# PRELIMINARY HYDROLOGY STUDY

## SOUTH OF GOYA

Southeast Corner of Goya Avenue & Indian Street
Moreno Valley, California

PENxxxxx
LSTxxxxx

Prepared for:
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# SECTION I - INTRODUCTION

## 1.1 PURPOSE

This report presents the hydrologic analysis for the proposed development located at the southeast corner of Goya Avenue & Indian Street, in the City of Moreno Valley, County of Riverside, State of California. The main objective of this report was to analyze the post construction "peak" run-off quantities for the proposed development.

## 1.2 PROJECT DESCRIPTION

The project is located across APNs 316020020, 316020021, 316020022, 316020023, and 316020014 at the southeast corner of Goya Avenue and Indian St as shown in Appendix A. The existing 13.74-acre site consists of residential tracts. It generally slopes from northeast to southwest at a gradient of approximately 0.8%. No existing underground storm drain facilities exist near the site that is tributary to the project. The site is bordered by Goya Avenue to the north, Indian Street to the west, and Residential development to the south and east. Indian Street are existing improved streets to be widen to add curb and gutter. Along the project site frontage, Goya Avenue is an existing dirt road and is part of street improvements at 0.39-acre and street improvements for southern portion of Iris Avenue at 0.37-acre for the residential tracts site.

The developed site will be residential homes with open space. The site will be graded to generally follow the existing condition drainage patterns to minimize adverse effects to the current topography and minimize the use of import soil.

The basin and storm drain curb inlet will ensure the project detains up to the 100-year stormwater volume exceeding the pre-developed condition while restricting outflow up to the 100-year pre-developed flow rate for the proposed onsite development only. The basin will both detain and infiltrate the project's onsite runoff as no underground storm drain facilities exist near the site.

The basin will operate as an extended detention: it will detain the onsite flows for the storm events specified herein while also acting as detention basin to treat the project's runoff. While the basin will be 5' deep with 1' of freeboard, it will act as a biotreatment detention basin as determined by the BMP calculation sheets herein. The basin will only store runoff in excess of this in order to attenuate runoff to the pre-development condition.

Please see the Hydrology Map in Appendix D for delineation.

# SECTION II - FLOW VOLUMES

## 2.1 METHODOLOGY

This hydrology study was based on the Riverside County Flood Control and Water Conservation District (RCFC&WCD) Hydrology Manual dated April 1978. This manual allows the use of two methods: the Rational Method and the Synthetic Unit Hydrograph Method.

The Rational Method was used to determine peak flow rates for each tributary area for pipe sizing to ensure that capacity for the 10-year and 100-year storm events were met. The Synthetic Unit Hydrograph Method was used to calculate pre-developed and post-developed runoff volumes and peak flow rates for the 2, 5, 10, and 100-year storm events at durations of 1, 3, 6, and 24 hours.

Basin modeling was performed using the Hydraflow Hydrographs Extension for Autodesk Civil 3D 2022. Synthetic Unit Hydrograph Method storm events were input into the extension to simulate basin depths,

**Post-Developed Impervious Calculation**

| Type | Area (SF) | Area (AC) | % of Total | % Imp. | Impervious Area (SF) | Impervious Area (AC) | Note |
|---|---|---|---|---|---|---|---|
| Residential Homes | 270,934 | 6.22 | 45% | 80% | 270,934 | 6.2 | 80% impervious from RCFC&WCD Hydrology Manual Plate E-6.3 |
| Open Space | 234,045 | 5.37 | 39% | 0% | 0 | 0.0 | |
| Residential Street & Sidewalk | 93,578 | 2.14 | 16% | 100% | 93,578 | 2.1 | |
| TOTAL | 598,557 | 13.7 | | | | 8.3 | |
| | | | | | Weighted % Impervious: | 43% | |

Stormwater quality volumes were determined in the project water quality management plan (WQMP). See project WQMP for more information.

Please see Appendix C for Riverside County Approved CivilD Bonadiman Software Calculations as well as basin sizing calculations. See Appendix D: Hydrology Map for an illustration of drainage patterns, tributary sub areas, and storm drain pipes to convey runoff to the onsite basin.

## 2.2 DESIGN CRITERIA

### Rational Method

Design Storm: 10 & 100-year

Soil Type: "B" (assumed for all areas).

Runoff Coefficients: A conservative on-site runoff coefficient of 0.90 was used for calculation of the post-developed runoff.

### Synthetic Unit Hydrograph Method

Design Storms: 2, 5, 10, 100 year at 1, 3, 6, 24 hours

Antecedent Moisture Condition (AMC):

I (2 & 5-year)

II (10 & 100-year)

# SECTION III - SUMMARY

Both the Rational Method and the Synthetic Unit Hydrograph Method were used to evaluate the hydraulic and hydrologic performance of the proposed development using the parameters described in Section 2.2. Peak runoff and storage for the development were calculated and are summarized in the following tables. The results of both calculations show that the proposed basin and storm drains are adequately sized to both convey and detain the runoff in excess of the pre-developed condition for the storm events indicated. Please see Appendices C & D for detailed calculations and locations of facilities.

Please note that Hydromodification and Hydrologic Conditions of Concern (HCOC) criteria do not apply to this project due to the downstream Canyon Lake sump. See the project WQMP for more information.

Rational Method Stormwater Calculations Summary

| **Condition** | **$t_c$** | | **$Q_{100}$** | |
|---|---|---|---|---|
| Pre-Developed | 23.91 | min | 17.17 | CFS |
| Post-Developed | 16.60 | min | 23.86 | CFS |

Synthetic Unit Hydrograph Method Stormwater Calculations Summary

| **Condition** | **$V_{100YR, 24HR}$** | | **$Q_{100YR, 24HR}$** | |
|---|---|---|---|---|
| Pre-Developed Runoff | 83,051 | CF | 6.15 | CFS |
| Post-Developed Runoff (Onsite) entering basin | 123,851 | CF | 4.75 | CFS |

Basin Fill Elevation Summary

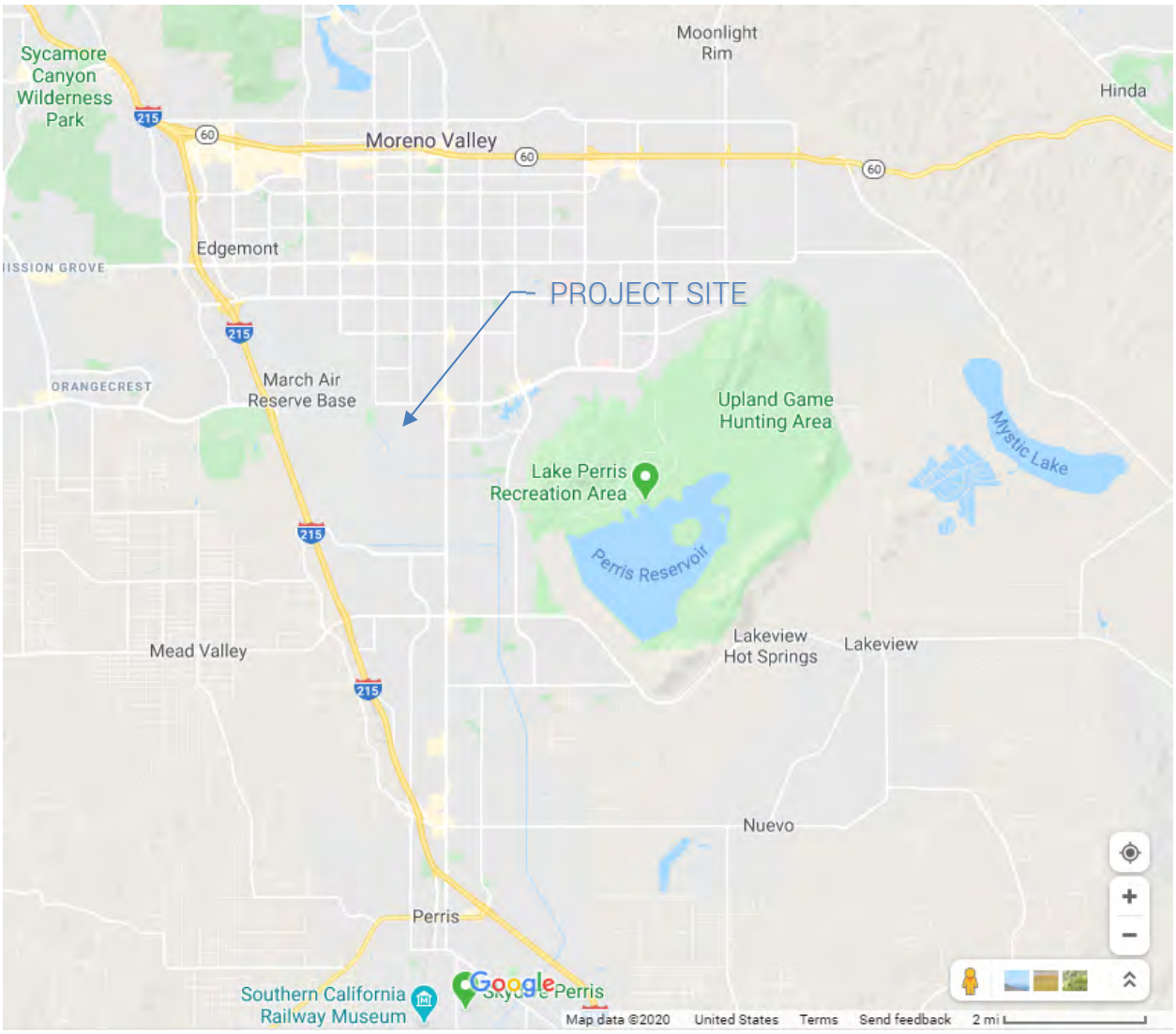
| Elevation | | Note |
|---|---|---|
| 1492.30 | Top of basin | 6' deep including 1.0' freeboard |
| 1491.30 | 100-year water surface elevation | 5' deep |
| 1486.30 | Bottom of Basin | |

# APPENDIX A

Vicinity Map

# APPENDIX A

Vicinity Map



# APPENDIX B

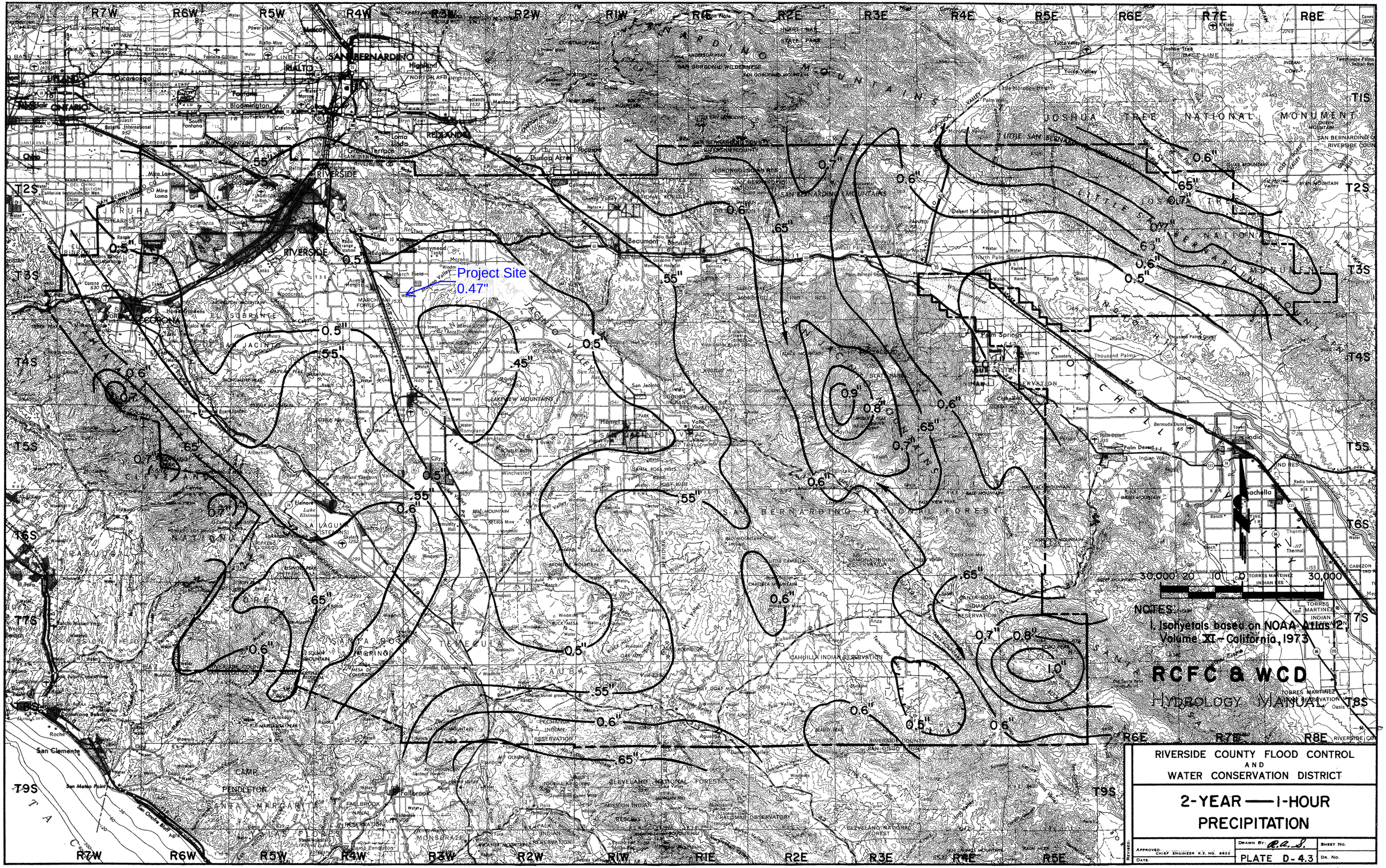
Reference Riverside County Hydrology Manual Plates

# RAINFALL INTENSITY—INCHES PER HOUR

| SUNNYMEAD - MORENO | | | WOODCREST | | |
|---|---|---|---|---|---|
| DURATION MINUTES | FREQUENCY | | DURATION MINUTES | FREQUENCY | |
| | 10 YEAR | 100 YEAR | | 10 YEAR | 100 YEAR |
| 5 | 2.84 | 4.16 | 5 | 3.37 | 5.30 |
| 6 | 2.59 | 3.79 | 6 | 3.05 | 4.79 |
| 7 | 2.40 | 3.51 | 7 | 2.80 | 4.40 |
| 8 | 2.25 | 3.29 | 8 | 2.60 | 4.09 |
| 9 | 2.12 | 3.10 | 9 | 2.44 | 3.83 |
| 10 | 2.01 | 2.94 | 10 | 2.30 | 3.62 |
| 11 | 1.92 | 2.80 | 11 | 2.19 | 3.43 |
| 12 | 1.83 | 2.68 | 12 | 2.08 | 3.27 |
| 13 | 1.76 | 2.58 | 13 | 1.99 | 3.13 |
| 14 | 1.70 | 2.48 | 14 | 1.91 | 3.01 |
| 15 | 1.64 | 2.40 | 15 | 1.84 | 2.89 |
| 16 | 1.59 | 2.32 | 16 | 1.78 | 2.79 |
| 17 | 1.54 | 2.25 | 17 | 1.72 | 2.70 |
| 18 | 1.50 | 2.19 | 18 | 1.67 | 2.62 |
| 19 | 1.46 | 2.13 | 19 | 1.62 | 2.54 |
| 20 | 1.42 | 2.08 | 20 | 1.57 | 2.47 |
| 22 | 1.35 | 1.98 | 22 | 1.49 | 2.34 |
| 24 | 1.30 | 1.90 | 24 | 1.42 | 2.23 |
| 26 | 1.25 | 1.82 | 26 | 1.36 | 2.14 |
| 28 | 1.20 | 1.76 | 28 | 1.31 | 2.05 |
| 30 | 1.16 | 1.70 | 30 | 1.26 | 1.98 |
| 32 | 1.12 | 1.64 | 32 | 1.22 | 1.91 |
| 34 | 1.09 | 1.59 | 34 | 1.18 | 1.85 |
| 36 | 1.06 | 1.55 | 36 | 1.14 | 1.79 |
| 38 | 1.03 | 1.51 | 38 | 1.11 | 1.74 |
| 40 | 1.00 | 1.47 | 40 | 1.07 | 1.69 |
| 45 | .95 | 1.39 | 45 | 1.01 | 1.58 |
| 50 | .90 | 1.31 | 50 | .95 | 1.49 |
| 55 | .86 | 1.25 | 55 | .90 | 1.42 |
| 60 | .82 | 1.20 | 60 | .86 | 1.35 |
| 65 | .79 | 1.15 | 65 | .82 | 1.29 |
| 70 | .76 | 1.11 | 70 | .79 | 1.24 |
| 75 | .73 | 1.07 | 75 | .76 | 1.19 |
| 80 | .71 | 1.04 | 80 | .73 | 1.15 |
| 85 | .69 | 1.01 | 85 | .71 | 1.11 |
| SLOPE = | .500 | | SLOPE = | .550 | |

## STANDARD INTENSITY-DURATION CURVES DATA

PLATE D-4.1 (6 of 6)


Project Site
0.47"
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR PRECIPITATION
PLATE D-4.3

Project Site
1.2"

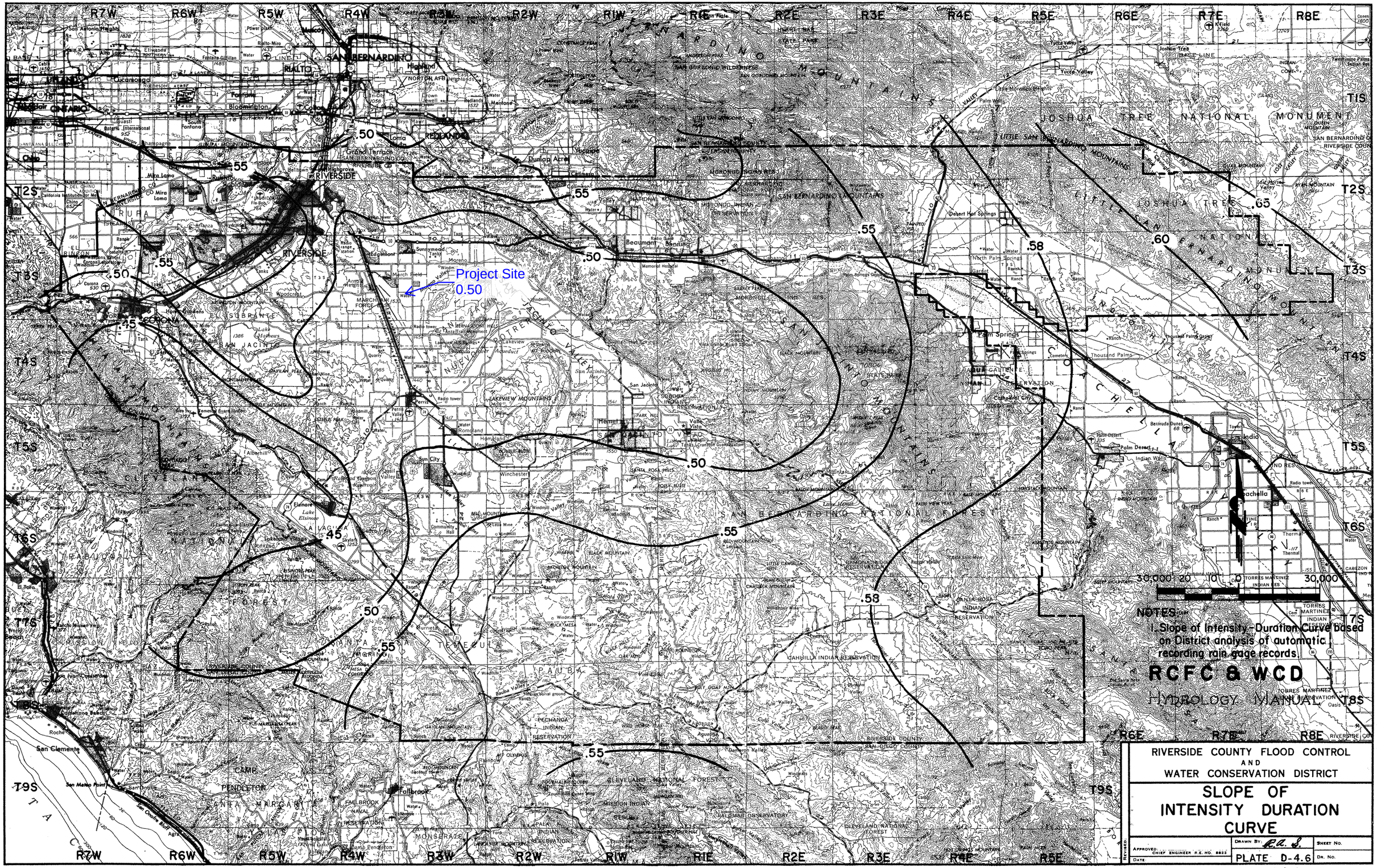
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973

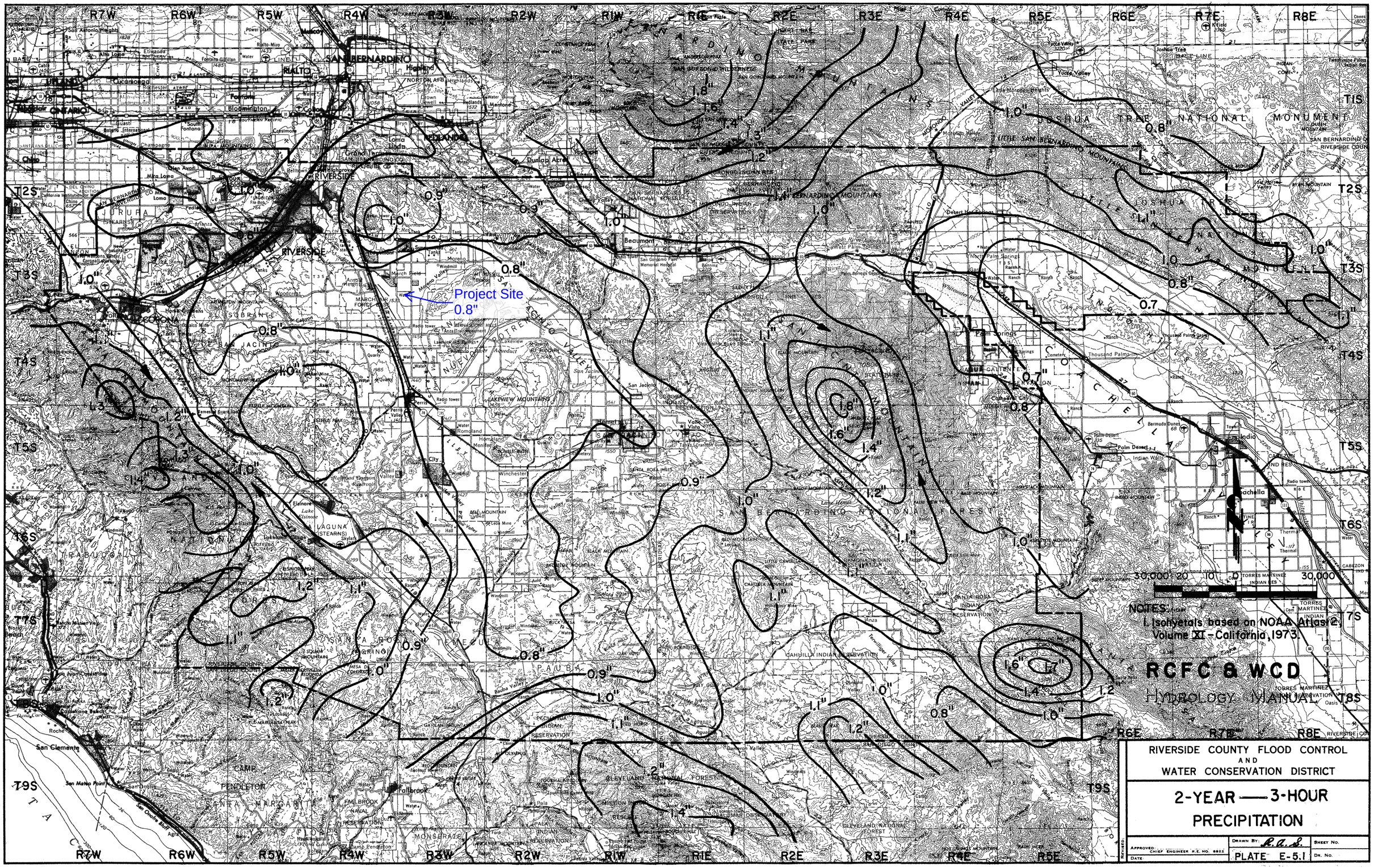
RCFC & WCD
HYDROLOGY MANUAL

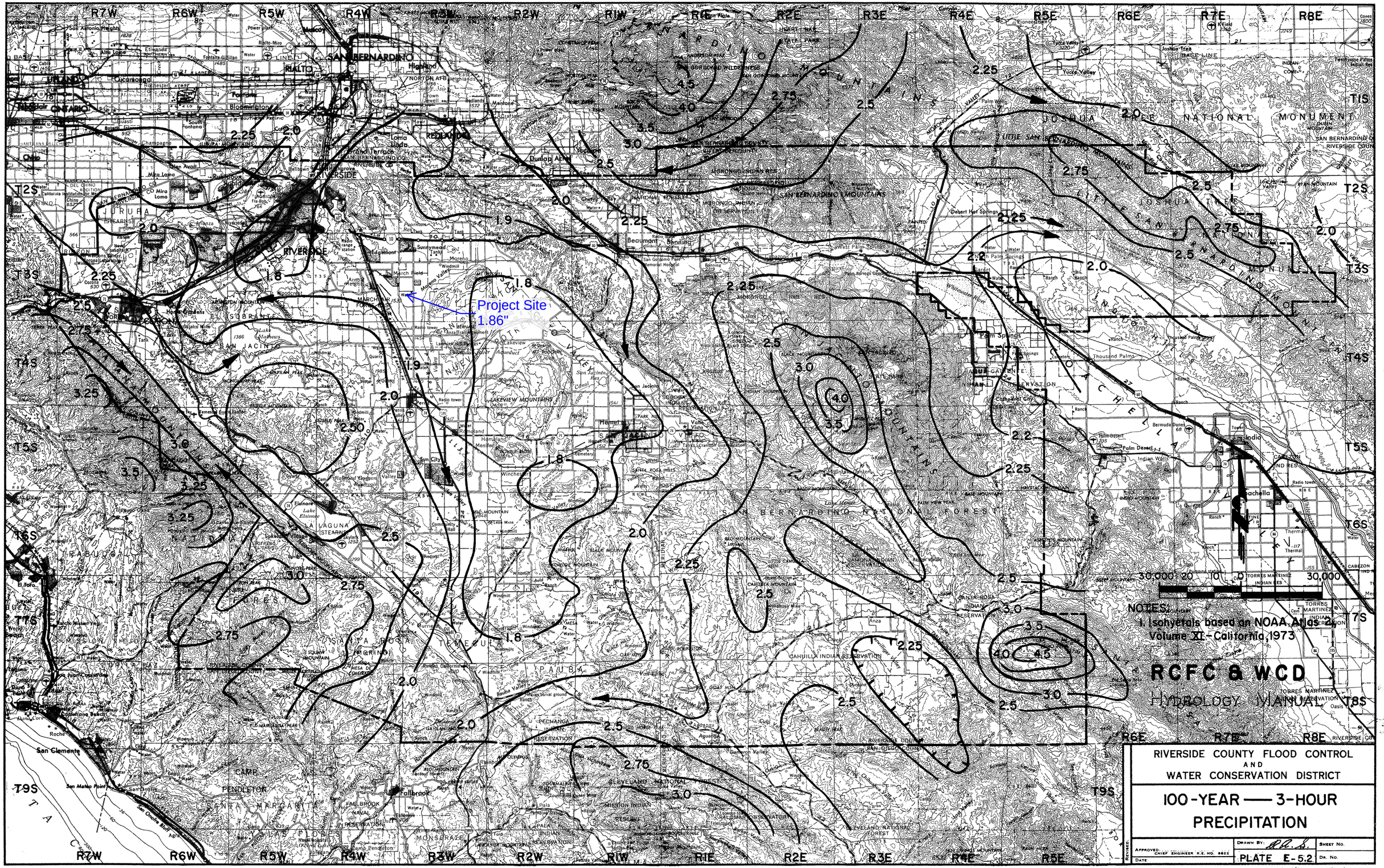
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

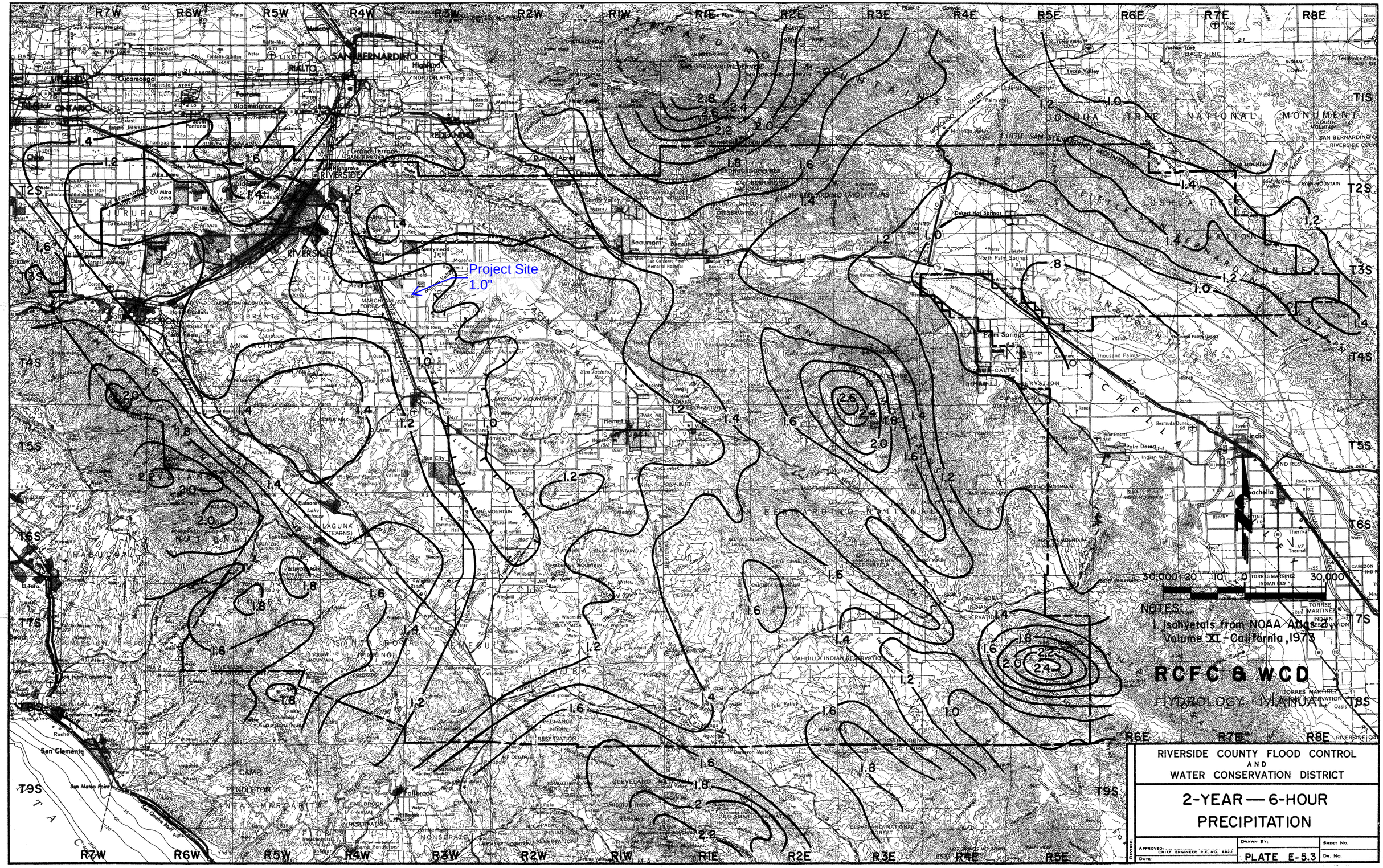
100-YEAR — 1-HOUR PRECIPITATION

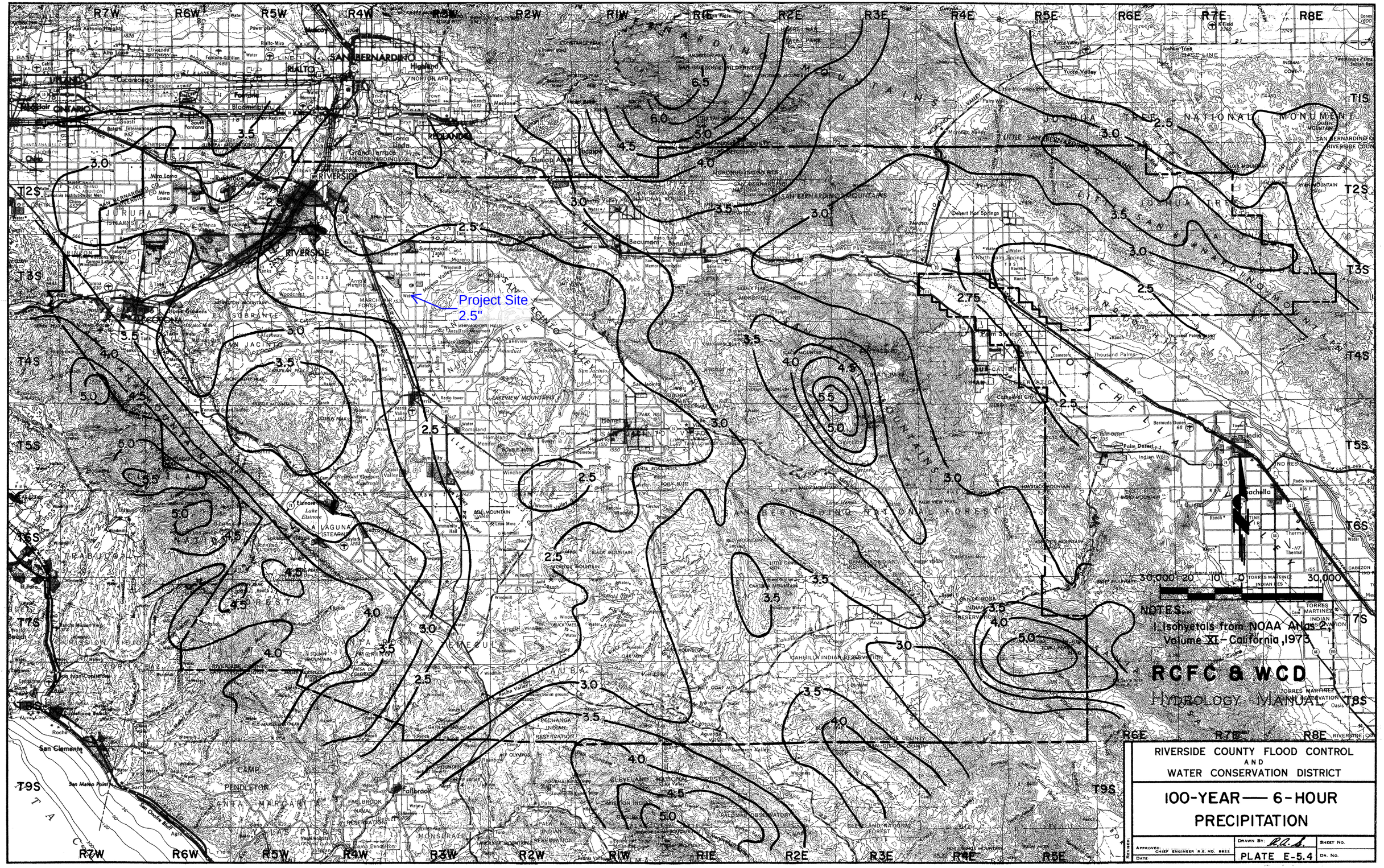
| | | |
|---|---|---|
| APPROVED: CHIEF ENGINEER R.E. NO. 8822 | DRAWN BY: A.A.S. | SHEET NO. |
| DATE | PLATE D-4.4 | DR. NO. |
| REVISED | | |

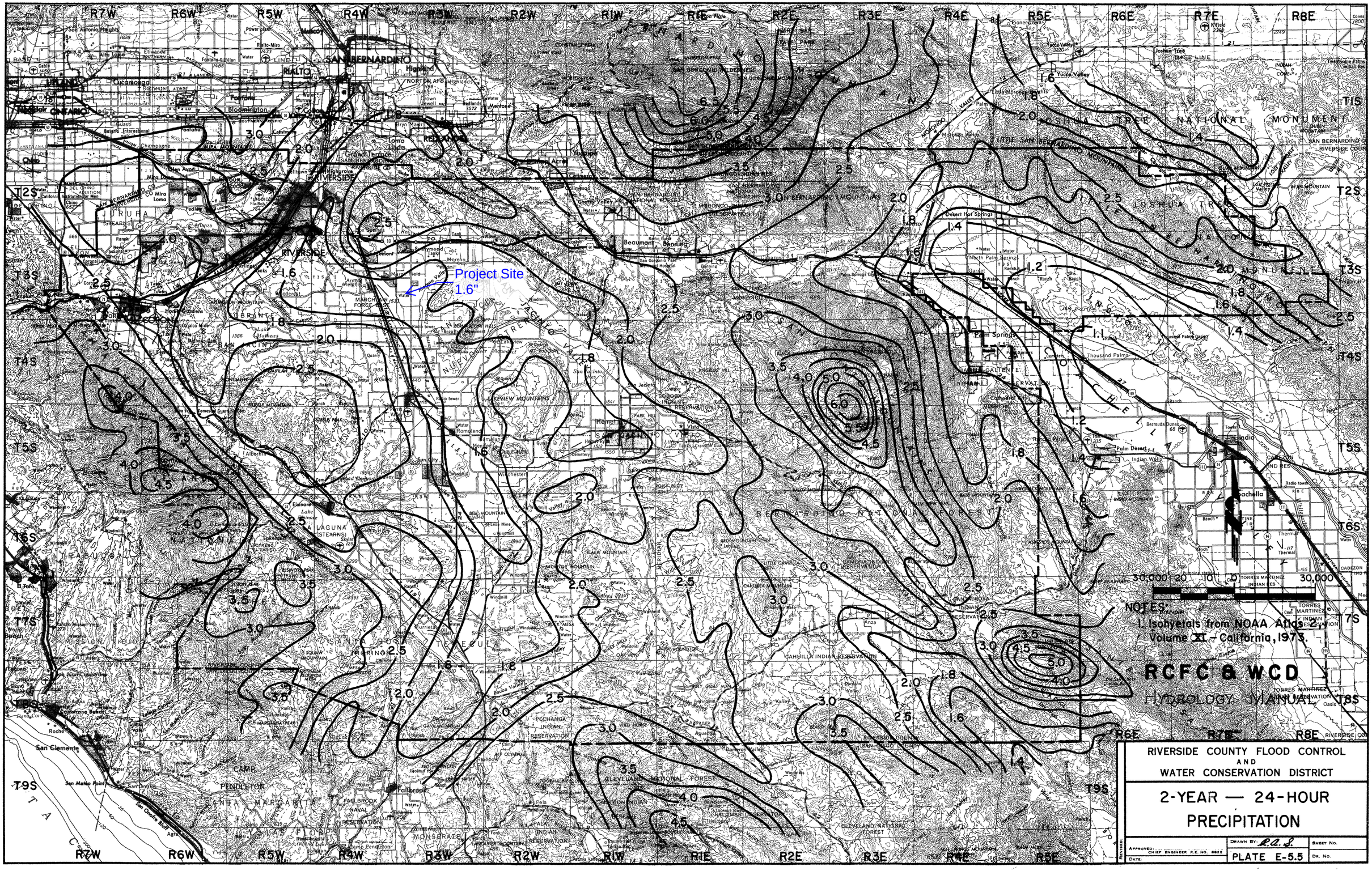

Project Site
0.50
.45
.50
.55
.58
.60
.63
NOTES
1. Slope of Intensity-Duration Curve Based on District analysis of automatic recording rain gage records
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
SLOPE OF INTENSITY DURATION CURVE
PLATE D-4.6

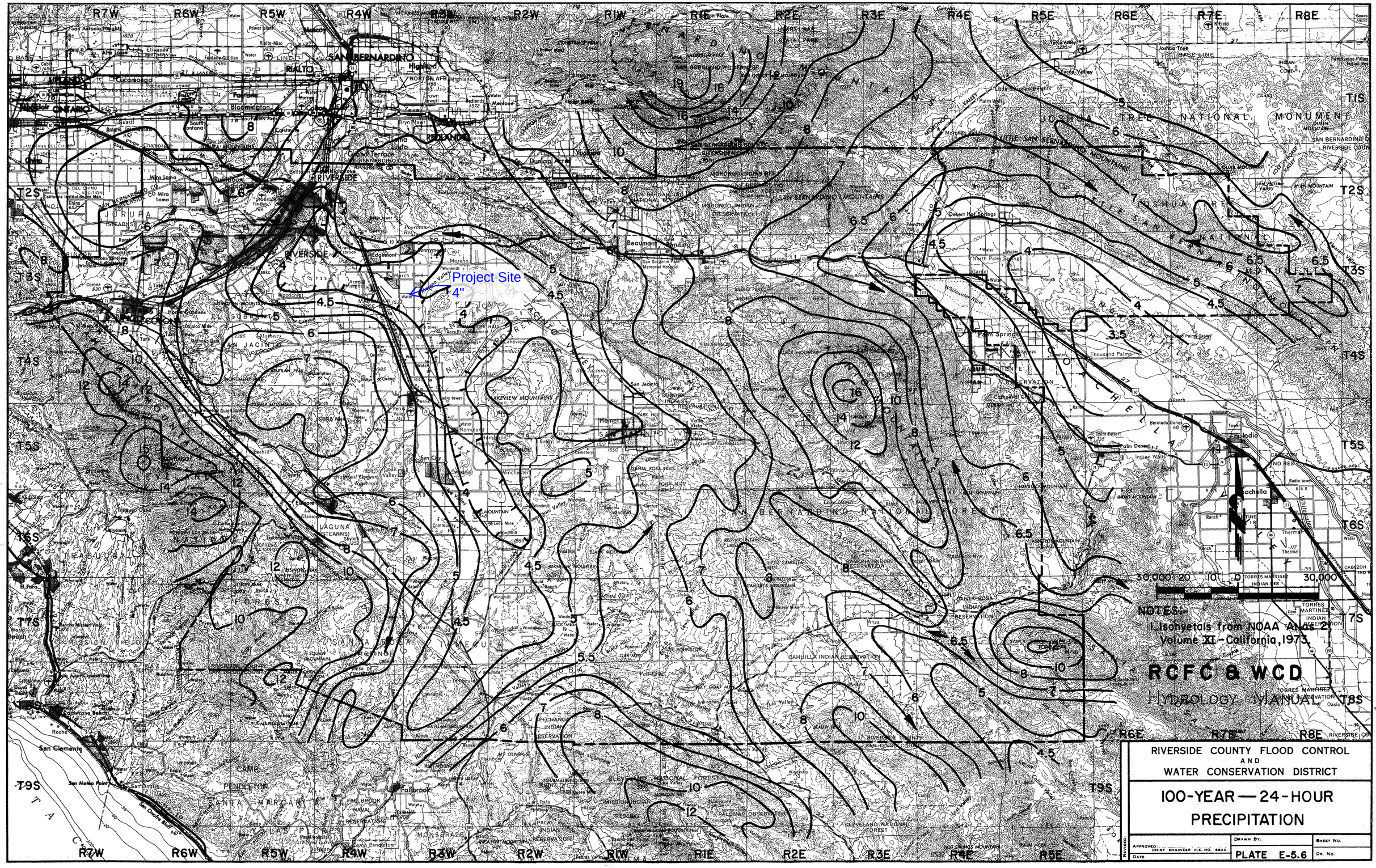

Project Site
0.8"
NOTES:
1. Isohyetals based on NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 3-HOUR PRECIPITATION
DRAWN BY: R.A.S.
SHEET NO.
APPROVED: CHIEF ENGINEER R.E. NO. 6822
DATE:
PLATE E-5.1
DR. No.
REVISED


Project Site
1.86"
NOTES:
1. Isohyetals based on NOAA Atlas 2,
Volume XI - California, 1973
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 3-HOUR
PRECIPITATION
DRAWN BY: R.R.S.
SHEET No.
PLATE E-5.2
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED
DR. No.


Project Site
1.0"
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 — 6-HOUR
PRECIPITATION
DRAWN BY:
SHEET NO.
APPROVED
CHIEF ENGINEER R.E. NO. 6822
DATE
PLATE E-5.3
DR. NO.
REVISED


Project Site
2.5"
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 — 6-HOUR PRECIPITATION
DRAWN BY: R.A.S.
SHEET No.
PLATE E-5.4
DR. No.
APPROVED CHIEF ENGINEER R.E. NO. 8822
DATE
REVISED:


Project Site
1.6"
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
APPROVED: CHIEF ENGINEER R.E. NO. 8822
DATE
DRAWN BY: R.A.S.
PLATE E-5.5
SHEET NO.
DR. NO.
REVISED


Project Site
4"
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
DRAWN BY:
REVISED
SHEET NO.
DR. NO.

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

| Cover Type (3) | Quality of Cover (2) | Soil Group A | B | C | D |
|---|---|---|---|---|---|
| NATURAL COVERS - | | | | | |
| Barren (Rockland, eroded and graded land) | | 78 | 86 | 91 | 93 |
| Chaparrel, Broadleaf (Manzonita, ceanothus and scrub oak) | Poor | 53 | 70 | 80 | 85 |
| | Fair | 40 | 63 | 75 | 81 |
| | Good | 31 | 57 | 71 | 78 |
| Chaparrel, Narrowleaf (Chamise and redshank) | Poor | 71 | 82 | 88 | 91 |
| | Fair | 55 | 72 | 81 | 86 |
| Grass, Annual or Perennial | Poor | 67 | 78 | 86 | 89 |
| | Fair | 50 | 69 | 79 | 84 |
| | Good | 38 | 61 | 74 | 80 |
| Meadows or Cienegas (Areas with seasonally high water table, principal vegetation is sod forming grass) | Poor | 63 | 77 | 85 | 88 |
| | Fair | 51 | 70 | 80 | 84 |
| | Good | 30 | 58 | 72 | 78 |
| Open Brush (Soft wood shrubs - buckwheat, sage, etc.) | Poor | 62 | 76 | 84 | 88 |
| | Fair | 46 | 66 | 77 | 83 |
| | Good | 41 | 63 | 75 | 81 |
| Woodland (Coniferous or broadleaf trees predominate. Canopy density is at least 50 percent) | Poor | 45 | 66 | 77 | 83 |
| | Fair | 36 | 60 | 73 | 79 |
| | Good | 28 | 55 | 70 | 77 |
| Woodland, Grass (Coniferous or broadleaf trees with canopy density from 20 to 50 percent) | Poor | 57 | 73 | 82 | 86 |
| | Fair | 44 | 65 | 77 | 82 |
| | Good | 33 | 58 | 72 | 79 |
| URBAN COVERS - | | | | | |
| Residential or Commercial Landscaping (Lawn, shrubs, etc.) | Good | 32 | 56 | 69 | 75 |
| Turf (Irrigated and mowed grass) | Poor | 58 | 74 | 83 | 87 |
| | Fair | 44 | 65 | 77 | 82 |
| | Good | 33 | 58 | 72 | 79 |
| AGRICULTURAL COVERS - | | | | | |
| Fallow (Land plowed but not tilled or seeded) | | 76 | 85 | 90 | 92 |

**RCFC & WCD**
HYDROLOGY MANUAL

**RUNOFF INDEX NUMBERS FOR PERVIOUS AREAS**

PLATE E-6.1 (1 of 2)

RUNOFF INDEX NUMBERS OF HYDROLOGIC SOIL-COVER COMPLEXES FOR PERVIOUS AREAS-AMC II

| Cover Type (3) | Quality of Cover (2) | Soil Group A | B | C | D |
|---|---|---|---|---|---|
| AGRICULTURAL COVERS (cont.) - | | | | | |
| Legumes, Close Seeded (Alfalfa, sweetclover, timothy, etc.) | Poor | 66 | 77 | 85 | 89 |
| | Good | 58 | 72 | 81 | 85 |
| Orchards, Deciduous (Apples, apricots, pears, walnuts, etc.) | | See Note 4 | | | |
| Orchards, Evergreen (Citrus, avocados, etc.) | Poor | 57 | 73 | 82 | 86 |
| | Fair | 44 | 65 | 77 | 82 |
| | Good | 33 | 58 | 72 | 79 |
| Pasture, Dryland (Annual grasses) | Poor | 67 | 78 | 86 | 89 |
| | Fair | 50 | 69 | 79 | 84 |
| | Good | 38 | 61 | 74 | 80 |
| Pasture, Irrigated (Legumes and perennial grass) | Poor | 58 | 74 | 83 | 87 |
| | Fair | 44 | 65 | 77 | 82 |
| | Good | 33 | 58 | 72 | 79 |
| Row Crops (Field crops - tomatoes, sugar beets, etc.) | Poor | 72 | 81 | 88 | 91 |
| | Good | 67 | 78 | 85 | 89 |
| Small Grain (Wheat, oats, barley, etc.) | Poor | 65 | 76 | 84 | 88 |
| | Good | 63 | 75 | 83 | 87 |
| Vineyard | | See Note 4 | | | |

Notes:

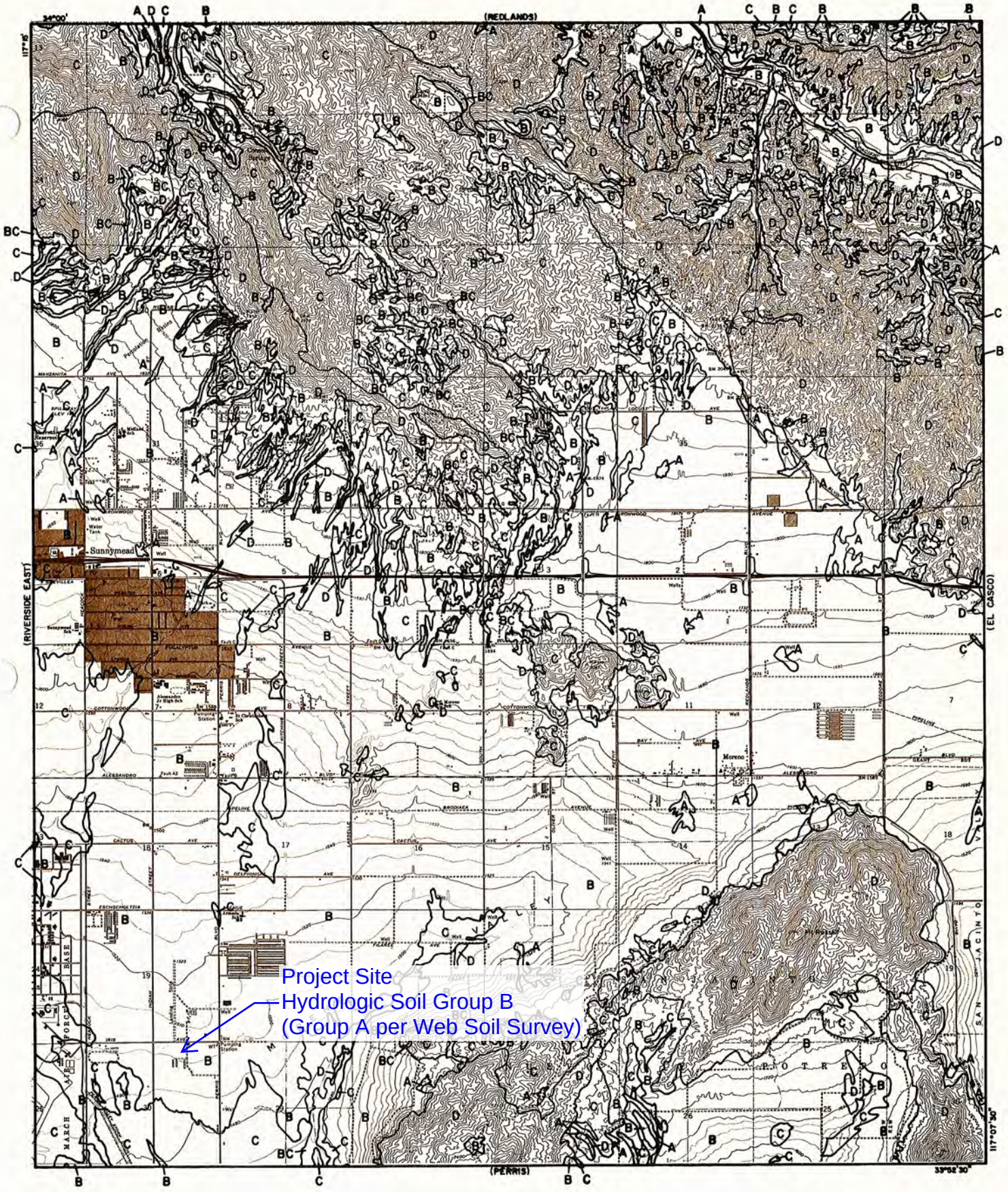
1. All runoff index (RI) numbers are for Antecedent Moisture Condition (AMC) II.

2. Quality of cover definitions:
   Poor-Heavily grazed or regularly burned areas. Less than 50 percent of the ground surface is protected by plant cover or brush and tree canopy.
   Fair-Moderate cover with 50 percent to 75 percent of the ground surface protected.
   Good-Heavy or dense cover with more than 75 percent of the ground surface protected.

3. See Plate C-2 for a detailed description of cover types.

4. Use runoff index numbers based on ground cover type. See discussion under "Cover Type Descriptions" on Plate C-2.

5. Reference Bibliography item 17.




**LEGEND**

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

0 FEET 5000

# HYDROLOGIC SOILS GROUP MAP FOR SUNNYMEAD

PLATE C-1.17

# APPENDIX C.1

Rational Method Post Development Calculations

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 03/16/23 File:10YRPRE.out

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GOYA 10YR PRE

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

English (in-lb) Units used in input data file

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Program License Serial Number 6215

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Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 1

Standard intensity-duration curves data (Plate D-4.1)
For the [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity = 2.010(In/Hr)
10 year storm 60 minute intensity = 0.820(In/Hr)
100 year storm 10 minute intensity = 2.940(In/Hr)
100 year storm 60 minute intensity = 1.200(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.820(In/Hr)
Slope of intensity duration curve = 0.5000

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station 401.000 to Point/Station 402.000
**** INITIAL AREA EVALUATION ****

---

Initial area flow distance = 422.000(Ft.)

```
Top (of initial area) elevation =  1496.220(Ft.)
Bottom (of initial area) elevation =  1495.000(Ft.)
Difference in elevation =     1.220(Ft.)
Slope =    0.00289  s(percent)=       0.29
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   19.151 min.
Rainfall intensity =      1.451(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.563
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  60.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      4.253(CFS)
Total initial stream area =        5.200(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      400.000
**** NATURAL CHANNEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of natural channel elevation =   1495.000(Ft.)
End of natural channel elevation =   1491.350(Ft.)
Length of natural channel  =   596.000(Ft.)
Estimated mean flow rate at midpoint of channel =      7.769(CFS)

Natural valley channel type used
L.A. County flood control district formula for channel velocity:
 Velocity(ft/s) = (7 + 8(q(English Units)^.352)(slope^0.5)
Velocity using mean channel flow =   1.84(Ft/s)

Correction to map slope used on extremely rugged channels with
drops and waterfalls (Plate D-6.2)
        Normal channel slope =  0.0061
Corrected/adjusted channel slope =  0.0061
Travel time =    5.41 min.     TC =   24.56  min.


 Adding area flow to channel
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.537
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  60.60
Pervious area fraction =  1.000; Impervious fraction =  0.000
```

Rainfall intensity = 1.282(In/Hr) for a 10.0 year storm
Subarea runoff = 5.917(CFS) for 8.600(Ac.)
Total runoff = 10.170(CFS) Total area = 13.800(Ac.)
End of computations, total study area = 13.80 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 78.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2005 Version 7.1
Rational Hydrology Study Date: 03/15/23 File:10YRPOST.out

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GOYA 10YR POST

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

English (in-lb) Units used in input data file

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Program License Serial Number 6215

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Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 1

Standard intensity-duration curves data (Plate D-4.1)
For the [ Sunnymead-Moreno ] area used.
10 year storm 10 minute intensity = 2.010(In/Hr)
10 year storm 60 minute intensity = 0.820(In/Hr)
100 year storm 10 minute intensity = 2.940(In/Hr)
100 year storm 60 minute intensity = 1.200(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.820(In/Hr)
Slope of intensity duration curve = 0.5000

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

Process from Point/Station 101.000 to Point/Station 102.000
**** INITIAL AREA EVALUATION ****

---

Initial area flow distance = 473.000(Ft.)
Top (of initial area) elevation = 1497.380(Ft.)

```
Bottom (of initial area) elevation =  1494.390(Ft.)
Difference in elevation =     2.990(Ft.)
Slope =    0.00632  s(percent)=       0.63
TC = k(0.390)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.614 min.
Rainfall intensity =      1.788(In/Hr) for a    10.0 year storm
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.644
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Initial subarea runoff =      3.257(CFS)
Total initial stream area =        2.830(Ac.)
Pervious area fraction = 0.500


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      104.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1489.340(Ft.)
Downstream point/station elevation =  1488.680(Ft.)
Pipe length  =   132.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     3.257(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     3.257(CFS)
Normal flow depth in pipe =    8.88(In.)
Flow top width inside pipe =   14.74(In.)
Critical Depth =    8.73(In.)
Pipe flow velocity =      4.31(Ft/s)
Travel time through pipe =    0.51 min.
Time of concentration (TC) =    13.12 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.641
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Time of concentration =    13.12 min.
```

```
Rainfall intensity =      1.753(In/Hr) for a    10.0 year storm
Subarea runoff =      0.528(CFS) for      0.470(Ac.)
Total runoff =      3.785(CFS)  Total area =       3.300(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      105.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1488.680(Ft.)
Downstream point/station elevation =  1488.160(Ft.)
Pipe length  =   104.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     3.785(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     3.785(CFS)
Normal flow depth in pipe =    9.83(In.)
Flow top width inside pipe =   14.26(In.)
Critical Depth =    9.43(In.)
Pipe flow velocity =      4.44(Ft/s)
Travel time through pipe =    0.39 min.
Time of concentration (TC) =    13.51 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      105.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.640
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Time of concentration =    13.51 min.
Rainfall intensity =      1.728(In/Hr) for a    10.0 year storm
Subarea runoff =      2.034(CFS) for      1.840(Ac.)
Total runoff =      5.819(CFS)  Total area =       5.140(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      107.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1488.160(Ft.)
Downstream point/station elevation =  1486.590(Ft.)
Pipe length  =   313.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     5.819(CFS)
Nearest computed pipe diameter  =     18.00(In.)
```

```
Calculated individual pipe flow  =     5.819(CFS)
Normal flow depth in pipe =   11.98(In.)
Flow top width inside pipe =   16.99(In.)
Critical Depth =   11.18(In.)
Pipe flow velocity =      4.66(Ft/s)
Travel time through pipe =    1.12 min.
Time of concentration (TC) =    14.64 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      107.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.635
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Time of concentration =    14.64 min.
Rainfall intensity =      1.660(In/Hr) for a    10.0 year storm
Subarea runoff =      1.920(CFS) for      1.820(Ac.)
Total runoff =      7.739(CFS)  Total area =       6.960(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1486.590(Ft.)
Downstream point/station elevation =  1486.360(Ft.)
Pipe length  =    46.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     7.739(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     7.739(CFS)
Normal flow depth in pipe =   14.18(In.)
Flow top width inside pipe =   14.72(In.)
Critical Depth =   12.92(In.)
Pipe flow velocity =      5.19(Ft/s)
Travel time through pipe =    0.15 min.
Time of concentration (TC) =    14.78 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      109.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
```

```
Stream flow area =      6.960(Ac.)
Runoff from this stream =      7.739(CFS)
Time of concentration =   14.78 min.
Rainfall intensity =     1.652(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Initial area flow distance =   263.000(Ft.)
Top (of initial area) elevation =  1493.590(Ft.)
Bottom (of initial area) elevation =  1492.860(Ft.)
Difference in elevation =     0.730(Ft.)
Slope =    0.00278  s(percent)=       0.28
TC = k(0.390)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   11.759 min.
Rainfall intensity =      1.852(In/Hr) for a    10.0 year storm
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.647
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Initial subarea runoff =      2.890(CFS)
Total initial stream area =        2.410(Ac.)
Pervious area fraction = 0.500


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      203.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1489.100(Ft.)
Downstream point/station elevation =  1487.640(Ft.)
Pipe length  =   293.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     2.890(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     2.890(CFS)
Normal flow depth in pipe =    8.24(In.)
Flow top width inside pipe =   14.93(In.)
Critical Depth =    8.19(In.)
Pipe flow velocity =      4.18(Ft/s)
Travel time through pipe =    1.17 min.
Time of concentration (TC) =    12.93 min.


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

```
Process from Point/Station      204.000 to Point/Station      203.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.642
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Time of concentration =    12.93 min.
Rainfall intensity =      1.767(In/Hr) for a    10.0 year storm
Subarea runoff =      2.677(CFS) for      2.360(Ac.)
Total runoff =      5.567(CFS)  Total area =       4.770(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =  1487.640(Ft.)
Downstream point/station elevation =  1486.360(Ft.)
Pipe length  =   256.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     5.567(CFS)
Nearest computed pipe diameter  =     18.00(In.)
Calculated individual pipe flow  =     5.567(CFS)
Normal flow depth in pipe =   11.02(In.)
Flow top width inside pipe =   17.54(In.)
Critical Depth =   10.93(In.)
Pipe flow velocity =      4.92(Ft/s)
Travel time through pipe =    0.87 min.
Time of concentration (TC) =    13.79 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      109.000
**** CONFLUENCE OF MINOR STREAMS ****
------------------------------------------------------------------------
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      4.770(Ac.)
Runoff from this stream =      5.567(CFS)
Time of concentration =   13.79 min.
Rainfall intensity =     1.710(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      301.000 to Point/Station      302.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
```

```
Initial area flow distance =   319.000(Ft.)
Top (of initial area) elevation =  1493.900(Ft.)
Bottom (of initial area) elevation =  1492.020(Ft.)
Difference in elevation =     1.880(Ft.)
Slope =    0.00589  s(percent)=       0.59
TC = k(0.390)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   10.927 min.
Rainfall intensity =      1.921(In/Hr) for a    10.0 year storm
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.651
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Initial subarea runoff =      1.515(CFS)
Total initial stream area =        1.210(Ac.)
Pervious area fraction = 0.500


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      109.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =  1486.930(Ft.)
Downstream point/station elevation =  1486.360(Ft.)
Pipe length  =   115.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =     1.515(CFS)
Nearest computed pipe diameter  =     12.00(In.)
Calculated individual pipe flow  =     1.515(CFS)
Normal flow depth in pipe =    6.40(In.)
Flow top width inside pipe =   11.97(In.)
Critical Depth =    6.26(In.)
Pipe flow velocity =      3.55(Ft/s)
Travel time through pipe =    0.54 min.
Time of concentration (TC) =    11.47 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      109.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 3
Stream flow area =      1.210(Ac.)
Runoff from this stream =      1.515(CFS)
Time of concentration =   11.47 min.
Rainfall intensity =     1.876(In/Hr)
Summary of stream data:
```

```
Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        7.739     14.78                1.652
2        5.567     13.79                1.710
3        1.515     11.47                1.876
Largest stream flow has longer time of concentration
Qp =      7.739 + sum of
          Qb         Ia/Ib
           5.567 *    0.966 =      5.378
          Qb         Ia/Ib
           1.515 *    0.881 =      1.334
Qp =     14.451

Total of 3 streams to confluence:
Flow rates before confluence point:
       7.739       5.567       1.515
Area of streams before confluence:
        6.960        4.770        1.210
Results of confluence:
Total flow rate =     14.451(CFS)
Time of concentration =    14.783 min.
Effective stream area after confluence =     12.940(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      111.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1486.360(Ft.)
Downstream point/station elevation =  1486.350(Ft.)
Pipe length  =   151.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    14.451(CFS)
Nearest computed pipe diameter  =     51.00(In.)
Calculated individual pipe flow  =    14.451(CFS)
Normal flow depth in pipe =   40.50(In.)
Flow top width inside pipe =   41.24(In.)
Critical Depth =   13.11(In.)
Pipe flow velocity =      1.20(Ft/s)
Travel time through pipe =    2.10 min.
Time of concentration (TC) =    16.89 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      111.000
**** SUBAREA FLOW ADDITION ****
______________________________________________________________________________
SINGLE FAMILY (1/4 Acre Lot)
Runoff Coefficient = 0.628
```

```
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 1.000
Decimal fraction soil group C = 0.000
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1)  =  36.00
Pervious area fraction =  0.500; Impervious fraction =  0.500
Time of concentration =    16.89 min.
Rainfall intensity =      1.546(In/Hr) for a    10.0 year storm
Subarea runoff =      0.776(CFS) for      0.800(Ac.)
Total runoff =     15.227(CFS)  Total area =      13.740(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      111.000 to Point/Station      100.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =  1486.350(Ft.)
Downstream point/station elevation =  1486.040(Ft.)
Pipe length  =    63.00(Ft.)   Manning's N = 0.012
No. of pipes = 1  Required pipe flow  =    15.227(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    15.227(CFS)
Normal flow depth in pipe =   17.58(In.)
Flow top width inside pipe =   21.25(In.)
Critical Depth =   16.88(In.)
Pipe flow velocity =      6.18(Ft/s)
Travel time through pipe =    0.17 min.
Time of concentration (TC) =    17.06 min.
End of computations, total study area =           13.74 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.500
Area averaged RI index number =  56.0
```

# APPENDIX C.2

Synthetic Unit Hydrograph Calculations per CivilD

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 - 2008, Version 8.1
Study date 03/16/23 File: GOYASUHPRE242.out

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

Program License Serial Number 6215

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

English Units used in output format

---
GOYASUHPRE2YR

---
Drainage Area = 14.00(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.00(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1018.00(Ft.)
Length along longest watercourse measured to centroid = 74.92(Ft.)
Length along longest watercourse = 0.193 Mi.
Length along longest watercourse measured to centroid = 0.014 Mi.
Difference in elevation = 7.94(Ft.)
Slope along watercourse = 41.1819 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.038 Hr.
Lag time = 2.26 Min.
25% of lag time = 0.57 Min.
40% of lag time = 0.91 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]
       14.00            1.87                   26.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.00            4.74                   66.36

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.870(In)
Area Averaged 100-Year Rainfall =    4.740(In)

Point rain (area averaged) =    1.870(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.870(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    14.000           78.00         0.100
 Total Area Entered =     14.00(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
78.0  60.6      0.464     0.100        0.422       1.000      0.422
                                                 Sum (F) =   0.422
Area averaged mean soil loss (F) (In/Hr) =  0.422
Minimum soil loss rate ((In/Hr)) =  0.211
(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        220.898         46.793             6.602
    2   0.167        441.795         41.935             5.917
    3   0.250        662.693          8.007             1.130
    4   0.333        883.590          3.264             0.461
                               Sum = 100.000   Sum=      14.109
------------------------------------------------------------------------
```

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 | 0.015 | ( 0.748) | 0.013 | 0.001 |
| 2 | 0.17 | 0.07 | 0.015 | ( 0.745) | 0.013 | 0.001 |
| 3 | 0.25 | 0.07 | 0.015 | ( 0.742) | 0.013 | 0.001 |
| 4 | 0.33 | 0.10 | 0.022 | ( 0.739) | 0.020 | 0.002 |
| 5 | 0.42 | 0.10 | 0.022 | ( 0.736) | 0.020 | 0.002 |
| 6 | 0.50 | 0.10 | 0.022 | ( 0.733) | 0.020 | 0.002 |
| 7 | 0.58 | 0.10 | 0.022 | ( 0.730) | 0.020 | 0.002 |
| 8 | 0.67 | 0.10 | 0.022 | ( 0.728) | 0.020 | 0.002 |
| 9 | 0.75 | 0.10 | 0.022 | ( 0.725) | 0.020 | 0.002 |
| 10 | 0.83 | 0.13 | 0.030 | ( 0.722) | 0.027 | 0.003 |
| 11 | 0.92 | 0.13 | 0.030 | ( 0.719) | 0.027 | 0.003 |
| 12 | 1.00 | 0.13 | 0.030 | ( 0.716) | 0.027 | 0.003 |
| 13 | 1.08 | 0.10 | 0.022 | ( 0.713) | 0.020 | 0.002 |
| 14 | 1.17 | 0.10 | 0.022 | ( 0.711) | 0.020 | 0.002 |
| 15 | 1.25 | 0.10 | 0.022 | ( 0.708) | 0.020 | 0.002 |
| 16 | 1.33 | 0.10 | 0.022 | ( 0.705) | 0.020 | 0.002 |
| 17 | 1.42 | 0.10 | 0.022 | ( 0.702) | 0.020 | 0.002 |
| 18 | 1.50 | 0.10 | 0.022 | ( 0.699) | 0.020 | 0.002 |
| 19 | 1.58 | 0.10 | 0.022 | ( 0.697) | 0.020 | 0.002 |
| 20 | 1.67 | 0.10 | 0.022 | ( 0.694) | 0.020 | 0.002 |
| 21 | 1.75 | 0.10 | 0.022 | ( 0.691) | 0.020 | 0.002 |
| 22 | 1.83 | 0.13 | 0.030 | ( 0.688) | 0.027 | 0.003 |
| 23 | 1.92 | 0.13 | 0.030 | ( 0.685) | 0.027 | 0.003 |
| 24 | 2.00 | 0.13 | 0.030 | ( 0.683) | 0.027 | 0.003 |
| 25 | 2.08 | 0.13 | 0.030 | ( 0.680) | 0.027 | 0.003 |
| 26 | 2.17 | 0.13 | 0.030 | ( 0.677) | 0.027 | 0.003 |
| 27 | 2.25 | 0.13 | 0.030 | ( 0.674) | 0.027 | 0.003 |
| 28 | 2.33 | 0.13 | 0.030 | ( 0.672) | 0.027 | 0.003 |
| 29 | 2.42 | 0.13 | 0.030 | ( 0.669) | 0.027 | 0.003 |
| 30 | 2.50 | 0.13 | 0.030 | ( 0.666) | 0.027 | 0.003 |
| 31 | 2.58 | 0.17 | 0.037 | ( 0.663) | 0.034 | 0.004 |
| 32 | 2.67 | 0.17 | 0.037 | ( 0.661) | 0.034 | 0.004 |
| 33 | 2.75 | 0.17 | 0.037 | ( 0.658) | 0.034 | 0.004 |
| 34 | 2.83 | 0.17 | 0.037 | ( 0.655) | 0.034 | 0.004 |
| 35 | 2.92 | 0.17 | 0.037 | ( 0.653) | 0.034 | 0.004 |
| 36 | 3.00 | 0.17 | 0.037 | ( 0.650) | 0.034 | 0.004 |
| 37 | 3.08 | 0.17 | 0.037 | ( 0.647) | 0.034 | 0.004 |
| 38 | 3.17 | 0.17 | 0.037 | ( 0.645) | 0.034 | 0.004 |
| 39 | 3.25 | 0.17 | 0.037 | ( 0.642) | 0.034 | 0.004 |
| 40 | 3.33 | 0.17 | 0.037 | ( 0.639) | 0.034 | 0.004 |
| 41 | 3.42 | 0.17 | 0.037 | ( 0.636) | 0.034 | 0.004 |
| 42 | 3.50 | 0.17 | 0.037 | ( 0.634) | 0.034 | 0.004 |
| 43 | 3.58 | 0.17 | 0.037 | ( 0.631) | 0.034 | 0.004 |
| 44 | 3.67 | 0.17 | 0.037 | ( 0.629) | 0.034 | 0.004 |
| 45 | 3.75 | 0.17 | 0.037 | ( 0.626) | 0.034 | 0.004 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | 3.83 | 0.20 | 0.045 | ( 0.623) | 0.040 | 0.004 |
| 47 | 3.92 | 0.20 | 0.045 | ( 0.621) | 0.040 | 0.004 |
| 48 | 4.00 | 0.20 | 0.045 | ( 0.618) | 0.040 | 0.004 |
| 49 | 4.08 | 0.20 | 0.045 | ( 0.615) | 0.040 | 0.004 |
| 50 | 4.17 | 0.20 | 0.045 | ( 0.613) | 0.040 | 0.004 |
| 51 | 4.25 | 0.20 | 0.045 | ( 0.610) | 0.040 | 0.004 |
| 52 | 4.33 | 0.23 | 0.052 | ( 0.608) | 0.047 | 0.005 |
| 53 | 4.42 | 0.23 | 0.052 | ( 0.605) | 0.047 | 0.005 |
| 54 | 4.50 | 0.23 | 0.052 | ( 0.602) | 0.047 | 0.005 |
| 55 | 4.58 | 0.23 | 0.052 | ( 0.600) | 0.047 | 0.005 |
| 56 | 4.67 | 0.23 | 0.052 | ( 0.597) | 0.047 | 0.005 |
| 57 | 4.75 | 0.23 | 0.052 | ( 0.595) | 0.047 | 0.005 |
| 58 | 4.83 | 0.27 | 0.060 | ( 0.592) | 0.054 | 0.006 |
| 59 | 4.92 | 0.27 | 0.060 | ( 0.589) | 0.054 | 0.006 |
| 60 | 5.00 | 0.27 | 0.060 | ( 0.587) | 0.054 | 0.006 |
| 61 | 5.08 | 0.20 | 0.045 | ( 0.584) | 0.040 | 0.004 |
| 62 | 5.17 | 0.20 | 0.045 | ( 0.582) | 0.040 | 0.004 |
| 63 | 5.25 | 0.20 | 0.045 | ( 0.579) | 0.040 | 0.004 |
| 64 | 5.33 | 0.23 | 0.052 | ( 0.577) | 0.047 | 0.005 |
| 65 | 5.42 | 0.23 | 0.052 | ( 0.574) | 0.047 | 0.005 |
| 66 | 5.50 | 0.23 | 0.052 | ( 0.572) | 0.047 | 0.005 |
| 67 | 5.58 | 0.27 | 0.060 | ( 0.569) | 0.054 | 0.006 |
| 68 | 5.67 | 0.27 | 0.060 | ( 0.567) | 0.054 | 0.006 |
| 69 | 5.75 | 0.27 | 0.060 | ( 0.564) | 0.054 | 0.006 |
| 70 | 5.83 | 0.27 | 0.060 | ( 0.562) | 0.054 | 0.006 |
| 71 | 5.92 | 0.27 | 0.060 | ( 0.559) | 0.054 | 0.006 |
| 72 | 6.00 | 0.27 | 0.060 | ( 0.557) | 0.054 | 0.006 |
| 73 | 6.08 | 0.30 | 0.067 | ( 0.554) | 0.061 | 0.007 |
| 74 | 6.17 | 0.30 | 0.067 | ( 0.552) | 0.061 | 0.007 |
| 75 | 6.25 | 0.30 | 0.067 | ( 0.549) | 0.061 | 0.007 |
| 76 | 6.33 | 0.30 | 0.067 | ( 0.547) | 0.061 | 0.007 |
| 77 | 6.42 | 0.30 | 0.067 | ( 0.544) | 0.061 | 0.007 |
| 78 | 6.50 | 0.30 | 0.067 | ( 0.542) | 0.061 | 0.007 |
| 79 | 6.58 | 0.33 | 0.075 | ( 0.540) | 0.067 | 0.007 |
| 80 | 6.67 | 0.33 | 0.075 | ( 0.537) | 0.067 | 0.007 |
| 81 | 6.75 | 0.33 | 0.075 | ( 0.535) | 0.067 | 0.007 |
| 82 | 6.83 | 0.33 | 0.075 | ( 0.532) | 0.067 | 0.007 |
| 83 | 6.92 | 0.33 | 0.075 | ( 0.530) | 0.067 | 0.007 |
| 84 | 7.00 | 0.33 | 0.075 | ( 0.528) | 0.067 | 0.007 |
| 85 | 7.08 | 0.33 | 0.075 | ( 0.525) | 0.067 | 0.007 |
| 86 | 7.17 | 0.33 | 0.075 | ( 0.523) | 0.067 | 0.007 |
| 87 | 7.25 | 0.33 | 0.075 | ( 0.520) | 0.067 | 0.007 |
| 88 | 7.33 | 0.37 | 0.082 | ( 0.518) | 0.074 | 0.008 |
| 89 | 7.42 | 0.37 | 0.082 | ( 0.516) | 0.074 | 0.008 |
| 90 | 7.50 | 0.37 | 0.082 | ( 0.513) | 0.074 | 0.008 |
| 91 | 7.58 | 0.40 | 0.090 | ( 0.511) | 0.081 | 0.009 |
| 92 | 7.67 | 0.40 | 0.090 | ( 0.509) | 0.081 | 0.009 |
| 93 | 7.75 | 0.40 | 0.090 | ( 0.506) | 0.081 | 0.009 |
| 94 | 7.83 | 0.43 | 0.097 | ( 0.504) | 0.088 | 0.010 |
| 95 | 7.92 | 0.43 | 0.097 | ( 0.502) | 0.088 | 0.010 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 96 | 8.00 | 0.43 | 0.097 | ( 0.499) | 0.088 | 0.010 |
| 97 | 8.08 | 0.50 | 0.112 | ( 0.497) | 0.101 | 0.011 |
| 98 | 8.17 | 0.50 | 0.112 | ( 0.495) | 0.101 | 0.011 |
| 99 | 8.25 | 0.50 | 0.112 | ( 0.492) | 0.101 | 0.011 |
| 100 | 8.33 | 0.50 | 0.112 | ( 0.490) | 0.101 | 0.011 |
| 101 | 8.42 | 0.50 | 0.112 | ( 0.488) | 0.101 | 0.011 |
| 102 | 8.50 | 0.50 | 0.112 | ( 0.485) | 0.101 | 0.011 |
| 103 | 8.58 | 0.53 | 0.120 | ( 0.483) | 0.108 | 0.012 |
| 104 | 8.67 | 0.53 | 0.120 | ( 0.481) | 0.108 | 0.012 |
| 105 | 8.75 | 0.53 | 0.120 | ( 0.479) | 0.108 | 0.012 |
| 106 | 8.83 | 0.57 | 0.127 | ( 0.476) | 0.114 | 0.013 |
| 107 | 8.92 | 0.57 | 0.127 | ( 0.474) | 0.114 | 0.013 |
| 108 | 9.00 | 0.57 | 0.127 | ( 0.472) | 0.114 | 0.013 |
| 109 | 9.08 | 0.63 | 0.142 | ( 0.470) | 0.128 | 0.014 |
| 110 | 9.17 | 0.63 | 0.142 | ( 0.467) | 0.128 | 0.014 |
| 111 | 9.25 | 0.63 | 0.142 | ( 0.465) | 0.128 | 0.014 |
| 112 | 9.33 | 0.67 | 0.150 | ( 0.463) | 0.135 | 0.015 |
| 113 | 9.42 | 0.67 | 0.150 | ( 0.461) | 0.135 | 0.015 |
| 114 | 9.50 | 0.67 | 0.150 | ( 0.458) | 0.135 | 0.015 |
| 115 | 9.58 | 0.70 | 0.157 | ( 0.456) | 0.141 | 0.016 |
| 116 | 9.67 | 0.70 | 0.157 | ( 0.454) | 0.141 | 0.016 |
| 117 | 9.75 | 0.70 | 0.157 | ( 0.452) | 0.141 | 0.016 |
| 118 | 9.83 | 0.73 | 0.165 | ( 0.450) | 0.148 | 0.016 |
| 119 | 9.92 | 0.73 | 0.165 | ( 0.448) | 0.148 | 0.016 |
| 120 | 10.00 | 0.73 | 0.165 | ( 0.445) | 0.148 | 0.016 |
| 121 | 10.08 | 0.50 | 0.112 | ( 0.443) | 0.101 | 0.011 |
| 122 | 10.17 | 0.50 | 0.112 | ( 0.441) | 0.101 | 0.011 |
| 123 | 10.25 | 0.50 | 0.112 | ( 0.439) | 0.101 | 0.011 |
| 124 | 10.33 | 0.50 | 0.112 | ( 0.437) | 0.101 | 0.011 |
| 125 | 10.42 | 0.50 | 0.112 | ( 0.435) | 0.101 | 0.011 |
| 126 | 10.50 | 0.50 | 0.112 | ( 0.433) | 0.101 | 0.011 |
| 127 | 10.58 | 0.67 | 0.150 | ( 0.430) | 0.135 | 0.015 |
| 128 | 10.67 | 0.67 | 0.150 | ( 0.428) | 0.135 | 0.015 |
| 129 | 10.75 | 0.67 | 0.150 | ( 0.426) | 0.135 | 0.015 |
| 130 | 10.83 | 0.67 | 0.150 | ( 0.424) | 0.135 | 0.015 |
| 131 | 10.92 | 0.67 | 0.150 | ( 0.422) | 0.135 | 0.015 |
| 132 | 11.00 | 0.67 | 0.150 | ( 0.420) | 0.135 | 0.015 |
| 133 | 11.08 | 0.63 | 0.142 | ( 0.418) | 0.128 | 0.014 |
| 134 | 11.17 | 0.63 | 0.142 | ( 0.416) | 0.128 | 0.014 |
| 135 | 11.25 | 0.63 | 0.142 | ( 0.414) | 0.128 | 0.014 |
| 136 | 11.33 | 0.63 | 0.142 | ( 0.412) | 0.128 | 0.014 |
| 137 | 11.42 | 0.63 | 0.142 | ( 0.410) | 0.128 | 0.014 |
| 138 | 11.50 | 0.63 | 0.142 | ( 0.408) | 0.128 | 0.014 |
| 139 | 11.58 | 0.57 | 0.127 | ( 0.406) | 0.114 | 0.013 |
| 140 | 11.67 | 0.57 | 0.127 | ( 0.404) | 0.114 | 0.013 |
| 141 | 11.75 | 0.57 | 0.127 | ( 0.402) | 0.114 | 0.013 |
| 142 | 11.83 | 0.60 | 0.135 | ( 0.400) | 0.121 | 0.013 |
| 143 | 11.92 | 0.60 | 0.135 | ( 0.398) | 0.121 | 0.013 |
| 144 | 12.00 | 0.60 | 0.135 | ( 0.396) | 0.121 | 0.013 |
| 145 | 12.08 | 0.83 | 0.187 | ( 0.394) | 0.168 | 0.019 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 146 | 12.17 | 0.83 | 0.187 | ( 0.392) | 0.168 | 0.019 |
| 147 | 12.25 | 0.83 | 0.187 | ( 0.390) | 0.168 | 0.019 |
| 148 | 12.33 | 0.87 | 0.194 | ( 0.388) | 0.175 | 0.019 |
| 149 | 12.42 | 0.87 | 0.194 | ( 0.386) | 0.175 | 0.019 |
| 150 | 12.50 | 0.87 | 0.194 | ( 0.384) | 0.175 | 0.019 |
| 151 | 12.58 | 0.93 | 0.209 | ( 0.382) | 0.188 | 0.021 |
| 152 | 12.67 | 0.93 | 0.209 | ( 0.380) | 0.188 | 0.021 |
| 153 | 12.75 | 0.93 | 0.209 | ( 0.378) | 0.188 | 0.021 |
| 154 | 12.83 | 0.97 | 0.217 | ( 0.376) | 0.195 | 0.022 |
| 155 | 12.92 | 0.97 | 0.217 | ( 0.374) | 0.195 | 0.022 |
| 156 | 13.00 | 0.97 | 0.217 | ( 0.372) | 0.195 | 0.022 |
| 157 | 13.08 | 1.13 | 0.254 | ( 0.371) | 0.229 | 0.025 |
| 158 | 13.17 | 1.13 | 0.254 | ( 0.369) | 0.229 | 0.025 |
| 159 | 13.25 | 1.13 | 0.254 | ( 0.367) | 0.229 | 0.025 |
| 160 | 13.33 | 1.13 | 0.254 | ( 0.365) | 0.229 | 0.025 |
| 161 | 13.42 | 1.13 | 0.254 | ( 0.363) | 0.229 | 0.025 |
| 162 | 13.50 | 1.13 | 0.254 | ( 0.361) | 0.229 | 0.025 |
| 163 | 13.58 | 0.77 | 0.172 | ( 0.359) | 0.155 | 0.017 |
| 164 | 13.67 | 0.77 | 0.172 | ( 0.358) | 0.155 | 0.017 |
| 165 | 13.75 | 0.77 | 0.172 | ( 0.356) | 0.155 | 0.017 |
| 166 | 13.83 | 0.77 | 0.172 | ( 0.354) | 0.155 | 0.017 |
| 167 | 13.92 | 0.77 | 0.172 | ( 0.352) | 0.155 | 0.017 |
| 168 | 14.00 | 0.77 | 0.172 | ( 0.350) | 0.155 | 0.017 |
| 169 | 14.08 | 0.90 | 0.202 | ( 0.349) | 0.182 | 0.020 |
| 170 | 14.17 | 0.90 | 0.202 | ( 0.347) | 0.182 | 0.020 |
| 171 | 14.25 | 0.90 | 0.202 | ( 0.345) | 0.182 | 0.020 |
| 172 | 14.33 | 0.87 | 0.194 | ( 0.343) | 0.175 | 0.019 |
| 173 | 14.42 | 0.87 | 0.194 | ( 0.342) | 0.175 | 0.019 |
| 174 | 14.50 | 0.87 | 0.194 | ( 0.340) | 0.175 | 0.019 |
| 175 | 14.58 | 0.87 | 0.194 | ( 0.338) | 0.175 | 0.019 |
| 176 | 14.67 | 0.87 | 0.194 | ( 0.336) | 0.175 | 0.019 |
| 177 | 14.75 | 0.87 | 0.194 | ( 0.335) | 0.175 | 0.019 |
| 178 | 14.83 | 0.83 | 0.187 | ( 0.333) | 0.168 | 0.019 |
| 179 | 14.92 | 0.83 | 0.187 | ( 0.331) | 0.168 | 0.019 |
| 180 | 15.00 | 0.83 | 0.187 | ( 0.329) | 0.168 | 0.019 |
| 181 | 15.08 | 0.80 | 0.180 | ( 0.328) | 0.162 | 0.018 |
| 182 | 15.17 | 0.80 | 0.180 | ( 0.326) | 0.162 | 0.018 |
| 183 | 15.25 | 0.80 | 0.180 | ( 0.324) | 0.162 | 0.018 |
| 184 | 15.33 | 0.77 | 0.172 | ( 0.323) | 0.155 | 0.017 |
| 185 | 15.42 | 0.77 | 0.172 | ( 0.321) | 0.155 | 0.017 |
| 186 | 15.50 | 0.77 | 0.172 | ( 0.319) | 0.155 | 0.017 |
| 187 | 15.58 | 0.63 | 0.142 | ( 0.318) | 0.128 | 0.014 |
| 188 | 15.67 | 0.63 | 0.142 | ( 0.316) | 0.128 | 0.014 |
| 189 | 15.75 | 0.63 | 0.142 | ( 0.315) | 0.128 | 0.014 |
| 190 | 15.83 | 0.63 | 0.142 | ( 0.313) | 0.128 | 0.014 |
| 191 | 15.92 | 0.63 | 0.142 | ( 0.311) | 0.128 | 0.014 |
| 192 | 16.00 | 0.63 | 0.142 | ( 0.310) | 0.128 | 0.014 |
| 193 | 16.08 | 0.13 | 0.030 | ( 0.308) | 0.027 | 0.003 |
| 194 | 16.17 | 0.13 | 0.030 | ( 0.307) | 0.027 | 0.003 |
| 195 | 16.25 | 0.13 | 0.030 | ( 0.305) | 0.027 | 0.003 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 196 | 16.33 | 0.13 | 0.030 | ( 0.303) | 0.027 | 0.003 |
| 197 | 16.42 | 0.13 | 0.030 | ( 0.302) | 0.027 | 0.003 |
| 198 | 16.50 | 0.13 | 0.030 | ( 0.300) | 0.027 | 0.003 |
| 199 | 16.58 | 0.10 | 0.022 | ( 0.299) | 0.020 | 0.002 |
| 200 | 16.67 | 0.10 | 0.022 | ( 0.297) | 0.020 | 0.002 |
| 201 | 16.75 | 0.10 | 0.022 | ( 0.296) | 0.020 | 0.002 |
| 202 | 16.83 | 0.10 | 0.022 | ( 0.294) | 0.020 | 0.002 |
| 203 | 16.92 | 0.10 | 0.022 | ( 0.293) | 0.020 | 0.002 |
| 204 | 17.00 | 0.10 | 0.022 | ( 0.291) | 0.020 | 0.002 |
| 205 | 17.08 | 0.17 | 0.037 | ( 0.290) | 0.034 | 0.004 |
| 206 | 17.17 | 0.17 | 0.037 | ( 0.288) | 0.034 | 0.004 |
| 207 | 17.25 | 0.17 | 0.037 | ( 0.287) | 0.034 | 0.004 |
| 208 | 17.33 | 0.17 | 0.037 | ( 0.286) | 0.034 | 0.004 |
| 209 | 17.42 | 0.17 | 0.037 | ( 0.284) | 0.034 | 0.004 |
| 210 | 17.50 | 0.17 | 0.037 | ( 0.283) | 0.034 | 0.004 |
| 211 | 17.58 | 0.17 | 0.037 | ( 0.281) | 0.034 | 0.004 |
| 212 | 17.67 | 0.17 | 0.037 | ( 0.280) | 0.034 | 0.004 |
| 213 | 17.75 | 0.17 | 0.037 | ( 0.278) | 0.034 | 0.004 |
| 214 | 17.83 | 0.13 | 0.030 | ( 0.277) | 0.027 | 0.003 |
| 215 | 17.92 | 0.13 | 0.030 | ( 0.276) | 0.027 | 0.003 |
| 216 | 18.00 | 0.13 | 0.030 | ( 0.274) | 0.027 | 0.003 |
| 217 | 18.08 | 0.13 | 0.030 | ( 0.273) | 0.027 | 0.003 |
| 218 | 18.17 | 0.13 | 0.030 | ( 0.272) | 0.027 | 0.003 |
| 219 | 18.25 | 0.13 | 0.030 | ( 0.270) | 0.027 | 0.003 |
| 220 | 18.33 | 0.13 | 0.030 | ( 0.269) | 0.027 | 0.003 |
| 221 | 18.42 | 0.13 | 0.030 | ( 0.268) | 0.027 | 0.003 |
| 222 | 18.50 | 0.13 | 0.030 | ( 0.266) | 0.027 | 0.003 |
| 223 | 18.58 | 0.10 | 0.022 | ( 0.265) | 0.020 | 0.002 |
| 224 | 18.67 | 0.10 | 0.022 | ( 0.264) | 0.020 | 0.002 |
| 225 | 18.75 | 0.10 | 0.022 | ( 0.263) | 0.020 | 0.002 |
| 226 | 18.83 | 0.07 | 0.015 | ( 0.261) | 0.013 | 0.001 |
| 227 | 18.92 | 0.07 | 0.015 | ( 0.260) | 0.013 | 0.001 |
| 228 | 19.00 | 0.07 | 0.015 | ( 0.259) | 0.013 | 0.001 |
| 229 | 19.08 | 0.10 | 0.022 | ( 0.258) | 0.020 | 0.002 |
| 230 | 19.17 | 0.10 | 0.022 | ( 0.256) | 0.020 | 0.002 |
| 231 | 19.25 | 0.10 | 0.022 | ( 0.255) | 0.020 | 0.002 |
| 232 | 19.33 | 0.13 | 0.030 | ( 0.254) | 0.027 | 0.003 |
| 233 | 19.42 | 0.13 | 0.030 | ( 0.253) | 0.027 | 0.003 |
| 234 | 19.50 | 0.13 | 0.030 | ( 0.252) | 0.027 | 0.003 |
| 235 | 19.58 | 0.10 | 0.022 | ( 0.251) | 0.020 | 0.002 |
| 236 | 19.67 | 0.10 | 0.022 | ( 0.249) | 0.020 | 0.002 |
| 237 | 19.75 | 0.10 | 0.022 | ( 0.248) | 0.020 | 0.002 |
| 238 | 19.83 | 0.07 | 0.015 | ( 0.247) | 0.013 | 0.001 |
| 239 | 19.92 | 0.07 | 0.015 | ( 0.246) | 0.013 | 0.001 |
| 240 | 20.00 | 0.07 | 0.015 | ( 0.245) | 0.013 | 0.001 |
| 241 | 20.08 | 0.10 | 0.022 | ( 0.244) | 0.020 | 0.002 |
| 242 | 20.17 | 0.10 | 0.022 | ( 0.243) | 0.020 | 0.002 |
| 243 | 20.25 | 0.10 | 0.022 | ( 0.242) | 0.020 | 0.002 |
| 244 | 20.33 | 0.10 | 0.022 | ( 0.241) | 0.020 | 0.002 |
| 245 | 20.42 | 0.10 | 0.022 | ( 0.240) | 0.020 | 0.002 |

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|---|---|---|---|---|---|---|
| 246 | 20.50 | 0.10 | 0.022 | ( 0.239) | 0.020 | 0.002 |
| 247 | 20.58 | 0.10 | 0.022 | ( 0.238) | 0.020 | 0.002 |
| 248 | 20.67 | 0.10 | 0.022 | ( 0.237) | 0.020 | 0.002 |
| 249 | 20.75 | 0.10 | 0.022 | ( 0.236) | 0.020 | 0.002 |
| 250 | 20.83 | 0.07 | 0.015 | ( 0.235) | 0.013 | 0.001 |
| 251 | 20.92 | 0.07 | 0.015 | ( 0.234) | 0.013 | 0.001 |
| 252 | 21.00 | 0.07 | 0.015 | ( 0.233) | 0.013 | 0.001 |
| 253 | 21.08 | 0.10 | 0.022 | ( 0.232) | 0.020 | 0.002 |
| 254 | 21.17 | 0.10 | 0.022 | ( 0.231) | 0.020 | 0.002 |
| 255 | 21.25 | 0.10 | 0.022 | ( 0.230) | 0.020 | 0.002 |
| 256 | 21.33 | 0.07 | 0.015 | ( 0.229) | 0.013 | 0.001 |
| 257 | 21.42 | 0.07 | 0.015 | ( 0.228) | 0.013 | 0.001 |
| 258 | 21.50 | 0.07 | 0.015 | ( 0.227) | 0.013 | 0.001 |
| 259 | 21.58 | 0.10 | 0.022 | ( 0.227) | 0.020 | 0.002 |
| 260 | 21.67 | 0.10 | 0.022 | ( 0.226) | 0.020 | 0.002 |
| 261 | 21.75 | 0.10 | 0.022 | ( 0.225) | 0.020 | 0.002 |
| 262 | 21.83 | 0.07 | 0.015 | ( 0.224) | 0.013 | 0.001 |
| 263 | 21.92 | 0.07 | 0.015 | ( 0.223) | 0.013 | 0.001 |
| 264 | 22.00 | 0.07 | 0.015 | ( 0.223) | 0.013 | 0.001 |
| 265 | 22.08 | 0.10 | 0.022 | ( 0.222) | 0.020 | 0.002 |
| 266 | 22.17 | 0.10 | 0.022 | ( 0.221) | 0.020 | 0.002 |
| 267 | 22.25 | 0.10 | 0.022 | ( 0.221) | 0.020 | 0.002 |
| 268 | 22.33 | 0.07 | 0.015 | ( 0.220) | 0.013 | 0.001 |
| 269 | 22.42 | 0.07 | 0.015 | ( 0.219) | 0.013 | 0.001 |
| 270 | 22.50 | 0.07 | 0.015 | ( 0.219) | 0.013 | 0.001 |
| 271 | 22.58 | 0.07 | 0.015 | ( 0.218) | 0.013 | 0.001 |
| 272 | 22.67 | 0.07 | 0.015 | ( 0.217) | 0.013 | 0.001 |
| 273 | 22.75 | 0.07 | 0.015 | ( 0.217) | 0.013 | 0.001 |
| 274 | 22.83 | 0.07 | 0.015 | ( 0.216) | 0.013 | 0.001 |
| 275 | 22.92 | 0.07 | 0.015 | ( 0.216) | 0.013 | 0.001 |
| 276 | 23.00 | 0.07 | 0.015 | ( 0.215) | 0.013 | 0.001 |
| 277 | 23.08 | 0.07 | 0.015 | ( 0.215) | 0.013 | 0.001 |
| 278 | 23.17 | 0.07 | 0.015 | ( 0.214) | 0.013 | 0.001 |
| 279 | 23.25 | 0.07 | 0.015 | ( 0.214) | 0.013 | 0.001 |
| 280 | 23.33 | 0.07 | 0.015 | ( 0.213) | 0.013 | 0.001 |
| 281 | 23.42 | 0.07 | 0.015 | ( 0.213) | 0.013 | 0.001 |
| 282 | 23.50 | 0.07 | 0.015 | ( 0.212) | 0.013 | 0.001 |
| 283 | 23.58 | 0.07 | 0.015 | ( 0.212) | 0.013 | 0.001 |
| 284 | 23.67 | 0.07 | 0.015 | ( 0.212) | 0.013 | 0.001 |
| 285 | 23.75 | 0.07 | 0.015 | ( 0.211) | 0.013 | 0.001 |
| 286 | 23.83 | 0.07 | 0.015 | ( 0.211) | 0.013 | 0.001 |
| 287 | 23.92 | 0.07 | 0.015 | ( 0.211) | 0.013 | 0.001 |
| 288 | 24.00 | 0.07 | 0.015 | ( 0.211) | 0.013 | 0.001 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 2.2

Flood volume = Effective rainfall 0.19(In)
times area 14.0(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 1.68(In)
Total soil loss = 1.963(Ac.Ft)
Total rainfall = 1.87(In)

Flood volume = 9503.1 Cubic Feet
Total soil loss = 85527.7 Cubic Feet

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Peak flow rate of this hydrograph = 0.359(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 | 0.0002 | 0.02 | Q | | | | |
| 0+15 | 0.0003 | 0.02 | Q | | | | |
| 0+20 | 0.0005 | 0.03 | Q | | | | |
| 0+25 | 0.0007 | 0.03 | Q | | | | |
| 0+30 | 0.0009 | 0.03 | Q | | | | |
| 0+35 | 0.0012 | 0.03 | Q | | | | |
| 0+40 | 0.0014 | 0.03 | Q | | | | |
| 0+45 | 0.0016 | 0.03 | Q | | | | |
| 0+50 | 0.0018 | 0.04 | Q | | | | |
| 0+55 | 0.0021 | 0.04 | Q | | | | |
| 1+ 0 | 0.0024 | 0.04 | Q | | | | |
| 1+ 5 | 0.0027 | 0.04 | Q | | | | |
| 1+10 | 0.0029 | 0.03 | Q | | | | |
| 1+15 | 0.0031 | 0.03 | Q | | | | |
| 1+20 | 0.0033 | 0.03 | Q | | | | |
| 1+25 | 0.0036 | 0.03 | Q | | | | |
| 1+30 | 0.0038 | 0.03 | Q | | | | |
| 1+35 | 0.0040 | 0.03 | Q | | | | |
| 1+40 | 0.0042 | 0.03 | Q | | | | |
| 1+45 | 0.0044 | 0.03 | Q | | | | |
| 1+50 | 0.0047 | 0.04 | Q | | | | |
| 1+55 | 0.0050 | 0.04 | Q | | | | |
| 2+ 0 | 0.0053 | 0.04 | Q | | | | |
| 2+ 5 | 0.0055 | 0.04 | QV | | | | |
| 2+10 | 0.0058 | 0.04 | QV | | | | |
| 2+15 | 0.0061 | 0.04 | QV | | | | |
| 2+20 | 0.0064 | 0.04 | QV | | | | |
| 2+25 | 0.0067 | 0.04 | QV | | | | |
| 2+30 | 0.0070 | 0.04 | QV | | | | |
| 2+35 | 0.0073 | 0.05 | QV | | | | |
| 2+40 | 0.0077 | 0.05 | QV | | | | |
| 2+45 | 0.0080 | 0.05 | QV | | | | |
| 2+50 | 0.0084 | 0.05 | QV | | | | |
| 2+55 | 0.0088 | 0.05 | QV | | | | |
| 3+ 0 | 0.0091 | 0.05 | QV | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+ 5 | 0.0095 | 0.05 | QV | | | | |
| 3+10 | 0.0099 | 0.05 | QV | | | | |
| 3+15 | 0.0102 | 0.05 | QV | | | | |
| 3+20 | 0.0106 | 0.05 | QV | | | | |
| 3+25 | 0.0110 | 0.05 | Q V | | | | |
| 3+30 | 0.0113 | 0.05 | Q V | | | | |
| 3+35 | 0.0117 | 0.05 | Q V | | | | |
| 3+40 | 0.0120 | 0.05 | Q V | | | | |
| 3+45 | 0.0124 | 0.05 | Q V | | | | |
| 3+50 | 0.0128 | 0.06 | Q V | | | | |
| 3+55 | 0.0132 | 0.06 | Q V | | | | |
| 4+ 0 | 0.0137 | 0.06 | Q V | | | | |
| 4+ 5 | 0.0141 | 0.06 | Q V | | | | |
| 4+10 | 0.0145 | 0.06 | Q V | | | | |
| 4+15 | 0.0150 | 0.06 | Q V | | | | |
| 4+20 | 0.0154 | 0.07 | Q V | | | | |
| 4+25 | 0.0159 | 0.07 | Q V | | | | |
| 4+30 | 0.0165 | 0.07 | Q  V | | | | |
| 4+35 | 0.0170 | 0.07 | Q  V | | | | |
| 4+40 | 0.0175 | 0.07 | Q  V | | | | |
| 4+45 | 0.0180 | 0.07 | Q  V | | | | |
| 4+50 | 0.0185 | 0.08 | Q  V | | | | |
| 4+55 | 0.0191 | 0.08 | Q  V | | | | |
| 5+ 0 | 0.0197 | 0.08 | Q  V | | | | |
| 5+ 5 | 0.0202 | 0.07 | Q  V | | | | |
| 5+10 | 0.0206 | 0.07 | Q  V | | | | |
| 5+15 | 0.0211 | 0.06 | Q  V | | | | |
| 5+20 | 0.0216 | 0.07 | Q  V | | | | |
| 5+25 | 0.0221 | 0.07 | Q   V | | | | |
| 5+30 | 0.0226 | 0.07 | Q   V | | | | |
| 5+35 | 0.0231 | 0.08 | Q   V | | | | |
| 5+40 | 0.0237 | 0.08 | Q   V | | | | |
| 5+45 | 0.0243 | 0.08 | Q   V | | | | |
| 5+50 | 0.0248 | 0.08 | Q   V | | | | |
| 5+55 | 0.0254 | 0.08 | Q   V | | | | |
| 6+ 0 | 0.0260 | 0.08 | Q   V | | | | |
| 6+ 5 | 0.0266 | 0.09 | Q   V | | | | |
| 6+10 | 0.0273 | 0.09 | Q   V | | | | |
| 6+15 | 0.0279 | 0.09 | Q    V | | | | |
| 6+20 | 0.0286 | 0.10 | Q    V | | | | |
| 6+25 | 0.0292 | 0.10 | Q    V | | | | |
| 6+30 | 0.0299 | 0.10 | Q    V | | | | |
| 6+35 | 0.0306 | 0.10 | Q    V | | | | |
| 6+40 | 0.0313 | 0.10 | Q    V | | | | |
| 6+45 | 0.0320 | 0.11 | Q    V | | | | |
| 6+50 | 0.0327 | 0.11 | Q     V | | | | |
| 6+55 | 0.0335 | 0.11 | Q     V | | | | |
| 7+ 0 | 0.0342 | 0.11 | Q     V | | | | |
| 7+ 5 | 0.0349 | 0.11 | Q     V | | | | |
| 7+10 | 0.0356 | 0.11 | Q     V | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 7+15 | 0.0364 | 0.11 | Q | V | \| | \| | \| | \| |
| 7+20 | 0.0371 | 0.11 | Q | V | \| | \| | \| | \| |
| 7+25 | 0.0379 | 0.11 | Q | V | \| | \| | \| | \| |
| 7+30 | 0.0387 | 0.12 | Q | V | \| | \| | \| | \| |
| 7+35 | 0.0396 | 0.12 | Q | V | \| | \| | \| | \| |
| 7+40 | 0.0404 | 0.13 | Q | V | \| | \| | \| | \| |
| 7+45 | 0.0413 | 0.13 | Q | V | \| | \| | \| | \| |
| 7+50 | 0.0422 | 0.13 | Q | V | \| | \| | \| | \| |
| 7+55 | 0.0431 | 0.14 | Q | V | \| | \| | \| | \| |
| 8+ 0 | 0.0441 | 0.14 | Q | V | \| | \| | \| | \| |
| 8+ 5 | 0.0451 | 0.15 | Q | V | \| | \| | \| | \| |
| 8+10 | 0.0462 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+15 | 0.0473 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+20 | 0.0483 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+25 | 0.0494 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+30 | 0.0505 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+35 | 0.0517 | 0.16 | Q | V | \| | \| | \| | \| |
| 8+40 | 0.0528 | 0.17 | Q | V | \| | \| | \| | \| |
| 8+45 | 0.0540 | 0.17 | Q | V | \| | \| | \| | \| |
| 8+50 | 0.0552 | 0.17 | Q | V | \| | \| | \| | \| |
| 8+55 | 0.0564 | 0.18 | Q | V | \| | \| | \| | \| |
| 9+ 0 | 0.0576 | 0.18 | Q | V | \| | \| | \| | \| |
| 9+ 5 | 0.0589 | 0.19 | Q | V | \| | \| | \| | \| |
| 9+10 | 0.0603 | 0.20 | Q | \| | V | \| | \| | \| |
| 9+15 | 0.0617 | 0.20 | Q | \| | V | \| | \| | \| |
| 9+20 | 0.0631 | 0.21 | Q | \| | V | \| | \| | \| |
| 9+25 | 0.0645 | 0.21 | Q | \| | V | \| | \| | \| |
| 9+30 | 0.0660 | 0.21 | Q | \| | \| | V | \| | \| |
| 9+35 | 0.0675 | 0.22 | Q | \| | \| | V | \| | \| |
| 9+40 | 0.0690 | 0.22 | Q | \| | \| | V | \| | \| |
| 9+45 | 0.0705 | 0.22 | Q | \| | \| | V | \| | \| |
| 9+50 | 0.0721 | 0.23 | Q | \| | \| | V | \| | \| |
| 9+55 | 0.0737 | 0.23 | Q | \| | \| | V | \| | \| |
| 10+ 0 | 0.0753 | 0.23 | Q | \| | \| | V | \| | \| |
| 10+ 5 | 0.0766 | 0.20 | Q | \| | \| | V | \| | \| |
| 10+10 | 0.0778 | 0.17 | Q | \| | \| | V | \| | \| |
| 10+15 | 0.0789 | 0.16 | Q | \| | \| | V | \| | \| |
| 10+20 | 0.0800 | 0.16 | Q | \| | \| | V | \| | \| |
| 10+25 | 0.0811 | 0.16 | Q | \| | \| | V | \| | \| |
| 10+30 | 0.0822 | 0.16 | Q | \| | \| | V | \| | \| |
| 10+35 | 0.0834 | 0.18 | Q | \| | \| | V | \| | \| |
| 10+40 | 0.0848 | 0.21 | Q | \| | \| | V | \| | \| |
| 10+45 | 0.0863 | 0.21 | Q | \| | \| | V | \| | \| |
| 10+50 | 0.0877 | 0.21 | Q | \| | \| | V | \| | \| |
| 10+55 | 0.0892 | 0.21 | Q | \| | \| | V | \| | \| |
| 11+ 0 | 0.0906 | 0.21 | Q | \| | \| | V | \| | \| |
| 11+ 5 | 0.0921 | 0.21 | Q | \| | \| | V | \| | \| |
| 11+10 | 0.0935 | 0.20 | Q | \| | \| | V | \| | \| |
| 11+15 | 0.0948 | 0.20 | Q | \| | \| | V | \| | \| |
| 11+20 | 0.0962 | 0.20 | Q | \| | \| | V | \| | \| |

```
11+25       0.0976      0.20  Q         |      V  |         |         |
11+30       0.0990      0.20  Q         |       V |         |         |
11+35       0.1003      0.19  Q         |       V |         |         |
11+40       0.1015      0.18  Q         |       V |         |         |
11+45       0.1028      0.18  Q         |       V |         |         |
11+50       0.1041      0.18  Q         |        V|         |         |
11+55       0.1054      0.19  Q         |        V|         |         |
12+ 0       0.1067      0.19  Q         |        V|         |         |
12+ 5       0.1082      0.22  Q         |        V|         |         |
12+10       0.1100      0.26  |Q        |         V         |         |
12+15       0.1118      0.26  |Q        |         V         |         |
12+20       0.1136      0.27  |Q        |         V         |         |
12+25       0.1155      0.27  |Q        |         |V        |         |
12+30       0.1174      0.27  |Q        |         |V        |         |
12+35       0.1194      0.28  |Q        |         |V        |         |
12+40       0.1214      0.29  |Q        |         | V       |         |
12+45       0.1234      0.29  |Q        |         | V       |         |
12+50       0.1255      0.30  |Q        |         |  V      |         |
12+55       0.1276      0.31  |Q        |         |  V      |         |
13+ 0       0.1297      0.31  |Q        |         |  V      |         |
13+ 5       0.1320      0.33  |Q        |         |   V     |         |
13+10       0.1344      0.35  |Q        |         |   V     |         |
13+15       0.1369      0.36  |Q        |         |    V    |         |
13+20       0.1393      0.36  |Q        |         |    V    |         |
13+25       0.1418      0.36  |Q        |         |    V    |         |
13+30       0.1443      0.36  |Q        |         |     V   |         |
13+35       0.1464      0.30  |Q        |         |     V   |         |
13+40       0.1481      0.26  |Q        |         |      V  |         |
13+45       0.1498      0.25  Q         |         |      V  |         |
13+50       0.1515      0.24  Q         |         |      V  |         |
13+55       0.1532      0.24  Q         |         |       V |         |
14+ 0       0.1549      0.24  Q         |         |       V |         |
14+ 5       0.1567      0.26  |Q        |         |       V |         |
14+10       0.1586      0.28  |Q        |         |        V|         |
14+15       0.1605      0.28  |Q        |         |        V|         |
14+20       0.1625      0.28  |Q        |         |        V|         |
14+25       0.1644      0.28  |Q        |         |         V         |
14+30       0.1663      0.27  |Q        |         |         V         |
14+35       0.1682      0.27  |Q        |         |         V         |
14+40       0.1700      0.27  |Q        |         |         |V        |
14+45       0.1719      0.27  |Q        |         |         |V        |
14+50       0.1738      0.27  |Q        |         |         |V        |
14+55       0.1756      0.27  |Q        |         |         | V       |
15+ 0       0.1774      0.26  |Q        |         |         | V       |
15+ 5       0.1792      0.26  |Q        |         |         | V       |
15+10       0.1810      0.25  |Q        |         |         |  V      |
15+15       0.1827      0.25  |Q        |         |         |  V      |
15+20       0.1844      0.25  Q         |         |         |  V      |
15+25       0.1861      0.24  Q         |         |         |   V     |
15+30       0.1878      0.24  Q         |         |         |   V     |
```

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15+35       0.1893      0.22  Q        |          |          |   V      |
15+40       0.1907      0.21  Q        |          |          |   V      |
15+45       0.1921      0.20  Q        |          |          |    V     |
15+50       0.1935      0.20  Q        |          |          |    V     |
15+55       0.1949      0.20  Q        |          |          |    V     |
16+ 0       0.1963      0.20  Q        |          |          |    V     |
16+ 5       0.1972      0.13  Q        |          |          |     V    |
16+10       0.1976      0.06  Q        |          |          |     V    |
16+15       0.1979      0.05  Q        |          |          |     V    |
16+20       0.1982      0.04  Q        |          |          |     V    |
16+25       0.1985      0.04  Q        |          |          |     V    |
16+30       0.1988      0.04  Q        |          |          |     V    |
16+35       0.1990      0.04  Q        |          |          |     V    |
16+40       0.1992      0.03  Q        |          |          |     V    |
16+45       0.1995      0.03  Q        |          |          |     V    |
16+50       0.1997      0.03  Q        |          |          |     V    |
16+55       0.1999      0.03  Q        |          |          |     V    |
17+ 0       0.2001      0.03  Q        |          |          |     V    |
17+ 5       0.2004      0.04  Q        |          |          |     V    |
17+10       0.2008      0.05  Q        |          |          |     V    |
17+15       0.2011      0.05  Q        |          |          |     V    |
17+20       0.2015      0.05  Q        |          |          |     V    |
17+25       0.2018      0.05  Q        |          |          |      V   |
17+30       0.2022      0.05  Q        |          |          |      V   |
17+35       0.2026      0.05  Q        |          |          |      V   |
17+40       0.2029      0.05  Q        |          |          |      V   |
17+45       0.2033      0.05  Q        |          |          |      V   |
17+50       0.2036      0.05  Q        |          |          |      V   |
17+55       0.2039      0.04  Q        |          |          |      V   |
18+ 0       0.2042      0.04  Q        |          |          |      V   |
18+ 5       0.2045      0.04  Q        |          |          |      V   |
18+10       0.2048      0.04  Q        |          |          |      V   |
18+15       0.2051      0.04  Q        |          |          |      V   |
18+20       0.2054      0.04  Q        |          |          |      V   |
18+25       0.2057      0.04  Q        |          |          |      V   |
18+30       0.2060      0.04  Q        |          |          |      V   |
18+35       0.2062      0.04  Q        |          |          |      V   |
18+40       0.2064      0.03  Q        |          |          |      V   |
18+45       0.2067      0.03  Q        |          |          |      V   |
18+50       0.2069      0.03  Q        |          |          |      V   |
18+55       0.2070      0.02  Q        |          |          |      V   |
19+ 0       0.2072      0.02  Q        |          |          |      V   |
19+ 5       0.2073      0.03  Q        |          |          |       V  |
19+10       0.2075      0.03  Q        |          |          |       V  |
19+15       0.2078      0.03  Q        |          |          |       V  |
19+20       0.2080      0.04  Q        |          |          |       V  |
19+25       0.2083      0.04  Q        |          |          |       V  |
19+30       0.2086      0.04  Q        |          |          |       V  |
19+35       0.2088      0.04  Q        |          |          |       V  |
19+40       0.2091      0.03  Q        |          |          |       V  |
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19+45       0.2093      0.03  Q         |         |         |        V |
19+50       0.2095      0.03  Q         |         |         |        V |
19+55       0.2096      0.02  Q         |         |         |        V |
20+ 0       0.2098      0.02  Q         |         |         |        V |
20+ 5       0.2100      0.03  Q         |         |         |        V |
20+10       0.2102      0.03  Q         |         |         |        V |
20+15       0.2104      0.03  Q         |         |         |        V |
20+20       0.2106      0.03  Q         |         |         |        V |
20+25       0.2108      0.03  Q         |         |         |        V |
20+30       0.2110      0.03  Q         |         |         |        V |
20+35       0.2112      0.03  Q         |         |         |        V |
20+40       0.2115      0.03  Q         |         |         |        V |
20+45       0.2117      0.03  Q         |         |         |        V |
20+50       0.2119      0.03  Q         |         |         |        V |
20+55       0.2120      0.02  Q         |         |         |        V |
21+ 0       0.2122      0.02  Q         |         |         |        V |
21+ 5       0.2124      0.03  Q         |         |         |        V |
21+10       0.2126      0.03  Q         |         |         |        V |
21+15       0.2128      0.03  Q         |         |         |         V|
21+20       0.2130      0.03  Q         |         |         |         V|
21+25       0.2131      0.02  Q         |         |         |         V|
21+30       0.2133      0.02  Q         |         |         |         V|
21+35       0.2134      0.03  Q         |         |         |         V|
21+40       0.2137      0.03  Q         |         |         |         V|
21+45       0.2139      0.03  Q         |         |         |         V|
21+50       0.2141      0.03  Q         |         |         |         V|
21+55       0.2142      0.02  Q         |         |         |         V|
22+ 0       0.2144      0.02  Q         |         |         |         V|
22+ 5       0.2145      0.03  Q         |         |         |         V|
22+10       0.2147      0.03  Q         |         |         |         V|
22+15       0.2150      0.03  Q         |         |         |         V|
22+20       0.2151      0.03  Q         |         |         |         V|
22+25       0.2153      0.02  Q         |         |         |         V|
22+30       0.2154      0.02  Q         |         |         |         V|
22+35       0.2156      0.02  Q         |         |         |         V|
22+40       0.2157      0.02  Q         |         |         |         V|
22+45       0.2159      0.02  Q         |         |         |         V|
22+50       0.2160      0.02  Q         |         |         |         V|
22+55       0.2162      0.02  Q         |         |         |         V|
23+ 0       0.2163      0.02  Q         |         |         |         V|
23+ 5       0.2165      0.02  Q         |         |         |         V|
23+10       0.2166      0.02  Q         |         |         |         V|
23+15       0.2168      0.02  Q         |         |         |         V|
23+20       0.2169      0.02  Q         |         |         |         V|
23+25       0.2170      0.02  Q         |         |         |         V|
23+30       0.2172      0.02  Q         |         |         |         V|
23+35       0.2173      0.02  Q         |         |         |         V|
23+40       0.2175      0.02  Q         |         |         |         V|
23+45       0.2176      0.02  Q         |         |         |         V|
23+50       0.2178      0.02  Q         |         |         |         V|
```

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   23+55       0.2179      0.02  Q        |         |         |        V|
   24+ 0       0.2181      0.02  Q        |         |         |        V|
   24+ 5       0.2181      0.01  Q        |         |         |        V|
   24+10       0.2182      0.00  Q        |         |         |        V|
   24+15       0.2182      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 - 2008, Version 8.1
Study date 03/16/23 File: GOYASUHPOST242.out

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

Program License Serial Number 6215

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

English Units used in output format

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GOYASUHPOST2YR

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Drainage Area = 13.75(Ac.) = 0.021 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 13.75(Ac.) = 0.021 Sq. Mi.
Length along longest watercourse = 1220.00(Ft.)
Length along longest watercourse measured to centroid = 146.00(Ft.)
Length along longest watercourse = 0.231 Mi.
Length along longest watercourse measured to centroid = 0.028 Mi.
Difference in elevation = 6.10(Ft.)
Slope along watercourse = 26.4000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.70 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.68 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]
       13.75            1.60                  22.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       13.75            4.00                  55.00

STORM EVENT (YEAR) =    2.00
Area Averaged 2-Year Rainfall =    1.600(In)
Area Averaged 100-Year Rainfall =    4.000(In)

Point rain (area averaged) =    1.600(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    1.600(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    13.750           56.00         0.600
 Total Area Entered =     13.75(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  36.0      0.706     0.600        0.325       1.000      0.325
                                                 Sum (F) =   0.325
Area averaged mean soil loss (F) (In/Hr) =  0.325
Minimum soil loss rate ((In/Hr)) =  0.162
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.380
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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   Time % of lag   Distribution   Unit Hydrograph
    (hrs)                          Graph %            (CFS)
------------------------------------------------------------------------
    1   0.083        294.139         56.070              7.770
    2   0.167        588.277         37.453              5.190
    3   0.250        882.416          6.476              0.897
                               Sum = 100.000   Sum=      13.857
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 The following loss rate calculations reflect use of the minimum calculated loss
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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 | 0.013 | ( 0.576) | 0.005 | 0.008 |
| 2 | 0.17 | 0.07 | 0.013 | ( 0.573) | 0.005 | 0.008 |
| 3 | 0.25 | 0.07 | 0.013 | ( 0.571) | 0.005 | 0.008 |
| 4 | 0.33 | 0.10 | 0.019 | ( 0.569) | 0.007 | 0.012 |
| 5 | 0.42 | 0.10 | 0.019 | ( 0.567) | 0.007 | 0.012 |
| 6 | 0.50 | 0.10 | 0.019 | ( 0.565) | 0.007 | 0.012 |
| 7 | 0.58 | 0.10 | 0.019 | ( 0.562) | 0.007 | 0.012 |
| 8 | 0.67 | 0.10 | 0.019 | ( 0.560) | 0.007 | 0.012 |
| 9 | 0.75 | 0.10 | 0.019 | ( 0.558) | 0.007 | 0.012 |
| 10 | 0.83 | 0.13 | 0.026 | ( 0.556) | 0.010 | 0.016 |
| 11 | 0.92 | 0.13 | 0.026 | ( 0.554) | 0.010 | 0.016 |
| 12 | 1.00 | 0.13 | 0.026 | ( 0.551) | 0.010 | 0.016 |
| 13 | 1.08 | 0.10 | 0.019 | ( 0.549) | 0.007 | 0.012 |
| 14 | 1.17 | 0.10 | 0.019 | ( 0.547) | 0.007 | 0.012 |
| 15 | 1.25 | 0.10 | 0.019 | ( 0.545) | 0.007 | 0.012 |
| 16 | 1.33 | 0.10 | 0.019 | ( 0.543) | 0.007 | 0.012 |
| 17 | 1.42 | 0.10 | 0.019 | ( 0.541) | 0.007 | 0.012 |
| 18 | 1.50 | 0.10 | 0.019 | ( 0.538) | 0.007 | 0.012 |
| 19 | 1.58 | 0.10 | 0.019 | ( 0.536) | 0.007 | 0.012 |
| 20 | 1.67 | 0.10 | 0.019 | ( 0.534) | 0.007 | 0.012 |
| 21 | 1.75 | 0.10 | 0.019 | ( 0.532) | 0.007 | 0.012 |
| 22 | 1.83 | 0.13 | 0.026 | ( 0.530) | 0.010 | 0.016 |
| 23 | 1.92 | 0.13 | 0.026 | ( 0.528) | 0.010 | 0.016 |
| 24 | 2.00 | 0.13 | 0.026 | ( 0.526) | 0.010 | 0.016 |
| 25 | 2.08 | 0.13 | 0.026 | ( 0.523) | 0.010 | 0.016 |
| 26 | 2.17 | 0.13 | 0.026 | ( 0.521) | 0.010 | 0.016 |
| 27 | 2.25 | 0.13 | 0.026 | ( 0.519) | 0.010 | 0.016 |
| 28 | 2.33 | 0.13 | 0.026 | ( 0.517) | 0.010 | 0.016 |
| 29 | 2.42 | 0.13 | 0.026 | ( 0.515) | 0.010 | 0.016 |
| 30 | 2.50 | 0.13 | 0.026 | ( 0.513) | 0.010 | 0.016 |
| 31 | 2.58 | 0.17 | 0.032 | ( 0.511) | 0.012 | 0.020 |
| 32 | 2.67 | 0.17 | 0.032 | ( 0.509) | 0.012 | 0.020 |
| 33 | 2.75 | 0.17 | 0.032 | ( 0.507) | 0.012 | 0.020 |
| 34 | 2.83 | 0.17 | 0.032 | ( 0.505) | 0.012 | 0.020 |
| 35 | 2.92 | 0.17 | 0.032 | ( 0.502) | 0.012 | 0.020 |
| 36 | 3.00 | 0.17 | 0.032 | ( 0.500) | 0.012 | 0.020 |
| 37 | 3.08 | 0.17 | 0.032 | ( 0.498) | 0.012 | 0.020 |
| 38 | 3.17 | 0.17 | 0.032 | ( 0.496) | 0.012 | 0.020 |
| 39 | 3.25 | 0.17 | 0.032 | ( 0.494) | 0.012 | 0.020 |
| 40 | 3.33 | 0.17 | 0.032 | ( 0.492) | 0.012 | 0.020 |
| 41 | 3.42 | 0.17 | 0.032 | ( 0.490) | 0.012 | 0.020 |
| 42 | 3.50 | 0.17 | 0.032 | ( 0.488) | 0.012 | 0.020 |
| 43 | 3.58 | 0.17 | 0.032 | ( 0.486) | 0.012 | 0.020 |
| 44 | 3.67 | 0.17 | 0.032 | ( 0.484) | 0.012 | 0.020 |
| 45 | 3.75 | 0.17 | 0.032 | ( 0.482) | 0.012 | 0.020 |
| 46 | 3.83 | 0.20 | 0.038 | ( 0.480) | 0.015 | 0.024 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | 3.92 | 0.20 | 0.038 | ( 0.478) | 0.015 | 0.024 |
| 48 | 4.00 | 0.20 | 0.038 | ( 0.476) | 0.015 | 0.024 |
| 49 | 4.08 | 0.20 | 0.038 | ( 0.474) | 0.015 | 0.024 |
| 50 | 4.17 | 0.20 | 0.038 | ( 0.472) | 0.015 | 0.024 |
| 51 | 4.25 | 0.20 | 0.038 | ( 0.470) | 0.015 | 0.024 |
| 52 | 4.33 | 0.23 | 0.045 | ( 0.468) | 0.017 | 0.028 |
| 53 | 4.42 | 0.23 | 0.045 | ( 0.466) | 0.017 | 0.028 |
| 54 | 4.50 | 0.23 | 0.045 | ( 0.464) | 0.017 | 0.028 |
| 55 | 4.58 | 0.23 | 0.045 | ( 0.462) | 0.017 | 0.028 |
| 56 | 4.67 | 0.23 | 0.045 | ( 0.460) | 0.017 | 0.028 |
| 57 | 4.75 | 0.23 | 0.045 | ( 0.458) | 0.017 | 0.028 |
| 58 | 4.83 | 0.27 | 0.051 | ( 0.456) | 0.019 | 0.032 |
| 59 | 4.92 | 0.27 | 0.051 | ( 0.454) | 0.019 | 0.032 |
| 60 | 5.00 | 0.27 | 0.051 | ( 0.452) | 0.019 | 0.032 |
| 61 | 5.08 | 0.20 | 0.038 | ( 0.450) | 0.015 | 0.024 |
| 62 | 5.17 | 0.20 | 0.038 | ( 0.448) | 0.015 | 0.024 |
| 63 | 5.25 | 0.20 | 0.038 | ( 0.446) | 0.015 | 0.024 |
| 64 | 5.33 | 0.23 | 0.045 | ( 0.444) | 0.017 | 0.028 |
| 65 | 5.42 | 0.23 | 0.045 | ( 0.442) | 0.017 | 0.028 |
| 66 | 5.50 | 0.23 | 0.045 | ( 0.440) | 0.017 | 0.028 |
| 67 | 5.58 | 0.27 | 0.051 | ( 0.438) | 0.019 | 0.032 |
| 68 | 5.67 | 0.27 | 0.051 | ( 0.436) | 0.019 | 0.032 |
| 69 | 5.75 | 0.27 | 0.051 | ( 0.434) | 0.019 | 0.032 |
| 70 | 5.83 | 0.27 | 0.051 | ( 0.433) | 0.019 | 0.032 |
| 71 | 5.92 | 0.27 | 0.051 | ( 0.431) | 0.019 | 0.032 |
| 72 | 6.00 | 0.27 | 0.051 | ( 0.429) | 0.019 | 0.032 |
| 73 | 6.08 | 0.30 | 0.058 | ( 0.427) | 0.022 | 0.036 |
| 74 | 6.17 | 0.30 | 0.058 | ( 0.425) | 0.022 | 0.036 |
| 75 | 6.25 | 0.30 | 0.058 | ( 0.423) | 0.022 | 0.036 |
| 76 | 6.33 | 0.30 | 0.058 | ( 0.421) | 0.022 | 0.036 |
| 77 | 6.42 | 0.30 | 0.058 | ( 0.419) | 0.022 | 0.036 |
| 78 | 6.50 | 0.30 | 0.058 | ( 0.417) | 0.022 | 0.036 |
| 79 | 6.58 | 0.33 | 0.064 | ( 0.415) | 0.024 | 0.040 |
| 80 | 6.67 | 0.33 | 0.064 | ( 0.414) | 0.024 | 0.040 |
| 81 | 6.75 | 0.33 | 0.064 | ( 0.412) | 0.024 | 0.040 |
| 82 | 6.83 | 0.33 | 0.064 | ( 0.410) | 0.024 | 0.040 |
| 83 | 6.92 | 0.33 | 0.064 | ( 0.408) | 0.024 | 0.040 |
| 84 | 7.00 | 0.33 | 0.064 | ( 0.406) | 0.024 | 0.040 |
| 85 | 7.08 | 0.33 | 0.064 | ( 0.404) | 0.024 | 0.040 |
| 86 | 7.17 | 0.33 | 0.064 | ( 0.402) | 0.024 | 0.040 |
| 87 | 7.25 | 0.33 | 0.064 | ( 0.401) | 0.024 | 0.040 |
| 88 | 7.33 | 0.37 | 0.070 | ( 0.399) | 0.027 | 0.044 |
| 89 | 7.42 | 0.37 | 0.070 | ( 0.397) | 0.027 | 0.044 |
| 90 | 7.50 | 0.37 | 0.070 | ( 0.395) | 0.027 | 0.044 |
| 91 | 7.58 | 0.40 | 0.077 | ( 0.393) | 0.029 | 0.048 |
| 92 | 7.67 | 0.40 | 0.077 | ( 0.392) | 0.029 | 0.048 |
| 93 | 7.75 | 0.40 | 0.077 | ( 0.390) | 0.029 | 0.048 |
| 94 | 7.83 | 0.43 | 0.083 | ( 0.388) | 0.032 | 0.052 |
| 95 | 7.92 | 0.43 | 0.083 | ( 0.386) | 0.032 | 0.052 |
| 96 | 8.00 | 0.43 | 0.083 | ( 0.384) | 0.032 | 0.052 |

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|---|---|---|---|---|---|---|
| 97 | 8.08 | 0.50 | 0.096 | ( 0.383) | 0.036 | 0.060 |
| 98 | 8.17 | 0.50 | 0.096 | ( 0.381) | 0.036 | 0.060 |
| 99 | 8.25 | 0.50 | 0.096 | ( 0.379) | 0.036 | 0.060 |
| 100 | 8.33 | 0.50 | 0.096 | ( 0.377) | 0.036 | 0.060 |
| 101 | 8.42 | 0.50 | 0.096 | ( 0.375) | 0.036 | 0.060 |
| 102 | 8.50 | 0.50 | 0.096 | ( 0.374) | 0.036 | 0.060 |
| 103 | 8.58 | 0.53 | 0.102 | ( 0.372) | 0.039 | 0.063 |
| 104 | 8.67 | 0.53 | 0.102 | ( 0.370) | 0.039 | 0.063 |
| 105 | 8.75 | 0.53 | 0.102 | ( 0.368) | 0.039 | 0.063 |
| 106 | 8.83 | 0.57 | 0.109 | ( 0.367) | 0.041 | 0.067 |
| 107 | 8.92 | 0.57 | 0.109 | ( 0.365) | 0.041 | 0.067 |
| 108 | 9.00 | 0.57 | 0.109 | ( 0.363) | 0.041 | 0.067 |
| 109 | 9.08 | 0.63 | 0.122 | ( 0.362) | 0.046 | 0.075 |
| 110 | 9.17 | 0.63 | 0.122 | ( 0.360) | 0.046 | 0.075 |
| 111 | 9.25 | 0.63 | 0.122 | ( 0.358) | 0.046 | 0.075 |
| 112 | 9.33 | 0.67 | 0.128 | ( 0.356) | 0.049 | 0.079 |
| 113 | 9.42 | 0.67 | 0.128 | ( 0.355) | 0.049 | 0.079 |
| 114 | 9.50 | 0.67 | 0.128 | ( 0.353) | 0.049 | 0.079 |
| 115 | 9.58 | 0.70 | 0.134 | ( 0.351) | 0.051 | 0.083 |
| 116 | 9.67 | 0.70 | 0.134 | ( 0.350) | 0.051 | 0.083 |
| 117 | 9.75 | 0.70 | 0.134 | ( 0.348) | 0.051 | 0.083 |
| 118 | 9.83 | 0.73 | 0.141 | ( 0.346) | 0.054 | 0.087 |
| 119 | 9.92 | 0.73 | 0.141 | ( 0.345) | 0.054 | 0.087 |
| 120 | 10.00 | 0.73 | 0.141 | ( 0.343) | 0.054 | 0.087 |
| 121 | 10.08 | 0.50 | 0.096 | ( 0.341) | 0.036 | 0.060 |
| 122 | 10.17 | 0.50 | 0.096 | ( 0.340) | 0.036 | 0.060 |
| 123 | 10.25 | 0.50 | 0.096 | ( 0.338) | 0.036 | 0.060 |
| 124 | 10.33 | 0.50 | 0.096 | ( 0.336) | 0.036 | 0.060 |
| 125 | 10.42 | 0.50 | 0.096 | ( 0.335) | 0.036 | 0.060 |
| 126 | 10.50 | 0.50 | 0.096 | ( 0.333) | 0.036 | 0.060 |
| 127 | 10.58 | 0.67 | 0.128 | ( 0.331) | 0.049 | 0.079 |
| 128 | 10.67 | 0.67 | 0.128 | ( 0.330) | 0.049 | 0.079 |
| 129 | 10.75 | 0.67 | 0.128 | ( 0.328) | 0.049 | 0.079 |
| 130 | 10.83 | 0.67 | 0.128 | ( 0.327) | 0.049 | 0.079 |
| 131 | 10.92 | 0.67 | 0.128 | ( 0.325) | 0.049 | 0.079 |
| 132 | 11.00 | 0.67 | 0.128 | ( 0.323) | 0.049 | 0.079 |
| 133 | 11.08 | 0.63 | 0.122 | ( 0.322) | 0.046 | 0.075 |
| 134 | 11.17 | 0.63 | 0.122 | ( 0.320) | 0.046 | 0.075 |
| 135 | 11.25 | 0.63 | 0.122 | ( 0.319) | 0.046 | 0.075 |
| 136 | 11.33 | 0.63 | 0.122 | ( 0.317) | 0.046 | 0.075 |
| 137 | 11.42 | 0.63 | 0.122 | ( 0.316) | 0.046 | 0.075 |
| 138 | 11.50 | 0.63 | 0.122 | ( 0.314) | 0.046 | 0.075 |
| 139 | 11.58 | 0.57 | 0.109 | ( 0.312) | 0.041 | 0.067 |
| 140 | 11.67 | 0.57 | 0.109 | ( 0.311) | 0.041 | 0.067 |
| 141 | 11.75 | 0.57 | 0.109 | ( 0.309) | 0.041 | 0.067 |
| 142 | 11.83 | 0.60 | 0.115 | ( 0.308) | 0.044 | 0.071 |
| 143 | 11.92 | 0.60 | 0.115 | ( 0.306) | 0.044 | 0.071 |
| 144 | 12.00 | 0.60 | 0.115 | ( 0.305) | 0.044 | 0.071 |
| 145 | 12.08 | 0.83 | 0.160 | ( 0.303) | 0.061 | 0.099 |
| 146 | 12.17 | 0.83 | 0.160 | ( 0.302) | 0.061 | 0.099 |

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|---|---|---|---|---|---|---|
| 147 | 12.25 | 0.83 | 0.160 | ( 0.300) | 0.061 | 0.099 |
| 148 | 12.33 | 0.87 | 0.166 | ( 0.299) | 0.063 | 0.103 |
| 149 | 12.42 | 0.87 | 0.166 | ( 0.297) | 0.063 | 0.103 |
| 150 | 12.50 | 0.87 | 0.166 | ( 0.296) | 0.063 | 0.103 |
| 151 | 12.58 | 0.93 | 0.179 | ( 0.294) | 0.068 | 0.111 |
| 152 | 12.67 | 0.93 | 0.179 | ( 0.293) | 0.068 | 0.111 |
| 153 | 12.75 | 0.93 | 0.179 | ( 0.291) | 0.068 | 0.111 |
| 154 | 12.83 | 0.97 | 0.186 | ( 0.290) | 0.071 | 0.115 |
| 155 | 12.92 | 0.97 | 0.186 | ( 0.288) | 0.071 | 0.115 |
| 156 | 13.00 | 0.97 | 0.186 | ( 0.287) | 0.071 | 0.115 |
| 157 | 13.08 | 1.13 | 0.218 | ( 0.285) | 0.083 | 0.135 |
| 158 | 13.17 | 1.13 | 0.218 | ( 0.284) | 0.083 | 0.135 |
| 159 | 13.25 | 1.13 | 0.218 | ( 0.282) | 0.083 | 0.135 |
| 160 | 13.33 | 1.13 | 0.218 | ( 0.281) | 0.083 | 0.135 |
| 161 | 13.42 | 1.13 | 0.218 | ( 0.280) | 0.083 | 0.135 |
| 162 | 13.50 | 1.13 | 0.218 | ( 0.278) | 0.083 | 0.135 |
| 163 | 13.58 | 0.77 | 0.147 | ( 0.277) | 0.056 | 0.091 |
| 164 | 13.67 | 0.77 | 0.147 | ( 0.275) | 0.056 | 0.091 |
| 165 | 13.75 | 0.77 | 0.147 | ( 0.274) | 0.056 | 0.091 |
| 166 | 13.83 | 0.77 | 0.147 | ( 0.273) | 0.056 | 0.091 |
| 167 | 13.92 | 0.77 | 0.147 | ( 0.271) | 0.056 | 0.091 |
| 168 | 14.00 | 0.77 | 0.147 | ( 0.270) | 0.056 | 0.091 |
| 169 | 14.08 | 0.90 | 0.173 | ( 0.268) | 0.066 | 0.107 |
| 170 | 14.17 | 0.90 | 0.173 | ( 0.267) | 0.066 | 0.107 |
| 171 | 14.25 | 0.90 | 0.173 | ( 0.266) | 0.066 | 0.107 |
| 172 | 14.33 | 0.87 | 0.166 | ( 0.264) | 0.063 | 0.103 |
| 173 | 14.42 | 0.87 | 0.166 | ( 0.263) | 0.063 | 0.103 |
| 174 | 14.50 | 0.87 | 0.166 | ( 0.262) | 0.063 | 0.103 |
| 175 | 14.58 | 0.87 | 0.166 | ( 0.260) | 0.063 | 0.103 |
| 176 | 14.67 | 0.87 | 0.166 | ( 0.259) | 0.063 | 0.103 |
| 177 | 14.75 | 0.87 | 0.166 | ( 0.258) | 0.063 | 0.103 |
| 178 | 14.83 | 0.83 | 0.160 | ( 0.256) | 0.061 | 0.099 |
| 179 | 14.92 | 0.83 | 0.160 | ( 0.255) | 0.061 | 0.099 |
| 180 | 15.00 | 0.83 | 0.160 | ( 0.254) | 0.061 | 0.099 |
| 181 | 15.08 | 0.80 | 0.154 | ( 0.252) | 0.058 | 0.095 |
| 182 | 15.17 | 0.80 | 0.154 | ( 0.251) | 0.058 | 0.095 |
| 183 | 15.25 | 0.80 | 0.154 | ( 0.250) | 0.058 | 0.095 |
| 184 | 15.33 | 0.77 | 0.147 | ( 0.248) | 0.056 | 0.091 |
| 185 | 15.42 | 0.77 | 0.147 | ( 0.247) | 0.056 | 0.091 |
| 186 | 15.50 | 0.77 | 0.147 | ( 0.246) | 0.056 | 0.091 |
| 187 | 15.58 | 0.63 | 0.122 | ( 0.245) | 0.046 | 0.075 |
| 188 | 15.67 | 0.63 | 0.122 | ( 0.243) | 0.046 | 0.075 |
| 189 | 15.75 | 0.63 | 0.122 | ( 0.242) | 0.046 | 0.075 |
| 190 | 15.83 | 0.63 | 0.122 | ( 0.241) | 0.046 | 0.075 |
| 191 | 15.92 | 0.63 | 0.122 | ( 0.240) | 0.046 | 0.075 |
| 192 | 16.00 | 0.63 | 0.122 | ( 0.238) | 0.046 | 0.075 |
| 193 | 16.08 | 0.13 | 0.026 | ( 0.237) | 0.010 | 0.016 |
| 194 | 16.17 | 0.13 | 0.026 | ( 0.236) | 0.010 | 0.016 |
| 195 | 16.25 | 0.13 | 0.026 | ( 0.235) | 0.010 | 0.016 |
| 196 | 16.33 | 0.13 | 0.026 | ( 0.234) | 0.010 | 0.016 |

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|---|---|---|---|---|---|---|
| 197 | 16.42 | 0.13 | 0.026 | ( 0.232) | 0.010 | 0.016 |
| 198 | 16.50 | 0.13 | 0.026 | ( 0.231) | 0.010 | 0.016 |
| 199 | 16.58 | 0.10 | 0.019 | ( 0.230) | 0.007 | 0.012 |
| 200 | 16.67 | 0.10 | 0.019 | ( 0.229) | 0.007 | 0.012 |
| 201 | 16.75 | 0.10 | 0.019 | ( 0.228) | 0.007 | 0.012 |
| 202 | 16.83 | 0.10 | 0.019 | ( 0.227) | 0.007 | 0.012 |
| 203 | 16.92 | 0.10 | 0.019 | ( 0.225) | 0.007 | 0.012 |
| 204 | 17.00 | 0.10 | 0.019 | ( 0.224) | 0.007 | 0.012 |
| 205 | 17.08 | 0.17 | 0.032 | ( 0.223) | 0.012 | 0.020 |
| 206 | 17.17 | 0.17 | 0.032 | ( 0.222) | 0.012 | 0.020 |
| 207 | 17.25 | 0.17 | 0.032 | ( 0.221) | 0.012 | 0.020 |
| 208 | 17.33 | 0.17 | 0.032 | ( 0.220) | 0.012 | 0.020 |
| 209 | 17.42 | 0.17 | 0.032 | ( 0.219) | 0.012 | 0.020 |
| 210 | 17.50 | 0.17 | 0.032 | ( 0.218) | 0.012 | 0.020 |
| 211 | 17.58 | 0.17 | 0.032 | ( 0.217) | 0.012 | 0.020 |
| 212 | 17.67 | 0.17 | 0.032 | ( 0.215) | 0.012 | 0.020 |
| 213 | 17.75 | 0.17 | 0.032 | ( 0.214) | 0.012 | 0.020 |
| 214 | 17.83 | 0.13 | 0.026 | ( 0.213) | 0.010 | 0.016 |
| 215 | 17.92 | 0.13 | 0.026 | ( 0.212) | 0.010 | 0.016 |
| 216 | 18.00 | 0.13 | 0.026 | ( 0.211) | 0.010 | 0.016 |
| 217 | 18.08 | 0.13 | 0.026 | ( 0.210) | 0.010 | 0.016 |
| 218 | 18.17 | 0.13 | 0.026 | ( 0.209) | 0.010 | 0.016 |
| 219 | 18.25 | 0.13 | 0.026 | ( 0.208) | 0.010 | 0.016 |
| 220 | 18.33 | 0.13 | 0.026 | ( 0.207) | 0.010 | 0.016 |
| 221 | 18.42 | 0.13 | 0.026 | ( 0.206) | 0.010 | 0.016 |
| 222 | 18.50 | 0.13 | 0.026 | ( 0.205) | 0.010 | 0.016 |
| 223 | 18.58 | 0.10 | 0.019 | ( 0.204) | 0.007 | 0.012 |
| 224 | 18.67 | 0.10 | 0.019 | ( 0.203) | 0.007 | 0.012 |
| 225 | 18.75 | 0.10 | 0.019 | ( 0.202) | 0.007 | 0.012 |
| 226 | 18.83 | 0.07 | 0.013 | ( 0.201) | 0.005 | 0.008 |
| 227 | 18.92 | 0.07 | 0.013 | ( 0.200) | 0.005 | 0.008 |
| 228 | 19.00 | 0.07 | 0.013 | ( 0.199) | 0.005 | 0.008 |
| 229 | 19.08 | 0.10 | 0.019 | ( 0.198) | 0.007 | 0.012 |
| 230 | 19.17 | 0.10 | 0.019 | ( 0.197) | 0.007 | 0.012 |
| 231 | 19.25 | 0.10 | 0.019 | ( 0.196) | 0.007 | 0.012 |
| 232 | 19.33 | 0.13 | 0.026 | ( 0.196) | 0.010 | 0.016 |
| 233 | 19.42 | 0.13 | 0.026 | ( 0.195) | 0.010 | 0.016 |
| 234 | 19.50 | 0.13 | 0.026 | ( 0.194) | 0.010 | 0.016 |
| 235 | 19.58 | 0.10 | 0.019 | ( 0.193) | 0.007 | 0.012 |
| 236 | 19.67 | 0.10 | 0.019 | ( 0.192) | 0.007 | 0.012 |
| 237 | 19.75 | 0.10 | 0.019 | ( 0.191) | 0.007 | 0.012 |
| 238 | 19.83 | 0.07 | 0.013 | ( 0.190) | 0.005 | 0.008 |
| 239 | 19.92 | 0.07 | 0.013 | ( 0.189) | 0.005 | 0.008 |
| 240 | 20.00 | 0.07 | 0.013 | ( 0.189) | 0.005 | 0.008 |
| 241 | 20.08 | 0.10 | 0.019 | ( 0.188) | 0.007 | 0.012 |
| 242 | 20.17 | 0.10 | 0.019 | ( 0.187) | 0.007 | 0.012 |
| 243 | 20.25 | 0.10 | 0.019 | ( 0.186) | 0.007 | 0.012 |
| 244 | 20.33 | 0.10 | 0.019 | ( 0.185) | 0.007 | 0.012 |
| 245 | 20.42 | 0.10 | 0.019 | ( 0.185) | 0.007 | 0.012 |
| 246 | 20.50 | 0.10 | 0.019 | ( 0.184) | 0.007 | 0.012 |

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| 247 | 20.58 | 0.10 | 0.019 | ( 0.183) | 0.007 | 0.012 |
| 248 | 20.67 | 0.10 | 0.019 | ( 0.182) | 0.007 | 0.012 |
| 249 | 20.75 | 0.10 | 0.019 | ( 0.181) | 0.007 | 0.012 |
| 250 | 20.83 | 0.07 | 0.013 | ( 0.181) | 0.005 | 0.008 |
| 251 | 20.92 | 0.07 | 0.013 | ( 0.180) | 0.005 | 0.008 |
| 252 | 21.00 | 0.07 | 0.013 | ( 0.179) | 0.005 | 0.008 |
| 253 | 21.08 | 0.10 | 0.019 | ( 0.179) | 0.007 | 0.012 |
| 254 | 21.17 | 0.10 | 0.019 | ( 0.178) | 0.007 | 0.012 |
| 255 | 21.25 | 0.10 | 0.019 | ( 0.177) | 0.007 | 0.012 |
| 256 | 21.33 | 0.07 | 0.013 | ( 0.176) | 0.005 | 0.008 |
| 257 | 21.42 | 0.07 | 0.013 | ( 0.176) | 0.005 | 0.008 |
| 258 | 21.50 | 0.07 | 0.013 | ( 0.175) | 0.005 | 0.008 |
| 259 | 21.58 | 0.10 | 0.019 | ( 0.175) | 0.007 | 0.012 |
| 260 | 21.67 | 0.10 | 0.019 | ( 0.174) | 0.007 | 0.012 |
| 261 | 21.75 | 0.10 | 0.019 | ( 0.173) | 0.007 | 0.012 |
| 262 | 21.83 | 0.07 | 0.013 | ( 0.173) | 0.005 | 0.008 |
| 263 | 21.92 | 0.07 | 0.013 | ( 0.172) | 0.005 | 0.008 |
| 264 | 22.00 | 0.07 | 0.013 | ( 0.171) | 0.005 | 0.008 |
| 265 | 22.08 | 0.10 | 0.019 | ( 0.171) | 0.007 | 0.012 |
| 266 | 22.17 | 0.10 | 0.019 | ( 0.170) | 0.007 | 0.012 |
| 267 | 22.25 | 0.10 | 0.019 | ( 0.170) | 0.007 | 0.012 |
| 268 | 22.33 | 0.07 | 0.013 | ( 0.169) | 0.005 | 0.008 |
| 269 | 22.42 | 0.07 | 0.013 | ( 0.169) | 0.005 | 0.008 |
| 270 | 22.50 | 0.07 | 0.013 | ( 0.168) | 0.005 | 0.008 |
| 271 | 22.58 | 0.07 | 0.013 | ( 0.168) | 0.005 | 0.008 |
| 272 | 22.67 | 0.07 | 0.013 | ( 0.167) | 0.005 | 0.008 |
| 273 | 22.75 | 0.07 | 0.013 | ( 0.167) | 0.005 | 0.008 |
| 274 | 22.83 | 0.07 | 0.013 | ( 0.166) | 0.005 | 0.008 |
| 275 | 22.92 | 0.07 | 0.013 | ( 0.166) | 0.005 | 0.008 |
| 276 | 23.00 | 0.07 | 0.013 | ( 0.166) | 0.005 | 0.008 |
| 277 | 23.08 | 0.07 | 0.013 | ( 0.165) | 0.005 | 0.008 |
| 278 | 23.17 | 0.07 | 0.013 | ( 0.165) | 0.005 | 0.008 |
| 279 | 23.25 | 0.07 | 0.013 | ( 0.164) | 0.005 | 0.008 |
| 280 | 23.33 | 0.07 | 0.013 | ( 0.164) | 0.005 | 0.008 |
| 281 | 23.42 | 0.07 | 0.013 | ( 0.164) | 0.005 | 0.008 |
| 282 | 23.50 | 0.07 | 0.013 | ( 0.164) | 0.005 | 0.008 |
| 283 | 23.58 | 0.07 | 0.013 | ( 0.163) | 0.005 | 0.008 |
| 284 | 23.67 | 0.07 | 0.013 | ( 0.163) | 0.005 | 0.008 |
| 285 | 23.75 | 0.07 | 0.013 | ( 0.163) | 0.005 | 0.008 |
| 286 | 23.83 | 0.07 | 0.013 | ( 0.163) | 0.005 | 0.008 |
| 287 | 23.92 | 0.07 | 0.013 | ( 0.162) | 0.005 | 0.008 |
| 288 | 24.00 | 0.07 | 0.013 | ( 0.162) | 0.005 | 0.008 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 11.9

Flood volume = Effective rainfall 0.99(In)
times area 13.8(Ac.)/[(In)/(Ft.)] = 1.1(Ac.Ft)
Total soil loss = 0.61(In)
Total soil loss = 0.697(Ac.Ft)
Total rainfall = 1.60(In)
Flood volume = 49511.9 Cubic Feet

Total soil loss = 30346.0 Cubic Feet

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Peak flow rate of this hydrograph = 1.870(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 | 0.0004 | 0.06 | Q | | | | |
| 0+10 | 0.0011 | 0.10 | Q | | | | |
| 0+15 | 0.0019 | 0.11 | Q | | | | |
| 0+20 | 0.0029 | 0.14 | Q | | | | |
| 0+25 | 0.0040 | 0.16 | Q | | | | |
| 0+30 | 0.0051 | 0.17 | Q | | | | |
| 0+35 | 0.0062 | 0.17 | Q | | | | |
| 0+40 | 0.0074 | 0.17 | Q | | | | |
| 0+45 | 0.0085 | 0.17 | Q | | | | |
| 0+50 | 0.0099 | 0.20 | Q | | | | |
| 0+55 | 0.0114 | 0.22 | Q | | | | |
| 1+ 0 | 0.0129 | 0.22 | Q | | | | |
| 1+ 5 | 0.0142 | 0.19 | Q | | | | |
| 1+10 | 0.0153 | 0.17 | Q | | | | |
| 1+15 | 0.0165 | 0.17 | Q | | | | |
| 1+20 | 0.0176 | 0.17 | Q | | | | |
| 1+25 | 0.0187 | 0.17 | Q | | | | |
| 1+30 | 0.0199 | 0.17 | Q | | | | |
| 1+35 | 0.0210 | 0.17 | Q | | | | |
| 1+40 | 0.0222 | 0.17 | Q | | | | |
| 1+45 | 0.0233 | 0.17 | Q | | | | |
| 1+50 | 0.0246 | 0.20 | Q | | | | |
| 1+55 | 0.0261 | 0.22 | Q | | | | |
| 2+ 0 | 0.0277 | 0.22 | Q | | | | |
| 2+ 5 | 0.0292 | 0.22 | QV | | | | |
| 2+10 | 0.0307 | 0.22 | QV | | | | |
| 2+15 | 0.0322 | 0.22 | QV | | | | |
| 2+20 | 0.0337 | 0.22 | QV | | | | |
| 2+25 | 0.0352 | 0.22 | QV | | | | |
| 2+30 | 0.0367 | 0.22 | QV | | | | |
| 2+35 | 0.0385 | 0.25 | \|Q | | | | |
| 2+40 | 0.0403 | 0.27 | \|Q | | | | |
| 2+45 | 0.0422 | 0.28 | \|Q | | | | |
| 2+50 | 0.0441 | 0.28 | \|Q | | | | |
| 2+55 | 0.0460 | 0.28 | \|Q | | | | |
| 3+ 0 | 0.0479 | 0.28 | \|Q | | | | |
| 3+ 5 | 0.0498 | 0.28 | \|Q | | | | |

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3+10       0.0517      0.28  |Q        |         |         |         |
3+15       0.0536      0.28  |Q        |         |         |         |
3+20       0.0555      0.28  |Q        |         |         |         |
3+25       0.0574      0.28  |QV       |         |         |         |
3+30       0.0593      0.28  |QV       |         |         |         |
3+35       0.0612      0.28  |QV       |         |         |         |
3+40       0.0631      0.28  |QV       |         |         |         |
3+45       0.0650      0.28  |QV       |         |         |         |
3+50       0.0671      0.31  |QV       |         |         |         |
3+55       0.0693      0.33  |QV       |         |         |         |
4+ 0       0.0716      0.33  |QV       |         |         |         |
4+ 5       0.0739      0.33  |QV       |         |         |         |
4+10       0.0761      0.33  |QV       |         |         |         |
4+15       0.0784      0.33  |QV       |         |         |         |
4+20       0.0809      0.36  |QV       |         |         |         |
4+25       0.0835      0.38  |QV       |         |         |         |
4+30       0.0862      0.39  |Q V      |         |         |         |
4+35       0.0888      0.39  |Q V      |         |         |         |
4+40       0.0915      0.39  |Q V      |         |         |         |
4+45       0.0941      0.39  |Q V      |         |         |         |
4+50       0.0970      0.42  |Q V      |         |         |         |
4+55       0.1000      0.44  |Q V      |         |         |         |
5+ 0       0.1030      0.44  |Q V      |         |         |         |
5+ 5       0.1056      0.38  |Q V      |         |         |         |
5+10       0.1080      0.34  |Q V      |         |         |         |
5+15       0.1102      0.33  |Q V      |         |         |         |
5+20       0.1127      0.36  |Q V      |         |         |         |
5+25       0.1154      0.38  |Q  V     |         |         |         |
5+30       0.1180      0.39  |Q  V     |         |         |         |
5+35       0.1209      0.42  |Q  V     |         |         |         |
5+40       0.1239      0.44  |Q  V     |         |         |         |
5+45       0.1269      0.44  |Q  V     |         |         |         |
5+50       0.1299      0.44  |Q  V     |         |         |         |
5+55       0.1330      0.44  |Q  V     |         |         |         |
6+ 0       0.1360      0.44  |Q  V     |         |         |         |
6+ 5       0.1392      0.47  |Q  V     |         |         |         |
6+10       0.1426      0.49  |Q   V    |         |         |         |
6+15       0.1460      0.50  |Q   V    |         |         |         |
6+20       0.1495      0.50  |Q   V    |         |         |         |
6+25       0.1529      0.50  |Q   V    |         |         |         |
6+30       0.1563      0.50  |Q   V    |         |         |         |
6+35       0.1599      0.53  | Q  V    |         |         |         |
6+40       0.1637      0.55  | Q  V    |         |         |         |
6+45       0.1674      0.55  | Q  V    |         |         |         |
6+50       0.1712      0.55  | Q   V   |         |         |         |
6+55       0.1750      0.55  | Q   V   |         |         |         |
7+ 0       0.1788      0.55  | Q   V   |         |         |         |
7+ 5       0.1826      0.55  | Q   V   |         |         |         |
7+10       0.1864      0.55  | Q   V   |         |         |         |
7+15       0.1902      0.55  | Q   V   |         |         |         |
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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7+20 | 0.1942 | 0.58 | Q V | | | | |
| 7+25 | 0.1983 | 0.60 | Q V | | | | |
| 7+30 | 0.2025 | 0.61 | Q V | | | | |
| 7+35 | 0.2069 | 0.64 | Q V | | | | |
| 7+40 | 0.2114 | 0.66 | Q V | | | | |
| 7+45 | 0.2159 | 0.66 | Q V | | | | |
| 7+50 | 0.2207 | 0.69 | Q V | | | | |
| 7+55 | 0.2256 | 0.71 | Q V | | | | |
| 8+ 0 | 0.2305 | 0.72 | Q V | | | | |
| 8+ 5 | 0.2359 | 0.78 | Q V | | | | |
| 8+10 | 0.2415 | 0.82 | Q V | | | | |
| 8+15 | 0.2472 | 0.83 | Q V | | | | |
| 8+20 | 0.2529 | 0.83 | Q V | | | | |
| 8+25 | 0.2586 | 0.83 | Q V | | | | |
| 8+30 | 0.2642 | 0.83 | Q V | | | | |
| 8+35 | 0.2701 | 0.86 | Q V | | | | |
| 8+40 | 0.2762 | 0.88 | Q V | | | | |
| 8+45 | 0.2822 | 0.88 | Q V | | | | |
| 8+50 | 0.2885 | 0.91 | Q V | | | | |
| 8+55 | 0.2949 | 0.93 | Q V | | | | |
| 9+ 0 | 0.3014 | 0.94 | Q V | | | | |
| 9+ 5 | 0.3082 | 1.00 | Q V | | | | |
| 9+10 | 0.3154 | 1.04 | Q V | | | | |
| 9+15 | 0.3226 | 1.05 | Q V | | | | |
| 9+20 | 0.3300 | 1.08 | Q V | | | | |
| 9+25 | 0.3376 | 1.10 | Q V | | | | |
| 9+30 | 0.3451 | 1.10 | Q V | | | | |
| 9+35 | 0.3529 | 1.13 | Q V | | | | |
| 9+40 | 0.3608 | 1.15 | Q V | | | | |
| 9+45 | 0.3688 | 1.16 | Q V | | | | |
| 9+50 | 0.3770 | 1.19 | Q V | | | | |
| 9+55 | 0.3853 | 1.21 | Q V | | | | |
| 10+ 0 | 0.3936 | 1.21 | Q V | | | | |
| 10+ 5 | 0.4005 | 0.99 | Q V | | | | |
| 10+10 | 0.4063 | 0.85 | Q V | | | | |
| 10+15 | 0.4120 | 0.83 | Q V | | | | |
| 10+20 | 0.4177 | 0.83 | Q V | | | | |
| 10+25 | 0.4234 | 0.83 | Q V | | | | |
| 10+30 | 0.4291 | 0.83 | Q V | | | | |
| 10+35 | 0.4358 | 0.98 | Q V | | | | |
| 10+40 | 0.4433 | 1.08 | Q V | | | | |
| 10+45 | 0.4508 | 1.10 | Q V | | | | |
| 10+50 | 0.4584 | 1.10 | Q V | | | | |
| 10+55 | 0.4660 | 1.10 | Q V | | | | |
| 11+ 0 | 0.4736 | 1.10 | Q V | | | | |
| 11+ 5 | 0.4809 | 1.07 | Q V | | | | |
| 11+10 | 0.4882 | 1.05 | Q V | | | | |
| 11+15 | 0.4954 | 1.05 | Q V | | | | |
| 11+20 | 0.5026 | 1.05 | Q V | | | | |
| 11+25 | 0.5098 | 1.05 | Q V | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11+30 | 0.5170 | 1.05 | Q | V | | | |
| 11+35 | 0.5237 | 0.98 | Q | V | | | |
| 11+40 | 0.5302 | 0.94 | Q | V | | | |
| 11+45 | 0.5367 | 0.94 | Q | V | | | |
| 11+50 | 0.5433 | 0.97 | Q | V | | | |
| 11+55 | 0.5501 | 0.99 | Q | V | | | |
| 12+ 0 | 0.5569 | 0.99 | Q | V | | | |
| 12+ 5 | 0.5652 | 1.21 | Q | V | | | |
| 12+10 | 0.5745 | 1.35 | Q | V | | | |
| 12+15 | 0.5840 | 1.38 | Q | V | | | |
| 12+20 | 0.5937 | 1.41 | Q | V | | | |
| 12+25 | 0.6035 | 1.43 | Q | V | | | |
| 12+30 | 0.6134 | 1.43 | Q | V | | | |
| 12+35 | 0.6236 | 1.49 | Q | V | | | |
| 12+40 | 0.6342 | 1.53 | Q | V | | | |
| 12+45 | 0.6448 | 1.54 | Q | V | | | |
| 12+50 | 0.6556 | 1.57 | Q | V | | | |
| 12+55 | 0.6666 | 1.59 | Q | V | | | |
| 13+ 0 | 0.6776 | 1.60 | Q | V | | | |
| 13+ 5 | 0.6896 | 1.75 | Q | V | | | |
| 13+10 | 0.7024 | 1.85 | Q | V | | | |
| 13+15 | 0.7153 | 1.87 | Q | V | | | |
| 13+20 | 0.7282 | 1.87 | Q | V | | | |
| 13+25 | 0.7410 | 1.87 | Q | V | | | |
| 13+30 | 0.7539 | 1.87 | Q | V | | | |
| 13+35 | 0.7645 | 1.53 | Q | V | | | |
| 13+40 | 0.7734 | 1.30 | Q | V | | | |
| 13+45 | 0.7822 | 1.27 | Q | V | | | |
| 13+50 | 0.7909 | 1.27 | Q | V | | | |
| 13+55 | 0.7996 | 1.27 | Q | V | | | |
| 14+ 0 | 0.8083 | 1.27 | Q | V | | | |
| 14+ 5 | 0.8179 | 1.39 | Q | V | | | |
| 14+10 | 0.8280 | 1.47 | Q | V | | | |
| 14+15 | 0.8382 | 1.49 | Q | V | | | |
| 14+20 | 0.8482 | 1.45 | Q | V | | | |
| 14+25 | 0.8581 | 1.43 | Q | V | | | |
| 14+30 | 0.8680 | 1.43 | Q | V | | | |
| 14+35 | 0.8778 | 1.43 | Q | V | | | |
| 14+40 | 0.8877 | 1.43 | Q | V | | | |
| 14+45 | 0.8975 | 1.43 | Q | V | | | |
| 14+50 | 0.9072 | 1.40 | Q | V | | | |
| 14+55 | 0.9167 | 1.38 | Q | V | | | |
| 15+ 0 | 0.9261 | 1.38 | Q | V | | | |
| 15+ 5 | 0.9354 | 1.34 | Q | V | | | |
| 15+10 | 0.9445 | 1.32 | Q | V | | | |
| 15+15 | 0.9536 | 1.32 | Q | V | | | |
| 15+20 | 0.9625 | 1.29 | Q | V | | | |
| 15+25 | 0.9712 | 1.27 | Q | V | | | |
| 15+30 | 0.9799 | 1.27 | Q | V | | | |
| 15+35 | 0.9878 | 1.14 | Q | V | | | |

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15+40       0.9951      1.06  |   Q     |         |         |    V    |
15+45       1.0023      1.05  |   Q     |         |         |    V    |
15+50       1.0095      1.05  |   Q     |         |         |    V    |
15+55       1.0167      1.05  |   Q     |         |         |    V    |
16+ 0       1.0239      1.05  |   Q     |         |         |     V   |
16+ 5       1.0279      0.58  | Q       |         |         |     V   |
16+10       1.0298      0.27  |Q        |         |         |     V   |
16+15       1.0313      0.22  Q         |         |         |     V   |
16+20       1.0328      0.22  Q         |         |         |     V   |
16+25       1.0343      0.22  Q         |         |         |     V   |
16+30       1.0358      0.22  Q         |         |         |     V   |
16+35       1.0372      0.19  Q         |         |         |     V   |
16+40       1.0383      0.17  Q         |         |         |     V   |
16+45       1.0394      0.17  Q         |         |         |     V   |
16+50       1.0406      0.17  Q         |         |         |     V   |
16+55       1.0417      0.17  Q         |         |         |     V   |
17+ 0       1.0429      0.17  Q         |         |         |     V   |
17+ 5       1.0444      0.23  Q         |         |         |     V   |
17+10       1.0463      0.27  |Q        |         |         |     V   |
17+15       1.0482      0.28  |Q        |         |         |     V   |
17+20       1.0501      0.28  |Q        |         |         |     V   |
17+25       1.0519      0.28  |Q        |         |         |      V  |
17+30       1.0538      0.28  |Q        |         |         |      V  |
17+35       1.0557      0.28  |Q        |         |         |      V  |
17+40       1.0576      0.28  |Q        |         |         |      V  |
17+45       1.0595      0.28  |Q        |         |         |      V  |
17+50       1.0612      0.24  Q         |         |         |      V  |
17+55       1.0627      0.22  Q         |         |         |      V  |
18+ 0       1.0643      0.22  Q         |         |         |      V  |
18+ 5       1.0658      0.22  Q         |         |         |      V  |
18+10       1.0673      0.22  Q         |         |         |      V  |
18+15       1.0688      0.22  Q         |         |         |      V  |
18+20       1.0703      0.22  Q         |         |         |      V  |
18+25       1.0718      0.22  Q         |         |         |      V  |
18+30       1.0734      0.22  Q         |         |         |      V  |
18+35       1.0747      0.19  Q         |         |         |      V  |
18+40       1.0758      0.17  Q         |         |         |      V  |
18+45       1.0770      0.17  Q         |         |         |      V  |
18+50       1.0779      0.13  Q         |         |         |      V  |
18+55       1.0787      0.11  Q         |         |         |      V  |
19+ 0       1.0794      0.11  Q         |         |         |      V  |
19+ 5       1.0804      0.14  Q         |         |         |       V |
19+10       1.0815      0.16  Q         |         |         |       V |
19+15       1.0826      0.17  Q         |         |         |       V |
19+20       1.0840      0.20  Q         |         |         |       V |
19+25       1.0855      0.22  Q         |         |         |       V |
19+30       1.0870      0.22  Q         |         |         |       V |
19+35       1.0883      0.19  Q         |         |         |       V |
19+40       1.0895      0.17  Q         |         |         |       V |
19+45       1.0906      0.17  Q         |         |         |       V |
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19+50       1.0915      0.13  Q         |         |         |        V |
19+55       1.0923      0.11  Q         |         |         |        V |
20+ 0       1.0931      0.11  Q         |         |         |        V |
20+ 5       1.0940      0.14  Q         |         |         |        V |
20+10       1.0951      0.16  Q         |         |         |        V |
20+15       1.0963      0.17  Q         |         |         |        V |
20+20       1.0974      0.17  Q         |         |         |        V |
20+25       1.0986      0.17  Q         |         |         |        V |
20+30       1.0997      0.17  Q         |         |         |        V |
20+35       1.1008      0.17  Q         |         |         |        V |
20+40       1.1020      0.17  Q         |         |         |        V |
20+45       1.1031      0.17  Q         |         |         |        V |
20+50       1.1040      0.13  Q         |         |         |        V |
20+55       1.1048      0.11  Q         |         |         |        V |
21+ 0       1.1056      0.11  Q         |         |         |        V |
21+ 5       1.1065      0.14  Q         |         |         |        V |
21+10       1.1076      0.16  Q         |         |         |        V |
21+15       1.1088      0.17  Q         |         |         |         V|
21+20       1.1097      0.13  Q         |         |         |         V|
21+25       1.1105      0.11  Q         |         |         |         V|
21+30       1.1112      0.11  Q         |         |         |         V|
21+35       1.1122      0.14  Q         |         |         |         V|
21+40       1.1133      0.16  Q         |         |         |         V|
21+45       1.1145      0.17  Q         |         |         |         V|
21+50       1.1154      0.13  Q         |         |         |         V|
21+55       1.1162      0.11  Q         |         |         |         V|
22+ 0       1.1169      0.11  Q         |         |         |         V|
22+ 5       1.1179      0.14  Q         |         |         |         V|
22+10       1.1190      0.16  Q         |         |         |         V|
22+15       1.1202      0.17  Q         |         |         |         V|
22+20       1.1211      0.13  Q         |         |         |         V|
22+25       1.1219      0.11  Q         |         |         |         V|
22+30       1.1226      0.11  Q         |         |         |         V|
22+35       1.1234      0.11  Q         |         |         |         V|
22+40       1.1241      0.11  Q         |         |         |         V|
22+45       1.1249      0.11  Q         |         |         |         V|
22+50       1.1256      0.11  Q         |         |         |         V|
22+55       1.1264      0.11  Q         |         |         |         V|
23+ 0       1.1272      0.11  Q         |         |         |         V|
23+ 5       1.1279      0.11  Q         |         |         |         V|
23+10       1.1287      0.11  Q         |         |         |         V|
23+15       1.1294      0.11  Q         |         |         |         V|
23+20       1.1302      0.11  Q         |         |         |         V|
23+25       1.1309      0.11  Q         |         |         |         V|
23+30       1.1317      0.11  Q         |         |         |         V|
23+35       1.1325      0.11  Q         |         |         |         V|
23+40       1.1332      0.11  Q         |         |         |         V|
23+45       1.1340      0.11  Q         |         |         |         V|
23+50       1.1347      0.11  Q         |         |         |         V|
23+55       1.1355      0.11  Q         |         |         |         V|
```

```
   24+ 0       1.1363      0.11  Q         |         |         |        V|
   24+ 5       1.1366      0.05  Q         |         |         |        V|
   24+10       1.1366      0.01  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 03/16/23 File: GOYASUHPRE245.out

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

Program License Serial Number 6215

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

English Units used in output format

---
GOYASUHPRE5YR

---
Drainage Area = 14.00(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.00(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1018.00(Ft.)
Length along longest watercourse measured to centroid = 74.92(Ft.)
Length along longest watercourse = 0.193 Mi.
Length along longest watercourse measured to centroid = 0.014 Mi.
Difference in elevation = 7.94(Ft.)
Slope along watercourse = 41.1819 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.038 Hr.
Lag time = 2.26 Min.
25% of lag time = 0.57 Min.
40% of lag time = 0.91 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]
       14.00            1.87                   26.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.00            4.74                   66.36

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.870(In)
Area Averaged 100-Year Rainfall =    4.740(In)

Point rain (area averaged) =    2.542(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.542(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    14.000           78.00         0.100
 Total Area Entered =     14.00(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
78.0  60.6      0.464     0.100        0.422       1.000      0.422
                                                 Sum (F) =   0.422
Area averaged mean soil loss (F) (In/Hr) =  0.422
Minimum soil loss rate ((In/Hr)) =  0.211
(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        220.898         46.793              6.602
    2   0.167        441.795         41.935              5.917
    3   0.250        662.693          8.007              1.130
    4   0.333        883.590          3.264              0.461
                               Sum = 100.000   Sum=      14.109
------------------------------------------------------------------------
```

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 | 0.020 | ( 0.748) | 0.018 | 0.002 |
| 2 | 0.17 | 0.07 | 0.020 | ( 0.745) | 0.018 | 0.002 |
| 3 | 0.25 | 0.07 | 0.020 | ( 0.742) | 0.018 | 0.002 |
| 4 | 0.33 | 0.10 | 0.031 | ( 0.739) | 0.027 | 0.003 |
| 5 | 0.42 | 0.10 | 0.031 | ( 0.736) | 0.027 | 0.003 |
| 6 | 0.50 | 0.10 | 0.031 | ( 0.733) | 0.027 | 0.003 |
| 7 | 0.58 | 0.10 | 0.031 | ( 0.730) | 0.027 | 0.003 |
| 8 | 0.67 | 0.10 | 0.031 | ( 0.728) | 0.027 | 0.003 |
| 9 | 0.75 | 0.10 | 0.031 | ( 0.725) | 0.027 | 0.003 |
| 10 | 0.83 | 0.13 | 0.041 | ( 0.722) | 0.037 | 0.004 |
| 11 | 0.92 | 0.13 | 0.041 | ( 0.719) | 0.037 | 0.004 |
| 12 | 1.00 | 0.13 | 0.041 | ( 0.716) | 0.037 | 0.004 |
| 13 | 1.08 | 0.10 | 0.031 | ( 0.713) | 0.027 | 0.003 |
| 14 | 1.17 | 0.10 | 0.031 | ( 0.711) | 0.027 | 0.003 |
| 15 | 1.25 | 0.10 | 0.031 | ( 0.708) | 0.027 | 0.003 |
| 16 | 1.33 | 0.10 | 0.031 | ( 0.705) | 0.027 | 0.003 |
| 17 | 1.42 | 0.10 | 0.031 | ( 0.702) | 0.027 | 0.003 |
| 18 | 1.50 | 0.10 | 0.031 | ( 0.699) | 0.027 | 0.003 |
| 19 | 1.58 | 0.10 | 0.031 | ( 0.697) | 0.027 | 0.003 |
| 20 | 1.67 | 0.10 | 0.031 | ( 0.694) | 0.027 | 0.003 |
| 21 | 1.75 | 0.10 | 0.031 | ( 0.691) | 0.027 | 0.003 |
| 22 | 1.83 | 0.13 | 0.041 | ( 0.688) | 0.037 | 0.004 |
| 23 | 1.92 | 0.13 | 0.041 | ( 0.685) | 0.037 | 0.004 |
| 24 | 2.00 | 0.13 | 0.041 | ( 0.683) | 0.037 | 0.004 |
| 25 | 2.08 | 0.13 | 0.041 | ( 0.680) | 0.037 | 0.004 |
| 26 | 2.17 | 0.13 | 0.041 | ( 0.677) | 0.037 | 0.004 |
| 27 | 2.25 | 0.13 | 0.041 | ( 0.674) | 0.037 | 0.004 |
| 28 | 2.33 | 0.13 | 0.041 | ( 0.672) | 0.037 | 0.004 |
| 29 | 2.42 | 0.13 | 0.041 | ( 0.669) | 0.037 | 0.004 |
| 30 | 2.50 | 0.13 | 0.041 | ( 0.666) | 0.037 | 0.004 |
| 31 | 2.58 | 0.17 | 0.051 | ( 0.663) | 0.046 | 0.005 |
| 32 | 2.67 | 0.17 | 0.051 | ( 0.661) | 0.046 | 0.005 |
| 33 | 2.75 | 0.17 | 0.051 | ( 0.658) | 0.046 | 0.005 |
| 34 | 2.83 | 0.17 | 0.051 | ( 0.655) | 0.046 | 0.005 |
| 35 | 2.92 | 0.17 | 0.051 | ( 0.653) | 0.046 | 0.005 |
| 36 | 3.00 | 0.17 | 0.051 | ( 0.650) | 0.046 | 0.005 |
| 37 | 3.08 | 0.17 | 0.051 | ( 0.647) | 0.046 | 0.005 |
| 38 | 3.17 | 0.17 | 0.051 | ( 0.645) | 0.046 | 0.005 |
| 39 | 3.25 | 0.17 | 0.051 | ( 0.642) | 0.046 | 0.005 |
| 40 | 3.33 | 0.17 | 0.051 | ( 0.639) | 0.046 | 0.005 |
| 41 | 3.42 | 0.17 | 0.051 | ( 0.636) | 0.046 | 0.005 |
| 42 | 3.50 | 0.17 | 0.051 | ( 0.634) | 0.046 | 0.005 |
| 43 | 3.58 | 0.17 | 0.051 | ( 0.631) | 0.046 | 0.005 |
| 44 | 3.67 | 0.17 | 0.051 | ( 0.629) | 0.046 | 0.005 |
| 45 | 3.75 | 0.17 | 0.051 | ( 0.626) | 0.046 | 0.005 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | 3.83 | 0.20 | 0.061 | ( 0.623) | 0.055 | 0.006 |
| 47 | 3.92 | 0.20 | 0.061 | ( 0.621) | 0.055 | 0.006 |
| 48 | 4.00 | 0.20 | 0.061 | ( 0.618) | 0.055 | 0.006 |
| 49 | 4.08 | 0.20 | 0.061 | ( 0.615) | 0.055 | 0.006 |
| 50 | 4.17 | 0.20 | 0.061 | ( 0.613) | 0.055 | 0.006 |
| 51 | 4.25 | 0.20 | 0.061 | ( 0.610) | 0.055 | 0.006 |
| 52 | 4.33 | 0.23 | 0.071 | ( 0.608) | 0.064 | 0.007 |
| 53 | 4.42 | 0.23 | 0.071 | ( 0.605) | 0.064 | 0.007 |
| 54 | 4.50 | 0.23 | 0.071 | ( 0.602) | 0.064 | 0.007 |
| 55 | 4.58 | 0.23 | 0.071 | ( 0.600) | 0.064 | 0.007 |
| 56 | 4.67 | 0.23 | 0.071 | ( 0.597) | 0.064 | 0.007 |
| 57 | 4.75 | 0.23 | 0.071 | ( 0.595) | 0.064 | 0.007 |
| 58 | 4.83 | 0.27 | 0.081 | ( 0.592) | 0.073 | 0.008 |
| 59 | 4.92 | 0.27 | 0.081 | ( 0.589) | 0.073 | 0.008 |
| 60 | 5.00 | 0.27 | 0.081 | ( 0.587) | 0.073 | 0.008 |
| 61 | 5.08 | 0.20 | 0.061 | ( 0.584) | 0.055 | 0.006 |
| 62 | 5.17 | 0.20 | 0.061 | ( 0.582) | 0.055 | 0.006 |
| 63 | 5.25 | 0.20 | 0.061 | ( 0.579) | 0.055 | 0.006 |
| 64 | 5.33 | 0.23 | 0.071 | ( 0.577) | 0.064 | 0.007 |
| 65 | 5.42 | 0.23 | 0.071 | ( 0.574) | 0.064 | 0.007 |
| 66 | 5.50 | 0.23 | 0.071 | ( 0.572) | 0.064 | 0.007 |
| 67 | 5.58 | 0.27 | 0.081 | ( 0.569) | 0.073 | 0.008 |
| 68 | 5.67 | 0.27 | 0.081 | ( 0.567) | 0.073 | 0.008 |
| 69 | 5.75 | 0.27 | 0.081 | ( 0.564) | 0.073 | 0.008 |
| 70 | 5.83 | 0.27 | 0.081 | ( 0.562) | 0.073 | 0.008 |
| 71 | 5.92 | 0.27 | 0.081 | ( 0.559) | 0.073 | 0.008 |
| 72 | 6.00 | 0.27 | 0.081 | ( 0.557) | 0.073 | 0.008 |
| 73 | 6.08 | 0.30 | 0.092 | ( 0.554) | 0.082 | 0.009 |
| 74 | 6.17 | 0.30 | 0.092 | ( 0.552) | 0.082 | 0.009 |
| 75 | 6.25 | 0.30 | 0.092 | ( 0.549) | 0.082 | 0.009 |
| 76 | 6.33 | 0.30 | 0.092 | ( 0.547) | 0.082 | 0.009 |
| 77 | 6.42 | 0.30 | 0.092 | ( 0.544) | 0.082 | 0.009 |
| 78 | 6.50 | 0.30 | 0.092 | ( 0.542) | 0.082 | 0.009 |
| 79 | 6.58 | 0.33 | 0.102 | ( 0.540) | 0.092 | 0.010 |
| 80 | 6.67 | 0.33 | 0.102 | ( 0.537) | 0.092 | 0.010 |
| 81 | 6.75 | 0.33 | 0.102 | ( 0.535) | 0.092 | 0.010 |
| 82 | 6.83 | 0.33 | 0.102 | ( 0.532) | 0.092 | 0.010 |
| 83 | 6.92 | 0.33 | 0.102 | ( 0.530) | 0.092 | 0.010 |
| 84 | 7.00 | 0.33 | 0.102 | ( 0.528) | 0.092 | 0.010 |
| 85 | 7.08 | 0.33 | 0.102 | ( 0.525) | 0.092 | 0.010 |
| 86 | 7.17 | 0.33 | 0.102 | ( 0.523) | 0.092 | 0.010 |
| 87 | 7.25 | 0.33 | 0.102 | ( 0.520) | 0.092 | 0.010 |
| 88 | 7.33 | 0.37 | 0.112 | ( 0.518) | 0.101 | 0.011 |
| 89 | 7.42 | 0.37 | 0.112 | ( 0.516) | 0.101 | 0.011 |
| 90 | 7.50 | 0.37 | 0.112 | ( 0.513) | 0.101 | 0.011 |
| 91 | 7.58 | 0.40 | 0.122 | ( 0.511) | 0.110 | 0.012 |
| 92 | 7.67 | 0.40 | 0.122 | ( 0.509) | 0.110 | 0.012 |
| 93 | 7.75 | 0.40 | 0.122 | ( 0.506) | 0.110 | 0.012 |
| 94 | 7.83 | 0.43 | 0.132 | ( 0.504) | 0.119 | 0.013 |
| 95 | 7.92 | 0.43 | 0.132 | ( 0.502) | 0.119 | 0.013 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 96 | 8.00 | 0.43 | 0.132 | ( 0.499) | 0.119 | 0.013 |
| 97 | 8.08 | 0.50 | 0.153 | ( 0.497) | 0.137 | 0.015 |
| 98 | 8.17 | 0.50 | 0.153 | ( 0.495) | 0.137 | 0.015 |
| 99 | 8.25 | 0.50 | 0.153 | ( 0.492) | 0.137 | 0.015 |
| 100 | 8.33 | 0.50 | 0.153 | ( 0.490) | 0.137 | 0.015 |
| 101 | 8.42 | 0.50 | 0.153 | ( 0.488) | 0.137 | 0.015 |
| 102 | 8.50 | 0.50 | 0.153 | ( 0.485) | 0.137 | 0.015 |
| 103 | 8.58 | 0.53 | 0.163 | ( 0.483) | 0.146 | 0.016 |
| 104 | 8.67 | 0.53 | 0.163 | ( 0.481) | 0.146 | 0.016 |
| 105 | 8.75 | 0.53 | 0.163 | ( 0.479) | 0.146 | 0.016 |
| 106 | 8.83 | 0.57 | 0.173 | ( 0.476) | 0.156 | 0.017 |
| 107 | 8.92 | 0.57 | 0.173 | ( 0.474) | 0.156 | 0.017 |
| 108 | 9.00 | 0.57 | 0.173 | ( 0.472) | 0.156 | 0.017 |
| 109 | 9.08 | 0.63 | 0.193 | ( 0.470) | 0.174 | 0.019 |
| 110 | 9.17 | 0.63 | 0.193 | ( 0.467) | 0.174 | 0.019 |
| 111 | 9.25 | 0.63 | 0.193 | ( 0.465) | 0.174 | 0.019 |
| 112 | 9.33 | 0.67 | 0.203 | ( 0.463) | 0.183 | 0.020 |
| 113 | 9.42 | 0.67 | 0.203 | ( 0.461) | 0.183 | 0.020 |
| 114 | 9.50 | 0.67 | 0.203 | ( 0.458) | 0.183 | 0.020 |
| 115 | 9.58 | 0.70 | 0.214 | ( 0.456) | 0.192 | 0.021 |
| 116 | 9.67 | 0.70 | 0.214 | ( 0.454) | 0.192 | 0.021 |
| 117 | 9.75 | 0.70 | 0.214 | ( 0.452) | 0.192 | 0.021 |
| 118 | 9.83 | 0.73 | 0.224 | ( 0.450) | 0.201 | 0.022 |
| 119 | 9.92 | 0.73 | 0.224 | ( 0.448) | 0.201 | 0.022 |
| 120 | 10.00 | 0.73 | 0.224 | ( 0.445) | 0.201 | 0.022 |
| 121 | 10.08 | 0.50 | 0.153 | ( 0.443) | 0.137 | 0.015 |
| 122 | 10.17 | 0.50 | 0.153 | ( 0.441) | 0.137 | 0.015 |
| 123 | 10.25 | 0.50 | 0.153 | ( 0.439) | 0.137 | 0.015 |
| 124 | 10.33 | 0.50 | 0.153 | ( 0.437) | 0.137 | 0.015 |
| 125 | 10.42 | 0.50 | 0.153 | ( 0.435) | 0.137 | 0.015 |
| 126 | 10.50 | 0.50 | 0.153 | ( 0.433) | 0.137 | 0.015 |
| 127 | 10.58 | 0.67 | 0.203 | ( 0.430) | 0.183 | 0.020 |
| 128 | 10.67 | 0.67 | 0.203 | ( 0.428) | 0.183 | 0.020 |
| 129 | 10.75 | 0.67 | 0.203 | ( 0.426) | 0.183 | 0.020 |
| 130 | 10.83 | 0.67 | 0.203 | ( 0.424) | 0.183 | 0.020 |
| 131 | 10.92 | 0.67 | 0.203 | ( 0.422) | 0.183 | 0.020 |
| 132 | 11.00 | 0.67 | 0.203 | ( 0.420) | 0.183 | 0.020 |
| 133 | 11.08 | 0.63 | 0.193 | ( 0.418) | 0.174 | 0.019 |
| 134 | 11.17 | 0.63 | 0.193 | ( 0.416) | 0.174 | 0.019 |
| 135 | 11.25 | 0.63 | 0.193 | ( 0.414) | 0.174 | 0.019 |
| 136 | 11.33 | 0.63 | 0.193 | ( 0.412) | 0.174 | 0.019 |
| 137 | 11.42 | 0.63 | 0.193 | ( 0.410) | 0.174 | 0.019 |
| 138 | 11.50 | 0.63 | 0.193 | ( 0.408) | 0.174 | 0.019 |
| 139 | 11.58 | 0.57 | 0.173 | ( 0.406) | 0.156 | 0.017 |
| 140 | 11.67 | 0.57 | 0.173 | ( 0.404) | 0.156 | 0.017 |
| 141 | 11.75 | 0.57 | 0.173 | ( 0.402) | 0.156 | 0.017 |
| 142 | 11.83 | 0.60 | 0.183 | ( 0.400) | 0.165 | 0.018 |
| 143 | 11.92 | 0.60 | 0.183 | ( 0.398) | 0.165 | 0.018 |
| 144 | 12.00 | 0.60 | 0.183 | ( 0.396) | 0.165 | 0.018 |
| 145 | 12.08 | 0.83 | 0.254 | ( 0.394) | 0.229 | 0.025 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 146 | 12.17 | 0.83 | 0.254 | ( 0.392) | 0.229 | 0.025 |
| 147 | 12.25 | 0.83 | 0.254 | ( 0.390) | 0.229 | 0.025 |
| 148 | 12.33 | 0.87 | 0.264 | ( 0.388) | 0.238 | 0.026 |
| 149 | 12.42 | 0.87 | 0.264 | ( 0.386) | 0.238 | 0.026 |
| 150 | 12.50 | 0.87 | 0.264 | ( 0.384) | 0.238 | 0.026 |
| 151 | 12.58 | 0.93 | 0.285 | ( 0.382) | 0.256 | 0.028 |
| 152 | 12.67 | 0.93 | 0.285 | ( 0.380) | 0.256 | 0.028 |
| 153 | 12.75 | 0.93 | 0.285 | ( 0.378) | 0.256 | 0.028 |
| 154 | 12.83 | 0.97 | 0.295 | ( 0.376) | 0.265 | 0.029 |
| 155 | 12.92 | 0.97 | 0.295 | ( 0.374) | 0.265 | 0.029 |
| 156 | 13.00 | 0.97 | 0.295 | ( 0.372) | 0.265 | 0.029 |
| 157 | 13.08 | 1.13 | 0.346 | ( 0.371) | 0.311 | 0.035 |
| 158 | 13.17 | 1.13 | 0.346 | ( 0.369) | 0.311 | 0.035 |
| 159 | 13.25 | 1.13 | 0.346 | ( 0.367) | 0.311 | 0.035 |
| 160 | 13.33 | 1.13 | 0.346 | ( 0.365) | 0.311 | 0.035 |
| 161 | 13.42 | 1.13 | 0.346 | ( 0.363) | 0.311 | 0.035 |
| 162 | 13.50 | 1.13 | 0.346 | ( 0.361) | 0.311 | 0.035 |
| 163 | 13.58 | 0.77 | 0.234 | ( 0.359) | 0.210 | 0.023 |
| 164 | 13.67 | 0.77 | 0.234 | ( 0.358) | 0.210 | 0.023 |
| 165 | 13.75 | 0.77 | 0.234 | ( 0.356) | 0.210 | 0.023 |
| 166 | 13.83 | 0.77 | 0.234 | ( 0.354) | 0.210 | 0.023 |
| 167 | 13.92 | 0.77 | 0.234 | ( 0.352) | 0.210 | 0.023 |
| 168 | 14.00 | 0.77 | 0.234 | ( 0.350) | 0.210 | 0.023 |
| 169 | 14.08 | 0.90 | 0.275 | ( 0.349) | 0.247 | 0.027 |
| 170 | 14.17 | 0.90 | 0.275 | ( 0.347) | 0.247 | 0.027 |
| 171 | 14.25 | 0.90 | 0.275 | ( 0.345) | 0.247 | 0.027 |
| 172 | 14.33 | 0.87 | 0.264 | ( 0.343) | 0.238 | 0.026 |
| 173 | 14.42 | 0.87 | 0.264 | ( 0.342) | 0.238 | 0.026 |
| 174 | 14.50 | 0.87 | 0.264 | ( 0.340) | 0.238 | 0.026 |
| 175 | 14.58 | 0.87 | 0.264 | ( 0.338) | 0.238 | 0.026 |
| 176 | 14.67 | 0.87 | 0.264 | ( 0.336) | 0.238 | 0.026 |
| 177 | 14.75 | 0.87 | 0.264 | ( 0.335) | 0.238 | 0.026 |
| 178 | 14.83 | 0.83 | 0.254 | ( 0.333) | 0.229 | 0.025 |
| 179 | 14.92 | 0.83 | 0.254 | ( 0.331) | 0.229 | 0.025 |
| 180 | 15.00 | 0.83 | 0.254 | ( 0.329) | 0.229 | 0.025 |
| 181 | 15.08 | 0.80 | 0.244 | ( 0.328) | 0.220 | 0.024 |
| 182 | 15.17 | 0.80 | 0.244 | ( 0.326) | 0.220 | 0.024 |
| 183 | 15.25 | 0.80 | 0.244 | ( 0.324) | 0.220 | 0.024 |
| 184 | 15.33 | 0.77 | 0.234 | ( 0.323) | 0.210 | 0.023 |
| 185 | 15.42 | 0.77 | 0.234 | ( 0.321) | 0.210 | 0.023 |
| 186 | 15.50 | 0.77 | 0.234 | ( 0.319) | 0.210 | 0.023 |
| 187 | 15.58 | 0.63 | 0.193 | ( 0.318) | 0.174 | 0.019 |
| 188 | 15.67 | 0.63 | 0.193 | ( 0.316) | 0.174 | 0.019 |
| 189 | 15.75 | 0.63 | 0.193 | ( 0.315) | 0.174 | 0.019 |
| 190 | 15.83 | 0.63 | 0.193 | ( 0.313) | 0.174 | 0.019 |
| 191 | 15.92 | 0.63 | 0.193 | ( 0.311) | 0.174 | 0.019 |
| 192 | 16.00 | 0.63 | 0.193 | ( 0.310) | 0.174 | 0.019 |
| 193 | 16.08 | 0.13 | 0.041 | ( 0.308) | 0.037 | 0.004 |
| 194 | 16.17 | 0.13 | 0.041 | ( 0.307) | 0.037 | 0.004 |
| 195 | 16.25 | 0.13 | 0.041 | ( 0.305) | 0.037 | 0.004 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 196 | 16.33 | 0.13 | 0.041 | ( 0.303) | 0.037 | 0.004 |
| 197 | 16.42 | 0.13 | 0.041 | ( 0.302) | 0.037 | 0.004 |
| 198 | 16.50 | 0.13 | 0.041 | ( 0.300) | 0.037 | 0.004 |
| 199 | 16.58 | 0.10 | 0.031 | ( 0.299) | 0.027 | 0.003 |
| 200 | 16.67 | 0.10 | 0.031 | ( 0.297) | 0.027 | 0.003 |
| 201 | 16.75 | 0.10 | 0.031 | ( 0.296) | 0.027 | 0.003 |
| 202 | 16.83 | 0.10 | 0.031 | ( 0.294) | 0.027 | 0.003 |
| 203 | 16.92 | 0.10 | 0.031 | ( 0.293) | 0.027 | 0.003 |
| 204 | 17.00 | 0.10 | 0.031 | ( 0.291) | 0.027 | 0.003 |
| 205 | 17.08 | 0.17 | 0.051 | ( 0.290) | 0.046 | 0.005 |
| 206 | 17.17 | 0.17 | 0.051 | ( 0.288) | 0.046 | 0.005 |
| 207 | 17.25 | 0.17 | 0.051 | ( 0.287) | 0.046 | 0.005 |
| 208 | 17.33 | 0.17 | 0.051 | ( 0.286) | 0.046 | 0.005 |
| 209 | 17.42 | 0.17 | 0.051 | ( 0.284) | 0.046 | 0.005 |
| 210 | 17.50 | 0.17 | 0.051 | ( 0.283) | 0.046 | 0.005 |
| 211 | 17.58 | 0.17 | 0.051 | ( 0.281) | 0.046 | 0.005 |
| 212 | 17.67 | 0.17 | 0.051 | ( 0.280) | 0.046 | 0.005 |
| 213 | 17.75 | 0.17 | 0.051 | ( 0.278) | 0.046 | 0.005 |
| 214 | 17.83 | 0.13 | 0.041 | ( 0.277) | 0.037 | 0.004 |
| 215 | 17.92 | 0.13 | 0.041 | ( 0.276) | 0.037 | 0.004 |
| 216 | 18.00 | 0.13 | 0.041 | ( 0.274) | 0.037 | 0.004 |
| 217 | 18.08 | 0.13 | 0.041 | ( 0.273) | 0.037 | 0.004 |
| 218 | 18.17 | 0.13 | 0.041 | ( 0.272) | 0.037 | 0.004 |
| 219 | 18.25 | 0.13 | 0.041 | ( 0.270) | 0.037 | 0.004 |
| 220 | 18.33 | 0.13 | 0.041 | ( 0.269) | 0.037 | 0.004 |
| 221 | 18.42 | 0.13 | 0.041 | ( 0.268) | 0.037 | 0.004 |
| 222 | 18.50 | 0.13 | 0.041 | ( 0.266) | 0.037 | 0.004 |
| 223 | 18.58 | 0.10 | 0.031 | ( 0.265) | 0.027 | 0.003 |
| 224 | 18.67 | 0.10 | 0.031 | ( 0.264) | 0.027 | 0.003 |
| 225 | 18.75 | 0.10 | 0.031 | ( 0.263) | 0.027 | 0.003 |
| 226 | 18.83 | 0.07 | 0.020 | ( 0.261) | 0.018 | 0.002 |
| 227 | 18.92 | 0.07 | 0.020 | ( 0.260) | 0.018 | 0.002 |
| 228 | 19.00 | 0.07 | 0.020 | ( 0.259) | 0.018 | 0.002 |
| 229 | 19.08 | 0.10 | 0.031 | ( 0.258) | 0.027 | 0.003 |
| 230 | 19.17 | 0.10 | 0.031 | ( 0.256) | 0.027 | 0.003 |
| 231 | 19.25 | 0.10 | 0.031 | ( 0.255) | 0.027 | 0.003 |
| 232 | 19.33 | 0.13 | 0.041 | ( 0.254) | 0.037 | 0.004 |
| 233 | 19.42 | 0.13 | 0.041 | ( 0.253) | 0.037 | 0.004 |
| 234 | 19.50 | 0.13 | 0.041 | ( 0.252) | 0.037 | 0.004 |
| 235 | 19.58 | 0.10 | 0.031 | ( 0.251) | 0.027 | 0.003 |
| 236 | 19.67 | 0.10 | 0.031 | ( 0.249) | 0.027 | 0.003 |
| 237 | 19.75 | 0.10 | 0.031 | ( 0.248) | 0.027 | 0.003 |
| 238 | 19.83 | 0.07 | 0.020 | ( 0.247) | 0.018 | 0.002 |
| 239 | 19.92 | 0.07 | 0.020 | ( 0.246) | 0.018 | 0.002 |
| 240 | 20.00 | 0.07 | 0.020 | ( 0.245) | 0.018 | 0.002 |
| 241 | 20.08 | 0.10 | 0.031 | ( 0.244) | 0.027 | 0.003 |
| 242 | 20.17 | 0.10 | 0.031 | ( 0.243) | 0.027 | 0.003 |
| 243 | 20.25 | 0.10 | 0.031 | ( 0.242) | 0.027 | 0.003 |
| 244 | 20.33 | 0.10 | 0.031 | ( 0.241) | 0.027 | 0.003 |
| 245 | 20.42 | 0.10 | 0.031 | ( 0.240) | 0.027 | 0.003 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 246 | 20.50 | 0.10 | 0.031 | ( 0.239) | 0.027 | 0.003 |
| 247 | 20.58 | 0.10 | 0.031 | ( 0.238) | 0.027 | 0.003 |
| 248 | 20.67 | 0.10 | 0.031 | ( 0.237) | 0.027 | 0.003 |
| 249 | 20.75 | 0.10 | 0.031 | ( 0.236) | 0.027 | 0.003 |
| 250 | 20.83 | 0.07 | 0.020 | ( 0.235) | 0.018 | 0.002 |
| 251 | 20.92 | 0.07 | 0.020 | ( 0.234) | 0.018 | 0.002 |
| 252 | 21.00 | 0.07 | 0.020 | ( 0.233) | 0.018 | 0.002 |
| 253 | 21.08 | 0.10 | 0.031 | ( 0.232) | 0.027 | 0.003 |
| 254 | 21.17 | 0.10 | 0.031 | ( 0.231) | 0.027 | 0.003 |
| 255 | 21.25 | 0.10 | 0.031 | ( 0.230) | 0.027 | 0.003 |
| 256 | 21.33 | 0.07 | 0.020 | ( 0.229) | 0.018 | 0.002 |
| 257 | 21.42 | 0.07 | 0.020 | ( 0.228) | 0.018 | 0.002 |
| 258 | 21.50 | 0.07 | 0.020 | ( 0.227) | 0.018 | 0.002 |
| 259 | 21.58 | 0.10 | 0.031 | ( 0.227) | 0.027 | 0.003 |
| 260 | 21.67 | 0.10 | 0.031 | ( 0.226) | 0.027 | 0.003 |
| 261 | 21.75 | 0.10 | 0.031 | ( 0.225) | 0.027 | 0.003 |
| 262 | 21.83 | 0.07 | 0.020 | ( 0.224) | 0.018 | 0.002 |
| 263 | 21.92 | 0.07 | 0.020 | ( 0.223) | 0.018 | 0.002 |
| 264 | 22.00 | 0.07 | 0.020 | ( 0.223) | 0.018 | 0.002 |
| 265 | 22.08 | 0.10 | 0.031 | ( 0.222) | 0.027 | 0.003 |
| 266 | 22.17 | 0.10 | 0.031 | ( 0.221) | 0.027 | 0.003 |
| 267 | 22.25 | 0.10 | 0.031 | ( 0.221) | 0.027 | 0.003 |
| 268 | 22.33 | 0.07 | 0.020 | ( 0.220) | 0.018 | 0.002 |
| 269 | 22.42 | 0.07 | 0.020 | ( 0.219) | 0.018 | 0.002 |
| 270 | 22.50 | 0.07 | 0.020 | ( 0.219) | 0.018 | 0.002 |
| 271 | 22.58 | 0.07 | 0.020 | ( 0.218) | 0.018 | 0.002 |
| 272 | 22.67 | 0.07 | 0.020 | ( 0.217) | 0.018 | 0.002 |
| 273 | 22.75 | 0.07 | 0.020 | ( 0.217) | 0.018 | 0.002 |
| 274 | 22.83 | 0.07 | 0.020 | ( 0.216) | 0.018 | 0.002 |
| 275 | 22.92 | 0.07 | 0.020 | ( 0.216) | 0.018 | 0.002 |
| 276 | 23.00 | 0.07 | 0.020 | ( 0.215) | 0.018 | 0.002 |
| 277 | 23.08 | 0.07 | 0.020 | ( 0.215) | 0.018 | 0.002 |
| 278 | 23.17 | 0.07 | 0.020 | ( 0.214) | 0.018 | 0.002 |
| 279 | 23.25 | 0.07 | 0.020 | ( 0.214) | 0.018 | 0.002 |
| 280 | 23.33 | 0.07 | 0.020 | ( 0.213) | 0.018 | 0.002 |
| 281 | 23.42 | 0.07 | 0.020 | ( 0.213) | 0.018 | 0.002 |
| 282 | 23.50 | 0.07 | 0.020 | ( 0.212) | 0.018 | 0.002 |
| 283 | 23.58 | 0.07 | 0.020 | ( 0.212) | 0.018 | 0.002 |
| 284 | 23.67 | 0.07 | 0.020 | ( 0.212) | 0.018 | 0.002 |
| 285 | 23.75 | 0.07 | 0.020 | ( 0.211) | 0.018 | 0.002 |
| 286 | 23.83 | 0.07 | 0.020 | ( 0.211) | 0.018 | 0.002 |
| 287 | 23.92 | 0.07 | 0.020 | ( 0.211) | 0.018 | 0.002 |
| 288 | 24.00 | 0.07 | 0.020 | ( 0.211) | 0.018 | 0.002 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 3.1

Flood volume = Effective rainfall 0.25(In)
times area 14.0(Ac.)/[(In)/(Ft.)] = 0.3(Ac.Ft)
Total soil loss = 2.29(In)
Total soil loss = 2.669(Ac.Ft)
Total rainfall = 2.54(In)

Flood volume = 12919.2 Cubic Feet
Total soil loss = 116273.0 Cubic Feet

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Peak flow rate of this hydrograph = 0.488(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 | 0.0003 | 0.03 | Q | | | | |
| 0+15 | 0.0005 | 0.03 | Q | | | | |
| 0+20 | 0.0007 | 0.04 | Q | | | | |
| 0+25 | 0.0010 | 0.04 | Q | | | | |
| 0+30 | 0.0013 | 0.04 | Q | | | | |
| 0+35 | 0.0016 | 0.04 | Q | | | | |
| 0+40 | 0.0019 | 0.04 | Q | | | | |
| 0+45 | 0.0022 | 0.04 | Q | | | | |
| 0+50 | 0.0025 | 0.05 | Q | | | | |
| 0+55 | 0.0029 | 0.06 | Q | | | | |
| 1+ 0 | 0.0033 | 0.06 | Q | | | | |
| 1+ 5 | 0.0036 | 0.05 | Q | | | | |
| 1+10 | 0.0039 | 0.04 | Q | | | | |
| 1+15 | 0.0042 | 0.04 | Q | | | | |
| 1+20 | 0.0045 | 0.04 | Q | | | | |
| 1+25 | 0.0048 | 0.04 | Q | | | | |
| 1+30 | 0.0051 | 0.04 | Q | | | | |
| 1+35 | 0.0054 | 0.04 | Q | | | | |
| 1+40 | 0.0057 | 0.04 | Q | | | | |
| 1+45 | 0.0060 | 0.04 | Q | | | | |
| 1+50 | 0.0064 | 0.05 | Q | | | | |
| 1+55 | 0.0068 | 0.06 | Q | | | | |
| 2+ 0 | 0.0071 | 0.06 | Q | | | | |
| 2+ 5 | 0.0075 | 0.06 | QV | | | | |
| 2+10 | 0.0079 | 0.06 | QV | | | | |
| 2+15 | 0.0083 | 0.06 | QV | | | | |
| 2+20 | 0.0087 | 0.06 | QV | | | | |
| 2+25 | 0.0091 | 0.06 | QV | | | | |
| 2+30 | 0.0095 | 0.06 | QV | | | | |
| 2+35 | 0.0100 | 0.06 | QV | | | | |
| 2+40 | 0.0104 | 0.07 | QV | | | | |
| 2+45 | 0.0109 | 0.07 | QV | | | | |
| 2+50 | 0.0114 | 0.07 | QV | | | | |
| 2+55 | 0.0119 | 0.07 | QV | | | | |
| 3+ 0 | 0.0124 | 0.07 | QV | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+ 5 | 0.0129 | 0.07 | QV | \| | \| | \| | \| |
| 3+10 | 0.0134 | 0.07 | QV | \| | \| | \| | \| |
| 3+15 | 0.0139 | 0.07 | QV | \| | \| | \| | \| |
| 3+20 | 0.0144 | 0.07 | QV | \| | \| | \| | \| |
| 3+25 | 0.0149 | 0.07 | Q V | \| | \| | \| | \| |
| 3+30 | 0.0154 | 0.07 | Q V | \| | \| | \| | \| |
| 3+35 | 0.0159 | 0.07 | Q V | \| | \| | \| | \| |
| 3+40 | 0.0164 | 0.07 | Q V | \| | \| | \| | \| |
| 3+45 | 0.0169 | 0.07 | Q V | \| | \| | \| | \| |
| 3+50 | 0.0174 | 0.08 | Q V | \| | \| | \| | \| |
| 3+55 | 0.0180 | 0.08 | Q V | \| | \| | \| | \| |
| 4+ 0 | 0.0186 | 0.09 | Q V | \| | \| | \| | \| |
| 4+ 5 | 0.0192 | 0.09 | Q V | \| | \| | \| | \| |
| 4+10 | 0.0198 | 0.09 | Q V | \| | \| | \| | \| |
| 4+15 | 0.0204 | 0.09 | Q V | \| | \| | \| | \| |
| 4+20 | 0.0210 | 0.09 | Q V | \| | \| | \| | \| |
| 4+25 | 0.0217 | 0.10 | Q V | \| | \| | \| | \| |
| 4+30 | 0.0224 | 0.10 | Q  V | \| | \| | \| | \| |
| 4+35 | 0.0231 | 0.10 | Q  V | \| | \| | \| | \| |
| 4+40 | 0.0238 | 0.10 | Q  V | \| | \| | \| | \| |
| 4+45 | 0.0244 | 0.10 | Q  V | \| | \| | \| | \| |
| 4+50 | 0.0252 | 0.11 | Q  V | \| | \| | \| | \| |
| 4+55 | 0.0260 | 0.11 | Q  V | \| | \| | \| | \| |
| 5+ 0 | 0.0268 | 0.11 | Q  V | \| | \| | \| | \| |
| 5+ 5 | 0.0274 | 0.10 | Q  V | \| | \| | \| | \| |
| 5+10 | 0.0281 | 0.09 | Q  V | \| | \| | \| | \| |
| 5+15 | 0.0287 | 0.09 | Q  V | \| | \| | \| | \| |
| 5+20 | 0.0293 | 0.09 | Q  V | \| | \| | \| | \| |
| 5+25 | 0.0300 | 0.10 | Q   V | \| | \| | \| | \| |
| 5+30 | 0.0307 | 0.10 | Q   V | \| | \| | \| | \| |
| 5+35 | 0.0314 | 0.11 | Q   V | \| | \| | \| | \| |
| 5+40 | 0.0322 | 0.11 | Q   V | \| | \| | \| | \| |
| 5+45 | 0.0330 | 0.11 | Q   V | \| | \| | \| | \| |
| 5+50 | 0.0338 | 0.11 | Q   V | \| | \| | \| | \| |
| 5+55 | 0.0346 | 0.11 | Q   V | \| | \| | \| | \| |
| 6+ 0 | 0.0354 | 0.11 | Q   V | \| | \| | \| | \| |
| 6+ 5 | 0.0362 | 0.12 | Q   V | \| | \| | \| | \| |
| 6+10 | 0.0371 | 0.13 | Q   V | \| | \| | \| | \| |
| 6+15 | 0.0380 | 0.13 | Q    V | \| | \| | \| | \| |
| 6+20 | 0.0388 | 0.13 | Q    V | \| | \| | \| | \| |
| 6+25 | 0.0397 | 0.13 | Q    V | \| | \| | \| | \| |
| 6+30 | 0.0406 | 0.13 | Q    V | \| | \| | \| | \| |
| 6+35 | 0.0416 | 0.14 | Q    V | \| | \| | \| | \| |
| 6+40 | 0.0425 | 0.14 | Q    V | \| | \| | \| | \| |
| 6+45 | 0.0435 | 0.14 | Q    V | \| | \| | \| | \| |
| 6+50 | 0.0445 | 0.14 | Q     V | \| | \| | \| | \| |
| 6+55 | 0.0455 | 0.14 | Q     V | \| | \| | \| | \| |
| 7+ 0 | 0.0465 | 0.14 | Q     V | \| | \| | \| | \| |
| 7+ 5 | 0.0475 | 0.14 | Q     V | \| | \| | \| | \| |
| 7+10 | 0.0485 | 0.14 | Q     V | \| | \| | \| | \| |

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 7+15       0.0495      0.14  Q     V   |          |          |          |
 7+20       0.0505      0.15  Q     V   |          |          |          |
 7+25       0.0516      0.16  Q     V   |          |          |          |
 7+30       0.0526      0.16  Q      V  |          |          |          |
 7+35       0.0538      0.16  Q      V  |          |          |          |
 7+40       0.0550      0.17  Q      V  |          |          |          |
 7+45       0.0561      0.17  Q      V  |          |          |          |
 7+50       0.0574      0.18  Q      V  |          |          |          |
 7+55       0.0586      0.18  Q      V  |          |          |          |
 8+ 0       0.0599      0.19  Q       V |          |          |          |
 8+ 5       0.0613      0.20  Q       V |          |          |          |
 8+10       0.0628      0.21  Q       V |          |          |          |
 8+15       0.0642      0.21  Q       V |          |          |          |
 8+20       0.0657      0.22  Q       V |          |          |          |
 8+25       0.0672      0.22  Q        V|          |          |          |
 8+30       0.0687      0.22  Q        V|          |          |          |
 8+35       0.0702      0.22  Q        V|          |          |          |
 8+40       0.0718      0.23  Q        V|          |          |          |
 8+45       0.0734      0.23  Q        V|          |          |          |
 8+50       0.0750      0.24  Q         V          |          |          |
 8+55       0.0767      0.24  Q         V          |          |          |
 9+ 0       0.0783      0.24  Q         V          |          |          |
 9+ 5       0.0801      0.26  |Q        V          |          |          |
 9+10       0.0820      0.27  |Q         |V         |          |          |
 9+15       0.0838      0.27  |Q         |V         |          |          |
 9+20       0.0858      0.28  |Q         |V         |          |          |
 9+25       0.0877      0.29  |Q         |V         |          |          |
 9+30       0.0897      0.29  |Q         | V        |          |          |
 9+35       0.0917      0.29  |Q         | V        |          |          |
 9+40       0.0938      0.30  |Q         | V        |          |          |
 9+45       0.0959      0.30  |Q         | V        |          |          |
 9+50       0.0980      0.31  |Q         |  V       |          |          |
 9+55       0.1002      0.31  |Q         |  V       |          |          |
10+ 0       0.1023      0.32  |Q         |  V       |          |          |
10+ 5       0.1042      0.27  |Q         |   V      |          |          |
10+10       0.1057      0.23  Q          |   V      |          |          |
10+15       0.1072      0.22  Q          |   V      |          |          |
10+20       0.1087      0.22  Q          |   V      |          |          |
10+25       0.1102      0.22  Q          |   V      |          |          |
10+30       0.1117      0.22  Q          |    V     |          |          |
10+35       0.1134      0.25  Q          |    V     |          |          |
10+40       0.1153      0.28  |Q         |    V     |          |          |
10+45       0.1173      0.28  |Q         |    V     |          |          |
10+50       0.1193      0.29  |Q         |     V    |          |          |
10+55       0.1212      0.29  |Q         |     V    |          |          |
11+ 0       0.1232      0.29  |Q         |     V    |          |          |
11+ 5       0.1252      0.28  |Q         |     V    |          |          |
11+10       0.1270      0.27  |Q         |      V   |          |          |
11+15       0.1289      0.27  |Q         |      V   |          |          |
11+20       0.1308      0.27  |Q         |      V   |          |          |
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11+25       0.1327      0.27  |Q        |      V  |         |         |
11+30       0.1346      0.27  |Q        |       V |         |         |
11+35       0.1363      0.26  |Q        |       V |         |         |
11+40       0.1381      0.25  Q         |       V |         |         |
11+45       0.1397      0.24  Q         |       V |         |         |
11+50       0.1415      0.25  |Q        |        V|         |         |
11+55       0.1432      0.26  |Q        |        V|         |         |
12+ 0       0.1450      0.26  |Q        |        V|         |         |
12+ 5       0.1471      0.31  |Q        |        V|         |         |
12+10       0.1495      0.35  |Q        |         V         |         |
12+15       0.1520      0.36  |Q        |         V         |         |
12+20       0.1545      0.37  |Q        |         V         |         |
12+25       0.1570      0.37  |Q        |         |V        |         |
12+30       0.1596      0.37  |Q        |         |V        |         |
12+35       0.1623      0.39  |Q        |         |V        |         |
12+40       0.1650      0.40  |Q        |         | V       |         |
12+45       0.1678      0.40  |Q        |         | V       |         |
12+50       0.1706      0.41  |Q        |         |  V      |         |
12+55       0.1734      0.41  |Q        |         |  V      |         |
13+ 0       0.1763      0.42  |Q        |         |  V      |         |
13+ 5       0.1794      0.45  |Q        |         |   V     |         |
13+10       0.1827      0.48  |Q        |         |   V     |         |
13+15       0.1861      0.49  |Q        |         |    V    |         |
13+20       0.1894      0.49  |Q        |         |    V    |         |
13+25       0.1928      0.49  |Q        |         |    V    |         |
13+30       0.1961      0.49  |Q        |         |     V   |         |
13+35       0.1990      0.41  |Q        |         |     V   |         |
13+40       0.2014      0.35  |Q        |         |      V  |         |
13+45       0.2037      0.34  |Q        |         |      V  |         |
13+50       0.2060      0.33  |Q        |         |      V  |         |
13+55       0.2082      0.33  |Q        |         |       V |         |
14+ 0       0.2105      0.33  |Q        |         |       V |         |
14+ 5       0.2130      0.36  |Q        |         |       V |         |
14+10       0.2156      0.38  |Q        |         |        V|         |
14+15       0.2183      0.39  |Q        |         |        V|         |
14+20       0.2209      0.38  |Q        |         |        V|         |
14+25       0.2235      0.37  |Q        |         |         V         |
14+30       0.2260      0.37  |Q        |         |         V         |
14+35       0.2286      0.37  |Q        |         |         V         |
14+40       0.2312      0.37  |Q        |         |         |V        |
14+45       0.2337      0.37  |Q        |         |         |V        |
14+50       0.2363      0.37  |Q        |         |         |V        |
14+55       0.2388      0.36  |Q        |         |         | V       |
15+ 0       0.2412      0.36  |Q        |         |         | V       |
15+ 5       0.2437      0.35  |Q        |         |         | V       |
15+10       0.2460      0.35  |Q        |         |         |  V      |
15+15       0.2484      0.34  |Q        |         |         |  V      |
15+20       0.2507      0.34  |Q        |         |         |  V      |
15+25       0.2530      0.33  |Q        |         |         |   V     |
15+30       0.2553      0.33  |Q        |         |         |   V     |
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15+35       0.2574      0.30  |Q        |          |          |   V      |
15+40       0.2593      0.28  |Q        |          |          |   V      |
15+45       0.2612      0.27  |Q        |          |          |    V     |
15+50       0.2631      0.27  |Q        |          |          |    V     |
15+55       0.2650      0.27  |Q        |          |          |    V     |
16+ 0       0.2668      0.27  |Q        |          |          |    V     |
16+ 5       0.2680      0.17  Q         |          |          |     V    |
16+10       0.2686      0.08  Q         |          |          |     V    |
16+15       0.2690      0.06  Q         |          |          |     V    |
16+20       0.2694      0.06  Q         |          |          |     V    |
16+25       0.2698      0.06  Q         |          |          |     V    |
16+30       0.2702      0.06  Q         |          |          |     V    |
16+35       0.2706      0.05  Q         |          |          |     V    |
16+40       0.2709      0.04  Q         |          |          |     V    |
16+45       0.2712      0.04  Q         |          |          |     V    |
16+50       0.2715      0.04  Q         |          |          |     V    |
16+55       0.2718      0.04  Q         |          |          |     V    |
17+ 0       0.2721      0.04  Q         |          |          |     V    |
17+ 5       0.2725      0.06  Q         |          |          |     V    |
17+10       0.2729      0.07  Q         |          |          |     V    |
17+15       0.2734      0.07  Q         |          |          |     V    |
17+20       0.2739      0.07  Q         |          |          |     V    |
17+25       0.2744      0.07  Q         |          |          |      V   |
17+30       0.2749      0.07  Q         |          |          |      V   |
17+35       0.2754      0.07  Q         |          |          |      V   |
17+40       0.2759      0.07  Q         |          |          |      V   |
17+45       0.2764      0.07  Q         |          |          |      V   |
17+50       0.2768      0.07  Q         |          |          |      V   |
17+55       0.2772      0.06  Q         |          |          |      V   |
18+ 0       0.2776      0.06  Q         |          |          |      V   |
18+ 5       0.2780      0.06  Q         |          |          |      V   |
18+10       0.2784      0.06  Q         |          |          |      V   |
18+15       0.2788      0.06  Q         |          |          |      V   |
18+20       0.2792      0.06  Q         |          |          |      V   |
18+25       0.2796      0.06  Q         |          |          |      V   |
18+30       0.2800      0.06  Q         |          |          |      V   |
18+35       0.2804      0.05  Q         |          |          |      V   |
18+40       0.2807      0.04  Q         |          |          |      V   |
18+45       0.2810      0.04  Q         |          |          |      V   |
18+50       0.2812      0.04  Q         |          |          |      V   |
18+55       0.2814      0.03  Q         |          |          |      V   |
19+ 0       0.2816      0.03  Q         |          |          |      V   |
19+ 5       0.2819      0.04  Q         |          |          |       V  |
19+10       0.2822      0.04  Q         |          |          |       V  |
19+15       0.2824      0.04  Q         |          |          |       V  |
19+20       0.2828      0.05  Q         |          |          |       V  |
19+25       0.2832      0.06  Q         |          |          |       V  |
19+30       0.2836      0.06  Q         |          |          |       V  |
19+35       0.2839      0.05  Q         |          |          |       V  |
19+40       0.2842      0.04  Q         |          |          |       V  |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19+45 | 0.2845 | 0.04 | Q | \| | \| | \| | V \| |
| 19+50 | 0.2848 | 0.04 | Q | \| | \| | \| | V \| |
| 19+55 | 0.2850 | 0.03 | Q | \| | \| | \| | V \| |
| 20+ 0 | 0.2852 | 0.03 | Q | \| | \| | \| | V \| |
| 20+ 5 | 0.2854 | 0.04 | Q | \| | \| | \| | V \| |
| 20+10 | 0.2857 | 0.04 | Q | \| | \| | \| | V \| |
| 20+15 | 0.2860 | 0.04 | Q | \| | \| | \| | V \| |
| 20+20 | 0.2863 | 0.04 | Q | \| | \| | \| | V \| |
| 20+25 | 0.2866 | 0.04 | Q | \| | \| | \| | V \| |
| 20+30 | 0.2869 | 0.04 | Q | \| | \| | \| | V \| |
| 20+35 | 0.2872 | 0.04 | Q | \| | \| | \| | V \| |
| 20+40 | 0.2875 | 0.04 | Q | \| | \| | \| | V \| |
| 20+45 | 0.2878 | 0.04 | Q | \| | \| | \| | V \| |
| 20+50 | 0.2880 | 0.04 | Q | \| | \| | \| | V \| |
| 20+55 | 0.2882 | 0.03 | Q | \| | \| | \| | V \| |
| 21+ 0 | 0.2884 | 0.03 | Q | \| | \| | \| | V \| |
| 21+ 5 | 0.2887 | 0.04 | Q | \| | \| | \| | V \| |
| 21+10 | 0.2890 | 0.04 | Q | \| | \| | \| | V \| |
| 21+15 | 0.2893 | 0.04 | Q | \| | \| | \| | V\| |
| 21+20 | 0.2895 | 0.04 | Q | \| | \| | \| | V\| |
| 21+25 | 0.2897 | 0.03 | Q | \| | \| | \| | V\| |
| 21+30 | 0.2899 | 0.03 | Q | \| | \| | \| | V\| |
| 21+35 | 0.2902 | 0.04 | Q | \| | \| | \| | V\| |
| 21+40 | 0.2905 | 0.04 | Q | \| | \| | \| | V\| |
| 21+45 | 0.2907 | 0.04 | Q | \| | \| | \| | V\| |
| 21+50 | 0.2910 | 0.04 | Q | \| | \| | \| | V\| |
| 21+55 | 0.2912 | 0.03 | Q | \| | \| | \| | V\| |
| 22+ 0 | 0.2914 | 0.03 | Q | \| | \| | \| | V\| |
| 22+ 5 | 0.2917 | 0.04 | Q | \| | \| | \| | V\| |
| 22+10 | 0.2919 | 0.04 | Q | \| | \| | \| | V\| |
| 22+15 | 0.2922 | 0.04 | Q | \| | \| | \| | V\| |
| 22+20 | 0.2925 | 0.04 | Q | \| | \| | \| | V\| |
| 22+25 | 0.2927 | 0.03 | Q | \| | \| | \| | V\| |
| 22+30 | 0.2929 | 0.03 | Q | \| | \| | \| | V\| |
| 22+35 | 0.2931 | 0.03 | Q | \| | \| | \| | V\| |
| 22+40 | 0.2933 | 0.03 | Q | \| | \| | \| | V\| |
| 22+45 | 0.2935 | 0.03 | Q | \| | \| | \| | V\| |
| 22+50 | 0.2937 | 0.03 | Q | \| | \| | \| | V\| |
| 22+55 | 0.2939 | 0.03 | Q | \| | \| | \| | V\| |
| 23+ 0 | 0.2941 | 0.03 | Q | \| | \| | \| | V\| |
| 23+ 5 | 0.2943 | 0.03 | Q | \| | \| | \| | V\| |
| 23+10 | 0.2945 | 0.03 | Q | \| | \| | \| | V\| |
| 23+15 | 0.2947 | 0.03 | Q | \| | \| | \| | V\| |
| 23+20 | 0.2949 | 0.03 | Q | \| | \| | \| | V\| |
| 23+25 | 0.2951 | 0.03 | Q | \| | \| | \| | V\| |
| 23+30 | 0.2953 | 0.03 | Q | \| | \| | \| | V\| |
| 23+35 | 0.2955 | 0.03 | Q | \| | \| | \| | V\| |
| 23+40 | 0.2957 | 0.03 | Q | \| | \| | \| | V\| |
| 23+45 | 0.2959 | 0.03 | Q | \| | \| | \| | V\| |
| 23+50 | 0.2961 | 0.03 | Q | \| | \| | \| | V\| |

```
   23+55       0.2963      0.03  Q         |         |         |        V|
   24+ 0       0.2965      0.03  Q         |         |         |        V|
   24+ 5       0.2966      0.02  Q         |         |         |        V|
   24+10       0.2966      0.00  Q         |         |         |        V|
   24+15       0.2966      0.00  Q         |         |         |         V
-------------------------------------------------------------------------
```

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

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Study date 03/16/23 File: GOYASUHPOST245.out

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

Program License Serial Number 6215

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

English Units used in output format

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GOYASUHPOST5YR

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Drainage Area = 13.75(Ac.) = 0.021 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 13.75(Ac.) = 0.021 Sq. Mi.
Length along longest watercourse = 1220.00(Ft.)
Length along longest watercourse measured to centroid = 146.00(Ft.)
Length along longest watercourse = 0.231 Mi.
Length along longest watercourse measured to centroid = 0.028 Mi.
Difference in elevation = 6.10(Ft.)
Slope along watercourse = 26.4000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.70 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.68 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]
       13.75            1.60                  22.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       13.75            4.00                  55.00

STORM EVENT (YEAR) =    5.00
Area Averaged 2-Year Rainfall =    1.600(In)
Area Averaged 100-Year Rainfall =    4.000(In)

Point rain (area averaged) =    2.162(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.162(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    13.750           56.00         0.600
 Total Area Entered =     13.75(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-1     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  36.0      0.706     0.600        0.325       1.000      0.325
                                                 Sum (F) =   0.325
Area averaged mean soil loss (F) (In/Hr) =  0.325
Minimum soil loss rate ((In/Hr)) =  0.162
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.380
------------------------------------------------------------------------

               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        294.139         56.070              7.770
    2   0.167        588.277         37.453              5.190
    3   0.250        882.416          6.476              0.897
                               Sum = 100.000   Sum=      13.857
------------------------------------------------------------------------

 The following loss rate calculations reflect use of the minimum calculated loss
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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 | 0.017 | ( 0.576) | 0.007 | 0.011 |
| 2 | 0.17 | 0.07 | 0.017 | ( 0.573) | 0.007 | 0.011 |
| 3 | 0.25 | 0.07 | 0.017 | ( 0.571) | 0.007 | 0.011 |
| 4 | 0.33 | 0.10 | 0.026 | ( 0.569) | 0.010 | 0.016 |
| 5 | 0.42 | 0.10 | 0.026 | ( 0.567) | 0.010 | 0.016 |
| 6 | 0.50 | 0.10 | 0.026 | ( 0.565) | 0.010 | 0.016 |
| 7 | 0.58 | 0.10 | 0.026 | ( 0.562) | 0.010 | 0.016 |
| 8 | 0.67 | 0.10 | 0.026 | ( 0.560) | 0.010 | 0.016 |
| 9 | 0.75 | 0.10 | 0.026 | ( 0.558) | 0.010 | 0.016 |
| 10 | 0.83 | 0.13 | 0.035 | ( 0.556) | 0.013 | 0.021 |
| 11 | 0.92 | 0.13 | 0.035 | ( 0.554) | 0.013 | 0.021 |
| 12 | 1.00 | 0.13 | 0.035 | ( 0.551) | 0.013 | 0.021 |
| 13 | 1.08 | 0.10 | 0.026 | ( 0.549) | 0.010 | 0.016 |
| 14 | 1.17 | 0.10 | 0.026 | ( 0.547) | 0.010 | 0.016 |
| 15 | 1.25 | 0.10 | 0.026 | ( 0.545) | 0.010 | 0.016 |
| 16 | 1.33 | 0.10 | 0.026 | ( 0.543) | 0.010 | 0.016 |
| 17 | 1.42 | 0.10 | 0.026 | ( 0.541) | 0.010 | 0.016 |
| 18 | 1.50 | 0.10 | 0.026 | ( 0.538) | 0.010 | 0.016 |
| 19 | 1.58 | 0.10 | 0.026 | ( 0.536) | 0.010 | 0.016 |
| 20 | 1.67 | 0.10 | 0.026 | ( 0.534) | 0.010 | 0.016 |
| 21 | 1.75 | 0.10 | 0.026 | ( 0.532) | 0.010 | 0.016 |
| 22 | 1.83 | 0.13 | 0.035 | ( 0.530) | 0.013 | 0.021 |
| 23 | 1.92 | 0.13 | 0.035 | ( 0.528) | 0.013 | 0.021 |
| 24 | 2.00 | 0.13 | 0.035 | ( 0.526) | 0.013 | 0.021 |
| 25 | 2.08 | 0.13 | 0.035 | ( 0.523) | 0.013 | 0.021 |
| 26 | 2.17 | 0.13 | 0.035 | ( 0.521) | 0.013 | 0.021 |
| 27 | 2.25 | 0.13 | 0.035 | ( 0.519) | 0.013 | 0.021 |
| 28 | 2.33 | 0.13 | 0.035 | ( 0.517) | 0.013 | 0.021 |
| 29 | 2.42 | 0.13 | 0.035 | ( 0.515) | 0.013 | 0.021 |
| 30 | 2.50 | 0.13 | 0.035 | ( 0.513) | 0.013 | 0.021 |
| 31 | 2.58 | 0.17 | 0.043 | ( 0.511) | 0.016 | 0.027 |
| 32 | 2.67 | 0.17 | 0.043 | ( 0.509) | 0.016 | 0.027 |
| 33 | 2.75 | 0.17 | 0.043 | ( 0.507) | 0.016 | 0.027 |
| 34 | 2.83 | 0.17 | 0.043 | ( 0.505) | 0.016 | 0.027 |
| 35 | 2.92 | 0.17 | 0.043 | ( 0.502) | 0.016 | 0.027 |
| 36 | 3.00 | 0.17 | 0.043 | ( 0.500) | 0.016 | 0.027 |
| 37 | 3.08 | 0.17 | 0.043 | ( 0.498) | 0.016 | 0.027 |
| 38 | 3.17 | 0.17 | 0.043 | ( 0.496) | 0.016 | 0.027 |
| 39 | 3.25 | 0.17 | 0.043 | ( 0.494) | 0.016 | 0.027 |
| 40 | 3.33 | 0.17 | 0.043 | ( 0.492) | 0.016 | 0.027 |
| 41 | 3.42 | 0.17 | 0.043 | ( 0.490) | 0.016 | 0.027 |
| 42 | 3.50 | 0.17 | 0.043 | ( 0.488) | 0.016 | 0.027 |
| 43 | 3.58 | 0.17 | 0.043 | ( 0.486) | 0.016 | 0.027 |
| 44 | 3.67 | 0.17 | 0.043 | ( 0.484) | 0.016 | 0.027 |
| 45 | 3.75 | 0.17 | 0.043 | ( 0.482) | 0.016 | 0.027 |
| 46 | 3.83 | 0.20 | 0.052 | ( 0.480) | 0.020 | 0.032 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | 3.92 | 0.20 | 0.052 | ( 0.478) | 0.020 | 0.032 |
| 48 | 4.00 | 0.20 | 0.052 | ( 0.476) | 0.020 | 0.032 |
| 49 | 4.08 | 0.20 | 0.052 | ( 0.474) | 0.020 | 0.032 |
| 50 | 4.17 | 0.20 | 0.052 | ( 0.472) | 0.020 | 0.032 |
| 51 | 4.25 | 0.20 | 0.052 | ( 0.470) | 0.020 | 0.032 |
| 52 | 4.33 | 0.23 | 0.061 | ( 0.468) | 0.023 | 0.038 |
| 53 | 4.42 | 0.23 | 0.061 | ( 0.466) | 0.023 | 0.038 |
| 54 | 4.50 | 0.23 | 0.061 | ( 0.464) | 0.023 | 0.038 |
| 55 | 4.58 | 0.23 | 0.061 | ( 0.462) | 0.023 | 0.038 |
| 56 | 4.67 | 0.23 | 0.061 | ( 0.460) | 0.023 | 0.038 |
| 57 | 4.75 | 0.23 | 0.061 | ( 0.458) | 0.023 | 0.038 |
| 58 | 4.83 | 0.27 | 0.069 | ( 0.456) | 0.026 | 0.043 |
| 59 | 4.92 | 0.27 | 0.069 | ( 0.454) | 0.026 | 0.043 |
| 60 | 5.00 | 0.27 | 0.069 | ( 0.452) | 0.026 | 0.043 |
| 61 | 5.08 | 0.20 | 0.052 | ( 0.450) | 0.020 | 0.032 |
| 62 | 5.17 | 0.20 | 0.052 | ( 0.448) | 0.020 | 0.032 |
| 63 | 5.25 | 0.20 | 0.052 | ( 0.446) | 0.020 | 0.032 |
| 64 | 5.33 | 0.23 | 0.061 | ( 0.444) | 0.023 | 0.038 |
| 65 | 5.42 | 0.23 | 0.061 | ( 0.442) | 0.023 | 0.038 |
| 66 | 5.50 | 0.23 | 0.061 | ( 0.440) | 0.023 | 0.038 |
| 67 | 5.58 | 0.27 | 0.069 | ( 0.438) | 0.026 | 0.043 |
| 68 | 5.67 | 0.27 | 0.069 | ( 0.436) | 0.026 | 0.043 |
| 69 | 5.75 | 0.27 | 0.069 | ( 0.434) | 0.026 | 0.043 |
| 70 | 5.83 | 0.27 | 0.069 | ( 0.433) | 0.026 | 0.043 |
| 71 | 5.92 | 0.27 | 0.069 | ( 0.431) | 0.026 | 0.043 |
| 72 | 6.00 | 0.27 | 0.069 | ( 0.429) | 0.026 | 0.043 |
| 73 | 6.08 | 0.30 | 0.078 | ( 0.427) | 0.030 | 0.048 |
| 74 | 6.17 | 0.30 | 0.078 | ( 0.425) | 0.030 | 0.048 |
| 75 | 6.25 | 0.30 | 0.078 | ( 0.423) | 0.030 | 0.048 |
| 76 | 6.33 | 0.30 | 0.078 | ( 0.421) | 0.030 | 0.048 |
| 77 | 6.42 | 0.30 | 0.078 | ( 0.419) | 0.030 | 0.048 |
| 78 | 6.50 | 0.30 | 0.078 | ( 0.417) | 0.030 | 0.048 |
| 79 | 6.58 | 0.33 | 0.086 | ( 0.415) | 0.033 | 0.054 |
| 80 | 6.67 | 0.33 | 0.086 | ( 0.414) | 0.033 | 0.054 |
| 81 | 6.75 | 0.33 | 0.086 | ( 0.412) | 0.033 | 0.054 |
| 82 | 6.83 | 0.33 | 0.086 | ( 0.410) | 0.033 | 0.054 |
| 83 | 6.92 | 0.33 | 0.086 | ( 0.408) | 0.033 | 0.054 |
| 84 | 7.00 | 0.33 | 0.086 | ( 0.406) | 0.033 | 0.054 |
| 85 | 7.08 | 0.33 | 0.086 | ( 0.404) | 0.033 | 0.054 |
| 86 | 7.17 | 0.33 | 0.086 | ( 0.402) | 0.033 | 0.054 |
| 87 | 7.25 | 0.33 | 0.086 | ( 0.401) | 0.033 | 0.054 |
| 88 | 7.33 | 0.37 | 0.095 | ( 0.399) | 0.036 | 0.059 |
| 89 | 7.42 | 0.37 | 0.095 | ( 0.397) | 0.036 | 0.059 |
| 90 | 7.50 | 0.37 | 0.095 | ( 0.395) | 0.036 | 0.059 |
| 91 | 7.58 | 0.40 | 0.104 | ( 0.393) | 0.039 | 0.064 |
| 92 | 7.67 | 0.40 | 0.104 | ( 0.392) | 0.039 | 0.064 |
| 93 | 7.75 | 0.40 | 0.104 | ( 0.390) | 0.039 | 0.064 |
| 94 | 7.83 | 0.43 | 0.112 | ( 0.388) | 0.043 | 0.070 |
| 95 | 7.92 | 0.43 | 0.112 | ( 0.386) | 0.043 | 0.070 |
| 96 | 8.00 | 0.43 | 0.112 | ( 0.384) | 0.043 | 0.070 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 97 | 8.08 | 0.50 | 0.130 | ( 0.383) | 0.049 | 0.080 |
| 98 | 8.17 | 0.50 | 0.130 | ( 0.381) | 0.049 | 0.080 |
| 99 | 8.25 | 0.50 | 0.130 | ( 0.379) | 0.049 | 0.080 |
| 100 | 8.33 | 0.50 | 0.130 | ( 0.377) | 0.049 | 0.080 |
| 101 | 8.42 | 0.50 | 0.130 | ( 0.375) | 0.049 | 0.080 |
| 102 | 8.50 | 0.50 | 0.130 | ( 0.374) | 0.049 | 0.080 |
| 103 | 8.58 | 0.53 | 0.138 | ( 0.372) | 0.053 | 0.086 |
| 104 | 8.67 | 0.53 | 0.138 | ( 0.370) | 0.053 | 0.086 |
| 105 | 8.75 | 0.53 | 0.138 | ( 0.368) | 0.053 | 0.086 |
| 106 | 8.83 | 0.57 | 0.147 | ( 0.367) | 0.056 | 0.091 |
| 107 | 8.92 | 0.57 | 0.147 | ( 0.365) | 0.056 | 0.091 |
| 108 | 9.00 | 0.57 | 0.147 | ( 0.363) | 0.056 | 0.091 |
| 109 | 9.08 | 0.63 | 0.164 | ( 0.362) | 0.062 | 0.102 |
| 110 | 9.17 | 0.63 | 0.164 | ( 0.360) | 0.062 | 0.102 |
| 111 | 9.25 | 0.63 | 0.164 | ( 0.358) | 0.062 | 0.102 |
| 112 | 9.33 | 0.67 | 0.173 | ( 0.356) | 0.066 | 0.107 |
| 113 | 9.42 | 0.67 | 0.173 | ( 0.355) | 0.066 | 0.107 |
| 114 | 9.50 | 0.67 | 0.173 | ( 0.353) | 0.066 | 0.107 |
| 115 | 9.58 | 0.70 | 0.182 | ( 0.351) | 0.069 | 0.113 |
| 116 | 9.67 | 0.70 | 0.182 | ( 0.350) | 0.069 | 0.113 |
| 117 | 9.75 | 0.70 | 0.182 | ( 0.348) | 0.069 | 0.113 |
| 118 | 9.83 | 0.73 | 0.190 | ( 0.346) | 0.072 | 0.118 |
| 119 | 9.92 | 0.73 | 0.190 | ( 0.345) | 0.072 | 0.118 |
| 120 | 10.00 | 0.73 | 0.190 | ( 0.343) | 0.072 | 0.118 |
| 121 | 10.08 | 0.50 | 0.130 | ( 0.341) | 0.049 | 0.080 |
| 122 | 10.17 | 0.50 | 0.130 | ( 0.340) | 0.049 | 0.080 |
| 123 | 10.25 | 0.50 | 0.130 | ( 0.338) | 0.049 | 0.080 |
| 124 | 10.33 | 0.50 | 0.130 | ( 0.336) | 0.049 | 0.080 |
| 125 | 10.42 | 0.50 | 0.130 | ( 0.335) | 0.049 | 0.080 |
| 126 | 10.50 | 0.50 | 0.130 | ( 0.333) | 0.049 | 0.080 |
| 127 | 10.58 | 0.67 | 0.173 | ( 0.331) | 0.066 | 0.107 |
| 128 | 10.67 | 0.67 | 0.173 | ( 0.330) | 0.066 | 0.107 |
| 129 | 10.75 | 0.67 | 0.173 | ( 0.328) | 0.066 | 0.107 |
| 130 | 10.83 | 0.67 | 0.173 | ( 0.327) | 0.066 | 0.107 |
| 131 | 10.92 | 0.67 | 0.173 | ( 0.325) | 0.066 | 0.107 |
| 132 | 11.00 | 0.67 | 0.173 | ( 0.323) | 0.066 | 0.107 |
| 133 | 11.08 | 0.63 | 0.164 | ( 0.322) | 0.062 | 0.102 |
| 134 | 11.17 | 0.63 | 0.164 | ( 0.320) | 0.062 | 0.102 |
| 135 | 11.25 | 0.63 | 0.164 | ( 0.319) | 0.062 | 0.102 |
| 136 | 11.33 | 0.63 | 0.164 | ( 0.317) | 0.062 | 0.102 |
| 137 | 11.42 | 0.63 | 0.164 | ( 0.316) | 0.062 | 0.102 |
| 138 | 11.50 | 0.63 | 0.164 | ( 0.314) | 0.062 | 0.102 |
| 139 | 11.58 | 0.57 | 0.147 | ( 0.312) | 0.056 | 0.091 |
| 140 | 11.67 | 0.57 | 0.147 | ( 0.311) | 0.056 | 0.091 |
| 141 | 11.75 | 0.57 | 0.147 | ( 0.309) | 0.056 | 0.091 |
| 142 | 11.83 | 0.60 | 0.156 | ( 0.308) | 0.059 | 0.097 |
| 143 | 11.92 | 0.60 | 0.156 | ( 0.306) | 0.059 | 0.097 |
| 144 | 12.00 | 0.60 | 0.156 | ( 0.305) | 0.059 | 0.097 |
| 145 | 12.08 | 0.83 | 0.216 | ( 0.303) | 0.082 | 0.134 |
| 146 | 12.17 | 0.83 | 0.216 | ( 0.302) | 0.082 | 0.134 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 147 | 12.25 | 0.83 | 0.216 | ( 0.300) | 0.082 | 0.134 |
| 148 | 12.33 | 0.87 | 0.225 | ( 0.299) | 0.085 | 0.139 |
| 149 | 12.42 | 0.87 | 0.225 | ( 0.297) | 0.085 | 0.139 |
| 150 | 12.50 | 0.87 | 0.225 | ( 0.296) | 0.085 | 0.139 |
| 151 | 12.58 | 0.93 | 0.242 | ( 0.294) | 0.092 | 0.150 |
| 152 | 12.67 | 0.93 | 0.242 | ( 0.293) | 0.092 | 0.150 |
| 153 | 12.75 | 0.93 | 0.242 | ( 0.291) | 0.092 | 0.150 |
| 154 | 12.83 | 0.97 | 0.251 | ( 0.290) | 0.095 | 0.155 |
| 155 | 12.92 | 0.97 | 0.251 | ( 0.288) | 0.095 | 0.155 |
| 156 | 13.00 | 0.97 | 0.251 | ( 0.287) | 0.095 | 0.155 |
| 157 | 13.08 | 1.13 | 0.294 | ( 0.285) | 0.112 | 0.182 |
| 158 | 13.17 | 1.13 | 0.294 | ( 0.284) | 0.112 | 0.182 |
| 159 | 13.25 | 1.13 | 0.294 | ( 0.282) | 0.112 | 0.182 |
| 160 | 13.33 | 1.13 | 0.294 | ( 0.281) | 0.112 | 0.182 |
| 161 | 13.42 | 1.13 | 0.294 | ( 0.280) | 0.112 | 0.182 |
| 162 | 13.50 | 1.13 | 0.294 | ( 0.278) | 0.112 | 0.182 |
| 163 | 13.58 | 0.77 | 0.199 | ( 0.277) | 0.076 | 0.123 |
| 164 | 13.67 | 0.77 | 0.199 | ( 0.275) | 0.076 | 0.123 |
| 165 | 13.75 | 0.77 | 0.199 | ( 0.274) | 0.076 | 0.123 |
| 166 | 13.83 | 0.77 | 0.199 | ( 0.273) | 0.076 | 0.123 |
| 167 | 13.92 | 0.77 | 0.199 | ( 0.271) | 0.076 | 0.123 |
| 168 | 14.00 | 0.77 | 0.199 | ( 0.270) | 0.076 | 0.123 |
| 169 | 14.08 | 0.90 | 0.234 | ( 0.268) | 0.089 | 0.145 |
| 170 | 14.17 | 0.90 | 0.234 | ( 0.267) | 0.089 | 0.145 |
| 171 | 14.25 | 0.90 | 0.234 | ( 0.266) | 0.089 | 0.145 |
| 172 | 14.33 | 0.87 | 0.225 | ( 0.264) | 0.085 | 0.139 |
| 173 | 14.42 | 0.87 | 0.225 | ( 0.263) | 0.085 | 0.139 |
| 174 | 14.50 | 0.87 | 0.225 | ( 0.262) | 0.085 | 0.139 |
| 175 | 14.58 | 0.87 | 0.225 | ( 0.260) | 0.085 | 0.139 |
| 176 | 14.67 | 0.87 | 0.225 | ( 0.259) | 0.085 | 0.139 |
| 177 | 14.75 | 0.87 | 0.225 | ( 0.258) | 0.085 | 0.139 |
| 178 | 14.83 | 0.83 | 0.216 | ( 0.256) | 0.082 | 0.134 |
| 179 | 14.92 | 0.83 | 0.216 | ( 0.255) | 0.082 | 0.134 |
| 180 | 15.00 | 0.83 | 0.216 | ( 0.254) | 0.082 | 0.134 |
| 181 | 15.08 | 0.80 | 0.208 | ( 0.252) | 0.079 | 0.129 |
| 182 | 15.17 | 0.80 | 0.208 | ( 0.251) | 0.079 | 0.129 |
| 183 | 15.25 | 0.80 | 0.208 | ( 0.250) | 0.079 | 0.129 |
| 184 | 15.33 | 0.77 | 0.199 | ( 0.248) | 0.076 | 0.123 |
| 185 | 15.42 | 0.77 | 0.199 | ( 0.247) | 0.076 | 0.123 |
| 186 | 15.50 | 0.77 | 0.199 | ( 0.246) | 0.076 | 0.123 |
| 187 | 15.58 | 0.63 | 0.164 | ( 0.245) | 0.062 | 0.102 |
| 188 | 15.67 | 0.63 | 0.164 | ( 0.243) | 0.062 | 0.102 |
| 189 | 15.75 | 0.63 | 0.164 | ( 0.242) | 0.062 | 0.102 |
| 190 | 15.83 | 0.63 | 0.164 | ( 0.241) | 0.062 | 0.102 |
| 191 | 15.92 | 0.63 | 0.164 | ( 0.240) | 0.062 | 0.102 |
| 192 | 16.00 | 0.63 | 0.164 | ( 0.238) | 0.062 | 0.102 |
| 193 | 16.08 | 0.13 | 0.035 | ( 0.237) | 0.013 | 0.021 |
| 194 | 16.17 | 0.13 | 0.035 | ( 0.236) | 0.013 | 0.021 |
| 195 | 16.25 | 0.13 | 0.035 | ( 0.235) | 0.013 | 0.021 |
| 196 | 16.33 | 0.13 | 0.035 | ( 0.234) | 0.013 | 0.021 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 197 | 16.42 | 0.13 | 0.035 | ( 0.232) | 0.013 | 0.021 |
| 198 | 16.50 | 0.13 | 0.035 | ( 0.231) | 0.013 | 0.021 |
| 199 | 16.58 | 0.10 | 0.026 | ( 0.230) | 0.010 | 0.016 |
| 200 | 16.67 | 0.10 | 0.026 | ( 0.229) | 0.010 | 0.016 |
| 201 | 16.75 | 0.10 | 0.026 | ( 0.228) | 0.010 | 0.016 |
| 202 | 16.83 | 0.10 | 0.026 | ( 0.227) | 0.010 | 0.016 |
| 203 | 16.92 | 0.10 | 0.026 | ( 0.225) | 0.010 | 0.016 |
| 204 | 17.00 | 0.10 | 0.026 | ( 0.224) | 0.010 | 0.016 |
| 205 | 17.08 | 0.17 | 0.043 | ( 0.223) | 0.016 | 0.027 |
| 206 | 17.17 | 0.17 | 0.043 | ( 0.222) | 0.016 | 0.027 |
| 207 | 17.25 | 0.17 | 0.043 | ( 0.221) | 0.016 | 0.027 |
| 208 | 17.33 | 0.17 | 0.043 | ( 0.220) | 0.016 | 0.027 |
| 209 | 17.42 | 0.17 | 0.043 | ( 0.219) | 0.016 | 0.027 |
| 210 | 17.50 | 0.17 | 0.043 | ( 0.218) | 0.016 | 0.027 |
| 211 | 17.58 | 0.17 | 0.043 | ( 0.217) | 0.016 | 0.027 |
| 212 | 17.67 | 0.17 | 0.043 | ( 0.215) | 0.016 | 0.027 |
| 213 | 17.75 | 0.17 | 0.043 | ( 0.214) | 0.016 | 0.027 |
| 214 | 17.83 | 0.13 | 0.035 | ( 0.213) | 0.013 | 0.021 |
| 215 | 17.92 | 0.13 | 0.035 | ( 0.212) | 0.013 | 0.021 |
| 216 | 18.00 | 0.13 | 0.035 | ( 0.211) | 0.013 | 0.021 |
| 217 | 18.08 | 0.13 | 0.035 | ( 0.210) | 0.013 | 0.021 |
| 218 | 18.17 | 0.13 | 0.035 | ( 0.209) | 0.013 | 0.021 |
| 219 | 18.25 | 0.13 | 0.035 | ( 0.208) | 0.013 | 0.021 |
| 220 | 18.33 | 0.13 | 0.035 | ( 0.207) | 0.013 | 0.021 |
| 221 | 18.42 | 0.13 | 0.035 | ( 0.206) | 0.013 | 0.021 |
| 222 | 18.50 | 0.13 | 0.035 | ( 0.205) | 0.013 | 0.021 |
| 223 | 18.58 | 0.10 | 0.026 | ( 0.204) | 0.010 | 0.016 |
| 224 | 18.67 | 0.10 | 0.026 | ( 0.203) | 0.010 | 0.016 |
| 225 | 18.75 | 0.10 | 0.026 | ( 0.202) | 0.010 | 0.016 |
| 226 | 18.83 | 0.07 | 0.017 | ( 0.201) | 0.007 | 0.011 |
| 227 | 18.92 | 0.07 | 0.017 | ( 0.200) | 0.007 | 0.011 |
| 228 | 19.00 | 0.07 | 0.017 | ( 0.199) | 0.007 | 0.011 |
| 229 | 19.08 | 0.10 | 0.026 | ( 0.198) | 0.010 | 0.016 |
| 230 | 19.17 | 0.10 | 0.026 | ( 0.197) | 0.010 | 0.016 |
| 231 | 19.25 | 0.10 | 0.026 | ( 0.196) | 0.010 | 0.016 |
| 232 | 19.33 | 0.13 | 0.035 | ( 0.196) | 0.013 | 0.021 |
| 233 | 19.42 | 0.13 | 0.035 | ( 0.195) | 0.013 | 0.021 |
| 234 | 19.50 | 0.13 | 0.035 | ( 0.194) | 0.013 | 0.021 |
| 235 | 19.58 | 0.10 | 0.026 | ( 0.193) | 0.010 | 0.016 |
| 236 | 19.67 | 0.10 | 0.026 | ( 0.192) | 0.010 | 0.016 |
| 237 | 19.75 | 0.10 | 0.026 | ( 0.191) | 0.010 | 0.016 |
| 238 | 19.83 | 0.07 | 0.017 | ( 0.190) | 0.007 | 0.011 |
| 239 | 19.92 | 0.07 | 0.017 | ( 0.189) | 0.007 | 0.011 |
| 240 | 20.00 | 0.07 | 0.017 | ( 0.189) | 0.007 | 0.011 |
| 241 | 20.08 | 0.10 | 0.026 | ( 0.188) | 0.010 | 0.016 |
| 242 | 20.17 | 0.10 | 0.026 | ( 0.187) | 0.010 | 0.016 |
| 243 | 20.25 | 0.10 | 0.026 | ( 0.186) | 0.010 | 0.016 |
| 244 | 20.33 | 0.10 | 0.026 | ( 0.185) | 0.010 | 0.016 |
| 245 | 20.42 | 0.10 | 0.026 | ( 0.185) | 0.010 | 0.016 |
| 246 | 20.50 | 0.10 | 0.026 | ( 0.184) | 0.010 | 0.016 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 247 | 20.58 | 0.10 | 0.026 | ( 0.183) | 0.010 | 0.016 |
| 248 | 20.67 | 0.10 | 0.026 | ( 0.182) | 0.010 | 0.016 |
| 249 | 20.75 | 0.10 | 0.026 | ( 0.181) | 0.010 | 0.016 |
| 250 | 20.83 | 0.07 | 0.017 | ( 0.181) | 0.007 | 0.011 |
| 251 | 20.92 | 0.07 | 0.017 | ( 0.180) | 0.007 | 0.011 |
| 252 | 21.00 | 0.07 | 0.017 | ( 0.179) | 0.007 | 0.011 |
| 253 | 21.08 | 0.10 | 0.026 | ( 0.179) | 0.010 | 0.016 |
| 254 | 21.17 | 0.10 | 0.026 | ( 0.178) | 0.010 | 0.016 |
| 255 | 21.25 | 0.10 | 0.026 | ( 0.177) | 0.010 | 0.016 |
| 256 | 21.33 | 0.07 | 0.017 | ( 0.176) | 0.007 | 0.011 |
| 257 | 21.42 | 0.07 | 0.017 | ( 0.176) | 0.007 | 0.011 |
| 258 | 21.50 | 0.07 | 0.017 | ( 0.175) | 0.007 | 0.011 |
| 259 | 21.58 | 0.10 | 0.026 | ( 0.175) | 0.010 | 0.016 |
| 260 | 21.67 | 0.10 | 0.026 | ( 0.174) | 0.010 | 0.016 |
| 261 | 21.75 | 0.10 | 0.026 | ( 0.173) | 0.010 | 0.016 |
| 262 | 21.83 | 0.07 | 0.017 | ( 0.173) | 0.007 | 0.011 |
| 263 | 21.92 | 0.07 | 0.017 | ( 0.172) | 0.007 | 0.011 |
| 264 | 22.00 | 0.07 | 0.017 | ( 0.171) | 0.007 | 0.011 |
| 265 | 22.08 | 0.10 | 0.026 | ( 0.171) | 0.010 | 0.016 |
| 266 | 22.17 | 0.10 | 0.026 | ( 0.170) | 0.010 | 0.016 |
| 267 | 22.25 | 0.10 | 0.026 | ( 0.170) | 0.010 | 0.016 |
| 268 | 22.33 | 0.07 | 0.017 | ( 0.169) | 0.007 | 0.011 |
| 269 | 22.42 | 0.07 | 0.017 | ( 0.169) | 0.007 | 0.011 |
| 270 | 22.50 | 0.07 | 0.017 | ( 0.168) | 0.007 | 0.011 |
| 271 | 22.58 | 0.07 | 0.017 | ( 0.168) | 0.007 | 0.011 |
| 272 | 22.67 | 0.07 | 0.017 | ( 0.167) | 0.007 | 0.011 |
| 273 | 22.75 | 0.07 | 0.017 | ( 0.167) | 0.007 | 0.011 |
| 274 | 22.83 | 0.07 | 0.017 | ( 0.166) | 0.007 | 0.011 |
| 275 | 22.92 | 0.07 | 0.017 | ( 0.166) | 0.007 | 0.011 |
| 276 | 23.00 | 0.07 | 0.017 | ( 0.166) | 0.007 | 0.011 |
| 277 | 23.08 | 0.07 | 0.017 | ( 0.165) | 0.007 | 0.011 |
| 278 | 23.17 | 0.07 | 0.017 | ( 0.165) | 0.007 | 0.011 |
| 279 | 23.25 | 0.07 | 0.017 | ( 0.164) | 0.007 | 0.011 |
| 280 | 23.33 | 0.07 | 0.017 | ( 0.164) | 0.007 | 0.011 |
| 281 | 23.42 | 0.07 | 0.017 | ( 0.164) | 0.007 | 0.011 |
| 282 | 23.50 | 0.07 | 0.017 | ( 0.164) | 0.007 | 0.011 |
| 283 | 23.58 | 0.07 | 0.017 | ( 0.163) | 0.007 | 0.011 |
| 284 | 23.67 | 0.07 | 0.017 | ( 0.163) | 0.007 | 0.011 |
| 285 | 23.75 | 0.07 | 0.017 | ( 0.163) | 0.007 | 0.011 |
| 286 | 23.83 | 0.07 | 0.017 | ( 0.163) | 0.007 | 0.011 |
| 287 | 23.92 | 0.07 | 0.017 | ( 0.162) | 0.007 | 0.011 |
| 288 | 24.00 | 0.07 | 0.017 | ( 0.162) | 0.007 | 0.011 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 16.1

Flood volume = Effective rainfall 1.34(In)
times area 13.8(Ac.)/[(In)/(Ft.)] = 1.5(Ac.Ft)
Total soil loss = 0.82(In)
Total soil loss = 0.941(Ac.Ft)
Total rainfall = 2.16(In)
Flood volume = 66907.2 Cubic Feet

Total soil loss = 41007.6 Cubic Feet

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Peak flow rate of this hydrograph = 2.528(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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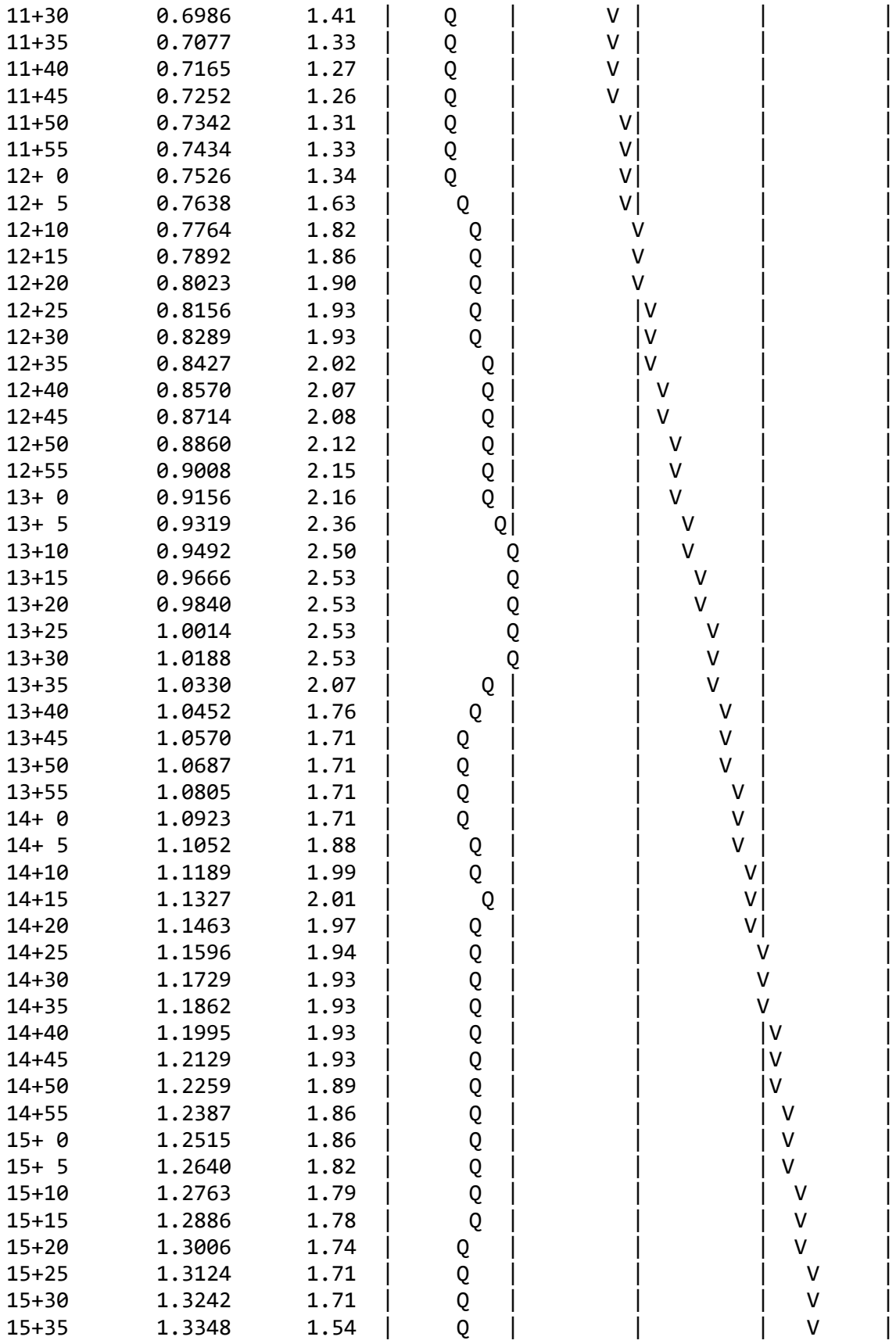
| Time(h+m) | Volume Ac.Ft | Q(CFS) | 0 | 2.5 | 5.0 | 7.5 | 10.0 |
|---|---|---|---|---|---|---|---|
| 0+ 5 | 0.0006 | 0.08 | Q | | | | |
| 0+10 | 0.0015 | 0.14 | Q | | | | |
| 0+15 | 0.0026 | 0.15 | Q | | | | |
| 0+20 | 0.0039 | 0.19 | Q | | | | |
| 0+25 | 0.0054 | 0.22 | Q | | | | |
| 0+30 | 0.0069 | 0.22 | Q | | | | |
| 0+35 | 0.0084 | 0.22 | Q | | | | |
| 0+40 | 0.0100 | 0.22 | Q | | | | |
| 0+45 | 0.0115 | 0.22 | Q | | | | |
| 0+50 | 0.0133 | 0.26 | VQ | | | | |
| 0+55 | 0.0154 | 0.29 | VQ | | | | |
| 1+ 0 | 0.0174 | 0.30 | VQ | | | | |
| 1+ 5 | 0.0192 | 0.26 | VQ | | | | |
| 1+10 | 0.0207 | 0.23 | Q | | | | |
| 1+15 | 0.0223 | 0.22 | Q | | | | |
| 1+20 | 0.0238 | 0.22 | Q | | | | |
| 1+25 | 0.0253 | 0.22 | Q | | | | |
| 1+30 | 0.0269 | 0.22 | Q | | | | |
| 1+35 | 0.0284 | 0.22 | Q | | | | |
| 1+40 | 0.0299 | 0.22 | Q | | | | |
| 1+45 | 0.0315 | 0.22 | Q | | | | |
| 1+50 | 0.0333 | 0.26 | VQ | | | | |
| 1+55 | 0.0353 | 0.29 | VQ | | | | |
| 2+ 0 | 0.0374 | 0.30 | VQ | | | | |
| 2+ 5 | 0.0394 | 0.30 | \|Q | | | | |
| 2+10 | 0.0415 | 0.30 | \|Q | | | | |
| 2+15 | 0.0435 | 0.30 | \|Q | | | | |
| 2+20 | 0.0456 | 0.30 | \|Q | | | | |
| 2+25 | 0.0476 | 0.30 | \|Q | | | | |
| 2+30 | 0.0497 | 0.30 | \|Q | | | | |
| 2+35 | 0.0520 | 0.34 | \|Q | | | | |
| 2+40 | 0.0545 | 0.37 | \|Q | | | | |
| 2+45 | 0.0571 | 0.37 | \|Q | | | | |
| 2+50 | 0.0596 | 0.37 | \|Q | | | | |
| 2+55 | 0.0622 | 0.37 | \|Q | | | | |
| 3+ 0 | 0.0648 | 0.37 | \|Q | | | | |
| 3+ 5 | 0.0673 | 0.37 | \|Q | | | | |

```
3+10       0.0699      0.37  |Q         |          |          |          |
3+15       0.0724      0.37  |Q         |          |          |          |
3+20       0.0750      0.37  |Q         |          |          |          |
3+25       0.0776      0.37  |QV        |          |          |          |
3+30       0.0801      0.37  |QV        |          |          |          |
3+35       0.0827      0.37  |QV        |          |          |          |
3+40       0.0852      0.37  |QV        |          |          |          |
3+45       0.0878      0.37  |QV        |          |          |          |
3+50       0.0906      0.41  |QV        |          |          |          |
3+55       0.0937      0.44  |QV        |          |          |          |
4+ 0       0.0968      0.45  |QV        |          |          |          |
4+ 5       0.0998      0.45  |QV        |          |          |          |
4+10       0.1029      0.45  |QV        |          |          |          |
4+15       0.1060      0.45  |QV        |          |          |          |
4+20       0.1093      0.49  |QV        |          |          |          |
4+25       0.1129      0.52  | Q        |          |          |          |
4+30       0.1165      0.52  | QV       |          |          |          |
4+35       0.1200      0.52  | QV       |          |          |          |
4+40       0.1236      0.52  | QV       |          |          |          |
4+45       0.1272      0.52  | QV       |          |          |          |
4+50       0.1311      0.56  | QV       |          |          |          |
4+55       0.1351      0.59  | QV       |          |          |          |
5+ 0       0.1392      0.59  | QV       |          |          |          |
5+ 5       0.1428      0.51  | QV       |          |          |          |
5+10       0.1459      0.46  |Q V       |          |          |          |
5+15       0.1490      0.45  |Q V       |          |          |          |
5+20       0.1523      0.49  |Q V       |          |          |          |
5+25       0.1559      0.52  | Q V      |          |          |          |
5+30       0.1595      0.52  | Q V      |          |          |          |
5+35       0.1633      0.56  | Q V      |          |          |          |
5+40       0.1674      0.59  | Q V      |          |          |          |
5+45       0.1715      0.59  | Q V      |          |          |          |
5+50       0.1756      0.59  | Q V      |          |          |          |
5+55       0.1797      0.59  | Q V      |          |          |          |
6+ 0       0.1838      0.59  | Q V      |          |          |          |
6+ 5       0.1882      0.64  | Q V      |          |          |          |
6+10       0.1927      0.66  | Q  V     |          |          |          |
6+15       0.1974      0.67  | Q  V     |          |          |          |
6+20       0.2020      0.67  | Q  V     |          |          |          |
6+25       0.2066      0.67  | Q  V     |          |          |          |
6+30       0.2112      0.67  | Q  V     |          |          |          |
6+35       0.2161      0.71  | Q  V     |          |          |          |
6+40       0.2212      0.74  | Q  V     |          |          |          |
6+45       0.2263      0.74  | Q  V     |          |          |          |
6+50       0.2314      0.74  | Q   V    |          |          |          |
6+55       0.2365      0.74  | Q   V    |          |          |          |
7+ 0       0.2416      0.74  | Q   V    |          |          |          |
7+ 5       0.2468      0.74  | Q   V    |          |          |          |
7+10       0.2519      0.74  | Q   V    |          |          |          |
7+15       0.2570      0.74  | Q   V    |          |          |          |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7+20 | 0.2624 | 0.79 | Q V | | | | |
| 7+25 | 0.2680 | 0.81 | Q V | | | | |
| 7+30 | 0.2736 | 0.82 | Q V | | | | |
| 7+35 | 0.2796 | 0.86 | Q V | | | | |
| 7+40 | 0.2857 | 0.89 | Q V | | | | |
| 7+45 | 0.2918 | 0.89 | Q V | | | | |
| 7+50 | 0.2982 | 0.93 | Q V | | | | |
| 7+55 | 0.3049 | 0.96 | Q V | | | | |
| 8+ 0 | 0.3115 | 0.97 | Q V | | | | |
| 8+ 5 | 0.3188 | 1.05 | Q V | | | | |
| 8+10 | 0.3264 | 1.11 | Q V | | | | |
| 8+15 | 0.3340 | 1.12 | Q V | | | | |
| 8+20 | 0.3417 | 1.12 | Q V | | | | |
| 8+25 | 0.3494 | 1.12 | Q V | | | | |
| 8+30 | 0.3571 | 1.12 | Q V | | | | |
| 8+35 | 0.3651 | 1.16 | Q V | | | | |
| 8+40 | 0.3732 | 1.18 | Q V | | | | |
| 8+45 | 0.3814 | 1.19 | Q V | | | | |
| 8+50 | 0.3899 | 1.23 | Q V | | | | |
| 8+55 | 0.3986 | 1.26 | Q V | | | | |
| 9+ 0 | 0.4073 | 1.26 | Q V | | | | |
| 9+ 5 | 0.4165 | 1.35 | Q V | | | | |
| 9+10 | 0.4262 | 1.40 | Q V | | | | |
| 9+15 | 0.4359 | 1.41 | Q V | | | | |
| 9+20 | 0.4459 | 1.45 | Q V | | | | |
| 9+25 | 0.4561 | 1.48 | Q V | | | | |
| 9+30 | 0.4664 | 1.49 | Q V | | | | |
| 9+35 | 0.4769 | 1.53 | Q V | | | | |
| 9+40 | 0.4876 | 1.56 | Q V | | | | |
| 9+45 | 0.4984 | 1.56 | Q V | | | | |
| 9+50 | 0.5094 | 1.60 | Q V | | | | |
| 9+55 | 0.5207 | 1.63 | Q V | | | | |
| 10+ 0 | 0.5319 | 1.64 | Q V | | | | |
| 10+ 5 | 0.5412 | 1.34 | Q V | | | | |
| 10+10 | 0.5491 | 1.15 | Q V | | | | |
| 10+15 | 0.5568 | 1.12 | Q V | | | | |
| 10+20 | 0.5644 | 1.12 | Q V | | | | |
| 10+25 | 0.5721 | 1.12 | Q V | | | | |
| 10+30 | 0.5798 | 1.12 | Q V | | | | |
| 10+35 | 0.5889 | 1.32 | Q V | | | | |
| 10+40 | 0.5990 | 1.46 | Q V | | | | |
| 10+45 | 0.6092 | 1.49 | Q V | | | | |
| 10+50 | 0.6195 | 1.49 | Q V | | | | |
| 10+55 | 0.6297 | 1.49 | Q V | | | | |
| 11+ 0 | 0.6399 | 1.49 | Q V | | | | |
| 11+ 5 | 0.6499 | 1.45 | Q V | | | | |
| 11+10 | 0.6597 | 1.42 | Q V | | | | |
| 11+15 | 0.6694 | 1.41 | Q V | | | | |
| 11+20 | 0.6791 | 1.41 | Q V | | | | |
| 11+25 | 0.6888 | 1.41 | Q V | | | | |



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15+40       1.3447      1.43  |    Q    |         |         |    V    |
15+45       1.3544      1.41  |    Q    |         |         |    V    |
15+50       1.3642      1.41  |    Q    |         |         |    V    |
15+55       1.3739      1.41  |    Q    |         |         |    V    |
16+ 0       1.3836      1.41  |    Q    |         |         |     V   |
16+ 5       1.3890      0.79  |  Q      |         |         |     V   |
16+10       1.3916      0.37  |Q        |         |         |     V   |
16+15       1.3936      0.30  |Q        |         |         |     V   |
16+20       1.3957      0.30  |Q        |         |         |     V   |
16+25       1.3977      0.30  |Q        |         |         |     V   |
16+30       1.3998      0.30  |Q        |         |         |     V   |
16+35       1.4015      0.26  |Q        |         |         |     V   |
16+40       1.4031      0.23  Q         |         |         |     V   |
16+45       1.4046      0.22  Q         |         |         |     V   |
16+50       1.4062      0.22  Q         |         |         |     V   |
16+55       1.4077      0.22  Q         |         |         |     V   |
17+ 0       1.4093      0.22  Q         |         |         |     V   |
17+ 5       1.4114      0.31  |Q        |         |         |     V   |
17+10       1.4139      0.36  |Q        |         |         |     V   |
17+15       1.4164      0.37  |Q        |         |         |     V   |
17+20       1.4190      0.37  |Q        |         |         |     V   |
17+25       1.4215      0.37  |Q        |         |         |      V  |
17+30       1.4241      0.37  |Q        |         |         |      V  |
17+35       1.4267      0.37  |Q        |         |         |      V  |
17+40       1.4292      0.37  |Q        |         |         |      V  |
17+45       1.4318      0.37  |Q        |         |         |      V  |
17+50       1.4340      0.33  |Q        |         |         |      V  |
17+55       1.4361      0.30  |Q        |         |         |      V  |
18+ 0       1.4382      0.30  |Q        |         |         |      V  |
18+ 5       1.4402      0.30  |Q        |         |         |      V  |
18+10       1.4423      0.30  |Q        |         |         |      V  |
18+15       1.4443      0.30  |Q        |         |         |      V  |
18+20       1.4464      0.30  |Q        |         |         |      V  |
18+25       1.4484      0.30  |Q        |         |         |      V  |
18+30       1.4505      0.30  |Q        |         |         |      V  |
18+35       1.4522      0.26  |Q        |         |         |      V  |
18+40       1.4538      0.23  Q         |         |         |      V  |
18+45       1.4553      0.22  Q         |         |         |      V  |
18+50       1.4566      0.18  Q         |         |         |      V  |
18+55       1.4576      0.15  Q         |         |         |      V  |
19+ 0       1.4587      0.15  Q         |         |         |      V  |
19+ 5       1.4600      0.19  Q         |         |         |       V |
19+10       1.4615      0.22  Q         |         |         |       V |
19+15       1.4630      0.22  Q         |         |         |       V |
19+20       1.4648      0.26  |Q        |         |         |       V |
19+25       1.4669      0.29  |Q        |         |         |       V |
19+30       1.4689      0.30  |Q        |         |         |       V |
19+35       1.4707      0.26  |Q        |         |         |       V |
19+40       1.4722      0.23  Q         |         |         |       V |
19+45       1.4738      0.22  Q         |         |         |       V |
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19+50 | 1.4750 | 0.18 | Q | \| | \| | \| | V \| |
| 19+55 | 1.4761 | 0.15 | Q | \| | \| | \| | V \| |
| 20+ 0 | 1.4771 | 0.15 | Q | \| | \| | \| | V \| |
| 20+ 5 | 1.4784 | 0.19 | Q | \| | \| | \| | V \| |
| 20+10 | 1.4799 | 0.22 | Q | \| | \| | \| | V \| |
| 20+15 | 1.4814 | 0.22 | Q | \| | \| | \| | V \| |
| 20+20 | 1.4830 | 0.22 | Q | \| | \| | \| | V \| |
| 20+25 | 1.4845 | 0.22 | Q | \| | \| | \| | V \| |
| 20+30 | 1.4861 | 0.22 | Q | \| | \| | \| | V \| |
| 20+35 | 1.4876 | 0.22 | Q | \| | \| | \| | V \| |
| 20+40 | 1.4891 | 0.22 | Q | \| | \| | \| | V \| |
| 20+45 | 1.4907 | 0.22 | Q | \| | \| | \| | V \| |
| 20+50 | 1.4919 | 0.18 | Q | \| | \| | \| | V \| |
| 20+55 | 1.4930 | 0.15 | Q | \| | \| | \| | V \| |
| 21+ 0 | 1.4940 | 0.15 | Q | \| | \| | \| | V \| |
| 21+ 5 | 1.4953 | 0.19 | Q | \| | \| | \| | V \| |
| 21+10 | 1.4968 | 0.22 | Q | \| | \| | \| | V \| |
| 21+15 | 1.4983 | 0.22 | Q | \| | \| | \| | V\| |
| 21+20 | 1.4996 | 0.18 | Q | \| | \| | \| | V\| |
| 21+25 | 1.5006 | 0.15 | Q | \| | \| | \| | V\| |
| 21+30 | 1.5017 | 0.15 | Q | \| | \| | \| | V\| |
| 21+35 | 1.5030 | 0.19 | Q | \| | \| | \| | V\| |
| 21+40 | 1.5045 | 0.22 | Q | \| | \| | \| | V\| |
| 21+45 | 1.5060 | 0.22 | Q | \| | \| | \| | V\| |
| 21+50 | 1.5073 | 0.18 | Q | \| | \| | \| | V\| |
| 21+55 | 1.5083 | 0.15 | Q | \| | \| | \| | V\| |
| 22+ 0 | 1.5094 | 0.15 | Q | \| | \| | \| | V\| |
| 22+ 5 | 1.5107 | 0.19 | Q | \| | \| | \| | V\| |
| 22+10 | 1.5122 | 0.22 | Q | \| | \| | \| | V\| |
| 22+15 | 1.5137 | 0.22 | Q | \| | \| | \| | V\| |
| 22+20 | 1.5149 | 0.18 | Q | \| | \| | \| | V\| |
| 22+25 | 1.5160 | 0.15 | Q | \| | \| | \| | V\| |
| 22+30 | 1.5170 | 0.15 | Q | \| | \| | \| | V\| |
| 22+35 | 1.5181 | 0.15 | Q | \| | \| | \| | V\| |
| 22+40 | 1.5191 | 0.15 | Q | \| | \| | \| | V\| |
| 22+45 | 1.5201 | 0.15 | Q | \| | \| | \| | V\| |
| 22+50 | 1.5211 | 0.15 | Q | \| | \| | \| | V\| |
| 22+55 | 1.5221 | 0.15 | Q | \| | \| | \| | V\| |
| 23+ 0 | 1.5232 | 0.15 | Q | \| | \| | \| | V\| |
| 23+ 5 | 1.5242 | 0.15 | Q | \| | \| | \| | V\| |
| 23+10 | 1.5252 | 0.15 | Q | \| | \| | \| | V\| |
| 23+15 | 1.5262 | 0.15 | Q | \| | \| | \| | V\| |
| 23+20 | 1.5273 | 0.15 | Q | \| | \| | \| | V\| |
| 23+25 | 1.5283 | 0.15 | Q | \| | \| | \| | V\| |
| 23+30 | 1.5293 | 0.15 | Q | \| | \| | \| | V\| |
| 23+35 | 1.5303 | 0.15 | Q | \| | \| | \| | V\| |
| 23+40 | 1.5314 | 0.15 | Q | \| | \| | \| | V\| |
| 23+45 | 1.5324 | 0.15 | Q | \| | \| | \| | V\| |
| 23+50 | 1.5334 | 0.15 | Q | \| | \| | \| | V\| |
| 23+55 | 1.5344 | 0.15 | Q | \| | \| | \| | V\| |

```
   24+ 0       1.5355      0.15  Q         |         |         |        V|
   24+ 5       1.5359      0.07  Q         |         |         |        V|
   24+10       1.5360      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 - 2008, Version 8.1
Study date 03/16/23 File: GoyaSUHPre2410.out

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

Program License Serial Number 6215

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

English Units used in output format

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GOYASUHPRE10

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Drainage Area = 14.00(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.00(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1018.00(Ft.)
Length along longest watercourse measured to centroid = 74.92(Ft.)
Length along longest watercourse = 0.193 Mi.
Length along longest watercourse measured to centroid = 0.014 Mi.
Difference in elevation = 7.94(Ft.)
Slope along watercourse = 41.1819 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.038 Hr.
Lag time = 2.26 Min.
25% of lag time = 0.57 Min.
40% of lag time = 0.91 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]
       14.00            1.87                   26.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.00            4.74                   66.36

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.870(In)
Area Averaged 100-Year Rainfall =    4.740(In)

Point rain (area averaged) =    3.051(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    3.051(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    14.000           78.00         0.100
 Total Area Entered =     14.00(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
78.0  78.0      0.268     0.100        0.244       1.000      0.244
                                                 Sum (F) =   0.244
Area averaged mean soil loss (F) (In/Hr) =  0.244
Minimum soil loss rate ((In/Hr)) =  0.122
(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        220.898         46.793             6.602
    2   0.167        441.795         41.935             5.917
    3   0.250        662.693          8.007             1.130
    4   0.333        883.590          3.264             0.461
                               Sum = 100.000   Sum=      14.109
------------------------------------------------------------------------
```

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 | 0.024 | ( 0.432) | 0.022 | 0.002 |
| 2 | 0.17 | 0.07 | 0.024 | ( 0.430) | 0.022 | 0.002 |
| 3 | 0.25 | 0.07 | 0.024 | ( 0.428) | 0.022 | 0.002 |
| 4 | 0.33 | 0.10 | 0.037 | ( 0.427) | 0.033 | 0.004 |
| 5 | 0.42 | 0.10 | 0.037 | ( 0.425) | 0.033 | 0.004 |
| 6 | 0.50 | 0.10 | 0.037 | ( 0.423) | 0.033 | 0.004 |
| 7 | 0.58 | 0.10 | 0.037 | ( 0.422) | 0.033 | 0.004 |
| 8 | 0.67 | 0.10 | 0.037 | ( 0.420) | 0.033 | 0.004 |
| 9 | 0.75 | 0.10 | 0.037 | ( 0.418) | 0.033 | 0.004 |
| 10 | 0.83 | 0.13 | 0.049 | ( 0.417) | 0.044 | 0.005 |
| 11 | 0.92 | 0.13 | 0.049 | ( 0.415) | 0.044 | 0.005 |
| 12 | 1.00 | 0.13 | 0.049 | ( 0.414) | 0.044 | 0.005 |
| 13 | 1.08 | 0.10 | 0.037 | ( 0.412) | 0.033 | 0.004 |
| 14 | 1.17 | 0.10 | 0.037 | ( 0.410) | 0.033 | 0.004 |
| 15 | 1.25 | 0.10 | 0.037 | ( 0.409) | 0.033 | 0.004 |
| 16 | 1.33 | 0.10 | 0.037 | ( 0.407) | 0.033 | 0.004 |
| 17 | 1.42 | 0.10 | 0.037 | ( 0.405) | 0.033 | 0.004 |
| 18 | 1.50 | 0.10 | 0.037 | ( 0.404) | 0.033 | 0.004 |
| 19 | 1.58 | 0.10 | 0.037 | ( 0.402) | 0.033 | 0.004 |
| 20 | 1.67 | 0.10 | 0.037 | ( 0.401) | 0.033 | 0.004 |
| 21 | 1.75 | 0.10 | 0.037 | ( 0.399) | 0.033 | 0.004 |
| 22 | 1.83 | 0.13 | 0.049 | ( 0.397) | 0.044 | 0.005 |
| 23 | 1.92 | 0.13 | 0.049 | ( 0.396) | 0.044 | 0.005 |
| 24 | 2.00 | 0.13 | 0.049 | ( 0.394) | 0.044 | 0.005 |
| 25 | 2.08 | 0.13 | 0.049 | ( 0.393) | 0.044 | 0.005 |
| 26 | 2.17 | 0.13 | 0.049 | ( 0.391) | 0.044 | 0.005 |
| 27 | 2.25 | 0.13 | 0.049 | ( 0.389) | 0.044 | 0.005 |
| 28 | 2.33 | 0.13 | 0.049 | ( 0.388) | 0.044 | 0.005 |
| 29 | 2.42 | 0.13 | 0.049 | ( 0.386) | 0.044 | 0.005 |
| 30 | 2.50 | 0.13 | 0.049 | ( 0.385) | 0.044 | 0.005 |
| 31 | 2.58 | 0.17 | 0.061 | ( 0.383) | 0.055 | 0.006 |
| 32 | 2.67 | 0.17 | 0.061 | ( 0.381) | 0.055 | 0.006 |
| 33 | 2.75 | 0.17 | 0.061 | ( 0.380) | 0.055 | 0.006 |
| 34 | 2.83 | 0.17 | 0.061 | ( 0.378) | 0.055 | 0.006 |
| 35 | 2.92 | 0.17 | 0.061 | ( 0.377) | 0.055 | 0.006 |
| 36 | 3.00 | 0.17 | 0.061 | ( 0.375) | 0.055 | 0.006 |
| 37 | 3.08 | 0.17 | 0.061 | ( 0.374) | 0.055 | 0.006 |
| 38 | 3.17 | 0.17 | 0.061 | ( 0.372) | 0.055 | 0.006 |
| 39 | 3.25 | 0.17 | 0.061 | ( 0.371) | 0.055 | 0.006 |
| 40 | 3.33 | 0.17 | 0.061 | ( 0.369) | 0.055 | 0.006 |
| 41 | 3.42 | 0.17 | 0.061 | ( 0.367) | 0.055 | 0.006 |
| 42 | 3.50 | 0.17 | 0.061 | ( 0.366) | 0.055 | 0.006 |
| 43 | 3.58 | 0.17 | 0.061 | ( 0.364) | 0.055 | 0.006 |
| 44 | 3.67 | 0.17 | 0.061 | ( 0.363) | 0.055 | 0.006 |
| 45 | 3.75 | 0.17 | 0.061 | ( 0.361) | 0.055 | 0.006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | 3.83 | 0.20 | 0.073 | ( 0.360) | 0.066 | 0.007 |
| 47 | 3.92 | 0.20 | 0.073 | ( 0.358) | 0.066 | 0.007 |
| 48 | 4.00 | 0.20 | 0.073 | ( 0.357) | 0.066 | 0.007 |
| 49 | 4.08 | 0.20 | 0.073 | ( 0.355) | 0.066 | 0.007 |
| 50 | 4.17 | 0.20 | 0.073 | ( 0.354) | 0.066 | 0.007 |
| 51 | 4.25 | 0.20 | 0.073 | ( 0.352) | 0.066 | 0.007 |
| 52 | 4.33 | 0.23 | 0.085 | ( 0.351) | 0.077 | 0.009 |
| 53 | 4.42 | 0.23 | 0.085 | ( 0.349) | 0.077 | 0.009 |
| 54 | 4.50 | 0.23 | 0.085 | ( 0.348) | 0.077 | 0.009 |
| 55 | 4.58 | 0.23 | 0.085 | ( 0.346) | 0.077 | 0.009 |
| 56 | 4.67 | 0.23 | 0.085 | ( 0.345) | 0.077 | 0.009 |
| 57 | 4.75 | 0.23 | 0.085 | ( 0.343) | 0.077 | 0.009 |
| 58 | 4.83 | 0.27 | 0.098 | ( 0.342) | 0.088 | 0.010 |
| 59 | 4.92 | 0.27 | 0.098 | ( 0.340) | 0.088 | 0.010 |
| 60 | 5.00 | 0.27 | 0.098 | ( 0.339) | 0.088 | 0.010 |
| 61 | 5.08 | 0.20 | 0.073 | ( 0.337) | 0.066 | 0.007 |
| 62 | 5.17 | 0.20 | 0.073 | ( 0.336) | 0.066 | 0.007 |
| 63 | 5.25 | 0.20 | 0.073 | ( 0.334) | 0.066 | 0.007 |
| 64 | 5.33 | 0.23 | 0.085 | ( 0.333) | 0.077 | 0.009 |
| 65 | 5.42 | 0.23 | 0.085 | ( 0.332) | 0.077 | 0.009 |
| 66 | 5.50 | 0.23 | 0.085 | ( 0.330) | 0.077 | 0.009 |
| 67 | 5.58 | 0.27 | 0.098 | ( 0.329) | 0.088 | 0.010 |
| 68 | 5.67 | 0.27 | 0.098 | ( 0.327) | 0.088 | 0.010 |
| 69 | 5.75 | 0.27 | 0.098 | ( 0.326) | 0.088 | 0.010 |
| 70 | 5.83 | 0.27 | 0.098 | ( 0.324) | 0.088 | 0.010 |
| 71 | 5.92 | 0.27 | 0.098 | ( 0.323) | 0.088 | 0.010 |
| 72 | 6.00 | 0.27 | 0.098 | ( 0.321) | 0.088 | 0.010 |
| 73 | 6.08 | 0.30 | 0.110 | ( 0.320) | 0.099 | 0.011 |
| 74 | 6.17 | 0.30 | 0.110 | ( 0.319) | 0.099 | 0.011 |
| 75 | 6.25 | 0.30 | 0.110 | ( 0.317) | 0.099 | 0.011 |
| 76 | 6.33 | 0.30 | 0.110 | ( 0.316) | 0.099 | 0.011 |
| 77 | 6.42 | 0.30 | 0.110 | ( 0.314) | 0.099 | 0.011 |
| 78 | 6.50 | 0.30 | 0.110 | ( 0.313) | 0.099 | 0.011 |
| 79 | 6.58 | 0.33 | 0.122 | ( 0.312) | 0.110 | 0.012 |
| 80 | 6.67 | 0.33 | 0.122 | ( 0.310) | 0.110 | 0.012 |
| 81 | 6.75 | 0.33 | 0.122 | ( 0.309) | 0.110 | 0.012 |
| 82 | 6.83 | 0.33 | 0.122 | ( 0.307) | 0.110 | 0.012 |
| 83 | 6.92 | 0.33 | 0.122 | ( 0.306) | 0.110 | 0.012 |
| 84 | 7.00 | 0.33 | 0.122 | ( 0.305) | 0.110 | 0.012 |
| 85 | 7.08 | 0.33 | 0.122 | ( 0.303) | 0.110 | 0.012 |
| 86 | 7.17 | 0.33 | 0.122 | ( 0.302) | 0.110 | 0.012 |
| 87 | 7.25 | 0.33 | 0.122 | ( 0.300) | 0.110 | 0.012 |
| 88 | 7.33 | 0.37 | 0.134 | ( 0.299) | 0.121 | 0.013 |
| 89 | 7.42 | 0.37 | 0.134 | ( 0.298) | 0.121 | 0.013 |
| 90 | 7.50 | 0.37 | 0.134 | ( 0.296) | 0.121 | 0.013 |
| 91 | 7.58 | 0.40 | 0.146 | ( 0.295) | 0.132 | 0.015 |
| 92 | 7.67 | 0.40 | 0.146 | ( 0.294) | 0.132 | 0.015 |
| 93 | 7.75 | 0.40 | 0.146 | ( 0.292) | 0.132 | 0.015 |
| 94 | 7.83 | 0.43 | 0.159 | ( 0.291) | 0.143 | 0.016 |
| 95 | 7.92 | 0.43 | 0.159 | ( 0.290) | 0.143 | 0.016 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 96 | 8.00 | 0.43 | 0.159 | ( 0.288) | 0.143 | 0.016 |
| 97 | 8.08 | 0.50 | 0.183 | ( 0.287) | 0.165 | 0.018 |
| 98 | 8.17 | 0.50 | 0.183 | ( 0.286) | 0.165 | 0.018 |
| 99 | 8.25 | 0.50 | 0.183 | ( 0.284) | 0.165 | 0.018 |
| 100 | 8.33 | 0.50 | 0.183 | ( 0.283) | 0.165 | 0.018 |
| 101 | 8.42 | 0.50 | 0.183 | ( 0.282) | 0.165 | 0.018 |
| 102 | 8.50 | 0.50 | 0.183 | ( 0.280) | 0.165 | 0.018 |
| 103 | 8.58 | 0.53 | 0.195 | ( 0.279) | 0.176 | 0.020 |
| 104 | 8.67 | 0.53 | 0.195 | ( 0.278) | 0.176 | 0.020 |
| 105 | 8.75 | 0.53 | 0.195 | ( 0.276) | 0.176 | 0.020 |
| 106 | 8.83 | 0.57 | 0.207 | ( 0.275) | 0.187 | 0.021 |
| 107 | 8.92 | 0.57 | 0.207 | ( 0.274) | 0.187 | 0.021 |
| 108 | 9.00 | 0.57 | 0.207 | ( 0.272) | 0.187 | 0.021 |
| 109 | 9.08 | 0.63 | 0.232 | ( 0.271) | 0.209 | 0.023 |
| 110 | 9.17 | 0.63 | 0.232 | ( 0.270) | 0.209 | 0.023 |
| 111 | 9.25 | 0.63 | 0.232 | ( 0.269) | 0.209 | 0.023 |
| 112 | 9.33 | 0.67 | 0.244 | ( 0.267) | 0.220 | 0.024 |
| 113 | 9.42 | 0.67 | 0.244 | ( 0.266) | 0.220 | 0.024 |
| 114 | 9.50 | 0.67 | 0.244 | ( 0.265) | 0.220 | 0.024 |
| 115 | 9.58 | 0.70 | 0.256 | ( 0.263) | 0.231 | 0.026 |
| 116 | 9.67 | 0.70 | 0.256 | ( 0.262) | 0.231 | 0.026 |
| 117 | 9.75 | 0.70 | 0.256 | ( 0.261) | 0.231 | 0.026 |
| 118 | 9.83 | 0.73 | 0.268 | ( 0.260) | 0.242 | 0.027 |
| 119 | 9.92 | 0.73 | 0.268 | ( 0.258) | 0.242 | 0.027 |
| 120 | 10.00 | 0.73 | 0.268 | ( 0.257) | 0.242 | 0.027 |
| 121 | 10.08 | 0.50 | 0.183 | ( 0.256) | 0.165 | 0.018 |
| 122 | 10.17 | 0.50 | 0.183 | ( 0.255) | 0.165 | 0.018 |
| 123 | 10.25 | 0.50 | 0.183 | ( 0.253) | 0.165 | 0.018 |
| 124 | 10.33 | 0.50 | 0.183 | ( 0.252) | 0.165 | 0.018 |
| 125 | 10.42 | 0.50 | 0.183 | ( 0.251) | 0.165 | 0.018 |
| 126 | 10.50 | 0.50 | 0.183 | ( 0.250) | 0.165 | 0.018 |
| 127 | 10.58 | 0.67 | 0.244 | ( 0.249) | 0.220 | 0.024 |
| 128 | 10.67 | 0.67 | 0.244 | ( 0.247) | 0.220 | 0.024 |
| 129 | 10.75 | 0.67 | 0.244 | ( 0.246) | 0.220 | 0.024 |
| 130 | 10.83 | 0.67 | 0.244 | ( 0.245) | 0.220 | 0.024 |
| 131 | 10.92 | 0.67 | 0.244 | ( 0.244) | 0.220 | 0.024 |
| 132 | 11.00 | 0.67 | 0.244 | ( 0.243) | 0.220 | 0.024 |
| 133 | 11.08 | 0.63 | 0.232 | ( 0.241) | 0.209 | 0.023 |
| 134 | 11.17 | 0.63 | 0.232 | ( 0.240) | 0.209 | 0.023 |
| 135 | 11.25 | 0.63 | 0.232 | ( 0.239) | 0.209 | 0.023 |
| 136 | 11.33 | 0.63 | 0.232 | ( 0.238) | 0.209 | 0.023 |
| 137 | 11.42 | 0.63 | 0.232 | ( 0.237) | 0.209 | 0.023 |
| 138 | 11.50 | 0.63 | 0.232 | ( 0.235) | 0.209 | 0.023 |
| 139 | 11.58 | 0.57 | 0.207 | ( 0.234) | 0.187 | 0.021 |
| 140 | 11.67 | 0.57 | 0.207 | ( 0.233) | 0.187 | 0.021 |
| 141 | 11.75 | 0.57 | 0.207 | ( 0.232) | 0.187 | 0.021 |
| 142 | 11.83 | 0.60 | 0.220 | ( 0.231) | 0.198 | 0.022 |
| 143 | 11.92 | 0.60 | 0.220 | ( 0.230) | 0.198 | 0.022 |
| 144 | 12.00 | 0.60 | 0.220 | ( 0.228) | 0.198 | 0.022 |
| 145 | 12.08 | 0.83 | 0.305 | 0.227 | ( 0.275) | 0.078 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 146 | 12.17 | 0.83 | 0.305 | 0.226 | ( 0.275) | 0.079 |
| 147 | 12.25 | 0.83 | 0.305 | 0.225 | ( 0.275) | 0.080 |
| 148 | 12.33 | 0.87 | 0.317 | 0.224 | ( 0.286) | 0.093 |
| 149 | 12.42 | 0.87 | 0.317 | 0.223 | ( 0.286) | 0.094 |
| 150 | 12.50 | 0.87 | 0.317 | 0.222 | ( 0.286) | 0.096 |
| 151 | 12.58 | 0.93 | 0.342 | 0.221 | ( 0.308) | 0.121 |
| 152 | 12.67 | 0.93 | 0.342 | 0.219 | ( 0.308) | 0.122 |
| 153 | 12.75 | 0.93 | 0.342 | 0.218 | ( 0.308) | 0.123 |
| 154 | 12.83 | 0.97 | 0.354 | 0.217 | ( 0.318) | 0.137 |
| 155 | 12.92 | 0.97 | 0.354 | 0.216 | ( 0.318) | 0.138 |
| 156 | 13.00 | 0.97 | 0.354 | 0.215 | ( 0.318) | 0.139 |
| 157 | 13.08 | 1.13 | 0.415 | 0.214 | ( 0.373) | 0.201 |
| 158 | 13.17 | 1.13 | 0.415 | 0.213 | ( 0.373) | 0.202 |
| 159 | 13.25 | 1.13 | 0.415 | 0.212 | ( 0.373) | 0.203 |
| 160 | 13.33 | 1.13 | 0.415 | 0.211 | ( 0.373) | 0.204 |
| 161 | 13.42 | 1.13 | 0.415 | 0.210 | ( 0.373) | 0.205 |
| 162 | 13.50 | 1.13 | 0.415 | 0.209 | ( 0.373) | 0.206 |
| 163 | 13.58 | 0.77 | 0.281 | 0.208 | ( 0.253) | 0.073 |
| 164 | 13.67 | 0.77 | 0.281 | 0.206 | ( 0.253) | 0.074 |
| 165 | 13.75 | 0.77 | 0.281 | 0.205 | ( 0.253) | 0.075 |
| 166 | 13.83 | 0.77 | 0.281 | 0.204 | ( 0.253) | 0.076 |
| 167 | 13.92 | 0.77 | 0.281 | 0.203 | ( 0.253) | 0.077 |
| 168 | 14.00 | 0.77 | 0.281 | 0.202 | ( 0.253) | 0.078 |
| 169 | 14.08 | 0.90 | 0.329 | 0.201 | ( 0.297) | 0.128 |
| 170 | 14.17 | 0.90 | 0.329 | 0.200 | ( 0.297) | 0.129 |
| 171 | 14.25 | 0.90 | 0.329 | 0.199 | ( 0.297) | 0.130 |
| 172 | 14.33 | 0.87 | 0.317 | 0.198 | ( 0.286) | 0.119 |
| 173 | 14.42 | 0.87 | 0.317 | 0.197 | ( 0.286) | 0.120 |
| 174 | 14.50 | 0.87 | 0.317 | 0.196 | ( 0.286) | 0.121 |
| 175 | 14.58 | 0.87 | 0.317 | 0.195 | ( 0.286) | 0.122 |
| 176 | 14.67 | 0.87 | 0.317 | 0.194 | ( 0.286) | 0.123 |
| 177 | 14.75 | 0.87 | 0.317 | 0.193 | ( 0.286) | 0.124 |
| 178 | 14.83 | 0.83 | 0.305 | 0.192 | ( 0.275) | 0.113 |
| 179 | 14.92 | 0.83 | 0.305 | 0.191 | ( 0.275) | 0.114 |
| 180 | 15.00 | 0.83 | 0.305 | 0.190 | ( 0.275) | 0.115 |
| 181 | 15.08 | 0.80 | 0.293 | 0.189 | ( 0.264) | 0.104 |
| 182 | 15.17 | 0.80 | 0.293 | 0.188 | ( 0.264) | 0.105 |
| 183 | 15.25 | 0.80 | 0.293 | 0.187 | ( 0.264) | 0.106 |
| 184 | 15.33 | 0.77 | 0.281 | 0.186 | ( 0.253) | 0.094 |
| 185 | 15.42 | 0.77 | 0.281 | 0.185 | ( 0.253) | 0.095 |
| 186 | 15.50 | 0.77 | 0.281 | 0.184 | ( 0.253) | 0.096 |
| 187 | 15.58 | 0.63 | 0.232 | 0.183 | ( 0.209) | 0.048 |
| 188 | 15.67 | 0.63 | 0.232 | 0.183 | ( 0.209) | 0.049 |
| 189 | 15.75 | 0.63 | 0.232 | 0.182 | ( 0.209) | 0.050 |
| 190 | 15.83 | 0.63 | 0.232 | 0.181 | ( 0.209) | 0.051 |
| 191 | 15.92 | 0.63 | 0.232 | 0.180 | ( 0.209) | 0.052 |
| 192 | 16.00 | 0.63 | 0.232 | 0.179 | ( 0.209) | 0.053 |
| 193 | 16.08 | 0.13 | 0.049 | ( 0.178) | 0.044 | 0.005 |
| 194 | 16.17 | 0.13 | 0.049 | ( 0.177) | 0.044 | 0.005 |
| 195 | 16.25 | 0.13 | 0.049 | ( 0.176) | 0.044 | 0.005 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 196 | 16.33 | 0.13 | 0.049 | ( 0.175) | 0.044 | 0.005 |
| 197 | 16.42 | 0.13 | 0.049 | ( 0.174) | 0.044 | 0.005 |
| 198 | 16.50 | 0.13 | 0.049 | ( 0.173) | 0.044 | 0.005 |
| 199 | 16.58 | 0.10 | 0.037 | ( 0.173) | 0.033 | 0.004 |
| 200 | 16.67 | 0.10 | 0.037 | ( 0.172) | 0.033 | 0.004 |
| 201 | 16.75 | 0.10 | 0.037 | ( 0.171) | 0.033 | 0.004 |
| 202 | 16.83 | 0.10 | 0.037 | ( 0.170) | 0.033 | 0.004 |
| 203 | 16.92 | 0.10 | 0.037 | ( 0.169) | 0.033 | 0.004 |
| 204 | 17.00 | 0.10 | 0.037 | ( 0.168) | 0.033 | 0.004 |
| 205 | 17.08 | 0.17 | 0.061 | ( 0.167) | 0.055 | 0.006 |
| 206 | 17.17 | 0.17 | 0.061 | ( 0.167) | 0.055 | 0.006 |
| 207 | 17.25 | 0.17 | 0.061 | ( 0.166) | 0.055 | 0.006 |
| 208 | 17.33 | 0.17 | 0.061 | ( 0.165) | 0.055 | 0.006 |
| 209 | 17.42 | 0.17 | 0.061 | ( 0.164) | 0.055 | 0.006 |
| 210 | 17.50 | 0.17 | 0.061 | ( 0.163) | 0.055 | 0.006 |
| 211 | 17.58 | 0.17 | 0.061 | ( 0.162) | 0.055 | 0.006 |
| 212 | 17.67 | 0.17 | 0.061 | ( 0.162) | 0.055 | 0.006 |
| 213 | 17.75 | 0.17 | 0.061 | ( 0.161) | 0.055 | 0.006 |
| 214 | 17.83 | 0.13 | 0.049 | ( 0.160) | 0.044 | 0.005 |
| 215 | 17.92 | 0.13 | 0.049 | ( 0.159) | 0.044 | 0.005 |
| 216 | 18.00 | 0.13 | 0.049 | ( 0.158) | 0.044 | 0.005 |
| 217 | 18.08 | 0.13 | 0.049 | ( 0.158) | 0.044 | 0.005 |
| 218 | 18.17 | 0.13 | 0.049 | ( 0.157) | 0.044 | 0.005 |
| 219 | 18.25 | 0.13 | 0.049 | ( 0.156) | 0.044 | 0.005 |
| 220 | 18.33 | 0.13 | 0.049 | ( 0.155) | 0.044 | 0.005 |
| 221 | 18.42 | 0.13 | 0.049 | ( 0.155) | 0.044 | 0.005 |
| 222 | 18.50 | 0.13 | 0.049 | ( 0.154) | 0.044 | 0.005 |
| 223 | 18.58 | 0.10 | 0.037 | ( 0.153) | 0.033 | 0.004 |
| 224 | 18.67 | 0.10 | 0.037 | ( 0.152) | 0.033 | 0.004 |
| 225 | 18.75 | 0.10 | 0.037 | ( 0.152) | 0.033 | 0.004 |
| 226 | 18.83 | 0.07 | 0.024 | ( 0.151) | 0.022 | 0.002 |
| 227 | 18.92 | 0.07 | 0.024 | ( 0.150) | 0.022 | 0.002 |
| 228 | 19.00 | 0.07 | 0.024 | ( 0.149) | 0.022 | 0.002 |
| 229 | 19.08 | 0.10 | 0.037 | ( 0.149) | 0.033 | 0.004 |
| 230 | 19.17 | 0.10 | 0.037 | ( 0.148) | 0.033 | 0.004 |
| 231 | 19.25 | 0.10 | 0.037 | ( 0.147) | 0.033 | 0.004 |
| 232 | 19.33 | 0.13 | 0.049 | ( 0.147) | 0.044 | 0.005 |
| 233 | 19.42 | 0.13 | 0.049 | ( 0.146) | 0.044 | 0.005 |
| 234 | 19.50 | 0.13 | 0.049 | ( 0.145) | 0.044 | 0.005 |
| 235 | 19.58 | 0.10 | 0.037 | ( 0.145) | 0.033 | 0.004 |
| 236 | 19.67 | 0.10 | 0.037 | ( 0.144) | 0.033 | 0.004 |
| 237 | 19.75 | 0.10 | 0.037 | ( 0.143) | 0.033 | 0.004 |
| 238 | 19.83 | 0.07 | 0.024 | ( 0.143) | 0.022 | 0.002 |
| 239 | 19.92 | 0.07 | 0.024 | ( 0.142) | 0.022 | 0.002 |
| 240 | 20.00 | 0.07 | 0.024 | ( 0.141) | 0.022 | 0.002 |
| 241 | 20.08 | 0.10 | 0.037 | ( 0.141) | 0.033 | 0.004 |
| 242 | 20.17 | 0.10 | 0.037 | ( 0.140) | 0.033 | 0.004 |
| 243 | 20.25 | 0.10 | 0.037 | ( 0.140) | 0.033 | 0.004 |
| 244 | 20.33 | 0.10 | 0.037 | ( 0.139) | 0.033 | 0.004 |
| 245 | 20.42 | 0.10 | 0.037 | ( 0.138) | 0.033 | 0.004 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 246 | 20.50 | 0.10 | 0.037 | ( 0.138) | 0.033 | 0.004 |
| 247 | 20.58 | 0.10 | 0.037 | ( 0.137) | 0.033 | 0.004 |
| 248 | 20.67 | 0.10 | 0.037 | ( 0.137) | 0.033 | 0.004 |
| 249 | 20.75 | 0.10 | 0.037 | ( 0.136) | 0.033 | 0.004 |
| 250 | 20.83 | 0.07 | 0.024 | ( 0.135) | 0.022 | 0.002 |
| 251 | 20.92 | 0.07 | 0.024 | ( 0.135) | 0.022 | 0.002 |
| 252 | 21.00 | 0.07 | 0.024 | ( 0.134) | 0.022 | 0.002 |
| 253 | 21.08 | 0.10 | 0.037 | ( 0.134) | 0.033 | 0.004 |
| 254 | 21.17 | 0.10 | 0.037 | ( 0.133) | 0.033 | 0.004 |
| 255 | 21.25 | 0.10 | 0.037 | ( 0.133) | 0.033 | 0.004 |
| 256 | 21.33 | 0.07 | 0.024 | ( 0.132) | 0.022 | 0.002 |
| 257 | 21.42 | 0.07 | 0.024 | ( 0.132) | 0.022 | 0.002 |
| 258 | 21.50 | 0.07 | 0.024 | ( 0.131) | 0.022 | 0.002 |
| 259 | 21.58 | 0.10 | 0.037 | ( 0.131) | 0.033 | 0.004 |
| 260 | 21.67 | 0.10 | 0.037 | ( 0.130) | 0.033 | 0.004 |
| 261 | 21.75 | 0.10 | 0.037 | ( 0.130) | 0.033 | 0.004 |
| 262 | 21.83 | 0.07 | 0.024 | ( 0.129) | 0.022 | 0.002 |
| 263 | 21.92 | 0.07 | 0.024 | ( 0.129) | 0.022 | 0.002 |
| 264 | 22.00 | 0.07 | 0.024 | ( 0.129) | 0.022 | 0.002 |
| 265 | 22.08 | 0.10 | 0.037 | ( 0.128) | 0.033 | 0.004 |
| 266 | 22.17 | 0.10 | 0.037 | ( 0.128) | 0.033 | 0.004 |
| 267 | 22.25 | 0.10 | 0.037 | ( 0.127) | 0.033 | 0.004 |
| 268 | 22.33 | 0.07 | 0.024 | ( 0.127) | 0.022 | 0.002 |
| 269 | 22.42 | 0.07 | 0.024 | ( 0.127) | 0.022 | 0.002 |
| 270 | 22.50 | 0.07 | 0.024 | ( 0.126) | 0.022 | 0.002 |
| 271 | 22.58 | 0.07 | 0.024 | ( 0.126) | 0.022 | 0.002 |
| 272 | 22.67 | 0.07 | 0.024 | ( 0.125) | 0.022 | 0.002 |
| 273 | 22.75 | 0.07 | 0.024 | ( 0.125) | 0.022 | 0.002 |
| 274 | 22.83 | 0.07 | 0.024 | ( 0.125) | 0.022 | 0.002 |
| 275 | 22.92 | 0.07 | 0.024 | ( 0.124) | 0.022 | 0.002 |
| 276 | 23.00 | 0.07 | 0.024 | ( 0.124) | 0.022 | 0.002 |
| 277 | 23.08 | 0.07 | 0.024 | ( 0.124) | 0.022 | 0.002 |
| 278 | 23.17 | 0.07 | 0.024 | ( 0.124) | 0.022 | 0.002 |
| 279 | 23.25 | 0.07 | 0.024 | ( 0.123) | 0.022 | 0.002 |
| 280 | 23.33 | 0.07 | 0.024 | ( 0.123) | 0.022 | 0.002 |
| 281 | 23.42 | 0.07 | 0.024 | ( 0.123) | 0.022 | 0.002 |
| 282 | 23.50 | 0.07 | 0.024 | ( 0.123) | 0.022 | 0.002 |
| 283 | 23.58 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |
| 284 | 23.67 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |
| 285 | 23.75 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |
| 286 | 23.83 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |
| 287 | 23.92 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |
| 288 | 24.00 | 0.07 | 0.024 | ( 0.122) | 0.022 | 0.002 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 7.5

Flood volume = Effective rainfall 0.62(In)
times area 14.0(Ac.)/[(In)/(Ft.)] = 0.7(Ac.Ft)
Total soil loss = 2.43(In)
Total soil loss = 2.830(Ac.Ft)
Total rainfall = 3.05(In)

Flood volume = 31744.3 Cubic Feet
Total soil loss = 123290.1 Cubic Feet

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Peak flow rate of this hydrograph = 2.902(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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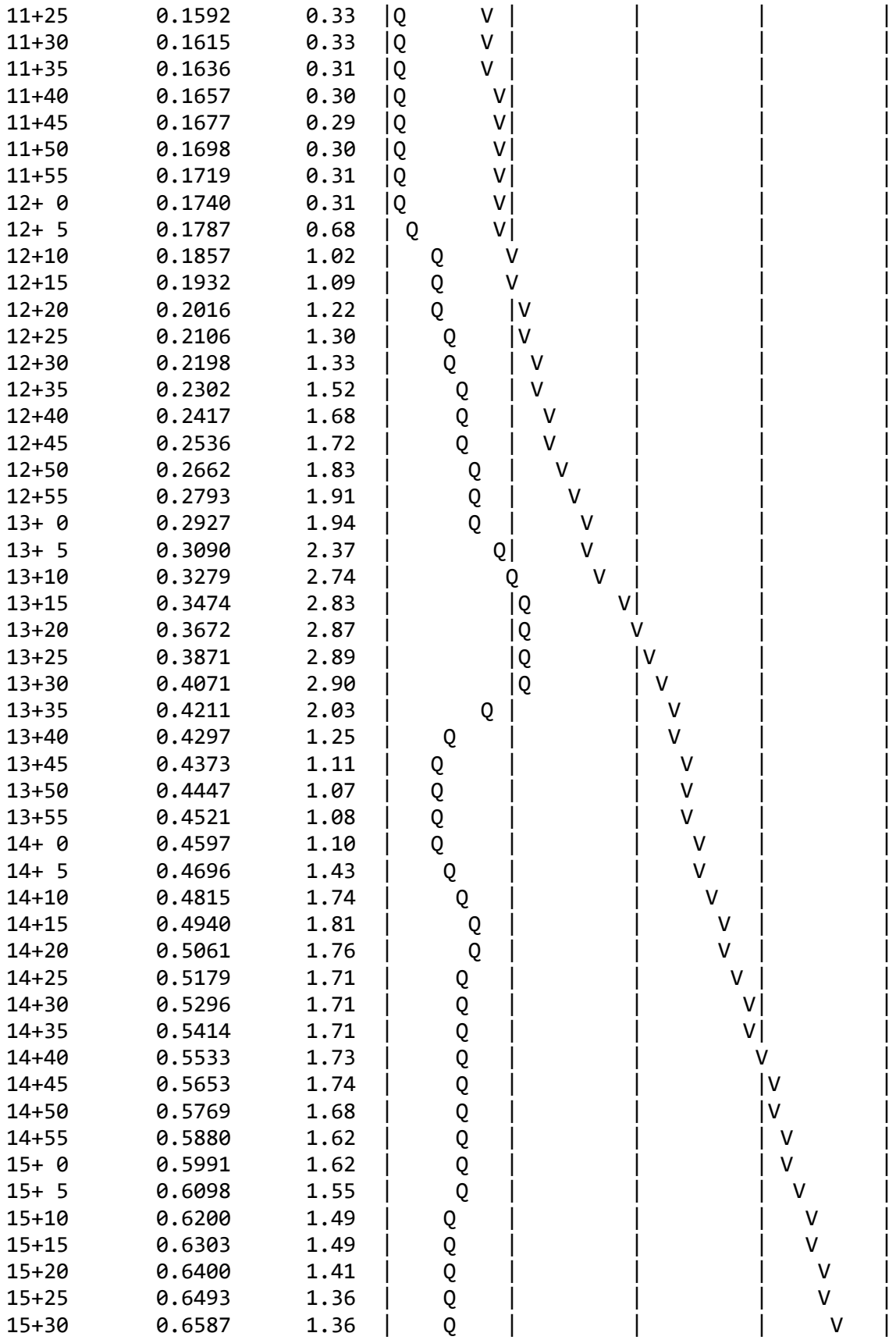
| Time(h+m) | Volume Ac.Ft | Q(CFS) | 0 | 2.5 | 5.0 | 7.5 | 10.0 |
|---|---|---|---|---|---|---|---|
| 0+ 5 | 0.0001 | 0.02 | Q | | | | |
| 0+10 | 0.0003 | 0.03 | Q | | | | |
| 0+15 | 0.0006 | 0.03 | Q | | | | |
| 0+20 | 0.0008 | 0.04 | Q | | | | |
| 0+25 | 0.0012 | 0.05 | Q | | | | |
| 0+30 | 0.0015 | 0.05 | Q | | | | |
| 0+35 | 0.0019 | 0.05 | Q | | | | |
| 0+40 | 0.0023 | 0.05 | Q | | | | |
| 0+45 | 0.0026 | 0.05 | Q | | | | |
| 0+50 | 0.0030 | 0.06 | Q | | | | |
| 0+55 | 0.0035 | 0.07 | Q | | | | |
| 1+ 0 | 0.0039 | 0.07 | Q | | | | |
| 1+ 5 | 0.0044 | 0.06 | Q | | | | |
| 1+10 | 0.0047 | 0.05 | Q | | | | |
| 1+15 | 0.0051 | 0.05 | Q | | | | |
| 1+20 | 0.0055 | 0.05 | Q | | | | |
| 1+25 | 0.0058 | 0.05 | Q | | | | |
| 1+30 | 0.0062 | 0.05 | Q | | | | |
| 1+35 | 0.0065 | 0.05 | Q | | | | |
| 1+40 | 0.0069 | 0.05 | Q | | | | |
| 1+45 | 0.0072 | 0.05 | Q | | | | |
| 1+50 | 0.0076 | 0.06 | Q | | | | |
| 1+55 | 0.0081 | 0.07 | Q | | | | |
| 2+ 0 | 0.0086 | 0.07 | Q | | | | |
| 2+ 5 | 0.0091 | 0.07 | Q | | | | |
| 2+10 | 0.0095 | 0.07 | Q | | | | |
| 2+15 | 0.0100 | 0.07 | Q | | | | |
| 2+20 | 0.0105 | 0.07 | Q | | | | |
| 2+25 | 0.0109 | 0.07 | Q | | | | |
| 2+30 | 0.0114 | 0.07 | Q | | | | |
| 2+35 | 0.0120 | 0.08 | Q | | | | |
| 2+40 | 0.0125 | 0.08 | Q | | | | |
| 2+45 | 0.0131 | 0.09 | Q | | | | |
| 2+50 | 0.0137 | 0.09 | Q | | | | |
| 2+55 | 0.0143 | 0.09 | Q | | | | |
| 3+ 0 | 0.0149 | 0.09 | Q | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+ 5 | 0.0155 | 0.09 | Q | | | | |
| 3+10 | 0.0161 | 0.09 | Q | | | | |
| 3+15 | 0.0167 | 0.09 | Q | | | | |
| 3+20 | 0.0173 | 0.09 | Q | | | | |
| 3+25 | 0.0179 | 0.09 | Q | | | | |
| 3+30 | 0.0185 | 0.09 | QV | | | | |
| 3+35 | 0.0191 | 0.09 | QV | | | | |
| 3+40 | 0.0196 | 0.09 | QV | | | | |
| 3+45 | 0.0202 | 0.09 | QV | | | | |
| 3+50 | 0.0209 | 0.09 | QV | | | | |
| 3+55 | 0.0216 | 0.10 | QV | | | | |
| 4+ 0 | 0.0223 | 0.10 | QV | | | | |
| 4+ 5 | 0.0230 | 0.10 | QV | | | | |
| 4+10 | 0.0237 | 0.10 | QV | | | | |
| 4+15 | 0.0244 | 0.10 | QV | | | | |
| 4+20 | 0.0252 | 0.11 | QV | | | | |
| 4+25 | 0.0260 | 0.12 | QV | | | | |
| 4+30 | 0.0268 | 0.12 | QV | | | | |
| 4+35 | 0.0277 | 0.12 | QV | | | | |
| 4+40 | 0.0285 | 0.12 | QV | | | | |
| 4+45 | 0.0293 | 0.12 | QV | | | | |
| 4+50 | 0.0302 | 0.13 | QV | | | | |
| 4+55 | 0.0312 | 0.14 | QV | | | | |
| 5+ 0 | 0.0321 | 0.14 | QV | | | | |
| 5+ 5 | 0.0329 | 0.12 | QV | | | | |
| 5+10 | 0.0337 | 0.11 | QV | | | | |
| 5+15 | 0.0344 | 0.10 | QV | | | | |
| 5+20 | 0.0352 | 0.11 | QV | | | | |
| 5+25 | 0.0360 | 0.12 | QV | | | | |
| 5+30 | 0.0368 | 0.12 | Q V | | | | |
| 5+35 | 0.0377 | 0.13 | Q V | | | | |
| 5+40 | 0.0386 | 0.14 | Q V | | | | |
| 5+45 | 0.0396 | 0.14 | Q V | | | | |
| 5+50 | 0.0405 | 0.14 | Q V | | | | |
| 5+55 | 0.0415 | 0.14 | Q V | | | | |
| 6+ 0 | 0.0424 | 0.14 | Q V | | | | |
| 6+ 5 | 0.0434 | 0.15 | Q V | | | | |
| 6+10 | 0.0445 | 0.15 | Q V | | | | |
| 6+15 | 0.0455 | 0.15 | Q V | | | | |
| 6+20 | 0.0466 | 0.16 | Q V | | | | |
| 6+25 | 0.0477 | 0.16 | Q V | | | | |
| 6+30 | 0.0487 | 0.16 | Q V | | | | |
| 6+35 | 0.0499 | 0.16 | Q V | | | | |
| 6+40 | 0.0510 | 0.17 | Q V | | | | |
| 6+45 | 0.0522 | 0.17 | Q V | | | | |
| 6+50 | 0.0534 | 0.17 | Q V | | | | |
| 6+55 | 0.0546 | 0.17 | Q V | | | | |
| 7+ 0 | 0.0558 | 0.17 | Q  V | | | | |
| 7+ 5 | 0.0570 | 0.17 | Q  V | | | | |
| 7+10 | 0.0582 | 0.17 | Q  V | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7+15 | 0.0593 | 0.17 | Q V | \| | \| | \| | \| |
| 7+20 | 0.0606 | 0.18 | Q V | \| | \| | \| | \| |
| 7+25 | 0.0619 | 0.19 | Q V | \| | \| | \| | \| |
| 7+30 | 0.0632 | 0.19 | Q V | \| | \| | \| | \| |
| 7+35 | 0.0645 | 0.20 | Q V | \| | \| | \| | \| |
| 7+40 | 0.0660 | 0.20 | Q V | \| | \| | \| | \| |
| 7+45 | 0.0674 | 0.21 | Q V | \| | \| | \| | \| |
| 7+50 | 0.0688 | 0.21 | Q V | \| | \| | \| | \| |
| 7+55 | 0.0704 | 0.22 | Q V | \| | \| | \| | \| |
| 8+ 0 | 0.0719 | 0.22 | Q V | \| | \| | \| | \| |
| 8+ 5 | 0.0736 | 0.24 | Q V | \| | \| | \| | \| |
| 8+10 | 0.0753 | 0.25 | \|Q V | \| | \| | \| | \| |
| 8+15 | 0.0771 | 0.26 | \|Q V | \| | \| | \| | \| |
| 8+20 | 0.0789 | 0.26 | \|Q V | \| | \| | \| | \| |
| 8+25 | 0.0807 | 0.26 | \|Q V | \| | \| | \| | \| |
| 8+30 | 0.0824 | 0.26 | \|Q V | \| | \| | \| | \| |
| 8+35 | 0.0843 | 0.27 | \|Q V | \| | \| | \| | \| |
| 8+40 | 0.0862 | 0.27 | \|Q V | \| | \| | \| | \| |
| 8+45 | 0.0880 | 0.28 | \|Q V | \| | \| | \| | \| |
| 8+50 | 0.0900 | 0.28 | \|Q V | \| | \| | \| | \| |
| 8+55 | 0.0920 | 0.29 | \|Q V | \| | \| | \| | \| |
| 9+ 0 | 0.0940 | 0.29 | \|Q V | \| | \| | \| | \| |
| 9+ 5 | 0.0961 | 0.31 | \|Q V | \| | \| | \| | \| |
| 9+10 | 0.0984 | 0.32 | \|Q V | \| | \| | \| | \| |
| 9+15 | 0.1006 | 0.33 | \|Q V | \| | \| | \| | \| |
| 9+20 | 0.1029 | 0.34 | \|Q V | \| | \| | \| | \| |
| 9+25 | 0.1053 | 0.34 | \|Q V | \| | \| | \| | \| |
| 9+30 | 0.1077 | 0.34 | \|Q V | \| | \| | \| | \| |
| 9+35 | 0.1101 | 0.35 | \|Q V | \| | \| | \| | \| |
| 9+40 | 0.1126 | 0.36 | \|Q V | \| | \| | \| | \| |
| 9+45 | 0.1151 | 0.36 | \|Q V | \| | \| | \| | \| |
| 9+50 | 0.1176 | 0.37 | \|Q V | \| | \| | \| | \| |
| 9+55 | 0.1202 | 0.38 | \|Q V | \| | \| | \| | \| |
| 10+ 0 | 0.1228 | 0.38 | \|Q V | \| | \| | \| | \| |
| 10+ 5 | 0.1250 | 0.32 | \|Q V | \| | \| | \| | \| |
| 10+10 | 0.1269 | 0.27 | \|Q V | \| | \| | \| | \| |
| 10+15 | 0.1287 | 0.26 | \|Q V | \| | \| | \| | \| |
| 10+20 | 0.1305 | 0.26 | \|Q V | \| | \| | \| | \| |
| 10+25 | 0.1323 | 0.26 | \|Q V | \| | \| | \| | \| |
| 10+30 | 0.1340 | 0.26 | \|Q V | \| | \| | \| | \| |
| 10+35 | 0.1361 | 0.30 | \|Q V | \| | \| | \| | \| |
| 10+40 | 0.1384 | 0.33 | \|Q V | \| | \| | \| | \| |
| 10+45 | 0.1408 | 0.34 | \|Q V | \| | \| | \| | \| |
| 10+50 | 0.1431 | 0.34 | \|Q V | \| | \| | \| | \| |
| 10+55 | 0.1455 | 0.34 | \|Q V | \| | \| | \| | \| |
| 11+ 0 | 0.1479 | 0.34 | \|Q V | \| | \| | \| | \| |
| 11+ 5 | 0.1502 | 0.34 | \|Q V | \| | \| | \| | \| |
| 11+10 | 0.1525 | 0.33 | \|Q V | \| | \| | \| | \| |
| 11+15 | 0.1547 | 0.33 | \|Q V | \| | \| | \| | \| |
| 11+20 | 0.1570 | 0.33 | \|Q V | \| | \| | \| | \| |



```
15+35       0.6658      1.04  |   Q     |         |         |     V   |
15+40       0.6711      0.76  |  Q      |         |         |     V   |
15+45       0.6761      0.72  | Q       |         |         |      V  |
15+50       0.6810      0.71  | Q       |         |         |      V  |
15+55       0.6860      0.73  | Q       |         |         |      V  |
16+ 0       0.6911      0.74  | Q       |         |         |      V  |
16+ 5       0.6941      0.43  |Q        |         |         |       V |
16+10       0.6951      0.15  Q         |         |         |       V |
16+15       0.6957      0.09  Q         |         |         |       V |
16+20       0.6962      0.07  Q         |         |         |       V |
16+25       0.6966      0.07  Q         |         |         |       V |
16+30       0.6971      0.07  Q         |         |         |       V |
16+35       0.6975      0.06  Q         |         |         |       V |
16+40       0.6979      0.05  Q         |         |         |       V |
16+45       0.6983      0.05  Q         |         |         |       V |
16+50       0.6986      0.05  Q         |         |         |       V |
16+55       0.6990      0.05  Q         |         |         |       V |
17+ 0       0.6993      0.05  Q         |         |         |       V |
17+ 5       0.6998      0.07  Q         |         |         |       V |
17+10       0.7004      0.08  Q         |         |         |       V |
17+15       0.7009      0.09  Q         |         |         |       V |
17+20       0.7015      0.09  Q         |         |         |       V |
17+25       0.7021      0.09  Q         |         |         |       V |
17+30       0.7027      0.09  Q         |         |         |       V |
17+35       0.7033      0.09  Q         |         |         |       V |
17+40       0.7039      0.09  Q         |         |         |       V |
17+45       0.7045      0.09  Q         |         |         |       V |
17+50       0.7050      0.08  Q         |         |         |       V |
17+55       0.7055      0.07  Q         |         |         |       V |
18+ 0       0.7060      0.07  Q         |         |         |       V |
18+ 5       0.7065      0.07  Q         |         |         |       V |
18+10       0.7070      0.07  Q         |         |         |       V |
18+15       0.7074      0.07  Q         |         |         |       V |
18+20       0.7079      0.07  Q         |         |         |       V |
18+25       0.7084      0.07  Q         |         |         |       V |
18+30       0.7089      0.07  Q         |         |         |       V |
18+35       0.7093      0.06  Q         |         |         |       V |
18+40       0.7096      0.05  Q         |         |         |       V |
18+45       0.7100      0.05  Q         |         |         |       V |
18+50       0.7103      0.04  Q         |         |         |       V |
18+55       0.7106      0.04  Q         |         |         |        V|
19+ 0       0.7108      0.04  Q         |         |         |        V|
19+ 5       0.7111      0.04  Q         |         |         |        V|
19+10       0.7114      0.05  Q         |         |         |        V|
19+15       0.7118      0.05  Q         |         |         |        V|
19+20       0.7122      0.06  Q         |         |         |        V|
19+25       0.7127      0.07  Q         |         |         |        V|
19+30       0.7131      0.07  Q         |         |         |        V|
19+35       0.7135      0.06  Q         |         |         |        V|
19+40       0.7139      0.05  Q         |         |         |        V|
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19+45 | 0.7143 | 0.05 | Q | \| | \| | \| | V\| |
| 19+50 | 0.7146 | 0.04 | Q | \| | \| | \| | V\| |
| 19+55 | 0.7148 | 0.04 | Q | \| | \| | \| | V\| |
| 20+ 0 | 0.7151 | 0.04 | Q | \| | \| | \| | V\| |
| 20+ 5 | 0.7154 | 0.04 | Q | \| | \| | \| | V\| |
| 20+10 | 0.7157 | 0.05 | Q | \| | \| | \| | V\| |
| 20+15 | 0.7161 | 0.05 | Q | \| | \| | \| | V\| |
| 20+20 | 0.7164 | 0.05 | Q | \| | \| | \| | V\| |
| 20+25 | 0.7168 | 0.05 | Q | \| | \| | \| | V\| |
| 20+30 | 0.7171 | 0.05 | Q | \| | \| | \| | V\| |
| 20+35 | 0.7175 | 0.05 | Q | \| | \| | \| | V\| |
| 20+40 | 0.7178 | 0.05 | Q | \| | \| | \| | V\| |
| 20+45 | 0.7182 | 0.05 | Q | \| | \| | \| | V\| |
| 20+50 | 0.7185 | 0.04 | Q | \| | \| | \| | V\| |
| 20+55 | 0.7187 | 0.04 | Q | \| | \| | \| | V\| |
| 21+ 0 | 0.7190 | 0.04 | Q | \| | \| | \| | V\| |
| 21+ 5 | 0.7193 | 0.04 | Q | \| | \| | \| | V\| |
| 21+10 | 0.7196 | 0.05 | Q | \| | \| | \| | V\| |
| 21+15 | 0.7200 | 0.05 | Q | \| | \| | \| | V\| |
| 21+20 | 0.7203 | 0.04 | Q | \| | \| | \| | V\| |
| 21+25 | 0.7205 | 0.04 | Q | \| | \| | \| | V\| |
| 21+30 | 0.7208 | 0.04 | Q | \| | \| | \| | V\| |
| 21+35 | 0.7211 | 0.04 | Q | \| | \| | \| | V\| |
| 21+40 | 0.7214 | 0.05 | Q | \| | \| | \| | V\| |
| 21+45 | 0.7217 | 0.05 | Q | \| | \| | \| | V\| |
| 21+50 | 0.7220 | 0.04 | Q | \| | \| | \| | V\| |
| 21+55 | 0.7223 | 0.04 | Q | \| | \| | \| | V\| |
| 22+ 0 | 0.7225 | 0.04 | Q | \| | \| | \| | V\| |
| 22+ 5 | 0.7228 | 0.04 | Q | \| | \| | \| | V\| |
| 22+10 | 0.7232 | 0.05 | Q | \| | \| | \| | V\| |
| 22+15 | 0.7235 | 0.05 | Q | \| | \| | \| | V\| |
| 22+20 | 0.7238 | 0.04 | Q | \| | \| | \| | V\| |
| 22+25 | 0.7241 | 0.04 | Q | \| | \| | \| | V\| |
| 22+30 | 0.7243 | 0.04 | Q | \| | \| | \| | V\| |
| 22+35 | 0.7246 | 0.03 | Q | \| | \| | \| | V\| |
| 22+40 | 0.7248 | 0.03 | Q | \| | \| | \| | V\| |
| 22+45 | 0.7250 | 0.03 | Q | \| | \| | \| | V\| |
| 22+50 | 0.7253 | 0.03 | Q | \| | \| | \| | V\| |
| 22+55 | 0.7255 | 0.03 | Q | \| | \| | \| | V\| |
| 23+ 0 | 0.7257 | 0.03 | Q | \| | \| | \| | V\| |
| 23+ 5 | 0.7260 | 0.03 | Q | \| | \| | \| | V\| |
| 23+10 | 0.7262 | 0.03 | Q | \| | \| | \| | V\| |
| 23+15 | 0.7265 | 0.03 | Q | \| | \| | \| | V\| |
| 23+20 | 0.7267 | 0.03 | Q | \| | \| | \| | V\| |
| 23+25 | 0.7269 | 0.03 | Q | \| | \| | \| | V\| |
| 23+30 | 0.7272 | 0.03 | Q | \| | \| | \| | V\| |
| 23+35 | 0.7274 | 0.03 | Q | \| | \| | \| | V\| |
| 23+40 | 0.7276 | 0.03 | Q | \| | \| | \| | V\| |
| 23+45 | 0.7279 | 0.03 | Q | \| | \| | \| | V\| |
| 23+50 | 0.7281 | 0.03 | Q | \| | \| | \| | V\| |

```
   23+55       0.7284      0.03  Q         |         |         |        V|
   24+ 0       0.7286      0.03  Q         |         |         |        V|
   24+ 5       0.7287      0.02  Q         |         |         |        V|
   24+10       0.7287      0.00  Q         |         |         |        V|
   24+15       0.7287      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 - 2008, Version 8.1
Study date 03/16/23 File: GoyaSUHPost2410.out

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

Program License Serial Number 6215

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

English Units used in output format

---
GOYASUHPOST10

---
Drainage Area = 13.75(Ac.) = 0.021 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 13.75(Ac.) = 0.021 Sq. Mi.
Length along longest watercourse = 1220.00(Ft.)
Length along longest watercourse measured to centroid = 146.00(Ft.)
Length along longest watercourse = 0.231 Mi.
Length along longest watercourse measured to centroid = 0.028 Mi.
Difference in elevation = 6.10(Ft.)
Slope along watercourse = 26.4000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.70 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.68 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]
       13.75            1.60                  22.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       13.75            4.00                  55.00

STORM EVENT (YEAR) =   10.00
Area Averaged 2-Year Rainfall =    1.600(In)
Area Averaged 100-Year Rainfall =    4.000(In)

Point rain (area averaged) =    2.587(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    2.587(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    13.750           56.00         0.600
 Total Area Entered =     13.75(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  56.0      0.511     0.600        0.235       1.000      0.235
                                                 Sum (F) =   0.235
Area averaged mean soil loss (F) (In/Hr) =  0.235
Minimum soil loss rate ((In/Hr)) =  0.117
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.380
------------------------------------------------------------------------

               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        294.139         56.070              7.770
    2   0.167        588.277         37.453              5.190
    3   0.250        882.416          6.476              0.897
                               Sum = 100.000   Sum=      13.857
------------------------------------------------------------------------

 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 | 0.021 | ( 0.417) | 0.008 | 0.013 |
| 2 | 0.17 | 0.07 | 0.021 | ( 0.415) | 0.008 | 0.013 |
| 3 | 0.25 | 0.07 | 0.021 | ( 0.413) | 0.008 | 0.013 |
| 4 | 0.33 | 0.10 | 0.031 | ( 0.412) | 0.012 | 0.019 |
| 5 | 0.42 | 0.10 | 0.031 | ( 0.410) | 0.012 | 0.019 |
| 6 | 0.50 | 0.10 | 0.031 | ( 0.409) | 0.012 | 0.019 |
| 7 | 0.58 | 0.10 | 0.031 | ( 0.407) | 0.012 | 0.019 |
| 8 | 0.67 | 0.10 | 0.031 | ( 0.405) | 0.012 | 0.019 |
| 9 | 0.75 | 0.10 | 0.031 | ( 0.404) | 0.012 | 0.019 |
| 10 | 0.83 | 0.13 | 0.041 | ( 0.402) | 0.016 | 0.026 |
| 11 | 0.92 | 0.13 | 0.041 | ( 0.401) | 0.016 | 0.026 |
| 12 | 1.00 | 0.13 | 0.041 | ( 0.399) | 0.016 | 0.026 |
| 13 | 1.08 | 0.10 | 0.031 | ( 0.397) | 0.012 | 0.019 |
| 14 | 1.17 | 0.10 | 0.031 | ( 0.396) | 0.012 | 0.019 |
| 15 | 1.25 | 0.10 | 0.031 | ( 0.394) | 0.012 | 0.019 |
| 16 | 1.33 | 0.10 | 0.031 | ( 0.393) | 0.012 | 0.019 |
| 17 | 1.42 | 0.10 | 0.031 | ( 0.391) | 0.012 | 0.019 |
| 18 | 1.50 | 0.10 | 0.031 | ( 0.390) | 0.012 | 0.019 |
| 19 | 1.58 | 0.10 | 0.031 | ( 0.388) | 0.012 | 0.019 |
| 20 | 1.67 | 0.10 | 0.031 | ( 0.386) | 0.012 | 0.019 |
| 21 | 1.75 | 0.10 | 0.031 | ( 0.385) | 0.012 | 0.019 |
| 22 | 1.83 | 0.13 | 0.041 | ( 0.383) | 0.016 | 0.026 |
| 23 | 1.92 | 0.13 | 0.041 | ( 0.382) | 0.016 | 0.026 |
| 24 | 2.00 | 0.13 | 0.041 | ( 0.380) | 0.016 | 0.026 |
| 25 | 2.08 | 0.13 | 0.041 | ( 0.379) | 0.016 | 0.026 |
| 26 | 2.17 | 0.13 | 0.041 | ( 0.377) | 0.016 | 0.026 |
| 27 | 2.25 | 0.13 | 0.041 | ( 0.376) | 0.016 | 0.026 |
| 28 | 2.33 | 0.13 | 0.041 | ( 0.374) | 0.016 | 0.026 |
| 29 | 2.42 | 0.13 | 0.041 | ( 0.373) | 0.016 | 0.026 |
| 30 | 2.50 | 0.13 | 0.041 | ( 0.371) | 0.016 | 0.026 |
| 31 | 2.58 | 0.17 | 0.052 | ( 0.370) | 0.020 | 0.032 |
| 32 | 2.67 | 0.17 | 0.052 | ( 0.368) | 0.020 | 0.032 |
| 33 | 2.75 | 0.17 | 0.052 | ( 0.367) | 0.020 | 0.032 |
| 34 | 2.83 | 0.17 | 0.052 | ( 0.365) | 0.020 | 0.032 |
| 35 | 2.92 | 0.17 | 0.052 | ( 0.364) | 0.020 | 0.032 |
| 36 | 3.00 | 0.17 | 0.052 | ( 0.362) | 0.020 | 0.032 |
| 37 | 3.08 | 0.17 | 0.052 | ( 0.361) | 0.020 | 0.032 |
| 38 | 3.17 | 0.17 | 0.052 | ( 0.359) | 0.020 | 0.032 |
| 39 | 3.25 | 0.17 | 0.052 | ( 0.358) | 0.020 | 0.032 |
| 40 | 3.33 | 0.17 | 0.052 | ( 0.356) | 0.020 | 0.032 |
| 41 | 3.42 | 0.17 | 0.052 | ( 0.355) | 0.020 | 0.032 |
| 42 | 3.50 | 0.17 | 0.052 | ( 0.353) | 0.020 | 0.032 |
| 43 | 3.58 | 0.17 | 0.052 | ( 0.352) | 0.020 | 0.032 |
| 44 | 3.67 | 0.17 | 0.052 | ( 0.350) | 0.020 | 0.032 |
| 45 | 3.75 | 0.17 | 0.052 | ( 0.349) | 0.020 | 0.032 |
| 46 | 3.83 | 0.20 | 0.062 | ( 0.347) | 0.024 | 0.038 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | 3.92 | 0.20 | 0.062 | ( 0.346) | 0.024 | 0.038 |
| 48 | 4.00 | 0.20 | 0.062 | ( 0.344) | 0.024 | 0.038 |
| 49 | 4.08 | 0.20 | 0.062 | ( 0.343) | 0.024 | 0.038 |
| 50 | 4.17 | 0.20 | 0.062 | ( 0.341) | 0.024 | 0.038 |
| 51 | 4.25 | 0.20 | 0.062 | ( 0.340) | 0.024 | 0.038 |
| 52 | 4.33 | 0.23 | 0.072 | ( 0.338) | 0.028 | 0.045 |
| 53 | 4.42 | 0.23 | 0.072 | ( 0.337) | 0.028 | 0.045 |
| 54 | 4.50 | 0.23 | 0.072 | ( 0.336) | 0.028 | 0.045 |
| 55 | 4.58 | 0.23 | 0.072 | ( 0.334) | 0.028 | 0.045 |
| 56 | 4.67 | 0.23 | 0.072 | ( 0.333) | 0.028 | 0.045 |
| 57 | 4.75 | 0.23 | 0.072 | ( 0.331) | 0.028 | 0.045 |
| 58 | 4.83 | 0.27 | 0.083 | ( 0.330) | 0.031 | 0.051 |
| 59 | 4.92 | 0.27 | 0.083 | ( 0.328) | 0.031 | 0.051 |
| 60 | 5.00 | 0.27 | 0.083 | ( 0.327) | 0.031 | 0.051 |
| 61 | 5.08 | 0.20 | 0.062 | ( 0.326) | 0.024 | 0.038 |
| 62 | 5.17 | 0.20 | 0.062 | ( 0.324) | 0.024 | 0.038 |
| 63 | 5.25 | 0.20 | 0.062 | ( 0.323) | 0.024 | 0.038 |
| 64 | 5.33 | 0.23 | 0.072 | ( 0.321) | 0.028 | 0.045 |
| 65 | 5.42 | 0.23 | 0.072 | ( 0.320) | 0.028 | 0.045 |
| 66 | 5.50 | 0.23 | 0.072 | ( 0.318) | 0.028 | 0.045 |
| 67 | 5.58 | 0.27 | 0.083 | ( 0.317) | 0.031 | 0.051 |
| 68 | 5.67 | 0.27 | 0.083 | ( 0.316) | 0.031 | 0.051 |
| 69 | 5.75 | 0.27 | 0.083 | ( 0.314) | 0.031 | 0.051 |
| 70 | 5.83 | 0.27 | 0.083 | ( 0.313) | 0.031 | 0.051 |
| 71 | 5.92 | 0.27 | 0.083 | ( 0.312) | 0.031 | 0.051 |
| 72 | 6.00 | 0.27 | 0.083 | ( 0.310) | 0.031 | 0.051 |
| 73 | 6.08 | 0.30 | 0.093 | ( 0.309) | 0.035 | 0.058 |
| 74 | 6.17 | 0.30 | 0.093 | ( 0.307) | 0.035 | 0.058 |
| 75 | 6.25 | 0.30 | 0.093 | ( 0.306) | 0.035 | 0.058 |
| 76 | 6.33 | 0.30 | 0.093 | ( 0.305) | 0.035 | 0.058 |
| 77 | 6.42 | 0.30 | 0.093 | ( 0.303) | 0.035 | 0.058 |
| 78 | 6.50 | 0.30 | 0.093 | ( 0.302) | 0.035 | 0.058 |
| 79 | 6.58 | 0.33 | 0.103 | ( 0.301) | 0.039 | 0.064 |
| 80 | 6.67 | 0.33 | 0.103 | ( 0.299) | 0.039 | 0.064 |
| 81 | 6.75 | 0.33 | 0.103 | ( 0.298) | 0.039 | 0.064 |
| 82 | 6.83 | 0.33 | 0.103 | ( 0.297) | 0.039 | 0.064 |
| 83 | 6.92 | 0.33 | 0.103 | ( 0.295) | 0.039 | 0.064 |
| 84 | 7.00 | 0.33 | 0.103 | ( 0.294) | 0.039 | 0.064 |
| 85 | 7.08 | 0.33 | 0.103 | ( 0.293) | 0.039 | 0.064 |
| 86 | 7.17 | 0.33 | 0.103 | ( 0.291) | 0.039 | 0.064 |
| 87 | 7.25 | 0.33 | 0.103 | ( 0.290) | 0.039 | 0.064 |
| 88 | 7.33 | 0.37 | 0.114 | ( 0.289) | 0.043 | 0.071 |
| 89 | 7.42 | 0.37 | 0.114 | ( 0.287) | 0.043 | 0.071 |
| 90 | 7.50 | 0.37 | 0.114 | ( 0.286) | 0.043 | 0.071 |
| 91 | 7.58 | 0.40 | 0.124 | ( 0.285) | 0.047 | 0.077 |
| 92 | 7.67 | 0.40 | 0.124 | ( 0.283) | 0.047 | 0.077 |
| 93 | 7.75 | 0.40 | 0.124 | ( 0.282) | 0.047 | 0.077 |
| 94 | 7.83 | 0.43 | 0.135 | ( 0.281) | 0.051 | 0.083 |
| 95 | 7.92 | 0.43 | 0.135 | ( 0.279) | 0.051 | 0.083 |
| 96 | 8.00 | 0.43 | 0.135 | ( 0.278) | 0.051 | 0.083 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 97 | 8.08 | 0.50 | 0.155 | ( 0.277) | 0.059 | 0.096 |
| 98 | 8.17 | 0.50 | 0.155 | ( 0.275) | 0.059 | 0.096 |
| 99 | 8.25 | 0.50 | 0.155 | ( 0.274) | 0.059 | 0.096 |
| 100 | 8.33 | 0.50 | 0.155 | ( 0.273) | 0.059 | 0.096 |
| 101 | 8.42 | 0.50 | 0.155 | ( 0.272) | 0.059 | 0.096 |
| 102 | 8.50 | 0.50 | 0.155 | ( 0.270) | 0.059 | 0.096 |
| 103 | 8.58 | 0.53 | 0.166 | ( 0.269) | 0.063 | 0.103 |
| 104 | 8.67 | 0.53 | 0.166 | ( 0.268) | 0.063 | 0.103 |
| 105 | 8.75 | 0.53 | 0.166 | ( 0.267) | 0.063 | 0.103 |
| 106 | 8.83 | 0.57 | 0.176 | ( 0.265) | 0.067 | 0.109 |
| 107 | 8.92 | 0.57 | 0.176 | ( 0.264) | 0.067 | 0.109 |
| 108 | 9.00 | 0.57 | 0.176 | ( 0.263) | 0.067 | 0.109 |
| 109 | 9.08 | 0.63 | 0.197 | ( 0.262) | 0.075 | 0.122 |
| 110 | 9.17 | 0.63 | 0.197 | ( 0.260) | 0.075 | 0.122 |
| 111 | 9.25 | 0.63 | 0.197 | ( 0.259) | 0.075 | 0.122 |
| 112 | 9.33 | 0.67 | 0.207 | ( 0.258) | 0.079 | 0.128 |
| 113 | 9.42 | 0.67 | 0.207 | ( 0.257) | 0.079 | 0.128 |
| 114 | 9.50 | 0.67 | 0.207 | ( 0.255) | 0.079 | 0.128 |
| 115 | 9.58 | 0.70 | 0.217 | ( 0.254) | 0.083 | 0.135 |
| 116 | 9.67 | 0.70 | 0.217 | ( 0.253) | 0.083 | 0.135 |
| 117 | 9.75 | 0.70 | 0.217 | ( 0.252) | 0.083 | 0.135 |
| 118 | 9.83 | 0.73 | 0.228 | ( 0.251) | 0.087 | 0.141 |
| 119 | 9.92 | 0.73 | 0.228 | ( 0.249) | 0.087 | 0.141 |
| 120 | 10.00 | 0.73 | 0.228 | ( 0.248) | 0.087 | 0.141 |
| 121 | 10.08 | 0.50 | 0.155 | ( 0.247) | 0.059 | 0.096 |
| 122 | 10.17 | 0.50 | 0.155 | ( 0.246) | 0.059 | 0.096 |
| 123 | 10.25 | 0.50 | 0.155 | ( 0.245) | 0.059 | 0.096 |
| 124 | 10.33 | 0.50 | 0.155 | ( 0.243) | 0.059 | 0.096 |
| 125 | 10.42 | 0.50 | 0.155 | ( 0.242) | 0.059 | 0.096 |
| 126 | 10.50 | 0.50 | 0.155 | ( 0.241) | 0.059 | 0.096 |
| 127 | 10.58 | 0.67 | 0.207 | ( 0.240) | 0.079 | 0.128 |
| 128 | 10.67 | 0.67 | 0.207 | ( 0.239) | 0.079 | 0.128 |
| 129 | 10.75 | 0.67 | 0.207 | ( 0.237) | 0.079 | 0.128 |
| 130 | 10.83 | 0.67 | 0.207 | ( 0.236) | 0.079 | 0.128 |
| 131 | 10.92 | 0.67 | 0.207 | ( 0.235) | 0.079 | 0.128 |
| 132 | 11.00 | 0.67 | 0.207 | ( 0.234) | 0.079 | 0.128 |
| 133 | 11.08 | 0.63 | 0.197 | ( 0.233) | 0.075 | 0.122 |
| 134 | 11.17 | 0.63 | 0.197 | ( 0.232) | 0.075 | 0.122 |
| 135 | 11.25 | 0.63 | 0.197 | ( 0.231) | 0.075 | 0.122 |
| 136 | 11.33 | 0.63 | 0.197 | ( 0.229) | 0.075 | 0.122 |
| 137 | 11.42 | 0.63 | 0.197 | ( 0.228) | 0.075 | 0.122 |
| 138 | 11.50 | 0.63 | 0.197 | ( 0.227) | 0.075 | 0.122 |
| 139 | 11.58 | 0.57 | 0.176 | ( 0.226) | 0.067 | 0.109 |
| 140 | 11.67 | 0.57 | 0.176 | ( 0.225) | 0.067 | 0.109 |
| 141 | 11.75 | 0.57 | 0.176 | ( 0.224) | 0.067 | 0.109 |
| 142 | 11.83 | 0.60 | 0.186 | ( 0.223) | 0.071 | 0.115 |
| 143 | 11.92 | 0.60 | 0.186 | ( 0.222) | 0.071 | 0.115 |
| 144 | 12.00 | 0.60 | 0.186 | ( 0.220) | 0.071 | 0.115 |
| 145 | 12.08 | 0.83 | 0.259 | ( 0.219) | 0.098 | 0.160 |
| 146 | 12.17 | 0.83 | 0.259 | ( 0.218) | 0.098 | 0.160 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 147 | 12.25 | 0.83 | 0.259 | ( 0.217) | 0.098 | 0.160 |
| 148 | 12.33 | 0.87 | 0.269 | ( 0.216) | 0.102 | 0.167 |
| 149 | 12.42 | 0.87 | 0.269 | ( 0.215) | 0.102 | 0.167 |
| 150 | 12.50 | 0.87 | 0.269 | ( 0.214) | 0.102 | 0.167 |
| 151 | 12.58 | 0.93 | 0.290 | ( 0.213) | 0.110 | 0.180 |
| 152 | 12.67 | 0.93 | 0.290 | ( 0.212) | 0.110 | 0.180 |
| 153 | 12.75 | 0.93 | 0.290 | ( 0.211) | 0.110 | 0.180 |
| 154 | 12.83 | 0.97 | 0.300 | ( 0.210) | 0.114 | 0.186 |
| 155 | 12.92 | 0.97 | 0.300 | ( 0.209) | 0.114 | 0.186 |
| 156 | 13.00 | 0.97 | 0.300 | ( 0.207) | 0.114 | 0.186 |
| 157 | 13.08 | 1.13 | 0.352 | ( 0.206) | 0.134 | 0.218 |
| 158 | 13.17 | 1.13 | 0.352 | ( 0.205) | 0.134 | 0.218 |
| 159 | 13.25 | 1.13 | 0.352 | ( 0.204) | 0.134 | 0.218 |
| 160 | 13.33 | 1.13 | 0.352 | ( 0.203) | 0.134 | 0.218 |
| 161 | 13.42 | 1.13 | 0.352 | ( 0.202) | 0.134 | 0.218 |
| 162 | 13.50 | 1.13 | 0.352 | ( 0.201) | 0.134 | 0.218 |
| 163 | 13.58 | 0.77 | 0.238 | ( 0.200) | 0.090 | 0.148 |
| 164 | 13.67 | 0.77 | 0.238 | ( 0.199) | 0.090 | 0.148 |
| 165 | 13.75 | 0.77 | 0.238 | ( 0.198) | 0.090 | 0.148 |
| 166 | 13.83 | 0.77 | 0.238 | ( 0.197) | 0.090 | 0.148 |
| 167 | 13.92 | 0.77 | 0.238 | ( 0.196) | 0.090 | 0.148 |
| 168 | 14.00 | 0.77 | 0.238 | ( 0.195) | 0.090 | 0.148 |
| 169 | 14.08 | 0.90 | 0.279 | ( 0.194) | 0.106 | 0.173 |
| 170 | 14.17 | 0.90 | 0.279 | ( 0.193) | 0.106 | 0.173 |
| 171 | 14.25 | 0.90 | 0.279 | ( 0.192) | 0.106 | 0.173 |
| 172 | 14.33 | 0.87 | 0.269 | ( 0.191) | 0.102 | 0.167 |
| 173 | 14.42 | 0.87 | 0.269 | ( 0.190) | 0.102 | 0.167 |
| 174 | 14.50 | 0.87 | 0.269 | ( 0.189) | 0.102 | 0.167 |
| 175 | 14.58 | 0.87 | 0.269 | ( 0.188) | 0.102 | 0.167 |
| 176 | 14.67 | 0.87 | 0.269 | ( 0.187) | 0.102 | 0.167 |
| 177 | 14.75 | 0.87 | 0.269 | ( 0.186) | 0.102 | 0.167 |
| 178 | 14.83 | 0.83 | 0.259 | ( 0.185) | 0.098 | 0.160 |
| 179 | 14.92 | 0.83 | 0.259 | ( 0.184) | 0.098 | 0.160 |
| 180 | 15.00 | 0.83 | 0.259 | ( 0.184) | 0.098 | 0.160 |
| 181 | 15.08 | 0.80 | 0.248 | ( 0.183) | 0.094 | 0.154 |
| 182 | 15.17 | 0.80 | 0.248 | ( 0.182) | 0.094 | 0.154 |
| 183 | 15.25 | 0.80 | 0.248 | ( 0.181) | 0.094 | 0.154 |
| 184 | 15.33 | 0.77 | 0.238 | ( 0.180) | 0.090 | 0.148 |
| 185 | 15.42 | 0.77 | 0.238 | ( 0.179) | 0.090 | 0.148 |
| 186 | 15.50 | 0.77 | 0.238 | ( 0.178) | 0.090 | 0.148 |
| 187 | 15.58 | 0.63 | 0.197 | ( 0.177) | 0.075 | 0.122 |
| 188 | 15.67 | 0.63 | 0.197 | ( 0.176) | 0.075 | 0.122 |
| 189 | 15.75 | 0.63 | 0.197 | ( 0.175) | 0.075 | 0.122 |
| 190 | 15.83 | 0.63 | 0.197 | ( 0.174) | 0.075 | 0.122 |
| 191 | 15.92 | 0.63 | 0.197 | ( 0.173) | 0.075 | 0.122 |
| 192 | 16.00 | 0.63 | 0.197 | ( 0.173) | 0.075 | 0.122 |
| 193 | 16.08 | 0.13 | 0.041 | ( 0.172) | 0.016 | 0.026 |
| 194 | 16.17 | 0.13 | 0.041 | ( 0.171) | 0.016 | 0.026 |
| 195 | 16.25 | 0.13 | 0.041 | ( 0.170) | 0.016 | 0.026 |
| 196 | 16.33 | 0.13 | 0.041 | ( 0.169) | 0.016 | 0.026 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 197 | 16.42 | 0.13 | 0.041 | ( 0.168) | 0.016 | 0.026 |
| 198 | 16.50 | 0.13 | 0.041 | ( 0.167) | 0.016 | 0.026 |
| 199 | 16.58 | 0.10 | 0.031 | ( 0.166) | 0.012 | 0.019 |
| 200 | 16.67 | 0.10 | 0.031 | ( 0.166) | 0.012 | 0.019 |
| 201 | 16.75 | 0.10 | 0.031 | ( 0.165) | 0.012 | 0.019 |
| 202 | 16.83 | 0.10 | 0.031 | ( 0.164) | 0.012 | 0.019 |
| 203 | 16.92 | 0.10 | 0.031 | ( 0.163) | 0.012 | 0.019 |
| 204 | 17.00 | 0.10 | 0.031 | ( 0.162) | 0.012 | 0.019 |
| 205 | 17.08 | 0.17 | 0.052 | ( 0.161) | 0.020 | 0.032 |
| 206 | 17.17 | 0.17 | 0.052 | ( 0.161) | 0.020 | 0.032 |
| 207 | 17.25 | 0.17 | 0.052 | ( 0.160) | 0.020 | 0.032 |
| 208 | 17.33 | 0.17 | 0.052 | ( 0.159) | 0.020 | 0.032 |
| 209 | 17.42 | 0.17 | 0.052 | ( 0.158) | 0.020 | 0.032 |
| 210 | 17.50 | 0.17 | 0.052 | ( 0.157) | 0.020 | 0.032 |
| 211 | 17.58 | 0.17 | 0.052 | ( 0.157) | 0.020 | 0.032 |
| 212 | 17.67 | 0.17 | 0.052 | ( 0.156) | 0.020 | 0.032 |
| 213 | 17.75 | 0.17 | 0.052 | ( 0.155) | 0.020 | 0.032 |
| 214 | 17.83 | 0.13 | 0.041 | ( 0.154) | 0.016 | 0.026 |
| 215 | 17.92 | 0.13 | 0.041 | ( 0.154) | 0.016 | 0.026 |
| 216 | 18.00 | 0.13 | 0.041 | ( 0.153) | 0.016 | 0.026 |
| 217 | 18.08 | 0.13 | 0.041 | ( 0.152) | 0.016 | 0.026 |
| 218 | 18.17 | 0.13 | 0.041 | ( 0.151) | 0.016 | 0.026 |
| 219 | 18.25 | 0.13 | 0.041 | ( 0.151) | 0.016 | 0.026 |
| 220 | 18.33 | 0.13 | 0.041 | ( 0.150) | 0.016 | 0.026 |
| 221 | 18.42 | 0.13 | 0.041 | ( 0.149) | 0.016 | 0.026 |
| 222 | 18.50 | 0.13 | 0.041 | ( 0.148) | 0.016 | 0.026 |
| 223 | 18.58 | 0.10 | 0.031 | ( 0.148) | 0.012 | 0.019 |
| 224 | 18.67 | 0.10 | 0.031 | ( 0.147) | 0.012 | 0.019 |
| 225 | 18.75 | 0.10 | 0.031 | ( 0.146) | 0.012 | 0.019 |
| 226 | 18.83 | 0.07 | 0.021 | ( 0.146) | 0.008 | 0.013 |
| 227 | 18.92 | 0.07 | 0.021 | ( 0.145) | 0.008 | 0.013 |
| 228 | 19.00 | 0.07 | 0.021 | ( 0.144) | 0.008 | 0.013 |
| 229 | 19.08 | 0.10 | 0.031 | ( 0.144) | 0.012 | 0.019 |
| 230 | 19.17 | 0.10 | 0.031 | ( 0.143) | 0.012 | 0.019 |
| 231 | 19.25 | 0.10 | 0.031 | ( 0.142) | 0.012 | 0.019 |
| 232 | 19.33 | 0.13 | 0.041 | ( 0.142) | 0.016 | 0.026 |
| 233 | 19.42 | 0.13 | 0.041 | ( 0.141) | 0.016 | 0.026 |
| 234 | 19.50 | 0.13 | 0.041 | ( 0.140) | 0.016 | 0.026 |
| 235 | 19.58 | 0.10 | 0.031 | ( 0.140) | 0.012 | 0.019 |
| 236 | 19.67 | 0.10 | 0.031 | ( 0.139) | 0.012 | 0.019 |
| 237 | 19.75 | 0.10 | 0.031 | ( 0.138) | 0.012 | 0.019 |
| 238 | 19.83 | 0.07 | 0.021 | ( 0.138) | 0.008 | 0.013 |
| 239 | 19.92 | 0.07 | 0.021 | ( 0.137) | 0.008 | 0.013 |
| 240 | 20.00 | 0.07 | 0.021 | ( 0.136) | 0.008 | 0.013 |
| 241 | 20.08 | 0.10 | 0.031 | ( 0.136) | 0.012 | 0.019 |
| 242 | 20.17 | 0.10 | 0.031 | ( 0.135) | 0.012 | 0.019 |
| 243 | 20.25 | 0.10 | 0.031 | ( 0.135) | 0.012 | 0.019 |
| 244 | 20.33 | 0.10 | 0.031 | ( 0.134) | 0.012 | 0.019 |
| 245 | 20.42 | 0.10 | 0.031 | ( 0.133) | 0.012 | 0.019 |
| 246 | 20.50 | 0.10 | 0.031 | ( 0.133) | 0.012 | 0.019 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 247 | 20.58 | 0.10 | 0.031 | ( 0.132) | 0.012 | 0.019 |
| 248 | 20.67 | 0.10 | 0.031 | ( 0.132) | 0.012 | 0.019 |
| 249 | 20.75 | 0.10 | 0.031 | ( 0.131) | 0.012 | 0.019 |
| 250 | 20.83 | 0.07 | 0.021 | ( 0.131) | 0.008 | 0.013 |
| 251 | 20.92 | 0.07 | 0.021 | ( 0.130) | 0.008 | 0.013 |
| 252 | 21.00 | 0.07 | 0.021 | ( 0.130) | 0.008 | 0.013 |
| 253 | 21.08 | 0.10 | 0.031 | ( 0.129) | 0.012 | 0.019 |
| 254 | 21.17 | 0.10 | 0.031 | ( 0.129) | 0.012 | 0.019 |
| 255 | 21.25 | 0.10 | 0.031 | ( 0.128) | 0.012 | 0.019 |
| 256 | 21.33 | 0.07 | 0.021 | ( 0.128) | 0.008 | 0.013 |
| 257 | 21.42 | 0.07 | 0.021 | ( 0.127) | 0.008 | 0.013 |
| 258 | 21.50 | 0.07 | 0.021 | ( 0.127) | 0.008 | 0.013 |
| 259 | 21.58 | 0.10 | 0.031 | ( 0.126) | 0.012 | 0.019 |
| 260 | 21.67 | 0.10 | 0.031 | ( 0.126) | 0.012 | 0.019 |
| 261 | 21.75 | 0.10 | 0.031 | ( 0.125) | 0.012 | 0.019 |
| 262 | 21.83 | 0.07 | 0.021 | ( 0.125) | 0.008 | 0.013 |
| 263 | 21.92 | 0.07 | 0.021 | ( 0.124) | 0.008 | 0.013 |
| 264 | 22.00 | 0.07 | 0.021 | ( 0.124) | 0.008 | 0.013 |
| 265 | 22.08 | 0.10 | 0.031 | ( 0.124) | 0.012 | 0.019 |
| 266 | 22.17 | 0.10 | 0.031 | ( 0.123) | 0.012 | 0.019 |
| 267 | 22.25 | 0.10 | 0.031 | ( 0.123) | 0.012 | 0.019 |
| 268 | 22.33 | 0.07 | 0.021 | ( 0.122) | 0.008 | 0.013 |
| 269 | 22.42 | 0.07 | 0.021 | ( 0.122) | 0.008 | 0.013 |
| 270 | 22.50 | 0.07 | 0.021 | ( 0.122) | 0.008 | 0.013 |
| 271 | 22.58 | 0.07 | 0.021 | ( 0.121) | 0.008 | 0.013 |
| 272 | 22.67 | 0.07 | 0.021 | ( 0.121) | 0.008 | 0.013 |
| 273 | 22.75 | 0.07 | 0.021 | ( 0.121) | 0.008 | 0.013 |
| 274 | 22.83 | 0.07 | 0.021 | ( 0.120) | 0.008 | 0.013 |
| 275 | 22.92 | 0.07 | 0.021 | ( 0.120) | 0.008 | 0.013 |
| 276 | 23.00 | 0.07 | 0.021 | ( 0.120) | 0.008 | 0.013 |
| 277 | 23.08 | 0.07 | 0.021 | ( 0.120) | 0.008 | 0.013 |
| 278 | 23.17 | 0.07 | 0.021 | ( 0.119) | 0.008 | 0.013 |
| 279 | 23.25 | 0.07 | 0.021 | ( 0.119) | 0.008 | 0.013 |
| 280 | 23.33 | 0.07 | 0.021 | ( 0.119) | 0.008 | 0.013 |
| 281 | 23.42 | 0.07 | 0.021 | ( 0.119) | 0.008 | 0.013 |
| 282 | 23.50 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 283 | 23.58 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 284 | 23.67 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 285 | 23.75 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 286 | 23.83 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 287 | 23.92 | 0.07 | 0.021 | ( 0.118) | 0.008 | 0.013 |
| 288 | 24.00 | 0.07 | 0.021 | ( 0.117) | 0.008 | 0.013 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.2

Flood volume = Effective rainfall 1.60(In)
times area 13.8(Ac.)/[(In)/(Ft.)] = 1.8(Ac.Ft)
Total soil loss = 0.98(In)
Total soil loss = 1.127(Ac.Ft)
Total rainfall = 2.59(In)
Flood volume = 80066.2 Cubic Feet

Total soil loss = 49072.9 Cubic Feet

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Peak flow rate of this hydrograph = 3.025(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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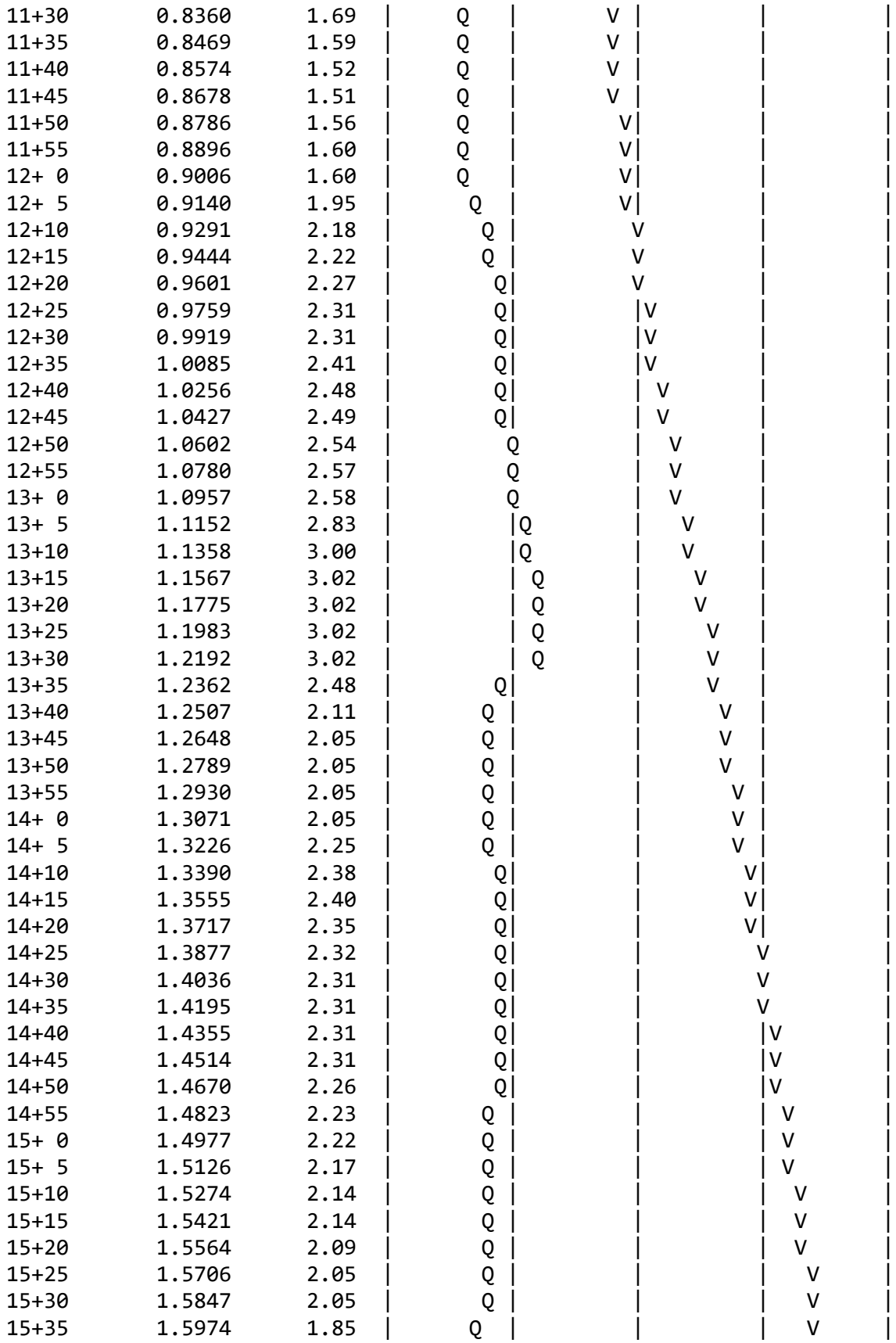
| Time(h+m) | Volume Ac.Ft | Q(CFS) | 0 | 2.5 | 5.0 | 7.5 | 10.0 |
|---|---|---|---|---|---|---|---|
| 0+ 5 | 0.0007 | 0.10 | Q | | | | |
| 0+10 | 0.0018 | 0.17 | Q | | | | |
| 0+15 | 0.0031 | 0.18 | Q | | | | |
| 0+20 | 0.0046 | 0.23 | Q | | | | |
| 0+25 | 0.0064 | 0.26 | VQ | | | | |
| 0+30 | 0.0083 | 0.27 | VQ | | | | |
| 0+35 | 0.0101 | 0.27 | VQ | | | | |
| 0+40 | 0.0119 | 0.27 | VQ | | | | |
| 0+45 | 0.0138 | 0.27 | VQ | | | | |
| 0+50 | 0.0160 | 0.32 | VQ | | | | |
| 0+55 | 0.0184 | 0.35 | VQ | | | | |
| 1+ 0 | 0.0208 | 0.36 | VQ | | | | |
| 1+ 5 | 0.0229 | 0.31 | VQ | | | | |
| 1+10 | 0.0248 | 0.27 | VQ | | | | |
| 1+15 | 0.0266 | 0.27 | VQ | | | | |
| 1+20 | 0.0285 | 0.27 | VQ | | | | |
| 1+25 | 0.0303 | 0.27 | VQ | | | | |
| 1+30 | 0.0322 | 0.27 | VQ | | | | |
| 1+35 | 0.0340 | 0.27 | VQ | | | | |
| 1+40 | 0.0358 | 0.27 | VQ | | | | |
| 1+45 | 0.0377 | 0.27 | VQ | | | | |
| 1+50 | 0.0399 | 0.32 | VQ | | | | |
| 1+55 | 0.0423 | 0.35 | VQ | | | | |
| 2+ 0 | 0.0447 | 0.36 | VQ | | | | |
| 2+ 5 | 0.0472 | 0.36 | \|Q | | | | |
| 2+10 | 0.0496 | 0.36 | \|Q | | | | |
| 2+15 | 0.0521 | 0.36 | \|Q | | | | |
| 2+20 | 0.0545 | 0.36 | \|Q | | | | |
| 2+25 | 0.0570 | 0.36 | \|Q | | | | |
| 2+30 | 0.0594 | 0.36 | \|Q | | | | |
| 2+35 | 0.0622 | 0.41 | \|Q | | | | |
| 2+40 | 0.0652 | 0.44 | \|Q | | | | |
| 2+45 | 0.0683 | 0.44 | \|Q | | | | |
| 2+50 | 0.0714 | 0.44 | \|Q | | | | |
| 2+55 | 0.0744 | 0.44 | \|Q | | | | |
| 3+ 0 | 0.0775 | 0.44 | \|Q | | | | |
| 3+ 5 | 0.0806 | 0.44 | \|Q | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+10 | 0.0836 | 0.44 | Q | | | | |
| 3+15 | 0.0867 | 0.44 | Q | | | | |
| 3+20 | 0.0897 | 0.44 | Q | | | | |
| 3+25 | 0.0928 | 0.44 | QV | | | | |
| 3+30 | 0.0959 | 0.44 | QV | | | | |
| 3+35 | 0.0989 | 0.44 | QV | | | | |
| 3+40 | 0.1020 | 0.44 | QV | | | | |
| 3+45 | 0.1051 | 0.44 | QV | | | | |
| 3+50 | 0.1085 | 0.49 | QV | | | | |
| 3+55 | 0.1121 | 0.53 | Q | | | | |
| 4+ 0 | 0.1158 | 0.53 | Q | | | | |
| 4+ 5 | 0.1195 | 0.53 | Q | | | | |
| 4+10 | 0.1231 | 0.53 | Q | | | | |
| 4+15 | 0.1268 | 0.53 | Q | | | | |
| 4+20 | 0.1308 | 0.58 | Q | | | | |
| 4+25 | 0.1351 | 0.62 | Q | | | | |
| 4+30 | 0.1394 | 0.62 | QV | | | | |
| 4+35 | 0.1437 | 0.62 | QV | | | | |
| 4+40 | 0.1479 | 0.62 | QV | | | | |
| 4+45 | 0.1522 | 0.62 | QV | | | | |
| 4+50 | 0.1569 | 0.67 | QV | | | | |
| 4+55 | 0.1617 | 0.71 | QV | | | | |
| 5+ 0 | 0.1666 | 0.71 | QV | | | | |
| 5+ 5 | 0.1708 | 0.61 | QV | | | | |
| 5+10 | 0.1746 | 0.55 | QV | | | | |
| 5+15 | 0.1783 | 0.53 | QV | | | | |
| 5+20 | 0.1823 | 0.58 | QV | | | | |
| 5+25 | 0.1865 | 0.62 | Q V | | | | |
| 5+30 | 0.1908 | 0.62 | Q V | | | | |
| 5+35 | 0.1955 | 0.67 | Q V | | | | |
| 5+40 | 0.2003 | 0.71 | Q V | | | | |
| 5+45 | 0.2052 | 0.71 | Q V | | | | |
| 5+50 | 0.2101 | 0.71 | Q V | | | | |
| 5+55 | 0.2150 | 0.71 | Q V | | | | |
| 6+ 0 | 0.2199 | 0.71 | Q V | | | | |
| 6+ 5 | 0.2252 | 0.76 | QV | | | | |
| 6+10 | 0.2307 | 0.79 | Q V | | | | |
| 6+15 | 0.2362 | 0.80 | Q V | | | | |
| 6+20 | 0.2417 | 0.80 | Q V | | | | |
| 6+25 | 0.2472 | 0.80 | Q V | | | | |
| 6+30 | 0.2527 | 0.80 | Q V | | | | |
| 6+35 | 0.2586 | 0.85 | Q V | | | | |
| 6+40 | 0.2647 | 0.88 | Q V | | | | |
| 6+45 | 0.2708 | 0.89 | Q V | | | | |
| 6+50 | 0.2769 | 0.89 | Q V | | | | |
| 6+55 | 0.2830 | 0.89 | Q V | | | | |
| 7+ 0 | 0.2892 | 0.89 | Q V | | | | |
| 7+ 5 | 0.2953 | 0.89 | Q V | | | | |
| 7+10 | 0.3014 | 0.89 | Q V | | | | |
| 7+15 | 0.3075 | 0.89 | Q V | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7+20 | 0.3140 | 0.94 | Q V | | | |
| 7+25 | 0.3207 | 0.97 | Q V | | | |
| 7+30 | 0.3275 | 0.98 | Q V | | | |
| 7+35 | 0.3345 | 1.03 | Q V | | | |
| 7+40 | 0.3419 | 1.06 | Q V | | | |
| 7+45 | 0.3492 | 1.07 | Q V | | | |
| 7+50 | 0.3569 | 1.12 | Q V | | | |
| 7+55 | 0.3648 | 1.15 | Q V | | | |
| 8+ 0 | 0.3728 | 1.16 | Q V | | | |
| 8+ 5 | 0.3814 | 1.26 | Q V | | | |
| 8+10 | 0.3906 | 1.32 | Q V | | | |
| 8+15 | 0.3997 | 1.33 | Q V | | | |
| 8+20 | 0.4089 | 1.33 | Q V | | | |
| 8+25 | 0.4181 | 1.33 | Q V | | | |
| 8+30 | 0.4273 | 1.33 | Q V | | | |
| 8+35 | 0.4368 | 1.38 | Q V | | | |
| 8+40 | 0.4466 | 1.42 | Q V | | | |
| 8+45 | 0.4564 | 1.42 | Q V | | | |
| 8+50 | 0.4666 | 1.47 | Q V | | | |
| 8+55 | 0.4769 | 1.51 | Q V | | | |
| 9+ 0 | 0.4874 | 1.51 | Q V | | | |
| 9+ 5 | 0.4985 | 1.61 | Q V | | | |
| 9+10 | 0.5100 | 1.68 | Q V | | | |
| 9+15 | 0.5217 | 1.69 | Q V | | | |
| 9+20 | 0.5336 | 1.74 | Q V | | | |
| 9+25 | 0.5459 | 1.77 | Q V | | | |
| 9+30 | 0.5581 | 1.78 | Q V | | | |
| 9+35 | 0.5707 | 1.83 | Q V | | | |
| 9+40 | 0.5835 | 1.86 | Q V | | | |
| 9+45 | 0.5964 | 1.87 | Q V | | | |
| 9+50 | 0.6096 | 1.92 | Q V | | | |
| 9+55 | 0.6231 | 1.95 | Q V | | | |
| 10+ 0 | 0.6365 | 1.96 | Q V | | | |
| 10+ 5 | 0.6476 | 1.61 | Q V | | | |
| 10+10 | 0.6571 | 1.37 | Q V | | | |
| 10+15 | 0.6663 | 1.33 | Q V | | | |
| 10+20 | 0.6755 | 1.33 | Q V | | | |
| 10+25 | 0.6846 | 1.33 | Q V | | | |
| 10+30 | 0.6938 | 1.33 | Q V | | | |
| 10+35 | 0.7047 | 1.58 | Q V | | | |
| 10+40 | 0.7168 | 1.75 | Q V | | | |
| 10+45 | 0.7291 | 1.78 | Q V | | | |
| 10+50 | 0.7413 | 1.78 | Q V | | | |
| 10+55 | 0.7536 | 1.78 | Q V | | | |
| 11+ 0 | 0.7658 | 1.78 | Q V | | | |
| 11+ 5 | 0.7777 | 1.73 | Q V | | | |
| 11+10 | 0.7894 | 1.70 | Q V | | | |
| 11+15 | 0.8010 | 1.69 | Q V | | | |
| 11+20 | 0.8127 | 1.69 | Q V | | | |
| 11+25 | 0.8243 | 1.69 | Q V | | | |



```
15+40       1.6092      1.71  |     Q   |         |         |    V    |
15+45       1.6208      1.69  |     Q   |         |         |    V    |
15+50       1.6325      1.69  |     Q   |         |         |    V    |
15+55       1.6441      1.69  |     Q   |         |         |    V    |
16+ 0       1.6557      1.69  |     Q   |         |         |     V   |
16+ 5       1.6622      0.94  |  Q      |         |         |     V   |
16+10       1.6653      0.44  |Q        |         |         |     V   |
16+15       1.6677      0.36  |Q        |         |         |     V   |
16+20       1.6702      0.36  |Q        |         |         |     V   |
16+25       1.6726      0.36  |Q        |         |         |     V   |
16+30       1.6751      0.36  |Q        |         |         |     V   |
16+35       1.6772      0.31  |Q        |         |         |     V   |
16+40       1.6791      0.27  |Q        |         |         |     V   |
16+45       1.6809      0.27  |Q        |         |         |     V   |
16+50       1.6827      0.27  |Q        |         |         |     V   |
16+55       1.6846      0.27  |Q        |         |         |     V   |
17+ 0       1.6864      0.27  |Q        |         |         |     V   |
17+ 5       1.6889      0.37  |Q        |         |         |     V   |
17+10       1.6919      0.43  |Q        |         |         |     V   |
17+15       1.6950      0.44  |Q        |         |         |     V   |
17+20       1.6981      0.44  |Q        |         |         |     V   |
17+25       1.7011      0.44  |Q        |         |         |      V  |
17+30       1.7042      0.44  |Q        |         |         |      V  |
17+35       1.7072      0.44  |Q        |         |         |      V  |
17+40       1.7103      0.44  |Q        |         |         |      V  |
17+45       1.7134      0.44  |Q        |         |         |      V  |
17+50       1.7161      0.39  |Q        |         |         |      V  |
17+55       1.7186      0.36  |Q        |         |         |      V  |
18+ 0       1.7210      0.36  |Q        |         |         |      V  |
18+ 5       1.7235      0.36  |Q        |         |         |      V  |
18+10       1.7259      0.36  |Q        |         |         |      V  |
18+15       1.7284      0.36  |Q        |         |         |      V  |
18+20       1.7308      0.36  |Q        |         |         |      V  |
18+25       1.7333      0.36  |Q        |         |         |      V  |
18+30       1.7357      0.36  |Q        |         |         |      V  |
18+35       1.7378      0.31  |Q        |         |         |      V  |
18+40       1.7397      0.27  |Q        |         |         |      V  |
18+45       1.7416      0.27  |Q        |         |         |      V  |
18+50       1.7431      0.22  Q         |         |         |      V  |
18+55       1.7443      0.18  Q         |         |         |      V  |
19+ 0       1.7455      0.18  Q         |         |         |      V  |
19+ 5       1.7471      0.23  Q         |         |         |       V |
19+10       1.7489      0.26  |Q        |         |         |       V |
19+15       1.7508      0.27  |Q        |         |         |       V |
19+20       1.7529      0.32  |Q        |         |         |       V |
19+25       1.7553      0.35  |Q        |         |         |       V |
19+30       1.7578      0.36  |Q        |         |         |       V |
19+35       1.7599      0.31  |Q        |         |         |       V |
19+40       1.7618      0.27  |Q        |         |         |       V |
19+45       1.7636      0.27  |Q        |         |         |       V |
```

```
19+50       1.7651      0.22  Q         |         |         |        V |
19+55       1.7664      0.18  Q         |         |         |        V |
20+ 0       1.7676      0.18  Q         |         |         |        V |
20+ 5       1.7692      0.23  Q         |         |         |        V |
20+10       1.7710      0.26  |Q        |         |         |        V |
20+15       1.7728      0.27  |Q        |         |         |        V |
20+20       1.7746      0.27  |Q        |         |         |        V |
20+25       1.7765      0.27  |Q        |         |         |        V |
20+30       1.7783      0.27  |Q        |         |         |        V |
20+35       1.7802      0.27  |Q        |         |         |        V |
20+40       1.7820      0.27  |Q        |         |         |        V |
20+45       1.7838      0.27  |Q        |         |         |        V |
20+50       1.7853      0.22  Q         |         |         |        V |
20+55       1.7866      0.18  Q         |         |         |        V |
21+ 0       1.7878      0.18  Q         |         |         |        V |
21+ 5       1.7894      0.23  Q         |         |         |        V |
21+10       1.7912      0.26  |Q        |         |         |        V |
21+15       1.7930      0.27  |Q        |         |         |         V|
21+20       1.7945      0.22  Q         |         |         |         V|
21+25       1.7958      0.18  Q         |         |         |         V|
21+30       1.7970      0.18  Q         |         |         |         V|
21+35       1.7986      0.23  Q         |         |         |         V|
21+40       1.8004      0.26  |Q        |         |         |         V|
21+45       1.8022      0.27  |Q        |         |         |         V|
21+50       1.8037      0.22  Q         |         |         |         V|
21+55       1.8050      0.18  Q         |         |         |         V|
22+ 0       1.8062      0.18  Q         |         |         |         V|
22+ 5       1.8078      0.23  Q         |         |         |         V|
22+10       1.8096      0.26  |Q        |         |         |         V|
22+15       1.8114      0.27  |Q        |         |         |         V|
22+20       1.8129      0.22  Q         |         |         |         V|
22+25       1.8142      0.18  Q         |         |         |         V|
22+30       1.8154      0.18  Q         |         |         |         V|
22+35       1.8166      0.18  Q         |         |         |         V|
22+40       1.8178      0.18  Q         |         |         |         V|
22+45       1.8191      0.18  Q         |         |         |         V|
22+50       1.8203      0.18  Q         |         |         |         V|
22+55       1.8215      0.18  Q         |         |         |         V|
23+ 0       1.8227      0.18  Q         |         |         |         V|
23+ 5       1.8240      0.18  Q         |         |         |         V|
23+10       1.8252      0.18  Q         |         |         |         V|
23+15       1.8264      0.18  Q         |         |         |         V|
23+20       1.8276      0.18  Q         |         |         |         V|
23+25       1.8289      0.18  Q         |         |         |         V|
23+30       1.8301      0.18  Q         |         |         |         V|
23+35       1.8313      0.18  Q         |         |         |         V|
23+40       1.8325      0.18  Q         |         |         |         V|
23+45       1.8338      0.18  Q         |         |         |         V|
23+50       1.8350      0.18  Q         |         |         |         V|
23+55       1.8362      0.18  Q         |         |         |         V|
```

```
   24+ 0       1.8375      0.18  Q         |         |         |        V|
   24+ 5       1.8380      0.08  Q         |         |         |        V|
   24+10       1.8381      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 - 2008, Version 8.1
Study date 01/05/23 File: GoyaSUHPre24100.out

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

Program License Serial Number 6215

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

English Units used in output format

---
GoyaSUHPre24100

---
Drainage Area = 14.00(Ac.) = 0.022 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 14.00(Ac.) = 0.022 Sq. Mi.
Length along longest watercourse = 1018.00(Ft.)
Length along longest watercourse measured to centroid = 74.92(Ft.)
Length along longest watercourse = 0.193 Mi.
Length along longest watercourse measured to centroid = 0.014 Mi.
Difference in elevation = 7.94(Ft.)
Slope along watercourse = 41.1819 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.038 Hr.
Lag time = 2.26 Min.
25% of lag time = 0.57 Min.
40% of lag time = 0.91 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]
       14.00            1.87                   26.18

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       14.00            4.74                   66.36

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.870(In)
Area Averaged 100-Year Rainfall =    4.740(In)

Point rain (area averaged) =    4.740(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.740(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    14.000           78.00         0.100
 Total Area Entered =     14.00(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
78.0  78.0      0.268     0.100        0.244       1.000      0.244
                                                 Sum (F) =   0.244
Area averaged mean soil loss (F) (In/Hr) =  0.244
Minimum soil loss rate ((In/Hr)) =  0.122
(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        220.898         46.793              6.602
    2   0.167        441.795         41.935              5.917
    3   0.250        662.693          8.007              1.130
    4   0.333        883.590          3.264              0.461
                               Sum = 100.000   Sum=      14.109
------------------------------------------------------------------------
```

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 | 0.038 | ( 0.432) | 0.034 | 0.004 |
| 2 | 0.17 | 0.07 | 0.038 | ( 0.430) | 0.034 | 0.004 |
| 3 | 0.25 | 0.07 | 0.038 | ( 0.428) | 0.034 | 0.004 |
| 4 | 0.33 | 0.10 | 0.057 | ( 0.427) | 0.051 | 0.006 |
| 5 | 0.42 | 0.10 | 0.057 | ( 0.425) | 0.051 | 0.006 |
| 6 | 0.50 | 0.10 | 0.057 | ( 0.423) | 0.051 | 0.006 |
| 7 | 0.58 | 0.10 | 0.057 | ( 0.422) | 0.051 | 0.006 |
| 8 | 0.67 | 0.10 | 0.057 | ( 0.420) | 0.051 | 0.006 |
| 9 | 0.75 | 0.10 | 0.057 | ( 0.418) | 0.051 | 0.006 |
| 10 | 0.83 | 0.13 | 0.076 | ( 0.417) | 0.068 | 0.008 |
| 11 | 0.92 | 0.13 | 0.076 | ( 0.415) | 0.068 | 0.008 |
| 12 | 1.00 | 0.13 | 0.076 | ( 0.414) | 0.068 | 0.008 |
| 13 | 1.08 | 0.10 | 0.057 | ( 0.412) | 0.051 | 0.006 |
| 14 | 1.17 | 0.10 | 0.057 | ( 0.410) | 0.051 | 0.006 |
| 15 | 1.25 | 0.10 | 0.057 | ( 0.409) | 0.051 | 0.006 |
| 16 | 1.33 | 0.10 | 0.057 | ( 0.407) | 0.051 | 0.006 |
| 17 | 1.42 | 0.10 | 0.057 | ( 0.405) | 0.051 | 0.006 |
| 18 | 1.50 | 0.10 | 0.057 | ( 0.404) | 0.051 | 0.006 |
| 19 | 1.58 | 0.10 | 0.057 | ( 0.402) | 0.051 | 0.006 |
| 20 | 1.67 | 0.10 | 0.057 | ( 0.401) | 0.051 | 0.006 |
| 21 | 1.75 | 0.10 | 0.057 | ( 0.399) | 0.051 | 0.006 |
| 22 | 1.83 | 0.13 | 0.076 | ( 0.397) | 0.068 | 0.008 |
| 23 | 1.92 | 0.13 | 0.076 | ( 0.396) | 0.068 | 0.008 |
| 24 | 2.00 | 0.13 | 0.076 | ( 0.394) | 0.068 | 0.008 |
| 25 | 2.08 | 0.13 | 0.076 | ( 0.393) | 0.068 | 0.008 |
| 26 | 2.17 | 0.13 | 0.076 | ( 0.391) | 0.068 | 0.008 |
| 27 | 2.25 | 0.13 | 0.076 | ( 0.389) | 0.068 | 0.008 |
| 28 | 2.33 | 0.13 | 0.076 | ( 0.388) | 0.068 | 0.008 |
| 29 | 2.42 | 0.13 | 0.076 | ( 0.386) | 0.068 | 0.008 |
| 30 | 2.50 | 0.13 | 0.076 | ( 0.385) | 0.068 | 0.008 |
| 31 | 2.58 | 0.17 | 0.095 | ( 0.383) | 0.085 | 0.009 |
| 32 | 2.67 | 0.17 | 0.095 | ( 0.381) | 0.085 | 0.009 |
| 33 | 2.75 | 0.17 | 0.095 | ( 0.380) | 0.085 | 0.009 |
| 34 | 2.83 | 0.17 | 0.095 | ( 0.378) | 0.085 | 0.009 |
| 35 | 2.92 | 0.17 | 0.095 | ( 0.377) | 0.085 | 0.009 |
| 36 | 3.00 | 0.17 | 0.095 | ( 0.375) | 0.085 | 0.009 |
| 37 | 3.08 | 0.17 | 0.095 | ( 0.374) | 0.085 | 0.009 |
| 38 | 3.17 | 0.17 | 0.095 | ( 0.372) | 0.085 | 0.009 |
| 39 | 3.25 | 0.17 | 0.095 | ( 0.371) | 0.085 | 0.009 |
| 40 | 3.33 | 0.17 | 0.095 | ( 0.369) | 0.085 | 0.009 |
| 41 | 3.42 | 0.17 | 0.095 | ( 0.367) | 0.085 | 0.009 |
| 42 | 3.50 | 0.17 | 0.095 | ( 0.366) | 0.085 | 0.009 |
| 43 | 3.58 | 0.17 | 0.095 | ( 0.364) | 0.085 | 0.009 |
| 44 | 3.67 | 0.17 | 0.095 | ( 0.363) | 0.085 | 0.009 |
| 45 | 3.75 | 0.17 | 0.095 | ( 0.361) | 0.085 | 0.009 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | 3.83 | 0.20 | 0.114 | ( 0.360) | 0.102 | 0.011 |
| 47 | 3.92 | 0.20 | 0.114 | ( 0.358) | 0.102 | 0.011 |
| 48 | 4.00 | 0.20 | 0.114 | ( 0.357) | 0.102 | 0.011 |
| 49 | 4.08 | 0.20 | 0.114 | ( 0.355) | 0.102 | 0.011 |
| 50 | 4.17 | 0.20 | 0.114 | ( 0.354) | 0.102 | 0.011 |
| 51 | 4.25 | 0.20 | 0.114 | ( 0.352) | 0.102 | 0.011 |
| 52 | 4.33 | 0.23 | 0.133 | ( 0.351) | 0.119 | 0.013 |
| 53 | 4.42 | 0.23 | 0.133 | ( 0.349) | 0.119 | 0.013 |
| 54 | 4.50 | 0.23 | 0.133 | ( 0.348) | 0.119 | 0.013 |
| 55 | 4.58 | 0.23 | 0.133 | ( 0.346) | 0.119 | 0.013 |
| 56 | 4.67 | 0.23 | 0.133 | ( 0.345) | 0.119 | 0.013 |
| 57 | 4.75 | 0.23 | 0.133 | ( 0.343) | 0.119 | 0.013 |
| 58 | 4.83 | 0.27 | 0.152 | ( 0.342) | 0.137 | 0.015 |
| 59 | 4.92 | 0.27 | 0.152 | ( 0.340) | 0.137 | 0.015 |
| 60 | 5.00 | 0.27 | 0.152 | ( 0.339) | 0.137 | 0.015 |
| 61 | 5.08 | 0.20 | 0.114 | ( 0.337) | 0.102 | 0.011 |
| 62 | 5.17 | 0.20 | 0.114 | ( 0.336) | 0.102 | 0.011 |
| 63 | 5.25 | 0.20 | 0.114 | ( 0.334) | 0.102 | 0.011 |
| 64 | 5.33 | 0.23 | 0.133 | ( 0.333) | 0.119 | 0.013 |
| 65 | 5.42 | 0.23 | 0.133 | ( 0.332) | 0.119 | 0.013 |
| 66 | 5.50 | 0.23 | 0.133 | ( 0.330) | 0.119 | 0.013 |
| 67 | 5.58 | 0.27 | 0.152 | ( 0.329) | 0.137 | 0.015 |
| 68 | 5.67 | 0.27 | 0.152 | ( 0.327) | 0.137 | 0.015 |
| 69 | 5.75 | 0.27 | 0.152 | ( 0.326) | 0.137 | 0.015 |
| 70 | 5.83 | 0.27 | 0.152 | ( 0.324) | 0.137 | 0.015 |
| 71 | 5.92 | 0.27 | 0.152 | ( 0.323) | 0.137 | 0.015 |
| 72 | 6.00 | 0.27 | 0.152 | ( 0.321) | 0.137 | 0.015 |
| 73 | 6.08 | 0.30 | 0.171 | ( 0.320) | 0.154 | 0.017 |
| 74 | 6.17 | 0.30 | 0.171 | ( 0.319) | 0.154 | 0.017 |
| 75 | 6.25 | 0.30 | 0.171 | ( 0.317) | 0.154 | 0.017 |
| 76 | 6.33 | 0.30 | 0.171 | ( 0.316) | 0.154 | 0.017 |
| 77 | 6.42 | 0.30 | 0.171 | ( 0.314) | 0.154 | 0.017 |
| 78 | 6.50 | 0.30 | 0.171 | ( 0.313) | 0.154 | 0.017 |
| 79 | 6.58 | 0.33 | 0.190 | ( 0.312) | 0.171 | 0.019 |
| 80 | 6.67 | 0.33 | 0.190 | ( 0.310) | 0.171 | 0.019 |
| 81 | 6.75 | 0.33 | 0.190 | ( 0.309) | 0.171 | 0.019 |
| 82 | 6.83 | 0.33 | 0.190 | ( 0.307) | 0.171 | 0.019 |
| 83 | 6.92 | 0.33 | 0.190 | ( 0.306) | 0.171 | 0.019 |
| 84 | 7.00 | 0.33 | 0.190 | ( 0.305) | 0.171 | 0.019 |
| 85 | 7.08 | 0.33 | 0.190 | ( 0.303) | 0.171 | 0.019 |
| 86 | 7.17 | 0.33 | 0.190 | ( 0.302) | 0.171 | 0.019 |
| 87 | 7.25 | 0.33 | 0.190 | ( 0.300) | 0.171 | 0.019 |
| 88 | 7.33 | 0.37 | 0.209 | ( 0.299) | 0.188 | 0.021 |
| 89 | 7.42 | 0.37 | 0.209 | ( 0.298) | 0.188 | 0.021 |
| 90 | 7.50 | 0.37 | 0.209 | ( 0.296) | 0.188 | 0.021 |
| 91 | 7.58 | 0.40 | 0.228 | ( 0.295) | 0.205 | 0.023 |
| 92 | 7.67 | 0.40 | 0.228 | ( 0.294) | 0.205 | 0.023 |
| 93 | 7.75 | 0.40 | 0.228 | ( 0.292) | 0.205 | 0.023 |
| 94 | 7.83 | 0.43 | 0.246 | ( 0.291) | 0.222 | 0.025 |
| 95 | 7.92 | 0.43 | 0.246 | ( 0.290) | 0.222 | 0.025 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 96 | 8.00 | 0.43 | 0.246 | ( | 0.288) | 0.222 | | 0.025 |
| 97 | 8.08 | 0.50 | 0.284 | ( | 0.287) | 0.256 | | 0.028 |
| 98 | 8.17 | 0.50 | 0.284 | ( | 0.286) | 0.256 | | 0.028 |
| 99 | 8.25 | 0.50 | 0.284 | ( | 0.284) | 0.256 | | 0.028 |
| 100 | 8.33 | 0.50 | 0.284 | ( | 0.283) | 0.256 | | 0.028 |
| 101 | 8.42 | 0.50 | 0.284 | ( | 0.282) | 0.256 | | 0.028 |
| 102 | 8.50 | 0.50 | 0.284 | ( | 0.280) | 0.256 | | 0.028 |
| 103 | 8.58 | 0.53 | 0.303 | ( | 0.279) | 0.273 | | 0.030 |
| 104 | 8.67 | 0.53 | 0.303 | ( | 0.278) | 0.273 | | 0.030 |
| 105 | 8.75 | 0.53 | 0.303 | ( | 0.276) | 0.273 | | 0.030 |
| 106 | 8.83 | 0.57 | 0.322 | | 0.275 | ( | 0.290) | 0.047 |
| 107 | 8.92 | 0.57 | 0.322 | | 0.274 | ( | 0.290) | 0.049 |
| 108 | 9.00 | 0.57 | 0.322 | | 0.272 | ( | 0.290) | 0.050 |
| 109 | 9.08 | 0.63 | 0.360 | | 0.271 | ( | 0.324) | 0.089 |
| 110 | 9.17 | 0.63 | 0.360 | | 0.270 | ( | 0.324) | 0.090 |
| 111 | 9.25 | 0.63 | 0.360 | | 0.269 | ( | 0.324) | 0.092 |
| 112 | 9.33 | 0.67 | 0.379 | | 0.267 | ( | 0.341) | 0.112 |
| 113 | 9.42 | 0.67 | 0.379 | | 0.266 | ( | 0.341) | 0.113 |
| 114 | 9.50 | 0.67 | 0.379 | | 0.265 | ( | 0.341) | 0.114 |
| 115 | 9.58 | 0.70 | 0.398 | | 0.263 | ( | 0.358) | 0.135 |
| 116 | 9.67 | 0.70 | 0.398 | | 0.262 | ( | 0.358) | 0.136 |
| 117 | 9.75 | 0.70 | 0.398 | | 0.261 | ( | 0.358) | 0.137 |
| 118 | 9.83 | 0.73 | 0.417 | | 0.260 | ( | 0.375) | 0.157 |
| 119 | 9.92 | 0.73 | 0.417 | | 0.258 | ( | 0.375) | 0.159 |
| 120 | 10.00 | 0.73 | 0.417 | | 0.257 | ( | 0.375) | 0.160 |
| 121 | 10.08 | 0.50 | 0.284 | | 0.256 | ( | 0.256) | 0.028 |
| 122 | 10.17 | 0.50 | 0.284 | | 0.255 | ( | 0.256) | 0.030 |
| 123 | 10.25 | 0.50 | 0.284 | | 0.253 | ( | 0.256) | 0.031 |
| 124 | 10.33 | 0.50 | 0.284 | | 0.252 | ( | 0.256) | 0.032 |
| 125 | 10.42 | 0.50 | 0.284 | | 0.251 | ( | 0.256) | 0.033 |
| 126 | 10.50 | 0.50 | 0.284 | | 0.250 | ( | 0.256) | 0.035 |
| 127 | 10.58 | 0.67 | 0.379 | | 0.249 | ( | 0.341) | 0.131 |
| 128 | 10.67 | 0.67 | 0.379 | | 0.247 | ( | 0.341) | 0.132 |
| 129 | 10.75 | 0.67 | 0.379 | | 0.246 | ( | 0.341) | 0.133 |
| 130 | 10.83 | 0.67 | 0.379 | | 0.245 | ( | 0.341) | 0.134 |
| 131 | 10.92 | 0.67 | 0.379 | | 0.244 | ( | 0.341) | 0.135 |
| 132 | 11.00 | 0.67 | 0.379 | | 0.243 | ( | 0.341) | 0.137 |
| 133 | 11.08 | 0.63 | 0.360 | | 0.241 | ( | 0.324) | 0.119 |
| 134 | 11.17 | 0.63 | 0.360 | | 0.240 | ( | 0.324) | 0.120 |
| 135 | 11.25 | 0.63 | 0.360 | | 0.239 | ( | 0.324) | 0.121 |
| 136 | 11.33 | 0.63 | 0.360 | | 0.238 | ( | 0.324) | 0.122 |
| 137 | 11.42 | 0.63 | 0.360 | | 0.237 | ( | 0.324) | 0.124 |
| 138 | 11.50 | 0.63 | 0.360 | | 0.235 | ( | 0.324) | 0.125 |
| 139 | 11.58 | 0.57 | 0.322 | | 0.234 | ( | 0.290) | 0.088 |
| 140 | 11.67 | 0.57 | 0.322 | | 0.233 | ( | 0.290) | 0.089 |
| 141 | 11.75 | 0.57 | 0.322 | | 0.232 | ( | 0.290) | 0.090 |
| 142 | 11.83 | 0.60 | 0.341 | | 0.231 | ( | 0.307) | 0.111 |
| 143 | 11.92 | 0.60 | 0.341 | | 0.230 | ( | 0.307) | 0.112 |
| 144 | 12.00 | 0.60 | 0.341 | | 0.228 | ( | 0.307) | 0.113 |
| 145 | 12.08 | 0.83 | 0.474 | | 0.227 | ( | 0.427) | 0.247 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 146 | 12.17 | 0.83 | 0.474 | 0.226 | ( 0.427) | 0.248 |
| 147 | 12.25 | 0.83 | 0.474 | 0.225 | ( 0.427) | 0.249 |
| 148 | 12.33 | 0.87 | 0.493 | 0.224 | ( 0.444) | 0.269 |
| 149 | 12.42 | 0.87 | 0.493 | 0.223 | ( 0.444) | 0.270 |
| 150 | 12.50 | 0.87 | 0.493 | 0.222 | ( 0.444) | 0.271 |
| 151 | 12.58 | 0.93 | 0.531 | 0.221 | ( 0.478) | 0.310 |
| 152 | 12.67 | 0.93 | 0.531 | 0.219 | ( 0.478) | 0.311 |
| 153 | 12.75 | 0.93 | 0.531 | 0.218 | ( 0.478) | 0.313 |
| 154 | 12.83 | 0.97 | 0.550 | 0.217 | ( 0.495) | 0.333 |
| 155 | 12.92 | 0.97 | 0.550 | 0.216 | ( 0.495) | 0.334 |
| 156 | 13.00 | 0.97 | 0.550 | 0.215 | ( 0.495) | 0.335 |
| 157 | 13.08 | 1.13 | 0.645 | 0.214 | ( 0.580) | 0.431 |
| 158 | 13.17 | 1.13 | 0.645 | 0.213 | ( 0.580) | 0.432 |
| 159 | 13.25 | 1.13 | 0.645 | 0.212 | ( 0.580) | 0.433 |
| 160 | 13.33 | 1.13 | 0.645 | 0.211 | ( 0.580) | 0.434 |
| 161 | 13.42 | 1.13 | 0.645 | 0.210 | ( 0.580) | 0.435 |
| 162 | 13.50 | 1.13 | 0.645 | 0.209 | ( 0.580) | 0.436 |
| 163 | 13.58 | 0.77 | 0.436 | 0.208 | ( 0.392) | 0.229 |
| 164 | 13.67 | 0.77 | 0.436 | 0.206 | ( 0.392) | 0.230 |
| 165 | 13.75 | 0.77 | 0.436 | 0.205 | ( 0.392) | 0.231 |
| 166 | 13.83 | 0.77 | 0.436 | 0.204 | ( 0.392) | 0.232 |
| 167 | 13.92 | 0.77 | 0.436 | 0.203 | ( 0.392) | 0.233 |
| 168 | 14.00 | 0.77 | 0.436 | 0.202 | ( 0.392) | 0.234 |
| 169 | 14.08 | 0.90 | 0.512 | 0.201 | ( 0.461) | 0.311 |
| 170 | 14.17 | 0.90 | 0.512 | 0.200 | ( 0.461) | 0.312 |
| 171 | 14.25 | 0.90 | 0.512 | 0.199 | ( 0.461) | 0.313 |
| 172 | 14.33 | 0.87 | 0.493 | 0.198 | ( 0.444) | 0.295 |
| 173 | 14.42 | 0.87 | 0.493 | 0.197 | ( 0.444) | 0.296 |
| 174 | 14.50 | 0.87 | 0.493 | 0.196 | ( 0.444) | 0.297 |
| 175 | 14.58 | 0.87 | 0.493 | 0.195 | ( 0.444) | 0.298 |
| 176 | 14.67 | 0.87 | 0.493 | 0.194 | ( 0.444) | 0.299 |
| 177 | 14.75 | 0.87 | 0.493 | 0.193 | ( 0.444) | 0.300 |
| 178 | 14.83 | 0.83 | 0.474 | 0.192 | ( 0.427) | 0.282 |
| 179 | 14.92 | 0.83 | 0.474 | 0.191 | ( 0.427) | 0.283 |
| 180 | 15.00 | 0.83 | 0.474 | 0.190 | ( 0.427) | 0.284 |
| 181 | 15.08 | 0.80 | 0.455 | 0.189 | ( 0.410) | 0.266 |
| 182 | 15.17 | 0.80 | 0.455 | 0.188 | ( 0.410) | 0.267 |
| 183 | 15.25 | 0.80 | 0.455 | 0.187 | ( 0.410) | 0.268 |
| 184 | 15.33 | 0.77 | 0.436 | 0.186 | ( 0.392) | 0.250 |
| 185 | 15.42 | 0.77 | 0.436 | 0.185 | ( 0.392) | 0.251 |
| 186 | 15.50 | 0.77 | 0.436 | 0.184 | ( 0.392) | 0.252 |
| 187 | 15.58 | 0.63 | 0.360 | 0.183 | ( 0.324) | 0.177 |
| 188 | 15.67 | 0.63 | 0.360 | 0.183 | ( 0.324) | 0.178 |
| 189 | 15.75 | 0.63 | 0.360 | 0.182 | ( 0.324) | 0.179 |
| 190 | 15.83 | 0.63 | 0.360 | 0.181 | ( 0.324) | 0.180 |
| 191 | 15.92 | 0.63 | 0.360 | 0.180 | ( 0.324) | 0.180 |
| 192 | 16.00 | 0.63 | 0.360 | 0.179 | ( 0.324) | 0.181 |
| 193 | 16.08 | 0.13 | 0.076 | ( 0.178) | 0.068 | 0.008 |
| 194 | 16.17 | 0.13 | 0.076 | ( 0.177) | 0.068 | 0.008 |
| 195 | 16.25 | 0.13 | 0.076 | ( 0.176) | 0.068 | 0.008 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 196 | 16.33 | 0.13 | 0.076 | ( 0.175) | 0.068 | 0.008 |
| 197 | 16.42 | 0.13 | 0.076 | ( 0.174) | 0.068 | 0.008 |
| 198 | 16.50 | 0.13 | 0.076 | ( 0.173) | 0.068 | 0.008 |
| 199 | 16.58 | 0.10 | 0.057 | ( 0.173) | 0.051 | 0.006 |
| 200 | 16.67 | 0.10 | 0.057 | ( 0.172) | 0.051 | 0.006 |
| 201 | 16.75 | 0.10 | 0.057 | ( 0.171) | 0.051 | 0.006 |
| 202 | 16.83 | 0.10 | 0.057 | ( 0.170) | 0.051 | 0.006 |
| 203 | 16.92 | 0.10 | 0.057 | ( 0.169) | 0.051 | 0.006 |
| 204 | 17.00 | 0.10 | 0.057 | ( 0.168) | 0.051 | 0.006 |
| 205 | 17.08 | 0.17 | 0.095 | ( 0.167) | 0.085 | 0.009 |
| 206 | 17.17 | 0.17 | 0.095 | ( 0.167) | 0.085 | 0.009 |
| 207 | 17.25 | 0.17 | 0.095 | ( 0.166) | 0.085 | 0.009 |
| 208 | 17.33 | 0.17 | 0.095 | ( 0.165) | 0.085 | 0.009 |
| 209 | 17.42 | 0.17 | 0.095 | ( 0.164) | 0.085 | 0.009 |
| 210 | 17.50 | 0.17 | 0.095 | ( 0.163) | 0.085 | 0.009 |
| 211 | 17.58 | 0.17 | 0.095 | ( 0.162) | 0.085 | 0.009 |
| 212 | 17.67 | 0.17 | 0.095 | ( 0.162) | 0.085 | 0.009 |
| 213 | 17.75 | 0.17 | 0.095 | ( 0.161) | 0.085 | 0.009 |
| 214 | 17.83 | 0.13 | 0.076 | ( 0.160) | 0.068 | 0.008 |
| 215 | 17.92 | 0.13 | 0.076 | ( 0.159) | 0.068 | 0.008 |
| 216 | 18.00 | 0.13 | 0.076 | ( 0.158) | 0.068 | 0.008 |
| 217 | 18.08 | 0.13 | 0.076 | ( 0.158) | 0.068 | 0.008 |
| 218 | 18.17 | 0.13 | 0.076 | ( 0.157) | 0.068 | 0.008 |
| 219 | 18.25 | 0.13 | 0.076 | ( 0.156) | 0.068 | 0.008 |
| 220 | 18.33 | 0.13 | 0.076 | ( 0.155) | 0.068 | 0.008 |
| 221 | 18.42 | 0.13 | 0.076 | ( 0.155) | 0.068 | 0.008 |
| 222 | 18.50 | 0.13 | 0.076 | ( 0.154) | 0.068 | 0.008 |
| 223 | 18.58 | 0.10 | 0.057 | ( 0.153) | 0.051 | 0.006 |
| 224 | 18.67 | 0.10 | 0.057 | ( 0.152) | 0.051 | 0.006 |
| 225 | 18.75 | 0.10 | 0.057 | ( 0.152) | 0.051 | 0.006 |
| 226 | 18.83 | 0.07 | 0.038 | ( 0.151) | 0.034 | 0.004 |
| 227 | 18.92 | 0.07 | 0.038 | ( 0.150) | 0.034 | 0.004 |
| 228 | 19.00 | 0.07 | 0.038 | ( 0.149) | 0.034 | 0.004 |
| 229 | 19.08 | 0.10 | 0.057 | ( 0.149) | 0.051 | 0.006 |
| 230 | 19.17 | 0.10 | 0.057 | ( 0.148) | 0.051 | 0.006 |
| 231 | 19.25 | 0.10 | 0.057 | ( 0.147) | 0.051 | 0.006 |
| 232 | 19.33 | 0.13 | 0.076 | ( 0.147) | 0.068 | 0.008 |
| 233 | 19.42 | 0.13 | 0.076 | ( 0.146) | 0.068 | 0.008 |
| 234 | 19.50 | 0.13 | 0.076 | ( 0.145) | 0.068 | 0.008 |
| 235 | 19.58 | 0.10 | 0.057 | ( 0.145) | 0.051 | 0.006 |
| 236 | 19.67 | 0.10 | 0.057 | ( 0.144) | 0.051 | 0.006 |
| 237 | 19.75 | 0.10 | 0.057 | ( 0.143) | 0.051 | 0.006 |
| 238 | 19.83 | 0.07 | 0.038 | ( 0.143) | 0.034 | 0.004 |
| 239 | 19.92 | 0.07 | 0.038 | ( 0.142) | 0.034 | 0.004 |
| 240 | 20.00 | 0.07 | 0.038 | ( 0.141) | 0.034 | 0.004 |
| 241 | 20.08 | 0.10 | 0.057 | ( 0.141) | 0.051 | 0.006 |
| 242 | 20.17 | 0.10 | 0.057 | ( 0.140) | 0.051 | 0.006 |
| 243 | 20.25 | 0.10 | 0.057 | ( 0.140) | 0.051 | 0.006 |
| 244 | 20.33 | 0.10 | 0.057 | ( 0.139) | 0.051 | 0.006 |
| 245 | 20.42 | 0.10 | 0.057 | ( 0.138) | 0.051 | 0.006 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 246 | 20.50 | 0.10 | 0.057 | ( 0.138) | 0.051 | 0.006 |
| 247 | 20.58 | 0.10 | 0.057 | ( 0.137) | 0.051 | 0.006 |
| 248 | 20.67 | 0.10 | 0.057 | ( 0.137) | 0.051 | 0.006 |
| 249 | 20.75 | 0.10 | 0.057 | ( 0.136) | 0.051 | 0.006 |
| 250 | 20.83 | 0.07 | 0.038 | ( 0.135) | 0.034 | 0.004 |
| 251 | 20.92 | 0.07 | 0.038 | ( 0.135) | 0.034 | 0.004 |
| 252 | 21.00 | 0.07 | 0.038 | ( 0.134) | 0.034 | 0.004 |
| 253 | 21.08 | 0.10 | 0.057 | ( 0.134) | 0.051 | 0.006 |
| 254 | 21.17 | 0.10 | 0.057 | ( 0.133) | 0.051 | 0.006 |
| 255 | 21.25 | 0.10 | 0.057 | ( 0.133) | 0.051 | 0.006 |
| 256 | 21.33 | 0.07 | 0.038 | ( 0.132) | 0.034 | 0.004 |
| 257 | 21.42 | 0.07 | 0.038 | ( 0.132) | 0.034 | 0.004 |
| 258 | 21.50 | 0.07 | 0.038 | ( 0.131) | 0.034 | 0.004 |
| 259 | 21.58 | 0.10 | 0.057 | ( 0.131) | 0.051 | 0.006 |
| 260 | 21.67 | 0.10 | 0.057 | ( 0.130) | 0.051 | 0.006 |
| 261 | 21.75 | 0.10 | 0.057 | ( 0.130) | 0.051 | 0.006 |
| 262 | 21.83 | 0.07 | 0.038 | ( 0.129) | 0.034 | 0.004 |
| 263 | 21.92 | 0.07 | 0.038 | ( 0.129) | 0.034 | 0.004 |
| 264 | 22.00 | 0.07 | 0.038 | ( 0.129) | 0.034 | 0.004 |
| 265 | 22.08 | 0.10 | 0.057 | ( 0.128) | 0.051 | 0.006 |
| 266 | 22.17 | 0.10 | 0.057 | ( 0.128) | 0.051 | 0.006 |
| 267 | 22.25 | 0.10 | 0.057 | ( 0.127) | 0.051 | 0.006 |
| 268 | 22.33 | 0.07 | 0.038 | ( 0.127) | 0.034 | 0.004 |
| 269 | 22.42 | 0.07 | 0.038 | ( 0.127) | 0.034 | 0.004 |
| 270 | 22.50 | 0.07 | 0.038 | ( 0.126) | 0.034 | 0.004 |
| 271 | 22.58 | 0.07 | 0.038 | ( 0.126) | 0.034 | 0.004 |
| 272 | 22.67 | 0.07 | 0.038 | ( 0.125) | 0.034 | 0.004 |
| 273 | 22.75 | 0.07 | 0.038 | ( 0.125) | 0.034 | 0.004 |
| 274 | 22.83 | 0.07 | 0.038 | ( 0.125) | 0.034 | 0.004 |
| 275 | 22.92 | 0.07 | 0.038 | ( 0.124) | 0.034 | 0.004 |
| 276 | 23.00 | 0.07 | 0.038 | ( 0.124) | 0.034 | 0.004 |
| 277 | 23.08 | 0.07 | 0.038 | ( 0.124) | 0.034 | 0.004 |
| 278 | 23.17 | 0.07 | 0.038 | ( 0.124) | 0.034 | 0.004 |
| 279 | 23.25 | 0.07 | 0.038 | ( 0.123) | 0.034 | 0.004 |
| 280 | 23.33 | 0.07 | 0.038 | ( 0.123) | 0.034 | 0.004 |
| 281 | 23.42 | 0.07 | 0.038 | ( 0.123) | 0.034 | 0.004 |
| 282 | 23.50 | 0.07 | 0.038 | ( 0.123) | 0.034 | 0.004 |
| 283 | 23.58 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |
| 284 | 23.67 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |
| 285 | 23.75 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |
| 286 | 23.83 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |
| 287 | 23.92 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |
| 288 | 24.00 | 0.07 | 0.038 | ( 0.122) | 0.034 | 0.004 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 19.6

Flood volume = Effective rainfall 1.63(In)
times area 14.0(Ac.)/[(In)/(Ft.)] = 1.9(Ac.Ft)
Total soil loss = 3.11(In)
Total soil loss = 3.623(Ac.Ft)
Total rainfall = 4.74(In)

Flood volume = 83051.2 Cubic Feet
Total soil loss = 157829.0 Cubic Feet

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Peak flow rate of this hydrograph = 6.145(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 | 0.0002 | 0.03 | Q | | | | |
| 0+10 | 0.0005 | 0.05 | Q | | | | |
| 0+15 | 0.0009 | 0.05 | Q | | | | |
| 0+20 | 0.0013 | 0.07 | Q | | | | |
| 0+25 | 0.0018 | 0.08 | Q | | | | |
| 0+30 | 0.0024 | 0.08 | Q | | | | |
| 0+35 | 0.0029 | 0.08 | Q | | | | |
| 0+40 | 0.0035 | 0.08 | Q | | | | |
| 0+45 | 0.0040 | 0.08 | Q | | | | |
| 0+50 | 0.0047 | 0.09 | Q | | | | |
| 0+55 | 0.0054 | 0.10 | Q | | | | |
| 1+ 0 | 0.0061 | 0.11 | Q | | | | |
| 1+ 5 | 0.0068 | 0.09 | Q | | | | |
| 1+10 | 0.0074 | 0.08 | Q | | | | |
| 1+15 | 0.0079 | 0.08 | Q | | | | |
| 1+20 | 0.0085 | 0.08 | Q | | | | |
| 1+25 | 0.0090 | 0.08 | Q | | | | |
| 1+30 | 0.0096 | 0.08 | Q | | | | |
| 1+35 | 0.0101 | 0.08 | Q | | | | |
| 1+40 | 0.0107 | 0.08 | Q | | | | |
| 1+45 | 0.0112 | 0.08 | Q | | | | |
| 1+50 | 0.0119 | 0.09 | Q | | | | |
| 1+55 | 0.0126 | 0.10 | Q | | | | |
| 2+ 0 | 0.0133 | 0.11 | Q | | | | |
| 2+ 5 | 0.0141 | 0.11 | Q | | | | |
| 2+10 | 0.0148 | 0.11 | Q | | | | |
| 2+15 | 0.0155 | 0.11 | Q | | | | |
| 2+20 | 0.0163 | 0.11 | Q | | | | |
| 2+25 | 0.0170 | 0.11 | Q | | | | |
| 2+30 | 0.0177 | 0.11 | Q | | | | |
| 2+35 | 0.0186 | 0.12 | Q | | | | |
| 2+40 | 0.0195 | 0.13 | Q | | | | |
| 2+45 | 0.0204 | 0.13 | Q | | | | |
| 2+50 | 0.0213 | 0.13 | Q | | | | |
| 2+55 | 0.0222 | 0.13 | Q | | | | |
| 3+ 0 | 0.0232 | 0.13 | Q | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+ 5 | 0.0241 | 0.13 | Q | \| | \| | \| | \| |
| 3+10 | 0.0250 | 0.13 | Q | \| | \| | \| | \| |
| 3+15 | 0.0259 | 0.13 | Q | \| | \| | \| | \| |
| 3+20 | 0.0268 | 0.13 | Q | \| | \| | \| | \| |
| 3+25 | 0.0278 | 0.13 | Q | \| | \| | \| | \| |
| 3+30 | 0.0287 | 0.13 | Q | \| | \| | \| | \| |
| 3+35 | 0.0296 | 0.13 | Q | \| | \| | \| | \| |
| 3+40 | 0.0305 | 0.13 | Q | \| | \| | \| | \| |
| 3+45 | 0.0314 | 0.13 | Q | \| | \| | \| | \| |
| 3+50 | 0.0325 | 0.15 | Q | \| | \| | \| | \| |
| 3+55 | 0.0335 | 0.16 | Q | \| | \| | \| | \| |
| 4+ 0 | 0.0346 | 0.16 | Q | \| | \| | \| | \| |
| 4+ 5 | 0.0357 | 0.16 | Q | \| | \| | \| | \| |
| 4+10 | 0.0369 | 0.16 | Q | \| | \| | \| | \| |
| 4+15 | 0.0380 | 0.16 | Q | \| | \| | \| | \| |
| 4+20 | 0.0392 | 0.17 | Q | \| | \| | \| | \| |
| 4+25 | 0.0404 | 0.18 | Q | \| | \| | \| | \| |
| 4+30 | 0.0417 | 0.19 | Q | \| | \| | \| | \| |
| 4+35 | 0.0430 | 0.19 | Q | \| | \| | \| | \| |
| 4+40 | 0.0443 | 0.19 | Q | \| | \| | \| | \| |
| 4+45 | 0.0456 | 0.19 | Q | \| | \| | \| | \| |
| 4+50 | 0.0470 | 0.20 | Q | \| | \| | \| | \| |
| 4+55 | 0.0484 | 0.21 | QV | \| | \| | \| | \| |
| 5+ 0 | 0.0499 | 0.21 | QV | \| | \| | \| | \| |
| 5+ 5 | 0.0512 | 0.19 | QV | \| | \| | \| | \| |
| 5+10 | 0.0523 | 0.17 | QV | \| | \| | \| | \| |
| 5+15 | 0.0534 | 0.16 | QV | \| | \| | \| | \| |
| 5+20 | 0.0546 | 0.17 | QV | \| | \| | \| | \| |
| 5+25 | 0.0559 | 0.18 | QV | \| | \| | \| | \| |
| 5+30 | 0.0572 | 0.19 | QV | \| | \| | \| | \| |
| 5+35 | 0.0586 | 0.20 | QV | \| | \| | \| | \| |
| 5+40 | 0.0600 | 0.21 | QV | \| | \| | \| | \| |
| 5+45 | 0.0615 | 0.21 | QV | \| | \| | \| | \| |
| 5+50 | 0.0630 | 0.21 | QV | \| | \| | \| | \| |
| 5+55 | 0.0644 | 0.21 | QV | \| | \| | \| | \| |
| 6+ 0 | 0.0659 | 0.21 | QV | \| | \| | \| | \| |
| 6+ 5 | 0.0675 | 0.23 | QV | \| | \| | \| | \| |
| 6+10 | 0.0691 | 0.24 | QV | \| | \| | \| | \| |
| 6+15 | 0.0708 | 0.24 | QV | \| | \| | \| | \| |
| 6+20 | 0.0724 | 0.24 | QV | \| | \| | \| | \| |
| 6+25 | 0.0741 | 0.24 | QV | \| | \| | \| | \| |
| 6+30 | 0.0757 | 0.24 | QV | \| | \| | \| | \| |
| 6+35 | 0.0775 | 0.25 | \|Q | \| | \| | \| | \| |
| 6+40 | 0.0793 | 0.26 | \|Q | \| | \| | \| | \| |
| 6+45 | 0.0811 | 0.27 | \|Q | \| | \| | \| | \| |
| 6+50 | 0.0830 | 0.27 | \|Q | \| | \| | \| | \| |
| 6+55 | 0.0848 | 0.27 | \|Q | \| | \| | \| | \| |
| 7+ 0 | 0.0867 | 0.27 | \|Q | \| | \| | \| | \| |
| 7+ 5 | 0.0885 | 0.27 | \|Q | \| | \| | \| | \| |
| 7+10 | 0.0904 | 0.27 | \|Q | \| | \| | \| | \| |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7+15 | 0.0922 | 0.27 | Q | | | |
| 7+20 | 0.0941 | 0.28 | Q | | | |
| 7+25 | 0.0961 | 0.29 | QV | | | |
| 7+30 | 0.0982 | 0.29 | QV | | | |
| 7+35 | 0.1003 | 0.31 | QV | | | |
| 7+40 | 0.1025 | 0.32 | QV | | | |
| 7+45 | 0.1047 | 0.32 | QV | | | |
| 7+50 | 0.1070 | 0.33 | QV | | | |
| 7+55 | 0.1093 | 0.34 | QV | | | |
| 8+ 0 | 0.1117 | 0.35 | QV | | | |
| 8+ 5 | 0.1143 | 0.37 | QV | | | |
| 8+10 | 0.1170 | 0.40 | QV | | | |
| 8+15 | 0.1198 | 0.40 | QV | | | |
| 8+20 | 0.1225 | 0.40 | QV | | | |
| 8+25 | 0.1253 | 0.40 | QV | | | |
| 8+30 | 0.1281 | 0.40 | QV | | | |
| 8+35 | 0.1309 | 0.41 | QV | | | |
| 8+40 | 0.1339 | 0.43 | QV | | | |
| 8+45 | 0.1368 | 0.43 | QV | | | |
| 8+50 | 0.1405 | 0.54 | Q | | | |
| 8+55 | 0.1450 | 0.65 | QV | | | |
| 9+ 0 | 0.1497 | 0.69 | QV | | | |
| 9+ 5 | 0.1563 | 0.96 | Q | | | |
| 9+10 | 0.1646 | 1.20 | VQ | | | |
| 9+15 | 0.1733 | 1.26 | V Q | | | |
| 9+20 | 0.1832 | 1.43 | V Q | | | |
| 9+25 | 0.1939 | 1.56 | V Q | | | |
| 9+30 | 0.2049 | 1.60 | V Q | | | |
| 9+35 | 0.2169 | 1.75 | V Q | | | |
| 9+40 | 0.2298 | 1.88 | V Q | | | |
| 9+45 | 0.2430 | 1.92 | V Q | | | |
| 9+50 | 0.2573 | 2.07 | V Q | | | |
| 9+55 | 0.2724 | 2.20 | V Q | | | |
| 10+ 0 | 0.2878 | 2.24 | V Q | | | |
| 10+ 5 | 0.2974 | 1.39 | QV | | | |
| 10+10 | 0.3016 | 0.62 | Q V | | | |
| 10+15 | 0.3050 | 0.49 | Q V | | | |
| 10+20 | 0.3080 | 0.44 | Q V | | | |
| 10+25 | 0.3112 | 0.46 | Q V | | | |
| 10+30 | 0.3145 | 0.48 | Q V | | | |
| 10+35 | 0.3222 | 1.12 | Q V | | | |
| 10+40 | 0.3339 | 1.70 | QV | | | |
| 10+45 | 0.3465 | 1.82 | Q | | | |
| 10+50 | 0.3594 | 1.88 | Q | | | |
| 10+55 | 0.3725 | 1.90 | Q | | | |
| 11+ 0 | 0.3857 | 1.92 | QV | | | |
| 11+ 5 | 0.3982 | 1.81 | QV | | | |
| 11+10 | 0.4100 | 1.71 | Q V | | | |
| 11+15 | 0.4218 | 1.71 | Q V | | | |
| 11+20 | 0.4336 | 1.72 | Q V | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11+25 | 0.4456 | 1.73 | \| Q V\| | \| | \| | \| |
| 11+30 | 0.4576 | 1.75 | \| Q V\| | \| | \| | \| |
| 11+35 | 0.4681 | 1.52 | \| Q V\| | \| | \| | \| |
| 11+40 | 0.4771 | 1.31 | \| Q V | \| | \| | \| |
| 11+45 | 0.4859 | 1.28 | \| Q V | \| | \| | \| |
| 11+50 | 0.4956 | 1.41 | \| Q V | \| | \| | \| |
| 11+55 | 0.5062 | 1.54 | \| Q V | \| | \| | \| |
| 12+ 0 | 0.5170 | 1.57 | \| Q V | \| | \| | \| |
| 12+ 5 | 0.5340 | 2.47 | \| Q\|V | \| | \| | \| |
| 12+10 | 0.5566 | 3.28 | \| \|V Q | \| | \| | \| |
| 12+15 | 0.5803 | 3.44 | \| \| VQ | \| | \| | \| |
| 12+20 | 0.6054 | 3.64 | \| \| V Q | \| | \| | \| |
| 12+25 | 0.6314 | 3.77 | \| \| V Q | \| | \| | \| |
| 12+30 | 0.6576 | 3.81 | \| \| V Q | \| | \| | \| |
| 12+35 | 0.6858 | 4.09 | \| \| V Q | \| | \| | \| |
| 12+40 | 0.7156 | 4.33 | \| \| V Q | \| | \| | \| |
| 12+45 | 0.7458 | 4.38 | \| \| V Q | \| | \| | \| |
| 12+50 | 0.7770 | 4.54 | \| \| V Q | \| | \| | \| |
| 12+55 | 0.8092 | 4.67 | \| \| V Q | \| | \| | \| |
| 13+ 0 | 0.8416 | 4.71 | \| \| VQ | \| | \| | \| |
| 13+ 5 | 0.8785 | 5.36 | \| \| V \|Q | \| | \| | \| |
| 13+10 | 0.9194 | 5.93 | \| \| V\| Q | \| | \| | \| |
| 13+15 | 0.9611 | 6.06 | \| \| V Q | \| | \| | \| |
| 13+20 | 1.0032 | 6.12 | \| \| \|V Q | \| | \| | \| |
| 13+25 | 1.0454 | 6.13 | \| \| \|V Q | \| | \| | \| |
| 13+30 | 1.0877 | 6.15 | \| \| \| V Q | \| | \| | \| |
| 13+35 | 1.1207 | 4.78 | \| \| Q\| V | \| | \| | \| |
| 13+40 | 1.1452 | 3.56 | \| \| Q | \| V | \| | \| |
| 13+45 | 1.1682 | 3.34 | \| \| Q | \| V | \| | \| |
| 13+50 | 1.1907 | 3.26 | \| \| Q | \| V | \| | \| |
| 13+55 | 1.2133 | 3.28 | \| \| Q | \| V | \| | \| |
| 14+ 0 | 1.2359 | 3.29 | \| \| Q | \| V | \| | \| |
| 14+ 5 | 1.2621 | 3.81 | \| \| Q | \| V | \| | \| |
| 14+10 | 1.2915 | 4.27 | \| \| Q | \| V | \| | \| |
| 14+15 | 1.3216 | 4.37 | \| \| Q | \| V | \| | \| |
| 14+20 | 1.3512 | 4.29 | \| \| Q | \| V | \| | \| |
| 14+25 | 1.3801 | 4.20 | \| \| Q | \| V | \| | \| |
| 14+30 | 1.4089 | 4.19 | \| \| Q | \| V\| | \| | \| |
| 14+35 | 1.4378 | 4.19 | \| \| Q | \| V | \| | \| |
| 14+40 | 1.4668 | 4.21 | \| \| Q | \| V | \| | \| |
| 14+45 | 1.4959 | 4.22 | \| \| Q | \| \|V | \| | \| |
| 14+50 | 1.5242 | 4.11 | \| \| Q | \| \|V | \| | \| |
| 14+55 | 1.5518 | 4.01 | \| \| Q | \| \| V | \| | \| |
| 15+ 0 | 1.5794 | 4.01 | \| \| Q | \| \| V | \| | \| |
| 15+ 5 | 1.6062 | 3.89 | \| \| Q | \| \| V | \| | \| |
| 15+10 | 1.6323 | 3.79 | \| \| Q | \| \| V | \| | \| |
| 15+15 | 1.6583 | 3.78 | \| \| Q | \| \| V | \| | \| |
| 15+20 | 1.6835 | 3.66 | \| \| Q | \| \| V | \| | \| |
| 15+25 | 1.7080 | 3.56 | \| \| Q | \| \| V | \| | \| |
| 15+30 | 1.7325 | 3.55 | \| \| Q | \| \| V | \| | \| |

```
15+35       1.7535      3.06  |          | Q       |          |      V   |
15+40       1.7716      2.62  |          Q         |          |       V  |
15+45       1.7891      2.55  |          Q         |          |       V  |
15+50       1.8065      2.53  |          Q         |          |       V  |
15+55       1.8240      2.54  |          Q         |          |        V |
16+ 0       1.8416      2.55  |          Q         |          |        V |
16+ 5       1.8513      1.41  |    Q     |         |          |        V |
16+10       1.8539      0.38  |Q         |         |          |        V |
16+15       1.8552      0.19  Q          |         |          |        V |
16+20       1.8560      0.11  Q          |         |          |        V |
16+25       1.8567      0.11  Q          |         |          |        V |
16+30       1.8574      0.11  Q          |         |          |        V |
16+35       1.8581      0.09  Q          |         |          |        V |
16+40       1.8587      0.08  Q          |         |          |        V |
16+45       1.8592      0.08  Q          |         |          |         V|
16+50       1.8598      0.08  Q          |         |          |         V|
16+55       1.8603      0.08  Q          |         |          |         V|
17+ 0       1.8609      0.08  Q          |         |          |         V|
17+ 5       1.8616      0.11  Q          |         |          |         V|
17+10       1.8625      0.13  Q          |         |          |         V|
17+15       1.8634      0.13  Q          |         |          |         V|
17+20       1.8643      0.13  Q          |         |          |         V|
17+25       1.8652      0.13  Q          |         |          |         V|
17+30       1.8662      0.13  Q          |         |          |         V|
17+35       1.8671      0.13  Q          |         |          |         V|
17+40       1.8680      0.13  Q          |         |          |         V|
17+45       1.8689      0.13  Q          |         |          |         V|
17+50       1.8698      0.12  Q          |         |          |         V|
17+55       1.8705      0.11  Q          |         |          |         V|
18+ 0       1.8713      0.11  Q          |         |          |         V|
18+ 5       1.8720      0.11  Q          |         |          |         V|
18+10       1.8727      0.11  Q          |         |          |         V|
18+15       1.8735      0.11  Q          |         |          |         V|
18+20       1.8742      0.11  Q          |         |          |         V|
18+25       1.8749      0.11  Q          |         |          |         V|
18+30       1.8757      0.11  Q          |         |          |         V|
18+35       1.8763      0.09  Q          |         |          |         V|
18+40       1.8769      0.08  Q          |         |          |         V|
18+45       1.8775      0.08  Q          |         |          |         V|
18+50       1.8779      0.07  Q          |         |          |         V|
18+55       1.8783      0.06  Q          |         |          |         V|
19+ 0       1.8787      0.05  Q          |         |          |         V|
19+ 5       1.8792      0.07  Q          |         |          |         V|
19+10       1.8797      0.08  Q          |         |          |         V|
19+15       1.8802      0.08  Q          |         |          |         V|
19+20       1.8809      0.09  Q          |         |          |         V|
19+25       1.8816      0.10  Q          |         |          |         V|
19+30       1.8823      0.11  Q          |         |          |         V|
19+35       1.8830      0.09  Q          |         |          |         V|
19+40       1.8835      0.08  Q          |         |          |         V|
```

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 19+45 | 1.8841 | 0.08 | Q | \| | \| | \| | V\| |
| 19+50 | 1.8846 | 0.07 | Q | \| | \| | \| | V\| |
| 19+55 | 1.8850 | 0.06 | Q | \| | \| | \| | V\| |
| 20+ 0 | 1.8853 | 0.05 | Q | \| | \| | \| | V\| |
| 20+ 5 | 1.8858 | 0.07 | Q | \| | \| | \| | V\| |
| 20+10 | 1.8863 | 0.08 | Q | \| | \| | \| | V\| |
| 20+15 | 1.8869 | 0.08 | Q | \| | \| | \| | V\| |
| 20+20 | 1.8874 | 0.08 | Q | \| | \| | \| | V\| |
| 20+25 | 1.8880 | 0.08 | Q | \| | \| | \| | V\| |
| 20+30 | 1.8885 | 0.08 | Q | \| | \| | \| | V\| |
| 20+35 | 1.8891 | 0.08 | Q | \| | \| | \| | V\| |
| 20+40 | 1.8896 | 0.08 | Q | \| | \| | \| | V\| |
| 20+45 | 1.8902 | 0.08 | Q | \| | \| | \| | V\| |
| 20+50 | 1.8906 | 0.07 | Q | \| | \| | \| | V\| |
| 20+55 | 1.8910 | 0.06 | Q | \| | \| | \| | V\| |
| 21+ 0 | 1.8914 | 0.05 | Q | \| | \| | \| | V\| |
| 21+ 5 | 1.8919 | 0.07 | Q | \| | \| | \| | V\| |
| 21+10 | 1.8924 | 0.08 | Q | \| | \| | \| | V\| |
| 21+15 | 1.8929 | 0.08 | Q | \| | \| | \| | V\| |
| 21+20 | 1.8934 | 0.07 | Q | \| | \| | \| | V\| |
| 21+25 | 1.8938 | 0.06 | Q | \| | \| | \| | V\| |
| 21+30 | 1.8942 | 0.05 | Q | \| | \| | \| | V\| |
| 21+35 | 1.8946 | 0.07 | Q | \| | \| | \| | V\| |
| 21+40 | 1.8952 | 0.08 | Q | \| | \| | \| | V\| |
| 21+45 | 1.8957 | 0.08 | Q | \| | \| | \| | V\| |
| 21+50 | 1.8962 | 0.07 | Q | \| | \| | \| | V\| |
| 21+55 | 1.8966 | 0.06 | Q | \| | \| | \| | V\| |
| 22+ 0 | 1.8969 | 0.05 | Q | \| | \| | \| | V\| |
| 22+ 5 | 1.8974 | 0.07 | Q | \| | \| | \| | V\| |
| 22+10 | 1.8979 | 0.08 | Q | \| | \| | \| | V\| |
| 22+15 | 1.8985 | 0.08 | Q | \| | \| | \| | V\| |
| 22+20 | 1.8989 | 0.07 | Q | \| | \| | \| | V\| |
| 22+25 | 1.8993 | 0.06 | Q | \| | \| | \| | V\| |
| 22+30 | 1.8997 | 0.05 | Q | \| | \| | \| | V\| |
| 22+35 | 1.9001 | 0.05 | Q | \| | \| | \| | V\| |
| 22+40 | 1.9004 | 0.05 | Q | \| | \| | \| | V\| |
| 22+45 | 1.9008 | 0.05 | Q | \| | \| | \| | V\| |
| 22+50 | 1.9012 | 0.05 | Q | \| | \| | \| | V\| |
| 22+55 | 1.9016 | 0.05 | Q | \| | \| | \| | V\| |
| 23+ 0 | 1.9019 | 0.05 | Q | \| | \| | \| | V\| |
| 23+ 5 | 1.9023 | 0.05 | Q | \| | \| | \| | V\| |
| 23+10 | 1.9027 | 0.05 | Q | \| | \| | \| | V\| |
| 23+15 | 1.9030 | 0.05 | Q | \| | \| | \| | V\| |
| 23+20 | 1.9034 | 0.05 | Q | \| | \| | \| | V\| |
| 23+25 | 1.9038 | 0.05 | Q | \| | \| | \| | V\| |
| 23+30 | 1.9041 | 0.05 | Q | \| | \| | \| | V\| |
| 23+35 | 1.9045 | 0.05 | Q | \| | \| | \| | V\| |
| 23+40 | 1.9049 | 0.05 | Q | \| | \| | \| | V\| |
| 23+45 | 1.9052 | 0.05 | Q | \| | \| | \| | V\| |
| 23+50 | 1.9056 | 0.05 | Q | \| | \| | \| | V\| |

```
   23+55       1.9060      0.05  Q         |         |         |        V|
   24+ 0       1.9063      0.05  Q         |         |         |        V|
   24+ 5       1.9065      0.03  Q         |         |         |        V|
   24+10       1.9066      0.01  Q         |         |         |        V|
   24+15       1.9066      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 - 2008, Version 8.1
Study date 03/08/23 File: GoyaSUHPost24100.out

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

Program License Serial Number 6215

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

English Units used in output format

---
GoyaSUHPost100

---
Drainage Area = 13.75(Ac.) = 0.021 Sq. Mi.
Drainage Area for Depth-Area Areal Adjustment = 13.75(Ac.) = 0.021 Sq. Mi.
Length along longest watercourse = 1220.00(Ft.)
Length along longest watercourse measured to centroid = 146.00(Ft.)
Length along longest watercourse = 0.231 Mi.
Length along longest watercourse measured to centroid = 0.028 Mi.
Difference in elevation = 6.10(Ft.)
Slope along watercourse = 26.4000 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.028 Hr.
Lag time = 1.70 Min.
25% of lag time = 0.42 Min.
40% of lag time = 0.68 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]
       13.75            1.60                  22.00

100 YEAR Area rainfall data:


Area(Ac.)[1]       Rainfall(In)[2]      Weighting[1*2]
       13.75            4.00                  55.00

STORM EVENT (YEAR) =  100.00
Area Averaged 2-Year Rainfall =    1.600(In)
Area Averaged 100-Year Rainfall =    4.000(In)

Point rain (area averaged) =    4.000(In)
Areal adjustment factor =  100.00 %
Adjusted average point rain =    4.000(In)

Sub-Area Data:
Area(Ac.)         Runoff Index   Impervious %
    13.750           56.00         0.600
 Total Area Entered =     13.75(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2     (In/Hr)    (Dec.%)     (In/Hr)      (Dec.)    (In/Hr)
56.0  56.0      0.511     0.600        0.235       1.000      0.235
                                                 Sum (F) =   0.235
Area averaged mean soil loss (F) (In/Hr) =  0.235
Minimum soil loss rate ((In/Hr)) =  0.117
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.380
------------------------------------------------------------------------

               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        294.139         56.070              7.770
    2   0.167        588.277         37.453              5.190
    3   0.250        882.416          6.476              0.897
                               Sum = 100.000   Sum=      13.857
------------------------------------------------------------------------

 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 | 0.032 | ( 0.417) | 0.012 | 0.020 |
| 2 | 0.17 | 0.07 | 0.032 | ( 0.415) | 0.012 | 0.020 |
| 3 | 0.25 | 0.07 | 0.032 | ( 0.413) | 0.012 | 0.020 |
| 4 | 0.33 | 0.10 | 0.048 | ( 0.412) | 0.018 | 0.030 |
| 5 | 0.42 | 0.10 | 0.048 | ( 0.410) | 0.018 | 0.030 |
| 6 | 0.50 | 0.10 | 0.048 | ( 0.409) | 0.018 | 0.030 |
| 7 | 0.58 | 0.10 | 0.048 | ( 0.407) | 0.018 | 0.030 |
| 8 | 0.67 | 0.10 | 0.048 | ( 0.405) | 0.018 | 0.030 |
| 9 | 0.75 | 0.10 | 0.048 | ( 0.404) | 0.018 | 0.030 |
| 10 | 0.83 | 0.13 | 0.064 | ( 0.402) | 0.024 | 0.040 |
| 11 | 0.92 | 0.13 | 0.064 | ( 0.401) | 0.024 | 0.040 |
| 12 | 1.00 | 0.13 | 0.064 | ( 0.399) | 0.024 | 0.040 |
| 13 | 1.08 | 0.10 | 0.048 | ( 0.397) | 0.018 | 0.030 |
| 14 | 1.17 | 0.10 | 0.048 | ( 0.396) | 0.018 | 0.030 |
| 15 | 1.25 | 0.10 | 0.048 | ( 0.394) | 0.018 | 0.030 |
| 16 | 1.33 | 0.10 | 0.048 | ( 0.393) | 0.018 | 0.030 |
| 17 | 1.42 | 0.10 | 0.048 | ( 0.391) | 0.018 | 0.030 |
| 18 | 1.50 | 0.10 | 0.048 | ( 0.390) | 0.018 | 0.030 |
| 19 | 1.58 | 0.10 | 0.048 | ( 0.388) | 0.018 | 0.030 |
| 20 | 1.67 | 0.10 | 0.048 | ( 0.386) | 0.018 | 0.030 |
| 21 | 1.75 | 0.10 | 0.048 | ( 0.385) | 0.018 | 0.030 |
| 22 | 1.83 | 0.13 | 0.064 | ( 0.383) | 0.024 | 0.040 |
| 23 | 1.92 | 0.13 | 0.064 | ( 0.382) | 0.024 | 0.040 |
| 24 | 2.00 | 0.13 | 0.064 | ( 0.380) | 0.024 | 0.040 |
| 25 | 2.08 | 0.13 | 0.064 | ( 0.379) | 0.024 | 0.040 |
| 26 | 2.17 | 0.13 | 0.064 | ( 0.377) | 0.024 | 0.040 |
| 27 | 2.25 | 0.13 | 0.064 | ( 0.376) | 0.024 | 0.040 |
| 28 | 2.33 | 0.13 | 0.064 | ( 0.374) | 0.024 | 0.040 |
| 29 | 2.42 | 0.13 | 0.064 | ( 0.373) | 0.024 | 0.040 |
| 30 | 2.50 | 0.13 | 0.064 | ( 0.371) | 0.024 | 0.040 |
| 31 | 2.58 | 0.17 | 0.080 | ( 0.370) | 0.030 | 0.050 |
| 32 | 2.67 | 0.17 | 0.080 | ( 0.368) | 0.030 | 0.050 |
| 33 | 2.75 | 0.17 | 0.080 | ( 0.367) | 0.030 | 0.050 |
| 34 | 2.83 | 0.17 | 0.080 | ( 0.365) | 0.030 | 0.050 |
| 35 | 2.92 | 0.17 | 0.080 | ( 0.364) | 0.030 | 0.050 |
| 36 | 3.00 | 0.17 | 0.080 | ( 0.362) | 0.030 | 0.050 |
| 37 | 3.08 | 0.17 | 0.080 | ( 0.361) | 0.030 | 0.050 |
| 38 | 3.17 | 0.17 | 0.080 | ( 0.359) | 0.030 | 0.050 |
| 39 | 3.25 | 0.17 | 0.080 | ( 0.358) | 0.030 | 0.050 |
| 40 | 3.33 | 0.17 | 0.080 | ( 0.356) | 0.030 | 0.050 |
| 41 | 3.42 | 0.17 | 0.080 | ( 0.355) | 0.030 | 0.050 |
| 42 | 3.50 | 0.17 | 0.080 | ( 0.353) | 0.030 | 0.050 |
| 43 | 3.58 | 0.17 | 0.080 | ( 0.352) | 0.030 | 0.050 |
| 44 | 3.67 | 0.17 | 0.080 | ( 0.350) | 0.030 | 0.050 |
| 45 | 3.75 | 0.17 | 0.080 | ( 0.349) | 0.030 | 0.050 |
| 46 | 3.83 | 0.20 | 0.096 | ( 0.347) | 0.036 | 0.060 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | 3.92 | 0.20 | 0.096 | ( 0.346) | 0.036 | 0.060 |
| 48 | 4.00 | 0.20 | 0.096 | ( 0.344) | 0.036 | 0.060 |
| 49 | 4.08 | 0.20 | 0.096 | ( 0.343) | 0.036 | 0.060 |
| 50 | 4.17 | 0.20 | 0.096 | ( 0.341) | 0.036 | 0.060 |
| 51 | 4.25 | 0.20 | 0.096 | ( 0.340) | 0.036 | 0.060 |
| 52 | 4.33 | 0.23 | 0.112 | ( 0.338) | 0.043 | 0.069 |
| 53 | 4.42 | 0.23 | 0.112 | ( 0.337) | 0.043 | 0.069 |
| 54 | 4.50 | 0.23 | 0.112 | ( 0.336) | 0.043 | 0.069 |
| 55 | 4.58 | 0.23 | 0.112 | ( 0.334) | 0.043 | 0.069 |
| 56 | 4.67 | 0.23 | 0.112 | ( 0.333) | 0.043 | 0.069 |
| 57 | 4.75 | 0.23 | 0.112 | ( 0.331) | 0.043 | 0.069 |
| 58 | 4.83 | 0.27 | 0.128 | ( 0.330) | 0.049 | 0.079 |
| 59 | 4.92 | 0.27 | 0.128 | ( 0.328) | 0.049 | 0.079 |
| 60 | 5.00 | 0.27 | 0.128 | ( 0.327) | 0.049 | 0.079 |
| 61 | 5.08 | 0.20 | 0.096 | ( 0.326) | 0.036 | 0.060 |
| 62 | 5.17 | 0.20 | 0.096 | ( 0.324) | 0.036 | 0.060 |
| 63 | 5.25 | 0.20 | 0.096 | ( 0.323) | 0.036 | 0.060 |
| 64 | 5.33 | 0.23 | 0.112 | ( 0.321) | 0.043 | 0.069 |
| 65 | 5.42 | 0.23 | 0.112 | ( 0.320) | 0.043 | 0.069 |
| 66 | 5.50 | 0.23 | 0.112 | ( 0.318) | 0.043 | 0.069 |
| 67 | 5.58 | 0.27 | 0.128 | ( 0.317) | 0.049 | 0.079 |
| 68 | 5.67 | 0.27 | 0.128 | ( 0.316) | 0.049 | 0.079 |
| 69 | 5.75 | 0.27 | 0.128 | ( 0.314) | 0.049 | 0.079 |
| 70 | 5.83 | 0.27 | 0.128 | ( 0.313) | 0.049 | 0.079 |
| 71 | 5.92 | 0.27 | 0.128 | ( 0.312) | 0.049 | 0.079 |
| 72 | 6.00 | 0.27 | 0.128 | ( 0.310) | 0.049 | 0.079 |
| 73 | 6.08 | 0.30 | 0.144 | ( 0.309) | 0.055 | 0.089 |
| 74 | 6.17 | 0.30 | 0.144 | ( 0.307) | 0.055 | 0.089 |
| 75 | 6.25 | 0.30 | 0.144 | ( 0.306) | 0.055 | 0.089 |
| 76 | 6.33 | 0.30 | 0.144 | ( 0.305) | 0.055 | 0.089 |
| 77 | 6.42 | 0.30 | 0.144 | ( 0.303) | 0.055 | 0.089 |
| 78 | 6.50 | 0.30 | 0.144 | ( 0.302) | 0.055 | 0.089 |
| 79 | 6.58 | 0.33 | 0.160 | ( 0.301) | 0.061 | 0.099 |
| 80 | 6.67 | 0.33 | 0.160 | ( 0.299) | 0.061 | 0.099 |
| 81 | 6.75 | 0.33 | 0.160 | ( 0.298) | 0.061 | 0.099 |
| 82 | 6.83 | 0.33 | 0.160 | ( 0.297) | 0.061 | 0.099 |
| 83 | 6.92 | 0.33 | 0.160 | ( 0.295) | 0.061 | 0.099 |
| 84 | 7.00 | 0.33 | 0.160 | ( 0.294) | 0.061 | 0.099 |
| 85 | 7.08 | 0.33 | 0.160 | ( 0.293) | 0.061 | 0.099 |
| 86 | 7.17 | 0.33 | 0.160 | ( 0.291) | 0.061 | 0.099 |
| 87 | 7.25 | 0.33 | 0.160 | ( 0.290) | 0.061 | 0.099 |
| 88 | 7.33 | 0.37 | 0.176 | ( 0.289) | 0.067 | 0.109 |
| 89 | 7.42 | 0.37 | 0.176 | ( 0.287) | 0.067 | 0.109 |
| 90 | 7.50 | 0.37 | 0.176 | ( 0.286) | 0.067 | 0.109 |
| 91 | 7.58 | 0.40 | 0.192 | ( 0.285) | 0.073 | 0.119 |
| 92 | 7.67 | 0.40 | 0.192 | ( 0.283) | 0.073 | 0.119 |
| 93 | 7.75 | 0.40 | 0.192 | ( 0.282) | 0.073 | 0.119 |
| 94 | 7.83 | 0.43 | 0.208 | ( 0.281) | 0.079 | 0.129 |
| 95 | 7.92 | 0.43 | 0.208 | ( 0.279) | 0.079 | 0.129 |
| 96 | 8.00 | 0.43 | 0.208 | ( 0.278) | 0.079 | 0.129 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 97 | 8.08 | 0.50 | 0.240 | ( 0.277) | 0.091 | 0.149 |
| 98 | 8.17 | 0.50 | 0.240 | ( 0.275) | 0.091 | 0.149 |
| 99 | 8.25 | 0.50 | 0.240 | ( 0.274) | 0.091 | 0.149 |
| 100 | 8.33 | 0.50 | 0.240 | ( 0.273) | 0.091 | 0.149 |
| 101 | 8.42 | 0.50 | 0.240 | ( 0.272) | 0.091 | 0.149 |
| 102 | 8.50 | 0.50 | 0.240 | ( 0.270) | 0.091 | 0.149 |
| 103 | 8.58 | 0.53 | 0.256 | ( 0.269) | 0.097 | 0.159 |
| 104 | 8.67 | 0.53 | 0.256 | ( 0.268) | 0.097 | 0.159 |
| 105 | 8.75 | 0.53 | 0.256 | ( 0.267) | 0.097 | 0.159 |
| 106 | 8.83 | 0.57 | 0.272 | ( 0.265) | 0.103 | 0.169 |
| 107 | 8.92 | 0.57 | 0.272 | ( 0.264) | 0.103 | 0.169 |
| 108 | 9.00 | 0.57 | 0.272 | ( 0.263) | 0.103 | 0.169 |
| 109 | 9.08 | 0.63 | 0.304 | ( 0.262) | 0.116 | 0.188 |
| 110 | 9.17 | 0.63 | 0.304 | ( 0.260) | 0.116 | 0.188 |
| 111 | 9.25 | 0.63 | 0.304 | ( 0.259) | 0.116 | 0.188 |
| 112 | 9.33 | 0.67 | 0.320 | ( 0.258) | 0.122 | 0.198 |
| 113 | 9.42 | 0.67 | 0.320 | ( 0.257) | 0.122 | 0.198 |
| 114 | 9.50 | 0.67 | 0.320 | ( 0.255) | 0.122 | 0.198 |
| 115 | 9.58 | 0.70 | 0.336 | ( 0.254) | 0.128 | 0.208 |
| 116 | 9.67 | 0.70 | 0.336 | ( 0.253) | 0.128 | 0.208 |
| 117 | 9.75 | 0.70 | 0.336 | ( 0.252) | 0.128 | 0.208 |
| 118 | 9.83 | 0.73 | 0.352 | ( 0.251) | 0.134 | 0.218 |
| 119 | 9.92 | 0.73 | 0.352 | ( 0.249) | 0.134 | 0.218 |
| 120 | 10.00 | 0.73 | 0.352 | ( 0.248) | 0.134 | 0.218 |
| 121 | 10.08 | 0.50 | 0.240 | ( 0.247) | 0.091 | 0.149 |
| 122 | 10.17 | 0.50 | 0.240 | ( 0.246) | 0.091 | 0.149 |
| 123 | 10.25 | 0.50 | 0.240 | ( 0.245) | 0.091 | 0.149 |
| 124 | 10.33 | 0.50 | 0.240 | ( 0.243) | 0.091 | 0.149 |
| 125 | 10.42 | 0.50 | 0.240 | ( 0.242) | 0.091 | 0.149 |
| 126 | 10.50 | 0.50 | 0.240 | ( 0.241) | 0.091 | 0.149 |
| 127 | 10.58 | 0.67 | 0.320 | ( 0.240) | 0.122 | 0.198 |
| 128 | 10.67 | 0.67 | 0.320 | ( 0.239) | 0.122 | 0.198 |
| 129 | 10.75 | 0.67 | 0.320 | ( 0.237) | 0.122 | 0.198 |
| 130 | 10.83 | 0.67 | 0.320 | ( 0.236) | 0.122 | 0.198 |
| 131 | 10.92 | 0.67 | 0.320 | ( 0.235) | 0.122 | 0.198 |
| 132 | 11.00 | 0.67 | 0.320 | ( 0.234) | 0.122 | 0.198 |
| 133 | 11.08 | 0.63 | 0.304 | ( 0.233) | 0.116 | 0.188 |
| 134 | 11.17 | 0.63 | 0.304 | ( 0.232) | 0.116 | 0.188 |
| 135 | 11.25 | 0.63 | 0.304 | ( 0.231) | 0.116 | 0.188 |
| 136 | 11.33 | 0.63 | 0.304 | ( 0.229) | 0.116 | 0.188 |
| 137 | 11.42 | 0.63 | 0.304 | ( 0.228) | 0.116 | 0.188 |
| 138 | 11.50 | 0.63 | 0.304 | ( 0.227) | 0.116 | 0.188 |
| 139 | 11.58 | 0.57 | 0.272 | ( 0.226) | 0.103 | 0.169 |
| 140 | 11.67 | 0.57 | 0.272 | ( 0.225) | 0.103 | 0.169 |
| 141 | 11.75 | 0.57 | 0.272 | ( 0.224) | 0.103 | 0.169 |
| 142 | 11.83 | 0.60 | 0.288 | ( 0.223) | 0.109 | 0.179 |
| 143 | 11.92 | 0.60 | 0.288 | ( 0.222) | 0.109 | 0.179 |
| 144 | 12.00 | 0.60 | 0.288 | ( 0.220) | 0.109 | 0.179 |
| 145 | 12.08 | 0.83 | 0.400 | ( 0.219) | 0.152 | 0.248 |
| 146 | 12.17 | 0.83 | 0.400 | ( 0.218) | 0.152 | 0.248 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 147 | 12.25 | 0.83 | 0.400 | ( 0.217) | 0.152 | 0.248 |
| 148 | 12.33 | 0.87 | 0.416 | ( 0.216) | 0.158 | 0.258 |
| 149 | 12.42 | 0.87 | 0.416 | ( 0.215) | 0.158 | 0.258 |
| 150 | 12.50 | 0.87 | 0.416 | ( 0.214) | 0.158 | 0.258 |
| 151 | 12.58 | 0.93 | 0.448 | ( 0.213) | 0.170 | 0.278 |
| 152 | 12.67 | 0.93 | 0.448 | ( 0.212) | 0.170 | 0.278 |
| 153 | 12.75 | 0.93 | 0.448 | ( 0.211) | 0.170 | 0.278 |
| 154 | 12.83 | 0.97 | 0.464 | ( 0.210) | 0.176 | 0.288 |
| 155 | 12.92 | 0.97 | 0.464 | ( 0.209) | 0.176 | 0.288 |
| 156 | 13.00 | 0.97 | 0.464 | ( 0.207) | 0.176 | 0.288 |
| 157 | 13.08 | 1.13 | 0.544 | 0.206 | ( 0.207) | 0.338 |
| 158 | 13.17 | 1.13 | 0.544 | 0.205 | ( 0.207) | 0.339 |
| 159 | 13.25 | 1.13 | 0.544 | 0.204 | ( 0.207) | 0.340 |
| 160 | 13.33 | 1.13 | 0.544 | 0.203 | ( 0.207) | 0.341 |
| 161 | 13.42 | 1.13 | 0.544 | 0.202 | ( 0.207) | 0.342 |
| 162 | 13.50 | 1.13 | 0.544 | 0.201 | ( 0.207) | 0.343 |
| 163 | 13.58 | 0.77 | 0.368 | ( 0.200) | 0.140 | 0.228 |
| 164 | 13.67 | 0.77 | 0.368 | ( 0.199) | 0.140 | 0.228 |
| 165 | 13.75 | 0.77 | 0.368 | ( 0.198) | 0.140 | 0.228 |
| 166 | 13.83 | 0.77 | 0.368 | ( 0.197) | 0.140 | 0.228 |
| 167 | 13.92 | 0.77 | 0.368 | ( 0.196) | 0.140 | 0.228 |
| 168 | 14.00 | 0.77 | 0.368 | ( 0.195) | 0.140 | 0.228 |
| 169 | 14.08 | 0.90 | 0.432 | ( 0.194) | 0.164 | 0.268 |
| 170 | 14.17 | 0.90 | 0.432 | ( 0.193) | 0.164 | 0.268 |
| 171 | 14.25 | 0.90 | 0.432 | ( 0.192) | 0.164 | 0.268 |
| 172 | 14.33 | 0.87 | 0.416 | ( 0.191) | 0.158 | 0.258 |
| 173 | 14.42 | 0.87 | 0.416 | ( 0.190) | 0.158 | 0.258 |
| 174 | 14.50 | 0.87 | 0.416 | ( 0.189) | 0.158 | 0.258 |
| 175 | 14.58 | 0.87 | 0.416 | ( 0.188) | 0.158 | 0.258 |
| 176 | 14.67 | 0.87 | 0.416 | ( 0.187) | 0.158 | 0.258 |
| 177 | 14.75 | 0.87 | 0.416 | ( 0.186) | 0.158 | 0.258 |
| 178 | 14.83 | 0.83 | 0.400 | ( 0.185) | 0.152 | 0.248 |
| 179 | 14.92 | 0.83 | 0.400 | ( 0.184) | 0.152 | 0.248 |
| 180 | 15.00 | 0.83 | 0.400 | ( 0.184) | 0.152 | 0.248 |
| 181 | 15.08 | 0.80 | 0.384 | ( 0.183) | 0.146 | 0.238 |
| 182 | 15.17 | 0.80 | 0.384 | ( 0.182) | 0.146 | 0.238 |
| 183 | 15.25 | 0.80 | 0.384 | ( 0.181) | 0.146 | 0.238 |
| 184 | 15.33 | 0.77 | 0.368 | ( 0.180) | 0.140 | 0.228 |
| 185 | 15.42 | 0.77 | 0.368 | ( 0.179) | 0.140 | 0.228 |
| 186 | 15.50 | 0.77 | 0.368 | ( 0.178) | 0.140 | 0.228 |
| 187 | 15.58 | 0.63 | 0.304 | ( 0.177) | 0.116 | 0.188 |
| 188 | 15.67 | 0.63 | 0.304 | ( 0.176) | 0.116 | 0.188 |
| 189 | 15.75 | 0.63 | 0.304 | ( 0.175) | 0.116 | 0.188 |
| 190 | 15.83 | 0.63 | 0.304 | ( 0.174) | 0.116 | 0.188 |
| 191 | 15.92 | 0.63 | 0.304 | ( 0.173) | 0.116 | 0.188 |
| 192 | 16.00 | 0.63 | 0.304 | ( 0.173) | 0.116 | 0.188 |
| 193 | 16.08 | 0.13 | 0.064 | ( 0.172) | 0.024 | 0.040 |
| 194 | 16.17 | 0.13 | 0.064 | ( 0.171) | 0.024 | 0.040 |
| 195 | 16.25 | 0.13 | 0.064 | ( 0.170) | 0.024 | 0.040 |
| 196 | 16.33 | 0.13 | 0.064 | ( 0.169) | 0.024 | 0.040 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 197 | 16.42 | 0.13 | 0.064 | ( 0.168) | 0.024 | 0.040 |
| 198 | 16.50 | 0.13 | 0.064 | ( 0.167) | 0.024 | 0.040 |
| 199 | 16.58 | 0.10 | 0.048 | ( 0.166) | 0.018 | 0.030 |
| 200 | 16.67 | 0.10 | 0.048 | ( 0.166) | 0.018 | 0.030 |
| 201 | 16.75 | 0.10 | 0.048 | ( 0.165) | 0.018 | 0.030 |
| 202 | 16.83 | 0.10 | 0.048 | ( 0.164) | 0.018 | 0.030 |
| 203 | 16.92 | 0.10 | 0.048 | ( 0.163) | 0.018 | 0.030 |
| 204 | 17.00 | 0.10 | 0.048 | ( 0.162) | 0.018 | 0.030 |
| 205 | 17.08 | 0.17 | 0.080 | ( 0.161) | 0.030 | 0.050 |
| 206 | 17.17 | 0.17 | 0.080 | ( 0.161) | 0.030 | 0.050 |
| 207 | 17.25 | 0.17 | 0.080 | ( 0.160) | 0.030 | 0.050 |
| 208 | 17.33 | 0.17 | 0.080 | ( 0.159) | 0.030 | 0.050 |
| 209 | 17.42 | 0.17 | 0.080 | ( 0.158) | 0.030 | 0.050 |
| 210 | 17.50 | 0.17 | 0.080 | ( 0.157) | 0.030 | 0.050 |
| 211 | 17.58 | 0.17 | 0.080 | ( 0.157) | 0.030 | 0.050 |
| 212 | 17.67 | 0.17 | 0.080 | ( 0.156) | 0.030 | 0.050 |
| 213 | 17.75 | 0.17 | 0.080 | ( 0.155) | 0.030 | 0.050 |
| 214 | 17.83 | 0.13 | 0.064 | ( 0.154) | 0.024 | 0.040 |
| 215 | 17.92 | 0.13 | 0.064 | ( 0.154) | 0.024 | 0.040 |
| 216 | 18.00 | 0.13 | 0.064 | ( 0.153) | 0.024 | 0.040 |
| 217 | 18.08 | 0.13 | 0.064 | ( 0.152) | 0.024 | 0.040 |
| 218 | 18.17 | 0.13 | 0.064 | ( 0.151) | 0.024 | 0.040 |
| 219 | 18.25 | 0.13 | 0.064 | ( 0.151) | 0.024 | 0.040 |
| 220 | 18.33 | 0.13 | 0.064 | ( 0.150) | 0.024 | 0.040 |
| 221 | 18.42 | 0.13 | 0.064 | ( 0.149) | 0.024 | 0.040 |
| 222 | 18.50 | 0.13 | 0.064 | ( 0.148) | 0.024 | 0.040 |
| 223 | 18.58 | 0.10 | 0.048 | ( 0.148) | 0.018 | 0.030 |
| 224 | 18.67 | 0.10 | 0.048 | ( 0.147) | 0.018 | 0.030 |
| 225 | 18.75 | 0.10 | 0.048 | ( 0.146) | 0.018 | 0.030 |
| 226 | 18.83 | 0.07 | 0.032 | ( 0.146) | 0.012 | 0.020 |
| 227 | 18.92 | 0.07 | 0.032 | ( 0.145) | 0.012 | 0.020 |
| 228 | 19.00 | 0.07 | 0.032 | ( 0.144) | 0.012 | 0.020 |
| 229 | 19.08 | 0.10 | 0.048 | ( 0.144) | 0.018 | 0.030 |
| 230 | 19.17 | 0.10 | 0.048 | ( 0.143) | 0.018 | 0.030 |
| 231 | 19.25 | 0.10 | 0.048 | ( 0.142) | 0.018 | 0.030 |
| 232 | 19.33 | 0.13 | 0.064 | ( 0.142) | 0.024 | 0.040 |
| 233 | 19.42 | 0.13 | 0.064 | ( 0.141) | 0.024 | 0.040 |
| 234 | 19.50 | 0.13 | 0.064 | ( 0.140) | 0.024 | 0.040 |
| 235 | 19.58 | 0.10 | 0.048 | ( 0.140) | 0.018 | 0.030 |
| 236 | 19.67 | 0.10 | 0.048 | ( 0.139) | 0.018 | 0.030 |
| 237 | 19.75 | 0.10 | 0.048 | ( 0.138) | 0.018 | 0.030 |
| 238 | 19.83 | 0.07 | 0.032 | ( 0.138) | 0.012 | 0.020 |
| 239 | 19.92 | 0.07 | 0.032 | ( 0.137) | 0.012 | 0.020 |
| 240 | 20.00 | 0.07 | 0.032 | ( 0.136) | 0.012 | 0.020 |
| 241 | 20.08 | 0.10 | 0.048 | ( 0.136) | 0.018 | 0.030 |
| 242 | 20.17 | 0.10 | 0.048 | ( 0.135) | 0.018 | 0.030 |
| 243 | 20.25 | 0.10 | 0.048 | ( 0.135) | 0.018 | 0.030 |
| 244 | 20.33 | 0.10 | 0.048 | ( 0.134) | 0.018 | 0.030 |
| 245 | 20.42 | 0.10 | 0.048 | ( 0.133) | 0.018 | 0.030 |
| 246 | 20.50 | 0.10 | 0.048 | ( 0.133) | 0.018 | 0.030 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 247 | 20.58 | 0.10 | 0.048 | ( 0.132) | 0.018 | 0.030 |
| 248 | 20.67 | 0.10 | 0.048 | ( 0.132) | 0.018 | 0.030 |
| 249 | 20.75 | 0.10 | 0.048 | ( 0.131) | 0.018 | 0.030 |
| 250 | 20.83 | 0.07 | 0.032 | ( 0.131) | 0.012 | 0.020 |
| 251 | 20.92 | 0.07 | 0.032 | ( 0.130) | 0.012 | 0.020 |
| 252 | 21.00 | 0.07 | 0.032 | ( 0.130) | 0.012 | 0.020 |
| 253 | 21.08 | 0.10 | 0.048 | ( 0.129) | 0.018 | 0.030 |
| 254 | 21.17 | 0.10 | 0.048 | ( 0.129) | 0.018 | 0.030 |
| 255 | 21.25 | 0.10 | 0.048 | ( 0.128) | 0.018 | 0.030 |
| 256 | 21.33 | 0.07 | 0.032 | ( 0.128) | 0.012 | 0.020 |
| 257 | 21.42 | 0.07 | 0.032 | ( 0.127) | 0.012 | 0.020 |
| 258 | 21.50 | 0.07 | 0.032 | ( 0.127) | 0.012 | 0.020 |
| 259 | 21.58 | 0.10 | 0.048 | ( 0.126) | 0.018 | 0.030 |
| 260 | 21.67 | 0.10 | 0.048 | ( 0.126) | 0.018 | 0.030 |
| 261 | 21.75 | 0.10 | 0.048 | ( 0.125) | 0.018 | 0.030 |
| 262 | 21.83 | 0.07 | 0.032 | ( 0.125) | 0.012 | 0.020 |
| 263 | 21.92 | 0.07 | 0.032 | ( 0.124) | 0.012 | 0.020 |
| 264 | 22.00 | 0.07 | 0.032 | ( 0.124) | 0.012 | 0.020 |
| 265 | 22.08 | 0.10 | 0.048 | ( 0.124) | 0.018 | 0.030 |
| 266 | 22.17 | 0.10 | 0.048 | ( 0.123) | 0.018 | 0.030 |
| 267 | 22.25 | 0.10 | 0.048 | ( 0.123) | 0.018 | 0.030 |
| 268 | 22.33 | 0.07 | 0.032 | ( 0.122) | 0.012 | 0.020 |
| 269 | 22.42 | 0.07 | 0.032 | ( 0.122) | 0.012 | 0.020 |
| 270 | 22.50 | 0.07 | 0.032 | ( 0.122) | 0.012 | 0.020 |
| 271 | 22.58 | 0.07 | 0.032 | ( 0.121) | 0.012 | 0.020 |
| 272 | 22.67 | 0.07 | 0.032 | ( 0.121) | 0.012 | 0.020 |
| 273 | 22.75 | 0.07 | 0.032 | ( 0.121) | 0.012 | 0.020 |
| 274 | 22.83 | 0.07 | 0.032 | ( 0.120) | 0.012 | 0.020 |
| 275 | 22.92 | 0.07 | 0.032 | ( 0.120) | 0.012 | 0.020 |
| 276 | 23.00 | 0.07 | 0.032 | ( 0.120) | 0.012 | 0.020 |
| 277 | 23.08 | 0.07 | 0.032 | ( 0.120) | 0.012 | 0.020 |
| 278 | 23.17 | 0.07 | 0.032 | ( 0.119) | 0.012 | 0.020 |
| 279 | 23.25 | 0.07 | 0.032 | ( 0.119) | 0.012 | 0.020 |
| 280 | 23.33 | 0.07 | 0.032 | ( 0.119) | 0.012 | 0.020 |
| 281 | 23.42 | 0.07 | 0.032 | ( 0.119) | 0.012 | 0.020 |
| 282 | 23.50 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 283 | 23.58 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 284 | 23.67 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 285 | 23.75 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 286 | 23.83 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 287 | 23.92 | 0.07 | 0.032 | ( 0.118) | 0.012 | 0.020 |
| 288 | 24.00 | 0.07 | 0.032 | ( 0.117) | 0.012 | 0.020 |

(Loss Rate Not Used)

Sum = 100.0 Sum = 29.8

Flood volume = Effective rainfall 2.48(In)
times area 13.8(Ac.)/[(In)/(Ft.)] = 2.8(Ac.Ft)
Total soil loss = 1.52(In)
Total soil loss = 1.740(Ac.Ft)
Total rainfall = 4.00(In)
Flood volume = 123851.4 Cubic Feet

Total soil loss = 75793.3 Cubic Feet

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Peak flow rate of this hydrograph = 4.745(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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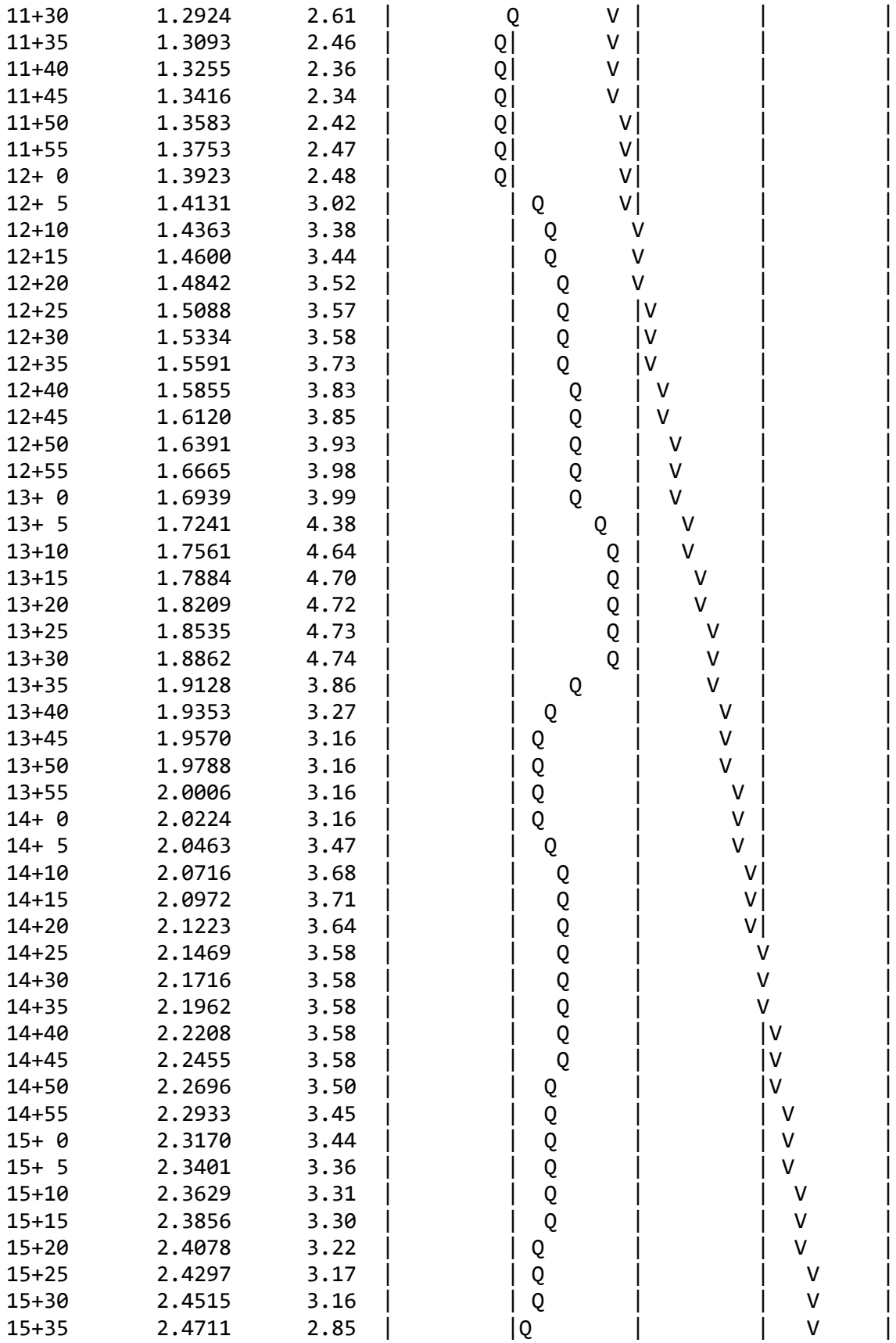
| Time(h+m) | Volume Ac.Ft | Q(CFS) | 0 | 2.5 | 5.0 | 7.5 | 10.0 |
|---|---|---|---|---|---|---|---|
| 0+ 5 | 0.0011 | 0.15 | Q | | | | |
| 0+10 | 0.0028 | 0.26 | VQ | | | | |
| 0+15 | 0.0047 | 0.28 | VQ | | | | |
| 0+20 | 0.0072 | 0.35 | VQ | | | | |
| 0+25 | 0.0099 | 0.40 | VQ | | | | |
| 0+30 | 0.0128 | 0.41 | VQ | | | | |
| 0+35 | 0.0156 | 0.41 | VQ | | | | |
| 0+40 | 0.0185 | 0.41 | VQ | | | | |
| 0+45 | 0.0213 | 0.41 | VQ | | | | |
| 0+50 | 0.0247 | 0.49 | VQ | | | | |
| 0+55 | 0.0284 | 0.54 | V Q | | | | |
| 1+ 0 | 0.0322 | 0.55 | V Q | | | | |
| 1+ 5 | 0.0354 | 0.47 | VQ | | | | |
| 1+10 | 0.0383 | 0.42 | VQ | | | | |
| 1+15 | 0.0412 | 0.41 | VQ | | | | |
| 1+20 | 0.0440 | 0.41 | VQ | | | | |
| 1+25 | 0.0469 | 0.41 | VQ | | | | |
| 1+30 | 0.0497 | 0.41 | VQ | | | | |
| 1+35 | 0.0526 | 0.41 | VQ | | | | |
| 1+40 | 0.0554 | 0.41 | VQ | | | | |
| 1+45 | 0.0582 | 0.41 | VQ | | | | |
| 1+50 | 0.0616 | 0.49 | VQ | | | | |
| 1+55 | 0.0653 | 0.54 | V Q | | | | |
| 2+ 0 | 0.0691 | 0.55 | V Q | | | | |
| 2+ 5 | 0.0729 | 0.55 | \|VQ | | | | |
| 2+10 | 0.0767 | 0.55 | \|VQ | | | | |
| 2+15 | 0.0805 | 0.55 | \|VQ | | | | |
| 2+20 | 0.0843 | 0.55 | \|VQ | | | | |
| 2+25 | 0.0881 | 0.55 | \|VQ | | | | |
| 2+30 | 0.0919 | 0.55 | \|VQ | | | | |
| 2+35 | 0.0962 | 0.63 | \|VQ | | | | |
| 2+40 | 0.1009 | 0.68 | \|VQ | | | | |
| 2+45 | 0.1056 | 0.69 | \|VQ | | | | |
| 2+50 | 0.1103 | 0.69 | \|VQ | | | | |
| 2+55 | 0.1151 | 0.69 | \|VQ | | | | |
| 3+ 0 | 0.1198 | 0.69 | \|VQ | | | | |
| 3+ 5 | 0.1245 | 0.69 | \|VQ | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3+10 | 0.1293 | 0.69 | VQ | | | | |
| 3+15 | 0.1340 | 0.69 | VQ | | | | |
| 3+20 | 0.1387 | 0.69 | VQ | | | | |
| 3+25 | 0.1435 | 0.69 | Q | | | | |
| 3+30 | 0.1482 | 0.69 | Q | | | | |
| 3+35 | 0.1530 | 0.69 | Q | | | | |
| 3+40 | 0.1577 | 0.69 | Q | | | | |
| 3+45 | 0.1624 | 0.69 | Q | | | | |
| 3+50 | 0.1677 | 0.76 | VQ | | | | |
| 3+55 | 0.1733 | 0.82 | VQ | | | | |
| 4+ 0 | 0.1790 | 0.83 | VQ | | | | |
| 4+ 5 | 0.1847 | 0.83 | VQ | | | | |
| 4+10 | 0.1904 | 0.83 | VQ | | | | |
| 4+15 | 0.1960 | 0.83 | VQ | | | | |
| 4+20 | 0.2023 | 0.90 | VQ | | | | |
| 4+25 | 0.2088 | 0.95 | VQ | | | | |
| 4+30 | 0.2155 | 0.96 | Q | | | | |
| 4+35 | 0.2221 | 0.96 | Q | | | | |
| 4+40 | 0.2287 | 0.96 | Q | | | | |
| 4+45 | 0.2354 | 0.96 | Q | | | | |
| 4+50 | 0.2425 | 1.04 | VQ | | | | |
| 4+55 | 0.2500 | 1.09 | VQ | | | | |
| 5+ 0 | 0.2576 | 1.10 | VQ | | | | |
| 5+ 5 | 0.2641 | 0.95 | Q | | | | |
| 5+10 | 0.2699 | 0.84 | Q | | | | |
| 5+15 | 0.2756 | 0.83 | Q | | | | |
| 5+20 | 0.2818 | 0.90 | Q | | | | |
| 5+25 | 0.2884 | 0.95 | QV | | | | |
| 5+30 | 0.2950 | 0.96 | QV | | | | |
| 5+35 | 0.3022 | 1.04 | Q | | | | |
| 5+40 | 0.3097 | 1.09 | Q | | | | |
| 5+45 | 0.3173 | 1.10 | Q | | | | |
| 5+50 | 0.3249 | 1.10 | Q | | | | |
| 5+55 | 0.3324 | 1.10 | Q | | | | |
| 6+ 0 | 0.3400 | 1.10 | Q | | | | |
| 6+ 5 | 0.3481 | 1.18 | Q | | | | |
| 6+10 | 0.3566 | 1.23 | QV | | | | |
| 6+15 | 0.3651 | 1.24 | QV | | | | |
| 6+20 | 0.3736 | 1.24 | QV | | | | |
| 6+25 | 0.3822 | 1.24 | QV | | | | |
| 6+30 | 0.3907 | 1.24 | QV | | | | |
| 6+35 | 0.3997 | 1.31 | Q | | | | |
| 6+40 | 0.4092 | 1.37 | Q | | | | |
| 6+45 | 0.4186 | 1.38 | Q | | | | |
| 6+50 | 0.4281 | 1.38 | QV | | | | |
| 6+55 | 0.4376 | 1.38 | QV | | | | |
| 7+ 0 | 0.4470 | 1.38 | QV | | | | |
| 7+ 5 | 0.4565 | 1.38 | QV | | | | |
| 7+10 | 0.4660 | 1.38 | QV | | | | |
| 7+15 | 0.4755 | 1.38 | QV | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 7+20 | 0.4855 | 1.45 | QV | | | |
| 7+25 | 0.4958 | 1.50 | Q | | | |
| 7+30 | 0.5062 | 1.51 | QV | | | |
| 7+35 | 0.5172 | 1.59 | QV | | | |
| 7+40 | 0.5285 | 1.64 | QV | | | |
| 7+45 | 0.5399 | 1.65 | QV | | | |
| 7+50 | 0.5518 | 1.73 | QV | | | |
| 7+55 | 0.5640 | 1.78 | Q | | | |
| 8+ 0 | 0.5763 | 1.79 | QV | | | |
| 8+ 5 | 0.5897 | 1.94 | QV | | | |
| 8+10 | 0.6038 | 2.05 | Q | | | |
| 8+15 | 0.6180 | 2.06 | Q | | | |
| 8+20 | 0.6322 | 2.06 | Q | | | |
| 8+25 | 0.6464 | 2.06 | QV | | | |
| 8+30 | 0.6606 | 2.06 | QV | | | |
| 8+35 | 0.6754 | 2.14 | QV | | | |
| 8+40 | 0.6904 | 2.19 | QV | | | |
| 8+45 | 0.7056 | 2.20 | QV | | | |
| 8+50 | 0.7213 | 2.28 | QV | | | |
| 8+55 | 0.7373 | 2.33 | QV | | | |
| 9+ 0 | 0.7534 | 2.34 | QV | | | |
| 9+ 5 | 0.7706 | 2.49 | QV | | | |
| 9+10 | 0.7885 | 2.60 | QV | | | |
| 9+15 | 0.8065 | 2.61 | QV | | | |
| 9+20 | 0.8250 | 2.69 | QV | | | |
| 9+25 | 0.8439 | 2.74 | QV | | | |
| 9+30 | 0.8628 | 2.75 | QV | | | |
| 9+35 | 0.8823 | 2.83 | QV | | | |
| 9+40 | 0.9021 | 2.88 | QV | | | |
| 9+45 | 0.9220 | 2.89 | QV | | | |
| 9+50 | 0.9424 | 2.97 | Q V | | | |
| 9+55 | 0.9632 | 3.02 | QV | | | |
| 10+ 0 | 0.9841 | 3.03 | QV | | | |
| 10+ 5 | 1.0012 | 2.49 | Q V | | | |
| 10+10 | 1.0158 | 2.13 | Q V | | | |
| 10+15 | 1.0300 | 2.06 | Q V | | | |
| 10+20 | 1.0442 | 2.06 | Q V | | | |
| 10+25 | 1.0584 | 2.06 | Q V | | | |
| 10+30 | 1.0726 | 2.06 | Q V | | | |
| 10+35 | 1.0895 | 2.45 | Q V | | | |
| 10+40 | 1.1081 | 2.71 | Q V | | | |
| 10+45 | 1.1271 | 2.75 | Q V | | | |
| 10+50 | 1.1460 | 2.75 | Q V | | | |
| 10+55 | 1.1650 | 2.75 | Q V | | | |
| 11+ 0 | 1.1839 | 2.75 | Q V | | | |
| 11+ 5 | 1.2023 | 2.67 | Q V | | | |
| 11+10 | 1.2204 | 2.62 | Q V | | | |
| 11+15 | 1.2384 | 2.61 | Q V | | | |
| 11+20 | 1.2564 | 2.61 | Q V | | | |
| 11+25 | 1.2744 | 2.61 | Q V | | | |



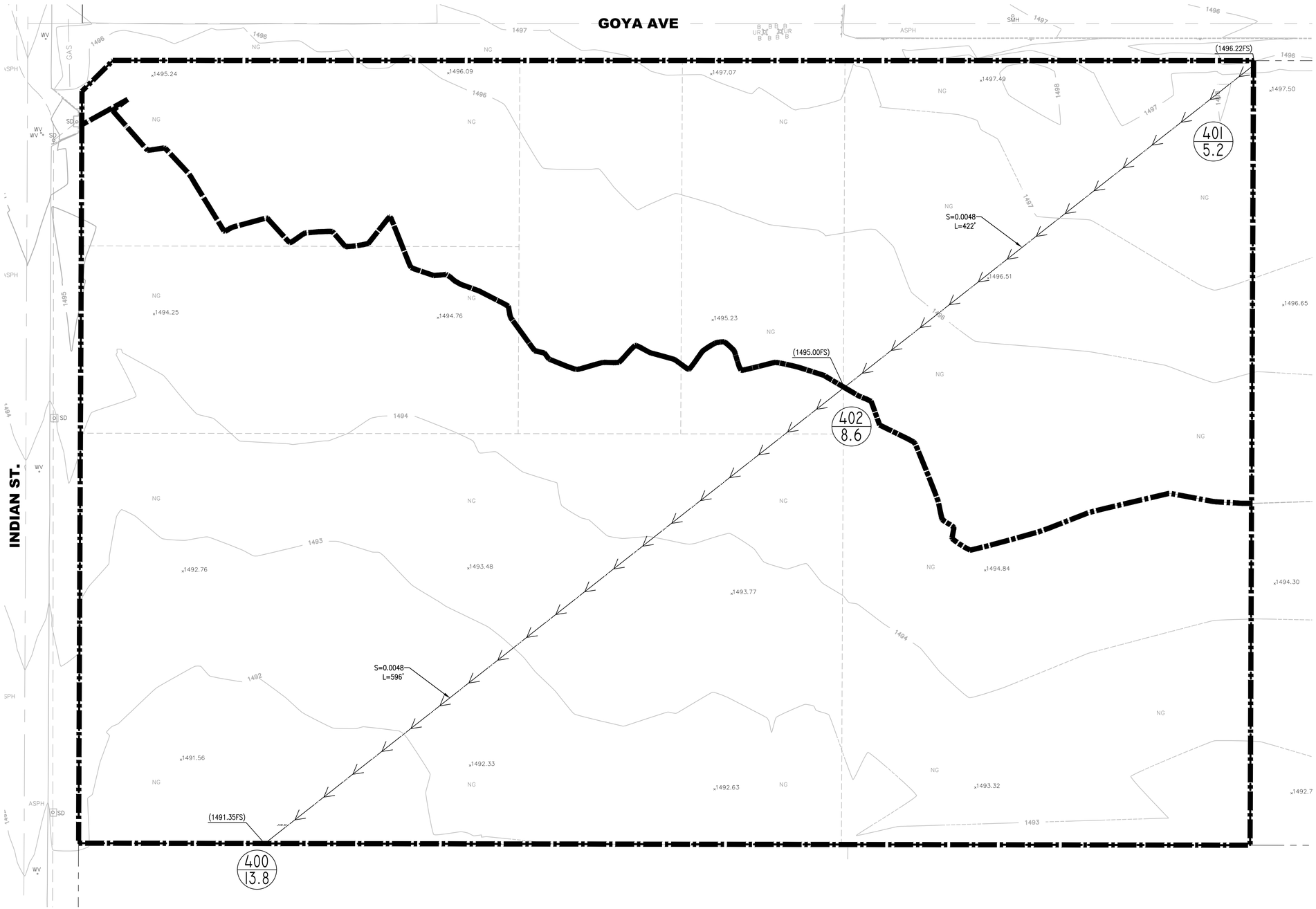
```
15+40       2.4894      2.65  |          Q          |          |     V     |
15+45       2.5074      2.61  |          Q          |          |     V     |
15+50       2.5254      2.61  |          Q          |          |     V     |
15+55       2.5434      2.61  |          Q          |          |     V     |
16+ 0       2.5614      2.61  |          Q          |          |      V    |
16+ 5       2.5714      1.46  |     Q     |         |          |      V    |
16+10       2.5761      0.68  | Q         |         |          |      V    |
16+15       2.5799      0.55  | Q         |         |          |      V    |
16+20       2.5837      0.55  | Q         |         |          |      V    |
16+25       2.5875      0.55  | Q         |         |          |      V    |
16+30       2.5913      0.55  | Q         |         |          |      V    |
16+35       2.5945      0.47  |Q          |         |          |      V    |
16+40       2.5974      0.42  |Q          |         |          |      V    |
16+45       2.6003      0.41  |Q          |         |          |      V    |
16+50       2.6031      0.41  |Q          |         |          |      V    |
16+55       2.6060      0.41  |Q          |         |          |      V    |
17+ 0       2.6088      0.41  |Q          |         |          |      V    |
17+ 5       2.6127      0.57  | Q         |         |          |      V    |
17+10       2.6173      0.67  | Q         |         |          |      V    |
17+15       2.6220      0.69  | Q         |         |          |      V    |
17+20       2.6268      0.69  | Q         |         |          |      V    |
17+25       2.6315      0.69  | Q         |         |          |       V   |
17+30       2.6363      0.69  | Q         |         |          |       V   |
17+35       2.6410      0.69  | Q         |         |          |       V   |
17+40       2.6457      0.69  | Q         |         |          |       V   |
17+45       2.6505      0.69  | Q         |         |          |       V   |
17+50       2.6547      0.61  | Q         |         |          |       V   |
17+55       2.6585      0.56  | Q         |         |          |       V   |
18+ 0       2.6623      0.55  | Q         |         |          |       V   |
18+ 5       2.6661      0.55  | Q         |         |          |       V   |
18+10       2.6699      0.55  | Q         |         |          |       V   |
18+15       2.6737      0.55  | Q         |         |          |       V   |
18+20       2.6775      0.55  | Q         |         |          |       V   |
18+25       2.6813      0.55  | Q         |         |          |       V   |
18+30       2.6850      0.55  | Q         |         |          |       V   |
18+35       2.6883      0.47  |Q          |         |          |       V   |
18+40       2.6912      0.42  |Q          |         |          |       V   |
18+45       2.6940      0.41  |Q          |         |          |       V   |
18+50       2.6964      0.34  |Q          |         |          |       V   |
18+55       2.6983      0.28  |Q          |         |          |       V   |
19+ 0       2.7002      0.28  |Q          |         |          |       V   |
19+ 5       2.7026      0.35  |Q          |         |          |        V  |
19+10       2.7054      0.40  |Q          |         |          |        V  |
19+15       2.7082      0.41  |Q          |         |          |        V  |
19+20       2.7116      0.49  |Q          |         |          |        V  |
19+25       2.7153      0.54  | Q         |         |          |        V  |
19+30       2.7191      0.55  | Q         |         |          |        V  |
19+35       2.7224      0.47  |Q          |         |          |        V  |
19+40       2.7253      0.42  |Q          |         |          |        V  |
19+45       2.7281      0.41  |Q          |         |          |        V  |
```

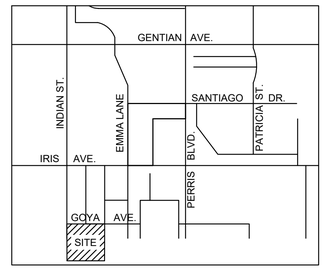
```
19+50       2.7305      0.34  |Q        |         |         |        V |
19+55       2.7324      0.28  |Q        |         |         |        V |
20+ 0       2.7343      0.28  |Q        |         |         |        V |
20+ 5       2.7367      0.35  |Q        |         |         |        V |
20+10       2.7395      0.40  |Q        |         |         |        V |
20+15       2.7423      0.41  |Q        |         |         |        V |
20+20       2.7452      0.41  |Q        |         |         |        V |
20+25       2.7480      0.41  |Q        |         |         |        V |
20+30       2.7509      0.41  |Q        |         |         |        V |
20+35       2.7537      0.41  |Q        |         |         |        V |
20+40       2.7566      0.41  |Q        |         |         |        V |
20+45       2.7594      0.41  |Q        |         |         |        V |
20+50       2.7617      0.34  |Q        |         |         |        V |
20+55       2.7637      0.28  |Q        |         |         |        V |
21+ 0       2.7656      0.28  |Q        |         |         |        V |
21+ 5       2.7680      0.35  |Q        |         |         |        V |
21+10       2.7708      0.40  |Q        |         |         |        V |
21+15       2.7736      0.41  |Q        |         |         |         V|
21+20       2.7759      0.34  |Q        |         |         |         V|
21+25       2.7779      0.28  |Q        |         |         |         V|
21+30       2.7798      0.28  |Q        |         |         |         V|
21+35       2.7822      0.35  |Q        |         |         |         V|
21+40       2.7850      0.40  |Q        |         |         |         V|
21+45       2.7878      0.41  |Q        |         |         |         V|
21+50       2.7901      0.34  |Q        |         |         |         V|
21+55       2.7921      0.28  |Q        |         |         |         V|
22+ 0       2.7940      0.28  |Q        |         |         |         V|
22+ 5       2.7964      0.35  |Q        |         |         |         V|
22+10       2.7992      0.40  |Q        |         |         |         V|
22+15       2.8020      0.41  |Q        |         |         |         V|
22+20       2.8043      0.34  |Q        |         |         |         V|
22+25       2.8063      0.28  |Q        |         |         |         V|
22+30       2.8082      0.28  |Q        |         |         |         V|
22+35       2.8101      0.28  |Q        |         |         |         V|
22+40       2.8120      0.28  |Q        |         |         |         V|
22+45       2.8139      0.28  |Q        |         |         |         V|
22+50       2.8158      0.28  |Q        |         |         |         V|
22+55       2.8177      0.28  |Q        |         |         |         V|
23+ 0       2.8195      0.28  |Q        |         |         |         V|
23+ 5       2.8214      0.28  |Q        |         |         |         V|
23+10       2.8233      0.28  |Q        |         |         |         V|
23+15       2.8252      0.28  |Q        |         |         |         V|
23+20       2.8271      0.28  |Q        |         |         |         V|
23+25       2.8290      0.28  |Q        |         |         |         V|
23+30       2.8309      0.28  |Q        |         |         |         V|
23+35       2.8328      0.28  |Q        |         |         |         V|
23+40       2.8347      0.28  |Q        |         |         |         V|
23+45       2.8366      0.28  |Q        |         |         |         V|
23+50       2.8385      0.28  |Q        |         |         |         V|
23+55       2.8404      0.28  |Q        |         |         |         V|
```

```
   24+ 0       2.8423      0.28  |Q        |         |         |        V|
   24+ 5       2.8431      0.12  Q         |         |         |        V|
   24+10       2.8432      0.02  Q         |         |         |         V
-------------------------------------------------------------------------
```

# APPENDIX D

Hydrology Maps




## SITE LOCATION MAP

NOT TO SCALE

## LEGENDS

- 1.09 / 1.24 — SUBAREA WATERSHED NODE, AREA IN ACRES
- HYDROLOGIC SUBAREA WATERSHED BOUNDARY
- FLOWLINE
- EXISTING MAJOR CONTOUR (1310)
- EXISTING MINOR CONTOUR

## AREA QUANTITIES

| | |
|---|---|
| PROJECT AREA: | ±599,050 SQ. FT. (13.75 AC) |
| ANALYZED DRAINAGE AREA: | ±599,050 SQ. FT. (13.75 AC) |

UNDERGROUND SERVICE ALERT
CALL:TOLL FREE
1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

**PEN22-XXXX/XXXX**
**LST22-XXXXX**

**NOTE:**
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER CITY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.

| MARK | BY | DATE | REVISIONS | APPR. | DATE |
|---|---|---|---|---|---|
| | | | | | |

DESIGNER | CITY

SEAL-ENGINEER

GreenbergFarrow
30 Executive Park, Suite 100
Irvine, CA 92614
t: 949 296 0450 f: 949 296 0479

JOB NO. 20200259.0

PREPARED BY:

BAHAREH SEHATZADEH RCE C89859, EXP. 06/30/2023 — DATE

BENCHMARK

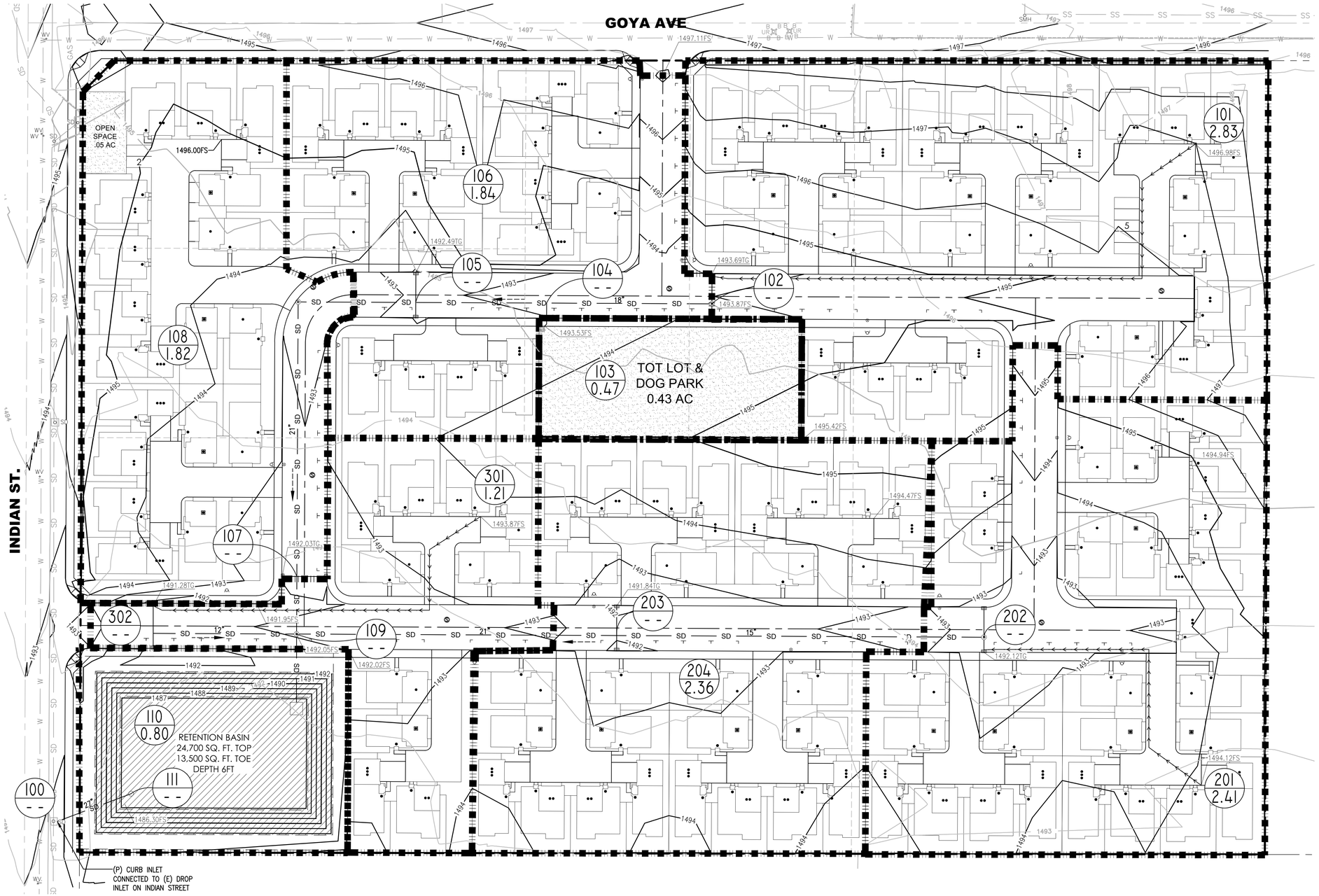
# CITY OF MORENO VALLEY

## PATTON SOUTH OF GOYA

SHEET NO. OF 2 SHEET

INITIAL DESIGN DATE: 03/15/2023

FOR: | W.O. | CITY FILE NO.




## LEGENDS

- 1.09 / 1.24 — SUBAREA WATERSHED NODE / AREA IN ACRES
- HYDROLOGIC SUBAREA WATERSHED BOUNDARY
- FLOWLINE
- STORM PIPE FLOW DIRECTION
- 1310 — PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- 1310 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR

## AREA QUANTITIES

| | |
|---|---|
| PROJECT AREA: | ±599,050 SQ. FT. (13.75 AC) |
| ANALYZED DRAINAGE AREA: | ±599,050 SQ. FT. (13.75 AC) |

GRAPHIC SCALE
40 0 20 40
( IN FEET )
1 inch = 40 ft.

UNDERGROUND SERVICE ALERT
CALL:TOLL FREE
1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

**NOTE:**
WORK CONTAINED WITHIN THESE PLANS SHALL NOT COMMENCE UNTIL AN ENCROACHMENT PERMIT AND/OR A GRADING PERMIT HAS BEEN ISSUED.

THE PRIVATE ENGINEER SIGNING THESE PLANS IS RESPONSIBLE FOR ASSURING THE ACCURACY AND ACCEPTABILITY OF THE DESIGN HEREON. IN THE EVENT OF DISCREPANCIES ARISING AFTER CITY APPROVAL OR DURING CONSTRUCTION, THE PRIVATE ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING AN ACCEPTABLE SOLUTION AND REVISING THE PLANS FOR APPROVAL BY THE CITY.

| MARK | BY | DATE | REVISIONS | APPR. | DATE |
|---|---|---|---|---|---|
| | | | | | |

DESIGNER — CITY

SEAL-ENGINEER

JOB NO. 20200259.0

GreenbergFarrow
30 Executive Park, Suite 100
Irvine, CA 92614
t: 949 296 0450 f: 949 296 0479

PREPARED BY:

BAHAREH SEHATZADEH RCE C89859, EXP. 06/30/2023 — DATE

BENCHMARK

PEN22-XXXX/XXXX
LST22-XXXXX

# CITY OF MORENO VALLEY

## PATTON SOUTH OF GOYA

INITIAL DESIGN DATE: 03/15/2023

SHEET NO. OF 2 SHEET

FOR: | W.O. | CITY FILE NO.

# APPENDIX E

BMP Sizing Calculations

R 07 W | R 06 W | R 05 W | R 04 W | R 03 W | R 02 W | R 01 W | R 01 E | R 02 E | R 03 E | R 04 E | R 05 E

T 01 S
T 02 S
T 03 S
T 04 S
T 05 S
T 06 S
T 07 S
T 08 S

| | | | | | |
|---|---|---|---|---|---|
| 06 | 05 | 04 | 03 | 02 | 01 |
| 07 | 08 | 09 | 10 | 11 | 12 |
| 18 | 17 | 16 | 15 | 14 | 13 |
| 19 | 20 | 21 | 22 | 23 | 24 |
| 30 | 29 | 28 | 27 | 26 | 25 |
| 31 | 32 | 33 | 34 | 35 | 36 |

0.85 MiraLoma
0.61 RiversideNorth
0.54 RiversideSouth
0.68 PigeonPass
0.66 MorenoEast
0.85 Beaumont
0.88 PradoDam
0.51 Woodcrest
0.50 LakeMathews
0.68 PerrisReservoir
PROJECT SITE
$D_{85}$ = 0.65"
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.90 HurkeyCreek
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley

Santa Ana River Watershed
Santa Margarita Watershed

JURUPA VALLEY | EASTVALE | NORCO | CORONA | RIVERSIDE | MORENO VALLEY | CALIMESA | BEAUMONT | SAN JACINTO | PERRIS | HEMET | CANYON LAKE | LAKE ELSINORE | MENIFEE | WILDOMAR | MURRIETA | TEMECULA

N

Rain Gage Locations

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

# Isohyetal Map for the 85th Percentile 24 hour Storm Event

July 2011

| Bioretention Facility - Design Procedure | BMP ID | Legend: | Required Entries |
|---|---|---|---|
| | | | Calculated Cells |

| | | | |
|---|---|---|---|
| Company Name: | South of Goya | Date: | 3/16/2023 |
| Designed by: | SK | County/City Case No.: | |

## Design Volume

| | | | |
|---|---|---|---|
| Enter the area tributary to this feature | $A_T$= | 13.7 | acres |
| Enter $V_{BMP}$ determined from Section 2.1 of this Handbook | $V_{BMP}$= | 14,845 | $ft^3$ |

## Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

## Bioretention Facility Surface Area

| | | | |
|---|---|---|---|
| Depth of Soil Filter Media Layer | $d_S$ = | 3.0 | ft |
| Top Width of Bioretention Facility, excluding curb | $w_T$ = | 130.0 | ft |
| Total Effective Depth, $d_E$<br>$d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$ | $d_E$ = | 1.79 | ft |
| Minimum Surface Area, $A_m$<br>$A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$ | $A_M$ = | 8,272 | $ft^2$ |
| Proposed Surface Area | A= | 13,500 | $ft^2$ |

## Bioretention Facility Properties

| | | | |
|---|---|---|---|
| Side Slopes in Bioretention Facility | z = | 4 | :1 |
| Diameter of Underdrain | | 6 | inches |
| Longitudinal Slope of Site (3% maximum) | | 0.8 | % |
| 6" Check Dam Spacing | | 0 | feet |
| Describe Vegetation: | | | |

Notes:

# Santa Ana Watershed - BMP Design Volume, $V_{BMP}$

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

| | | | |
|---|---|---|---|
| Company Name | South of Goya | Date | 3/16/2023 |
| Designed by | SK | Case No | |
| Company Project Number/Name | 202208150 Patton South of Goya | | |

## BMP Identification

BMP NAME / ID

*Must match Name/ID used on BMP Design Calculation Sheet*

## Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

$D_{85}$= 0.65 inches

## Drainage Management Area Tabulation

*Insert additional rows if needed to accommodate all DMAs draining to the BMP*

| DMA Type/ID | DMA Area (square feet) | Post-Project Surface Type | Effective Imperivous Fraction, $I_f$ | DMA Runoff Factor | DMA Areas x Runoff Factor | *Design Storm Depth (in)* | *Design Capture Volume, $V_{BMP}$ (cubic feet)* | *Proposed Volume on Plans (cubic feet)* |
|---|---|---|---|---|---|---|---|---|
| *101* | *123,211* | *Mixed Surface Types* | *0.71* | *0.50* | *61468.2* | | | |
| *103* | *20,271* | *Ornamental Landscaping* | *0.10* | *0.11* | *2239.1* | | | |
| *106* | *80,140* | *Mixed Surface Types* | *0.72* | *0.51* | *40883.2* | | | |
| *108* | *79,196* | *Mixed Surface Types* | *0.68* | *0.47* | *37410.4* | | | |
| *110* | *35,014* | *Ornamental Landscaping* | *0.10* | *0.11* | *3867.6* | | | |
| *201* | *105,195* | *Mixed Surface Types* | *0.69* | *0.48* | *50874.7* | | | |
| *204* | *102,785* | *Mixed Surface Types* | *0.69* | *0.48* | *49680.3* | | | |
| *301* | *52,745* | *Mixed Surface Types* | *0.73* | *0.52* | *27638.5* | | | |
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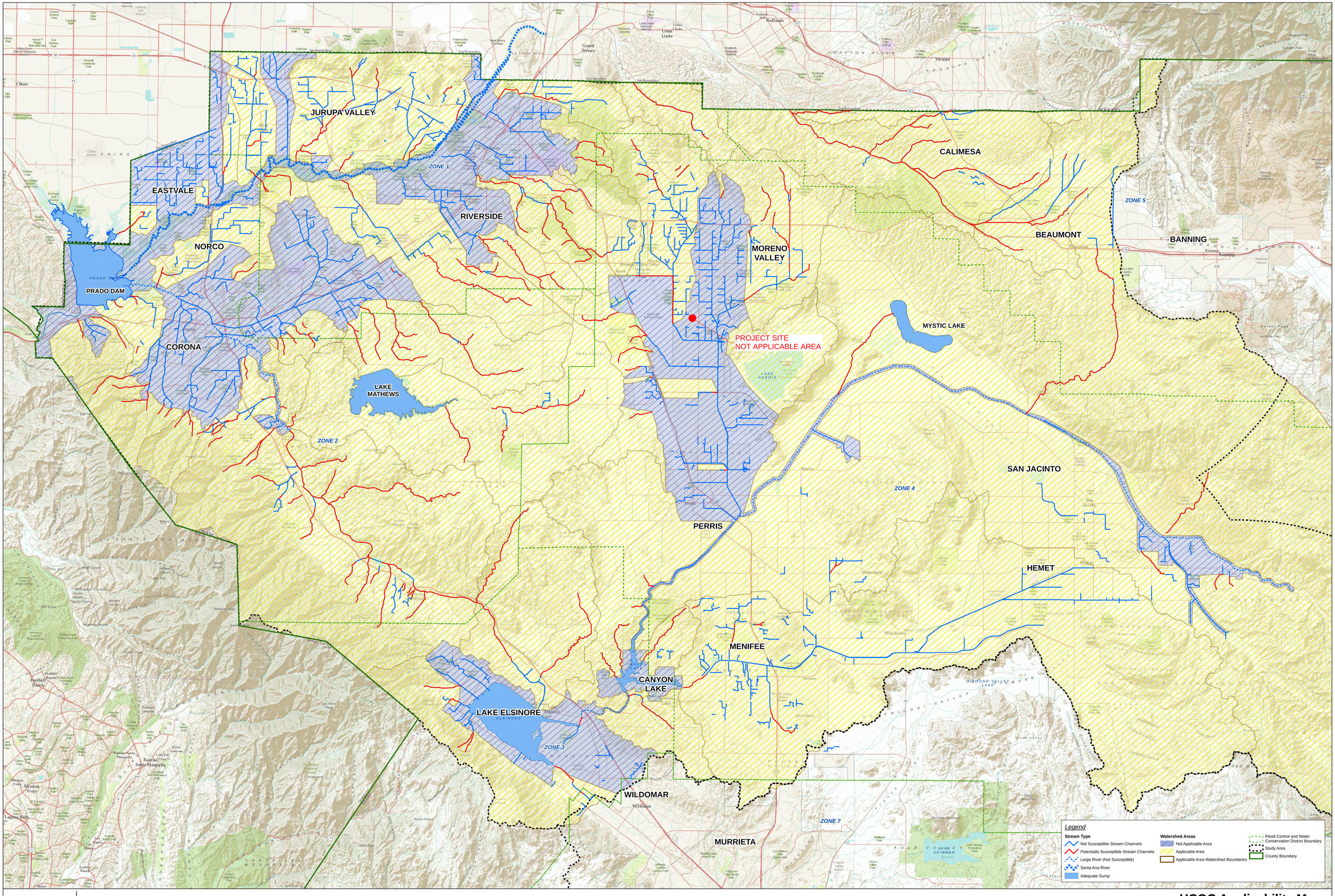
| | *598557* | *Total* | | | *274062* | *0.65* | *14845* | *88805* |

Notes:

# APPENDIX F

HCOC Applicability Map




# HCOC Applicability Map

Hydromodification Susceptibility Documentation Report and Mapping
Riverside County Flood Control and Water Conservation District

Map 2