| Area(Ac.)[1] | Rainfall(In)[2] | Weighting[1*2] |
|---|---|---|
| 15.70 | 5.00 | 78.50 |

STORM EVENT (YEAR) = 100.00
Area Averaged 2-Year Rainfall = 2.000(In)
Area Averaged 100-Year Rainfall = 5.000(In)

Point rain (area averaged) = 5.000(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 5.000(In)

Sub-Area Data:

| Area(Ac.) | Runoff Index | Impervious % |
|---|---|---|
| 15.700 | 56.00 | 0.400 |

Total Area Entered = 15.70(Ac.)

| RI AMC2 | RI AMC-3 | Infil. Rate (In/Hr) | Impervious (Dec.%) | Adj. Infil. Rate (In/Hr) | Area% (Dec.) | F (In/Hr) |
|---|---|---|---|---|---|---|
| 56.0 | 74.8 | 0.305 | 0.400 | 0.195 | 1.000 | 0.195 |
| | | | | | Sum (F) = | 0.195 |

Area averaged mean soil loss (F) (In/Hr) = 0.195
Minimum soil loss rate ((In/Hr)) = 0.098
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.580

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U n i t H y d r o g r a p h
VALLEY S-Curve

---

Unit Hydrograph Data

| Unit time period (hrs) | | Time % of lag | Distribution Graph % | Unit Hydrograph (CFS) |
|---|---|---|---|---|
| 1 | 0.083 | 202.991 | 43.914 | 6.948 |
| 2 | 0.167 | 405.982 | 43.159 | 6.829 |
| 3 | 0.250 | 608.974 | 8.673 | 1.372 |
| 4 | 0.333 | 811.965 | 4.254 | 0.673 |
| | | | Sum = 100.000 | Sum= 15.823 |

---

The following loss rate calculations reflect use of the minimum calculated loss rate subtracted from the Storm Rain to produce the maximum Effective Rain value

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.346) | 0.023 | 0.017 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.345) | 0.023 | 0.017 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.344) | 0.023 | 0.017 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.342) | 0.035 | 0.025 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.341) | 0.035 | 0.025 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.340) | 0.035 | 0.025 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.338) | 0.035 | 0.025 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.337) | 0.035 | 0.025 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.336) | 0.035 | 0.025 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.334) | 0.046 | 0.034 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.333) | 0.046 | 0.034 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.332) | 0.046 | 0.034 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.331) | 0.035 | 0.025 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.329) | 0.035 | 0.025 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.328) | 0.035 | 0.025 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.327) | 0.035 | 0.025 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.325) | 0.035 | 0.025 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.324) | 0.035 | 0.025 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.323) | 0.035 | 0.025 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.321) | 0.035 | 0.025 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.320) | 0.035 | 0.025 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.319) | 0.046 | 0.034 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.318) | 0.046 | 0.034 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.316) | 0.046 | 0.034 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.315) | 0.046 | 0.034 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.314) | 0.046 | 0.034 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.312) | 0.046 | 0.034 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.311) | 0.046 | 0.034 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.310) | 0.046 | 0.034 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.309) | 0.046 | 0.034 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.307) | 0.058 | 0.042 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.306) | 0.058 | 0.042 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.305) | 0.058 | 0.042 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.304) | 0.058 | 0.042 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.302) | 0.058 | 0.042 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.301) | 0.058 | 0.042 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.300) | 0.058 | 0.042 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.299) | 0.058 | 0.042 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.297) | 0.058 | 0.042 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.296) | 0.058 | 0.042 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.295) | 0.058 | 0.042 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.294) | 0.058 | 0.042 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.292) | 0.058 | 0.042 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.291) | 0.058 | 0.042 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.290) | 0.058 | 0.042 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.289) | 0.070 | 0.050 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.288) | 0.070 | 0.050 |
| 48 | 4.00 | 0.20 | 0.120 | ( 0.286) | 0.070 | 0.050 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 49 | 4.08 | 0.20 | 0.120 | ( 0.285) | 0.070 | 0.050 |
| 50 | 4.17 | 0.20 | 0.120 | ( 0.284) | 0.070 | 0.050 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.283) | 0.070 | 0.050 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.281) | 0.081 | 0.059 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.280) | 0.081 | 0.059 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.279) | 0.081 | 0.059 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.278) | 0.081 | 0.059 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.277) | 0.081 | 0.059 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.275) | 0.081 | 0.059 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.274) | 0.093 | 0.067 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.273) | 0.093 | 0.067 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.272) | 0.093 | 0.067 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.271) | 0.070 | 0.050 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.270) | 0.070 | 0.050 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.268) | 0.070 | 0.050 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.267) | 0.081 | 0.059 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.266) | 0.081 | 0.059 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.265) | 0.081 | 0.059 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.264) | 0.093 | 0.067 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.263) | 0.093 | 0.067 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.261) | 0.093 | 0.067 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.260) | 0.093 | 0.067 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.259) | 0.093 | 0.067 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.258) | 0.093 | 0.067 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.257) | 0.104 | 0.076 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.256) | 0.104 | 0.076 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.255) | 0.104 | 0.076 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.253) | 0.104 | 0.076 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.252) | 0.104 | 0.076 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.251) | 0.104 | 0.076 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.250) | 0.116 | 0.084 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.249) | 0.116 | 0.084 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.248) | 0.116 | 0.084 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.247) | 0.116 | 0.084 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.246) | 0.116 | 0.084 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.244) | 0.116 | 0.084 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.243) | 0.116 | 0.084 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.242) | 0.116 | 0.084 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.241) | 0.116 | 0.084 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.240) | 0.128 | 0.092 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.239) | 0.128 | 0.092 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.238) | 0.128 | 0.092 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.237) | 0.139 | 0.101 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.236) | 0.139 | 0.101 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.235) | 0.139 | 0.101 |
| 94 | 7.83 | 0.43 | 0.260 | ( 0.233) | 0.151 | 0.109 |
| 95 | 7.92 | 0.43 | 0.260 | ( 0.232) | 0.151 | 0.109 |
| 96 | 8.00 | 0.43 | 0.260 | ( 0.231) | 0.151 | 0.109 |
| 97 | 8.08 | 0.50 | 0.300 | ( 0.230) | 0.174 | 0.126 |
| 98 | 8.17 | 0.50 | 0.300 | ( 0.229) | 0.174 | 0.126 |
| 99 | 8.25 | 0.50 | 0.300 | ( 0.228) | 0.174 | 0.126 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 100 | 8.33 | 0.50 | 0.300 | ( 0.227) | 0.174 | 0.126 |
| 101 | 8.42 | 0.50 | 0.300 | ( 0.226) | 0.174 | 0.126 |
| 102 | 8.50 | 0.50 | 0.300 | ( 0.225) | 0.174 | 0.126 |
| 103 | 8.58 | 0.53 | 0.320 | ( 0.224) | 0.186 | 0.134 |
| 104 | 8.67 | 0.53 | 0.320 | ( 0.223) | 0.186 | 0.134 |
| 105 | 8.75 | 0.53 | 0.320 | ( 0.222) | 0.186 | 0.134 |
| 106 | 8.83 | 0.57 | 0.340 | ( 0.221) | 0.197 | 0.143 |
| 107 | 8.92 | 0.57 | 0.340 | ( 0.220) | 0.197 | 0.143 |
| 108 | 9.00 | 0.57 | 0.340 | ( 0.219) | 0.197 | 0.143 |
| 109 | 9.08 | 0.63 | 0.380 | 0.218 | ( 0.220) | 0.162 |
| 110 | 9.17 | 0.63 | 0.380 | 0.217 | ( 0.220) | 0.163 |
| 111 | 9.25 | 0.63 | 0.380 | 0.216 | ( 0.220) | 0.164 |
| 112 | 9.33 | 0.67 | 0.400 | 0.214 | ( 0.232) | 0.186 |
| 113 | 9.42 | 0.67 | 0.400 | 0.213 | ( 0.232) | 0.187 |
| 114 | 9.50 | 0.67 | 0.400 | 0.212 | ( 0.232) | 0.188 |
| 115 | 9.58 | 0.70 | 0.420 | 0.211 | ( 0.244) | 0.209 |
| 116 | 9.67 | 0.70 | 0.420 | 0.210 | ( 0.244) | 0.210 |
| 117 | 9.75 | 0.70 | 0.420 | 0.209 | ( 0.244) | 0.211 |
| 118 | 9.83 | 0.73 | 0.440 | 0.208 | ( 0.255) | 0.232 |
| 119 | 9.92 | 0.73 | 0.440 | 0.207 | ( 0.255) | 0.233 |
| 120 | 10.00 | 0.73 | 0.440 | 0.206 | ( 0.255) | 0.234 |
| 121 | 10.08 | 0.50 | 0.300 | ( 0.205) | 0.174 | 0.126 |
| 122 | 10.17 | 0.50 | 0.300 | ( 0.204) | 0.174 | 0.126 |
| 123 | 10.25 | 0.50 | 0.300 | ( 0.203) | 0.174 | 0.126 |
| 124 | 10.33 | 0.50 | 0.300 | ( 0.202) | 0.174 | 0.126 |
| 125 | 10.42 | 0.50 | 0.300 | ( 0.201) | 0.174 | 0.126 |
| 126 | 10.50 | 0.50 | 0.300 | ( 0.200) | 0.174 | 0.126 |
| 127 | 10.58 | 0.67 | 0.400 | 0.199 | ( 0.232) | 0.201 |
| 128 | 10.67 | 0.67 | 0.400 | 0.198 | ( 0.232) | 0.202 |
| 129 | 10.75 | 0.67 | 0.400 | 0.198 | ( 0.232) | 0.202 |
| 130 | 10.83 | 0.67 | 0.400 | 0.197 | ( 0.232) | 0.203 |
| 131 | 10.92 | 0.67 | 0.400 | 0.196 | ( 0.232) | 0.204 |
| 132 | 11.00 | 0.67 | 0.400 | 0.195 | ( 0.232) | 0.205 |
| 133 | 11.08 | 0.63 | 0.380 | 0.194 | ( 0.220) | 0.186 |
| 134 | 11.17 | 0.63 | 0.380 | 0.193 | ( 0.220) | 0.187 |
| 135 | 11.25 | 0.63 | 0.380 | 0.192 | ( 0.220) | 0.188 |
| 136 | 11.33 | 0.63 | 0.380 | 0.191 | ( 0.220) | 0.189 |
| 137 | 11.42 | 0.63 | 0.380 | 0.190 | ( 0.220) | 0.190 |
| 138 | 11.50 | 0.63 | 0.380 | 0.189 | ( 0.220) | 0.191 |
| 139 | 11.58 | 0.57 | 0.340 | 0.188 | ( 0.197) | 0.152 |
| 140 | 11.67 | 0.57 | 0.340 | 0.187 | ( 0.197) | 0.153 |
| 141 | 11.75 | 0.57 | 0.340 | 0.186 | ( 0.197) | 0.154 |
| 142 | 11.83 | 0.60 | 0.360 | 0.185 | ( 0.209) | 0.175 |
| 143 | 11.92 | 0.60 | 0.360 | 0.184 | ( 0.209) | 0.176 |
| 144 | 12.00 | 0.60 | 0.360 | 0.183 | ( 0.209) | 0.177 |
| 145 | 12.08 | 0.83 | 0.500 | 0.182 | ( 0.290) | 0.318 |
| 146 | 12.17 | 0.83 | 0.500 | 0.182 | ( 0.290) | 0.318 |
| 147 | 12.25 | 0.83 | 0.500 | 0.181 | ( 0.290) | 0.319 |
| 148 | 12.33 | 0.87 | 0.520 | 0.180 | ( 0.302) | 0.340 |
| 149 | 12.42 | 0.87 | 0.520 | 0.179 | ( 0.302) | 0.341 |
| 150 | 12.50 | 0.87 | 0.520 | 0.178 | ( 0.302) | 0.342 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 151 | 12.58 | 0.93 | 0.560 | 0.177 | ( 0.325) | 0.383 |
| 152 | 12.67 | 0.93 | 0.560 | 0.176 | ( 0.325) | 0.384 |
| 153 | 12.75 | 0.93 | 0.560 | 0.175 | ( 0.325) | 0.385 |
| 154 | 12.83 | 0.97 | 0.580 | 0.174 | ( 0.336) | 0.406 |
| 155 | 12.92 | 0.97 | 0.580 | 0.173 | ( 0.336) | 0.407 |
| 156 | 13.00 | 0.97 | 0.580 | 0.173 | ( 0.336) | 0.407 |
| 157 | 13.08 | 1.13 | 0.680 | 0.172 | ( 0.394) | 0.508 |
| 158 | 13.17 | 1.13 | 0.680 | 0.171 | ( 0.394) | 0.509 |
| 159 | 13.25 | 1.13 | 0.680 | 0.170 | ( 0.394) | 0.510 |
| 160 | 13.33 | 1.13 | 0.680 | 0.169 | ( 0.394) | 0.511 |
| 161 | 13.42 | 1.13 | 0.680 | 0.168 | ( 0.394) | 0.512 |
| 162 | 13.50 | 1.13 | 0.680 | 0.167 | ( 0.394) | 0.513 |
| 163 | 13.58 | 0.77 | 0.460 | 0.167 | ( 0.267) | 0.293 |
| 164 | 13.67 | 0.77 | 0.460 | 0.166 | ( 0.267) | 0.294 |
| 165 | 13.75 | 0.77 | 0.460 | 0.165 | ( 0.267) | 0.295 |
| 166 | 13.83 | 0.77 | 0.460 | 0.164 | ( 0.267) | 0.296 |
| 167 | 13.92 | 0.77 | 0.460 | 0.163 | ( 0.267) | 0.297 |
| 168 | 14.00 | 0.77 | 0.460 | 0.162 | ( 0.267) | 0.298 |
| 169 | 14.08 | 0.90 | 0.540 | 0.162 | ( 0.313) | 0.378 |
| 170 | 14.17 | 0.90 | 0.540 | 0.161 | ( 0.313) | 0.379 |
| 171 | 14.25 | 0.90 | 0.540 | 0.160 | ( 0.313) | 0.380 |
| 172 | 14.33 | 0.87 | 0.520 | 0.159 | ( 0.302) | 0.361 |
| 173 | 14.42 | 0.87 | 0.520 | 0.158 | ( 0.302) | 0.362 |
| 174 | 14.50 | 0.87 | 0.520 | 0.157 | ( 0.302) | 0.363 |
| 175 | 14.58 | 0.87 | 0.520 | 0.157 | ( 0.302) | 0.363 |
| 176 | 14.67 | 0.87 | 0.520 | 0.156 | ( 0.302) | 0.364 |
| 177 | 14.75 | 0.87 | 0.520 | 0.155 | ( 0.302) | 0.365 |
| 178 | 14.83 | 0.83 | 0.500 | 0.154 | ( 0.290) | 0.346 |
| 179 | 14.92 | 0.83 | 0.500 | 0.153 | ( 0.290) | 0.347 |
| 180 | 15.00 | 0.83 | 0.500 | 0.153 | ( 0.290) | 0.347 |
| 181 | 15.08 | 0.80 | 0.480 | 0.152 | ( 0.278) | 0.328 |
| 182 | 15.17 | 0.80 | 0.480 | 0.151 | ( 0.278) | 0.329 |
| 183 | 15.25 | 0.80 | 0.480 | 0.150 | ( 0.278) | 0.330 |
| 184 | 15.33 | 0.77 | 0.460 | 0.150 | ( 0.267) | 0.310 |
| 185 | 15.42 | 0.77 | 0.460 | 0.149 | ( 0.267) | 0.311 |
| 186 | 15.50 | 0.77 | 0.460 | 0.148 | ( 0.267) | 0.312 |
| 187 | 15.58 | 0.63 | 0.380 | 0.147 | ( 0.220) | 0.233 |
| 188 | 15.67 | 0.63 | 0.380 | 0.146 | ( 0.220) | 0.233 |
| 189 | 15.75 | 0.63 | 0.380 | 0.146 | ( 0.220) | 0.234 |
| 190 | 15.83 | 0.63 | 0.380 | 0.145 | ( 0.220) | 0.235 |
| 191 | 15.92 | 0.63 | 0.380 | 0.144 | ( 0.220) | 0.236 |
| 192 | 16.00 | 0.63 | 0.380 | 0.144 | ( 0.220) | 0.236 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.143) | 0.046 | 0.034 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.142) | 0.046 | 0.034 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.141) | 0.046 | 0.034 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.141) | 0.046 | 0.034 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.140) | 0.046 | 0.034 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.139) | 0.046 | 0.034 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.138) | 0.035 | 0.025 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.138) | 0.035 | 0.025 |
| 201 | 16.75 | 0.10 | 0.060 | ( 0.137) | 0.035 | 0.025 |

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|---|---|---|---|---|---|---|
| 202 | 16.83 | 0.10 | 0.060 | ( 0.136) | 0.035 | 0.025 |
| 203 | 16.92 | 0.10 | 0.060 | ( 0.136) | 0.035 | 0.025 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.135) | 0.035 | 0.025 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.134) | 0.058 | 0.042 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.134) | 0.058 | 0.042 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.133) | 0.058 | 0.042 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.132) | 0.058 | 0.042 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.132) | 0.058 | 0.042 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.131) | 0.058 | 0.042 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.130) | 0.058 | 0.042 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.130) | 0.058 | 0.042 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.129) | 0.058 | 0.042 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.128) | 0.046 | 0.034 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.128) | 0.046 | 0.034 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.127) | 0.046 | 0.034 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.126) | 0.046 | 0.034 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.126) | 0.046 | 0.034 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.125) | 0.046 | 0.034 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.125) | 0.046 | 0.034 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.124) | 0.046 | 0.034 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.123) | 0.046 | 0.034 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.123) | 0.035 | 0.025 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.122) | 0.035 | 0.025 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.122) | 0.035 | 0.025 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.121) | 0.023 | 0.017 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.120) | 0.023 | 0.017 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.120) | 0.023 | 0.017 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.119) | 0.035 | 0.025 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.119) | 0.035 | 0.025 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.118) | 0.035 | 0.025 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.118) | 0.046 | 0.034 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.117) | 0.046 | 0.034 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.117) | 0.046 | 0.034 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.116) | 0.035 | 0.025 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.116) | 0.035 | 0.025 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.115) | 0.035 | 0.025 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.115) | 0.023 | 0.017 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.114) | 0.023 | 0.017 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.113) | 0.023 | 0.017 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.113) | 0.035 | 0.025 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.112) | 0.035 | 0.025 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.112) | 0.035 | 0.025 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.112) | 0.035 | 0.025 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.111) | 0.035 | 0.025 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.111) | 0.035 | 0.025 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.110) | 0.035 | 0.025 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.110) | 0.035 | 0.025 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.109) | 0.035 | 0.025 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.109) | 0.023 | 0.017 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.108) | 0.023 | 0.017 |
| 252 | 21.00 | 0.07 | 0.040 | ( 0.108) | 0.023 | 0.017 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 253 | 21.08 | 0.10 | 0.060 | ( 0.107) | 0.035 | 0.025 |
| 254 | 21.17 | 0.10 | 0.060 | ( 0.107) | 0.035 | 0.025 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.107) | 0.035 | 0.025 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.106) | 0.023 | 0.017 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.106) | 0.023 | 0.017 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.105) | 0.023 | 0.017 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.105) | 0.035 | 0.025 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.105) | 0.035 | 0.025 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.104) | 0.035 | 0.025 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.104) | 0.023 | 0.017 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.104) | 0.023 | 0.017 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.103) | 0.023 | 0.017 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.103) | 0.035 | 0.025 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.103) | 0.035 | 0.025 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.102) | 0.035 | 0.025 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.102) | 0.023 | 0.017 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.102) | 0.023 | 0.017 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.101) | 0.023 | 0.017 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.101) | 0.023 | 0.017 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.101) | 0.023 | 0.017 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.100) | 0.023 | 0.017 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.100) | 0.023 | 0.017 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.100) | 0.023 | 0.017 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.100) | 0.023 | 0.017 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.099) | 0.023 | 0.017 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.099) | 0.023 | 0.017 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.099) | 0.023 | 0.017 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.099) | 0.023 | 0.017 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.099) | 0.023 | 0.017 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.098) | 0.023 | 0.017 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 32.5

Flood volume = Effective rainfall 2.71(In)
times area 15.7(Ac.)/[(In)/(Ft.)] = 3.5(Ac.Ft)
Total soil loss = 2.29(In)
Total soil loss = 2.997(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 154400.7 Cubic Feet
Total soil loss = 130545.5 Cubic Feet

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Peak flow rate of this hydrograph = 8.105(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 | 0.0008 | 0.12 | Q | \| | \| | \| | \| |
| 0+10 | 0.0024 | 0.23 | Q | \| | \| | \| | \| |
| 0+15 | 0.0042 | 0.25 | VQ | \| | \| | \| | \| |
| 0+20 | 0.0064 | 0.32 | VQ | \| | \| | \| | \| |
| 0+25 | 0.0090 | 0.38 | VQ | \| | \| | \| | \| |
| 0+30 | 0.0117 | 0.39 | VQ | \| | \| | \| | \| |
| 0+35 | 0.0145 | 0.40 | VQ | \| | \| | \| | \| |
| 0+40 | 0.0172 | 0.40 | VQ | \| | \| | \| | \| |
| 0+45 | 0.0200 | 0.40 | VQ | \| | \| | \| | \| |
| 0+50 | 0.0231 | 0.46 | VQ | \| | \| | \| | \| |
| 0+55 | 0.0267 | 0.51 | V Q | \| | \| | \| | \| |
| 1+ 0 | 0.0303 | 0.53 | V Q | \| | \| | \| | \| |
| 1+ 5 | 0.0335 | 0.47 | VQ | \| | \| | \| | \| |
| 1+10 | 0.0364 | 0.42 | VQ | \| | \| | \| | \| |
| 1+15 | 0.0392 | 0.40 | VQ | \| | \| | \| | \| |
| 1+20 | 0.0419 | 0.40 | VQ | \| | \| | \| | \| |
| 1+25 | 0.0447 | 0.40 | VQ | \| | \| | \| | \| |
| 1+30 | 0.0474 | 0.40 | VQ | \| | \| | \| | \| |
| 1+35 | 0.0502 | 0.40 | VQ | \| | \| | \| | \| |
| 1+40 | 0.0529 | 0.40 | VQ | \| | \| | \| | \| |
| 1+45 | 0.0557 | 0.40 | VQ | \| | \| | \| | \| |
| 1+50 | 0.0588 | 0.46 | VQ | \| | \| | \| | \| |
| 1+55 | 0.0624 | 0.51 | V Q | \| | \| | \| | \| |
| 2+ 0 | 0.0660 | 0.53 | V Q | \| | \| | \| | \| |
| 2+ 5 | 0.0697 | 0.53 | V Q | \| | \| | \| | \| |
| 2+10 | 0.0733 | 0.53 | V Q | \| | \| | \| | \| |
| 2+15 | 0.0770 | 0.53 | V Q | \| | \| | \| | \| |
| 2+20 | 0.0807 | 0.53 | V Q | \| | \| | \| | \| |
| 2+25 | 0.0843 | 0.53 | V Q | \| | \| | \| | \| |
| 2+30 | 0.0880 | 0.53 | V Q | \| | \| | \| | \| |
| 2+35 | 0.0920 | 0.59 | \|VQ | \| | \| | \| | \| |
| 2+40 | 0.0965 | 0.65 | \|VQ | \| | \| | \| | \| |
| 2+45 | 0.1010 | 0.66 | \|VQ | \| | \| | \| | \| |
| 2+50 | 0.1056 | 0.66 | \|VQ | \| | \| | \| | \| |
| 2+55 | 0.1102 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+ 0 | 0.1148 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+ 5 | 0.1194 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+10 | 0.1239 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+15 | 0.1285 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+20 | 0.1331 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+25 | 0.1377 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+30 | 0.1423 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+35 | 0.1468 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+40 | 0.1514 | 0.66 | \|VQ | \| | \| | \| | \| |
| 3+45 | 0.1560 | 0.66 | \|VQ | \| | \| | \| | \| |

```
3+50       0.1610      0.72  |VQ       |         |         |         |
3+55       0.1664      0.78  |V Q      |         |         |         |
4+ 0       0.1718      0.79  |V Q      |         |         |         |
4+ 5       0.1773      0.80  | VQ      |         |         |         |
4+10       0.1828      0.80  | VQ      |         |         |         |
4+15       0.1883      0.80  | VQ      |         |         |         |
4+20       0.1942      0.86  | VQ      |         |         |         |
4+25       0.2005      0.91  | VQ      |         |         |         |
4+30       0.2069      0.93  | VQ      |         |         |         |
4+35       0.2133      0.93  | VQ      |         |         |         |
4+40       0.2197      0.93  | VQ      |         |         |         |
4+45       0.2261      0.93  | VQ      |         |         |         |
4+50       0.2329      0.99  | VQ      |         |         |         |
4+55       0.2401      1.05  | V Q     |         |         |         |
5+ 0       0.2474      1.06  | V Q     |         |         |         |
5+ 5       0.2539      0.95  | VQ      |         |         |         |
5+10       0.2596      0.83  | VQ      |         |         |         |
5+15       0.2652      0.81  | VQ      |         |         |         |
5+20       0.2711      0.86  |  Q      |         |         |         |
5+25       0.2774      0.91  |  Q      |         |         |         |
5+30       0.2838      0.93  |  Q      |         |         |         |
5+35       0.2906      0.99  |  Q      |         |         |         |
5+40       0.2978      1.05  |  VQ     |         |         |         |
5+45       0.3051      1.06  |  VQ     |         |         |         |
5+50       0.3124      1.06  |  VQ     |         |         |         |
5+55       0.3197      1.06  |  VQ     |         |         |         |
6+ 0       0.3271      1.06  |  VQ     |         |         |         |
6+ 5       0.3348      1.12  |  VQ     |         |         |         |
6+10       0.3429      1.18  |  VQ     |         |         |         |
6+15       0.3511      1.19  |  VQ     |         |         |         |
6+20       0.3594      1.20  |   Q     |         |         |         |
6+25       0.3676      1.20  |   Q     |         |         |         |
6+30       0.3759      1.20  |   Q     |         |         |         |
6+35       0.3845      1.26  |   VQ    |         |         |         |
6+40       0.3935      1.31  |   VQ    |         |         |         |
6+45       0.4027      1.32  |   VQ    |         |         |         |
6+50       0.4118      1.33  |   VQ    |         |         |         |
6+55       0.4210      1.33  |   VQ    |         |         |         |
7+ 0       0.4301      1.33  |   VQ    |         |         |         |
7+ 5       0.4393      1.33  |   VQ    |         |         |         |
7+10       0.4484      1.33  |    Q    |         |         |         |
7+15       0.4576      1.33  |    Q    |         |         |         |
7+20       0.4672      1.39  |    Q    |         |         |         |
7+25       0.4771      1.45  |    Q    |         |         |         |
7+30       0.4872      1.46  |    Q    |         |         |         |
7+35       0.4976      1.52  |    VQ   |         |         |         |
7+40       0.5085      1.58  |    VQ   |         |         |         |
7+45       0.5195      1.59  |    VQ   |         |         |         |
7+50       0.5308      1.65  |    VQ   |         |         |         |
7+55       0.5426      1.71  |     Q   |         |         |         |
8+ 0       0.5545      1.72  |     Q   |         |         |         |
```

```
 8+ 5       0.5672      1.85  |     VQ  |          |          |          |
 8+10       0.5807      1.96  |     VQ  |          |          |          |
 8+15       0.5944      1.98  |     VQ  |          |          |          |
 8+20       0.6081      1.99  |     VQ  |          |          |          |
 8+25       0.6218      1.99  |      Q  |          |          |          |
 8+30       0.6356      1.99  |      Q  |          |          |          |
 8+35       0.6497      2.05  |      VQ |          |          |          |
 8+40       0.6643      2.11  |      VQ |          |          |          |
 8+45       0.6789      2.12  |      VQ |          |          |          |
 8+50       0.6939      2.19  |      VQ |          |          |          |
 8+55       0.7094      2.24  |       Q |          |          |          |
 9+ 0       0.7249      2.25  |       VQ|          |          |          |
 9+ 5       0.7414      2.40  |       VQ|          |          |          |
 9+10       0.7589      2.54  |       V Q          |          |          |
 9+15       0.7767      2.58  |       V Q          |          |          |
 9+20       0.7956      2.75  |       V Q          |          |          |
 9+25       0.8156      2.90  |        V|Q         |          |          |
 9+30       0.8358      2.94  |        V|Q         |          |          |
 9+35       0.8573      3.11  |        V| Q        |          |          |
 9+40       0.8797      3.27  |        V|  Q       |          |          |
 9+45       0.9025      3.31  |         V  Q       |          |          |
 9+50       0.9265      3.48  |         V  Q       |          |          |
 9+55       0.9515      3.63  |         V   Q      |          |          |
10+ 0       0.9768      3.67  |         |V  Q      |          |          |
10+ 5       0.9971      2.95  |         |Q         |          |          |
10+10       1.0123      2.21  |       Q |V         |          |          |
10+15       1.0266      2.07  |       Q |V         |          |          |
10+20       1.0403      1.99  |      Q  |V         |          |          |
10+25       1.0540      1.99  |      Q  |V         |          |          |
10+30       1.0678      1.99  |      Q  | V        |          |          |
10+35       1.0851      2.51  |         Q V        |          |          |
10+40       1.1059      3.03  |         | Q        |          |          |
10+45       1.1276      3.14  |         | Q        |          |          |
10+50       1.1497      3.21  |         | Q        |          |          |
10+55       1.1719      3.22  |         | QV       |          |          |
11+ 0       1.1942      3.24  |         | QV       |          |          |
11+ 5       1.2157      3.12  |         | QV       |          |          |
11+10       1.2363      2.99  |         |Q V       |          |          |
11+15       1.2569      2.98  |         |Q  V      |          |          |
11+20       1.2774      2.98  |         |Q  V      |          |          |
11+25       1.2981      3.00  |         |Q  V      |          |          |
11+30       1.3188      3.01  |         | Q V      |          |          |
11+35       1.3378      2.75  |         |Q   V     |          |          |
11+40       1.3549      2.49  |        Q|    V     |          |          |
11+45       1.3718      2.45  |        Q|    V     |          |          |
11+50       1.3896      2.58  |         Q    V     |          |          |
11+55       1.4084      2.73  |         Q    V     |          |          |
12+ 0       1.4275      2.77  |         |Q    V    |          |          |
12+ 5       1.4535      3.77  |         |    QV    |          |          |
12+10       1.4861      4.74  |         |     V Q  |          |          |
12+15       1.5202      4.95  |         |      V Q|          |          |
```

```
12+20       1.5560      5.20  |         |      V  Q         |         |
12+25       1.5929      5.35  |         |      V  |Q        |         |
12+30       1.6300      5.39  |         |       V |Q        |         |
12+35       1.6692      5.70  |         |       V | Q       |         |
12+40       1.7105      5.98  |         |        V|  Q      |         |
12+45       1.7522      6.05  |         |        V|   Q     |         |
12+50       1.7951      6.23  |         |         V   Q     |         |
12+55       1.8391      6.38  |         |         V    Q    |         |
13+ 0       1.8833      6.43  |         |         |V   Q    |         |
13+ 5       1.9325      7.15  |         |         |V      Q |         |
13+10       1.9866      7.85  |         |         | V       |Q        |
13+15       2.0416      8.00  |         |         |  V      |Q        |
13+20       2.0973      8.08  |         |         |  V      | Q       |
13+25       2.1530      8.09  |         |         |   V     | Q       |
13+30       2.2088      8.10  |         |         |   V     | Q       |
13+35       2.2542      6.59  |         |         |    VQ   |         |
13+40       2.2893      5.10  |         |         Q    V    |         |
13+45       2.3225      4.81  |         |        Q|     V   |         |
13+50       2.3547      4.68  |         |       Q |     V   |         |
13+55       2.3869      4.69  |         |       Q |     V   |         |
14+ 0       2.4193      4.70  |         |       Q |      V  |         |
14+ 5       2.4556      5.27  |         |         |Q     V  |         |
14+10       2.4958      5.83  |         |         |  Q    V |         |
14+15       2.5368      5.95  |         |         |  Q    V |         |
14+20       2.5773      5.88  |         |         |  Q     V|         |
14+25       2.6170      5.76  |         |         |  Q     V|         |
14+30       2.6565      5.74  |         |         | Q      V|         |
14+35       2.6961      5.74  |         |         | Q       V         |
14+40       2.7357      5.76  |         |         |  Q      V         |
14+45       2.7755      5.77  |         |         |  Q      |V        |
14+50       2.8143      5.64  |         |         | Q       |V        |
14+55       2.8523      5.52  |         |         | Q       | V       |
15+ 0       2.8902      5.50  |         |         | Q       | V       |
15+ 5       2.9272      5.36  |         |         |Q        |  V      |
15+10       2.9632      5.24  |         |         Q         |  V      |
15+15       2.9992      5.22  |         |         Q         |  V      |
15+20       3.0342      5.08  |         |         Q         |   V     |
15+25       3.0684      4.96  |         |        Q|         |   V     |
15+30       3.1024      4.94  |         |        Q|         |    V    |
15+35       3.1326      4.39  |         |      Q  |         |    V    |
15+40       3.1592      3.85  |         |    Q    |         |    V    |
15+45       3.1850      3.75  |         |    Q    |         |    V    |
15+50       3.2106      3.71  |         |   Q     |         |     V   |
15+55       3.2362      3.72  |         |   Q     |         |     V   |
16+ 0       3.2619      3.74  |         |   Q     |         |     V   |
16+ 5       3.2780      2.33  |        Q|         |         |     V   |
16+10       3.2845      0.95  |  Q      |         |         |      V  |
16+15       3.2891      0.67  | Q       |         |         |      V  |
16+20       3.2928      0.53  | Q       |         |         |      V  |
16+25       3.2964      0.53  | Q       |         |         |      V  |
16+30       3.3001      0.53  | Q       |         |         |      V  |
```

```
16+35       3.3034      0.47  |Q         |          |          |       V  |
16+40       3.3062      0.42  |Q         |          |          |       V  |
16+45       3.3090      0.40  |Q         |          |          |       V  |
16+50       3.3118      0.40  |Q         |          |          |       V  |
16+55       3.3145      0.40  |Q         |          |          |       V  |
17+ 0       3.3173      0.40  |Q         |          |          |       V  |
17+ 5       3.3208      0.52  | Q        |          |          |       V  |
17+10       3.3251      0.63  | Q        |          |          |       V  |
17+15       3.3296      0.65  | Q        |          |          |       V  |
17+20       3.3342      0.66  | Q        |          |          |       V  |
17+25       3.3388      0.66  | Q        |          |          |       V  |
17+30       3.3434      0.66  | Q        |          |          |       V  |
17+35       3.3480      0.66  | Q        |          |          |       V  |
17+40       3.3525      0.66  | Q        |          |          |       V  |
17+45       3.3571      0.66  | Q        |          |          |       V  |
17+50       3.3613      0.61  | Q        |          |          |       V  |
17+55       3.3651      0.55  | Q        |          |          |       V  |
18+ 0       3.3688      0.54  | Q        |          |          |        V |
18+ 5       3.3724      0.53  | Q        |          |          |        V |
18+10       3.3761      0.53  | Q        |          |          |        V |
18+15       3.3798      0.53  | Q        |          |          |        V |
18+20       3.3834      0.53  | Q        |          |          |        V |
18+25       3.3871      0.53  | Q        |          |          |        V |
18+30       3.3908      0.53  | Q        |          |          |        V |
18+35       3.3940      0.47  |Q         |          |          |        V |
18+40       3.3969      0.42  |Q         |          |          |        V |
18+45       3.3997      0.40  |Q         |          |          |        V |
18+50       3.4020      0.34  |Q         |          |          |        V |
18+55       3.4040      0.28  |Q         |          |          |        V |
19+ 0       3.4058      0.27  |Q         |          |          |        V |
19+ 5       3.4081      0.32  |Q         |          |          |        V |
19+10       3.4107      0.38  |Q         |          |          |        V |
19+15       3.4134      0.39  |Q         |          |          |        V |
19+20       3.4166      0.46  |Q         |          |          |        V |
19+25       3.4201      0.51  | Q        |          |          |        V |
19+30       3.4237      0.53  | Q        |          |          |        V |
19+35       3.4270      0.47  |Q         |          |          |        V |
19+40       3.4299      0.42  |Q         |          |          |        V |
19+45       3.4326      0.40  |Q         |          |          |        V |
19+50       3.4350      0.34  |Q         |          |          |        V |
19+55       3.4369      0.28  |Q         |          |          |        V |
20+ 0       3.4388      0.27  |Q         |          |          |        V |
20+ 5       3.4410      0.32  |Q         |          |          |        V |
20+10       3.4437      0.38  |Q         |          |          |        V |
20+15       3.4464      0.39  |Q         |          |          |        V |
20+20       3.4491      0.40  |Q         |          |          |        V |
20+25       3.4519      0.40  |Q         |          |          |        V |
20+30       3.4546      0.40  |Q         |          |          |        V |
20+35       3.4574      0.40  |Q         |          |          |         V|
20+40       3.4601      0.40  |Q         |          |          |         V|
20+45       3.4629      0.40  |Q         |          |          |         V|
```

```
  20+50       3.4652      0.34  |Q         |          |          |         V|
  20+55       3.4672      0.28  |Q         |          |          |         V|
  21+ 0       3.4690      0.27  |Q         |          |          |         V|
  21+ 5       3.4713      0.32  |Q         |          |          |         V|
  21+10       3.4739      0.38  |Q         |          |          |         V|
  21+15       3.4766      0.39  |Q         |          |          |         V|
  21+20       3.4789      0.34  |Q         |          |          |         V|
  21+25       3.4809      0.28  |Q         |          |          |         V|
  21+30       3.4828      0.27  |Q         |          |          |         V|
  21+35       3.4850      0.32  |Q         |          |          |         V|
  21+40       3.4876      0.38  |Q         |          |          |         V|
  21+45       3.4903      0.39  |Q         |          |          |         V|
  21+50       3.4927      0.34  |Q         |          |          |         V|
  21+55       3.4946      0.28  |Q         |          |          |         V|
  22+ 0       3.4965      0.27  |Q         |          |          |         V|
  22+ 5       3.4987      0.32  |Q         |          |          |         V|
  22+10       3.5014      0.38  |Q         |          |          |         V|
  22+15       3.5041      0.39  |Q         |          |          |         V|
  22+20       3.5064      0.34  |Q         |          |          |         V|
  22+25       3.5084      0.28  |Q         |          |          |         V|
  22+30       3.5102      0.27  |Q         |          |          |         V|
  22+35       3.5121      0.27  |Q         |          |          |         V|
  22+40       3.5139      0.27  |Q         |          |          |         V|
  22+45       3.5157      0.27  |Q         |          |          |         V|
  22+50       3.5176      0.27  |Q         |          |          |         V|
  22+55       3.5194      0.27  |Q         |          |          |         V|
  23+ 0       3.5212      0.27  |Q         |          |          |         V|
  23+ 5       3.5231      0.27  |Q         |          |          |         V|
  23+10       3.5249      0.27  |Q         |          |          |         V|
  23+15       3.5267      0.27  |Q         |          |          |         V|
  23+20       3.5286      0.27  |Q         |          |          |         V|
  23+25       3.5304      0.27  |Q         |          |          |         V|
  23+30       3.5322      0.27  |Q         |          |          |         V|
  23+35       3.5341      0.27  |Q         |          |          |         V|
  23+40       3.5359      0.27  |Q         |          |          |         V|
  23+45       3.5377      0.27  |Q         |          |          |         V|
  23+50       3.5395      0.27  |Q         |          |          |         V|
  23+55       3.5414      0.27  |Q         |          |          |         V|
  24+ 0       3.5432      0.27  |Q         |          |          |         V|
  24+ 5       3.5442      0.15  Q          |          |          |         V|
  24+10       3.5445      0.03  Q          |          |          |         V|
  24+15       3.5446      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

        Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018, Version 9.0
                Study date  12/02/22 File: proposedd24100.out


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

Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978


Program License Serial Number 6443

--------------------------------------------------------------------
 English (in-lb) Input Units Used
 English Rainfall Data (Inches) Input Values Used

 English Units used in output format



--------------------------------------------------------------------
THE TERRACES - MURRIETA
PROPOSED BASIN D
12/02/2022

-------------------------------------------------------------------
Drainage Area =       6.90(Ac.)  =      0.011 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment =       6.90(Ac.)  =
0.011 Sq. Mi.
Length along longest watercourse =     990.00(Ft.)
Length along longest watercourse measured to centroid =     495.00(Ft.)
Length along longest watercourse =      0.188 Mi.
Length along longest watercourse measured to centroid =      0.094 Mi.
Difference in elevation =      35.00(Ft.)
Slope along watercourse =    186.6667 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time =    0.029 Hr.
Lag time =     1.72 Min.
25% of lag time =     0.43 Min.
40% of lag time =     0.69 Min.
Unit time =     5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow =     0.00(CFS)

2 YEAR Area rainfall data:
```

```
Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        6.90            2.00                   13.80

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
        6.90            5.00                   34.50

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    2.000(In)
Area Averaged 100-Year Rainfall =    5.000(In)

Point rain (area averaged) =    5.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    5.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
     6.900           56.00         0.800
 Total Area Entered =      6.90(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-3     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  74.8      0.305     0.800        0.086       1.000      0.086
                                                  Sum (F) =   0.086
Area averaged mean soil loss (F) (In/Hr) =  0.086
Minimum soil loss rate ((In/Hr)) =  0.043
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.260
-----------------------------------------------------------------------

                U n i t  H y d r o g r a p h
                        VALLEY S-Curve
-----------------------------------------------------------------------
                Unit Hydrograph Data
-----------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                           Graph %            (CFS)
-----------------------------------------------------------------------
    1   0.083        290.355         55.668              3.871
    2   0.167        580.710         37.666              2.619
    3   0.250        871.065          6.666              0.464
                                Sum = 100.000   Sum=       6.954
-----------------------------------------------------------------------


 The following loss rate calculations reflect use of the minimum calculated loss
 rate subtracted from the Storm Rain to produce the maximum Effective Rain value
```

| Unit | Time (Hr.) | Pattern Percent | Storm Rain (In/Hr) | Loss rate(In./Hr) Max | Low | Effective (In/Hr) |
|---|---|---|---|---|---|---|
| 1 | 0.08 | 0.07 | 0.040 | ( 0.152) | 0.010 | 0.030 |
| 2 | 0.17 | 0.07 | 0.040 | ( 0.151) | 0.010 | 0.030 |
| 3 | 0.25 | 0.07 | 0.040 | ( 0.150) | 0.010 | 0.030 |
| 4 | 0.33 | 0.10 | 0.060 | ( 0.150) | 0.016 | 0.044 |
| 5 | 0.42 | 0.10 | 0.060 | ( 0.149) | 0.016 | 0.044 |
| 6 | 0.50 | 0.10 | 0.060 | ( 0.149) | 0.016 | 0.044 |
| 7 | 0.58 | 0.10 | 0.060 | ( 0.148) | 0.016 | 0.044 |
| 8 | 0.67 | 0.10 | 0.060 | ( 0.147) | 0.016 | 0.044 |
| 9 | 0.75 | 0.10 | 0.060 | ( 0.147) | 0.016 | 0.044 |
| 10 | 0.83 | 0.13 | 0.080 | ( 0.146) | 0.021 | 0.059 |
| 11 | 0.92 | 0.13 | 0.080 | ( 0.146) | 0.021 | 0.059 |
| 12 | 1.00 | 0.13 | 0.080 | ( 0.145) | 0.021 | 0.059 |
| 13 | 1.08 | 0.10 | 0.060 | ( 0.145) | 0.016 | 0.044 |
| 14 | 1.17 | 0.10 | 0.060 | ( 0.144) | 0.016 | 0.044 |
| 15 | 1.25 | 0.10 | 0.060 | ( 0.143) | 0.016 | 0.044 |
| 16 | 1.33 | 0.10 | 0.060 | ( 0.143) | 0.016 | 0.044 |
| 17 | 1.42 | 0.10 | 0.060 | ( 0.142) | 0.016 | 0.044 |
| 18 | 1.50 | 0.10 | 0.060 | ( 0.142) | 0.016 | 0.044 |
| 19 | 1.58 | 0.10 | 0.060 | ( 0.141) | 0.016 | 0.044 |
| 20 | 1.67 | 0.10 | 0.060 | ( 0.141) | 0.016 | 0.044 |
| 21 | 1.75 | 0.10 | 0.060 | ( 0.140) | 0.016 | 0.044 |
| 22 | 1.83 | 0.13 | 0.080 | ( 0.139) | 0.021 | 0.059 |
| 23 | 1.92 | 0.13 | 0.080 | ( 0.139) | 0.021 | 0.059 |
| 24 | 2.00 | 0.13 | 0.080 | ( 0.138) | 0.021 | 0.059 |
| 25 | 2.08 | 0.13 | 0.080 | ( 0.138) | 0.021 | 0.059 |
| 26 | 2.17 | 0.13 | 0.080 | ( 0.137) | 0.021 | 0.059 |
| 27 | 2.25 | 0.13 | 0.080 | ( 0.137) | 0.021 | 0.059 |
| 28 | 2.33 | 0.13 | 0.080 | ( 0.136) | 0.021 | 0.059 |
| 29 | 2.42 | 0.13 | 0.080 | ( 0.136) | 0.021 | 0.059 |
| 30 | 2.50 | 0.13 | 0.080 | ( 0.135) | 0.021 | 0.059 |
| 31 | 2.58 | 0.17 | 0.100 | ( 0.134) | 0.026 | 0.074 |
| 32 | 2.67 | 0.17 | 0.100 | ( 0.134) | 0.026 | 0.074 |
| 33 | 2.75 | 0.17 | 0.100 | ( 0.133) | 0.026 | 0.074 |
| 34 | 2.83 | 0.17 | 0.100 | ( 0.133) | 0.026 | 0.074 |
| 35 | 2.92 | 0.17 | 0.100 | ( 0.132) | 0.026 | 0.074 |
| 36 | 3.00 | 0.17 | 0.100 | ( 0.132) | 0.026 | 0.074 |
| 37 | 3.08 | 0.17 | 0.100 | ( 0.131) | 0.026 | 0.074 |
| 38 | 3.17 | 0.17 | 0.100 | ( 0.131) | 0.026 | 0.074 |
| 39 | 3.25 | 0.17 | 0.100 | ( 0.130) | 0.026 | 0.074 |
| 40 | 3.33 | 0.17 | 0.100 | ( 0.130) | 0.026 | 0.074 |
| 41 | 3.42 | 0.17 | 0.100 | ( 0.129) | 0.026 | 0.074 |
| 42 | 3.50 | 0.17 | 0.100 | ( 0.128) | 0.026 | 0.074 |
| 43 | 3.58 | 0.17 | 0.100 | ( 0.128) | 0.026 | 0.074 |
| 44 | 3.67 | 0.17 | 0.100 | ( 0.127) | 0.026 | 0.074 |
| 45 | 3.75 | 0.17 | 0.100 | ( 0.127) | 0.026 | 0.074 |
| 46 | 3.83 | 0.20 | 0.120 | ( 0.126) | 0.031 | 0.089 |
| 47 | 3.92 | 0.20 | 0.120 | ( 0.126) | 0.031 | 0.089 |
| 48 | 4.00 | 0.20 | 0.120 | ( 0.125) | 0.031 | 0.089 |
| 49 | 4.08 | 0.20 | 0.120 | ( 0.125) | 0.031 | 0.089 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 50 | 4.17 | 0.20 | 0.120 | ( 0.124) | 0.031 | 0.089 |
| 51 | 4.25 | 0.20 | 0.120 | ( 0.124) | 0.031 | 0.089 |
| 52 | 4.33 | 0.23 | 0.140 | ( 0.123) | 0.036 | 0.104 |
| 53 | 4.42 | 0.23 | 0.140 | ( 0.123) | 0.036 | 0.104 |
| 54 | 4.50 | 0.23 | 0.140 | ( 0.122) | 0.036 | 0.104 |
| 55 | 4.58 | 0.23 | 0.140 | ( 0.122) | 0.036 | 0.104 |
| 56 | 4.67 | 0.23 | 0.140 | ( 0.121) | 0.036 | 0.104 |
| 57 | 4.75 | 0.23 | 0.140 | ( 0.121) | 0.036 | 0.104 |
| 58 | 4.83 | 0.27 | 0.160 | ( 0.120) | 0.042 | 0.118 |
| 59 | 4.92 | 0.27 | 0.160 | ( 0.119) | 0.042 | 0.118 |
| 60 | 5.00 | 0.27 | 0.160 | ( 0.119) | 0.042 | 0.118 |
| 61 | 5.08 | 0.20 | 0.120 | ( 0.118) | 0.031 | 0.089 |
| 62 | 5.17 | 0.20 | 0.120 | ( 0.118) | 0.031 | 0.089 |
| 63 | 5.25 | 0.20 | 0.120 | ( 0.117) | 0.031 | 0.089 |
| 64 | 5.33 | 0.23 | 0.140 | ( 0.117) | 0.036 | 0.104 |
| 65 | 5.42 | 0.23 | 0.140 | ( 0.116) | 0.036 | 0.104 |
| 66 | 5.50 | 0.23 | 0.140 | ( 0.116) | 0.036 | 0.104 |
| 67 | 5.58 | 0.27 | 0.160 | ( 0.115) | 0.042 | 0.118 |
| 68 | 5.67 | 0.27 | 0.160 | ( 0.115) | 0.042 | 0.118 |
| 69 | 5.75 | 0.27 | 0.160 | ( 0.114) | 0.042 | 0.118 |
| 70 | 5.83 | 0.27 | 0.160 | ( 0.114) | 0.042 | 0.118 |
| 71 | 5.92 | 0.27 | 0.160 | ( 0.113) | 0.042 | 0.118 |
| 72 | 6.00 | 0.27 | 0.160 | ( 0.113) | 0.042 | 0.118 |
| 73 | 6.08 | 0.30 | 0.180 | ( 0.112) | 0.047 | 0.133 |
| 74 | 6.17 | 0.30 | 0.180 | ( 0.112) | 0.047 | 0.133 |
| 75 | 6.25 | 0.30 | 0.180 | ( 0.111) | 0.047 | 0.133 |
| 76 | 6.33 | 0.30 | 0.180 | ( 0.111) | 0.047 | 0.133 |
| 77 | 6.42 | 0.30 | 0.180 | ( 0.110) | 0.047 | 0.133 |
| 78 | 6.50 | 0.30 | 0.180 | ( 0.110) | 0.047 | 0.133 |
| 79 | 6.58 | 0.33 | 0.200 | ( 0.109) | 0.052 | 0.148 |
| 80 | 6.67 | 0.33 | 0.200 | ( 0.109) | 0.052 | 0.148 |
| 81 | 6.75 | 0.33 | 0.200 | ( 0.108) | 0.052 | 0.148 |
| 82 | 6.83 | 0.33 | 0.200 | ( 0.108) | 0.052 | 0.148 |
| 83 | 6.92 | 0.33 | 0.200 | ( 0.107) | 0.052 | 0.148 |
| 84 | 7.00 | 0.33 | 0.200 | ( 0.107) | 0.052 | 0.148 |
| 85 | 7.08 | 0.33 | 0.200 | ( 0.106) | 0.052 | 0.148 |
| 86 | 7.17 | 0.33 | 0.200 | ( 0.106) | 0.052 | 0.148 |
| 87 | 7.25 | 0.33 | 0.200 | ( 0.105) | 0.052 | 0.148 |
| 88 | 7.33 | 0.37 | 0.220 | ( 0.105) | 0.057 | 0.163 |
| 89 | 7.42 | 0.37 | 0.220 | ( 0.105) | 0.057 | 0.163 |
| 90 | 7.50 | 0.37 | 0.220 | ( 0.104) | 0.057 | 0.163 |
| 91 | 7.58 | 0.40 | 0.240 | ( 0.104) | 0.062 | 0.178 |
| 92 | 7.67 | 0.40 | 0.240 | ( 0.103) | 0.062 | 0.178 |
| 93 | 7.75 | 0.40 | 0.240 | ( 0.103) | 0.062 | 0.178 |
| 94 | 7.83 | 0.43 | 0.260 | ( 0.102) | 0.068 | 0.192 |
| 95 | 7.92 | 0.43 | 0.260 | ( 0.102) | 0.068 | 0.192 |
| 96 | 8.00 | 0.43 | 0.260 | ( 0.101) | 0.068 | 0.192 |
| 97 | 8.08 | 0.50 | 0.300 | ( 0.101) | 0.078 | 0.222 |
| 98 | 8.17 | 0.50 | 0.300 | ( 0.100) | 0.078 | 0.222 |
| 99 | 8.25 | 0.50 | 0.300 | ( 0.100) | 0.078 | 0.222 |
| 100 | 8.33 | 0.50 | 0.300 | ( 0.099) | 0.078 | 0.222 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 101 | 8.42 | 0.50 | 0.300 | ( 0.099) | 0.078 | 0.222 |
| 102 | 8.50 | 0.50 | 0.300 | ( 0.098) | 0.078 | 0.222 |
| 103 | 8.58 | 0.53 | 0.320 | ( 0.098) | 0.083 | 0.237 |
| 104 | 8.67 | 0.53 | 0.320 | ( 0.097) | 0.083 | 0.237 |
| 105 | 8.75 | 0.53 | 0.320 | ( 0.097) | 0.083 | 0.237 |
| 106 | 8.83 | 0.57 | 0.340 | ( 0.097) | 0.088 | 0.252 |
| 107 | 8.92 | 0.57 | 0.340 | ( 0.096) | 0.088 | 0.252 |
| 108 | 9.00 | 0.57 | 0.340 | ( 0.096) | 0.088 | 0.252 |
| 109 | 9.08 | 0.63 | 0.380 | 0.095 | ( 0.099) | 0.285 |
| 110 | 9.17 | 0.63 | 0.380 | 0.095 | ( 0.099) | 0.285 |
| 111 | 9.25 | 0.63 | 0.380 | 0.094 | ( 0.099) | 0.286 |
| 112 | 9.33 | 0.67 | 0.400 | 0.094 | ( 0.104) | 0.306 |
| 113 | 9.42 | 0.67 | 0.400 | 0.093 | ( 0.104) | 0.307 |
| 114 | 9.50 | 0.67 | 0.400 | 0.093 | ( 0.104) | 0.307 |
| 115 | 9.58 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.328 |
| 116 | 9.67 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.328 |
| 117 | 9.75 | 0.70 | 0.420 | 0.092 | ( 0.109) | 0.328 |
| 118 | 9.83 | 0.73 | 0.440 | 0.091 | ( 0.114) | 0.349 |
| 119 | 9.92 | 0.73 | 0.440 | 0.091 | ( 0.114) | 0.349 |
| 120 | 10.00 | 0.73 | 0.440 | 0.090 | ( 0.114) | 0.350 |
| 121 | 10.08 | 0.50 | 0.300 | ( 0.090) | 0.078 | 0.222 |
| 122 | 10.17 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 123 | 10.25 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 124 | 10.33 | 0.50 | 0.300 | ( 0.089) | 0.078 | 0.222 |
| 125 | 10.42 | 0.50 | 0.300 | ( 0.088) | 0.078 | 0.222 |
| 126 | 10.50 | 0.50 | 0.300 | ( 0.088) | 0.078 | 0.222 |
| 127 | 10.58 | 0.67 | 0.400 | 0.087 | ( 0.104) | 0.313 |
| 128 | 10.67 | 0.67 | 0.400 | 0.087 | ( 0.104) | 0.313 |
| 129 | 10.75 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 130 | 10.83 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 131 | 10.92 | 0.67 | 0.400 | 0.086 | ( 0.104) | 0.314 |
| 132 | 11.00 | 0.67 | 0.400 | 0.085 | ( 0.104) | 0.315 |
| 133 | 11.08 | 0.63 | 0.380 | 0.085 | ( 0.099) | 0.295 |
| 134 | 11.17 | 0.63 | 0.380 | 0.084 | ( 0.099) | 0.296 |
| 135 | 11.25 | 0.63 | 0.380 | 0.084 | ( 0.099) | 0.296 |
| 136 | 11.33 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 137 | 11.42 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 138 | 11.50 | 0.63 | 0.380 | 0.083 | ( 0.099) | 0.297 |
| 139 | 11.58 | 0.57 | 0.340 | 0.082 | ( 0.088) | 0.258 |
| 140 | 11.67 | 0.57 | 0.340 | 0.082 | ( 0.088) | 0.258 |
| 141 | 11.75 | 0.57 | 0.340 | 0.081 | ( 0.088) | 0.259 |
| 142 | 11.83 | 0.60 | 0.360 | 0.081 | ( 0.094) | 0.279 |
| 143 | 11.92 | 0.60 | 0.360 | 0.081 | ( 0.094) | 0.279 |
| 144 | 12.00 | 0.60 | 0.360 | 0.080 | ( 0.094) | 0.280 |
| 145 | 12.08 | 0.83 | 0.500 | 0.080 | ( 0.130) | 0.420 |
| 146 | 12.17 | 0.83 | 0.500 | 0.079 | ( 0.130) | 0.421 |
| 147 | 12.25 | 0.83 | 0.500 | 0.079 | ( 0.130) | 0.421 |
| 148 | 12.33 | 0.87 | 0.520 | 0.079 | ( 0.135) | 0.441 |
| 149 | 12.42 | 0.87 | 0.520 | 0.078 | ( 0.135) | 0.442 |
| 150 | 12.50 | 0.87 | 0.520 | 0.078 | ( 0.135) | 0.442 |
| 151 | 12.58 | 0.93 | 0.560 | 0.077 | ( 0.146) | 0.483 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 152 | 12.67 | 0.93 | 0.560 | 0.077 | ( 0.146) | 0.483 |
| 153 | 12.75 | 0.93 | 0.560 | 0.077 | ( 0.146) | 0.483 |
| 154 | 12.83 | 0.97 | 0.580 | 0.076 | ( 0.151) | 0.504 |
| 155 | 12.92 | 0.97 | 0.580 | 0.076 | ( 0.151) | 0.504 |
| 156 | 13.00 | 0.97 | 0.580 | 0.076 | ( 0.151) | 0.504 |
| 157 | 13.08 | 1.13 | 0.680 | 0.075 | ( 0.177) | 0.605 |
| 158 | 13.17 | 1.13 | 0.680 | 0.075 | ( 0.177) | 0.605 |
| 159 | 13.25 | 1.13 | 0.680 | 0.074 | ( 0.177) | 0.606 |
| 160 | 13.33 | 1.13 | 0.680 | 0.074 | ( 0.177) | 0.606 |
| 161 | 13.42 | 1.13 | 0.680 | 0.074 | ( 0.177) | 0.606 |
| 162 | 13.50 | 1.13 | 0.680 | 0.073 | ( 0.177) | 0.607 |
| 163 | 13.58 | 0.77 | 0.460 | 0.073 | ( 0.120) | 0.387 |
| 164 | 13.67 | 0.77 | 0.460 | 0.072 | ( 0.120) | 0.388 |
| 165 | 13.75 | 0.77 | 0.460 | 0.072 | ( 0.120) | 0.388 |
| 166 | 13.83 | 0.77 | 0.460 | 0.072 | ( 0.120) | 0.388 |
| 167 | 13.92 | 0.77 | 0.460 | 0.071 | ( 0.120) | 0.389 |
| 168 | 14.00 | 0.77 | 0.460 | 0.071 | ( 0.120) | 0.389 |
| 169 | 14.08 | 0.90 | 0.540 | 0.071 | ( 0.140) | 0.469 |
| 170 | 14.17 | 0.90 | 0.540 | 0.070 | ( 0.140) | 0.470 |
| 171 | 14.25 | 0.90 | 0.540 | 0.070 | ( 0.140) | 0.470 |
| 172 | 14.33 | 0.87 | 0.520 | 0.070 | ( 0.135) | 0.450 |
| 173 | 14.42 | 0.87 | 0.520 | 0.069 | ( 0.135) | 0.451 |
| 174 | 14.50 | 0.87 | 0.520 | 0.069 | ( 0.135) | 0.451 |
| 175 | 14.58 | 0.87 | 0.520 | 0.069 | ( 0.135) | 0.451 |
| 176 | 14.67 | 0.87 | 0.520 | 0.068 | ( 0.135) | 0.452 |
| 177 | 14.75 | 0.87 | 0.520 | 0.068 | ( 0.135) | 0.452 |
| 178 | 14.83 | 0.83 | 0.500 | 0.067 | ( 0.130) | 0.433 |
| 179 | 14.92 | 0.83 | 0.500 | 0.067 | ( 0.130) | 0.433 |
| 180 | 15.00 | 0.83 | 0.500 | 0.067 | ( 0.130) | 0.433 |
| 181 | 15.08 | 0.80 | 0.480 | 0.066 | ( 0.125) | 0.414 |
| 182 | 15.17 | 0.80 | 0.480 | 0.066 | ( 0.125) | 0.414 |
| 183 | 15.25 | 0.80 | 0.480 | 0.066 | ( 0.125) | 0.414 |
| 184 | 15.33 | 0.77 | 0.460 | 0.065 | ( 0.120) | 0.395 |
| 185 | 15.42 | 0.77 | 0.460 | 0.065 | ( 0.120) | 0.395 |
| 186 | 15.50 | 0.77 | 0.460 | 0.065 | ( 0.120) | 0.395 |
| 187 | 15.58 | 0.63 | 0.380 | 0.064 | ( 0.099) | 0.316 |
| 188 | 15.67 | 0.63 | 0.380 | 0.064 | ( 0.099) | 0.316 |
| 189 | 15.75 | 0.63 | 0.380 | 0.064 | ( 0.099) | 0.316 |
| 190 | 15.83 | 0.63 | 0.380 | 0.063 | ( 0.099) | 0.317 |
| 191 | 15.92 | 0.63 | 0.380 | 0.063 | ( 0.099) | 0.317 |
| 192 | 16.00 | 0.63 | 0.380 | 0.063 | ( 0.099) | 0.317 |
| 193 | 16.08 | 0.13 | 0.080 | ( 0.062) | 0.021 | 0.059 |
| 194 | 16.17 | 0.13 | 0.080 | ( 0.062) | 0.021 | 0.059 |
| 195 | 16.25 | 0.13 | 0.080 | ( 0.062) | 0.021 | 0.059 |
| 196 | 16.33 | 0.13 | 0.080 | ( 0.062) | 0.021 | 0.059 |
| 197 | 16.42 | 0.13 | 0.080 | ( 0.061) | 0.021 | 0.059 |
| 198 | 16.50 | 0.13 | 0.080 | ( 0.061) | 0.021 | 0.059 |
| 199 | 16.58 | 0.10 | 0.060 | ( 0.061) | 0.016 | 0.044 |
| 200 | 16.67 | 0.10 | 0.060 | ( 0.060) | 0.016 | 0.044 |
| 201 | 16.75 | 0.10 | 0.060 | ( 0.060) | 0.016 | 0.044 |
| 202 | 16.83 | 0.10 | 0.060 | ( 0.060) | 0.016 | 0.044 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 203 | 16.92 | 0.10 | 0.060 | ( 0.059) | 0.016 | 0.044 |
| 204 | 17.00 | 0.10 | 0.060 | ( 0.059) | 0.016 | 0.044 |
| 205 | 17.08 | 0.17 | 0.100 | ( 0.059) | 0.026 | 0.074 |
| 206 | 17.17 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 207 | 17.25 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 208 | 17.33 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 209 | 17.42 | 0.17 | 0.100 | ( 0.058) | 0.026 | 0.074 |
| 210 | 17.50 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 211 | 17.58 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 212 | 17.67 | 0.17 | 0.100 | ( 0.057) | 0.026 | 0.074 |
| 213 | 17.75 | 0.17 | 0.100 | ( 0.056) | 0.026 | 0.074 |
| 214 | 17.83 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 215 | 17.92 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 216 | 18.00 | 0.13 | 0.080 | ( 0.056) | 0.021 | 0.059 |
| 217 | 18.08 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 218 | 18.17 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 219 | 18.25 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 220 | 18.33 | 0.13 | 0.080 | ( 0.055) | 0.021 | 0.059 |
| 221 | 18.42 | 0.13 | 0.080 | ( 0.054) | 0.021 | 0.059 |
| 222 | 18.50 | 0.13 | 0.080 | ( 0.054) | 0.021 | 0.059 |
| 223 | 18.58 | 0.10 | 0.060 | ( 0.054) | 0.016 | 0.044 |
| 224 | 18.67 | 0.10 | 0.060 | ( 0.053) | 0.016 | 0.044 |
| 225 | 18.75 | 0.10 | 0.060 | ( 0.053) | 0.016 | 0.044 |
| 226 | 18.83 | 0.07 | 0.040 | ( 0.053) | 0.010 | 0.030 |
| 227 | 18.92 | 0.07 | 0.040 | ( 0.053) | 0.010 | 0.030 |
| 228 | 19.00 | 0.07 | 0.040 | ( 0.052) | 0.010 | 0.030 |
| 229 | 19.08 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 230 | 19.17 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 231 | 19.25 | 0.10 | 0.060 | ( 0.052) | 0.016 | 0.044 |
| 232 | 19.33 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 233 | 19.42 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 234 | 19.50 | 0.13 | 0.080 | ( 0.051) | 0.021 | 0.059 |
| 235 | 19.58 | 0.10 | 0.060 | ( 0.051) | 0.016 | 0.044 |
| 236 | 19.67 | 0.10 | 0.060 | ( 0.051) | 0.016 | 0.044 |
| 237 | 19.75 | 0.10 | 0.060 | ( 0.050) | 0.016 | 0.044 |
| 238 | 19.83 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 239 | 19.92 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 240 | 20.00 | 0.07 | 0.040 | ( 0.050) | 0.010 | 0.030 |
| 241 | 20.08 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 242 | 20.17 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 243 | 20.25 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 244 | 20.33 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 245 | 20.42 | 0.10 | 0.060 | ( 0.049) | 0.016 | 0.044 |
| 246 | 20.50 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 247 | 20.58 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 248 | 20.67 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 249 | 20.75 | 0.10 | 0.060 | ( 0.048) | 0.016 | 0.044 |
| 250 | 20.83 | 0.07 | 0.040 | ( 0.048) | 0.010 | 0.030 |
| 251 | 20.92 | 0.07 | 0.040 | ( 0.047) | 0.010 | 0.030 |
| 252 | 21.00 | 0.07 | 0.040 | ( 0.047) | 0.010 | 0.030 |
| 253 | 21.08 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 254 | 21.17 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |
| 255 | 21.25 | 0.10 | 0.060 | ( 0.047) | 0.016 | 0.044 |
| 256 | 21.33 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 257 | 21.42 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 258 | 21.50 | 0.07 | 0.040 | ( 0.046) | 0.010 | 0.030 |
| 259 | 21.58 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 260 | 21.67 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 261 | 21.75 | 0.10 | 0.060 | ( 0.046) | 0.016 | 0.044 |
| 262 | 21.83 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 263 | 21.92 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 264 | 22.00 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 265 | 22.08 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 266 | 22.17 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 267 | 22.25 | 0.10 | 0.060 | ( 0.045) | 0.016 | 0.044 |
| 268 | 22.33 | 0.07 | 0.040 | ( 0.045) | 0.010 | 0.030 |
| 269 | 22.42 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 270 | 22.50 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 271 | 22.58 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 272 | 22.67 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 273 | 22.75 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 274 | 22.83 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 275 | 22.92 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 276 | 23.00 | 0.07 | 0.040 | ( 0.044) | 0.010 | 0.030 |
| 277 | 23.08 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 278 | 23.17 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 279 | 23.25 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 280 | 23.33 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 281 | 23.42 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 282 | 23.50 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 283 | 23.58 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 284 | 23.67 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 285 | 23.75 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 286 | 23.83 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 287 | 23.92 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |
| 288 | 24.00 | 0.07 | 0.040 | ( 0.043) | 0.010 | 0.030 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 47.8

Flood volume = Effective rainfall 3.99(In)
times area 6.9(Ac.)/[(In)/(Ft.)] = 2.3(Ac.Ft)
Total soil loss = 1.01(In)
Total soil loss = 0.583(Ac.Ft)
Total rainfall = 5.00(In)
Flood volume = 99823.8 Cubic Feet
Total soil loss = 25409.5 Cubic Feet

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Peak flow rate of this hydrograph = 4.220(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

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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 | 0.0008 | 0.11 | Q | \| | \| | \| | \| |
| 0+10 | 0.0021 | 0.19 | Q | \| | \| | \| | \| |
| 0+15 | 0.0035 | 0.21 | Q | \| | \| | \| | \| |
| 0+20 | 0.0053 | 0.26 | VQ | \| | \| | \| | \| |
| 0+25 | 0.0074 | 0.30 | VQ | \| | \| | \| | \| |
| 0+30 | 0.0096 | 0.31 | VQ | \| | \| | \| | \| |
| 0+35 | 0.0117 | 0.31 | VQ | \| | \| | \| | \| |
| 0+40 | 0.0138 | 0.31 | VQ | \| | \| | \| | \| |
| 0+45 | 0.0159 | 0.31 | VQ | \| | \| | \| | \| |
| 0+50 | 0.0185 | 0.37 | VQ | \| | \| | \| | \| |
| 0+55 | 0.0212 | 0.41 | VQ | \| | \| | \| | \| |
| 1+ 0 | 0.0241 | 0.41 | VQ | \| | \| | \| | \| |
| 1+ 5 | 0.0265 | 0.35 | VQ | \| | \| | \| | \| |
| 1+10 | 0.0287 | 0.32 | VQ | \| | \| | \| | \| |
| 1+15 | 0.0308 | 0.31 | VQ | \| | \| | \| | \| |
| 1+20 | 0.0330 | 0.31 | VQ | \| | \| | \| | \| |
| 1+25 | 0.0351 | 0.31 | VQ | \| | \| | \| | \| |
| 1+30 | 0.0372 | 0.31 | VQ | \| | \| | \| | \| |
| 1+35 | 0.0393 | 0.31 | VQ | \| | \| | \| | \| |
| 1+40 | 0.0415 | 0.31 | VQ | \| | \| | \| | \| |
| 1+45 | 0.0436 | 0.31 | VQ | \| | \| | \| | \| |
| 1+50 | 0.0461 | 0.37 | VQ | \| | \| | \| | \| |
| 1+55 | 0.0489 | 0.41 | VQ | \| | \| | \| | \| |
| 2+ 0 | 0.0517 | 0.41 | VQ | \| | \| | \| | \| |
| 2+ 5 | 0.0546 | 0.41 | VQ | \| | \| | \| | \| |
| 2+10 | 0.0574 | 0.41 | \|Q | \| | \| | \| | \| |
| 2+15 | 0.0603 | 0.41 | \|Q | \| | \| | \| | \| |
| 2+20 | 0.0631 | 0.41 | \|Q | \| | \| | \| | \| |
| 2+25 | 0.0659 | 0.41 | \|Q | \| | \| | \| | \| |
| 2+30 | 0.0688 | 0.41 | \|Q | \| | \| | \| | \| |
| 2+35 | 0.0720 | 0.47 | \|Q | \| | \| | \| | \| |
| 2+40 | 0.0755 | 0.51 | \|VQ | \| | \| | \| | \| |
| 2+45 | 0.0790 | 0.51 | \|VQ | \| | \| | \| | \| |
| 2+50 | 0.0826 | 0.51 | \|VQ | \| | \| | \| | \| |
| 2+55 | 0.0861 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+ 0 | 0.0897 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+ 5 | 0.0932 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+10 | 0.0968 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+15 | 0.1003 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+20 | 0.1039 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+25 | 0.1074 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+30 | 0.1109 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+35 | 0.1145 | 0.51 | \|VQ | \| | \| | \| | \| |
| 3+40 | 0.1180 | 0.51 | \| Q | \| | \| | \| | \| |
| 3+45 | 0.1216 | 0.51 | \| Q | \| | \| | \| | \| |
| 3+50 | 0.1255 | 0.57 | \| Q | \| | \| | \| | \| |

```
3+55       0.1297      0.61  | Q        |          |          |          |
4+ 0       0.1340      0.62  | Q        |          |          |          |
4+ 5       0.1382      0.62  | Q        |          |          |          |
4+10       0.1425      0.62  | Q        |          |          |          |
4+15       0.1468      0.62  | Q        |          |          |          |
4+20       0.1514      0.68  | Q        |          |          |          |
4+25       0.1563      0.71  | Q        |          |          |          |
4+30       0.1613      0.72  | Q        |          |          |          |
4+35       0.1662      0.72  | Q        |          |          |          |
4+40       0.1712      0.72  | Q        |          |          |          |
4+45       0.1762      0.72  | QV       |          |          |          |
4+50       0.1815      0.78  |  Q       |          |          |          |
4+55       0.1872      0.82  |  Q       |          |          |          |
5+ 0       0.1928      0.82  |  Q       |          |          |          |
5+ 5       0.1977      0.71  | QV       |          |          |          |
5+10       0.2021      0.63  | QV       |          |          |          |
5+15       0.2063      0.62  | QV       |          |          |          |
5+20       0.2110      0.68  | QV       |          |          |          |
5+25       0.2159      0.71  | QV       |          |          |          |
5+30       0.2209      0.72  | QV       |          |          |          |
5+35       0.2262      0.78  |  Q       |          |          |          |
5+40       0.2318      0.82  |  QV      |          |          |          |
5+45       0.2375      0.82  |  QV      |          |          |          |
5+50       0.2432      0.82  |  QV      |          |          |          |
5+55       0.2489      0.82  |  QV      |          |          |          |
6+ 0       0.2545      0.82  |  QV      |          |          |          |
6+ 5       0.2606      0.88  |  QV      |          |          |          |
6+10       0.2669      0.92  |  QV      |          |          |          |
6+15       0.2733      0.93  |  QV      |          |          |          |
6+20       0.2797      0.93  |  QV      |          |          |          |
6+25       0.2861      0.93  |  QV      |          |          |          |
6+30       0.2925      0.93  |  Q V     |          |          |          |
6+35       0.2992      0.98  |  Q V     |          |          |          |
6+40       0.3063      1.02  |   QV     |          |          |          |
6+45       0.3134      1.03  |   QV     |          |          |          |
6+50       0.3205      1.03  |   QV     |          |          |          |
6+55       0.3276      1.03  |   QV     |          |          |          |
7+ 0       0.3347      1.03  |   QV     |          |          |          |
7+ 5       0.3417      1.03  |   QV     |          |          |          |
7+10       0.3488      1.03  |   Q V    |          |          |          |
7+15       0.3559      1.03  |   Q V    |          |          |          |
7+20       0.3634      1.09  |   Q V    |          |          |          |
7+25       0.3712      1.13  |   Q V    |          |          |          |
7+30       0.3790      1.13  |   Q V    |          |          |          |
7+35       0.3872      1.19  |   Q V    |          |          |          |
7+40       0.3956      1.23  |   Q V    |          |          |          |
7+45       0.4041      1.24  |   Q  V   |          |          |          |
7+50       0.4130      1.29  |    Q V   |          |          |          |
7+55       0.4222      1.33  |    Q V   |          |          |          |
8+ 0       0.4314      1.34  |    Q V   |          |          |          |
8+ 5       0.4414      1.45  |    Q V   |          |          |          |
```

```
 8+10       0.4520      1.53  |     QV  |          |          |          |
 8+15       0.4626      1.54  |     Q V |          |          |          |
 8+20       0.4733      1.54  |     Q V |          |          |          |
 8+25       0.4839      1.54  |     Q V |          |          |          |
 8+30       0.4945      1.54  |     Q V |          |          |          |
 8+35       0.5056      1.60  |     Q V |          |          |          |
 8+40       0.5169      1.64  |     Q  V|          |          |          |
 8+45       0.5282      1.65  |     Q  V|          |          |          |
 8+50       0.5400      1.70  |     Q  V|          |          |          |
 8+55       0.5520      1.74  |     Q  V|          |          |          |
 9+ 0       0.5640      1.75  |      Q V|          |          |          |
 9+ 5       0.5770      1.88  |      Q  V          |          |          |
 9+10       0.5905      1.97  |      Q  V          |          |          |
 9+15       0.6042      1.99  |      Q  V          |          |          |
 9+20       0.6184      2.07  |       Q V          |          |          |
 9+25       0.6330      2.12  |       Q |V         |          |          |
 9+30       0.6477      2.13  |       Q |V         |          |          |
 9+35       0.6630      2.22  |       Q |V         |          |          |
 9+40       0.6786      2.27  |        Q|V         |          |          |
 9+45       0.6944      2.28  |        Q| V        |          |          |
 9+50       0.7106      2.36  |        Q| V        |          |          |
 9+55       0.7273      2.42  |        Q| V        |          |          |
10+ 0       0.7440      2.43  |        Q| V        |          |          |
10+ 5       0.7574      1.94  |      Q  |  V       |          |          |
10+10       0.7684      1.60  |     Q   |  V       |          |          |
10+15       0.7791      1.54  |     Q   |  V       |          |          |
10+20       0.7897      1.54  |     Q   |  V       |          |          |
10+25       0.8004      1.54  |     Q   |  V       |          |          |
10+30       0.8110      1.54  |     Q   |   V      |          |          |
10+35       0.8240      1.90  |      Q  |   V      |          |          |
10+40       0.8388      2.14  |       Q |   V      |          |          |
10+45       0.8538      2.18  |       Q |   V      |          |          |
10+50       0.8688      2.18  |       Q |    V     |          |          |
10+55       0.8839      2.19  |       Q |    V     |          |          |
11+ 0       0.8989      2.19  |       Q |    V     |          |          |
11+ 5       0.9135      2.11  |       Q |    V     |          |          |
11+10       0.9277      2.07  |       Q |     V    |          |          |
11+15       0.9419      2.06  |       Q |     V    |          |          |
11+20       0.9561      2.06  |       Q |     V    |          |          |
11+25       0.9703      2.06  |       Q |     V    |          |          |
11+30       0.9846      2.07  |       Q |      V   |          |          |
11+35       0.9977      1.92  |      Q  |      V   |          |          |
11+40       1.0102      1.81  |      Q  |      V   |          |          |
11+45       1.0226      1.80  |      Q  |      V   |          |          |
11+50       1.0355      1.88  |      Q  |       V  |          |          |
11+55       1.0489      1.93  |      Q  |       V  |          |          |
12+ 0       1.0623      1.95  |      Q  |       V  |          |          |
12+ 5       1.0794      2.49  |        Q|       V  |          |          |
12+10       1.0991      2.86  |         |Q       V|          |          |
12+15       1.1193      2.93  |         |Q       V|          |          |
12+20       1.1400      3.01  |         | Q      V|          |          |
```

```
12+25       1.1611      3.06  |          | Q       V         |         |
12+30       1.1823      3.07  |          | Q       V         |         |
12+35       1.2045      3.23  |          | Q       |V        |         |
12+40       1.2275      3.34  |          |  Q      |V        |         |
12+45       1.2507      3.36  |          |  Q      |V        |         |
12+50       1.2744      3.44  |          |  Q      | V       |         |
12+55       1.2985      3.50  |          |  Q      | V       |         |
13+ 0       1.3226      3.51  |          |   Q     |  V      |         |
13+ 5       1.3495      3.90  |          |    Q    |  V      |         |
13+10       1.3781      4.16  |          |     Q   |   V     |         |
13+15       1.4071      4.21  |          |     Q   |   V     |         |
13+20       1.4362      4.21  |          |     Q   |    V    |         |
13+25       1.4652      4.22  |          |     Q   |    V    |         |
13+30       1.4943      4.22  |          |     Q   |     V   |         |
13+35       1.5175      3.37  |          |  Q      |     V   |         |
13+40       1.5368      2.80  |          |Q        |     V   |         |
13+45       1.5553      2.70  |          Q         |      V  |         |
13+50       1.5739      2.70  |          Q         |      V  |         |
13+55       1.5925      2.70  |          Q         |      V  |         |
14+ 0       1.6112      2.70  |          Q         |       V |         |
14+ 5       1.6320      3.02  |          | Q       |       V |         |
14+10       1.6542      3.23  |          | Q       |       V |         |
14+15       1.6767      3.27  |          |  Q      |        V|         |
14+20       1.6987      3.19  |          | Q       |        V|         |
14+25       1.7204      3.14  |          | Q       |         V         |
14+30       1.7420      3.14  |          | Q       |         V         |
14+35       1.7636      3.14  |          | Q       |         V         |
14+40       1.7852      3.14  |          | Q       |         |V        |
14+45       1.8069      3.14  |          | Q       |         |V        |
14+50       1.8280      3.07  |          | Q       |         |V        |
14+55       1.8488      3.02  |          | Q       |         | V       |
15+ 0       1.8696      3.01  |          | Q       |         | V       |
15+ 5       1.8898      2.94  |          |Q        |         | V       |
15+10       1.9097      2.89  |          |Q        |         |  V      |
15+15       1.9295      2.88  |          |Q        |         |  V      |
15+20       1.9489      2.81  |          |Q        |         |   V     |
15+25       1.9679      2.76  |          |Q        |         |   V     |
15+30       1.9868      2.75  |          Q         |         |   V     |
15+35       2.0036      2.44  |         Q|         |         |   V     |
15+40       2.0190      2.23  |       Q |          |         |    V    |
15+45       2.0341      2.20  |       Q |          |         |    V    |
15+50       2.0493      2.20  |       Q |          |         |    V    |
15+55       2.0645      2.20  |       Q |          |         |     V   |
16+ 0       2.0797      2.21  |       Q |          |         |     V   |
16+ 5       2.0880      1.21  |   Q     |          |         |     V   |
16+10       2.0916      0.53  | Q       |          |         |     V   |
16+15       2.0945      0.41  |Q        |          |         |     V   |
16+20       2.0973      0.41  |Q        |          |         |     V   |
16+25       2.1001      0.41  |Q        |          |         |     V   |
16+30       2.1030      0.41  |Q        |          |         |     V   |
16+35       2.1054      0.35  |Q        |          |         |     V   |
```

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16+40       2.1076      0.32  |Q        |         |         |     V   |
16+45       2.1097      0.31  |Q        |         |         |     V   |
16+50       2.1118      0.31  |Q        |         |         |     V   |
16+55       2.1140      0.31  |Q        |         |         |     V   |
17+ 0       2.1161      0.31  |Q        |         |         |     V   |
17+ 5       2.1190      0.42  |Q        |         |         |     V   |
17+10       2.1225      0.50  | Q       |         |         |      V  |
17+15       2.1260      0.51  | Q       |         |         |      V  |
17+20       2.1296      0.51  | Q       |         |         |      V  |
17+25       2.1331      0.51  | Q       |         |         |      V  |
17+30       2.1367      0.51  | Q       |         |         |      V  |
17+35       2.1402      0.51  | Q       |         |         |      V  |
17+40       2.1437      0.51  | Q       |         |         |      V  |
17+45       2.1473      0.51  | Q       |         |         |      V  |
17+50       2.1504      0.46  |Q        |         |         |      V  |
17+55       2.1533      0.42  |Q        |         |         |      V  |
18+ 0       2.1562      0.41  |Q        |         |         |      V  |
18+ 5       2.1590      0.41  |Q        |         |         |      V  |
18+10       2.1618      0.41  |Q        |         |         |      V  |
18+15       2.1647      0.41  |Q        |         |         |      V  |
18+20       2.1675      0.41  |Q        |         |         |      V  |
18+25       2.1703      0.41  |Q        |         |         |      V  |
18+30       2.1732      0.41  |Q        |         |         |      V  |
18+35       2.1756      0.35  |Q        |         |         |      V  |
18+40       2.1778      0.32  |Q        |         |         |       V |
18+45       2.1799      0.31  |Q        |         |         |       V |
18+50       2.1817      0.25  |Q        |         |         |       V |
18+55       2.1831      0.21  Q         |         |         |       V |
19+ 0       2.1845      0.21  Q         |         |         |       V |
19+ 5       2.1864      0.26  |Q        |         |         |       V |
19+10       2.1884      0.30  |Q        |         |         |       V |
19+15       2.1906      0.31  |Q        |         |         |       V |
19+20       2.1931      0.37  |Q        |         |         |       V |
19+25       2.1959      0.41  |Q        |         |         |       V |
19+30       2.1987      0.41  |Q        |         |         |       V |
19+35       2.2012      0.35  |Q        |         |         |       V |
19+40       2.2033      0.32  |Q        |         |         |       V |
19+45       2.2055      0.31  |Q        |         |         |       V |
19+50       2.2072      0.25  |Q        |         |         |       V |
19+55       2.2087      0.21  Q         |         |         |       V |
20+ 0       2.2101      0.21  Q         |         |         |       V |
20+ 5       2.2119      0.26  |Q        |         |         |       V |
20+10       2.2140      0.30  |Q        |         |         |       V |
20+15       2.2161      0.31  |Q        |         |         |       V |
20+20       2.2182      0.31  |Q        |         |         |       V |
20+25       2.2203      0.31  |Q        |         |         |       V |
20+30       2.2225      0.31  |Q        |         |         |       V |
20+35       2.2246      0.31  |Q        |         |         |       V |
20+40       2.2267      0.31  |Q        |         |         |       V |
20+45       2.2289      0.31  |Q        |         |         |       V |
20+50       2.2306      0.25  |Q        |         |         |       V |
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   20+55       2.2321      0.21  Q         |          |          |        V |
   21+ 0       2.2335      0.21  Q         |          |          |        V |
   21+ 5       2.2353      0.26  |Q        |          |          |         V|
   21+10       2.2374      0.30  |Q        |          |          |         V|
   21+15       2.2395      0.31  |Q        |          |          |         V|
   21+20       2.2412      0.25  |Q        |          |          |         V|
   21+25       2.2427      0.21  Q         |          |          |         V|
   21+30       2.2441      0.21  Q         |          |          |         V|
   21+35       2.2459      0.26  |Q        |          |          |         V|
   21+40       2.2480      0.30  |Q        |          |          |         V|
   21+45       2.2501      0.31  |Q        |          |          |         V|
   21+50       2.2519      0.25  |Q        |          |          |         V|
   21+55       2.2533      0.21  Q         |          |          |         V|
   22+ 0       2.2547      0.21  Q         |          |          |         V|
   22+ 5       2.2566      0.26  |Q        |          |          |         V|
   22+10       2.2586      0.30  |Q        |          |          |         V|
   22+15       2.2608      0.31  |Q        |          |          |         V|
   22+20       2.2625      0.25  |Q        |          |          |         V|
   22+25       2.2640      0.21  Q         |          |          |         V|
   22+30       2.2654      0.21  Q         |          |          |         V|
   22+35       2.2668      0.21  Q         |          |          |         V|
   22+40       2.2682      0.21  Q         |          |          |         V|
   22+45       2.2696      0.21  Q         |          |          |         V|
   22+50       2.2711      0.21  Q         |          |          |         V|
   22+55       2.2725      0.21  Q         |          |          |         V|
   23+ 0       2.2739      0.21  Q         |          |          |         V|
   23+ 5       2.2753      0.21  Q         |          |          |         V|
   23+10       2.2767      0.21  Q         |          |          |         V|
   23+15       2.2782      0.21  Q         |          |          |         V|
   23+20       2.2796      0.21  Q         |          |          |         V|
   23+25       2.2810      0.21  Q         |          |          |         V|
   23+30       2.2824      0.21  Q         |          |          |         V|
   23+35       2.2838      0.21  Q         |          |          |         V|
   23+40       2.2852      0.21  Q         |          |          |         V|
   23+45       2.2867      0.21  Q         |          |          |         V|
   23+50       2.2881      0.21  Q         |          |          |         V|
   23+55       2.2895      0.21  Q         |          |          |         V|
   24+ 0       2.2909      0.21  Q         |          |          |         V|
   24+ 5       2.2915      0.09  Q         |          |          |         V|
   24+10       2.2916      0.01  Q         |          |          |         V|
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