Appendix L

Preliminary Drainage Report

Kimley»Horn

PRELIMINARY DRAINAGE REPORT

Sunrise Community Solar and Battery Energy Storage System Project

APN 0498-111-04, 0498-111-05

Sunrise Road, Boron, CA 93516

Permit#: Proj-2023-00169

PREPARED FOR

RPCA Solar 13, LLC

44 Montgomery Street, Suite 3150
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PREPARED BY

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INTRODUCTION

RPCA Solar 13, LLC is proposing a community solar project capable of producing 14 MWac. The Project is to be located at the northeast corner of Twenty Mule Team Road and the western boundary line of San Bernardino County, within unincorporated San Bernardino County. This drainage study will evaluate the 100-year ponding depths within the subject tract due to flows associated with local rainfall in the vicinity of the subject tract.

The Project site is bound by Mojave Barstow Highway (Highway 58) to the north and east, Old Highway 58 to the east, Twenty Mule Team Road to the south, and the western boundary line of San Bernardino County to the west. Refer to **Figure 1** for the Vicinity map.

PURPOSE

The purpose of this report is to summarize the results of the hydrologic and hydraulic analysis conducted for the project for the 100-year storm event and the water quality analysis. RPCA Solar 13, LLC is intending to develop the property as a ground-mount photovoltaic solar power generation facility. This analysis included offsite runoff from the nearby mountains. The hydrologic analysis was used to develop a hydraulic analysis to determine the site drainage limits and characteristics.

PROJECT METHODOLOGIES

Hydrologic calculations were completed per the Natural Resources Conservation Service (NRCS) National Engineering Handbook (NEH) Part 630 – Hydrology and the San Bernardino County Hydrology Manual and Addendum. The Hydrowin Advanced Engineering Software (AES) software was used to calculate the loss rate values, effective rainfall, S-graph, and onsite hydrologic model based off of arid region San Bernardino County guidelines. More specifically:

- Watersheds were delineated utilizing USGS 1-meter National Elevation Dataset (NED) digital elevation models.
- Hydrologic Soil Group Data was digitized and geo-referenced from the San Bernardino County Hydrology Manual Hydrologic Soils Group Map (Figure C-11).
- Existing land uses based on the 2019 National Land Cover Database from the Multi-Resolution Land Characteristics Consortium (MRLC).
- Rainfall data from National Oceanic and Atmospheric Administration (NOAA) Atlas 14.
- The San Bernardino County 24-hour Desert S-graph was used to model the precipitation for the model.
- The San Bernardino County Hydrology Manual design storm loss rate method was used to estimate rainfall losses and direct runoff.
- The Manning's n value was assigned based on existing land use, defined by aerial imagery and the National Land Cover Database.

The unsteady two-dimensional function in United States Army Corps of Engineers HEC-RAS computer program (Version 6.2) was used for the hydraulic modeling.

FEMA FLOODPLAIN CLASSIFICATIONS

The Special Flood Hazard Areas (SFHA) are outlined in the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps. The Project is located on FEMA Flood Insurance Rate Map FIRM Community Panel Nos. 06071C3175H, 06071C3200H, 06071C3825H, 06071C3800H, dated August 28, 2008. The panels are not printed, and the site is located within a Zone D, or Area of Undetermined Flood Hazard. Refer to the FEMA FIRMette for the site in **Attachment A.** The project area was considered in the HEC-RAS model to determine the extent of the potential flood hazards.

HYDROLOGY

A detailed hydrologic analysis was completed for the property. The analysis included hydrology modeling for onsite and offsite watersheds. Refer to **Figure 6** for the Drainage Area Map.

The property generally drains from southeast to northwest at a grade of 1% - 2%. The total contributing watershed to this property is limited by highway and rail infrastructure to the north and south with minimal run-on expected from offsite areas. The soils onsite consist of sandy, silty loam, and rock. No information was made available through the United States Department of Agriculture (USDA) Web Soil Survey at this time to confirm the soil types and to categorize the runoff and infiltration potential. The San Bernardino County Hydrology Manual Hydrologic Soils Group Map for Southcentral Area (Figure C-11) was used to confirm the Project area's soils as hydrologic soil group (HSG) B. This soil classification has a moderate infiltration rate when thoroughly wet. These consist chiefly of soils with moderately fine texture to moderately coarse texture.

The 100-year, 24-hour storm event was modeled for this analysis. Per the San Bernardino County Hydrology Manual, the synthetic storm pattern was used to model the precipitation for onsite flows. Refer to **Table 1** and **Attachment A** for the NOAA 14 precipitation data.

Table 1: NOAA 14 Precipitation Data

Storm Event	Precipitation (in)
100-year	3.68

The low loss fraction and maximum watershed loss rate for each sub-basin were estimated using the San Bernardino County Hydrology method, existing conditions land use, and soil data collection from a NRCS STATSGO2 dataset. The Hydrowin Advanced Engineering Software (AES) program was used to calculate the loss parameters for each subbasin. The vegetative cover was estimated using aerial imagery and engineering judgement. Refer to **Figure 3** and **Figure 4** for the land use and soil maps, respectively**.** The lag time was calculated using the San Bernardino County method, depending on sub-basin characteristics.

Table 2 is a summary of the hydrologic results. The single area unit hydrograph output from AES provided the effective rainfall for the drainage area. Refer to **Attachment A** for full lag time, loss parameter, and effective rainfall calculations.

Table 2: Hydrologic Sub-basin Results

Area (mi^2)	Basin Factor	S-Graph Type	Lag (hr)	Max. Loss Rate (in/hr)
3.40	0.030	Desert	0.82	0.142

HYDRAULICS

The results of the hydrologic modelling were used to develop a detailed hydraulic model for the site. HEC-RAS v.6.2 can model two-dimensional unsteady flow. The two-dimensional model uses the effective rainfall to route the runoff through the property in any of the sub-critical, critical and super-critical states. The program uses a computed mesh with irregular polygon cells to pass the runoff. The mesh was built in HEC-RAS using the topography obtained for this project. The cells were generated at 100-foot by 100-foot intervals for the majority of the site and at 10-foot by 10-foot intervals for all defined existing channels and other areas requiring more detail. The different zones within the property were assigned a Manning's "n" value based on the existing land uses of the site.

Boundary conditions were set using the effective precipitation time series throughout the 2D model domain. A normal depth condition was used to set the downstream boundary at points where the runoff exits the model domain. All slopes were determined using the project topography.

ONSITE AND OFFSITE DRAINAGE ANALYSIS

The 100-year inundation boundary and maximum velocities were mapped based on the modeling results, refer to **Figure 7** and **Figure 8.**

During the 100-year event, inundation occurs in the natural wash, swales along roads and highways that generally run from west to east, located primarily north of the site. Within this area, the inundation depth ranges between six inches and nine feet. Sheet flow occurs across most of the project area, with depths less than six inches prevalent across most of the site. In some areas of channelized flow throughout the site, inundation depths range between six inches and two feet.

The maximum velocities range from zero to five feet per second throughout the site. The majority of the site experiences velocities less than one foot per second. Within the major wash, velocity ranges between 0.5 and 10 feet per second.

The unit hydrograph was also completed to quantify the volume and peak flow rates for the project area. This will create the peak flow mitigation design standard for the basins during the 100-year, 24-hour storm event. **Table 3** contains a summary of the existing conditions hydrograph for the 100-year, 24-hour event. Refer to **Figure 2a** for the Existing Conditions Onsite Hydrology Map.

Table 3: Existing Conditions Peak Flow Summary

Drainage Area ID	Area (ac)	100-yr Peak Discharge (cfs)
DA-1	46.09	96.20
DA-2	36.21	83.26
Total	82.3	179.46

100-YEAR MITIGATION DESIGN

The proposed 100-year inundation boundary and maximum velocities will be mapped based on the modeling results during final design based on the proposed conditions models. The proposed unit hydrograph was developed in AES and the flood routing analysis was completed in Bentely's Pondpack software. Refer to **Table 4** for a summary of the 100-year, 24-hour proposed conditions hydrograph peak flows. Approximately 1,276 cu-ft of storage is required for the change in runoff due to the proposed site design and approximately 3,030 cu-ft is provided, as summarized in **Table 6**. Stormwater storage areas are anticipated to be provided via a shallow retention basin. See **Figure 2b** for the Proposed Conditions Onsite Hydrology Map.

Table 4: Proposed Conditions Hydrograph Peak Flow Summary

Drainage Area ID	Area (ac)	100-yr Unmitigated Peak Discharge (cfs)	100-yr Mitigated Peak Discharge (cfs)
DA-1	46.09	98.04	163.15
DA-2	36.21	84.73	
Total	82.3	182.77	

Table 5: Detention Design Summary

Basin	Water Storage Depth (ft)	Existing Peak Discharge (cfs)	Proposed Unmitigated Peak Discharge (cfs)	Proposed Mitigated Peak Discharge (cfs)	Storage Required (Cu-Ft)	Storage Provided (Cu-Ft)
1	0.5	179.48	183.4	163.15	1,276	3,030

Detailed calculations are included in **Attachment C**.

WATER QUALITY DESIGN

The Project is located within unincorporated San Bernardino County, within the South Lahontan Basin region. Per the California Stormwater Quality Association (CASQA) Low Impact Development (LID) Manual, and the Mojave River Watershed Region Stormwater Quality Best Management Practice Design Handbook for Low Impact Development, project development must include sufficient water quality design to mimic the pre-development hydrology to the maximum extent practicable.

The proposed site must comply with the post-construction standards set forth in the NPDES General Permit for Stormwater Discharges in California NPDES NO. CAS00002 (General Permit). Within the Post-Construction Section I.U of the Construction General Permit, the post-development runoff must match the pre-development runoff for the 85th percentile, 24-hour storm event. The proposed lease limit of the Project is used to delineate the site area for water quality purposes. The water quality target volume required to be treated by the site is the calculated difference between the 85th percentile volume produced by the post and pre-development conditions. Per the San Bernardino County Mojave River Watershed Infiltration Basin BMP guidelines, the volume required to be treated combined with the proposed basin depth determines the minimum bottom surface area of the basin. See **Table 6** for the summary of the water quality requirements and **Attachment C** for detailed calculations.

Table 6: Water Quality Summary

Basin	Area (Ac)	Water Storage Depth (ft)	Pre-Development 85th Percentile Volume (cu-ft)	Post-Development 85th Percentile Volume (cu-ft)	Required Treatment Volume (cu-ft)	Volume Provided (cu-ft)	Minimum Bottom Surface Area Required (sq-ft)	Design Bottom Surface Area Provided (sq-ft)
1	62.51	0.5	7,825	10,850	3,026	3,030	2,297	6,060

Construction-phase temporary erosion control measures will be placed on the downstream limits of site disturbance until the site is restabilized per the approved Restoration Plan. The Erosion and Sediment Control (ESC) measures specified in the ESC Construction Drawings consist of temporary earthen dikes except for in areas of desert dry wash where silt fence will be used for enhanced protection.

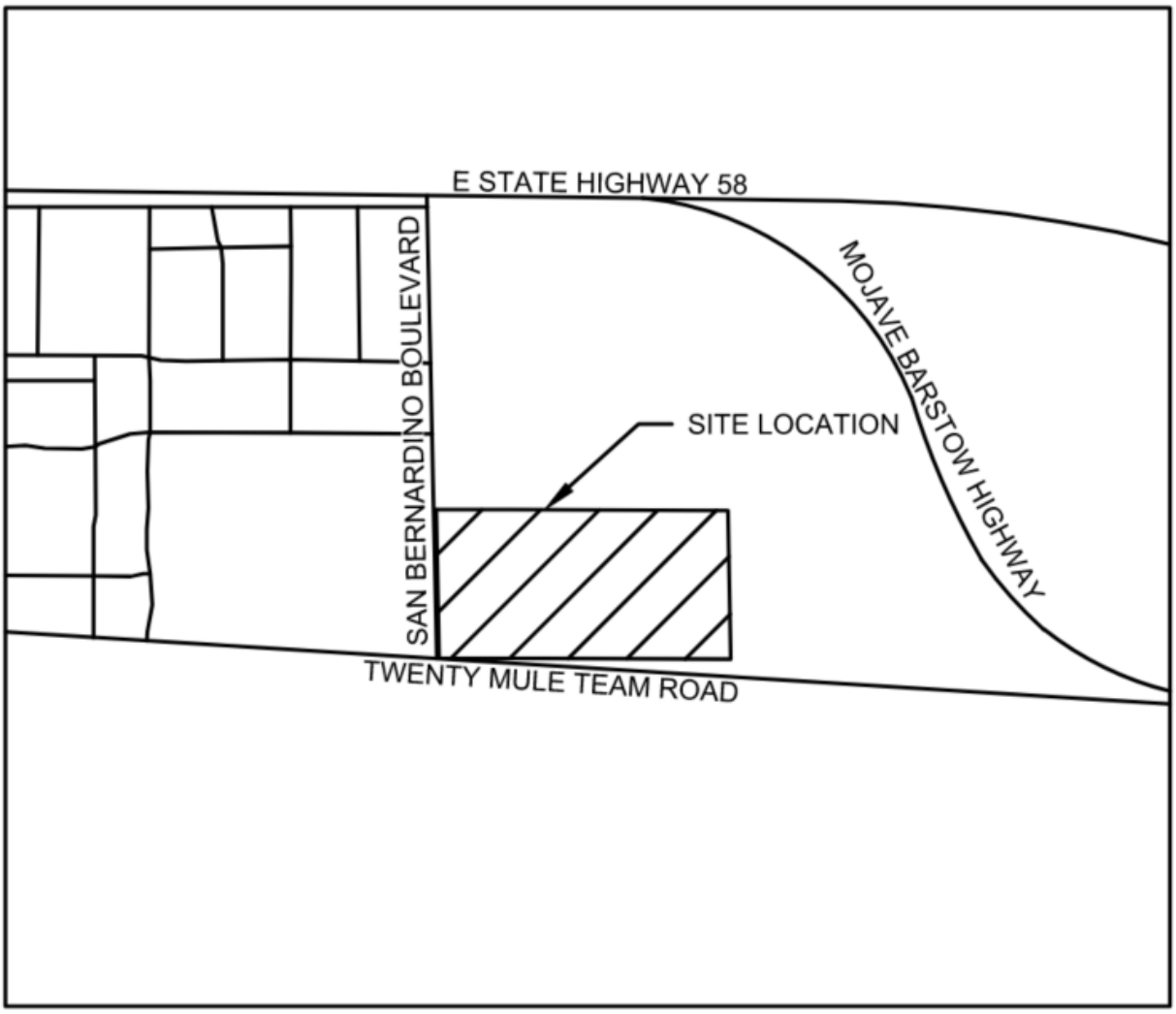
DISCUSSION OF POTENTIAL IMPACTS

RPCA Solar 13, LLC is proposing a 14 MW community solar project. The Project is to be located at the northeast corner of Twenty Mule Team Road and the western boundary line of San Bernardino County, within unincorporated San Bernardino County. The hydrologic and hydraulic analyses were used to determine inundation limits and depths of flow for the 100-year storm in the existing conditions. From the HEC-RAS inundation model, it is unlikely that a flood hazard will occur within the property area. The hydrologic and flood routing analyses as well as water quality calculations were used to determine retention basin sizes for the project area.

Figures

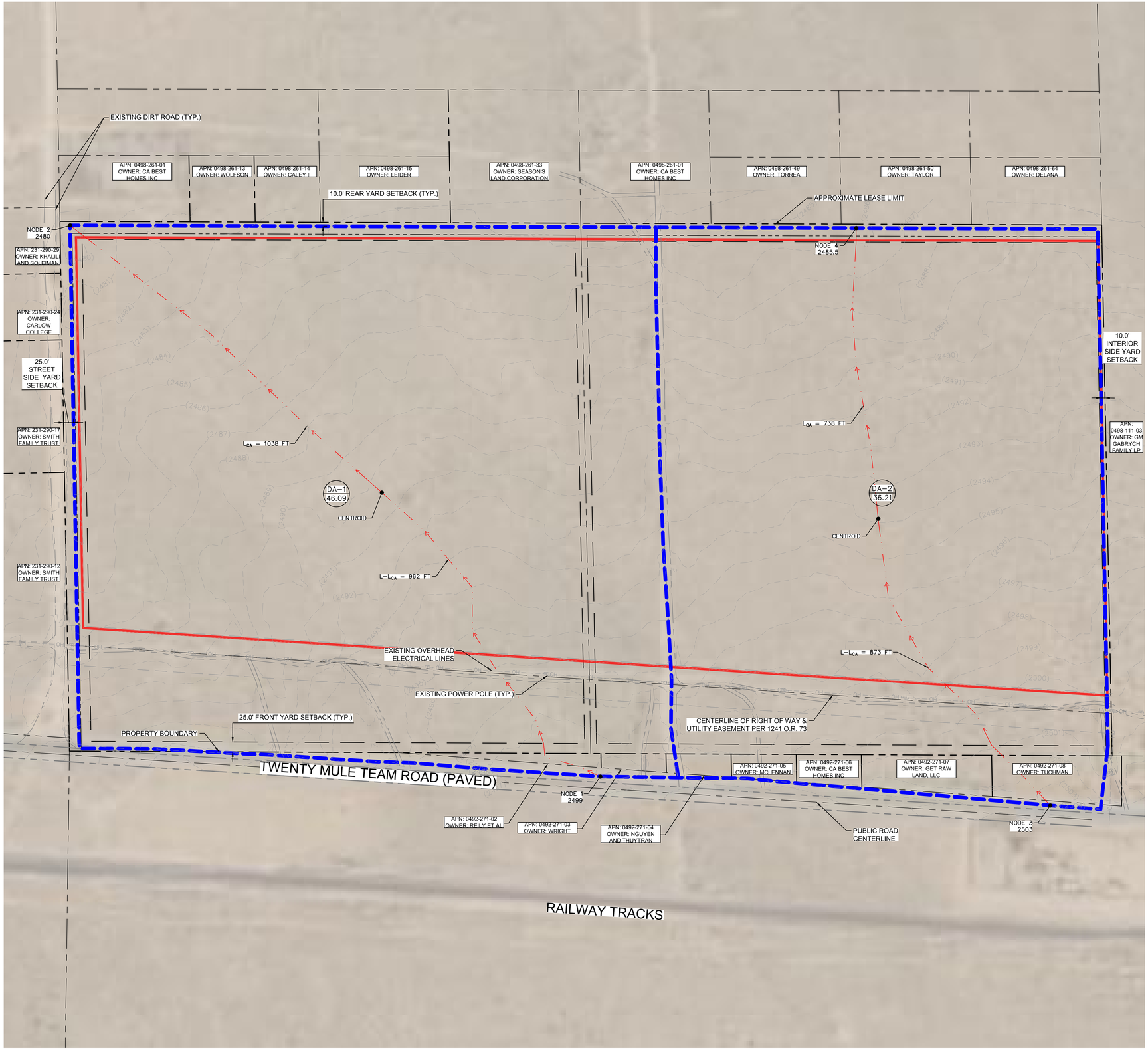
Attachments

FIGURE 1



VICINITY MAP

NTS



LEGEND

- EXISTING PROPERTY LINE
- APPROXIMATE LEASE LIMIT
- PROPERTY LINE SETBACK
- PROPOSED ROAD CENTERLINE
- EXISTING OVERHEED LINE
- 50' OVERHEAD LINE SETBACK
- EXISTING ROADS (VARYING WIDTHS)
- EXISTING CONTOUR
- DA-1 X.XX — ONSITE DRAINAGE AREA WITH APPROXIMATE ACREAGE
- ONSITE DRAINAGE AREA LIMIT
- ONSITE FLOW PATH

SITE INFORMATION

PROJECT ADDRESS:	SUNRISE ROAD, BORON, CA 93516
SITE AREA:	82 AC
FLOOD NOTE:	THIS PROPERTY IS IN ZONE "D" OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 06071C3175H, 06071C3200H, 06071C3825H, 06071C3800H, PANEL DATED AUGUST 28, 2008.

WATER QUALITY CALCULATIONS

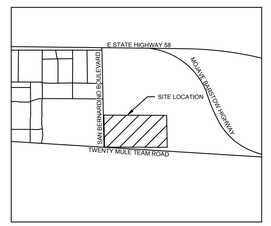
INPUT PARAMETER	VALUE
PARAMETER APPLICATION	ONSITE BASIN SIZING
DEVELOPMENT CONDITIONS	EXISTING
ON-SITE AREA	62.5 ACRES
STORM FREQUENCY	85TH PERCENTILE
RAINFALL DEPTH (2-YEAR, 1-HOUR)	0.35 INCHES
85TH PERCENTILE DEPTH	0.44 INCHES
PERCENT IMPERVIOUS	0%
CLIMATIC REGION	DESERT
A1 (DESERT)	1.2371
A2 (48-HOUR DRAWDOWN)	1.9630
COMPOSITE RUNOFF C VALUE	0.04
85TH PERCENTILE WATER QUALITY VOLUME	7825 CF

NOTES: N/A

ON-SITE HYDROLOGIC CALCULATIONS

INPUT PARAMETER	VALUE
PARAMETER APPLICATION	ONSITE BASIN SIZING
DEVELOPMENT CONDITIONS	EXISTING
SITE AREA	82.3 ACRES
STORM FREQUENCY	100-YEAR, 24-HOUR
RAINFALL DEPTH (100-YEAR, 24-HOUR)	3.68 INCHES
PERCENT IMPERVIOUS	0%
100-YEAR, 24-HOUR PEAK FLOW	179.46 CFS

NOTES: N/A



VICINITY MAP
NTS

NORTH

GRAPHIC SCALE IN FEET
0 60 120 240
1" = 120'
WHEN PLOTTED ON 24" X 36" SHEET

No.	REVISIONS	DATE	BY

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Kimley»Horn
Kimley-Horn and Associates, Inc.

KHA PROJECT 099997002
DATE 10/24/24
SCALE AS SHOWN
DESIGNED BY BY
DRAWN BY AG
CHECKED BY LAC

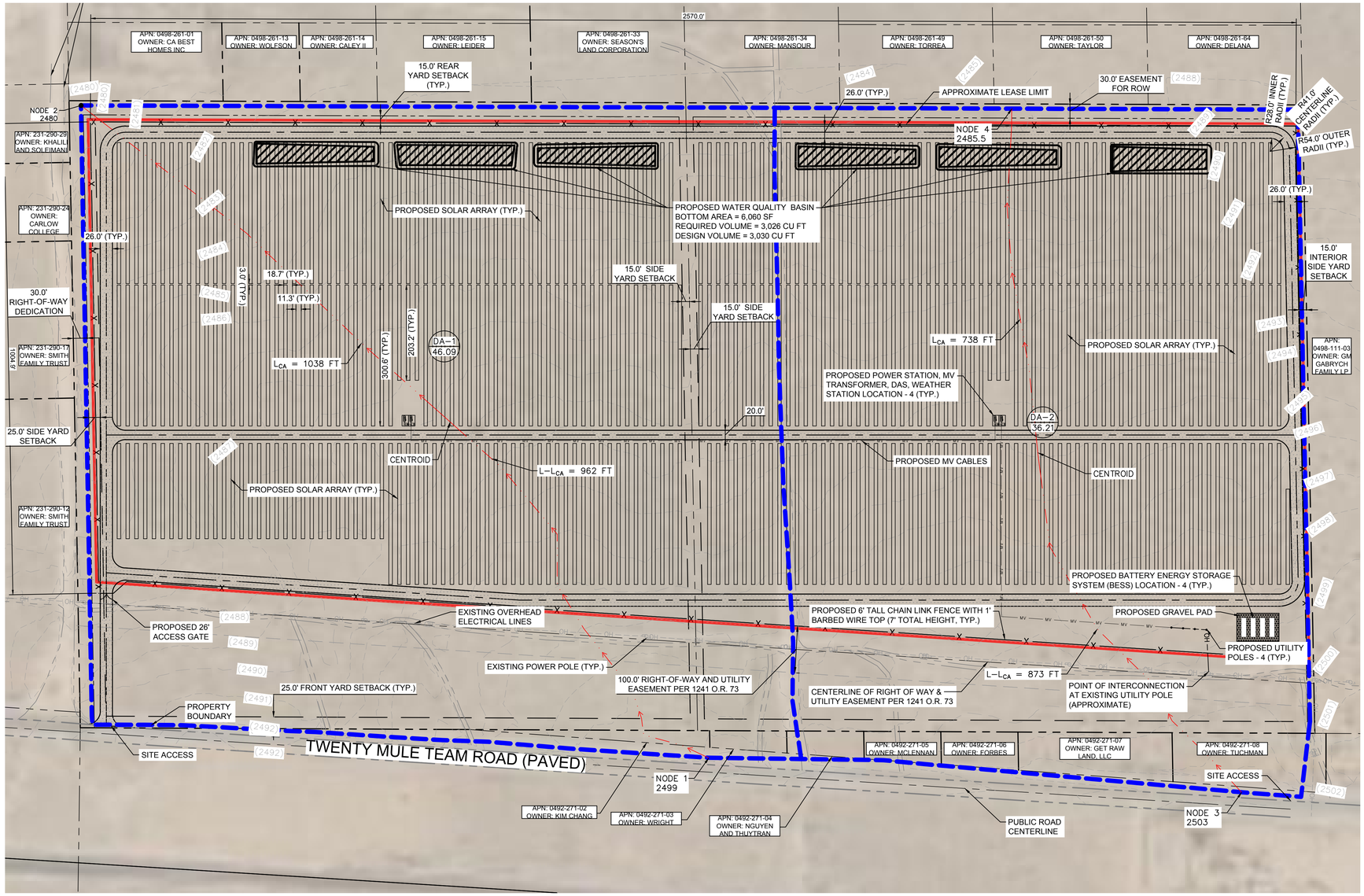
EXISTING CONDITIONS ONSITE HYDROLOGY MAP

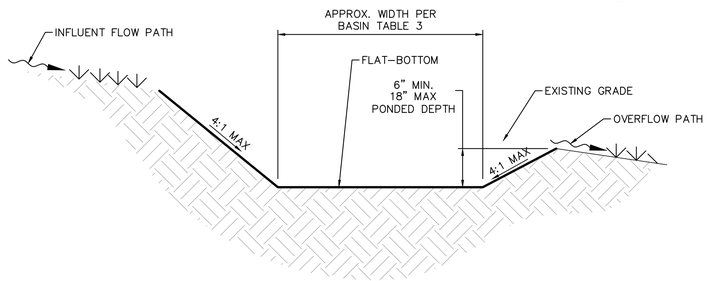
SUNRISE SOLAR

PREPARED FOR
RPCA SOLAR 13, LLC

SAN BERNARDINO COUNTY, CA

FIGURE NUMBER





NOTES:

1. THIS DETAIL REPRESENTS GENERAL INTENT; BASINS TO BE FURTHER DETAILED DURING FINAL DESIGN.
2. SPOILS FROM BASIN EXCAVATION ARE TO REMAIN ON-SITE, SHOULD BE PLACED ON RIDGELINES WHERE POSSIBLE.
3. BASINS TO BE CONSTRUCTED IN ELONGATED RECTANGULAR LAYOUT AS SHOWN PER PLAN.
4. PROPOSED ONSITE ACCESS ROADS SHALL REMAIN AT EXISTING GRADE, ELEVATED ABOVE BASIN INUNDATION ELEVATIONS IN ORDER TO DISCOURAGE INUNDATION OF TRAVELED WAY.
5. EARTHWORK REQUIRED FOR BASIN GRADING AND DAYLIGHT SLOPES MAY EXCEED THE MINIMUM REQUIRED STORAGE OR RETENTION VOLUME AND IS SUBJECT TO CHANGE DURING THE FINAL DEISGN

TYPICAL INFILTRATION RETENTION BASIN

N.T.S.

LEGEND

- 81 MODULE SAT ROW
- 54 MODULE SAT ROW
- POWER STATION, MV TRANSFORMER, DAS, WEATHER STATION LOCATION
- EXISTING PROPERTY LINE
- APPROXIMATE LEASE LIMIT
- PROPERTY LINE SETBACK
- PROPOSED ROAD CENTERLINE
- PROPOSED 6' TALL CHAIN LINK FENCE WITH 1' BARBED WIRE TOP (7' TOTAL HEIGHT)
- EXISTING OVERHEED LINE
- PROPOSED OVERHEAD LINE
- ALL WEATHER ACCESS ROAD (VARYING WIDTHS)
- 26' SITE ACCESS GATE
- 50' OVERHEAD LINE SETBACK
- PROPOSED MV CABLES
- EXISTING ROADS (VARYING WIDTHS)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- ONSITE DRAINAGE AREA WITH APPROXIMATE ACREAGE
- ONSITE DRAINAGE AREA LIMIT
- ONSITE FLOW PATH
- RETENTION BASIN

SITE INFORMATION

PROJECT ADDRESS:	SUNRISE ROAD, BORON, CA 93516
SITE AREA:	82 AC
FLOOD NOTE:	THIS PROPERTY IS IN ZONE "D" OF THE FLOOD INSURANCE RATE MAP, PANEL NO. 06071C3175H, 06071C3200H, 06071C3825H, 06071C3800H, PANEL DATED AUGUST 28, 2008.

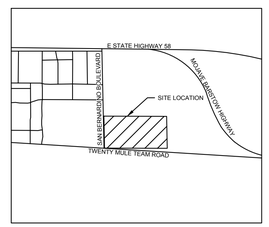
WATER QUALITY CALCULATIONS

INPUT PARAMETER	VALUE
PARAMETER APPLICATION	ONSITE BASIN SIZING
DEVELOPMENT CONDITIONS	PROPOSED
ON-SITE AREA	62.5 ACRES
STORM FREQUENCY	85TH PERCENTILE
RAINFALL DEPTH (2-YEAR, 1-HOUR)	0.35 INCHES
85TH PERCENTILE DEPTH	0.44 INCHES
PERCENT IMPERVIOUS	2.04%
CLIMATIC REGION	DESERT
A1 (DESERT)	1.2371
A2 (48-HOUR DRAWDOWN)	1.9630
COMPOSITE RUNOFF C VALUE	0.055
85TH PERCENTILE WATER QUALITY VOLUME	10850 CF

NOTES: N/A

ON-SITE HYDROLOGIC CALCULATIONS

INPUT PARAMETER	VALUE
PARAMETER APPLICATION	ONSITE BASIN SIZING
DEVELOPMENT CONDITIONS	PROPOSED
SITE AREA	82.3 ACRES
STORM FREQUENCY	100-YEAR, 24-HOUR
RAINFALL DEPTH (100-YEAR, 24-HOUR)	3.68 INCHES
PERCENT IMPERVIOUS	1.55%
100-YEAR, 24-HOUR PEAK FLOW	182.77 CFS
MITIGATED PEAK FLOW	163.15 CFS



VICINITY MAP

NTS

NORTH

GRAPHIC SCALE IN FEET
0 60 120 240
1" = 120'
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Kimley»Horn
Kimley-Horn and Associates, Inc.

KHA PROJECT 099997002
DATE 10/24/24
SCALE AS SHOWN
DESIGNED BY BY
DRAWN BY AG
CHECKED BY LAC

PROPOSED CONDITIONS ONSITE HYDROLOGY MAP

SUNRISE SOLAR

PREPARED FOR
RPCA SOLAR 13, LLC

SAN BERNARDINO COUNTY, CA

FIGURE NUMBER

Legend

- PROJECT EXTENTS
- 2D MODEL EXTENTS

LANDCOVER

- Developed, High Intensity
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, Open Space
- Shrub/Scrub
- Woody Wetlands
- Barren Land

DESIGN:	LAC	
DRAWN:	BRS	
REVIEW:	VK	

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N

1 inch = 600 feet

SUNRISE ROAD SOLAR
SAN BERNARDINO COUNTY, CA

EXISTING LAND COVER MAP

DATE
OCTOBER 2024

PROJECT NO.
099997004

FIGURE NUMBER
3

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HYDROLOGIC SOIL GROUP MAP

SUNRISE ROAD SOLAR
SAN BERNARDINO COUNTY, CA

1 inch = 600 feet

N

Legend
- PROJECT EXTENTS
- 2D MODEL EXTENTS
- HYDROLOGIC SOIL GROUP
  - A
  - B
  - C
  - D

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DESIGN:	LAC
DRAWN:	BRS
REVIEW:	VK

DATE
OCTOBER 2024
PROJECT NO.
099997004
FIGURE NUMBER
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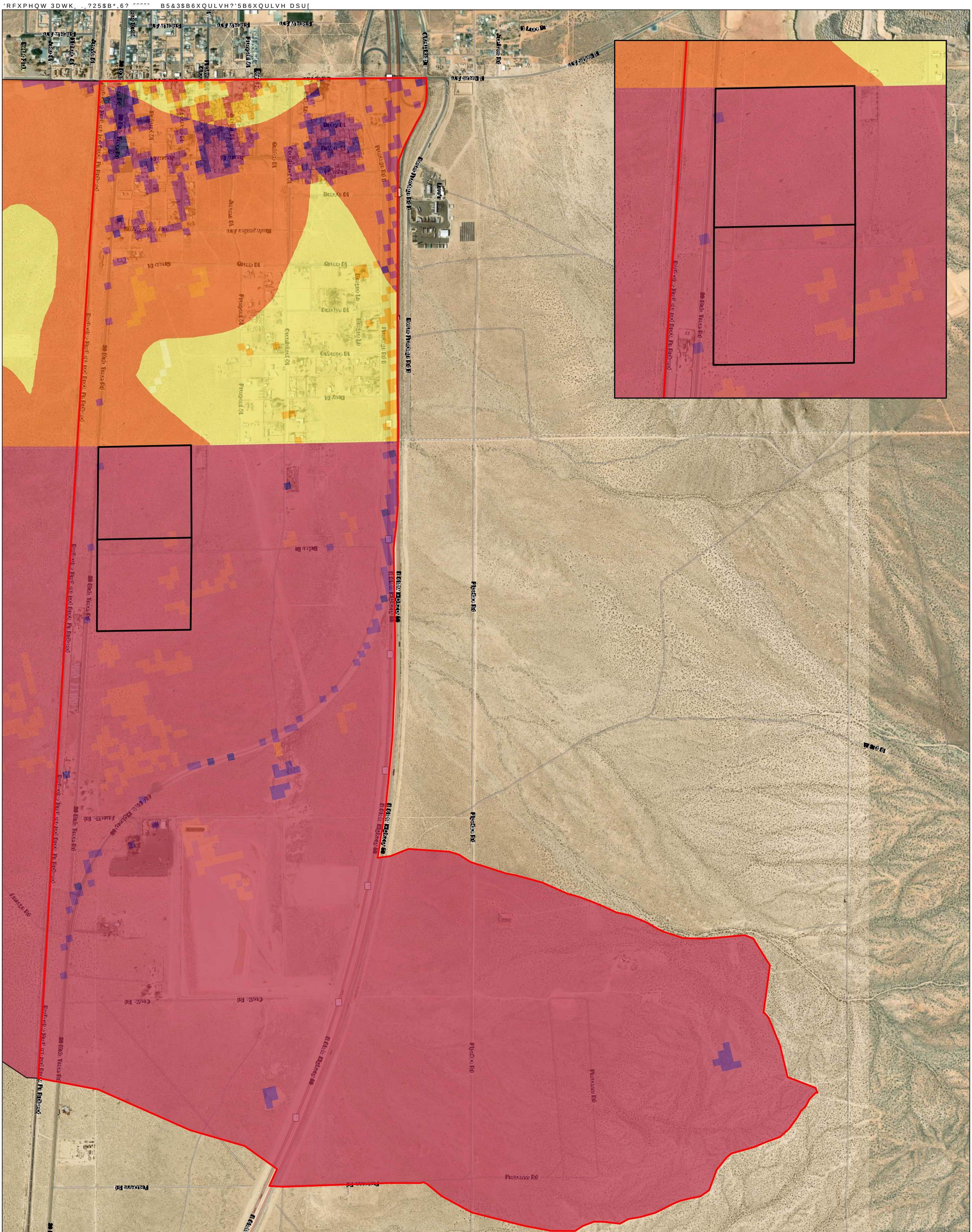

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DRAINAGE AREA MAP

SUNRISE ROAD SOLAR
SAN BERNARDINO COUNTY, CA

1 inch = 600 feet

N

Legend
- PROJECT EXTENTS
- Tc FLOWPATH
- 2D MODEL EXTENTS

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DESIGN:	LAC
DRAWN:	BRS
REVIEW:	VK

DATE: OCTOBER 2024
PROJECT NO.: 099997004
FIGURE NUMBER: 6

Legend

- PROJECT EXTENTS
- 2D MODEL EXTENTS

DEPTH (FT)

- <0.25 (no color)
- 0.25 - 0.5
- 0.5 - 1.0
- 1.0 - 1.5
- 1.5 - 2.0
- 2.0 - 3.0
- 3.0 - 5.0
- 5.0 - 10.0
- > 10.0

20 Mule Team Rd

Burlington Northern and Santa Fe Railroad

DESIGN:	LAC
DRAWN:	BRS
REVIEW:	RR

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N

1 inch = 100 feet

SUNRISE ROAD SOLAR
SAN BERNARDINO COUNTY, CA

EXISTING 100-YEAR INUNDATION MAP

DATE
OCTOBER 2024

PROJECT NO.
099997004

FIGURE NUMBER
7

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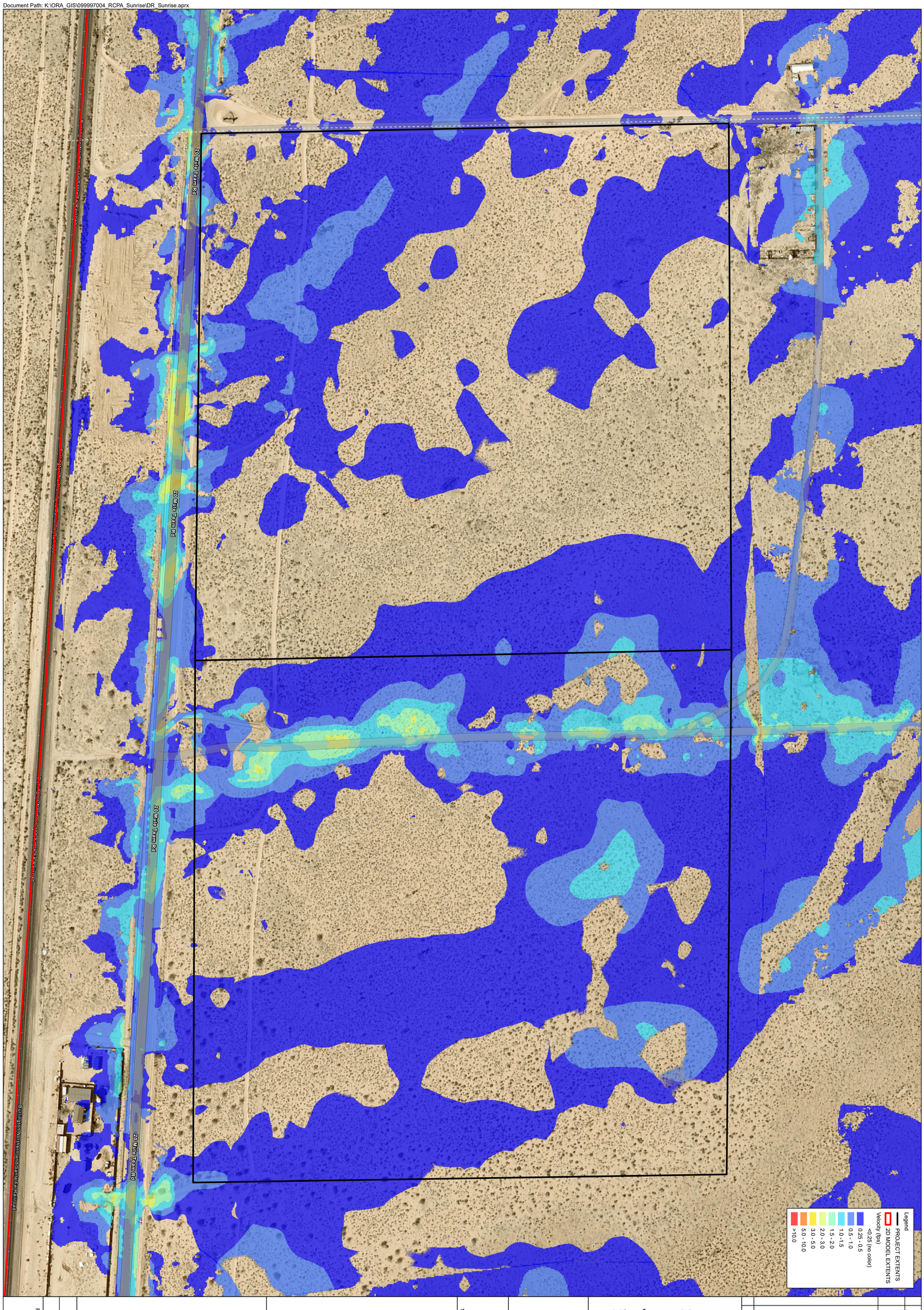

8

FIGURE NUMBER

099997004

PROJECT NO.

OCTOBER 2024

DATE

EXISTING 100-YEAR VELOCITY MAP

SUNRISE ROAD SOLAR
SAN BERNARDINO COUNTY, CA

1 inch = 100 feet

N

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660 SOUTH FIGUEROA STREET, SUITE 2050
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DESIGN:	LAC
DRAWN:	BRS
REVIEW:	RR

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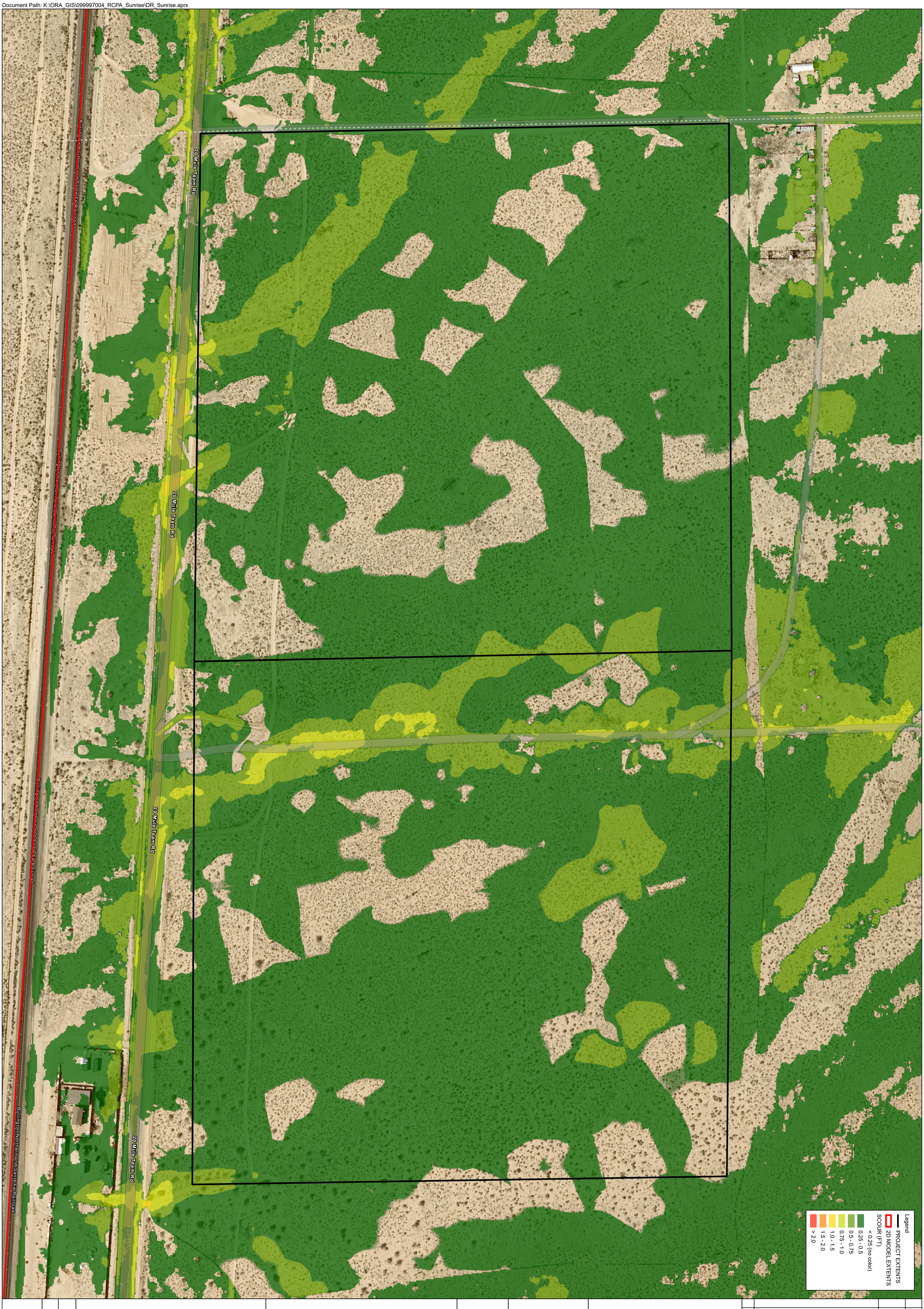

9	DATE: OCTOBER 2024 PROJECT NO.: 099997004 FIGURE NUMBER	EXISTING 100-YEAR SCOUR POTENTIAL MAP	SUNRISE ROAD SOLAR SAN BERNARDINO COUNTY, CA

1 inch = 100 feet

N

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DESIGN:	LAC
DRAWN:	BRS
REVIEW:	RR

Attachment A– Hydrologic Parameters and Results

- **NOAA Data**
- **FEMA FIRMette**
- **Total Study Limits Existing AES Outputs**

NOAA Atlas 14, Volume 6, Version 2
Location name: Boron, California, USA*
Latitude: 35.0012°, Longitude: -117.6297°
Elevation: 2489 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.075 (0.062-0.093)	0.107 (0.087-0.132)	0.149 (0.122-0.184)	0.185 (0.150-0.231)	0.236 (0.185-0.303)	0.276 (0.212-0.363)	0.319 (0.239-0.428)	0.364 (0.266-0.502)	0.427 (0.300-0.615)	0.479 (0.325-0.712)
10-min	0.108 (0.089-0.133)	0.153 (0.125-0.189)	0.214 (0.175-0.264)	0.265 (0.215-0.331)	0.338 (0.265-0.435)	0.396 (0.304-0.520)	0.457 (0.343-0.614)	0.521 (0.381-0.720)	0.613 (0.430-0.881)	0.686 (0.466-1.02)
15-min	0.131 (0.107-0.161)	0.185 (0.151-0.228)	0.259 (0.211-0.320)	0.321 (0.260-0.400)	0.408 (0.321-0.526)	0.479 (0.368-0.629)	0.552 (0.415-0.743)	0.631 (0.461-0.871)	0.741 (0.520-1.06)	0.830 (0.564-1.23)
30-min	0.179 (0.147-0.220)	0.253 (0.207-0.312)	0.353 (0.289-0.437)	0.438 (0.355-0.547)	0.559 (0.438-0.719)	0.654 (0.503-0.860)	0.755 (0.567-1.02)	0.862 (0.630-1.19)	1.01 (0.711-1.46)	1.13 (0.771-1.69)
60-min	0.251 (0.206-0.310)	0.355 (0.291-0.438)	0.497 (0.406-0.614)	0.616 (0.499-0.768)	0.785 (0.616-1.01)	0.920 (0.707-1.21)	1.06 (0.797-1.43)	1.21 (0.886-1.67)	1.42 (1.00-2.05)	1.59 (1.08-2.37)
2-hr	0.369 (0.302-0.454)	0.500 (0.410-0.617)	0.685 (0.559-0.847)	0.844 (0.684-1.05)	1.08 (0.845-1.39)	1.27 (0.975-1.66)	1.47 (1.11-1.98)	1.70 (1.24-2.34)	2.02 (1.42-2.91)	2.29 (1.56-3.40)
3-hr	0.433 (0.355-0.534)	0.584 (0.478-0.720)	0.797 (0.651-0.985)	0.982 (0.796-1.22)	1.25 (0.984-1.61)	1.48 (1.14-1.94)	1.72 (1.30-2.32)	1.99 (1.46-2.75)	2.38 (1.67-3.43)	2.71 (1.84-4.03)
6-hr	0.549 (0.450-0.676)	0.748 (0.612-0.922)	1.03 (0.840-1.27)	1.27 (1.03-1.58)	1.63 (1.28-2.10)	1.92 (1.48-2.52)	2.24 (1.68-3.01)	2.58 (1.89-3.57)	3.09 (2.17-4.44)	3.51 (2.38-5.22)
12-hr	0.632 (0.518-0.778)	0.910 (0.745-1.12)	1.29 (1.05-1.60)	1.61 (1.31-2.01)	2.07 (1.62-2.66)	2.44 (1.87-3.20)	2.82 (2.12-3.79)	3.23 (2.36-4.46)	3.81 (2.68-5.48)	4.28 (2.91-6.37)
24-hr	0.756 (0.671-0.869)	1.16 (1.03-1.33)	1.69 (1.49-1.95)	2.13 (1.87-2.48)	2.73 (2.31-3.28)	3.20 (2.65-3.93)	3.68 (2.98-4.63)	4.17 (3.28-5.41)	4.85 (3.66-6.56)	5.39 (3.93-7.54)
2-day	0.862 (0.765-0.991)	1.34 (1.18-1.54)	1.95 (1.73-2.26)	2.45 (2.15-2.86)	3.12 (2.65-3.76)	3.64 (3.02-4.47)	4.15 (3.36-5.23)	4.68 (3.69-6.07)	5.39 (4.07-7.28)	5.93 (4.33-8.30)
3-day	0.925 (0.821-1.06)	1.44 (1.27-1.65)	2.10 (1.85-2.42)	2.62 (2.30-3.05)	3.33 (2.82-4.01)	3.86 (3.21-4.75)	4.40 (3.56-5.54)	4.94 (3.89-6.40)	5.66 (4.28-7.66)	6.22 (4.53-8.70)
4-day	0.992 (0.881-1.14)	1.54 (1.37-1.78)	2.25 (1.99-2.60)	2.82 (2.47-3.28)	3.57 (3.03-4.29)	4.14 (3.43-5.08)	4.70 (3.81-5.92)	5.27 (4.15-6.84)	6.03 (4.56-8.16)	6.61 (4.82-9.25)
7-day	1.08 (0.957-1.24)	1.68 (1.49-1.93)	2.45 (2.17-2.83)	3.07 (2.69-3.57)	3.90 (3.30-4.69)	4.52 (3.75-5.55)	5.14 (4.16-6.48)	5.77 (4.54-7.48)	6.61 (4.99-8.93)	7.24 (5.28-10.1)
10-day	1.13 (1.00-1.30)	1.76 (1.56-2.02)	2.57 (2.27-2.97)	3.22 (2.83-3.75)	4.10 (3.48-4.93)	4.76 (3.95-5.85)	5.43 (4.40-6.84)	6.10 (4.80-7.91)	7.00 (5.29-9.47)	7.69 (5.61-10.8)
20-day	1.34 (1.19-1.55)	2.09 (1.85-2.40)	3.06 (2.71-3.53)	3.85 (3.38-4.48)	4.92 (4.17-5.92)	5.73 (4.76-7.05)	6.56 (5.31-8.26)	7.40 (5.83-9.60)	8.54 (6.45-11.5)	9.42 (6.87-13.2)
30-day	1.60 (1.42-1.84)	2.46 (2.18-2.84)	3.60 (3.19-4.16)	4.54 (3.98-5.28)	5.81 (4.92-6.99)	6.79 (5.63-8.34)	7.78 (6.30-9.81)	8.82 (6.94-11.4)	10.2 (7.71-13.8)	11.3 (8.24-15.8)
45-day	1.95 (1.73-2.24)	2.95 (2.62-3.40)	4.29 (3.79-4.95)	5.39 (4.73-6.28)	6.92 (5.86-8.32)	8.10 (6.73-9.96)	9.32 (7.55-11.7)	10.6 (8.34-13.7)	12.3 (9.30-16.7)	13.7 (9.98-19.2)
60-day	2.16 (1.92-2.48)	3.22 (2.86-3.71)	4.65 (4.11-5.37)	5.84 (5.12-6.79)	7.49 (6.35-9.01)	8.79 (7.29-10.8)	10.1 (8.20-12.8)	11.5 (9.08-14.9)	13.5 (10.2-18.2)	15.0 (10.9-21.0)

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

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

Please refer to NOAA Atlas 14 document for more information.

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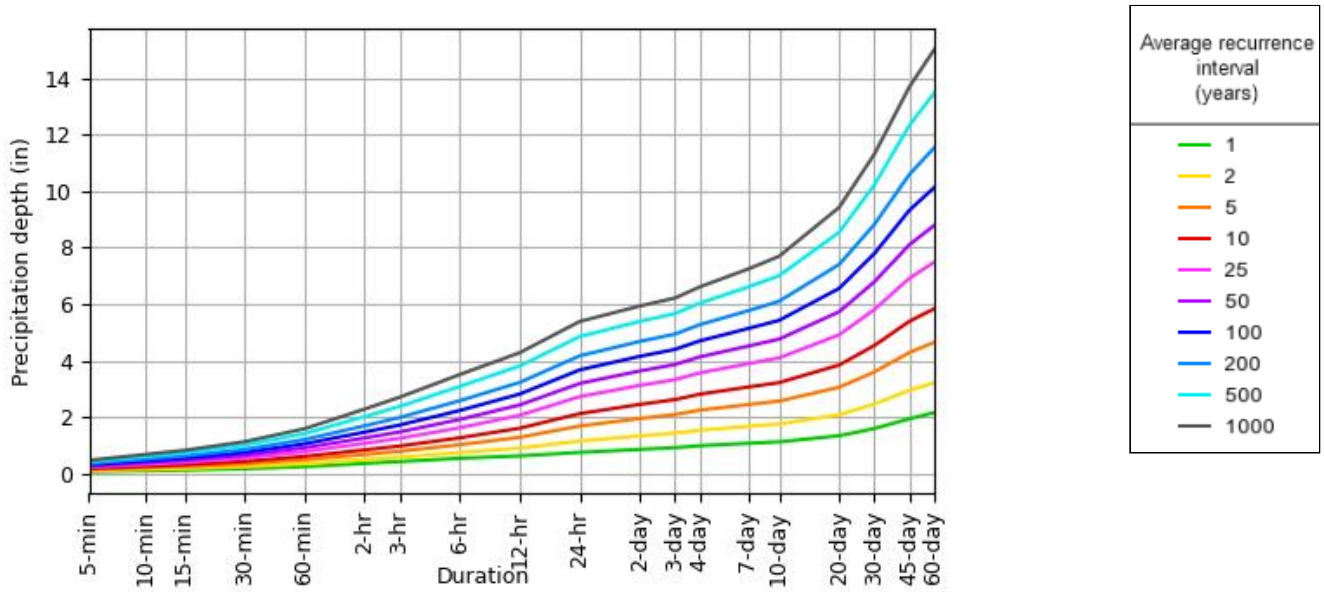
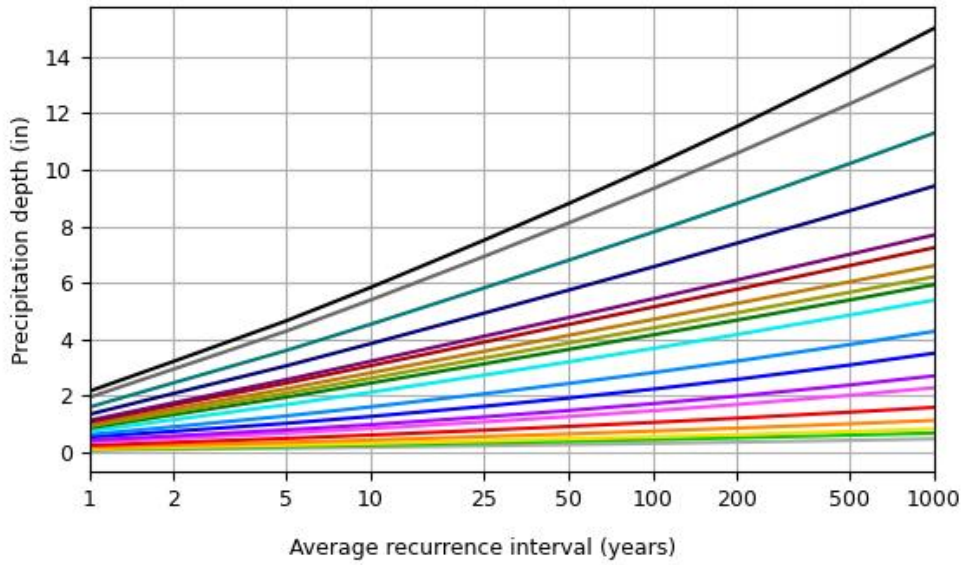
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 35.0012°, Longitude: -117.6297°





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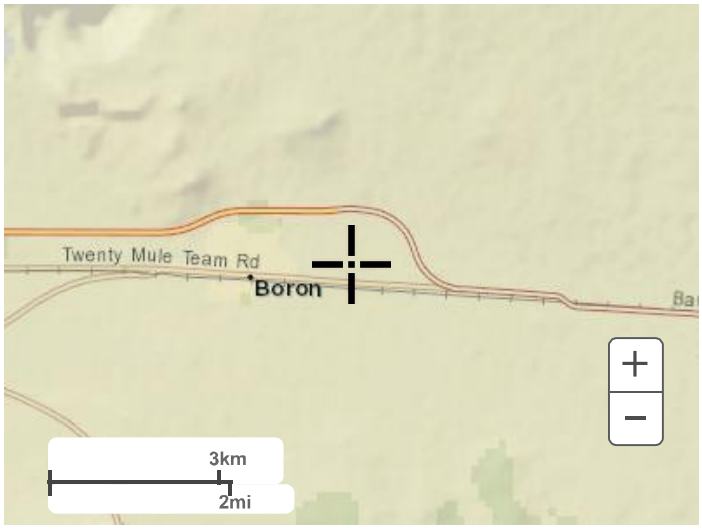
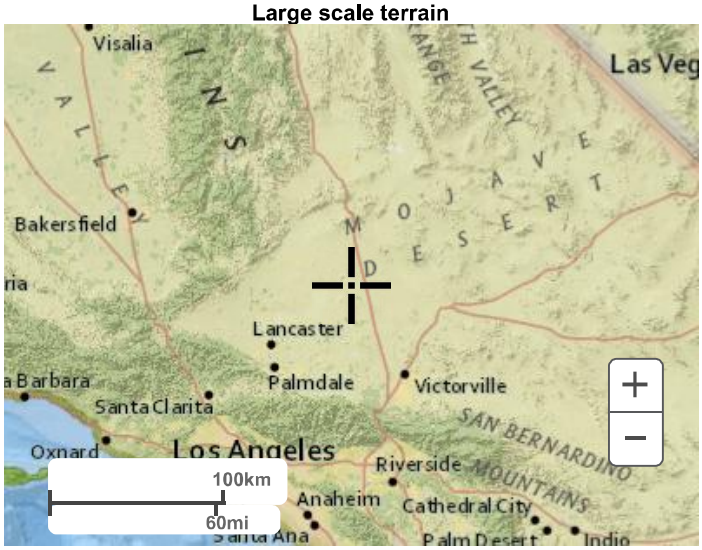
Maps & aerials

Small scale terrain

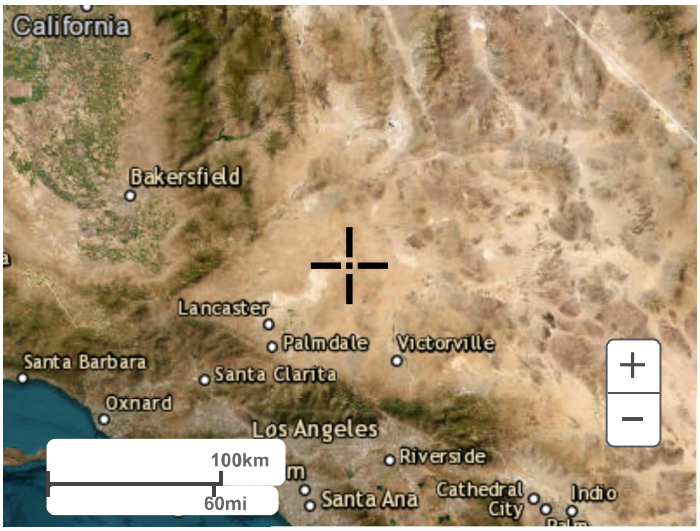


Large scale terrain



Large scale map

Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
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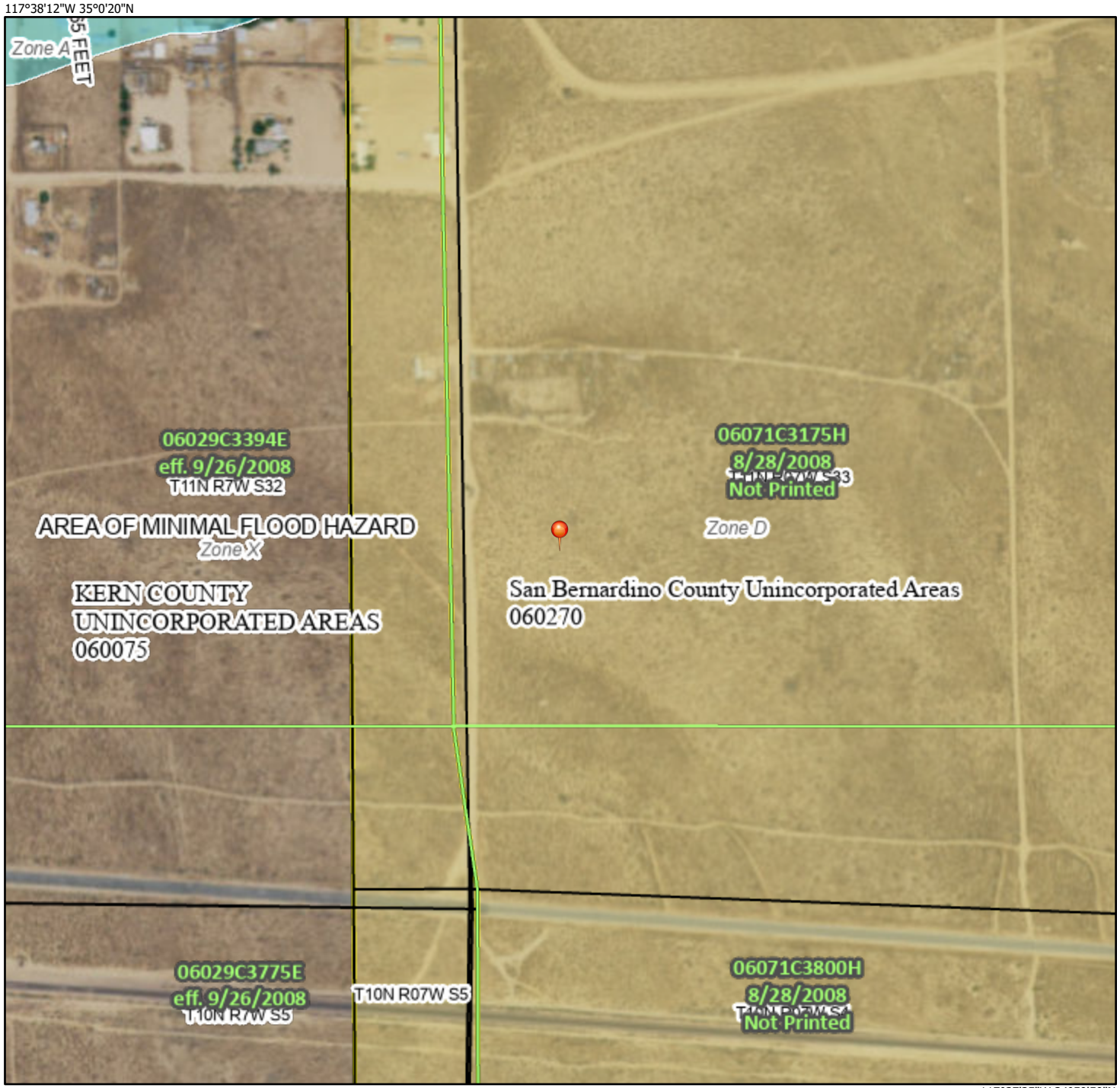
Questions?: HDSC.Questions@noaa.gov

National Flood Hazard Layer FIRMette

FEMA



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/30/2023 at 12:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

National Flood Hazard Layer FIRMette

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Basemap Imagery Source: USGS National Map 2023

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                          Analysis prepared by:

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

 ************************* DESCRIPTION OF STUDY *************************
* RPCA SUNRISE                                                          *
* 100-YEAR EXISTING TOTAL HECRAS AREA                                   *
* KIMLEY-HORN                                                           *
 ************************************************************************

  FILE NAME: SUNE100.DAT
  TIME/DATE OF STUDY: 18:05 11/10/2023


**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERCOURSE LENGTH =   18392.000 FEET
         LENGTH FROM CONCENTRATION POINT TO CENTROID =    9196.000 FEET
         ELEVATION VARIATION ALONG WATERCOURSE =      64.670 FEET
         BASIN FACTOR = 0.030
         WATERSHED AREA =    2173.000 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         WATERCOURSE "LAG" TIME =    0.820 HOURS
         DESERT(UNDEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.142
         LOW LOSS FRACTION = 0.153
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.32
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.75
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.06
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.72
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.24
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  3.68

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.903
          30-MINUTE FACTOR = 0.903
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1-HOUR FACTOR = 0.903
3-HOUR FACTOR = 0.985
6-HOUR FACTOR = 0.993
24-HOUR FACTOR = 0.996

UNIT HYDROGRAPH TIME UNIT = 5.000 MINUTES
UNIT INTERVAL PERCENTAGE OF LAG-TIME = 10.163

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	0.447	117.514
2	1.583	298.373
3	3.387	474.199
4	5.864	651.052
5	9.076	844.051
6	14.273	1365.783
7	22.188	2079.918
8	32.222	2637.064
9	40.878	2274.621
10	47.775	1812.433
11	53.489	1501.803
12	58.176	1231.625
13	61.902	979.318
14	65.052	827.727
15	67.796	721.213
16	70.306	659.469
17	72.537	586.466
18	74.496	514.647
19	76.278	468.344
20	77.975	445.910
21	79.401	374.759
22	80.742	352.526
23	81.993	328.787
24	83.093	289.091
25	84.181	285.885
26	85.179	262.146
27	86.155	256.439
28	87.058	237.450
29	87.871	213.763
30	88.661	207.450
31	89.298	167.500
32	89.908	160.200
33	90.497	154.749
34	91.066	149.496
35	91.622	146.211
36	92.118	130.304
37	92.605	128.080
38	93.069	121.817

39	93.516	117.576
40	93.942	112.020
41	94.294	92.526
42	94.640	90.808
43	94.985	90.808
44	95.331	90.758
45	95.656	85.354
46	95.923	70.202
47	96.187	69.495
48	96.451	69.342
49	96.716	69.495
50	96.953	62.525
51	97.138	48.487
52	97.321	48.080
53	97.504	48.082
54	97.686	47.979
55	97.838	39.899
56	97.940	26.769
57	98.042	26.767
58	98.143	26.666
59	98.245	26.668
60	98.356	29.293
61	98.478	31.919
62	98.600	32.120
63	98.722	32.022
64	98.844	32.120
65	98.966	32.022
66	99.088	32.020
67	99.210	32.020
68	99.332	32.020
69	99.453	32.020
70	99.575	32.020
71	99.697	32.020
72	99.819	32.020
73	99.941	32.020
74	100.000	15.579

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UNIT PERIOD (NUMBER)	UNIT RAINFALL (INCHES)	UNIT SOIL-LOSS (INCHES)	EFFECTIVE RAINFALL (INCHES)
1	0.0046	0.0007	0.0039
2	0.0046	0.0007	0.0039
3	0.0046	0.0007	0.0039
4	0.0046	0.0007	0.0039
5	0.0047	0.0007	0.0039
6	0.0047	0.0007	0.0039
7	0.0047	0.0007	0.0040
8	0.0047	0.0007	0.0040
9	0.0047	0.0007	0.0040
10	0.0047	0.0007	0.0040
11	0.0047	0.0007	0.0040

12	0.0048	0.0007	0.0040
13	0.0048	0.0007	0.0040
14	0.0048	0.0007	0.0041
15	0.0048	0.0007	0.0041
16	0.0048	0.0007	0.0041
17	0.0049	0.0007	0.0041
18	0.0049	0.0007	0.0041
19	0.0049	0.0007	0.0041
20	0.0049	0.0007	0.0041
21	0.0049	0.0008	0.0042
22	0.0049	0.0008	0.0042
23	0.0050	0.0008	0.0042
24	0.0050	0.0008	0.0042
25	0.0050	0.0008	0.0042
26	0.0050	0.0008	0.0042
27	0.0050	0.0008	0.0043
28	0.0050	0.0008	0.0043
29	0.0051	0.0008	0.0043
30	0.0051	0.0008	0.0043
31	0.0051	0.0008	0.0043
32	0.0051	0.0008	0.0043
33	0.0052	0.0008	0.0044
34	0.0052	0.0008	0.0044
35	0.0052	0.0008	0.0044
36	0.0052	0.0008	0.0044
37	0.0052	0.0008	0.0044
38	0.0053	0.0008	0.0045
39	0.0053	0.0008	0.0045
40	0.0053	0.0008	0.0045
41	0.0053	0.0008	0.0045
42	0.0053	0.0008	0.0045
43	0.0054	0.0008	0.0046
44	0.0054	0.0008	0.0046
45	0.0054	0.0008	0.0046
46	0.0054	0.0008	0.0046
47	0.0055	0.0008	0.0046
48	0.0055	0.0008	0.0046
49	0.0055	0.0008	0.0047
50	0.0055	0.0008	0.0047
51	0.0056	0.0009	0.0047
52	0.0056	0.0009	0.0047
53	0.0056	0.0009	0.0048
54	0.0056	0.0009	0.0048
55	0.0057	0.0009	0.0048
56	0.0057	0.0009	0.0048
57	0.0057	0.0009	0.0048
58	0.0057	0.0009	0.0049
59	0.0058	0.0009	0.0049
60	0.0058	0.0009	0.0049
61	0.0058	0.0009	0.0049
62	0.0059	0.0009	0.0050
63	0.0059	0.0009	0.0050
64	0.0059	0.0009	0.0050
65	0.0059	0.0009	0.0050
66	0.0060	0.0009	0.0051

67	0.0060	0.0009	0.0051
68	0.0060	0.0009	0.0051
69	0.0061	0.0009	0.0051
70	0.0061	0.0009	0.0052
71	0.0061	0.0009	0.0052
72	0.0062	0.0009	0.0052
73	0.0062	0.0009	0.0053
74	0.0062	0.0010	0.0053
75	0.0063	0.0010	0.0053
76	0.0063	0.0010	0.0053
77	0.0063	0.0010	0.0054
78	0.0064	0.0010	0.0054
79	0.0064	0.0010	0.0054
80	0.0064	0.0010	0.0054
81	0.0065	0.0010	0.0055
82	0.0065	0.0010	0.0055
83	0.0066	0.0010	0.0056
84	0.0066	0.0010	0.0056
85	0.0066	0.0010	0.0056
86	0.0067	0.0010	0.0056
87	0.0067	0.0010	0.0057
88	0.0067	0.0010	0.0057
89	0.0068	0.0010	0.0058
90	0.0068	0.0010	0.0058
91	0.0069	0.0011	0.0058
92	0.0069	0.0011	0.0059
93	0.0070	0.0011	0.0059
94	0.0070	0.0011	0.0059
95	0.0071	0.0011	0.0060
96	0.0071	0.0011	0.0060
97	0.0072	0.0011	0.0061
98	0.0072	0.0011	0.0061
99	0.0073	0.0011	0.0061
100	0.0073	0.0011	0.0062
101	0.0074	0.0011	0.0062
102	0.0074	0.0011	0.0063
103	0.0075	0.0011	0.0063
104	0.0075	0.0011	0.0063
105	0.0076	0.0012	0.0064
106	0.0076	0.0012	0.0064
107	0.0077	0.0012	0.0065
108	0.0077	0.0012	0.0065
109	0.0078	0.0012	0.0066
110	0.0078	0.0012	0.0066
111	0.0079	0.0012	0.0067
112	0.0080	0.0012	0.0067
113	0.0080	0.0012	0.0068
114	0.0081	0.0012	0.0069
115	0.0082	0.0013	0.0069
116	0.0082	0.0013	0.0070
117	0.0083	0.0013	0.0070
118	0.0084	0.0013	0.0071
119	0.0085	0.0013	0.0072
120	0.0085	0.0013	0.0072
121	0.0086	0.0013	0.0073

122	0.0087	0.0013	0.0073
123	0.0088	0.0013	0.0074
124	0.0088	0.0013	0.0075
125	0.0089	0.0014	0.0076
126	0.0090	0.0014	0.0076
127	0.0091	0.0014	0.0077
128	0.0092	0.0014	0.0078
129	0.0093	0.0014	0.0079
130	0.0093	0.0014	0.0079
131	0.0095	0.0015	0.0080
132	0.0095	0.0015	0.0081
133	0.0097	0.0015	0.0082
134	0.0097	0.0015	0.0083
135	0.0099	0.0015	0.0084
136	0.0100	0.0015	0.0084
137	0.0101	0.0015	0.0086
138	0.0102	0.0016	0.0086
139	0.0104	0.0016	0.0088
140	0.0104	0.0016	0.0088
141	0.0106	0.0016	0.0090
142	0.0107	0.0016	0.0091
143	0.0109	0.0017	0.0092
144	0.0110	0.0017	0.0093
145	0.0121	0.0019	0.0103
146	0.0123	0.0019	0.0104
147	0.0125	0.0019	0.0106
148	0.0126	0.0019	0.0107
149	0.0128	0.0020	0.0109
150	0.0129	0.0020	0.0110
151	0.0132	0.0020	0.0112
152	0.0133	0.0020	0.0113
153	0.0136	0.0021	0.0115
154	0.0137	0.0021	0.0116
155	0.0140	0.0021	0.0119
156	0.0142	0.0022	0.0120
157	0.0145	0.0022	0.0123
158	0.0147	0.0022	0.0124
159	0.0150	0.0023	0.0127
160	0.0152	0.0023	0.0129
161	0.0156	0.0024	0.0132
162	0.0158	0.0024	0.0134
163	0.0162	0.0025	0.0137
164	0.0164	0.0025	0.0139
165	0.0169	0.0026	0.0143
166	0.0172	0.0026	0.0145
167	0.0177	0.0027	0.0150
168	0.0180	0.0028	0.0152
169	0.0247	0.0038	0.0209
170	0.0250	0.0038	0.0212
171	0.0257	0.0039	0.0218
172	0.0261	0.0040	0.0221
173	0.0269	0.0041	0.0228
174	0.0274	0.0042	0.0232
175	0.0284	0.0043	0.0240
176	0.0289	0.0044	0.0245

177	0.0301	0.0046	0.0255
178	0.0307	0.0047	0.0260
179	0.0321	0.0049	0.0272
180	0.0329	0.0050	0.0278
181	0.0346	0.0053	0.0293
182	0.0356	0.0054	0.0302
183	0.0379	0.0058	0.0321
184	0.0392	0.0060	0.0332
185	0.0407	0.0062	0.0344
186	0.0426	0.0065	0.0361
187	0.0473	0.0072	0.0401
188	0.0504	0.0077	0.0427
189	0.0562	0.0086	0.0476
190	0.0625	0.0096	0.0530
191	0.0853	0.0118	0.0735
192	0.1129	0.0118	0.1010
193	0.2890	0.0118	0.2771
194	0.0713	0.0109	0.0604
195	0.0541	0.0083	0.0459
196	0.0448	0.0068	0.0379
197	0.0407	0.0062	0.0345
198	0.0367	0.0056	0.0311
199	0.0337	0.0052	0.0286
200	0.0314	0.0048	0.0266
201	0.0295	0.0045	0.0250
202	0.0279	0.0043	0.0236
203	0.0265	0.0041	0.0225
204	0.0254	0.0039	0.0215
205	0.0183	0.0028	0.0155
206	0.0174	0.0027	0.0148
207	0.0167	0.0026	0.0141
208	0.0160	0.0024	0.0135
209	0.0154	0.0024	0.0130
210	0.0148	0.0023	0.0126
211	0.0143	0.0022	0.0121
212	0.0139	0.0021	0.0117
213	0.0134	0.0021	0.0114
214	0.0131	0.0020	0.0111
215	0.0127	0.0019	0.0108
216	0.0124	0.0019	0.0105
217	0.0111	0.0017	0.0094
218	0.0108	0.0017	0.0091
219	0.0105	0.0016	0.0089
220	0.0103	0.0016	0.0087
221	0.0100	0.0015	0.0085
222	0.0098	0.0015	0.0083
223	0.0096	0.0015	0.0081
224	0.0094	0.0014	0.0080
225	0.0092	0.0014	0.0078
226	0.0090	0.0014	0.0077
227	0.0089	0.0014	0.0075
228	0.0087	0.0013	0.0074
229	0.0086	0.0013	0.0072
230	0.0084	0.0013	0.0071
231	0.0083	0.0013	0.0070

232	0.0081	0.0012	0.0069
233	0.0080	0.0012	0.0068
234	0.0079	0.0012	0.0067
235	0.0078	0.0012	0.0066
236	0.0076	0.0012	0.0065
237	0.0075	0.0012	0.0064
238	0.0074	0.0011	0.0063
239	0.0073	0.0011	0.0062
240	0.0072	0.0011	0.0061
241	0.0071	0.0011	0.0060
242	0.0070	0.0011	0.0060
243	0.0069	0.0011	0.0059
244	0.0069	0.0010	0.0058
245	0.0068	0.0010	0.0057
246	0.0067	0.0010	0.0057
247	0.0066	0.0010	0.0056
248	0.0065	0.0010	0.0055
249	0.0065	0.0010	0.0055
250	0.0064	0.0010	0.0054
251	0.0063	0.0010	0.0053
252	0.0062	0.0010	0.0053
253	0.0062	0.0009	0.0052
254	0.0061	0.0009	0.0052
255	0.0061	0.0009	0.0051
256	0.0060	0.0009	0.0051
257	0.0059	0.0009	0.0050
258	0.0059	0.0009	0.0050
259	0.0058	0.0009	0.0049
260	0.0058	0.0009	0.0049
261	0.0057	0.0009	0.0048
262	0.0057	0.0009	0.0048
263	0.0056	0.0009	0.0047
264	0.0055	0.0008	0.0047
265	0.0055	0.0008	0.0047
266	0.0055	0.0008	0.0046
267	0.0054	0.0008	0.0046
268	0.0054	0.0008	0.0045
269	0.0053	0.0008	0.0045
270	0.0053	0.0008	0.0045
271	0.0052	0.0008	0.0044
272	0.0052	0.0008	0.0044
273	0.0051	0.0008	0.0044
274	0.0051	0.0008	0.0043
275	0.0051	0.0008	0.0043
276	0.0050	0.0008	0.0043
277	0.0050	0.0008	0.0042
278	0.0049	0.0008	0.0042
279	0.0049	0.0008	0.0042
280	0.0049	0.0007	0.0041
281	0.0048	0.0007	0.0041
282	0.0048	0.0007	0.0041
283	0.0048	0.0007	0.0040
284	0.0047	0.0007	0.0040
285	0.0047	0.0007	0.0040
286	0.0047	0.0007	0.0040

287	0.0046	0.0007	0.0039
288	0.0046	0.0007	0.0039

TOTAL STORM RAINFALL(INCHES) = 3.66
TOTAL SOIL-LOSS(INCHES) = 0.52
TOTAL EFFECTIVE RAINFALL(INCHES) = 3.14

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 94.4433
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 568.7405

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2 4 - 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 FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	450.0	900.0	1350.0	1800.0
0.083	0.0031	0.46	Q	.	.	.	.
0.167	0.0143	1.62	Q	.	.	.	.
0.250	0.0381	3.46	Q	.	.	.	.
0.333	0.0795	6.00	Q	.	.	.	.
0.417	0.1436	9.30	Q	.	.	.	.
0.500	0.2444	14.64	Q	.	.	.	.
0.583	0.4012	22.77	Q	.	.	.	.
0.667	0.6291	33.09	Q	.	.	.	.
0.750	0.9185	42.03	Q	.	.	.	.
0.833	1.2575	49.21	VQ	.	.	.	.
0.917	1.6377	55.21	VQ	.	.	.	.
1.000	2.0522	60.18	VQ	.	.	.	.
1.083	2.4943	64.19	VQ	.	.	.	.
1.167	2.9600	67.63	VQ	.	.	.	.
1.250	3.4467	70.66	VQ	.	.	.	.
1.333	3.9526	73.47	VQ	.	.	.	.
1.417	4.4760	76.00	VQ	.	.	.	.
1.500	5.0150	78.26	VQ	.	.	.	.
1.583	5.5685	80.36	VQ	.	.	.	.
1.667	6.1358	82.37	VQ	.	.	.	.
1.750	6.7151	84.12	VQ	.	.	.	.
1.833	7.3059	85.79	VQ	.	.	.	.
1.917	7.9076	87.37	VQ	.	.	.	.
2.000	8.5192	88.81	VQ	.	.	.	.
2.083	9.1407	90.23	V Q	.	.	.	.
2.167	9.7714	91.58	V Q	.	.	.	.
2.250	10.4112	92.91	V Q	.	.	.	.
2.333	11.0598	94.17	V Q	.	.	.	.
2.417	11.7165	95.35	V Q	.	.	.	.
2.500	12.3811	96.50	V Q	.	.	.	.
2.583	13.0527	97.51	V Q	.	.	.	.
2.667	13.7310	98.50	V Q	.	.	.	.

2.750	14.4161	99.47	.VQ	.	.	.	.
2.833	15.1077	100.42	.VQ	.	.	.	.
2.917	15.8059	101.37	.VQ	.	.	.	.
3.000	16.5102	102.27	.VQ	.	.	.	.
3.083	17.2206	103.15	.VQ	.	.	.	.
3.167	17.9370	104.02	.VQ	.	.	.	.
3.250	18.6593	104.88	.VQ	.	.	.	.
3.333	19.3875	105.73	.VQ	.	.	.	.
3.417	20.1210	106.50	.VQ	.	.	.	.
3.500	20.8597	107.27	.VQ	.	.	.	.
3.583	21.6039	108.05	.VQ	.	.	.	.
3.667	22.3534	108.83	.VQ	.	.	.	.
3.750	23.1082	109.60	.VQ	.	.	.	.
3.833	23.8679	110.31	.VQ	.	.	.	.
3.917	24.6326	111.03	.VQ	.	.	.	.
4.000	25.4022	111.75	.VQ	.	.	.	.
4.083	26.1768	112.48	.VQ	.	.	.	.
4.167	26.9563	113.18	.VQ	.	.	.	.
4.250	27.7404	113.84	.VQ	.	.	.	.
4.333	28.5290	114.50	. Q	.	.	.	.
4.417	29.3222	115.17	. Q	.	.	.	.
4.500	30.1200	115.84	. Q	.	.	.	.
4.583	30.9223	116.49	. Q	.	.	.	.
4.667	31.7287	117.10	. Q	.	.	.	.
4.750	32.5393	117.70	. Q	.	.	.	.
4.833	33.3542	118.32	. Q	.	.	.	.
4.917	34.1733	118.94	. Q	.	.	.	.
5.000	34.9968	119.57	. Q	.	.	.	.
5.083	35.8248	120.23	. Q	.	.	.	.
5.167	36.6574	120.89	. Q	.	.	.	.
5.250	37.4946	121.55	. Q	.	.	.	.
5.333	38.3363	122.23	. Q	.	.	.	.
5.417	39.1828	122.91	. Q	.	.	.	.
5.500	40.0340	123.60	. Q	.	.	.	.
5.583	40.8900	124.29	. Q	.	.	.	.
5.667	41.7509	124.99	. Q	.	.	.	.
5.750	42.6166	125.70	. Q	.	.	.	.
5.833	43.4872	126.42	. QV	.	.	.	.
5.917	44.3628	127.14	. QV	.	.	.	.
6.000	45.2435	127.87	. QV	.	.	.	.
6.083	46.1292	128.61	. QV	.	.	.	.
6.167	47.0197	129.30	. QV	.	.	.	.
6.250	47.9145	129.93	. QV	.	.	.	.
6.333	48.8137	130.57	. QV	.	.	.	.
6.417	49.7174	131.21	. QV	.	.	.	.
6.500	50.6256	131.87	. QV	.	.	.	.
6.583	51.5384	132.53	. QV	.	.	.	.
6.667	52.4558	133.21	. QV	.	.	.	.
6.750	53.3779	133.89	. QV	.	.	.	.
6.833	54.3048	134.58	. QV	.	.	.	.
6.917	55.2365	135.28	. Q	.	.	.	.
7.000	56.1731	135.99	. Q	.	.	.	.
7.083	57.1146	136.71	. QV	.	.	.	.
7.167	58.0612	137.44	. QV	.	.	.	.
7.250	59.0128	138.18	. QV	.	.	.	.

7.333	59.9697	138.93	.	QV	.	.	.	.
7.417	60.9317	139.69	.	QV	.	.	.	.
7.500	61.8991	140.47	.	QV	.	.	.	.
7.583	62.8719	141.25	.	QV	.	.	.	.
7.667	63.8502	142.04	.	QV	.	.	.	.
7.750	64.8340	142.85	.	QV	.	.	.	.
7.833	65.8234	143.67	.	QV	.	.	.	.
7.917	66.8185	144.49	.	QV	.	.	.	.
8.000	67.8195	145.34	.	QV	.	.	.	.
8.083	68.8263	146.19	.	QV	.	.	.	.
8.167	69.8391	147.06	.	QV	.	.	.	.
8.250	70.8580	147.94	.	QV	.	.	.	.
8.333	71.8831	148.84	.	Q V	.	.	.	.
8.417	72.9144	149.75	.	Q V	.	.	.	.
8.500	73.9521	150.67	.	Q V	.	.	.	.
8.583	74.9962	151.61	.	Q V	.	.	.	.
8.667	76.0470	152.57	.	Q V	.	.	.	.
8.750	77.1044	153.53	.	Q V	.	.	.	.
8.833	78.1686	154.52	.	Q V	.	.	.	.
8.917	79.2397	155.52	.	Q V	.	.	.	.
9.000	80.3178	156.55	.	Q V	.	.	.	.
9.083	81.4031	157.58	.	Q V	.	.	.	.
9.167	82.4957	158.64	.	Q V	.	.	.	.
9.250	83.5956	159.71	.	Q V	.	.	.	.
9.333	84.7031	160.81	.	Q V	.	.	.	.
9.417	85.8182	161.92	.	Q V	.	.	.	.
9.500	86.9411	163.05	.	Q V	.	.	.	.
9.583	88.0720	164.20	.	Q V	.	.	.	.
9.667	89.2110	165.38	.	Q V	.	.	.	.
9.750	90.3582	166.57	.	Q V	.	.	.	.
9.833	91.5138	167.80	.	Q V	.	.	.	.
9.917	92.6780	169.04	.	Q V	.	.	.	.
10.000	93.8509	170.31	.	Q V	.	.	.	.
10.083	95.0327	171.59	.	Q V	.	.	.	.
10.167	96.2235	172.92	.	Q V	.	.	.	.
10.250	97.4237	174.26	.	Q V	.	.	.	.
10.333	98.6333	175.63	.	Q V	.	.	.	.
10.417	99.8525	177.03	.	Q V	.	.	.	.
10.500	101.0815	178.46	.	Q V	.	.	.	.
10.583	102.3207	179.92	.	Q V	.	.	.	.
10.667	103.5701	181.41	.	Q V	.	.	.	.
10.750	104.8299	182.93	.	Q V	.	.	.	.
10.833	106.1006	184.50	.	Q V	.	.	.	.
10.917	107.3822	186.08	.	Q V	.	.	.	.
11.000	108.6750	187.72	.	Q V	.	.	.	.
11.083	109.9793	189.38	.	Q V	.	.	.	.
11.167	111.2953	191.09	.	Q V	.	.	.	.
11.250	112.6234	192.83	.	Q V	.	.	.	.
11.333	113.9638	194.63	.	Q V	.	.	.	.
11.417	115.3167	196.45	.	Q V	.	.	.	.
11.500	116.6827	198.34	.	Q V	.	.	.	.
11.583	118.0619	200.26	.	Q V	.	.	.	.
11.667	119.4547	202.24	.	Q V	.	.	.	.
11.750	120.8614	204.26	.	Q V	.	.	.	.
11.833	122.2825	206.34	.	Q V	.	.	.	.

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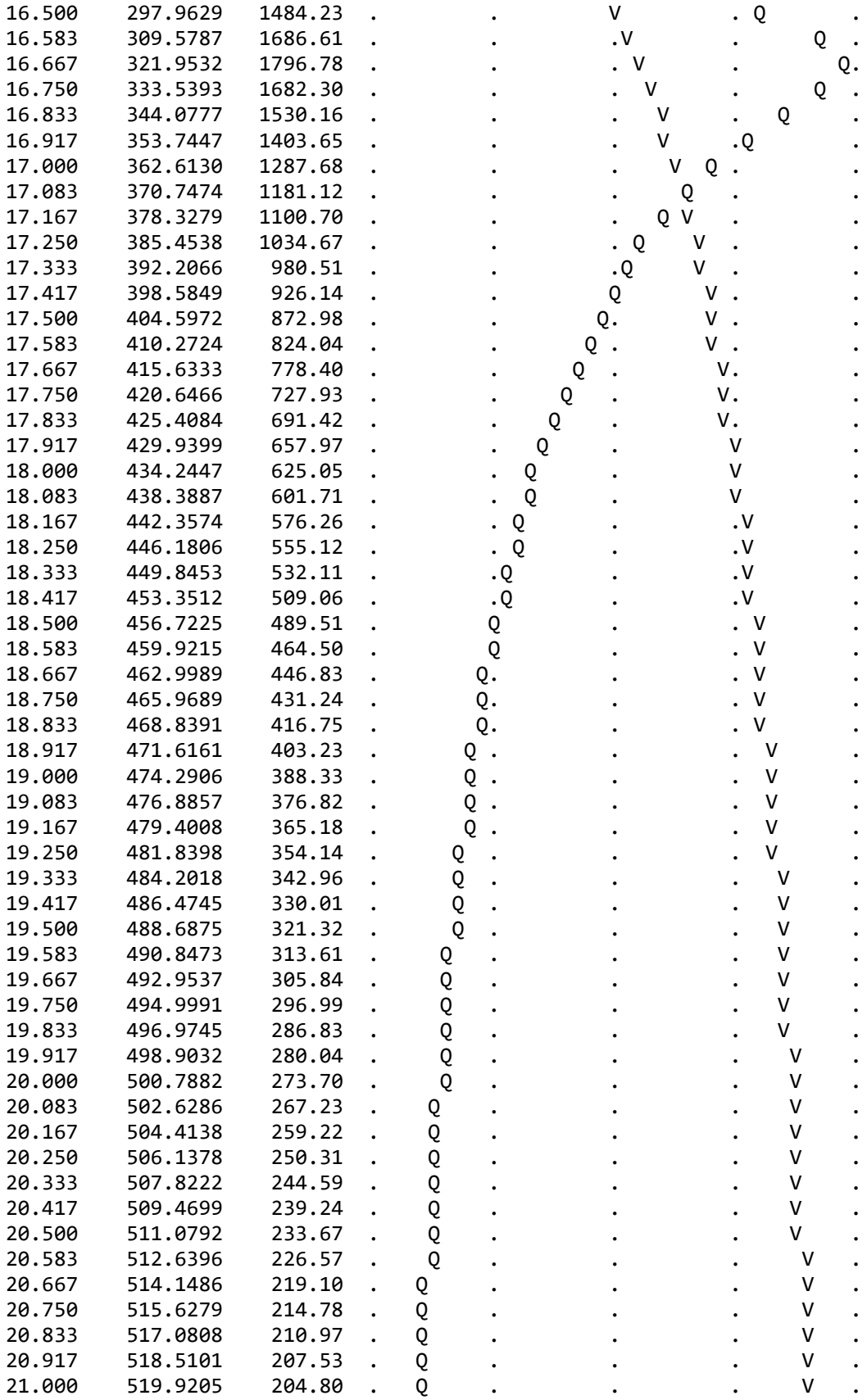
11.917    123.7183    208.48  .   Q   V .         .         .         .
12.000    125.1693    210.68  .   Q   V .         .         .         .
12.083    126.6364    213.02  .   Q   V .         .         .         .
12.167    128.1212    215.60  .   Q    V.         .         .         .
12.250    129.6252    218.37  .   Q    V.         .         .         .
12.333    131.1498    221.38  .   Q    V.         .         .         .
12.417    132.6967    224.61  .   Q    V.         .         .         .
12.500    134.2695    228.37  .    Q   V.         .         .         .
12.583    135.8727    232.78  .    Q   V.         .         .         .
12.667    137.5102    237.77  .    Q   V.         .         .         .
12.750    139.1807    242.55  .    Q   V.         .         .         .
12.833    140.8822    247.06  .    Q   V.         .         .         .
12.917    142.6137    251.42  .    Q    V         .         .         .
13.000    144.3746    255.68  .    Q    V         .         .         .
13.083    146.1641    259.83  .    Q    V         .         .         .
13.167    147.9824    264.01  .    Q    V         .         .         .
13.250    149.8295    268.21  .    Q    V         .         .         .
13.333    151.7064    272.52  .     Q   V         .         .         .
13.417    153.6133    276.89  .     Q   V         .         .         .
13.500    155.5513    281.39  .     Q   V         .         .         .
13.583    157.5209    285.99  .     Q   .V        .         .         .
13.667    159.5234    290.77  .     Q   .V        .         .         .
13.750    161.5597    295.67  .     Q   .V        .         .         .
13.833    163.6311    300.77  .     Q   .V        .         .         .
13.917    165.7389    306.05  .     Q   .V        .         .         .
14.000    167.8847    311.57  .     Q   .V        .         .         .
14.083    170.0741    317.91  .      Q  .V        .         .         .
14.167    172.3156    325.46  .      Q  . V       .         .         .
14.250    174.6172    334.19  .      Q  . V       .         .         .
14.333    176.9877    344.19  .      Q  . V       .         .         .
14.417    179.4359    355.48  .      Q  . V       .         .         .
14.500    181.9833    369.89  .       Q . V       .         .         .
14.583    184.6578    388.34  .       Q . V       .         .         .
14.667    187.4829    410.20  .        Q.  V      .         .         .
14.750    190.4492    430.71  .        Q.  V      .         .         .
14.833    193.5450    449.52  .        Q.  V      .         .         .
14.917    196.7638    467.36  .         Q  V      .         .         .
15.000    200.1013    484.61  .         Q   V     .         .         .
15.083    203.5540    501.33  .         .Q  V     .         .         .
15.167    207.1235    518.29  .         .Q  V     .         .         .
15.250    210.8129    535.70  .         .Q  V     .         .         .
15.333    214.6291    554.12  .         . Q  V    .         .         .
15.417    218.5778    573.35  .         . Q  V    .         .         .
15.500    222.6672    593.79  .         .  Q V    .         .         .
15.583    226.9079    615.74  .         .  Q V    .         .         .
15.667    231.3158    640.04  .         .   Q V   .         .         .
15.750    235.9072    666.67  .         .   Q V   .         .         .
15.833    240.7046    696.58  .         .    QV   .         .         .
15.917    245.7438    731.70  .         .     QV  .         .         .
16.000    251.0961    777.16  .         .      Q  .         .         .
16.083    256.9928    856.20  .         .       VQ.         .         .
16.167    263.5683    954.76  .         .       V .Q        .         .
16.250    270.8401   1055.87  .         .        V.  Q      .         .
16.333    278.8579   1164.18  .         .        V.    Q    .         .
16.417    287.7409   1289.82  .         .         V       Q .         .
```



21.083	521.3124	202.10	.	Q	.	.	V	.
21.167	522.6828	198.98	.	Q	.	.	V	.
21.250	524.0319	195.89	.	Q	.	.	V	.
21.333	525.3603	192.88	.	Q	.	.	V	.
21.417	526.6680	189.87	.	Q	.	.	V	.
21.500	527.9553	186.92	.	Q	.	.	V	.
21.583	529.2228	184.04	.	Q	.	.	V	.
21.667	530.4706	181.19	.	Q	.	.	V	.
21.750	531.6987	178.31	.	Q	.	.	V	.
21.833	532.9064	175.37	.	Q	.	.	V	.
21.917	534.0932	172.32	.	Q	.	.	V	.
22.000	535.2563	168.88	.	Q	.	.	V	.
22.083	536.3907	164.71	.	Q	.	.	V	.
22.167	537.4738	157.26	.	Q	.	.	V	.
22.250	538.5115	150.69	.	Q	.	.	V	.
22.333	539.5292	147.77	.	Q	.	.	V	.
22.417	540.5295	145.25	.	Q	.	.	V	.
22.500	541.5140	142.94	.	Q	.	.	V	.
22.583	542.4836	140.79	.	Q	.	.	V	.
22.667	543.4393	138.77	.	Q	.	.	V	.
22.750	544.3818	136.85	.	Q	.	.	V	.
22.833	545.3117	135.02	.	Q	.	.	V	.
22.917	546.2296	133.27	.	Q	.	.	V	.
23.000	547.1358	131.58	.	Q	.	.	V	.
23.083	548.0308	129.95	.	Q	.	.	V	.
23.167	548.9155	128.46	.	Q	.	.	V	.
23.250	549.7909	127.10	.	Q	.	.	V	.
23.333	550.6572	125.78	.	Q	.	.	V	.
23.417	551.5146	124.50	.	Q	.	.	V	.
23.500	552.3636	123.27	.	Q	.	.	V	.
23.583	553.2043	122.07	.	Q	.	.	V	.
23.667	554.0369	120.90	.	Q	.	.	V	.
23.750	554.8618	119.76	.	Q	.	.	V	.
23.833	555.6790	118.65	.	Q	.	.	V	.
23.917	556.4887	117.58	.	Q	.	.	V	.
24.000	557.2913	116.53	.	Q	.	.	V	.
24.083	558.0836	115.05	.	Q	.	.	V	.
24.167	558.8611	112.90	.	Q	.	.	V	.
24.250	559.6196	110.13	.	Q	.	.	V	.
24.333	560.3544	106.69	.	Q	.	.	V	.
24.417	561.0607	102.55	.	Q	.	.	V	.
24.500	561.7248	96.43	.	Q	.	.	V	.
24.583	562.3280	87.59	.	Q	.	.	V	.
24.667	562.8560	76.66	.	Q	.	.	V	.
24.750	563.3189	67.22	.	Q	.	.	V	.
24.833	563.7297	59.64	.	Q	.	.	V	.
24.917	564.0970	53.33	.	Q	.	.	V	.
25.000	564.4283	48.11	.	Q	.	.	V	.
25.083	564.7308	43.92	Q	.	.	.	V	.
25.167	565.0086	40.34	Q	.	.	.	V	.
25.250	565.2649	37.21	Q	.	.	.	V	.
25.333	565.5014	34.34	Q	.	.	.	V	.
25.417	565.7203	31.78	Q	.	.	.	V	.
25.500	565.9236	29.52	Q	.	.	.	V	.
25.583	566.1127	27.46	Q	.	.	.	V	.

25.667	566.2883	25.50	Q	.	.	.	V.
25.750	566.4525	23.84	Q	.	.	.	V.
25.833	566.6058	22.27	Q	.	.	.	V.
25.917	566.7491	20.81	Q	.	.	.	V.
26.000	566.8836	19.52	Q	.	.	.	V.
26.083	567.0093	18.25	Q	.	.	.	V.
26.167	567.1270	17.08	Q	.	.	.	V.
26.250	567.2368	15.95	Q	.	.	.	V.
26.333	567.3394	14.90	Q	.	.	.	V.
26.417	567.4355	13.95	Q	.	.	.	V.
26.500	567.5252	13.03	Q	.	.	.	V.
26.583	567.6097	12.27	Q	.	.	.	V.
26.667	567.6893	11.55	Q	.	.	.	V.
26.750	567.7641	10.86	Q	.	.	.	V.
26.833	567.8343	10.19	Q	.	.	.	V.
26.917	567.9000	9.55	Q	.	.	.	V.
27.000	567.9617	8.96	Q	.	.	.	V.
27.083	568.0195	8.40	Q	.	.	.	V.
27.167	568.0737	7.86	Q	.	.	.	V.
27.250	568.1242	7.34	Q	.	.	.	V.
27.333	568.1714	6.85	Q	.	.	.	V.
27.417	568.2157	6.43	Q	.	.	.	V.
27.500	568.2573	6.03	Q	.	.	.	V.
27.583	568.2961	5.63	Q	.	.	.	V.
27.667	568.3322	5.24	Q	.	.	.	V.
27.750	568.3657	4.87	Q	.	.	.	V.
27.833	568.3970	4.56	Q	.	.	.	V.
27.917	568.4263	4.25	Q	.	.	.	V.
28.000	568.4536	3.95	Q	.	.	.	V.
28.083	568.4787	3.65	Q	.	.	.	V.
28.167	568.5020	3.38	Q	.	.	.	V.
28.250	568.5237	3.17	Q	.	.	.	V.
28.333	568.5441	2.96	Q	.	.	.	V.
28.417	568.5630	2.75	Q	.	.	.	V.
28.500	568.5806	2.54	Q	.	.	.	V.
28.583	568.5969	2.37	Q	.	.	.	V.
28.667	568.6124	2.25	Q	.	.	.	V.
28.750	568.6270	2.13	Q	.	.	.	V.
28.833	568.6409	2.01	Q	.	.	.	V.
28.917	568.6539	1.89	Q	.	.	.	V.
29.000	568.6660	1.76	Q	.	.	.	V.
29.083	568.6772	1.63	Q	.	.	.	V.
29.167	568.6875	1.49	Q	.	.	.	V.
29.250	568.6968	1.36	Q	.	.	.	V.
29.333	568.7053	1.22	Q	.	.	.	V.
29.417	568.7128	1.09	Q	.	.	.	V.
29.500	568.7194	0.96	Q	.	.	.	V.
29.583	568.7250	0.83	Q	.	.	.	V.
29.667	568.7299	0.70	Q	.	.	.	V.
29.750	568.7338	0.57	Q	.	.	.	V.
29.833	568.7368	0.44	Q	.	.	.	V.
29.917	568.7390	0.31	Q	.	.	.	V.
30.000	568.7402	0.19	Q	.	.	.	V.
30.083	568.7407	0.06	Q	.	.	.	V

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1805.0
10%	670.0
20%	285.0
30%	180.0
40%	115.0
50%	80.0
60%	55.0
70%	40.0
80%	25.0
90%	15.0

==========

END OF FLOODSCx ROUTING ANALYSIS

Attachment B – Basin 100-Year Mitigation Parameters and Result

- **Onsite Existing and Proposed AES Outputs**
- **Pondpack Output**

Imperviousness Calculations

Project Name: RPCA Sunrise
Completed by: Rafael Rodriguez
Reviewed by: Ashley Teani
Date: 24-Oct-24
County: San Bernardino

Drainage Area	Area	Length of Arrays	# of Piles	Pile Area *	Roads and Gravel	Effective Impervious Roads and Gravel **	Pads	Total Impervious	% Impervious
	(sf)	(ft)	(-)	(sf)	(sf)	(sf)	(sf)	(sf)	(cf)
DA 1	1,577,207	51,517	2576	1718.09	104105.00	20821.00	2229.00	24768.09	0.0157
DA 2	2,007,517	63,422	3171	2115.11	140075.00	28015.00	629.00	30759.11	0.0153
Total	*3,584,724*	114,938	5747	3833.20	244180.00	48836.00	2858.00	55527.20	0.0155

* Piles are estimated to have a cross sectional area of 8" x 12" = 0.667 sf

** Piles and concrete pads are considered 100% impervious. Roads and gravel aggregate surfaces are considered 20% impervious.

Hydrology Calculations

Project Name: RPCA Sunrise
Completed by: Rafael Rodriguez
Reviewed by: Ashley Teani
Date: 24-Oct-24
County: San Bernardino

Drainage Area	Area	Area	100-Year Peak Flow		
			Existing	Proposed	Delta
	(sf)	(ac)	(cfs)	(cfs)	(cfs)
DA 1	2,007,517	46.09	96.20	98.04	1.84
DA 2	1,577,207	36.21	83.26	84.73	1.47
Total	3,584,724	82.3	179.46	182.77	3.31

Snyder Method Lag Time Calculation

	Existing							Proposed						
Drainage Area	n	Ct	L (ft)	Lca (ft)	S (ft/mi)	m	Lag (hr)	n	Ct	L (ft)	Lca (ft)	S (ft/mi)	m	Lag (hr)
DA 1	0.03	0.72	2000	1038	50.1600	0.380	0.128	0.03	0.72	2000	1038	50.1600	0.38	0.128
DA 2	0.03	0.72	1611	738	57.3557	0.380	0.101	0.03	0.72	1611	738	57.3557	0.38	0.101

```
**************************************************************************
          NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                    AND LOW LOSS FRACTION ESTIMATIONS
==========================================================================
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             Ver. 23.0  Release Date: 07/01/2016  License ID 1499

                          Analysis prepared by:




**************************************************************************
--------------------------------------------------------------------------

 Problem Descriptions:
  RPCA SUNRISE
  100-YEAR EXISTING WEST AREA DA-1
  KIMLEY-HORN
==========================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.68 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1         46.09      100.00       82.(AMC II)     0.142       0.847

    TOTAL AREA (Acres) =     46.09

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.142

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.153
==========================================================================
```

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

            F L O O D    R O U T I N G    A N A L Y S I S
          USING COUNTY HYDROLOGY MANUAL OF SAN BERNARDINO(1986)
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             Ver. 23.0  Release Date: 07/01/2016  License ID 1499

                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* RPCA SUNRISE                                                          *
* 100 YEAR EXISTING WEST DA-1                                           *
* KIMLEY-HORN                                                           *
 ************************************************************************

  FILE NAME: SRW100E.DAT
  TIME/DATE OF STUDY: 23:28 10/23/2024


**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =      46.090 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.128 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         DESERT(UNDEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.142
         LOW LOSS FRACTION = 0.153
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.32
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.75
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.06
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.72
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.24
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  3.68

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.998
```

30-MINUTE FACTOR = 0.998
1-HOUR FACTOR = 0.998
3-HOUR FACTOR = 1.000
6-HOUR FACTOR = 1.000
24-HOUR FACTOR = 1.000

UNIT HYDROGRAPH TIME UNIT = 5.000 MINUTES
UNIT INTERVAL PERCENTAGE OF LAG-TIME = 65.104

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 0.00
MODEL TIME(HOURS) FOR END OF RESULTS = 24.00

==========

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	6.621	36.903
2	46.358	221.497
3	71.060	137.690
4	81.731	59.478
5	88.011	35.007
6	91.943	21.916
7	94.679	15.251
8	96.569	10.532
9	97.782	6.761
10	98.525	4.144
11	99.287	4.248
12	99.715	2.384
13	99.929	1.192
14	100.000	0.397

****

UNIT PERIOD (NUMBER)	UNIT RAINFALL (INCHES)	UNIT SOIL-LOSS (INCHES)	EFFECTIVE RAINFALL (INCHES)
1	0.0046	0.0007	0.0039
2	0.0046	0.0007	0.0039
3	0.0046	0.0007	0.0039
4	0.0046	0.0007	0.0039
5	0.0046	0.0007	0.0039
6	0.0047	0.0007	0.0039
7	0.0047	0.0007	0.0040
8	0.0047	0.0007	0.0040
9	0.0047	0.0007	0.0040

10	0.0047	0.0007	0.0040
11	0.0047	0.0007	0.0040
12	0.0048	0.0007	0.0040
13	0.0048	0.0007	0.0040
14	0.0048	0.0007	0.0041
15	0.0048	0.0007	0.0041
16	0.0048	0.0007	0.0041
17	0.0048	0.0007	0.0041
18	0.0049	0.0007	0.0041
19	0.0049	0.0007	0.0041
20	0.0049	0.0007	0.0041
21	0.0049	0.0008	0.0042
22	0.0049	0.0008	0.0042
23	0.0050	0.0008	0.0042
24	0.0050	0.0008	0.0042
25	0.0050	0.0008	0.0042
26	0.0050	0.0008	0.0042
27	0.0050	0.0008	0.0043
28	0.0050	0.0008	0.0043
29	0.0051	0.0008	0.0043
30	0.0051	0.0008	0.0043
31	0.0051	0.0008	0.0043
32	0.0051	0.0008	0.0043
33	0.0052	0.0008	0.0044
34	0.0052	0.0008	0.0044
35	0.0052	0.0008	0.0044
36	0.0052	0.0008	0.0044
37	0.0052	0.0008	0.0044
38	0.0052	0.0008	0.0044
39	0.0053	0.0008	0.0045
40	0.0053	0.0008	0.0045
41	0.0053	0.0008	0.0045
42	0.0053	0.0008	0.0045
43	0.0054	0.0008	0.0045
44	0.0054	0.0008	0.0046
45	0.0054	0.0008	0.0046
46	0.0054	0.0008	0.0046
47	0.0055	0.0008	0.0046
48	0.0055	0.0008	0.0046
49	0.0055	0.0008	0.0047
50	0.0055	0.0008	0.0047
51	0.0056	0.0009	0.0047
52	0.0056	0.0009	0.0047
53	0.0056	0.0009	0.0048
54	0.0056	0.0009	0.0048
55	0.0057	0.0009	0.0048
56	0.0057	0.0009	0.0048
57	0.0057	0.0009	0.0048
58	0.0057	0.0009	0.0049
59	0.0058	0.0009	0.0049
60	0.0058	0.0009	0.0049
61	0.0058	0.0009	0.0049
62	0.0058	0.0009	0.0050

63	0.0059	0.0009	0.0050
64	0.0059	0.0009	0.0050
65	0.0059	0.0009	0.0050
66	0.0060	0.0009	0.0051
67	0.0060	0.0009	0.0051
68	0.0060	0.0009	0.0051
69	0.0061	0.0009	0.0051
70	0.0061	0.0009	0.0052
71	0.0061	0.0009	0.0052
72	0.0062	0.0009	0.0052
73	0.0062	0.0009	0.0053
74	0.0062	0.0010	0.0053
75	0.0063	0.0010	0.0053
76	0.0063	0.0010	0.0053
77	0.0063	0.0010	0.0054
78	0.0064	0.0010	0.0054
79	0.0064	0.0010	0.0054
80	0.0064	0.0010	0.0054
81	0.0065	0.0010	0.0055
82	0.0065	0.0010	0.0055
83	0.0066	0.0010	0.0056
84	0.0066	0.0010	0.0056
85	0.0066	0.0010	0.0056
86	0.0067	0.0010	0.0056
87	0.0067	0.0010	0.0057
88	0.0067	0.0010	0.0057
89	0.0068	0.0010	0.0058
90	0.0068	0.0010	0.0058
91	0.0069	0.0011	0.0058
92	0.0069	0.0011	0.0059
93	0.0070	0.0011	0.0059
94	0.0070	0.0011	0.0059
95	0.0071	0.0011	0.0060
96	0.0071	0.0011	0.0060
97	0.0072	0.0011	0.0061
98	0.0072	0.0011	0.0061
99	0.0073	0.0011	0.0061
100	0.0073	0.0011	0.0062
101	0.0074	0.0011	0.0062
102	0.0074	0.0011	0.0063
103	0.0075	0.0011	0.0063
104	0.0075	0.0011	0.0063
105	0.0076	0.0012	0.0064
106	0.0076	0.0012	0.0064
107	0.0077	0.0012	0.0065
108	0.0077	0.0012	0.0065
109	0.0078	0.0012	0.0066
110	0.0078	0.0012	0.0066
111	0.0079	0.0012	0.0067
112	0.0080	0.0012	0.0067
113	0.0080	0.0012	0.0068
114	0.0081	0.0012	0.0069
115	0.0082	0.0013	0.0069

116	0.0082	0.0013	0.0070
117	0.0083	0.0013	0.0070
118	0.0084	0.0013	0.0071
119	0.0085	0.0013	0.0072
120	0.0085	0.0013	0.0072
121	0.0086	0.0013	0.0073
122	0.0087	0.0013	0.0073
123	0.0088	0.0013	0.0074
124	0.0088	0.0014	0.0075
125	0.0089	0.0014	0.0076
126	0.0090	0.0014	0.0076
127	0.0091	0.0014	0.0077
128	0.0092	0.0014	0.0078
129	0.0093	0.0014	0.0079
130	0.0094	0.0014	0.0079
131	0.0095	0.0015	0.0080
132	0.0096	0.0015	0.0081
133	0.0097	0.0015	0.0082
134	0.0098	0.0015	0.0083
135	0.0099	0.0015	0.0084
136	0.0100	0.0015	0.0085
137	0.0101	0.0015	0.0086
138	0.0102	0.0016	0.0086
139	0.0104	0.0016	0.0088
140	0.0105	0.0016	0.0089
141	0.0106	0.0016	0.0090
142	0.0107	0.0016	0.0091
143	0.0109	0.0017	0.0092
144	0.0110	0.0017	0.0093
145	0.0119	0.0018	0.0101
146	0.0120	0.0018	0.0102
147	0.0122	0.0019	0.0104
148	0.0123	0.0019	0.0105
149	0.0126	0.0019	0.0107
150	0.0127	0.0019	0.0108
151	0.0129	0.0020	0.0110
152	0.0131	0.0020	0.0111
153	0.0133	0.0020	0.0113
154	0.0135	0.0021	0.0114
155	0.0138	0.0021	0.0117
156	0.0139	0.0021	0.0118
157	0.0143	0.0022	0.0121
158	0.0144	0.0022	0.0122
159	0.0148	0.0023	0.0125
160	0.0150	0.0023	0.0127
161	0.0153	0.0023	0.0130
162	0.0155	0.0024	0.0132
163	0.0160	0.0024	0.0135
164	0.0162	0.0025	0.0137
165	0.0167	0.0026	0.0141
166	0.0169	0.0026	0.0143
167	0.0175	0.0027	0.0148
168	0.0178	0.0027	0.0150

169	0.0213	0.0033	0.0180
170	0.0216	0.0033	0.0183
171	0.0224	0.0034	0.0189
172	0.0228	0.0035	0.0193
173	0.0236	0.0036	0.0200
174	0.0241	0.0037	0.0204
175	0.0251	0.0038	0.0212
176	0.0256	0.0039	0.0217
177	0.0268	0.0041	0.0227
178	0.0275	0.0042	0.0233
179	0.0289	0.0044	0.0245
180	0.0297	0.0045	0.0252
181	0.0316	0.0048	0.0268
182	0.0326	0.0050	0.0276
183	0.0351	0.0054	0.0297
184	0.0365	0.0056	0.0309
185	0.0441	0.0067	0.0373
186	0.0462	0.0071	0.0392
187	0.0515	0.0079	0.0436
188	0.0549	0.0084	0.0465
189	0.0632	0.0097	0.0535
190	0.0702	0.0107	0.0595
191	0.0956	0.0118	0.0837
192	0.1260	0.0118	0.1142
193	0.3183	0.0118	0.3065
194	0.0800	0.0118	0.0682
195	0.0590	0.0090	0.0500
196	0.0486	0.0074	0.0412
197	0.0381	0.0058	0.0323
198	0.0338	0.0052	0.0286
199	0.0306	0.0047	0.0259
200	0.0282	0.0043	0.0239
201	0.0262	0.0040	0.0222
202	0.0245	0.0038	0.0208
203	0.0232	0.0035	0.0196
204	0.0220	0.0034	0.0186
205	0.0181	0.0028	0.0153
206	0.0172	0.0026	0.0146
207	0.0164	0.0025	0.0139
208	0.0158	0.0024	0.0133
209	0.0151	0.0023	0.0128
210	0.0146	0.0022	0.0124
211	0.0141	0.0022	0.0119
212	0.0136	0.0021	0.0115
213	0.0132	0.0020	0.0112
214	0.0128	0.0020	0.0109
215	0.0125	0.0019	0.0106
216	0.0121	0.0019	0.0103
217	0.0111	0.0017	0.0094
218	0.0108	0.0017	0.0092
219	0.0105	0.0016	0.0089
220	0.0103	0.0016	0.0087
221	0.0101	0.0015	0.0085

222	0.0098	0.0015	0.0083
223	0.0096	0.0015	0.0081
224	0.0094	0.0014	0.0080
225	0.0092	0.0014	0.0078
226	0.0091	0.0014	0.0077
227	0.0089	0.0014	0.0075
228	0.0087	0.0013	0.0074
229	0.0086	0.0013	0.0073
230	0.0084	0.0013	0.0071
231	0.0083	0.0013	0.0070
232	0.0081	0.0012	0.0069
233	0.0080	0.0012	0.0068
234	0.0079	0.0012	0.0067
235	0.0078	0.0012	0.0066
236	0.0076	0.0012	0.0065
237	0.0075	0.0012	0.0064
238	0.0074	0.0011	0.0063
239	0.0073	0.0011	0.0062
240	0.0072	0.0011	0.0061
241	0.0071	0.0011	0.0060
242	0.0070	0.0011	0.0060
243	0.0069	0.0011	0.0059
244	0.0069	0.0010	0.0058
245	0.0068	0.0010	0.0057
246	0.0067	0.0010	0.0057
247	0.0066	0.0010	0.0056
248	0.0065	0.0010	0.0055
249	0.0065	0.0010	0.0055
250	0.0064	0.0010	0.0054
251	0.0063	0.0010	0.0053
252	0.0062	0.0010	0.0053
253	0.0062	0.0009	0.0052
254	0.0061	0.0009	0.0052
255	0.0060	0.0009	0.0051
256	0.0060	0.0009	0.0051
257	0.0059	0.0009	0.0050
258	0.0059	0.0009	0.0050
259	0.0058	0.0009	0.0049
260	0.0058	0.0009	0.0049
261	0.0057	0.0009	0.0048
262	0.0056	0.0009	0.0048
263	0.0056	0.0009	0.0047
264	0.0055	0.0008	0.0047
265	0.0055	0.0008	0.0047
266	0.0054	0.0008	0.0046
267	0.0054	0.0008	0.0046
268	0.0054	0.0008	0.0045
269	0.0053	0.0008	0.0045
270	0.0053	0.0008	0.0045
271	0.0052	0.0008	0.0044
272	0.0052	0.0008	0.0044
273	0.0051	0.0008	0.0044
274	0.0051	0.0008	0.0043

275	0.0051	0.0008	0.0043
276	0.0050	0.0008	0.0042
277	0.0050	0.0008	0.0042
278	0.0049	0.0008	0.0042
279	0.0049	0.0008	0.0042
280	0.0049	0.0007	0.0041
281	0.0048	0.0007	0.0041
282	0.0048	0.0007	0.0041
283	0.0048	0.0007	0.0040
284	0.0047	0.0007	0.0040
285	0.0047	0.0007	0.0040
286	0.0047	0.0007	0.0040
287	0.0046	0.0007	0.0039
288	0.0046	0.0007	0.0039

TOTAL STORM RAINFALL(INCHES) = 3.68
TOTAL SOIL-LOSS(INCHES) = 0.52
TOTAL EFFECTIVE RAINFALL(INCHES) = 3.16

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 1.9798
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 12.1469

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2 4 - 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 FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	25.0	50.0	75.0	100.0
0.083	0.0010	0.14	Q	.	.	.	.
0.167	0.0079	1.00	Q	.	.	.	.
0.250	0.0185	1.54	Q	.	.	.	.
0.333	0.0307	1.78	Q	.	.	.	.
0.417	0.0439	1.92	Q	.	.	.	.
0.500	0.0578	2.01	Q	.	.	.	.
0.583	0.0721	2.07	Q	.	.	.	.
0.667	0.0867	2.12	Q	.	.	.	.
0.750	0.1015	2.16	Q	.	.	.	.
0.833	0.1165	2.18	Q	.	.	.	.
0.917	0.1317	2.20	Q	.	.	.	.
1.000	0.1470	2.22	Q	.	.	.	.
1.083	0.1624	2.23	Q	.	.	.	.
1.167	0.1779	2.24	Q	.	.	.	.
1.250	0.1934	2.25	Q	.	.	.	.
1.333	0.2089	2.26	Q	.	.	.	.
1.417	0.2245	2.27	Q	.	.	.	.
1.500	0.2402	2.28	Q	.	.	.	.

1.583	0.2559	2.28	Q	.	.	.	.
1.667	0.2717	2.29	Q	.	.	.	.
1.750	0.2876	2.30	Q	.	.	.	.
1.833	0.3035	2.31	Q	.	.	.	.
1.917	0.3194	2.32	QV	.	.	.	.
2.000	0.3354	2.33	QV	.	.	.	.
2.083	0.3515	2.33	QV	.	.	.	.
2.167	0.3677	2.34	QV	.	.	.	.
2.250	0.3839	2.35	QV	.	.	.	.
2.333	0.4001	2.36	QV	.	.	.	.
2.417	0.4165	2.37	QV	.	.	.	.
2.500	0.4329	2.38	QV	.	.	.	.
2.583	0.4493	2.39	QV	.	.	.	.
2.667	0.4658	2.40	QV	.	.	.	.
2.750	0.4824	2.41	QV	.	.	.	.
2.833	0.4991	2.42	QV	.	.	.	.
2.917	0.5158	2.43	QV	.	.	.	.
3.000	0.5326	2.44	QV	.	.	.	.
3.083	0.5494	2.45	QV	.	.	.	.
3.167	0.5664	2.46	QV	.	.	.	.
3.250	0.5834	2.47	QV	.	.	.	.
3.333	0.6004	2.48	QV	.	.	.	.
3.417	0.6176	2.49	Q V	.	.	.	.
3.500	0.6348	2.50	Q V	.	.	.	.
3.583	0.6520	2.51	.QV	.	.	.	.
3.667	0.6694	2.52	.QV	.	.	.	.
3.750	0.6868	2.53	.QV	.	.	.	.
3.833	0.7043	2.54	.QV	.	.	.	.
3.917	0.7219	2.55	.QV	.	.	.	.
4.000	0.7396	2.56	.QV	.	.	.	.
4.083	0.7573	2.57	.QV	.	.	.	.
4.167	0.7751	2.59	.QV	.	.	.	.
4.250	0.7930	2.60	.QV	.	.	.	.
4.333	0.8110	2.61	.QV	.	.	.	.
4.417	0.8290	2.62	.QV	.	.	.	.
4.500	0.8471	2.63	.QV	.	.	.	.
4.583	0.8654	2.64	.QV	.	.	.	.
4.667	0.8837	2.66	.QV	.	.	.	.
4.750	0.9020	2.67	.QV	.	.	.	.
4.833	0.9205	2.68	.Q V	.	.	.	.
4.917	0.9391	2.69	.Q V	.	.	.	.
5.000	0.9577	2.71	.Q V	.	.	.	.
5.083	0.9764	2.72	.Q V	.	.	.	.
5.167	0.9953	2.73	.Q V	.	.	.	.
5.250	1.0142	2.75	.Q V	.	.	.	.
5.333	1.0332	2.76	.Q V	.	.	.	.
5.417	1.0523	2.77	.Q V	.	.	.	.
5.500	1.0715	2.79	.Q V	.	.	.	.
5.583	1.0908	2.80	.Q V	.	.	.	.
5.667	1.1102	2.82	.Q V	.	.	.	.
5.750	1.1297	2.83	.Q V	.	.	.	.
5.833	1.1493	2.84	.Q V	.	.	.	.
5.917	1.1689	2.86	.Q V	.	.	.	.

6.000	1.1887	2.87	.Q V	.	.	.	.
6.083	1.2086	2.89	.Q V	.	.	.	.
6.167	1.2286	2.90	.Q V	.	.	.	.
6.250	1.2488	2.92	.Q V	.	.	.	.
6.333	1.2690	2.94	.Q V	.	.	.	.
6.417	1.2893	2.95	.Q V	.	.	.	.
6.500	1.3097	2.97	.Q V	.	.	.	.
6.583	1.3303	2.98	.Q V	.	.	.	.
6.667	1.3510	3.00	.Q V	.	.	.	.
6.750	1.3717	3.02	.Q V	.	.	.	.
6.833	1.3926	3.04	.Q V	.	.	.	.
6.917	1.4136	3.05	.Q V	.	.	.	.
7.000	1.4348	3.07	.Q V	.	.	.	.
7.083	1.4561	3.09	.Q V	.	.	.	.
7.167	1.4774	3.11	.Q V	.	.	.	.
7.250	1.4990	3.12	.Q V	.	.	.	.
7.333	1.5206	3.14	.Q V	.	.	.	.
7.417	1.5424	3.16	.Q V	.	.	.	.
7.500	1.5643	3.18	.Q V	.	.	.	.
7.583	1.5863	3.20	.Q V	.	.	.	.
7.667	1.6085	3.22	.Q V	.	.	.	.
7.750	1.6308	3.24	.Q V	.	.	.	.
7.833	1.6533	3.26	.Q V	.	.	.	.
7.917	1.6759	3.28	.Q V	.	.	.	.
8.000	1.6986	3.30	.Q V	.	.	.	.
8.083	1.7215	3.32	.Q V	.	.	.	.
8.167	1.7446	3.35	.Q V	.	.	.	.
8.250	1.7678	3.37	.Q V	.	.	.	.
8.333	1.7911	3.39	.Q V	.	.	.	.
8.417	1.8147	3.41	.Q V	.	.	.	.
8.500	1.8383	3.44	.Q V	.	.	.	.
8.583	1.8622	3.46	.Q V	.	.	.	.
8.667	1.8862	3.49	.Q V	.	.	.	.
8.750	1.9104	3.51	.Q V	.	.	.	.
8.833	1.9348	3.54	.Q V	.	.	.	.
8.917	1.9593	3.56	.Q V	.	.	.	.
9.000	1.9840	3.59	.Q V	.	.	.	.
9.083	2.0089	3.61	.Q V	.	.	.	.
9.167	2.0340	3.64	.Q V	.	.	.	.
9.250	2.0593	3.67	.Q V	.	.	.	.
9.333	2.0847	3.70	.Q V	.	.	.	.
9.417	2.1104	3.73	.Q V	.	.	.	.
9.500	2.1363	3.76	.Q V	.	.	.	.
9.583	2.1624	3.79	.Q V	.	.	.	.
9.667	2.1887	3.82	.Q V	.	.	.	.
9.750	2.2152	3.85	.Q V	.	.	.	.
9.833	2.2419	3.88	.Q V	.	.	.	.
9.917	2.2689	3.91	.Q V	.	.	.	.
10.000	2.2961	3.95	.Q V	.	.	.	.
10.083	2.3235	3.98	.Q V	.	.	.	.
10.167	2.3511	4.02	.Q V	.	.	.	.
10.250	2.3790	4.05	.Q V	.	.	.	.
10.333	2.4072	4.09	.Q V	.	.	.	.

10.417	2.4356	4.13	.Q	V .	.	.	.
10.500	2.4643	4.17	.Q	V .	.	.	.
10.583	2.4932	4.20	.Q	V .	.	.	.
10.667	2.5225	4.24	.Q	V .	.	.	.
10.750	2.5520	4.28	.Q	V .	.	.	.
10.833	2.5818	4.33	.Q	V .	.	.	.
10.917	2.6119	4.37	.Q	V .	.	.	.
11.000	2.6423	4.42	.Q	V .	.	.	.
11.083	2.6730	4.46	.Q	V .	.	.	.
11.167	2.7040	4.51	.Q	V .	.	.	.
11.250	2.7354	4.55	.Q	V.	.	.	.
11.333	2.7671	4.61	.Q	V.	.	.	.
11.417	2.7992	4.65	.Q	V.	.	.	.
11.500	2.8316	4.71	.Q	V.	.	.	.
11.583	2.8644	4.76	.Q	V.	.	.	.
11.667	2.8976	4.82	.Q	V.	.	.	.
11.750	2.9311	4.87	.Q	V.	.	.	.
11.833	2.9651	4.93	.Q	V.	.	.	.
11.917	2.9995	4.99	.Q	V.	.	.	.
12.000	3.0343	5.06	. Q	V.	.	.	.
12.083	3.0697	5.14	. Q	V	.	.	.
12.167	3.1066	5.35	. Q	V	.	.	.
12.250	3.1444	5.50	. Q	V	.	.	.
12.333	3.1831	5.61	. Q	V	.	.	.
12.417	3.2223	5.70	. Q	V	.	.	.
12.500	3.2623	5.80	. Q	V	.	.	.
12.583	3.3028	5.89	. Q	V	.	.	.
12.667	3.3440	5.98	. Q	.V	.	.	.
12.750	3.3858	6.07	. Q	.V	.	.	.
12.833	3.4283	6.17	. Q	.V	.	.	.
12.917	3.4714	6.26	. Q	.V	.	.	.
13.000	3.5153	6.37	. Q	.V	.	.	.
13.083	3.5598	6.46	. Q	.V	.	.	.
13.167	3.6051	6.58	. Q	.V	.	.	.
13.250	3.6511	6.68	. Q	. V	.	.	.
13.333	3.6980	6.81	. Q	. V	.	.	.
13.417	3.7457	6.93	. Q	. V	.	.	.
13.500	3.7944	7.06	. Q	. V	.	.	.
13.583	3.8439	7.19	. Q	. V	.	.	.
13.667	3.8944	7.34	. Q	. V	.	.	.
13.750	3.9460	7.48	. Q	. V	.	.	.
13.833	3.9987	7.65	. Q	. V	.	.	.
13.917	4.0525	7.81	. Q	. V	.	.	.
14.000	4.1076	8.00	. Q	. V	.	.	.
14.083	4.1645	8.27	. Q	. V	.	.	.
14.167	4.2267	9.03	. Q	. V	.	.	.
14.250	4.2927	9.58	. Q	. V	.	.	.
14.333	4.3614	9.98	. Q	. V	.	.	.
14.417	4.4323	10.30	. Q	. V	.	.	.
14.500	4.5057	10.65	. Q	. V	.	.	.
14.583	4.5812	10.97	. Q	. V	.	.	.
14.667	4.6593	11.34	. Q	. V	.	.	.
14.750	4.7398	11.68	. Q	. V	.	.	.

14.833	4.8231	12.10	. Q . V . . .
14.917	4.9092	12.51	. Q . V . . .
15.000	4.9988	13.01	. Q . V . . .
15.083	5.0917	13.50	. Q . V . . .
15.167	5.1889	14.11	. Q . V . . .
15.250	5.2904	14.73	. Q . V . . .
15.333	5.3974	15.53	. Q . V . . .
15.417	5.5109	16.48	. Q . V . . .
15.500	5.6374	18.37	. Q . V . . .
15.583	5.7753	20.03	. Q . V . . .
15.667	5.9260	21.88	. Q . V . . .
15.750	6.0901	23.82	. Q . V . . .
15.833	6.2728	26.53	. Q . V . . .
15.917	6.4809	30.22	. . Q . V . . .
16.000	6.7444	38.27	. . . Q . V . . .
16.083	7.1319	56.26	. . . . QV . . .
16.167	7.7944	96.20	. . . . V . Q .
16.250	8.2918	72.23	. . . . VQ . . .
16.333	8.6246	48.32	. . . Q . V . . .
16.417	8.8814	37.28	. . . Q . . V . .
16.500	9.0850	29.57	. . Q . . V . .
16.583	9.2540	24.53	. . Q . . . V . .
16.667	9.3977	20.86	. . Q . . . V . .
16.750	9.5217	18.01	. . Q . . . .V . .
16.833	9.6311	15.88	. . Q . . . .V . .
16.917	9.7315	14.58	. . Q . . . . V . .
17.000	9.8215	13.07	. . Q . . . . V . .
17.083	9.9028	11.80	. . Q . . . . V . .
17.167	9.9739	10.33	. . Q . . . . V . .
17.250	10.0380	9.30	. . Q . . . . . V . .
17.333	10.0976	8.66	. . Q . . . . . V . .
17.417	10.1538	8.16	. . Q . . . . . V . .
17.500	10.2071	7.74	. . Q . . . . . V . .
17.583	10.2580	7.39	. Q . . . . . V . .
17.667	10.3067	7.08	. Q . . . . . V . .
17.750	10.3536	6.81	. Q . . . . . . V . .
17.833	10.3988	6.56	. Q . . . . . . V . .
17.917	10.4425	6.34	. Q . . . . . . V . .
18.000	10.4848	6.14	. Q . . . . . . V . .
18.083	10.5257	5.94	. Q . . . . . . V . .
18.167	10.5645	5.64	. Q . . . . . . V . .
18.250	10.6017	5.40	. Q . . . . . . V . .
18.333	10.6377	5.22	. Q . . . . V . .
18.417	10.6726	5.07	. Q . . . . V . .
18.500	10.7066	4.94	.Q . . . . . . V . .
18.583	10.7398	4.81	.Q . . . . . . V . .
18.667	10.7721	4.70	.Q . . . . . . V . .
18.750	10.8037	4.59	.Q . . . . . . V . .
18.833	10.8346	4.49	.Q . . . . . . V . .
18.917	10.8649	4.40	.Q . . . . . . V . .
19.000	10.8946	4.31	.Q . . . . . . V . .
19.083	10.9237	4.22	.Q . . . . . . V . .
19.167	10.9522	4.15	.Q . . . . V .

19.250	10.9802	4.07	.Q	.	.	.	V .
19.333	11.0078	4.00	.Q	.	.	.	V .
19.417	11.0349	3.93	.Q	.	.	.	V .
19.500	11.0615	3.86	.Q	.	.	.	V .
19.583	11.0877	3.80	.Q	.	.	.	V .
19.667	11.1134	3.74	.Q	.	.	.	V .
19.750	11.1388	3.68	.Q	.	.	.	V .
19.833	11.1638	3.63	.Q	.	.	.	V .
19.917	11.1884	3.57	.Q	.	.	.	V .
20.000	11.2127	3.52	.Q	.	.	.	V .
20.083	11.2366	3.47	.Q	.	.	.	V .
20.167	11.2602	3.43	.Q	.	.	.	V .
20.250	11.2835	3.38	.Q	.	.	.	V .
20.333	11.3064	3.33	.Q	.	.	.	V .
20.417	11.3291	3.29	.Q	.	.	.	V .
20.500	11.3515	3.25	.Q	.	.	.	V .
20.583	11.3736	3.21	.Q	.	.	.	V .
20.667	11.3954	3.17	.Q	.	.	.	V .
20.750	11.4170	3.13	.Q	.	.	.	V .
20.833	11.4383	3.10	.Q	.	.	.	V .
20.917	11.4594	3.06	.Q	.	.	.	V .
21.000	11.4802	3.02	.Q	.	.	.	V .
21.083	11.5008	2.99	.Q	.	.	.	V .
21.167	11.5212	2.96	.Q	.	.	.	V .
21.250	11.5413	2.93	.Q	.	.	.	V .
21.333	11.5613	2.90	.Q	.	.	.	V .
21.417	11.5810	2.87	.Q	.	.	.	V .
21.500	11.6005	2.84	.Q	.	.	.	V .
21.583	11.6199	2.81	.Q	.	.	.	V .
21.667	11.6390	2.78	.Q	.	.	.	V .
21.750	11.6580	2.75	.Q	.	.	.	V .
21.833	11.6767	2.73	.Q	.	.	.	V .
21.917	11.6953	2.70	.Q	.	.	.	V .
22.000	11.7137	2.67	.Q	.	.	.	V .
22.083	11.7320	2.65	.Q	.	.	.	V .
22.167	11.7501	2.63	.Q	.	.	.	V .
22.250	11.7680	2.60	.Q	.	.	.	V .
22.333	11.7858	2.58	.Q	.	.	.	V .
22.417	11.8034	2.56	.Q	.	.	.	V .
22.500	11.8208	2.53	.Q	.	.	.	V .
22.583	11.8381	2.51	.Q	.	.	.	V .
22.667	11.8553	2.49	Q	.	.	.	V.
22.750	11.8723	2.47	Q	.	.	.	V.
22.833	11.8892	2.45	Q	.	.	.	V.
22.917	11.9060	2.43	Q	.	.	.	V.
23.000	11.9226	2.41	Q	.	.	.	V.
23.083	11.9390	2.39	Q	.	.	.	V.
23.167	11.9554	2.37	Q	.	.	.	V.
23.250	11.9716	2.36	Q	.	.	.	V.
23.333	11.9877	2.34	Q	.	.	.	V.
23.417	12.0037	2.32	Q	.	.	.	V.
23.500	12.0196	2.30	Q	.	.	.	V.
23.583	12.0353	2.29	Q	.	.	.	V.

23.667	12.0510	2.27	Q	.	.	.	V.
23.750	12.0665	2.25	Q	.	.	.	V.
23.833	12.0819	2.24	Q	.	.	.	V.
23.917	12.0972	2.22	Q	.	.	.	V.
24.000	12.1124	2.21	Q	.	.	.	V.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1445.0
10%	175.0
20%	70.0
30%	40.0
40%	20.0
50%	20.0
60%	10.0
70%	10.0
80%	5.0
90%	5.0

END OF FLOODSCx ROUTING ANALYSIS

```
******************************************************************************
          NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                    AND LOW LOSS FRACTION ESTIMATIONS
==============================================================================
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                          Analysis prepared by:

******************************************************************************
------------------------------------------------------------------------------

 Problem Descriptions:
  RPCA SUNRISE
  100 YEAR EXISTING EAST AREA DA-2
  KIMLEY-HORN
==============================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.68 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1         36.21      100.00       82.(AMC II)     0.142       0.847

    TOTAL AREA (Acres) =     36.21

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.142

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.153
==============================================================================
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**************************************************************************

            F L O O D    R O U T I N G    A N A L Y S I S
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             Ver. 23.0  Release Date: 07/01/2016  License ID 1499

                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* RPCA SUNRISE                                                          *
* 100 YEAR EXISTING EAST AREA DA-2                                      *
* KIMLEY-HORN                                                           *
 ************************************************************************

  FILE NAME: SRE100E.DAT
  TIME/DATE OF STUDY: 15:22 10/31/2023


**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =      36.210 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.100 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         DESERT(UNDEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.142
         LOW LOSS FRACTION = 0.153
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.32
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.75
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.06
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.72
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.24
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  3.68

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.998
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30-MINUTE FACTOR = 0.998
1-HOUR FACTOR = 0.998
3-HOUR FACTOR = 1.000
6-HOUR FACTOR = 1.000
24-HOUR FACTOR = 1.000

UNIT HYDROGRAPH TIME UNIT = 5.000 MINUTES
UNIT INTERVAL PERCENTAGE OF LAG-TIME = 83.333

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 0.00
MODEL TIME(HOURS) FOR END OF RESULTS = 24.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	11.774	51.561
2	59.344	208.316
3	79.039	86.247
4	87.838	38.533
5	92.728	21.414
6	95.763	13.291
7	97.597	8.028
8	98.603	4.408
9	99.480	3.839
10	99.792	1.366
11	99.948	0.683
12	100.000	0.228

UNIT PERIOD (NUMBER)	UNIT RAINFALL (INCHES)	UNIT SOIL-LOSS (INCHES)	EFFECTIVE RAINFALL (INCHES)
1	0.0046	0.0007	0.0039
2	0.0046	0.0007	0.0039
3	0.0046	0.0007	0.0039
4	0.0046	0.0007	0.0039
5	0.0046	0.0007	0.0039
6	0.0047	0.0007	0.0039
7	0.0047	0.0007	0.0040
8	0.0047	0.0007	0.0040
9	0.0047	0.0007	0.0040
10	0.0047	0.0007	0.0040
11	0.0047	0.0007	0.0040

12	0.0048	0.0007	0.0040
13	0.0048	0.0007	0.0040
14	0.0048	0.0007	0.0041
15	0.0048	0.0007	0.0041
16	0.0048	0.0007	0.0041
17	0.0048	0.0007	0.0041
18	0.0049	0.0007	0.0041
19	0.0049	0.0007	0.0041
20	0.0049	0.0007	0.0041
21	0.0049	0.0008	0.0042
22	0.0049	0.0008	0.0042
23	0.0050	0.0008	0.0042
24	0.0050	0.0008	0.0042
25	0.0050	0.0008	0.0042
26	0.0050	0.0008	0.0042
27	0.0050	0.0008	0.0043
28	0.0050	0.0008	0.0043
29	0.0051	0.0008	0.0043
30	0.0051	0.0008	0.0043
31	0.0051	0.0008	0.0043
32	0.0051	0.0008	0.0043
33	0.0052	0.0008	0.0044
34	0.0052	0.0008	0.0044
35	0.0052	0.0008	0.0044
36	0.0052	0.0008	0.0044
37	0.0052	0.0008	0.0044
38	0.0052	0.0008	0.0044
39	0.0053	0.0008	0.0045
40	0.0053	0.0008	0.0045
41	0.0053	0.0008	0.0045
42	0.0053	0.0008	0.0045
43	0.0054	0.0008	0.0045
44	0.0054	0.0008	0.0046
45	0.0054	0.0008	0.0046
46	0.0054	0.0008	0.0046
47	0.0055	0.0008	0.0046
48	0.0055	0.0008	0.0046
49	0.0055	0.0008	0.0047
50	0.0055	0.0008	0.0047
51	0.0056	0.0009	0.0047
52	0.0056	0.0009	0.0047
53	0.0056	0.0009	0.0048
54	0.0056	0.0009	0.0048
55	0.0057	0.0009	0.0048
56	0.0057	0.0009	0.0048
57	0.0057	0.0009	0.0048
58	0.0057	0.0009	0.0049
59	0.0058	0.0009	0.0049
60	0.0058	0.0009	0.0049
61	0.0058	0.0009	0.0049
62	0.0058	0.0009	0.0050
63	0.0059	0.0009	0.0050
64	0.0059	0.0009	0.0050

65	0.0059	0.0009	0.0050
66	0.0060	0.0009	0.0051
67	0.0060	0.0009	0.0051
68	0.0060	0.0009	0.0051
69	0.0061	0.0009	0.0051
70	0.0061	0.0009	0.0052
71	0.0061	0.0009	0.0052
72	0.0062	0.0009	0.0052
73	0.0062	0.0009	0.0052
74	0.0062	0.0010	0.0053
75	0.0063	0.0010	0.0053
76	0.0063	0.0010	0.0053
77	0.0063	0.0010	0.0054
78	0.0064	0.0010	0.0054
79	0.0064	0.0010	0.0054
80	0.0064	0.0010	0.0054
81	0.0065	0.0010	0.0055
82	0.0065	0.0010	0.0055
83	0.0066	0.0010	0.0056
84	0.0066	0.0010	0.0056
85	0.0066	0.0010	0.0056
86	0.0067	0.0010	0.0056
87	0.0067	0.0010	0.0057
88	0.0067	0.0010	0.0057
89	0.0068	0.0010	0.0058
90	0.0068	0.0010	0.0058
91	0.0069	0.0011	0.0058
92	0.0069	0.0011	0.0059
93	0.0070	0.0011	0.0059
94	0.0070	0.0011	0.0059
95	0.0071	0.0011	0.0060
96	0.0071	0.0011	0.0060
97	0.0072	0.0011	0.0061
98	0.0072	0.0011	0.0061
99	0.0073	0.0011	0.0061
100	0.0073	0.0011	0.0062
101	0.0074	0.0011	0.0062
102	0.0074	0.0011	0.0063
103	0.0075	0.0011	0.0063
104	0.0075	0.0011	0.0063
105	0.0076	0.0012	0.0064
106	0.0076	0.0012	0.0064
107	0.0077	0.0012	0.0065
108	0.0077	0.0012	0.0065
109	0.0078	0.0012	0.0066
110	0.0078	0.0012	0.0066
111	0.0079	0.0012	0.0067
112	0.0080	0.0012	0.0067
113	0.0080	0.0012	0.0068
114	0.0081	0.0012	0.0069
115	0.0082	0.0013	0.0069
116	0.0082	0.0013	0.0070
117	0.0083	0.0013	0.0070

118	0.0084	0.0013	0.0071
119	0.0085	0.0013	0.0072
120	0.0085	0.0013	0.0072
121	0.0086	0.0013	0.0073
122	0.0087	0.0013	0.0073
123	0.0088	0.0013	0.0074
124	0.0088	0.0014	0.0075
125	0.0089	0.0014	0.0076
126	0.0090	0.0014	0.0076
127	0.0091	0.0014	0.0077
128	0.0092	0.0014	0.0078
129	0.0093	0.0014	0.0079
130	0.0094	0.0014	0.0079
131	0.0095	0.0015	0.0080
132	0.0096	0.0015	0.0081
133	0.0097	0.0015	0.0082
134	0.0098	0.0015	0.0083
135	0.0099	0.0015	0.0084
136	0.0100	0.0015	0.0085
137	0.0101	0.0015	0.0086
138	0.0102	0.0016	0.0086
139	0.0104	0.0016	0.0088
140	0.0105	0.0016	0.0089
141	0.0106	0.0016	0.0090
142	0.0107	0.0016	0.0091
143	0.0109	0.0017	0.0092
144	0.0110	0.0017	0.0093
145	0.0119	0.0018	0.0101
146	0.0120	0.0018	0.0102
147	0.0122	0.0019	0.0104
148	0.0123	0.0019	0.0105
149	0.0126	0.0019	0.0107
150	0.0127	0.0019	0.0108
151	0.0129	0.0020	0.0110
152	0.0131	0.0020	0.0111
153	0.0133	0.0020	0.0113
154	0.0135	0.0021	0.0114
155	0.0138	0.0021	0.0117
156	0.0139	0.0021	0.0118
157	0.0143	0.0022	0.0121
158	0.0144	0.0022	0.0122
159	0.0148	0.0023	0.0125
160	0.0150	0.0023	0.0127
161	0.0153	0.0023	0.0130
162	0.0155	0.0024	0.0132
163	0.0160	0.0024	0.0135
164	0.0162	0.0025	0.0137
165	0.0167	0.0026	0.0141
166	0.0169	0.0026	0.0143
167	0.0175	0.0027	0.0148
168	0.0178	0.0027	0.0150
169	0.0213	0.0033	0.0180
170	0.0216	0.0033	0.0183

171	0.0223	0.0034	0.0189
172	0.0227	0.0035	0.0193
173	0.0236	0.0036	0.0200
174	0.0240	0.0037	0.0204
175	0.0250	0.0038	0.0212
176	0.0256	0.0039	0.0217
177	0.0268	0.0041	0.0227
178	0.0274	0.0042	0.0232
179	0.0289	0.0044	0.0245
180	0.0297	0.0045	0.0252
181	0.0316	0.0048	0.0267
182	0.0326	0.0050	0.0276
183	0.0351	0.0054	0.0297
184	0.0365	0.0056	0.0309
185	0.0441	0.0067	0.0374
186	0.0463	0.0071	0.0392
187	0.0515	0.0079	0.0436
188	0.0550	0.0084	0.0465
189	0.0633	0.0097	0.0536
190	0.0703	0.0108	0.0595
191	0.0956	0.0118	0.0838
192	0.1261	0.0118	0.1142
193	0.3185	0.0118	0.3067
194	0.0801	0.0118	0.0683
195	0.0591	0.0090	0.0500
196	0.0486	0.0074	0.0412
197	0.0381	0.0058	0.0323
198	0.0338	0.0052	0.0286
199	0.0306	0.0047	0.0259
200	0.0281	0.0043	0.0238
201	0.0262	0.0040	0.0222
202	0.0245	0.0038	0.0208
203	0.0232	0.0035	0.0196
204	0.0220	0.0034	0.0186
205	0.0181	0.0028	0.0153
206	0.0172	0.0026	0.0146
207	0.0164	0.0025	0.0139
208	0.0158	0.0024	0.0133
209	0.0151	0.0023	0.0128
210	0.0146	0.0022	0.0124
211	0.0141	0.0022	0.0119
212	0.0136	0.0021	0.0115
213	0.0132	0.0020	0.0112
214	0.0128	0.0020	0.0109
215	0.0125	0.0019	0.0106
216	0.0121	0.0019	0.0103
217	0.0111	0.0017	0.0094
218	0.0108	0.0017	0.0092
219	0.0105	0.0016	0.0089
220	0.0103	0.0016	0.0087
221	0.0101	0.0015	0.0085
222	0.0098	0.0015	0.0083
223	0.0096	0.0015	0.0081

224	0.0094	0.0014	0.0080
225	0.0092	0.0014	0.0078
226	0.0091	0.0014	0.0077
227	0.0089	0.0014	0.0075
228	0.0087	0.0013	0.0074
229	0.0086	0.0013	0.0073
230	0.0084	0.0013	0.0071
231	0.0083	0.0013	0.0070
232	0.0081	0.0012	0.0069
233	0.0080	0.0012	0.0068
234	0.0079	0.0012	0.0067
235	0.0078	0.0012	0.0066
236	0.0076	0.0012	0.0065
237	0.0075	0.0012	0.0064
238	0.0074	0.0011	0.0063
239	0.0073	0.0011	0.0062
240	0.0072	0.0011	0.0061
241	0.0071	0.0011	0.0060
242	0.0070	0.0011	0.0060
243	0.0069	0.0011	0.0059
244	0.0069	0.0010	0.0058
245	0.0068	0.0010	0.0057
246	0.0067	0.0010	0.0057
247	0.0066	0.0010	0.0056
248	0.0065	0.0010	0.0055
249	0.0065	0.0010	0.0055
250	0.0064	0.0010	0.0054
251	0.0063	0.0010	0.0053
252	0.0062	0.0010	0.0053
253	0.0062	0.0009	0.0052
254	0.0061	0.0009	0.0052
255	0.0060	0.0009	0.0051
256	0.0060	0.0009	0.0051
257	0.0059	0.0009	0.0050
258	0.0059	0.0009	0.0050
259	0.0058	0.0009	0.0049
260	0.0058	0.0009	0.0049
261	0.0057	0.0009	0.0048
262	0.0056	0.0009	0.0048
263	0.0056	0.0009	0.0047
264	0.0055	0.0008	0.0047
265	0.0055	0.0008	0.0047
266	0.0054	0.0008	0.0046
267	0.0054	0.0008	0.0046
268	0.0054	0.0008	0.0045
269	0.0053	0.0008	0.0045
270	0.0053	0.0008	0.0045
271	0.0052	0.0008	0.0044
272	0.0052	0.0008	0.0044
273	0.0051	0.0008	0.0044
274	0.0051	0.0008	0.0043
275	0.0051	0.0008	0.0043
276	0.0050	0.0008	0.0042

277	0.0050	0.0008	0.0042
278	0.0049	0.0008	0.0042
279	0.0049	0.0008	0.0042
280	0.0049	0.0007	0.0041
281	0.0048	0.0007	0.0041
282	0.0048	0.0007	0.0041
283	0.0048	0.0007	0.0040
284	0.0047	0.0007	0.0040
285	0.0047	0.0007	0.0040
286	0.0047	0.0007	0.0040
287	0.0046	0.0007	0.0039
288	0.0046	0.0007	0.0039

TOTAL STORM RAINFALL(INCHES) = 3.68
TOTAL SOIL-LOSS(INCHES) = 0.52
TOTAL EFFECTIVE RAINFALL(INCHES) = 3.16

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 1.5553
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 9.5433

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2 4 - 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 FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	22.5	45.0	67.5	90.0
0.083	0.0014	0.20	Q	.	.	.	.
0.167	0.0083	1.01	Q	.	.	.	.
0.250	0.0176	1.35	Q	.	.	.	.
0.333	0.0279	1.50	Q	.	.	.	.
0.417	0.0389	1.59	Q	.	.	.	.
0.500	0.0502	1.65	Q	.	.	.	.
0.583	0.0618	1.68	Q	.	.	.	.
0.667	0.0735	1.71	Q	.	.	.	.
0.750	0.0854	1.73	Q	.	.	.	.
0.833	0.0974	1.74	Q	.	.	.	.
0.917	0.1094	1.75	Q	.	.	.	.
1.000	0.1215	1.75	Q	.	.	.	.
1.083	0.1336	1.76	Q	.	.	.	.
1.167	0.1457	1.77	Q	.	.	.	.
1.250	0.1579	1.77	Q	.	.	.	.
1.333	0.1702	1.78	Q	.	.	.	.
1.417	0.1825	1.78	Q	.	.	.	.
1.500	0.1948	1.79	Q	.	.	.	.
1.583	0.2072	1.80	Q	.	.	.	.
1.667	0.2196	1.80	Q	.	.	.	.

1.750	0.2321	1.81	Q	.	.	.	.
1.833	0.2446	1.82	QV	.	.	.	.
1.917	0.2572	1.82	QV	.	.	.	.
2.000	0.2698	1.83	QV	.	.	.	.
2.083	0.2824	1.84	QV	.	.	.	.
2.167	0.2951	1.85	QV	.	.	.	.
2.250	0.3079	1.85	QV	.	.	.	.
2.333	0.3207	1.86	QV	.	.	.	.
2.417	0.3335	1.87	QV	.	.	.	.
2.500	0.3465	1.87	QV	.	.	.	.
2.583	0.3594	1.88	QV	.	.	.	.
2.667	0.3724	1.89	QV	.	.	.	.
2.750	0.3855	1.90	QV	.	.	.	.
2.833	0.3986	1.90	QV	.	.	.	.
2.917	0.4117	1.91	QV	.	.	.	.
3.000	0.4250	1.92	QV	.	.	.	.
3.083	0.4382	1.93	QV	.	.	.	.
3.167	0.4515	1.93	QV	.	.	.	.
3.250	0.4649	1.94	QV	.	.	.	.
3.333	0.4784	1.95	Q V	.	.	.	.
3.417	0.4918	1.96	Q V	.	.	.	.
3.500	0.5054	1.97	Q V	.	.	.	.
3.583	0.5190	1.97	Q V	.	.	.	.
3.667	0.5327	1.98	Q V	.	.	.	.
3.750	0.5464	1.99	Q V	.	.	.	.
3.833	0.5602	2.00	Q V	.	.	.	.
3.917	0.5740	2.01	Q V	.	.	.	.
4.000	0.5879	2.02	Q V	.	.	.	.
4.083	0.6019	2.03	Q V	.	.	.	.
4.167	0.6159	2.04	Q V	.	.	.	.
4.250	0.6300	2.04	Q V	.	.	.	.
4.333	0.6441	2.05	Q V	.	.	.	.
4.417	0.6583	2.06	Q V	.	.	.	.
4.500	0.6726	2.07	Q V	.	.	.	.
4.583	0.6869	2.08	Q V	.	.	.	.
4.667	0.7014	2.09	Q V	.	.	.	.
4.750	0.7158	2.10	Q V	.	.	.	.
4.833	0.7304	2.11	Q V	.	.	.	.
4.917	0.7450	2.12	Q V	.	.	.	.
5.000	0.7597	2.13	Q V	.	.	.	.
5.083	0.7744	2.14	Q V	.	.	.	.
5.167	0.7892	2.15	Q V	.	.	.	.
5.250	0.8041	2.16	Q V	.	.	.	.
5.333	0.8191	2.17	Q V	.	.	.	.
5.417	0.8342	2.18	Q V	.	.	.	.
5.500	0.8493	2.20	Q V	.	.	.	.
5.583	0.8645	2.21	Q V	.	.	.	.
5.667	0.8797	2.22	Q V	.	.	.	.
5.750	0.8951	2.23	Q V	.	.	.	.
5.833	0.9105	2.24	Q V	.	.	.	.
5.917	0.9260	2.25	.Q V	.	.	.	.
6.000	0.9416	2.26	.Q V	.	.	.	.
6.083	0.9573	2.28	.Q V	.	.	.	.

6.167	0.9730	2.29	.Q	V	.	.	.	.
6.250	0.9889	2.30	.Q	V	.	.	.	.
6.333	1.0048	2.31	.Q	V	.	.	.	.
6.417	1.0208	2.32	.Q	V	.	.	.	.
6.500	1.0369	2.34	.Q	V	.	.	.	.
6.583	1.0531	2.35	.Q	V	.	.	.	.
6.667	1.0694	2.36	.Q	V	.	.	.	.
6.750	1.0858	2.38	.Q	V	.	.	.	.
6.833	1.1022	2.39	.Q	V	.	.	.	.
6.917	1.1188	2.40	.Q	V	.	.	.	.
7.000	1.1354	2.42	.Q	V	.	.	.	.
7.083	1.1522	2.43	.Q	V	.	.	.	.
7.167	1.1690	2.45	.Q	V	.	.	.	.
7.250	1.1860	2.46	.Q	V	.	.	.	.
7.333	1.2030	2.48	.Q	V	.	.	.	.
7.417	1.2202	2.49	.Q	V	.	.	.	.
7.500	1.2375	2.51	.Q	V	.	.	.	.
7.583	1.2548	2.52	.Q	V	.	.	.	.
7.667	1.2723	2.54	.Q	V	.	.	.	.
7.750	1.2899	2.55	.Q	V	.	.	.	.
7.833	1.3076	2.57	.Q	V	.	.	.	.
7.917	1.3254	2.59	.Q	V	.	.	.	.
8.000	1.3433	2.60	.Q	V	.	.	.	.
8.083	1.3614	2.62	.Q	V	.	.	.	.
8.167	1.3796	2.64	.Q	V	.	.	.	.
8.250	1.3978	2.65	.Q	V	.	.	.	.
8.333	1.4163	2.67	.Q	V	.	.	.	.
8.417	1.4348	2.69	.Q	V	.	.	.	.
8.500	1.4535	2.71	.Q	V	.	.	.	.
8.583	1.4723	2.73	.Q	V	.	.	.	.
8.667	1.4912	2.75	.Q	V	.	.	.	.
8.750	1.5103	2.77	.Q	V	.	.	.	.
8.833	1.5295	2.79	.Q	V	.	.	.	.
8.917	1.5488	2.81	.Q	V	.	.	.	.
9.000	1.5683	2.83	.Q	V	.	.	.	.
9.083	1.5879	2.85	.Q	V	.	.	.	.
9.167	1.6077	2.87	.Q	V	.	.	.	.
9.250	1.6276	2.89	.Q	V	.	.	.	.
9.333	1.6477	2.92	.Q	V	.	.	.	.
9.417	1.6680	2.94	.Q	V	.	.	.	.
9.500	1.6884	2.96	.Q	V	.	.	.	.
9.583	1.7090	2.99	.Q	V	.	.	.	.
9.667	1.7297	3.01	.Q	V	.	.	.	.
9.750	1.7506	3.04	.Q	V	.	.	.	.
9.833	1.7717	3.06	.Q	V	.	.	.	.
9.917	1.7930	3.09	.Q	V	.	.	.	.
10.000	1.8144	3.12	.Q	V	.	.	.	.
10.083	1.8360	3.14	.Q	V	.	.	.	.
10.167	1.8579	3.17	.Q	V	.	.	.	.
10.250	1.8799	3.20	.Q	V	.	.	.	.
10.333	1.9021	3.23	.Q	V	.	.	.	.
10.417	1.9245	3.25	.Q	V	.	.	.	.
10.500	1.9472	3.29	.Q	V	.	.	.	.

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10.583      1.9700      3.32  .Q      V .         .         .         .
10.667      1.9931      3.35  .Q      V .         .         .         .
10.750      2.0164      3.38  .Q      V .         .         .         .
10.833      2.0399      3.42  .Q      V .         .         .         .
10.917      2.0636      3.45  .Q      V .         .         .         .
11.000      2.0877      3.49  .Q      V .         .         .         .
11.083      2.1119      3.52  .Q      V .         .         .         .
11.167      2.1364      3.56  .Q      V .         .         .         .
11.250      2.1612      3.60  .Q       V.         .         .         .
11.333      2.1862      3.64  .Q       V.         .         .         .
11.417      2.2115      3.68  .Q       V.         .         .         .
11.500      2.2372      3.72  .Q       V.         .         .         .
11.583      2.2631      3.76  .Q       V.         .         .         .
11.667      2.2893      3.81  .Q       V.         .         .         .
11.750      2.3158      3.85  .Q       V.         .         .         .
11.833      2.3426      3.90  .Q       V.         .         .         .
11.917      2.3698      3.94  .Q       V.         .         .         .
12.000      2.3973      4.00  .Q        V         .         .         .
12.083      2.4254      4.08  .Q        V         .         .         .
12.167      2.4548      4.26  .Q        V         .         .         .
12.250      2.4848      4.37  .Q        V         .         .         .
12.333      2.5155      4.45  .Q        V         .         .         .
12.417      2.5466      4.52  . Q       V         .         .         .
12.500      2.5783      4.60  . Q       V         .         .         .
12.583      2.6104      4.66  . Q       V         .         .         .
12.667      2.6430      4.74  . Q       .V        .         .         .
12.750      2.6761      4.80  . Q       .V        .         .         .
12.833      2.7098      4.88  . Q       .V        .         .         .
12.917      2.7439      4.96  . Q       .V        .         .         .
13.000      2.7786      5.04  . Q       .V        .         .         .
13.083      2.8138      5.12  . Q       .V        .         .         .
13.167      2.8497      5.21  . Q       .V        .         .         .
13.250      2.8862      5.29  . Q       . V       .         .         .
13.333      2.9233      5.39  . Q       . V       .         .         .
13.417      2.9611      5.49  . Q       . V       .         .         .
13.500      2.9997      5.60  . Q       . V       .         .         .
13.583      3.0389      5.70  . Q       . V       .         .         .
13.667      3.0790      5.82  . Q       . V       .         .         .
13.750      3.1199      5.93  . Q       .  V      .         .         .
13.833      3.1617      6.07  . Q       .  V      .         .         .
13.917      3.2044      6.20  . Q       .  V      .         .         .
14.000      3.2482      6.35  . Q       .  V      .         .         .
14.083      3.2938      6.62  . Q       .  V      .         .         .
14.167      3.3441      7.31  .  Q      .   V     .         .         .
14.250      3.3970      7.69  .  Q      .   V     .         .         .
14.333      3.4520      7.99  .  Q      .   V     .         .         .
14.417      3.5087      8.23  .  Q      .   V     .         .         .
14.500      3.5673      8.51  .  Q      .   V     .         .         .
14.583      3.6276      8.75  .  Q      .    V    .         .         .
14.667      3.6899      9.04  .   Q     .    V    .         .         .
14.750      3.7541      9.32  .   Q     .    V    .         .         .
14.833      3.8206      9.66  .   Q     .     V   .         .         .
14.917      3.8893      9.98  .   Q     .     V   .         .         .
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15.000      3.9609     10.39  .   Q     .     V   .         .         .
15.083      4.0351     10.78  .   Q     .     V   .         .         .
15.167      4.1129     11.30  .    Q    .      V  .         .         .
15.250      4.1942     11.80  .    Q    .      V  .         .         .
15.333      4.2802     12.48  .    Q    .      V  .         .         .
15.417      4.3720     13.33  .    Q    .       V .         .         .
15.500      4.4754     15.01  .     Q   .       V .         .         .
15.583      4.5876     16.30  .      Q  .        V.         .         .
15.667      4.7106     17.85  .      Q  .        V.         .         .
15.750      4.8446     19.46  .       Q .         V         .         .
15.833      4.9948     21.80  .        Q.         V         .         .
15.917      5.1683     25.20  .         .Q        .V        .         .
16.000      5.3941     32.78  .         .   Q     . V       .         .
16.083      5.7497     51.63  .         .         . Q V     .         .
16.167      6.3231     83.26  .         .         .     V   .       Q .
16.250      6.6752     51.12  .         .         . Q    V  .         .
16.333      6.9148     34.79  .         .    Q    .       V .         .
16.417      7.0974     26.52  .         .Q        .        V.         .
16.500      7.2410     20.85  .        Q.         .         V         .
16.583      7.3585     17.06  .      Q  .         .         V         .
16.667      7.4576     14.39  .     Q   .         .         .V        .
16.750      7.5457     12.79  .    Q    .         .         .V        .
16.833      7.6223     11.11  .   Q     .         .         .V        .
16.917      7.6916     10.07  .   Q     .         .         . V       .
17.000      7.7554      9.26  .   Q     .         .         . V       .
17.083      7.8140      8.51  .  Q      .         .         . V       .
17.167      7.8659      7.54  .  Q      .         .         . V       .
17.250      7.9137      6.94  .  Q      .         .         .  V      .
17.333      7.9585      6.51  . Q       .         .         .  V      .
17.417      8.0010      6.17  . Q       .         .         .  V      .
17.500      8.0415      5.88  . Q       .         .         .  V      .
17.583      8.0803      5.63  . Q       .         .         .  V      .
17.667      8.1176      5.41  . Q       .         .         .   V     .
17.750      8.1535      5.22  . Q       .         .         .   V     .
17.833      8.1882      5.04  . Q       .         .         .   V     .
17.917      8.2219      4.89  . Q       .         .         .   V     .
18.000      8.2545      4.74  . Q       .         .         .   V     .
18.083      8.2860      4.58  . Q       .         .         .   V     .
18.167      8.3158      4.32  .Q        .         .         .   V     .
18.250      8.3445      4.16  .Q        .         .         .   V     .
18.333      8.3722      4.03  .Q        .         .         .    V    .
18.417      8.3992      3.92  .Q        .         .         .    V    .
18.500      8.4255      3.82  .Q        .         .         .    V    .
18.583      8.4511      3.72  .Q        .         .         .    V    .
18.667      8.4762      3.64  .Q        .         .         .    V    .
18.750      8.5007      3.56  .Q        .         .         .    V    .
18.833      8.5247      3.48  .Q        .         .         .    V    .
18.917      8.5482      3.41  .Q        .         .         .    V    .
19.000      8.5713      3.35  .Q        .         .         .    V    .
19.083      8.5939      3.28  .Q        .         .         .     V   .
19.167      8.6161      3.22  .Q        .         .         .     V   .
19.250      8.6379      3.17  .Q        .         .         .     V   .
19.333      8.6593      3.11  .Q        .         .         .     V   .
```

19.417	8.6804	3.06	.Q	.	.	.	V .
19.500	8.7012	3.01	.Q	.	.	.	V .
19.583	8.7215	2.96	.Q	.	.	.	V .
19.667	8.7416	2.92	.Q	.	.	.	V .
19.750	8.7614	2.87	.Q	.	.	.	V .
19.833	8.7809	2.83	.Q	.	.	.	V .
19.917	8.8001	2.79	.Q	.	.	.	V .
20.000	8.8190	2.75	.Q	.	.	.	V .
20.083	8.8376	2.71	.Q	.	.	.	V .
20.167	8.8560	2.67	.Q	.	.	.	V .
20.250	8.8742	2.64	.Q	.	.	.	V .
20.333	8.8921	2.60	.Q	.	.	.	V .
20.417	8.9098	2.57	.Q	.	.	.	V .
20.500	8.9273	2.54	.Q	.	.	.	V .
20.583	8.9445	2.51	.Q	.	.	.	V .
20.667	8.9616	2.47	.Q	.	.	.	V .
20.750	8.9784	2.45	.Q	.	.	.	V .
20.833	8.9951	2.42	.Q	.	.	.	V .
20.917	9.0115	2.39	.Q	.	.	.	V .
21.000	9.0278	2.36	.Q	.	.	.	V .
21.083	9.0439	2.34	.Q	.	.	.	V .
21.167	9.0598	2.31	.Q	.	.	.	V .
21.250	9.0755	2.29	.Q	.	.	.	V .
21.333	9.0911	2.26	.Q	.	.	.	V .
21.417	9.1065	2.24	Q	.	.	.	V .
21.500	9.1218	2.22	Q	.	.	.	V .
21.583	9.1369	2.19	Q	.	.	.	V .
21.667	9.1519	2.17	Q	.	.	.	V .
21.750	9.1667	2.15	Q	.	.	.	V .
21.833	9.1814	2.13	Q	.	.	.	V .
21.917	9.1959	2.11	Q	.	.	.	V .
22.000	9.2103	2.09	Q	.	.	.	V .
22.083	9.2246	2.07	Q	.	.	.	V .
22.167	9.2387	2.05	Q	.	.	.	V .
22.250	9.2527	2.04	Q	.	.	.	V .
22.333	9.2666	2.02	Q	.	.	.	V .
22.417	9.2804	2.00	Q	.	.	.	V .
22.500	9.2941	1.98	Q	.	.	.	V .
22.583	9.3076	1.97	Q	.	.	.	V.
22.667	9.3210	1.95	Q	.	.	.	V.
22.750	9.3343	1.93	Q	.	.	.	V.
22.833	9.3475	1.92	Q	.	.	.	V.
22.917	9.3606	1.90	Q	.	.	.	V.
23.000	9.3736	1.89	Q	.	.	.	V.
23.083	9.3865	1.87	Q	.	.	.	V.
23.167	9.3993	1.86	Q	.	.	.	V.
23.250	9.4120	1.84	Q	.	.	.	V.
23.333	9.4246	1.83	Q	.	.	.	V.
23.417	9.4372	1.82	Q	.	.	.	V.
23.500	9.4496	1.80	Q	.	.	.	V.
23.583	9.4619	1.79	Q	.	.	.	V.
23.667	9.4741	1.78	Q	.	.	.	V.
23.750	9.4863	1.76	Q	.	.	.	V.

23.833	9.4984	1.75	Q	.	.	.	V.
23.917	9.5103	1.74	Q	.	.	.	V.
24.000	9.5222	1.73	Q	.	.	.	V.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1445.0
10%	160.0
20%	60.0
30%	35.0
40%	20.0
50%	15.0
60%	15.0
70%	5.0
80%	5.0
90%	5.0

END OF FLOODSCx ROUTING ANALYSIS

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**************************************************************************
          NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                    AND LOW LOSS FRACTION ESTIMATIONS
==========================================================================
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                          Analysis prepared by:




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 Problem Descriptions:
  RPCA SUNRISE
  100-YEAR PROPOSED WEST DA-1
  KIMLEY-HORN
==========================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.68 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1         46.09       98.47       86.(AMC II)     0.106       0.906

    TOTAL AREA (Acres) =     46.09

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.104

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.094
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            F L O O D    R O U T I N G    A N A L Y S I S
          USING COUNTY HYDROLOGY MANUAL OF SAN BERNARDINO(1986)
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                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* RPCA SUNRISE                                                          *
* 100 YEAR PROPOSED WEST DA-1                                           *
* KIMLEY-HORN                                                           *
 ************************************************************************

  FILE NAME: SRW100P.DAT
  TIME/DATE OF STUDY: 23:32 10/23/2024


**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =      46.090 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.128 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         DESERT(UNDEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.104
         LOW LOSS FRACTION = 0.094
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.32
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.75
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.06
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.72
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.24
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  3.68

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.998
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30-MINUTE FACTOR = 0.998
1-HOUR FACTOR = 0.998
3-HOUR FACTOR = 1.000
6-HOUR FACTOR = 1.000
24-HOUR FACTOR = 1.000

UNIT HYDROGRAPH TIME UNIT = 5.000 MINUTES
UNIT INTERVAL PERCENTAGE OF LAG-TIME = 65.104

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 0.00
MODEL TIME(HOURS) FOR END OF RESULTS = 24.00

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UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	6.621	36.903
2	46.358	221.497
3	71.060	137.690
4	81.731	59.478
5	88.011	35.007
6	91.943	21.916
7	94.679	15.251
8	96.569	10.532
9	97.782	6.761
10	98.525	4.144
11	99.287	4.248
12	99.715	2.384
13	99.929	1.192
14	100.000	0.397

****

UNIT PERIOD (NUMBER)	UNIT RAINFALL (INCHES)	UNIT SOIL-LOSS (INCHES)	EFFECTIVE RAINFALL (INCHES)
1	0.0046	0.0004	0.0042
2	0.0046	0.0004	0.0042
3	0.0046	0.0004	0.0042
4	0.0046	0.0004	0.0042
5	0.0046	0.0004	0.0042
6	0.0047	0.0004	0.0042
7	0.0047	0.0004	0.0042
8	0.0047	0.0004	0.0042
9	0.0047	0.0004	0.0043

10	0.0047	0.0004	0.0043
11	0.0047	0.0004	0.0043
12	0.0048	0.0004	0.0043
13	0.0048	0.0004	0.0043
14	0.0048	0.0004	0.0043
15	0.0048	0.0005	0.0044
16	0.0048	0.0005	0.0044
17	0.0048	0.0005	0.0044
18	0.0049	0.0005	0.0044
19	0.0049	0.0005	0.0044
20	0.0049	0.0005	0.0044
21	0.0049	0.0005	0.0045
22	0.0049	0.0005	0.0045
23	0.0050	0.0005	0.0045
24	0.0050	0.0005	0.0045
25	0.0050	0.0005	0.0045
26	0.0050	0.0005	0.0045
27	0.0050	0.0005	0.0046
28	0.0050	0.0005	0.0046
29	0.0051	0.0005	0.0046
30	0.0051	0.0005	0.0046
31	0.0051	0.0005	0.0046
32	0.0051	0.0005	0.0046
33	0.0052	0.0005	0.0047
34	0.0052	0.0005	0.0047
35	0.0052	0.0005	0.0047
36	0.0052	0.0005	0.0047
37	0.0052	0.0005	0.0047
38	0.0052	0.0005	0.0048
39	0.0053	0.0005	0.0048
40	0.0053	0.0005	0.0048
41	0.0053	0.0005	0.0048
42	0.0053	0.0005	0.0048
43	0.0054	0.0005	0.0049
44	0.0054	0.0005	0.0049
45	0.0054	0.0005	0.0049
46	0.0054	0.0005	0.0049
47	0.0055	0.0005	0.0049
48	0.0055	0.0005	0.0050
49	0.0055	0.0005	0.0050
50	0.0055	0.0005	0.0050
51	0.0056	0.0005	0.0050
52	0.0056	0.0005	0.0051
53	0.0056	0.0005	0.0051
54	0.0056	0.0005	0.0051
55	0.0057	0.0005	0.0051
56	0.0057	0.0005	0.0051
57	0.0057	0.0005	0.0052
58	0.0057	0.0005	0.0052
59	0.0058	0.0005	0.0052
60	0.0058	0.0005	0.0052
61	0.0058	0.0005	0.0053
62	0.0058	0.0005	0.0053

63	0.0059	0.0006	0.0053
64	0.0059	0.0006	0.0054
65	0.0059	0.0006	0.0054
66	0.0060	0.0006	0.0054
67	0.0060	0.0006	0.0054
68	0.0060	0.0006	0.0055
69	0.0061	0.0006	0.0055
70	0.0061	0.0006	0.0055
71	0.0061	0.0006	0.0056
72	0.0062	0.0006	0.0056
73	0.0062	0.0006	0.0056
74	0.0062	0.0006	0.0056
75	0.0063	0.0006	0.0057
76	0.0063	0.0006	0.0057
77	0.0063	0.0006	0.0057
78	0.0064	0.0006	0.0058
79	0.0064	0.0006	0.0058
80	0.0064	0.0006	0.0058
81	0.0065	0.0006	0.0059
82	0.0065	0.0006	0.0059
83	0.0066	0.0006	0.0059
84	0.0066	0.0006	0.0060
85	0.0066	0.0006	0.0060
86	0.0067	0.0006	0.0060
87	0.0067	0.0006	0.0061
88	0.0067	0.0006	0.0061
89	0.0068	0.0006	0.0062
90	0.0068	0.0006	0.0062
91	0.0069	0.0006	0.0062
92	0.0069	0.0006	0.0063
93	0.0070	0.0007	0.0063
94	0.0070	0.0007	0.0063
95	0.0071	0.0007	0.0064
96	0.0071	0.0007	0.0064
97	0.0072	0.0007	0.0065
98	0.0072	0.0007	0.0065
99	0.0073	0.0007	0.0066
100	0.0073	0.0007	0.0066
101	0.0074	0.0007	0.0067
102	0.0074	0.0007	0.0067
103	0.0075	0.0007	0.0068
104	0.0075	0.0007	0.0068
105	0.0076	0.0007	0.0069
106	0.0076	0.0007	0.0069
107	0.0077	0.0007	0.0070
108	0.0077	0.0007	0.0070
109	0.0078	0.0007	0.0071
110	0.0078	0.0007	0.0071
111	0.0079	0.0007	0.0072
112	0.0080	0.0007	0.0072
113	0.0080	0.0008	0.0073
114	0.0081	0.0008	0.0073
115	0.0082	0.0008	0.0074

116	0.0082	0.0008	0.0075
117	0.0083	0.0008	0.0075
118	0.0084	0.0008	0.0076
119	0.0085	0.0008	0.0077
120	0.0085	0.0008	0.0077
121	0.0086	0.0008	0.0078
122	0.0087	0.0008	0.0079
123	0.0088	0.0008	0.0079
124	0.0088	0.0008	0.0080
125	0.0089	0.0008	0.0081
126	0.0090	0.0008	0.0081
127	0.0091	0.0009	0.0083
128	0.0092	0.0009	0.0083
129	0.0093	0.0009	0.0084
130	0.0094	0.0009	0.0085
131	0.0095	0.0009	0.0086
132	0.0096	0.0009	0.0087
133	0.0097	0.0009	0.0088
134	0.0098	0.0009	0.0088
135	0.0099	0.0009	0.0090
136	0.0100	0.0009	0.0090
137	0.0101	0.0010	0.0092
138	0.0102	0.0010	0.0092
139	0.0104	0.0010	0.0094
140	0.0105	0.0010	0.0095
141	0.0106	0.0010	0.0096
142	0.0107	0.0010	0.0097
143	0.0109	0.0010	0.0099
144	0.0110	0.0010	0.0100
145	0.0119	0.0011	0.0108
146	0.0120	0.0011	0.0109
147	0.0122	0.0011	0.0111
148	0.0123	0.0012	0.0112
149	0.0126	0.0012	0.0114
150	0.0127	0.0012	0.0115
151	0.0129	0.0012	0.0117
152	0.0131	0.0012	0.0118
153	0.0133	0.0013	0.0121
154	0.0135	0.0013	0.0122
155	0.0138	0.0013	0.0125
156	0.0139	0.0013	0.0126
157	0.0143	0.0013	0.0129
158	0.0144	0.0014	0.0131
159	0.0148	0.0014	0.0134
160	0.0150	0.0014	0.0136
161	0.0153	0.0014	0.0139
162	0.0155	0.0015	0.0141
163	0.0160	0.0015	0.0145
164	0.0162	0.0015	0.0147
165	0.0167	0.0016	0.0151
166	0.0169	0.0016	0.0153
167	0.0175	0.0016	0.0158
168	0.0178	0.0017	0.0161

169	0.0213	0.0020	0.0193
170	0.0216	0.0020	0.0196
171	0.0224	0.0021	0.0203
172	0.0228	0.0021	0.0206
173	0.0236	0.0022	0.0214
174	0.0241	0.0023	0.0218
175	0.0251	0.0024	0.0227
176	0.0256	0.0024	0.0232
177	0.0268	0.0025	0.0243
178	0.0275	0.0026	0.0249
179	0.0289	0.0027	0.0262
180	0.0297	0.0028	0.0269
181	0.0316	0.0030	0.0286
182	0.0326	0.0031	0.0296
183	0.0351	0.0033	0.0318
184	0.0365	0.0034	0.0331
185	0.0441	0.0041	0.0399
186	0.0462	0.0043	0.0419
187	0.0515	0.0048	0.0466
188	0.0549	0.0052	0.0498
189	0.0632	0.0059	0.0573
190	0.0702	0.0066	0.0636
191	0.0956	0.0087	0.0869
192	0.1260	0.0087	0.1173
193	0.3183	0.0087	0.3097
194	0.0800	0.0075	0.0725
195	0.0590	0.0055	0.0535
196	0.0486	0.0046	0.0440
197	0.0381	0.0036	0.0345
198	0.0338	0.0032	0.0306
199	0.0306	0.0029	0.0277
200	0.0282	0.0026	0.0255
201	0.0262	0.0025	0.0237
202	0.0245	0.0023	0.0222
203	0.0232	0.0022	0.0210
204	0.0220	0.0021	0.0199
205	0.0181	0.0017	0.0164
206	0.0172	0.0016	0.0156
207	0.0164	0.0015	0.0149
208	0.0158	0.0015	0.0143
209	0.0151	0.0014	0.0137
210	0.0146	0.0014	0.0132
211	0.0141	0.0013	0.0128
212	0.0136	0.0013	0.0124
213	0.0132	0.0012	0.0120
214	0.0128	0.0012	0.0116
215	0.0125	0.0012	0.0113
216	0.0121	0.0011	0.0110
217	0.0111	0.0010	0.0100
218	0.0108	0.0010	0.0098
219	0.0105	0.0010	0.0095
220	0.0103	0.0010	0.0093
221	0.0101	0.0009	0.0091

222	0.0098	0.0009	0.0089
223	0.0096	0.0009	0.0087
224	0.0094	0.0009	0.0085
225	0.0092	0.0009	0.0084
226	0.0091	0.0009	0.0082
227	0.0089	0.0008	0.0080
228	0.0087	0.0008	0.0079
229	0.0086	0.0008	0.0078
230	0.0084	0.0008	0.0076
231	0.0083	0.0008	0.0075
232	0.0081	0.0008	0.0074
233	0.0080	0.0008	0.0073
234	0.0079	0.0007	0.0071
235	0.0078	0.0007	0.0070
236	0.0076	0.0007	0.0069
237	0.0075	0.0007	0.0068
238	0.0074	0.0007	0.0067
239	0.0073	0.0007	0.0066
240	0.0072	0.0007	0.0065
241	0.0071	0.0007	0.0065
242	0.0070	0.0007	0.0064
243	0.0069	0.0007	0.0063
244	0.0069	0.0006	0.0062
245	0.0068	0.0006	0.0061
246	0.0067	0.0006	0.0061
247	0.0066	0.0006	0.0060
248	0.0065	0.0006	0.0059
249	0.0065	0.0006	0.0058
250	0.0064	0.0006	0.0058
251	0.0063	0.0006	0.0057
252	0.0062	0.0006	0.0057
253	0.0062	0.0006	0.0056
254	0.0061	0.0006	0.0055
255	0.0060	0.0006	0.0055
256	0.0060	0.0006	0.0054
257	0.0059	0.0006	0.0054
258	0.0059	0.0006	0.0053
259	0.0058	0.0005	0.0053
260	0.0058	0.0005	0.0052
261	0.0057	0.0005	0.0052
262	0.0056	0.0005	0.0051
263	0.0056	0.0005	0.0051
264	0.0055	0.0005	0.0050
265	0.0055	0.0005	0.0050
266	0.0054	0.0005	0.0049
267	0.0054	0.0005	0.0049
268	0.0054	0.0005	0.0049
269	0.0053	0.0005	0.0048
270	0.0053	0.0005	0.0048
271	0.0052	0.0005	0.0047
272	0.0052	0.0005	0.0047
273	0.0051	0.0005	0.0047
274	0.0051	0.0005	0.0046

275	0.0051	0.0005	0.0046
276	0.0050	0.0005	0.0045
277	0.0050	0.0005	0.0045
278	0.0049	0.0005	0.0045
279	0.0049	0.0005	0.0044
280	0.0049	0.0005	0.0044
281	0.0048	0.0005	0.0044
282	0.0048	0.0005	0.0043
283	0.0048	0.0004	0.0043
284	0.0047	0.0004	0.0043
285	0.0047	0.0004	0.0043
286	0.0047	0.0004	0.0042
287	0.0046	0.0004	0.0042
288	0.0046	0.0004	0.0042

TOTAL STORM RAINFALL(INCHES) = 3.68
TOTAL SOIL-LOSS(INCHES) = 0.32
TOTAL EFFECTIVE RAINFALL(INCHES) = 3.36

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 1.2334
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 12.8929

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2 4 - 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 FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	25.0	50.0	75.0	100.0
0.083	0.0011	0.15	Q	.	.	.	.
0.167	0.0084	1.07	Q	.	.	.	.
0.250	0.0198	1.65	Q	.	.	.	.
0.333	0.0329	1.90	Q	.	.	.	.
0.417	0.0470	2.05	Q	.	.	.	.
0.500	0.0618	2.15	Q	.	.	.	.
0.583	0.0771	2.22	Q	.	.	.	.
0.667	0.0927	2.27	Q	.	.	.	.
0.750	0.1086	2.31	Q	.	.	.	.
0.833	0.1247	2.33	Q	.	.	.	.
0.917	0.1409	2.36	Q	.	.	.	.
1.000	0.1573	2.38	Q	.	.	.	.
1.083	0.1737	2.39	Q	.	.	.	.
1.167	0.1902	2.40	Q	.	.	.	.
1.250	0.2068	2.41	Q	.	.	.	.
1.333	0.2235	2.42	Q	.	.	.	.
1.417	0.2402	2.42	Q	.	.	.	.
1.500	0.2569	2.43	Q	.	.	.	.

1.583	0.2738	2.44	Q	.	.	.	.
1.667	0.2906	2.45	Q	.	.	.	.
1.750	0.3076	2.46	Q	.	.	.	.
1.833	0.3246	2.47	QV	.	.	.	.
1.917	0.3417	2.48	QV	.	.	.	.
2.000	0.3588	2.49	QV	.	.	.	.
2.083	0.3760	2.50	QV	.	.	.	.
2.167	0.3933	2.51	.Q	.	.	.	.
2.250	0.4106	2.52	.Q	.	.	.	.
2.333	0.4280	2.53	.Q	.	.	.	.
2.417	0.4455	2.54	.Q	.	.	.	.
2.500	0.4630	2.55	.Q	.	.	.	.
2.583	0.4806	2.56	.Q	.	.	.	.
2.667	0.4983	2.57	.Q	.	.	.	.
2.750	0.5160	2.58	.Q	.	.	.	.
2.833	0.5338	2.59	.Q	.	.	.	.
2.917	0.5517	2.60	.Q	.	.	.	.
3.000	0.5697	2.61	.Q	.	.	.	.
3.083	0.5877	2.62	.Q	.	.	.	.
3.167	0.6058	2.63	.Q	.	.	.	.
3.250	0.6240	2.64	.Q	.	.	.	.
3.333	0.6423	2.65	.Q	.	.	.	.
3.417	0.6606	2.66	.QV	.	.	.	.
3.500	0.6790	2.67	.QV	.	.	.	.
3.583	0.6975	2.68	.QV	.	.	.	.
3.667	0.7160	2.70	.QV	.	.	.	.
3.750	0.7347	2.71	.QV	.	.	.	.
3.833	0.7534	2.72	.QV	.	.	.	.
3.917	0.7722	2.73	.QV	.	.	.	.
4.000	0.7911	2.74	.QV	.	.	.	.
4.083	0.8100	2.75	.QV	.	.	.	.
4.167	0.8291	2.77	.QV	.	.	.	.
4.250	0.8482	2.78	.QV	.	.	.	.
4.333	0.8675	2.79	.QV	.	.	.	.
4.417	0.8868	2.80	.QV	.	.	.	.
4.500	0.9062	2.82	.QV	.	.	.	.
4.583	0.9256	2.83	.QV	.	.	.	.
4.667	0.9452	2.84	.QV	.	.	.	.
4.750	0.9649	2.86	.QV	.	.	.	.
4.833	0.9846	2.87	.Q V	.	.	.	.
4.917	1.0045	2.88	.Q V	.	.	.	.
5.000	1.0244	2.90	.Q V	.	.	.	.
5.083	1.0445	2.91	.Q V	.	.	.	.
5.167	1.0646	2.92	.Q V	.	.	.	.
5.250	1.0848	2.94	.Q V	.	.	.	.
5.333	1.1052	2.95	.Q V	.	.	.	.
5.417	1.1256	2.97	.Q V	.	.	.	.
5.500	1.1461	2.98	.Q V	.	.	.	.
5.583	1.1668	3.00	.Q V	.	.	.	.
5.667	1.1875	3.01	.Q V	.	.	.	.
5.750	1.2084	3.03	.Q V	.	.	.	.
5.833	1.2293	3.04	.Q V	.	.	.	.
5.917	1.2504	3.06	.Q V	.	.	.	.

6.000	1.2716	3.07	.Q	V	.	.	.	.
6.083	1.2928	3.09	.Q	V	.	.	.	.
6.167	1.3142	3.11	.Q	V	.	.	.	.
6.250	1.3357	3.12	.Q	V	.	.	.	.
6.333	1.3574	3.14	.Q	V	.	.	.	.
6.417	1.3791	3.16	.Q	V	.	.	.	.
6.500	1.4010	3.17	.Q	V	.	.	.	.
6.583	1.4229	3.19	.Q	V	.	.	.	.
6.667	1.4451	3.21	.Q	V	.	.	.	.
6.750	1.4673	3.23	.Q	V	.	.	.	.
6.833	1.4896	3.25	.Q	V	.	.	.	.
6.917	1.5121	3.26	.Q	V	.	.	.	.
7.000	1.5347	3.28	.Q	V	.	.	.	.
7.083	1.5575	3.30	.Q	V	.	.	.	.
7.167	1.5804	3.32	.Q	V	.	.	.	.
7.250	1.6034	3.34	.Q	V	.	.	.	.
7.333	1.6265	3.36	.Q	V	.	.	.	.
7.417	1.6498	3.38	.Q	V	.	.	.	.
7.500	1.6732	3.40	.Q	V	.	.	.	.
7.583	1.6968	3.42	.Q	V	.	.	.	.
7.667	1.7205	3.45	.Q	V	.	.	.	.
7.750	1.7444	3.47	.Q	V	.	.	.	.
7.833	1.7684	3.49	.Q	V	.	.	.	.
7.917	1.7926	3.51	.Q	V	.	.	.	.
8.000	1.8170	3.53	.Q	V	.	.	.	.
8.083	1.8414	3.56	.Q	V	.	.	.	.
8.167	1.8661	3.58	.Q	V	.	.	.	.
8.250	1.8909	3.60	.Q	V	.	.	.	.
8.333	1.9159	3.63	.Q	V	.	.	.	.
8.417	1.9411	3.65	.Q	V	.	.	.	.
8.500	1.9664	3.68	.Q	V	.	.	.	.
8.583	1.9919	3.70	.Q	V	.	.	.	.
8.667	2.0176	3.73	.Q	V	.	.	.	.
8.750	2.0435	3.76	.Q	V	.	.	.	.
8.833	2.0695	3.78	.Q	V	.	.	.	.
8.917	2.0958	3.81	.Q	V	.	.	.	.
9.000	2.1222	3.84	.Q	V	.	.	.	.
9.083	2.1488	3.87	.Q	V	.	.	.	.
9.167	2.1757	3.90	.Q	V	.	.	.	.
9.250	2.2027	3.93	.Q	V	.	.	.	.
9.333	2.2300	3.96	.Q	V	.	.	.	.
9.417	2.2574	3.99	.Q	V	.	.	.	.
9.500	2.2851	4.02	.Q	V	.	.	.	.
9.583	2.3130	4.05	.Q	V	.	.	.	.
9.667	2.3411	4.08	.Q	V	.	.	.	.
9.750	2.3695	4.12	.Q	V	.	.	.	.
9.833	2.3981	4.15	.Q	V	.	.	.	.
9.917	2.4269	4.19	.Q	V	.	.	.	.
10.000	2.4560	4.22	.Q	V	.	.	.	.
10.083	2.4853	4.26	.Q	V	.	.	.	.
10.167	2.5149	4.30	.Q	V	.	.	.	.
10.250	2.5448	4.33	.Q	V	.	.	.	.
10.333	2.5749	4.37	.Q	V	.	.	.	.

10.417	2.6053	4.41	.Q	V .	.	.	.
10.500	2.6360	4.46	.Q	V .	.	.	.
10.583	2.6669	4.50	.Q	V .	.	.	.
10.667	2.6982	4.54	.Q	V .	.	.	.
10.750	2.7297	4.58	.Q	V .	.	.	.
10.833	2.7616	4.63	.Q	V .	.	.	.
10.917	2.7938	4.67	.Q	V .	.	.	.
11.000	2.8263	4.72	.Q	V .	.	.	.
11.083	2.8592	4.77	.Q	V .	.	.	.
11.167	2.8924	4.82	.Q	V .	.	.	.
11.250	2.9260	4.87	.Q	V.	.	.	.
11.333	2.9599	4.93	.Q	V.	.	.	.
11.417	2.9942	4.98	.Q	V.	.	.	.
11.500	3.0289	5.04	. Q	V.	.	.	.
11.583	3.0639	5.09	. Q	V.	.	.	.
11.667	3.0994	5.15	. Q	V.	.	.	.
11.750	3.1353	5.21	. Q	V.	.	.	.
11.833	3.1717	5.28	. Q	V.	.	.	.
11.917	3.2084	5.34	. Q	V.	.	.	.
12.000	3.2457	5.41	. Q	V	.	.	.
12.083	3.2836	5.50	. Q	V	.	.	.
12.167	3.3230	5.72	. Q	V	.	.	.
12.250	3.3635	5.88	. Q	V	.	.	.
12.333	3.4048	6.00	. Q	V	.	.	.
12.417	3.4468	6.10	. Q	V	.	.	.
12.500	3.4895	6.20	. Q	V	.	.	.
12.583	3.5329	6.30	. Q	V	.	.	.
12.667	3.5770	6.40	. Q	.V	.	.	.
12.750	3.6217	6.49	. Q	.V	.	.	.
12.833	3.6671	6.60	. Q	.V	.	.	.
12.917	3.7132	6.70	. Q	.V	.	.	.
13.000	3.7601	6.81	. Q	.V	.	.	.
13.083	3.8078	6.91	. Q	.V	.	.	.
13.167	3.8562	7.04	. Q	.V	.	.	.
13.250	3.9055	7.15	. Q	. V	.	.	.
13.333	3.9556	7.28	. Q	. V	.	.	.
13.417	4.0066	7.41	. Q	. V	.	.	.
13.500	4.0587	7.55	. Q	. V	.	.	.
13.583	4.1116	7.69	. Q	. V	.	.	.
13.667	4.1657	7.85	. Q	. V	.	.	.
13.750	4.2209	8.01	. Q	. V	.	.	.
13.833	4.2772	8.19	. Q	. V	.	.	.
13.917	4.3348	8.36	. Q	. V	.	.	.
14.000	4.3937	8.56	. Q	. V	.	.	.
14.083	4.4546	8.85	. Q	. V	.	.	.
14.167	4.5212	9.66	. Q	. V	.	.	.
14.250	4.5917	10.24	. Q	. V	.	.	.
14.333	4.6652	10.67	. Q	. V	.	.	.
14.417	4.7411	11.02	. Q	. V	.	.	.
14.500	4.8195	11.39	. Q	. V	.	.	.
14.583	4.9003	11.73	. Q	. V	.	.	.
14.667	4.9838	12.12	. Q	. V	.	.	.
14.750	5.0699	12.50	. Q	. V	.	.	.

14.833	5.1590	12.94	. Q . V . . .
14.917	5.2512	13.38	. Q . V . . .
15.000	5.3470	13.91	. Q . V . . .
15.083	5.4464	14.44	. Q . V . . .
15.167	5.5504	15.10	. Q . V . . .
15.250	5.6589	15.76	. Q . V . . .
15.333	5.7733	16.61	. Q . V . . .
15.417	5.8948	17.63	. Q . V . . .
15.500	6.0301	19.64	. Q . V . . .
15.583	6.1776	21.42	. Q . V. . .
15.667	6.3388	23.41	. Q. V. . .
15.750	6.5143	25.48	. Q V . .
15.833	6.7097	28.38	. Q V . .
15.917	6.9316	32.22	. Q .V . .
16.000	7.2083	40.17	. Q . V . .
16.083	7.6082	58.08	. . Q . .
16.167	8.2835	98.04	. . V . Q.
16.250	8.7950	74.28	. . V Q. .
16.333	9.1416	50.32	. . Q V . .
16.417	9.4106	39.07	. Q . V. .
16.500	9.6249	31.11	. Q . V. .
16.583	9.8032	25.89	. Q . V .
16.667	9.9552	22.08	. Q . V .
16.750	10.0868	19.11	. Q . .V .
16.833	10.2031	16.88	. Q . .V .
16.917	10.3098	15.50	. Q . .V .
17.000	10.4058	13.93	. Q . . V .
17.083	10.4925	12.60	. Q . . V .
17.167	10.5686	11.04	. Q . . V .
17.250	10.6371	9.95	. Q . . . V .
17.333	10.7009	9.26	. Q . . . V .
17.417	10.7610	8.72	. Q . . . V .
17.500	10.8180	8.28	. Q . . . V .
17.583	10.8724	7.90	. Q . . . V .
17.667	10.9246	7.57	. Q . . . V .
17.750	10.9747	7.28	. Q . . . V .
17.833	11.0231	7.02	. Q . . . V .
17.917	11.0698	6.78	. Q . . . V .
18.000	11.1150	6.57	. Q . . . V .
18.083	11.1588	6.35	. Q . . . V .
18.167	11.2003	6.03	. Q . . . V .
18.250	11.2401	5.78	. Q . . . V .
18.333	11.2786	5.59	. Q . . . V .
18.417	11.3160	5.42	. Q . . . V .
18.500	11.3523	5.28	. Q . . . V .
18.583	11.3877	5.15	. Q . . . V .
18.667	11.4223	5.02	. Q . . . V .
18.750	11.4562	4.91	.Q . . . V .
18.833	11.4892	4.80	.Q . . . V .
18.917	11.5216	4.70	.Q . . . V .
19.000	11.5533	4.61	.Q . . . V .
19.083	11.5845	4.52	.Q . . . V .
19.167	11.6150	4.43	.Q . . . V .

19.250	11.6450	4.35	.Q	.	.	.	V .
19.333	11.6744	4.28	.Q	.	.	.	V .
19.417	11.7034	4.20	.Q	.	.	.	V .
19.500	11.7319	4.13	.Q	.	.	.	V .
19.583	11.7599	4.07	.Q	.	.	.	V .
19.667	11.7874	4.00	.Q	.	.	.	V .
19.750	11.8146	3.94	.Q	.	.	.	V .
19.833	11.8413	3.88	.Q	.	.	.	V .
19.917	11.8676	3.82	.Q	.	.	.	V .
20.000	11.8936	3.77	.Q	.	.	.	V .
20.083	11.9192	3.72	.Q	.	.	.	V .
20.167	11.9444	3.66	.Q	.	.	.	V .
20.250	11.9693	3.61	.Q	.	.	.	V .
20.333	11.9939	3.57	.Q	.	.	.	V .
20.417	12.0181	3.52	.Q	.	.	.	V .
20.500	12.0421	3.48	.Q	.	.	.	V .
20.583	12.0657	3.43	.Q	.	.	.	V .
20.667	12.0891	3.39	.Q	.	.	.	V .
20.750	12.1121	3.35	.Q	.	.	.	V .
20.833	12.1349	3.31	.Q	.	.	.	V .
20.917	12.1575	3.27	.Q	.	.	.	V .
21.000	12.1798	3.24	.Q	.	.	.	V .
21.083	12.2018	3.20	.Q	.	.	.	V .
21.167	12.2236	3.16	.Q	.	.	.	V .
21.250	12.2452	3.13	.Q	.	.	.	V .
21.333	12.2665	3.10	.Q	.	.	.	V .
21.417	12.2876	3.06	.Q	.	.	.	V .
21.500	12.3085	3.03	.Q	.	.	.	V .
21.583	12.3292	3.00	.Q	.	.	.	V .
21.667	12.3496	2.97	.Q	.	.	.	V .
21.750	12.3699	2.94	.Q	.	.	.	V .
21.833	12.3900	2.92	.Q	.	.	.	V .
21.917	12.4099	2.89	.Q	.	.	.	V .
22.000	12.4296	2.86	.Q	.	.	.	V .
22.083	12.4491	2.83	.Q	.	.	.	V .
22.167	12.4684	2.81	.Q	.	.	.	V .
22.250	12.4876	2.78	.Q	.	.	.	V .
22.333	12.5066	2.76	.Q	.	.	.	V .
22.417	12.5255	2.73	.Q	.	.	.	V .
22.500	12.5441	2.71	.Q	.	.	.	V .
22.583	12.5626	2.69	.Q	.	.	.	V .
22.667	12.5810	2.67	.Q	.	.	.	V.
22.750	12.5992	2.64	.Q	.	.	.	V.
22.833	12.6173	2.62	.Q	.	.	.	V.
22.917	12.6352	2.60	.Q	.	.	.	V.
23.000	12.6529	2.58	.Q	.	.	.	V.
23.083	12.6706	2.56	.Q	.	.	.	V.
23.167	12.6881	2.54	.Q	.	.	.	V.
23.250	12.7054	2.52	.Q	.	.	.	V.
23.333	12.7227	2.50	.Q	.	.	.	V.
23.417	12.7398	2.48	Q	.	.	.	V.
23.500	12.7567	2.46	Q	.	.	.	V.
23.583	12.7736	2.45	Q	.	.	.	V.

23.667	12.7903	2.43	Q	.	.	.	V.
23.750	12.8069	2.41	Q	.	.	.	V.
23.833	12.8234	2.39	Q	.	.	.	V.
23.917	12.8398	2.38	Q	.	.	.	V.
24.000	12.8560	2.36	Q	.	.	.	V.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1445.0
10%	185.0
20%	75.0
30%	40.0
40%	25.0
50%	20.0
60%	10.0
70%	10.0
80%	5.0
90%	5.0

END OF FLOODSCx ROUTING ANALYSIS

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******************************************************************************
          NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
                    AND LOW LOSS FRACTION ESTIMATIONS
==============================================================================
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                          Analysis prepared by:




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

 Problem Descriptions:
  RPCA SUNRISE
  100-YEAR PROPOSED EAST DA-2
  KIMLEY-HORN
==============================================================================
*** NON-HOMOGENEOUS WATERSHED AREA-AVERAGED LOSS RATE (Fm)
    AND LOW LOSS FRACTION ESTIMATIONS FOR AMC III:

    TOTAL 24-HOUR DURATION RAINFALL DEPTH =     3.68 (inches)

    SOIL-COVER     AREA      PERCENT OF    SCS CURVE    LOSS RATE
       TYPE      (Acres)   PERVIOUS AREA     NUMBER    Fp(in./hr.)    YIELD
         1         36.21       98.43       86.(AMC II)     0.106       0.906

    TOTAL AREA (Acres) =     36.21

    AREA-AVERAGED LOSS RATE, Fm (in./hr.) =  0.104

    AREA-AVERAGED LOW LOSS FRACTION, Y = 0.094
==============================================================================
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            F L O O D    R O U T I N G    A N A L Y S I S
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                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* RPCA SUNRISE                                                          *
* 100 YEAR PROPOSED EAST AREA DA-2                                      *
* KIMLEY-HORN                                                           *
 ************************************************************************

  FILE NAME: SRE100P.DAT
  TIME/DATE OF STUDY: 23:34 10/23/2024


**************************************************************************
  FLOW PROCESS FROM NODE      1.00 TO NODE      2.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>SUBAREA RUNOFF (UNIT-HYDROGRAPH ANALYSIS)<<<<<
==========================================================================

      (UNIT-HYDROGRAPH ADDED TO STREAM #1)

         WATERSHED AREA =      36.210 ACRES
         BASEFLOW =   0.000 CFS/SQUARE-MILE
         *USER ENTERED "LAG" TIME =    0.100 HOURS
          CAUTION: LAG TIME IS LESS THAN 0.50 HOURS.
          THE 5-MINUTE PERIOD UH MODEL (USED IN THIS COMPUTER PROGRAM)
          MAY BE TOO LARGE FOR PEAK FLOW ESTIMATES.
         DESERT(UNDEVELOPED) S-GRAPH SELECTED
         MAXIMUM WATERSHED LOSS RATE(INCH/HOUR) =  0.104
         LOW LOSS FRACTION = 0.094
         *HYDROGRAPH MODEL #1 SPECIFIED*

         SPECIFIED PEAK  5-MINUTES RAINFALL(INCH)=  0.32
         SPECIFIED PEAK 30-MINUTES RAINFALL(INCH)=  0.75
         SPECIFIED PEAK  1-HOUR RAINFALL(INCH) =  1.06
         SPECIFIED PEAK  3-HOUR RAINFALL(INCH) =  1.72
         SPECIFIED PEAK  6-HOUR RAINFALL(INCH) =  2.24
         SPECIFIED PEAK 24-HOUR RAINFALL(INCH) =  3.68

         PRECIPITATION DEPTH-AREA REDUCTION FACTORS:
           5-MINUTE FACTOR = 0.998
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30-MINUTE FACTOR = 0.998
1-HOUR FACTOR = 0.998
3-HOUR FACTOR = 1.000
6-HOUR FACTOR = 1.000
24-HOUR FACTOR = 1.000

UNIT HYDROGRAPH TIME UNIT = 5.000 MINUTES
UNIT INTERVAL PERCENTAGE OF LAG-TIME = 83.333

RUNOFF HYDROGRAPH LISTING LIMITS:
MODEL TIME(HOURS) FOR BEGINNING OF RESULTS = 0.00
MODEL TIME(HOURS) FOR END OF RESULTS = 24.00

UNIT HYDROGRAPH DETERMINATION

INTERVAL NUMBER	"S" GRAPH MEAN VALUES	UNIT HYDROGRAPH ORDINATES(CFS)
1	11.774	51.561
2	59.344	208.316
3	79.039	86.247
4	87.838	38.533
5	92.728	21.414
6	95.763	13.291
7	97.597	8.028
8	98.603	4.408
9	99.480	3.839
10	99.792	1.366
11	99.948	0.683
12	100.000	0.228

UNIT PERIOD (NUMBER)	UNIT RAINFALL (INCHES)	UNIT SOIL-LOSS (INCHES)	EFFECTIVE RAINFALL (INCHES)
1	0.0046	0.0004	0.0042
2	0.0046	0.0004	0.0042
3	0.0046	0.0004	0.0042
4	0.0046	0.0004	0.0042
5	0.0046	0.0004	0.0042
6	0.0047	0.0004	0.0042
7	0.0047	0.0004	0.0042
8	0.0047	0.0004	0.0042
9	0.0047	0.0004	0.0043
10	0.0047	0.0004	0.0043
11	0.0047	0.0004	0.0043

12	0.0048	0.0004	0.0043
13	0.0048	0.0004	0.0043
14	0.0048	0.0004	0.0043
15	0.0048	0.0005	0.0044
16	0.0048	0.0005	0.0044
17	0.0048	0.0005	0.0044
18	0.0049	0.0005	0.0044
19	0.0049	0.0005	0.0044
20	0.0049	0.0005	0.0044
21	0.0049	0.0005	0.0045
22	0.0049	0.0005	0.0045
23	0.0050	0.0005	0.0045
24	0.0050	0.0005	0.0045
25	0.0050	0.0005	0.0045
26	0.0050	0.0005	0.0045
27	0.0050	0.0005	0.0046
28	0.0050	0.0005	0.0046
29	0.0051	0.0005	0.0046
30	0.0051	0.0005	0.0046
31	0.0051	0.0005	0.0046
32	0.0051	0.0005	0.0046
33	0.0052	0.0005	0.0047
34	0.0052	0.0005	0.0047
35	0.0052	0.0005	0.0047
36	0.0052	0.0005	0.0047
37	0.0052	0.0005	0.0047
38	0.0052	0.0005	0.0048
39	0.0053	0.0005	0.0048
40	0.0053	0.0005	0.0048
41	0.0053	0.0005	0.0048
42	0.0053	0.0005	0.0048
43	0.0054	0.0005	0.0049
44	0.0054	0.0005	0.0049
45	0.0054	0.0005	0.0049
46	0.0054	0.0005	0.0049
47	0.0055	0.0005	0.0049
48	0.0055	0.0005	0.0050
49	0.0055	0.0005	0.0050
50	0.0055	0.0005	0.0050
51	0.0056	0.0005	0.0050
52	0.0056	0.0005	0.0051
53	0.0056	0.0005	0.0051
54	0.0056	0.0005	0.0051
55	0.0057	0.0005	0.0051
56	0.0057	0.0005	0.0051
57	0.0057	0.0005	0.0052
58	0.0057	0.0005	0.0052
59	0.0058	0.0005	0.0052
60	0.0058	0.0005	0.0052
61	0.0058	0.0005	0.0053
62	0.0058	0.0005	0.0053
63	0.0059	0.0006	0.0053
64	0.0059	0.0006	0.0054

65	0.0059	0.0006	0.0054
66	0.0060	0.0006	0.0054
67	0.0060	0.0006	0.0054
68	0.0060	0.0006	0.0055
69	0.0061	0.0006	0.0055
70	0.0061	0.0006	0.0055
71	0.0061	0.0006	0.0056
72	0.0062	0.0006	0.0056
73	0.0062	0.0006	0.0056
74	0.0062	0.0006	0.0056
75	0.0063	0.0006	0.0057
76	0.0063	0.0006	0.0057
77	0.0063	0.0006	0.0057
78	0.0064	0.0006	0.0058
79	0.0064	0.0006	0.0058
80	0.0064	0.0006	0.0058
81	0.0065	0.0006	0.0059
82	0.0065	0.0006	0.0059
83	0.0066	0.0006	0.0059
84	0.0066	0.0006	0.0060
85	0.0066	0.0006	0.0060
86	0.0067	0.0006	0.0060
87	0.0067	0.0006	0.0061
88	0.0067	0.0006	0.0061
89	0.0068	0.0006	0.0062
90	0.0068	0.0006	0.0062
91	0.0069	0.0006	0.0062
92	0.0069	0.0006	0.0063
93	0.0070	0.0007	0.0063
94	0.0070	0.0007	0.0063
95	0.0071	0.0007	0.0064
96	0.0071	0.0007	0.0064
97	0.0072	0.0007	0.0065
98	0.0072	0.0007	0.0065
99	0.0073	0.0007	0.0066
100	0.0073	0.0007	0.0066
101	0.0074	0.0007	0.0067
102	0.0074	0.0007	0.0067
103	0.0075	0.0007	0.0068
104	0.0075	0.0007	0.0068
105	0.0076	0.0007	0.0069
106	0.0076	0.0007	0.0069
107	0.0077	0.0007	0.0070
108	0.0077	0.0007	0.0070
109	0.0078	0.0007	0.0071
110	0.0078	0.0007	0.0071
111	0.0079	0.0007	0.0072
112	0.0080	0.0007	0.0072
113	0.0080	0.0008	0.0073
114	0.0081	0.0008	0.0073
115	0.0082	0.0008	0.0074
116	0.0082	0.0008	0.0075
117	0.0083	0.0008	0.0075

118	0.0084	0.0008	0.0076
119	0.0085	0.0008	0.0077
120	0.0085	0.0008	0.0077
121	0.0086	0.0008	0.0078
122	0.0087	0.0008	0.0079
123	0.0088	0.0008	0.0079
124	0.0088	0.0008	0.0080
125	0.0089	0.0008	0.0081
126	0.0090	0.0008	0.0081
127	0.0091	0.0009	0.0083
128	0.0092	0.0009	0.0083
129	0.0093	0.0009	0.0084
130	0.0094	0.0009	0.0085
131	0.0095	0.0009	0.0086
132	0.0096	0.0009	0.0087
133	0.0097	0.0009	0.0088
134	0.0098	0.0009	0.0088
135	0.0099	0.0009	0.0090
136	0.0100	0.0009	0.0090
137	0.0101	0.0010	0.0092
138	0.0102	0.0010	0.0092
139	0.0104	0.0010	0.0094
140	0.0105	0.0010	0.0095
141	0.0106	0.0010	0.0096
142	0.0107	0.0010	0.0097
143	0.0109	0.0010	0.0099
144	0.0110	0.0010	0.0100
145	0.0119	0.0011	0.0108
146	0.0120	0.0011	0.0109
147	0.0122	0.0011	0.0111
148	0.0123	0.0012	0.0112
149	0.0126	0.0012	0.0114
150	0.0127	0.0012	0.0115
151	0.0129	0.0012	0.0117
152	0.0131	0.0012	0.0118
153	0.0133	0.0013	0.0121
154	0.0135	0.0013	0.0122
155	0.0138	0.0013	0.0125
156	0.0139	0.0013	0.0126
157	0.0143	0.0013	0.0129
158	0.0144	0.0014	0.0131
159	0.0148	0.0014	0.0134
160	0.0150	0.0014	0.0135
161	0.0153	0.0014	0.0139
162	0.0155	0.0015	0.0141
163	0.0160	0.0015	0.0145
164	0.0162	0.0015	0.0147
165	0.0167	0.0016	0.0151
166	0.0169	0.0016	0.0153
167	0.0175	0.0016	0.0158
168	0.0178	0.0017	0.0161
169	0.0213	0.0020	0.0193
170	0.0216	0.0020	0.0196

171	0.0223	0.0021	0.0202
172	0.0227	0.0021	0.0206
173	0.0236	0.0022	0.0214
174	0.0240	0.0023	0.0218
175	0.0250	0.0024	0.0227
176	0.0256	0.0024	0.0232
177	0.0268	0.0025	0.0243
178	0.0274	0.0026	0.0249
179	0.0289	0.0027	0.0262
180	0.0297	0.0028	0.0269
181	0.0316	0.0030	0.0286
182	0.0326	0.0031	0.0296
183	0.0351	0.0033	0.0318
184	0.0365	0.0034	0.0331
185	0.0441	0.0041	0.0400
186	0.0463	0.0043	0.0419
187	0.0515	0.0048	0.0466
188	0.0550	0.0052	0.0498
189	0.0633	0.0059	0.0573
190	0.0703	0.0066	0.0637
191	0.0956	0.0087	0.0870
192	0.1261	0.0087	0.1174
193	0.3185	0.0087	0.3098
194	0.0801	0.0075	0.0726
195	0.0591	0.0056	0.0535
196	0.0486	0.0046	0.0441
197	0.0381	0.0036	0.0345
198	0.0338	0.0032	0.0306
199	0.0306	0.0029	0.0277
200	0.0281	0.0026	0.0255
201	0.0262	0.0025	0.0237
202	0.0245	0.0023	0.0222
203	0.0232	0.0022	0.0210
204	0.0220	0.0021	0.0199
205	0.0181	0.0017	0.0164
206	0.0172	0.0016	0.0156
207	0.0164	0.0015	0.0149
208	0.0158	0.0015	0.0143
209	0.0151	0.0014	0.0137
210	0.0146	0.0014	0.0132
211	0.0141	0.0013	0.0128
212	0.0136	0.0013	0.0123
213	0.0132	0.0012	0.0120
214	0.0128	0.0012	0.0116
215	0.0125	0.0012	0.0113
216	0.0121	0.0011	0.0110
217	0.0111	0.0010	0.0100
218	0.0108	0.0010	0.0098
219	0.0105	0.0010	0.0095
220	0.0103	0.0010	0.0093
221	0.0101	0.0009	0.0091
222	0.0098	0.0009	0.0089
223	0.0096	0.0009	0.0087

224	0.0094	0.0009	0.0085
225	0.0092	0.0009	0.0084
226	0.0091	0.0009	0.0082
227	0.0089	0.0008	0.0080
228	0.0087	0.0008	0.0079
229	0.0086	0.0008	0.0078
230	0.0084	0.0008	0.0076
231	0.0083	0.0008	0.0075
232	0.0081	0.0008	0.0074
233	0.0080	0.0008	0.0073
234	0.0079	0.0007	0.0071
235	0.0078	0.0007	0.0070
236	0.0076	0.0007	0.0069
237	0.0075	0.0007	0.0068
238	0.0074	0.0007	0.0067
239	0.0073	0.0007	0.0066
240	0.0072	0.0007	0.0065
241	0.0071	0.0007	0.0065
242	0.0070	0.0007	0.0064
243	0.0069	0.0007	0.0063
244	0.0069	0.0006	0.0062
245	0.0068	0.0006	0.0061
246	0.0067	0.0006	0.0061
247	0.0066	0.0006	0.0060
248	0.0065	0.0006	0.0059
249	0.0065	0.0006	0.0058
250	0.0064	0.0006	0.0058
251	0.0063	0.0006	0.0057
252	0.0062	0.0006	0.0057
253	0.0062	0.0006	0.0056
254	0.0061	0.0006	0.0055
255	0.0060	0.0006	0.0055
256	0.0060	0.0006	0.0054
257	0.0059	0.0006	0.0054
258	0.0059	0.0006	0.0053
259	0.0058	0.0005	0.0053
260	0.0058	0.0005	0.0052
261	0.0057	0.0005	0.0052
262	0.0056	0.0005	0.0051
263	0.0056	0.0005	0.0051
264	0.0055	0.0005	0.0050
265	0.0055	0.0005	0.0050
266	0.0054	0.0005	0.0049
267	0.0054	0.0005	0.0049
268	0.0054	0.0005	0.0049
269	0.0053	0.0005	0.0048
270	0.0053	0.0005	0.0048
271	0.0052	0.0005	0.0047
272	0.0052	0.0005	0.0047
273	0.0051	0.0005	0.0047
274	0.0051	0.0005	0.0046
275	0.0051	0.0005	0.0046
276	0.0050	0.0005	0.0045

277	0.0050	0.0005	0.0045
278	0.0049	0.0005	0.0045
279	0.0049	0.0005	0.0044
280	0.0049	0.0005	0.0044
281	0.0048	0.0005	0.0044
282	0.0048	0.0005	0.0043
283	0.0048	0.0004	0.0043
284	0.0047	0.0004	0.0043
285	0.0047	0.0004	0.0043
286	0.0047	0.0004	0.0042
287	0.0046	0.0004	0.0042
288	0.0046	0.0004	0.0042

TOTAL STORM RAINFALL(INCHES) = 3.68
TOTAL SOIL-LOSS(INCHES) = 0.32
TOTAL EFFECTIVE RAINFALL(INCHES) = 3.36

TOTAL SOIL-LOSS VOLUME(ACRE-FEET) = 0.9690
TOTAL STORM RUNOFF VOLUME(ACRE-FEET) = 10.1294

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2 4 - 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 FIVE-MINUTE UNIT INTERVALS(CFS)
(Note: Time indicated is at END of Each Unit Intervals)

TIME(HRS)	VOLUME(AF)	Q(CFS)	0.	22.5	45.0	67.5	90.0
0.083	0.0015	0.21	Q	.	.	.	.
0.167	0.0089	1.08	Q	.	.	.	.
0.250	0.0188	1.44	Q	.	.	.	.
0.333	0.0299	1.61	Q	.	.	.	.
0.417	0.0416	1.70	Q	.	.	.	.
0.500	0.0537	1.76	Q	.	.	.	.
0.583	0.0661	1.80	Q	.	.	.	.
0.667	0.0787	1.82	Q	.	.	.	.
0.750	0.0914	1.85	Q	.	.	.	.
0.833	0.1042	1.86	Q	.	.	.	.
0.917	0.1170	1.87	Q	.	.	.	.
1.000	0.1299	1.88	Q	.	.	.	.
1.083	0.1429	1.88	Q	.	.	.	.
1.167	0.1559	1.89	Q	.	.	.	.
1.250	0.1689	1.89	Q	.	.	.	.
1.333	0.1820	1.90	Q	.	.	.	.
1.417	0.1952	1.91	Q	.	.	.	.
1.500	0.2084	1.92	Q	.	.	.	.
1.583	0.2216	1.92	Q	.	.	.	.
1.667	0.2349	1.93	Q	.	.	.	.

1.750	0.2483	1.94	Q	.	.	.	.
1.833	0.2616	1.94	QV	.	.	.	.
1.917	0.2751	1.95	QV	.	.	.	.
2.000	0.2886	1.96	QV	.	.	.	.
2.083	0.3021	1.97	QV	.	.	.	.
2.167	0.3157	1.97	QV	.	.	.	.
2.250	0.3293	1.98	QV	.	.	.	.
2.333	0.3430	1.99	QV	.	.	.	.
2.417	0.3568	2.00	QV	.	.	.	.
2.500	0.3706	2.00	QV	.	.	.	.
2.583	0.3844	2.01	QV	.	.	.	.
2.667	0.3984	2.02	QV	.	.	.	.
2.750	0.4123	2.03	QV	.	.	.	.
2.833	0.4263	2.04	QV	.	.	.	.
2.917	0.4404	2.04	QV	.	.	.	.
3.000	0.4546	2.05	QV	.	.	.	.
3.083	0.4687	2.06	QV	.	.	.	.
3.167	0.4830	2.07	QV	.	.	.	.
3.250	0.4973	2.08	QV	.	.	.	.
3.333	0.5117	2.09	Q V	.	.	.	.
3.417	0.5261	2.09	Q V	.	.	.	.
3.500	0.5406	2.10	Q V	.	.	.	.
3.583	0.5551	2.11	Q V	.	.	.	.
3.667	0.5698	2.12	Q V	.	.	.	.
3.750	0.5844	2.13	Q V	.	.	.	.
3.833	0.5992	2.14	Q V	.	.	.	.
3.917	0.6140	2.15	Q V	.	.	.	.
4.000	0.6288	2.16	Q V	.	.	.	.
4.083	0.6438	2.17	Q V	.	.	.	.
4.167	0.6588	2.18	Q V	.	.	.	.
4.250	0.6738	2.19	Q V	.	.	.	.
4.333	0.6890	2.20	Q V	.	.	.	.
4.417	0.7042	2.21	Q V	.	.	.	.
4.500	0.7195	2.22	Q V	.	.	.	.
4.583	0.7348	2.23	Q V	.	.	.	.
4.667	0.7502	2.24	Q V	.	.	.	.
4.750	0.7657	2.25	Q V	.	.	.	.
4.833	0.7812	2.26	.Q V	.	.	.	.
4.917	0.7969	2.27	.Q V	.	.	.	.
5.000	0.8126	2.28	.Q V	.	.	.	.
5.083	0.8284	2.29	.Q V	.	.	.	.
5.167	0.8442	2.30	.Q V	.	.	.	.
5.250	0.8602	2.31	.Q V	.	.	.	.
5.333	0.8762	2.33	.Q V	.	.	.	.
5.417	0.8923	2.34	.Q V	.	.	.	.
5.500	0.9084	2.35	.Q V	.	.	.	.
5.583	0.9247	2.36	.Q V	.	.	.	.
5.667	0.9410	2.37	.Q V	.	.	.	.
5.750	0.9574	2.38	.Q V	.	.	.	.
5.833	0.9739	2.40	.Q V	.	.	.	.
5.917	0.9905	2.41	.Q V	.	.	.	.
6.000	1.0072	2.42	.Q V	.	.	.	.
6.083	1.0240	2.43	.Q V	.	.	.	.

6.167	1.0408	2.45	.Q	V	.	.	.	.
6.250	1.0578	2.46	.Q	V	.	.	.	.
6.333	1.0748	2.47	.Q	V	.	.	.	.
6.417	1.0919	2.49	.Q	V	.	.	.	.
6.500	1.1091	2.50	.Q	V	.	.	.	.
6.583	1.1265	2.51	.Q	V	.	.	.	.
6.667	1.1439	2.53	.Q	V	.	.	.	.
6.750	1.1614	2.54	.Q	V	.	.	.	.
6.833	1.1790	2.56	.Q	V	.	.	.	.
6.917	1.1967	2.57	.Q	V	.	.	.	.
7.000	1.2145	2.59	.Q	V	.	.	.	.
7.083	1.2324	2.60	.Q	V	.	.	.	.
7.167	1.2505	2.62	.Q	V	.	.	.	.
7.250	1.2686	2.63	.Q	V	.	.	.	.
7.333	1.2868	2.65	.Q	V	.	.	.	.
7.417	1.3052	2.66	.Q	V	.	.	.	.
7.500	1.3237	2.68	.Q	V	.	.	.	.
7.583	1.3422	2.70	.Q	V	.	.	.	.
7.667	1.3609	2.72	.Q	V	.	.	.	.
7.750	1.3797	2.73	.Q	V	.	.	.	.
7.833	1.3987	2.75	.Q	V	.	.	.	.
7.917	1.4177	2.77	.Q	V	.	.	.	.
8.000	1.4369	2.79	.Q	V	.	.	.	.
8.083	1.4562	2.80	.Q	V	.	.	.	.
8.167	1.4757	2.82	.Q	V	.	.	.	.
8.250	1.4952	2.84	.Q	V	.	.	.	.
8.333	1.5149	2.86	.Q	V	.	.	.	.
8.417	1.5347	2.88	.Q	V	.	.	.	.
8.500	1.5547	2.90	.Q	V	.	.	.	.
8.583	1.5748	2.92	.Q	V	.	.	.	.
8.667	1.5951	2.94	.Q	V	.	.	.	.
8.750	1.6155	2.96	.Q	V	.	.	.	.
8.833	1.6360	2.98	.Q	V	.	.	.	.
8.917	1.6567	3.00	.Q	V	.	.	.	.
9.000	1.6775	3.03	.Q	V	.	.	.	.
9.083	1.6985	3.05	.Q	V	.	.	.	.
9.167	1.7197	3.07	.Q	V	.	.	.	.
9.250	1.7410	3.10	.Q	V	.	.	.	.
9.333	1.7625	3.12	.Q	V	.	.	.	.
9.417	1.7842	3.14	.Q	V	.	.	.	.
9.500	1.8060	3.17	.Q	V	.	.	.	.
9.583	1.8280	3.19	.Q	V	.	.	.	.
9.667	1.8502	3.22	.Q	V	.	.	.	.
9.750	1.8725	3.25	.Q	V	.	.	.	.
9.833	1.8951	3.28	.Q	V	.	.	.	.
9.917	1.9178	3.30	.Q	V	.	.	.	.
10.000	1.9408	3.33	.Q	V	.	.	.	.
10.083	1.9639	3.36	.Q	V	.	.	.	.
10.167	1.9873	3.39	.Q	V	.	.	.	.
10.250	2.0108	3.42	.Q	V	.	.	.	.
10.333	2.0346	3.45	.Q	V	.	.	.	.
10.417	2.0586	3.48	.Q	V	.	.	.	.
10.500	2.0828	3.52	.Q	V	.	.	.	.

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10.583      2.1072      3.55  .Q      V .         .         .         .
10.667      2.1319      3.58  .Q      V .         .         .         .
10.750      2.1568      3.62  .Q      V .         .         .         .
10.833      2.1820      3.65  .Q      V .         .         .         .
10.917      2.2074      3.69  .Q      V .         .         .         .
11.000      2.2331      3.73  .Q      V .         .         .         .
11.083      2.2590      3.77  .Q      V .         .         .         .
11.167      2.2852      3.81  .Q       V.         .         .         .
11.250      2.3117      3.85  .Q       V.         .         .         .
11.333      2.3385      3.89  .Q       V.         .         .         .
11.417      2.3656      3.93  .Q       V.         .         .         .
11.500      2.3930      3.98  .Q       V.         .         .         .
11.583      2.4207      4.02  .Q       V.         .         .         .
11.667      2.4487      4.07  .Q       V.         .         .         .
11.750      2.4771      4.12  .Q       V.         .         .         .
11.833      2.5058      4.17  .Q       V.         .         .         .
11.917      2.5349      4.22  .Q        V         .         .         .
12.000      2.5643      4.28  .Q        V         .         .         .
12.083      2.5944      4.36  .Q        V         .         .         .
12.167      2.6258      4.56  . Q       V         .         .         .
12.250      2.6579      4.67  . Q       V         .         .         .
12.333      2.6907      4.76  . Q       V         .         .         .
12.417      2.7240      4.84  . Q       V         .         .         .
12.500      2.7579      4.92  . Q       V         .         .         .
12.583      2.7922      4.99  . Q       .V        .         .         .
12.667      2.8271      5.07  . Q       .V        .         .         .
12.750      2.8625      5.14  . Q       .V        .         .         .
12.833      2.8985      5.22  . Q       .V        .         .         .
12.917      2.9350      5.30  . Q       .V        .         .         .
13.000      2.9722      5.39  . Q       .V        .         .         .
13.083      3.0099      5.47  . Q       .V        .         .         .
13.167      3.0482      5.57  . Q       . V       .         .         .
13.250      3.0872      5.66  . Q       . V       .         .         .
13.333      3.1270      5.77  . Q       . V       .         .         .
13.417      3.1674      5.87  . Q       . V       .         .         .
13.500      3.2086      5.99  . Q       . V       .         .         .
13.583      3.2506      6.10  . Q       . V       .         .         .
13.667      3.2935      6.23  . Q       .  V      .         .         .
13.750      3.3372      6.35  . Q       .  V      .         .         .
13.833      3.3820      6.50  . Q       .  V      .         .         .
13.917      3.4276      6.63  . Q       .  V      .         .         .
14.000      3.4744      6.80  .  Q      .  V      .         .         .
14.083      3.5232      7.08  .  Q      .  V      .         .         .
14.167      3.5770      7.82  .  Q      .   V     .         .         .
14.250      3.6337      8.22  .  Q      .   V     .         .         .
14.333      3.6925      8.54  .  Q      .   V     .         .         .
14.417      3.7532      8.81  .  Q      .   V     .         .         .
14.500      3.8158      9.10  .   Q     .    V    .         .         .
14.583      3.8803      9.36  .   Q     .    V    .         .         .
14.667      3.9469      9.67  .   Q     .    V    .         .         .
14.750      4.0156      9.97  .   Q     .    V    .         .         .
14.833      4.0867     10.33  .   Q     .     V   .         .         .
14.917      4.1602     10.67  .   Q     .     V   .         .         .
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15.000      4.2368     11.11  .   Q     .     V   .         .         .
15.083      4.3162     11.53  .    Q    .      V  .         .         .
15.167      4.3994     12.09  .    Q    .      V  .         .         .
15.250      4.4864     12.62  .    Q    .      V  .         .         .
15.333      4.5783     13.35  .    Q    .       V .         .         .
15.417      4.6765     14.26  .     Q   .       V .         .         .
15.500      4.7871     16.06  .      Q  .       V .         .         .
15.583      4.9072     17.44  .      Q  .        V.         .         .
15.667      5.0387     19.09  .       Q .        V.         .         .
15.750      5.1821     20.81  .        Q.         V         .         .
15.833      5.3427     23.32  .         Q         .V        .         .
15.917      5.5274     26.82  .          .Q       .V        .         .
16.000      5.7633     34.26  .          .    Q    . V       .         .
16.083      6.1288     53.06  .          .         .  QV     .         .
16.167      6.7123     84.73  .          .         .     V   .       Q .
16.250      7.0758     52.78  .          .         .  Q   V  .         .
16.333      7.3261     36.34  .          .     Q   .       V .         .
16.417      7.5180     27.87  .          . Q       .        V.         .
16.500      7.6695     22.00  .        Q.          .         V         .
16.583      7.7940     18.07  .       Q .          .         V         .
16.667      7.8993     15.29  .     Q   .          .         .V        .
16.750      7.9930     13.60  .     Q   .          .         .V        .
16.833      8.0746     11.86  .    Q    .          .         .V        .
16.917      8.1487     10.75  .   Q     .          .         . V       .
17.000      8.2169      9.90  .   Q     .          .         . V       .
17.083      8.2796      9.11  .   Q     .          .         . V       .
17.167      8.3351      8.06  .  Q      .          .         . V       .
17.250      8.3862      7.42  .  Q      .          .         .  V      .
17.333      8.4342      6.96  .  Q      .          .         .  V      .
17.417      8.4796      6.60  . Q       .          .         .  V      .
17.500      8.5229      6.29  . Q       .          .         .  V      .
17.583      8.5644      6.02  . Q       .          .         .  V      .
17.667      8.6043      5.79  . Q       .          .         .  V      .
17.750      8.6427      5.58  . Q       .          .         .   V     .
17.833      8.6799      5.39  . Q       .          .         .   V     .
17.917      8.7159      5.23  . Q       .          .         .   V     .
18.000      8.7508      5.07  . Q       .          .         .   V     .
18.083      8.7845      4.89  . Q       .          .         .   V     .
18.167      8.8164      4.63  . Q       .          .         .   V     .
18.250      8.8470      4.45  .Q        .          .         .   V     .
18.333      8.8767      4.31  .Q        .          .         .    V    .
18.417      8.9055      4.19  .Q        .          .         .    V    .
18.500      8.9337      4.08  .Q        .          .         .    V    .
18.583      8.9611      3.98  .Q        .          .         .    V    .
18.667      8.9879      3.89  .Q        .          .         .    V    .
18.750      9.0141      3.81  .Q        .          .         .    V    .
18.833      9.0398      3.73  .Q        .          .         .    V    .
18.917      9.0649      3.65  .Q        .          .         .    V    .
19.000      9.0896      3.58  .Q        .          .         .    V    .
19.083      9.1138      3.51  .Q        .          .         .    V    .
19.167      9.1375      3.45  .Q        .          .         .     V   .
19.250      9.1609      3.39  .Q        .          .         .     V   .
19.333      9.1838      3.33  .Q        .          .         .     V   .
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19.417	9.2064	3.27	.Q	.	.	.	V .
19.500	9.2285	3.22	.Q	.	.	.	V .
19.583	9.2503	3.17	.Q	.	.	.	V .
19.667	9.2718	3.12	.Q	.	.	.	V .
19.750	9.2930	3.07	.Q	.	.	.	V .
19.833	9.3138	3.03	.Q	.	.	.	V .
19.917	9.3343	2.98	.Q	.	.	.	V .
20.000	9.3546	2.94	.Q	.	.	.	V .
20.083	9.3745	2.90	.Q	.	.	.	V .
20.167	9.3942	2.86	.Q	.	.	.	V .
20.250	9.4136	2.82	.Q	.	.	.	V .
20.333	9.4328	2.78	.Q	.	.	.	V .
20.417	9.4517	2.75	.Q	.	.	.	V .
20.500	9.4704	2.71	.Q	.	.	.	V .
20.583	9.4889	2.68	.Q	.	.	.	V .
20.667	9.5071	2.65	.Q	.	.	.	V .
20.750	9.5251	2.62	.Q	.	.	.	V .
20.833	9.5429	2.59	.Q	.	.	.	V .
20.917	9.5605	2.56	.Q	.	.	.	V .
21.000	9.5779	2.53	.Q	.	.	.	V .
21.083	9.5951	2.50	.Q	.	.	.	V .
21.167	9.6122	2.47	.Q	.	.	.	V .
21.250	9.6290	2.45	.Q	.	.	.	V .
21.333	9.6457	2.42	.Q	.	.	.	V .
21.417	9.6622	2.40	.Q	.	.	.	V .
21.500	9.6785	2.37	.Q	.	.	.	V .
21.583	9.6946	2.35	.Q	.	.	.	V .
21.667	9.7107	2.32	.Q	.	.	.	V .
21.750	9.7265	2.30	.Q	.	.	.	V .
21.833	9.7422	2.28	.Q	.	.	.	V .
21.917	9.7577	2.26	.Q	.	.	.	V .
22.000	9.7731	2.24	Q	.	.	.	V .
22.083	9.7884	2.22	Q	.	.	.	V .
22.167	9.8035	2.20	Q	.	.	.	V .
22.250	9.8185	2.18	Q	.	.	.	V .
22.333	9.8334	2.16	Q	.	.	.	V .
22.417	9.8481	2.14	Q	.	.	.	V .
22.500	9.8627	2.12	Q	.	.	.	V .
22.583	9.8772	2.10	Q	.	.	.	V.
22.667	9.8916	2.09	Q	.	.	.	V.
22.750	9.9058	2.07	Q	.	.	.	V.
22.833	9.9199	2.05	Q	.	.	.	V.
22.917	9.9340	2.04	Q	.	.	.	V.
23.000	9.9479	2.02	Q	.	.	.	V.
23.083	9.9617	2.00	Q	.	.	.	V.
23.167	9.9753	1.99	Q	.	.	.	V.
23.250	9.9889	1.97	Q	.	.	.	V.
23.333	10.0024	1.96	Q	.	.	.	V.
23.417	10.0158	1.94	Q	.	.	.	V.
23.500	10.0291	1.93	Q	.	.	.	V.
23.583	10.0423	1.91	Q	.	.	.	V.
23.667	10.0554	1.90	Q	.	.	.	V.
23.750	10.0684	1.89	Q	.	.	.	V.

23.833	10.0813	1.87	Q	.	.	.	V.
23.917	10.0941	1.86	Q	.	.	.	V.
24.000	10.1068	1.85	Q	.	.	.	V.

TIME DURATION(minutes) OF PERCENTILES OF ESTIMATED PEAK FLOW RATE:
(Note: 100% of Peak Flow Rate estimate assumed to have
an instantaneous time duration)

Percentile of Estimated Peak Flow Rate	Duration (minutes)
0%	1445.0
10%	170.0
20%	65.0
30%	35.0
40%	25.0
50%	15.0
60%	15.0
70%	5.0
80%	5.0
90%	5.0

END OF FLOODSCx ROUTING ANALYSIS

100-yr 24-hr Basin Analysis

Project Summary	
Title	RPCA Lear 100-yr 24-hr
Engineer	
Company	Kimley-Horn
Date	11/10/2023

Notes	1. The hydrographs were inputted and created using the AES v.2011 software.

Table of Contents

100-yr 24-hr Basin Analysis

Subsection: User Notifications

User Notifications?	No user notifications generated.

100-yr 24-hr Basin Analysis

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
DA 1	Base	0	558,394.00	16.030	98.040
DA 2	Base	0	439,049.00	16.030	84.730

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
O-1	Base	0	1,010,605.00	16.050	163.153

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft³)
Detention (IN)	Base	0	1,011,571.00	16.050	169.169	(N/A)	(N/A)
Detention (OUT)	Base	0	1,010,949.00	16.050	163.153	0.67	1,276.00

100-yr 24-hr Basin Analysis

Subsection: Read Hydrograph | Scenario: Base

Label: DA 1

Peak Discharge	98.040 ft³/s
Time to Peak	16.030 hours
Hydrograph Volume	558,394.46 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.083 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.150	1.070	1.650	1.900	2.050
0.415	2.150	2.220	2.270	2.310	2.330
0.831	2.360	2.380	2.390	2.400	2.410
1.246	2.420	2.420	2.430	2.440	2.450
1.661	2.460	2.470	2.480	2.490	2.500
2.076	2.510	2.520	2.530	2.540	2.550
2.492	2.560	2.570	2.580	2.590	2.600
2.907	2.610	2.620	2.630	2.640	2.650
3.322	2.660	2.670	2.680	2.700	2.710
3.738	2.720	2.730	2.740	2.750	2.770
4.153	2.780	2.790	2.800	2.820	2.830
4.568	2.840	2.860	2.870	2.880	2.900
4.983	2.910	2.920	2.940	2.950	2.970
5.399	2.980	3.000	3.010	3.030	3.040
5.814	3.060	3.070	3.090	3.110	3.120
6.229	3.140	3.160	3.170	3.190	3.210
6.644	3.230	3.250	3.260	3.280	3.300
7.060	3.320	3.340	3.360	3.380	3.400
7.475	3.420	3.450	3.470	3.490	3.510
7.890	3.530	3.560	3.580	3.600	3.630
8.306	3.650	3.680	3.700	3.730	3.760
8.721	3.780	3.810	3.840	3.870	3.900
9.136	3.930	3.960	3.990	4.020	4.050
9.551	4.080	4.120	4.150	4.190	4.220
9.967	4.260	4.300	4.330	4.370	4.410
10.382	4.460	4.500	4.540	4.580	4.630
10.797	4.670	4.720	4.770	4.820	4.870
11.213	4.930	4.980	5.040	5.090	5.150
11.628	5.210	5.280	5.340	5.410	5.500
12.043	5.720	5.880	6.000	6.100	6.200
12.458	6.300	6.400	6.490	6.600	6.700
12.874	6.810	6.910	7.040	7.150	7.280
13.289	7.410	7.550	7.690	7.850	8.010
13.704	8.190	8.360	8.560	8.850	9.660
14.119	10.240	10.670	11.020	11.390	11.730
14.535	12.120	12.500	12.940	13.380	13.910
14.950	14.440	15.100	15.760	16.610	17.630

100-yr 24-hr Basin Analysis

Subsection: Read Hydrograph | Scenario: Base

Label: DA 1

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.083 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.365	19.640	21.420	23.410	25.480	28.380
15.781	32.220	40.170	58.080	98.040	74.280
16.196	50.320	39.070	31.110	25.890	22.080
16.611	19.110	16.880	15.500	13.930	12.600
17.026	11.040	9.950	9.260	8.720	8.280
17.442	7.900	7.570	7.280	7.020	6.780
17.857	6.570	6.350	6.030	5.780	5.590
18.272	5.420	5.280	5.150	5.020	4.910
18.688	4.800	4.700	4.610	4.520	4.430
19.103	4.350	4.280	4.200	4.130	4.070
19.518	4.000	3.940	3.880	3.820	3.770
19.933	3.720	3.660	3.610	3.570	3.520
20.349	3.480	3.430	3.390	3.350	3.310
20.764	3.270	3.240	3.200	3.160	3.130
21.179	3.100	3.060	3.030	3.000	2.970
21.594	2.940	2.920	2.890	2.860	2.830
22.010	2.810	2.780	2.760	2.730	2.710
22.425	2.690	2.670	2.640	2.620	2.600
22.840	2.580	2.560	2.540	2.520	2.500
23.256	2.480	2.460	2.450	2.430	2.410
23.671	2.390	2.380	2.360	1.850	(N/A)

100-yr 24-hr Basin Analysis

Subsection: Read Hydrograph | Scenario: Base

Label: DA 2

Peak Discharge	84.730 ft³/s
Time to Peak	16.030 hours
Hydrograph Volume	439,048.61 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.083 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.000	0.210	1.080	1.440	1.610	1.700
0.415	1.760	1.800	1.820	1.850	1.860
0.831	1.870	1.880	1.880	1.890	1.890
1.246	1.900	1.910	1.920	1.920	1.930
1.661	1.940	1.940	1.950	1.960	1.970
2.076	1.970	1.980	1.990	2.000	2.000
2.492	2.010	2.020	2.030	2.040	2.040
2.907	2.050	2.060	2.070	2.080	2.090
3.322	2.090	2.100	2.110	2.120	2.130
3.738	2.140	2.150	2.160	2.170	2.180
4.153	2.190	2.200	2.210	2.220	2.230
4.568	2.240	2.250	2.260	2.270	2.280
4.983	2.290	2.300	2.310	2.330	2.340
5.399	2.350	2.360	2.370	2.380	2.400
5.814	2.410	2.420	2.430	2.450	2.460
6.229	2.470	2.490	2.500	2.510	2.530
6.644	2.540	2.560	2.570	2.590	2.600
7.060	2.620	2.630	2.650	2.660	2.680
7.475	2.700	2.720	2.730	2.750	2.770
7.890	2.790	2.800	2.820	2.840	2.860
8.306	2.880	2.900	2.920	2.940	2.960
8.721	2.980	3.000	3.030	3.050	3.070
9.136	3.100	3.120	3.140	3.170	3.190
9.551	3.220	3.250	3.280	3.300	3.330
9.967	3.360	3.390	3.420	3.450	3.480
10.382	3.520	3.550	3.580	3.620	3.650
10.797	3.690	3.730	3.770	3.810	3.850
11.213	3.890	3.930	3.980	4.020	4.070
11.628	4.120	4.170	4.220	4.280	4.360
12.043	4.560	4.670	4.760	4.840	4.920
12.458	4.990	5.070	5.140	5.220	5.300
12.874	5.390	5.470	5.570	5.660	5.770
13.289	5.870	5.990	6.100	6.230	6.350
13.704	6.500	6.630	6.800	7.080	7.820
14.119	8.220	8.540	8.810	9.100	9.360
14.535	9.670	9.970	10.330	10.670	11.110
14.950	11.530	12.090	12.620	13.350	14.260

100-yr 24-hr Basin Analysis

Subsection: Read Hydrograph | Scenario: Base

Label: DA 2

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.083 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
15.365	16.060	17.440	19.090	20.810	23.320
15.781	26.820	34.260	53.060	84.730	52.780
16.196	36.340	27.870	22.000	18.070	15.290
16.611	13.600	11.860	10.750	9.900	9.110
17.026	8.060	7.420	6.960	6.600	6.290
17.442	6.020	5.790	5.580	5.390	5.230
17.857	5.070	4.890	4.630	4.450	4.310
18.272	4.190	4.080	3.980	3.890	3.810
18.688	3.730	3.650	3.580	3.510	3.450
19.103	3.390	3.330	3.270	3.220	3.170
19.518	3.120	3.070	3.030	2.980	2.940
19.933	2.900	2.860	2.820	2.780	2.750
20.349	2.710	2.680	2.650	2.620	2.590
20.764	2.560	2.530	2.500	2.470	2.450
21.179	2.420	2.400	2.370	2.350	2.320
21.594	2.300	2.280	2.260	2.240	2.220
22.010	2.200	2.180	2.160	2.140	2.120
22.425	2.100	2.090	2.070	2.050	2.040
22.840	2.020	2.000	1.990	1.970	1.960
23.256	1.940	1.930	1.910	1.900	1.890
23.671	1.870	1.860	1.850	1.850	(N/A)

100-yr 24-hr Basin Analysis

Subsection: Addition Summary Scenario: Base

Label: O-1

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
Overflow	Detention

Node Inflows

Inflow Type	Element	Volume (ft^3)	Time to Peak (hours)	Flow (Peak) (ft^3/s)
Flow (From)	Overflow	1,010,604.55	16.050	163.153
Flow (In)	O-1	1,010,604.55	16.050	163.153

100-yr 24-hr Basin Analysis

Subsection: Time vs. Elevation
Scenario: Base
Label: Detention (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	0.00	0.08	0.26	0.50	0.51
0.250	0.50	0.51	0.50	0.51	0.50
0.500	0.51	0.51	0.51	0.51	0.51
0.750	0.51	0.51	0.51	0.51	0.51
1.000	0.51	0.51	0.51	0.51	0.51
1.250	0.51	0.51	0.51	0.51	0.51
1.500	0.51	0.51	0.51	0.51	0.51
1.750	0.51	0.51	0.51	0.51	0.51
2.000	0.51	0.51	0.51	0.51	0.51
2.250	0.51	0.51	0.51	0.51	0.51
2.500	0.51	0.51	0.51	0.51	0.51
2.750	0.51	0.51	0.51	0.51	0.51
3.000	0.51	0.51	0.51	0.51	0.51
3.250	0.51	0.51	0.51	0.51	0.51
3.500	0.51	0.51	0.51	0.51	0.51
3.750	0.51	0.51	0.51	0.51	0.51
4.000	0.51	0.51	0.51	0.51	0.51
4.250	0.51	0.51	0.51	0.51	0.51
4.500	0.51	0.51	0.51	0.51	0.51
4.750	0.51	0.51	0.51	0.51	0.51
5.000	0.51	0.51	0.51	0.51	0.51
5.250	0.51	0.51	0.51	0.51	0.51
5.500	0.51	0.51	0.51	0.51	0.51
5.750	0.51	0.51	0.51	0.51	0.51
6.000	0.51	0.51	0.51	0.51	0.51
6.250	0.51	0.51	0.51	0.51	0.51
6.500	0.51	0.51	0.51	0.51	0.51
6.750	0.51	0.51	0.51	0.51	0.51
7.000	0.51	0.51	0.51	0.51	0.51
7.250	0.51	0.51	0.51	0.51	0.51
7.500	0.51	0.51	0.51	0.51	0.51
7.750	0.51	0.51	0.51	0.51	0.51
8.000	0.51	0.51	0.51	0.51	0.51
8.250	0.51	0.51	0.51	0.51	0.51
8.500	0.51	0.51	0.51	0.51	0.51
8.750	0.51	0.51	0.51	0.51	0.51
9.000	0.51	0.51	0.51	0.51	0.51
9.250	0.51	0.51	0.51	0.51	0.51
9.500	0.51	0.51	0.51	0.51	0.51
9.750	0.51	0.51	0.51	0.51	0.51
10.000	0.51	0.51	0.51	0.52	0.52

100-yr 24-hr Basin Analysis

Subsection: Time vs. Elevation
Scenario: Base
Label: Detention (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	0.52	0.52	0.52	0.52	0.52
10.500	0.52	0.52	0.52	0.52	0.52
10.750	0.52	0.52	0.52	0.52	0.52
11.000	0.52	0.52	0.52	0.52	0.52
11.250	0.52	0.52	0.52	0.52	0.52
11.500	0.52	0.52	0.52	0.52	0.52
11.750	0.52	0.52	0.52	0.52	0.52
12.000	0.52	0.52	0.52	0.52	0.52
12.250	0.52	0.52	0.52	0.52	0.52
12.500	0.52	0.52	0.52	0.52	0.52
12.750	0.52	0.52	0.52	0.52	0.52
13.000	0.52	0.52	0.52	0.52	0.53
13.250	0.53	0.53	0.53	0.53	0.53
13.500	0.53	0.53	0.53	0.53	0.53
13.750	0.53	0.53	0.53	0.53	0.53
14.000	0.53	0.53	0.53	0.54	0.54
14.250	0.54	0.54	0.54	0.54	0.54
14.500	0.54	0.54	0.54	0.54	0.54
14.750	0.55	0.55	0.55	0.55	0.55
15.000	0.55	0.55	0.55	0.55	0.55
15.250	0.56	0.56	0.56	0.56	0.56
15.500	0.57	0.57	0.57	0.57	0.58
15.750	0.58	0.59	0.59	0.61	0.62
16.000	0.65	0.67	0.66	0.64	0.62
16.250	0.61	0.60	0.59	0.58	0.57
16.500	0.57	0.56	0.56	0.56	0.55
16.750	0.55	0.55	0.55	0.55	0.54
17.000	0.54	0.54	0.54	0.53	0.53
17.250	0.53	0.53	0.53	0.53	0.53
17.500	0.53	0.53	0.53	0.52	0.52
17.750	0.52	0.52	0.52	0.52	0.52
18.000	0.52	0.52	0.52	0.52	0.52
18.250	0.52	0.52	0.52	0.52	0.52
18.500	0.52	0.52	0.52	0.52	0.52
18.750	0.52	0.52	0.52	0.52	0.52
19.000	0.52	0.52	0.52	0.51	0.51
19.250	0.51	0.51	0.51	0.51	0.51
19.500	0.51	0.51	0.51	0.51	0.51
19.750	0.51	0.51	0.51	0.51	0.51
20.000	0.51	0.51	0.51	0.51	0.51
20.250	0.51	0.51	0.51	0.51	0.51

100-yr 24-hr Basin Analysis

Subsection: Time vs. Elevation
Scenario: Base
Label: Detention (OUT)

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	0.51	0.51	0.51	0.51	0.51
20.750	0.51	0.51	0.51	0.51	0.51
21.000	0.51	0.51	0.51	0.51	0.51
21.250	0.51	0.51	0.51	0.51	0.51
21.500	0.51	0.51	0.51	0.51	0.51
21.750	0.51	0.51	0.51	0.51	0.51
22.000	0.51	0.51	0.51	0.51	0.51
22.250	0.51	0.51	0.51	0.51	0.51
22.500	0.51	0.51	0.51	0.51	0.51
22.750	0.51	0.51	0.51	0.51	0.51
23.000	0.51	0.51	0.51	0.51	0.51
23.250	0.51	0.51	0.51	0.51	0.51
23.500	0.51	0.51	0.51	0.51	0.51
23.750	0.51	0.51	0.51	0.51	0.51
24.000	0.51	0.51	0.51	0.51	0.51
24.250	0.51	0.51	0.51	0.51	0.51
24.500	0.51	0.51	0.51	0.51	0.51
24.750	0.51	0.51	0.51	0.51	0.51
25.000	0.51	(N/A)	(N/A)	(N/A)	(N/A)

100-yr 24-hr Basin Analysis

Subsection: Time vs. Volume
Scenario: Base
Label: Detention

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
0.000	0.00	162.00	502.00	953.00	974.00
0.250	957.00	974.00	959.00	973.00	961.00
0.500	973.00	962.00	972.00	963.00	972.00
0.750	964.00	971.00	965.00	971.00	966.00
1.000	971.00	966.00	970.00	966.00	970.00
1.250	967.00	970.00	967.00	970.00	967.00
1.500	970.00	968.00	970.00	968.00	970.00
1.750	968.00	969.00	968.00	969.00	968.00
2.000	969.00	969.00	969.00	969.00	969.00
2.250	969.00	970.00	969.00	970.00	969.00
2.500	970.00	969.00	970.00	969.00	970.00
2.750	969.00	970.00	970.00	970.00	970.00
3.000	970.00	970.00	970.00	970.00	970.00
3.250	970.00	970.00	970.00	970.00	970.00
3.500	970.00	970.00	970.00	970.00	970.00
3.750	970.00	971.00	971.00	971.00	971.00
4.000	971.00	971.00	971.00	971.00	971.00
4.250	971.00	971.00	971.00	971.00	971.00
4.500	971.00	971.00	971.00	971.00	971.00
4.750	971.00	971.00	972.00	972.00	972.00
5.000	972.00	972.00	972.00	972.00	972.00
5.250	972.00	972.00	972.00	972.00	972.00
5.500	972.00	972.00	972.00	972.00	973.00
5.750	973.00	973.00	973.00	973.00	973.00
6.000	973.00	973.00	973.00	973.00	973.00
6.250	973.00	973.00	973.00	973.00	973.00
6.500	974.00	974.00	974.00	974.00	974.00
6.750	974.00	974.00	974.00	974.00	974.00
7.000	974.00	974.00	974.00	975.00	975.00
7.250	975.00	975.00	975.00	975.00	975.00
7.500	975.00	975.00	975.00	975.00	975.00
7.750	976.00	976.00	976.00	976.00	976.00
8.000	976.00	976.00	976.00	976.00	976.00
8.250	976.00	977.00	977.00	977.00	977.00
8.500	977.00	977.00	977.00	977.00	977.00
8.750	977.00	978.00	978.00	978.00	978.00
9.000	978.00	978.00	978.00	978.00	979.00
9.250	979.00	979.00	979.00	979.00	979.00
9.500	979.00	979.00	980.00	980.00	980.00
9.750	980.00	980.00	980.00	980.00	981.00
10.000	981.00	981.00	981.00	981.00	981.00

100-yr 24-hr Basin Analysis

Subsection: Time vs. Volume
Scenario: Base
Label: Detention

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
10.250	981.00	982.00	982.00	982.00	982.00
10.500	982.00	982.00	983.00	983.00	983.00
10.750	983.00	983.00	984.00	984.00	984.00
11.000	984.00	984.00	985.00	985.00	985.00
11.250	985.00	985.00	986.00	986.00	986.00
11.500	986.00	987.00	987.00	987.00	987.00
11.750	988.00	988.00	988.00	988.00	989.00
12.000	990.00	990.00	991.00	992.00	992.00
12.250	993.00	993.00	993.00	994.00	994.00
12.500	994.00	995.00	995.00	995.00	996.00
12.750	996.00	997.00	997.00	997.00	998.00
13.000	998.00	999.00	999.00	1,000.00	1,000.00
13.250	1,001.00	1,001.00	1,002.00	1,002.00	1,003.00
13.500	1,004.00	1,004.00	1,005.00	1,006.00	1,006.00
13.750	1,007.00	1,008.00	1,008.00	1,009.00	1,011.00
14.000	1,013.00	1,016.00	1,019.00	1,021.00	1,022.00
14.250	1,024.00	1,025.00	1,027.00	1,028.00	1,030.00
14.500	1,031.00	1,033.00	1,034.00	1,036.00	1,037.00
14.750	1,039.00	1,041.00	1,043.00	1,045.00	1,047.00
15.000	1,049.00	1,050.00	1,052.00	1,053.00	1,055.00
15.250	1,057.00	1,060.00	1,064.00	1,068.00	1,072.00
15.500	1,076.00	1,081.00	1,085.00	1,091.00	1,097.00
15.750	1,105.00	1,116.00	1,131.00	1,156.00	1,189.00
16.000	1,240.00	1,276.00	1,262.00	1,220.00	1,181.00
16.250	1,153.00	1,134.00	1,115.00	1,101.00	1,089.00
16.500	1,080.00	1,072.00	1,066.00	1,060.00	1,056.00
16.750	1,052.00	1,049.00	1,044.00	1,039.00	1,034.00
17.000	1,029.00	1,024.00	1,019.00	1,016.00	1,013.00
17.250	1,011.00	1,009.00	1,007.00	1,006.00	1,004.00
17.500	1,003.00	1,002.00	1,001.00	1,000.00	999.00
17.750	998.00	997.00	996.00	995.00	994.00
18.000	993.00	991.00	991.00	989.00	989.00
18.250	988.00	988.00	987.00	987.00	986.00
18.500	986.00	985.00	985.00	984.00	984.00
18.750	983.00	983.00	983.00	982.00	982.00
19.000	982.00	981.00	981.00	981.00	981.00
19.250	980.00	980.00	980.00	979.00	979.00
19.500	979.00	979.00	978.00	978.00	978.00
19.750	978.00	977.00	977.00	977.00	977.00
20.000	977.00	976.00	976.00	976.00	976.00
20.250	976.00	976.00	975.00	975.00	975.00

100-yr 24-hr Basin Analysis

Subsection: Time vs. Volume
Scenario: Base
Label: Detention

Time vs. Volume (ft³)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
20.500	975.00	975.00	975.00	974.00	974.00
20.750	974.00	974.00	974.00	974.00	973.00
21.000	973.00	973.00	973.00	973.00	973.00
21.250	973.00	973.00	972.00	972.00	972.00
21.500	972.00	972.00	972.00	972.00	972.00
21.750	972.00	971.00	971.00	971.00	971.00
22.000	971.00	971.00	971.00	971.00	971.00
22.250	970.00	970.00	970.00	970.00	970.00
22.500	970.00	970.00	970.00	970.00	970.00
22.750	970.00	970.00	969.00	969.00	969.00
23.000	969.00	969.00	969.00	969.00	969.00
23.250	969.00	969.00	969.00	969.00	969.00
23.500	968.00	968.00	968.00	968.00	968.00
23.750	968.00	968.00	968.00	967.00	967.00
24.000	967.00	967.00	967.00	967.00	967.00
24.250	967.00	967.00	967.00	967.00	967.00
24.500	967.00	967.00	967.00	967.00	967.00
24.750	967.00	967.00	967.00	967.00	967.00
25.000	967.00	(N/A)	(N/A)	(N/A)	(N/A)

100-yr 24-hr Basin Analysis

Subsection: Elevation-Area Volume Curve Scenario: Base

Label: Detention

Elevation (ft)	Planimeter (ft²)	Area (ft²)	A1+A2+sqr (A1*A2) (ft²)	Volume (ft³)	Volume (Total) (ft³)
0.00	0.0	1,905.000	0.000	0.00	0.00
0.50	0.0	1,905.000	5,715.000	952.00	952.00
1.00	0.0	1,905.000	5,715.000	952.00	1,905.00

Pond Volume Equations
* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2 - El1) * (Area1 + Area2 + sqr(Area1 * Area2))

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

100-yr 24-hr Basin Analysis

Subsection: Outlet Input Data Scenario: Base

Label: Weir

Requested Pond Water Surface Elevations	
Minimum (Headwater)	0.00 ft
Increment (Headwater)	0.05 ft
Maximum (Headwater)	1.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	0.50	1.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Structure ID: Weir - 1 Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	0.50 ft
Weir Length	750.00 ft
Weir Coefficient	3.08 (ft^0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

100-yr 24-hr Basin Analysis

Subsection: Composite Rating Curve
Scenario: Base
Label: Weir

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft^3/s)	Tailwater Elevation (ft)	Convergence Error (ft)
0.00	0.000	(N/A)	0.00
0.05	0.000	(N/A)	0.00
0.10	0.000	(N/A)	0.00
0.15	0.000	(N/A)	0.00
0.20	0.000	(N/A)	0.00
0.25	0.000	(N/A)	0.00
0.30	0.000	(N/A)	0.00
0.35	0.000	(N/A)	0.00
0.40	0.000	(N/A)	0.00
0.45	0.000	(N/A)	0.00
0.50	0.000	(N/A)	0.00
0.55	25.826	(N/A)	0.00
0.60	73.047	(N/A)	0.00
0.65	134.194	(N/A)	0.00
0.70	206.602	(N/A)	0.00
0.75	288.731	(N/A)	0.00
0.80	379.541	(N/A)	0.00
0.85	478.270	(N/A)	0.00
0.90	584.327	(N/A)	0.00
0.95	697.234	(N/A)	0.00
1.00	816.599	(N/A)	0.00

Contributing Structures
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1

100-yr 24-hr Basin Analysis

Subsection: Composite Rating Curve Scenario: Base

Label: Weir

Composite Outflow Summary

Contributing Structures
Weir - 1

100-yr 24-hr Basin Analysis

Subsection: Elevation-Volume-Flow Table (Pond) Scenario: Base

Label: Detention

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.000 ft³/s
Flow (Initial Infiltration)	0.000 ft³/s
Flow (Initial, Total)	0.000 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (ft²)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
0.00	0.000	0.00	1,905.000	0.000	0.000	0.000
0.05	0.000	95.25	1,905.000	0.000	0.000	1.058
0.10	0.000	190.50	1,905.000	0.000	0.000	2.117
0.15	0.000	285.75	1,905.000	0.000	0.000	3.175
0.20	0.000	381.00	1,905.000	0.000	0.000	4.233
0.25	0.000	476.25	1,905.000	0.000	0.000	5.292
0.30	0.000	571.50	1,905.000	0.000	0.000	6.350
0.35	0.000	666.75	1,905.000	0.000	0.000	7.408
0.40	0.000	762.00	1,905.000	0.000	0.000	8.467
0.45	0.000	857.25	1,905.000	0.000	0.000	9.525
0.50	0.000	952.50	1,905.000	0.000	0.000	10.583
0.55	25.826	1,047.75	1,905.000	0.000	25.826	37.468
0.60	73.047	1,143.00	1,905.000	0.000	73.047	85.747
0.65	134.194	1,238.25	1,905.000	0.000	134.194	147.952
0.70	206.602	1,333.50	1,905.000	0.000	206.602	221.418
0.75	288.731	1,428.75	1,905.000	0.000	288.731	304.606
0.80	379.541	1,524.00	1,905.000	0.000	379.541	396.475
0.85	478.270	1,619.25	1,905.000	0.000	478.270	496.262
0.90	584.327	1,714.50	1,905.000	0.000	584.327	603.377
0.95	697.234	1,809.75	1,905.000	0.000	697.234	717.342
1.00	816.599	1,905.00	1,905.000	0.000	816.599	837.766

100-yr 24-hr Basin Analysis

Subsection: Level Pool Pond Routing Summary
Scenario: Base
Label: Detention (IN)

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	0.00 ft
Volume (Initial)	0.00 ft³
Flow (Initial Outlet)	0.000 ft³/s
Flow (Initial Infiltration)	0.000 ft³/s
Flow (Initial, Total)	0.000 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	169.169 ft³/s	Time to Peak (Flow, In)	16.050 hours
Flow (Peak Outlet)	163.153 ft³/s	Time to Peak (Flow, Outlet)	16.050 hours

Elevation (Water Surface, Peak)	0.67 ft
Volume (Peak)	1,276.34 ft³

Mass Balance (ft³)	
Volume (Initial)	0.00 ft³
Volume (Total Inflow)	1,011,571.00 ft³
Volume (Total Infiltration)	0.00 ft³
Volume (Total Outlet Outflow)	1,010,949.00 ft³
Volume (Retained)	622.00 ft³
Volume (Unrouted)	0.00 ft³
Error (Mass Balance)	0.0 %

100-yr 24-hr Basin Analysis

Subsection: Pond Routed Hydrograph (total out) Scenario: Base

Label: Detention (OUT)

Peak Discharge	163.153 ft³/s
Time to Peak	16.050 hours
Hydrograph Volume	1,010,604.55 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.100	0.000	0.233	5.711	1.246	5.739
0.350	1.861	5.649	2.324	5.522	2.679
0.600	5.380	2.973	5.255	3.194	5.133
0.850	3.391	5.034	3.546	4.932	3.673
1.100	4.854	3.781	4.785	3.881	4.731
1.350	3.962	4.690	4.038	4.652	4.105
1.600	4.632	4.169	4.615	4.218	4.601
1.850	4.271	4.598	4.320	4.599	4.359
2.100	4.594	4.397	4.602	4.436	4.612
2.350	4.471	4.615	4.498	4.628	4.532
2.600	4.644	4.564	4.661	4.593	4.672
2.850	4.614	4.687	4.643	4.707	4.671
3.100	4.727	4.699	4.748	4.725	4.763
3.350	4.742	4.781	4.769	4.805	4.802
3.600	4.836	4.830	4.859	4.855	4.882
3.850	4.881	4.905	4.906	4.929	4.938
4.100	4.961	4.965	4.985	4.990	5.008
4.350	5.018	5.042	5.049	5.065	5.073
4.600	5.093	5.108	5.123	5.132	5.147
4.850	5.160	5.181	5.191	5.205	5.215
5.100	5.233	5.249	5.269	5.285	5.305
5.350	5.318	5.331	5.348	5.365	5.376
5.600	5.393	5.410	5.429	5.446	5.465
5.850	5.478	5.491	5.509	5.529	5.553
6.100	5.569	5.581	5.599	5.619	5.644
6.350	5.659	5.671	5.689	5.710	5.734
6.600	5.754	5.772	5.796	5.815	5.827
6.850	5.848	5.872	5.890	5.911	5.935
7.100	5.954	5.973	5.997	6.018	6.036
7.350	6.059	6.083	6.107	6.135	6.164
7.600	6.185	6.204	6.228	6.252	6.276
7.850	6.300	6.324	6.348	6.372	6.396
8.100	6.421	6.446	6.476	6.503	6.527
8.350	6.556	6.585	6.609	6.636	6.667
8.600	6.697	6.725	6.750	6.777	6.807
8.850	6.842	6.877	6.907	6.938	6.967
9.100	7.003	7.038	7.068	7.098	7.128

100-yr 24-hr Basin Analysis

Subsection: Pond Routed Hydrograph (total out) Scenario: Base

Label: Detention (OUT)

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.350	7.164	7.198	7.228	7.262	7.298
9.600	7.340	7.381	7.417	7.453	7.489
9.850	7.525	7.563	7.605	7.647	7.689
10.100	7.726	7.764	7.806	7.848	7.890
10.350	7.944	7.995	8.036	8.079	8.121
10.600	8.169	8.217	8.265	8.314	8.362
10.850	8.416	8.470	8.524	8.579	8.633
11.100	8.687	8.743	8.804	8.860	8.915
11.350	8.981	9.042	9.096	9.159	9.226
11.600	9.292	9.361	9.433	9.501	9.568
11.850	9.646	9.735	9.837	10.056	10.299
12.100	10.462	10.608	10.734	10.846	10.954
12.350	11.050	11.118	11.222	11.327	11.433
12.600	11.535	11.636	11.746	11.857	11.967
12.850	12.083	12.200	12.311	12.433	12.567
13.100	12.695	12.822	12.961	13.103	13.244
13.350	13.393	13.548	13.700	13.861	14.034
13.600	14.205	14.382	14.574	14.764	14.951
13.850	15.158	15.417	15.736	16.354	17.221
14.100	17.936	18.483	18.962	19.376	19.755
14.350	20.143	20.529	20.897	21.288	21.706
14.600	22.120	22.552	23.021	23.497	23.985
14.850	24.530	25.110	25.684	26.337	27.069
15.100	27.791	28.587	29.502	30.560	31.923
15.350	33.852	36.010	37.977	40.029	42.237
15.600	44.490	47.118	50.263	54.130	59.491
15.850	67.275	81.211	102.264	135.576	163.153
16.100	152.400	122.293	97.313	79.735	68.612
16.350	59.262	52.008	46.240	41.580	37.867
16.600	34.736	32.092	29.708	27.816	26.326
16.850	24.858	23.473	22.158	20.715	19.269
17.100	18.087	17.188	16.474	15.868	15.348
17.350	14.874	14.447	14.055	13.695	13.367
17.600	13.057	12.769	12.499	12.245	12.009
17.850	11.782	11.552	11.301	10.959	10.405
18.100	10.378	9.957	9.961	9.603	9.610
18.350	9.305	9.307	9.039	9.027	8.793
18.600	8.782	8.573	8.547	8.358	8.331
18.850	8.166	8.133	7.980	7.943	7.807
19.100	7.768	7.648	7.606	7.487	7.442
19.350	7.340	7.301	7.208	7.159	7.069
19.600	7.022	6.943	6.899	6.817	6.772

100-yr 24-hr Basin Analysis

Subsection: Pond Routed Hydrograph (total out) Scenario: Base

Label: Detention (OUT)

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.850	6.705	6.663	6.596	6.546	6.480
20.100	6.435	6.378	6.338	6.283	6.241
20.350	6.187	6.144	6.093	6.056	6.009
20.600	5.971	5.925	5.886	5.841	5.806
20.850	5.767	5.727	5.683	5.643	5.607
21.100	5.579	5.541	5.506	5.469	5.434
21.350	5.397	5.368	5.335	5.299	5.267
21.600	5.238	5.213	5.187	5.157	5.127
21.850	5.096	5.067	5.039	5.015	4.986
22.100	4.957	4.933	4.906	4.876	4.851
22.350	4.827	4.803	4.781	4.763	4.735
22.600	4.706	4.682	4.661	4.643	4.620
22.850	4.596	4.572	4.551	4.533	4.510
23.100	4.487	4.468	4.447	4.423	4.404
23.350	4.386	4.368	4.350	4.332	4.314
23.600	4.295	4.271	4.253	4.241	4.224
23.850	4.133	3.832	3.815	3.830	3.816
24.100	3.829	3.817	3.828	3.818	3.827
24.350	3.819	3.827	3.819	3.826	3.820
24.600	3.826	3.820	3.825	3.821	3.825
24.850	3.821	3.825	3.821	3.824	(N/A)

100-yr 24-hr Basin Analysis

Subsection: Pond Inflow Summary
Scenario: Base
Label: Detention (IN)

Summary for Hydrograph Addition at 'Detention'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	DA 1
<Catchment to Outflow Node>	DA 2

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	DA 1	558,394.46	16.030	98.040
Flow (From)	DA 2	439,048.61	16.030	84.730
Flow (In)	Detention	1,011,571.16	16.050	169.169

100-yr 24-hr Basin Analysis

Subsection: Diverted Hydrograph
Scenario: Base
Label: Overflow

Peak Discharge	163.153 ft³/s
Time to Peak	16.050 hours
Hydrograph Volume	1,010,604.55 ft³

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
0.100	0.000	0.233	5.711	1.246	5.739
0.350	1.861	5.649	2.324	5.522	2.679
0.600	5.380	2.973	5.255	3.194	5.133
0.850	3.391	5.034	3.546	4.932	3.673
1.100	4.854	3.781	4.785	3.881	4.731
1.350	3.962	4.690	4.038	4.652	4.105
1.600	4.632	4.169	4.615	4.218	4.601
1.850	4.271	4.598	4.320	4.599	4.359
2.100	4.594	4.397	4.602	4.436	4.612
2.350	4.471	4.615	4.498	4.628	4.532
2.600	4.644	4.564	4.661	4.593	4.672
2.850	4.614	4.687	4.643	4.707	4.671
3.100	4.727	4.699	4.748	4.725	4.763
3.350	4.742	4.781	4.769	4.805	4.802
3.600	4.836	4.830	4.859	4.855	4.882
3.850	4.881	4.905	4.906	4.929	4.938
4.100	4.961	4.965	4.985	4.990	5.008
4.350	5.018	5.042	5.049	5.065	5.073
4.600	5.093	5.108	5.123	5.132	5.147
4.850	5.160	5.181	5.191	5.205	5.215
5.100	5.233	5.249	5.269	5.285	5.305
5.350	5.318	5.331	5.348	5.365	5.376
5.600	5.393	5.410	5.429	5.446	5.465
5.850	5.478	5.491	5.509	5.529	5.553
6.100	5.569	5.581	5.599	5.619	5.644
6.350	5.659	5.671	5.689	5.710	5.734
6.600	5.754	5.772	5.796	5.815	5.827
6.850	5.848	5.872	5.890	5.911	5.935
7.100	5.954	5.973	5.997	6.018	6.036
7.350	6.059	6.083	6.107	6.135	6.164
7.600	6.185	6.204	6.228	6.252	6.276
7.850	6.300	6.324	6.348	6.372	6.396
8.100	6.421	6.446	6.476	6.503	6.527
8.350	6.556	6.585	6.609	6.636	6.667
8.600	6.697	6.725	6.750	6.777	6.807
8.850	6.842	6.877	6.907	6.938	6.967
9.100	7.003	7.038	7.068	7.098	7.128

100-yr 24-hr Basin Analysis

Subsection: Diverted Hydrograph
Scenario: Base
Label: Overflow

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
9.350	7.164	7.198	7.228	7.262	7.298
9.600	7.340	7.381	7.417	7.453	7.489
9.850	7.525	7.563	7.605	7.647	7.689
10.100	7.726	7.764	7.806	7.848	7.890
10.350	7.944	7.995	8.036	8.079	8.121
10.600	8.169	8.217	8.265	8.314	8.362
10.850	8.416	8.470	8.524	8.579	8.633
11.100	8.687	8.743	8.804	8.860	8.915
11.350	8.981	9.042	9.096	9.159	9.226
11.600	9.292	9.361	9.433	9.501	9.568
11.850	9.646	9.735	9.837	10.056	10.299
12.100	10.462	10.608	10.734	10.846	10.954
12.350	11.050	11.118	11.222	11.327	11.433
12.600	11.535	11.636	11.746	11.857	11.967
12.850	12.083	12.200	12.311	12.433	12.567
13.100	12.695	12.822	12.961	13.103	13.244
13.350	13.393	13.548	13.700	13.861	14.034
13.600	14.205	14.382	14.574	14.764	14.951
13.850	15.158	15.417	15.736	16.354	17.221
14.100	17.936	18.483	18.962	19.376	19.755
14.350	20.143	20.529	20.897	21.288	21.706
14.600	22.120	22.552	23.021	23.497	23.985
14.850	24.530	25.110	25.684	26.337	27.069
15.100	27.791	28.587	29.502	30.560	31.923
15.350	33.852	36.010	37.977	40.029	42.237
15.600	44.490	47.118	50.263	54.130	59.491
15.850	67.275	81.211	102.264	135.576	163.153
16.100	152.400	122.293	97.313	79.735	68.612
16.350	59.262	52.008	46.240	41.580	37.867
16.600	34.736	32.092	29.708	27.816	26.326
16.850	24.858	23.473	22.158	20.715	19.269
17.100	18.087	17.188	16.474	15.868	15.348
17.350	14.874	14.447	14.055	13.695	13.367
17.600	13.057	12.769	12.499	12.245	12.009
17.850	11.782	11.552	11.301	10.959	10.405
18.100	10.378	9.957	9.961	9.603	9.610
18.350	9.305	9.307	9.039	9.027	8.793
18.600	8.782	8.573	8.547	8.358	8.331
18.850	8.166	8.133	7.980	7.943	7.807
19.100	7.768	7.648	7.606	7.487	7.442
19.350	7.340	7.301	7.208	7.159	7.069
19.600	7.022	6.943	6.899	6.817	6.772

100-yr 24-hr Basin Analysis

Subsection: Diverted Hydrograph
Scenario: Base
Label: Overflow

HYDROGRAPH ORDINATES (ft³/s)
Output Time Increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)	Flow (ft³/s)
19.850	6.705	6.663	6.596	6.546	6.480
20.100	6.435	6.378	6.338	6.283	6.241
20.350	6.187	6.144	6.093	6.056	6.009
20.600	5.971	5.925	5.886	5.841	5.806
20.850	5.767	5.727	5.683	5.643	5.607
21.100	5.579	5.541	5.506	5.469	5.434
21.350	5.397	5.368	5.335	5.299	5.267
21.600	5.238	5.213	5.187	5.157	5.127
21.850	5.096	5.067	5.039	5.015	4.986
22.100	4.957	4.933	4.906	4.876	4.851
22.350	4.827	4.803	4.781	4.763	4.735
22.600	4.706	4.682	4.661	4.643	4.620
22.850	4.596	4.572	4.551	4.533	4.510
23.100	4.487	4.468	4.447	4.423	4.404
23.350	4.386	4.368	4.350	4.332	4.314
23.600	4.295	4.271	4.253	4.241	4.224
23.850	4.133	3.832	3.815	3.830	3.816
24.100	3.829	3.817	3.828	3.818	3.827
24.350	3.819	3.827	3.819	3.826	3.820
24.600	3.826	3.820	3.825	3.821	3.825
24.850	3.821	3.825	3.821	3.824	(N/A)

100-yr 24-hr Basin Analysis

Index

Attachment C – Water Quality Calculations

- **Pre-Development 85th Percentile Volume**
- **Post-Development 85th Percentile Volume**
- **Infiltration Basin Sizing Worksheet**

Water Quality Calculations

Project Name: RPCA Sunrise
Completed by: Rafael Rodriguez
Reviewed by: Ashley Teani
Date: 24-Oct-24
County: San Bernardino

Existing Conditions

Drainage Area	Area (sf)	Area (ac)	Land Cover	Impervious Area (%)	impervious area (sf)	imp	2-yr 1-hr Isohyet* (in)	climatic region	a1 (desert)	draw down time (hr)	a2 (48 hours)	C	85th% Depth (in)	Water Quality Volume (cf)
DMA 1	2,722,888	62.51	Undeveloped - Poor	0.0	0.0	0.000	0.355	desert	1.2371	48	1.963	0.040	0.439	7825
Total	2,722,888	62.5												7,824.60

Proposed Conditions

Drainage Area	Area (sf)	Area (ac)	Land Cover	Impervious Area (%)	impervious area (sf)	imp	2-yr 1-hr Isohyet* (in)	climatic region	a1 (desert)	draw down time (hr)	a2 (48 hours)	C	85th% Depth (in)	Water Quality Volume (cf)
DMA 1	2,722,888	62.51	Undeveloped - Poor	2.04	55528.0	0.0204	0.355	desert	1.2371	48	1.963	0.055	0.439	10850
Total	2,722,888	62.5												10,850.20

*Get from NOAA 14

Water Quality Calculations

Project Name: RPCA Sunrise
Completed by: Rafael Rodriguez
Reviewed by: Ashley Teani
Date: 24-Oct-24
County: San Bernardino

85th Percentile Volume Mitigation

Drainage Area	Area	Area	Water Quality Volume		Delta
			Existing	Proposed	
	(sf)	(ac)	(cf)	(cf)	(cf)
DMA 1	2,722,888	62.51	7825	10850	3026
Total	2,722,888	62.5			3,025.60

San Bernardino County Infiltration Basin Formula Table 5-4

Drainage Area	Volume (cf)	Infiltration Rate (in/hr)	Infiltration Safety Factor	Design percolation rate (in/hr)	Drawdown Time (hr)	Duration of Storm (hr)	Inch to Feet Conversion	Surface Area (sf)
DMA 1	3026	0.62	2	0.31	48	3	12	2296.5
Total	3026						Total	2296.5

Basin	Tributary DA	85th Percentile, 24-hr Mitigation Volume (cf)	Required Retention Volume (cf)	Design Length (ft)	Design Width (ft)	Design Area (sf)	Design Depth (ft)	Design Volume (cf)	Vdesign > Vrequired?
1	DA 1-2	3,026	3,026	1,010	6.0	6,060	0.5	3,030	*YES*
Total Required Retention Volume			**3,026**	**Total Designed Volume**					**3,030**

Basin	Ponding Depth (ft)	Infiltration Rate (in/hr)	Factor of Safety	Design Infiltration Rate (in/hr)	Drawdown Time (hr)
1	0.5	0.62	2	0.31	19.35

VII.4.1. Site Suitability Considerations

Suitability assessment related considerations include (**Table VII.3**):

- Soil assessment methods – the site assessment extent (e.g., number of borings, test pits, etc.) and the measurement method used to estimate the short-term infiltration rate.
- Predominant soil texture/percent fines – soil texture and the percent of fines can greatly influence the potential for clogging.
- Site soil variability – site with spatially heterogeneous soils (vertically or horizontally) as determined from site investigations are more difficult to estimate average properties for resulting in a higher level of uncertainty associated with initial estimates.
- Depth to seasonal high groundwater/impervious layer – groundwater mounding may become an issue during excessively wet conditions where shallow aquifers or shallow clay lenses are present.

Table VII.3: Suitability Assessment Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern	Medium Concern	Low Concern
Assessment methods (see explanation below)	Use of soil survey maps or simple texture analysis to estimate short-term infiltration rates	Direct measurement of ≥ 20 percent of infiltration area with localized infiltration measurement methods (e.g., infiltrometer)	Direct measurement of ≥ 50 percent of infiltration area with localized infiltration measurement methods or Use of extensive test pit infiltration measurement methods
Texture Class	Silty and clayey soils with significant fines	Loamy soils	Granular to slightly loamy soils
Site soil variability	Highly variable soils indicated from site assessment or limited soil borings collected during site assessment	Soil borings/test pits indicate moderately homogeneous soils	Multiple soil borings/test pits indicate relatively homogeneous soils
Depth to groundwater/ impervious layer	<5 ft below facility bottom	5-10 ft below facility bottom	>10 below facility bottom

Localized infiltration testing refers to methods such as the double ring infiltrometer test (ASTM D3385-88) which measure infiltration rates over an area less than 10 sq-ft, may include lateral

Table VII.4: Design Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern	Medium Concern	Low Concern
Tributary area size	Greater than 10 acres.	Greater than 2 acres but less than 10 acres.	2 acres or less.
Level of pretreatment/ expected influent sediment loads	Pretreatment from gross solids removal devices only, such as hydrodynamic separators, racks and screens AND tributary area includes landscaped areas, steep slopes, high traffic areas, or any other areas expected to produce high sediment, trash, or debris loads.	Good pretreatment with BMPs that mitigate coarse sediments such as vegetated swales AND influent sediment loads from the tributary area are expected to be relatively low (e.g., low traffic, mild slopes, disconnected impervious areas, etc.).	Excellent pretreatment with BMPs that mitigate fine sediments such as bioretention or media filtration OR sedimentation or facility only treats runoff from relatively clean surfaces, such as rooftops.
Redundancy of treatment	No redundancy in BMP treatment train.	Medium redundancy, other BMPs available in treatment train to maintain at least 50% of function of facility in event of failure.	High redundancy, multiple components capable of operating independently and in parallel, maintaining at least 90% of facility functionality in event of failure.
Compaction during construction	Construction of facility on a compacted site or elevated probability of unintended/ indirect compaction.	Medium probability of unintended/ indirect compaction.	Heavy equipment actively prohibited from infiltration areas during construction and low probability of unintended/ indirect compaction.

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	2	0.50
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			1.25
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	2	0.50
		Redundancy	0.25	2	0.50
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, $S_B = \Sigma p$			2.00
Combined Safety Factor, $S_{TOT} = S_A \times S_B$					2.5
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					0.77
Design Infiltration Rate, in/hr, $K_{DESIGN} = S_{TOT} \times K_M$					0.308

Supporting Data

Briefly describe infiltration test and provide reference to test forms:

Percolation testing was conducted by Salem Engineering Group, Inc. in October 2023. The two boring locations were conducted at a depth of 4.4 ft from the existing surface elevation. The unfactored measured infiltration rates were 0.43 in/hr and 0.77 in/hr respectively for the P1 and P2 borings. The 0.77 in/hr rate was used for analysis due to its proximity to the proposed infiltration BMP location. See attached site plan for the boring locations.

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

SITE PLAN	SCALE: 1" =400'	DATE: October 27, 2023
GEOTECHNICAL ENGINEERING INVESTIGATION Proposed 14 MW Ground Mount Solar Array NE Corner of Sunrise Rd and Twenty Mule Team Rd Near Coordinates, 35.0021, -117.6323 Boron, California	DRAWN BY: MH	APPROVED BY: DL
	PROJECT NO. 3-223-1037	FIGURE NO. 2

SALEM engineering group, inc.