

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director



Mayor Timothy M. Keller

October 31, 2025

Nina Villa
Huitt-Zollars, Inc.
333 Rio Rancho Drive, Suite 101
Rio Rancho, NM 87124

**RE: NM Rail Runner O&M Facility
1400 2nd Street SW
Drainage Study - ACCEPTED
Engineer's Stamp Date: 10/22/25
Hydrology File: K14D236
Case # HYDR-2025-00382**

Dear Ms. Villa:

Based upon the information provided in your submittal received 10/22/2025, the Drainage Study for the NM Rail Runner O&M Facility is approved for Design. Please submit the Grading and Drainage Plans for review and approval for Building Permit, Grading Permit, Paving Permit, and/or Work Order Permit.

PO Box 1293

PRIOR TO CERTIFICATE OF OCCUPANCY:

Albuquerque

NM 87103

www.cabq.gov

1. Engineer's Certification, per the DPM Part 6-14 (F): *Engineer's Certification Checklist For Non-Subdivision* is required.
2. Please provide the Drainage Covenant with Exhibit A for the stormwater quality ponds per Article 6-15(C) of the DPM prior to Permanent Release of Occupancy. Please submit the original copies along with the \$ 25.00 recording fee check made payable to Bernalillo County to the Hydrology Section of Development Review Services on the Ground floor of Plaza de Sol. Electronic submittal in ABQ-PLAN is also required.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 505-924-3314 or amontoya@cabq.gov.

Sincerely,

Anthony Montoya, Jr., P.E., C.F.M.
Senior Engineer, Hydrology
Planning Department, Development Review Services



**DRAINAGE STUDY
NM RAIL RUNNER O&M FACILITY**

CITY OF ALBUQUERQUE

PREPARED FOR:



PREPARED BY:

HUITT-ZOLIARS

**333 RIO RANCHO BLVD., SUITE 101
RIO RANCHO, NEW MEXICO 87124**

OCTOBER 2025

HZI Project No. R317697.01

**City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED**

DATE: 10/31/2025

BY: *[Signature]*

HydroTrans # K14D236

THE APPROVAL OF THESE PLANS/REPORTS SHALL NOT BE CONSTRUED TO PERMIT VIOLATIONS OF ANY CITY ORDINANCE OR STATE LAW, AND SHALL NOT PREVENT THE CITY OF ALBUQUERQUE FROM REQUIRING CORRECTIONS FOR ERRORS OR DIMENSIONS IN PLANS, SPECIFICATIONS, OR CONSTRUCTION DOCUMENTS. SUCH APPROVED PLANS/REPORTS SHALL NOT BE CHANGED, MODIFIED OR ALTERED WITHOUT AUTHORIZATION.

THE APPROVAL OF THESE PLANS/REPORTS SHALL EXPIRE TWO (2) YEARS AFTER THE APPROVAL DATE IF NO BUILDING PERMIT HAS BEEN PULLED ON THE DEVELOPMENT.



DRAINAGE STUDY

NM RAIL RUNNER O&M FACILITY

I, Scott Eddings, being first duly sworn upon my oath, state that I am a registered professional engineer, qualified in civil engineering and that the accompanying report was prepared by me or under my supervision and is true and correct to the best of my knowledge and belief.



10/22/25



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INTRODUCTION

This drainage report has been prepared for the NM Rail Runner Operations and Maintenance (O&M) Facility to document the proposed stormwater management design for the site. The report outlines key drainage components including flow patterns, basin delineation, storm drain infrastructure, and detention pond design. It also demonstrates compliance with the allowable discharge rates established in the area's master drainage plan.

The proposed development encompasses approximately 10.1 acres. The storm drain system has been designed to efficiently collect and convey runoff through strategically placed inlets across the site. Collected flows will be directed through a centralized storm drain system that ultimately discharges into a detention pond located at the southern boundary of the property. This system is designed to manage site runoff and ensure that discharge is directed toward the existing South Broadway Detention Pond in accordance with regional drainage requirements.

FLOOD HAZARD ZONE

The proposed site does not lie within a flood zone as shown on Flood Insurance Rate Map Number 35001C0334G, effective date September, 26, 2008. See **Appendix A** for the FEMA Flood Insurance Rate Map.

RELATED REPORTS

South Broadway Drainage Master Plan by RESPEC, Inc, dated January 2024, provided the overall map and design of project location and the entire South Broadway Drainage Plan.

South Broadway Drainage and Storm Water Quality Management Plan by URS Corporation, dated April 2013, provided the overall map and design with Hydrologic and Hydraulic System Analysis.

JURISDICTIONS OF PUBLIC AGENCIES

This project is located entirely within the City of Albuquerque Limits and is therefore within their jurisdiction and must comply with the City's development requirements.

METHODOLOGY

This drainage report follows procedures outlined in the City of Albuquerque Development Process Manual (DPM). The precipitation data used for this project was obtained from the NOAA Atlas Point Precipitation Frequency Estimates site. See **Appendix B** for NOAA information. Hydrology modeling was completed using AHYMO and is consistent with the related reports. The data generated from AHYMO was utilized to design drainage devices that will divert the runoff towards internal storm drains specifically designed to handle the NM Rail Runner O&M facility 100-year storm event. These drainage devices were designed with the assistance of StormCAD and Flowmaster. See **Appendix C** for the AHYMO generated data.



PRECIPITATION

The 100-yr, 24-hr design storm was used for the surface flow analysis. For the AHYMO utilized storm, the program requires the 1, 6, and 24-hr precipitation values. This determines the surface flow levels that are required for FlowMaster and StormCAD analysis. The precipitation values are consistent with current data obtained from NOAA Atlas 14 Precipitation Frequency Data Server.

LAND TREATMENTS

The land treatments used in the AHYMO Computer model are as described by the AHYMO user manual and are summarized in **Table 1**.

**Table 1
Land Treatment Classifications**

Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10% slopes. Native grasses, weeds, and shrubs in typical densities with minimal disturbance to grading, ground cover, and infiltration capacity. Croplands.
B	Irrigated lawns, parks and golf courses with 0 to 10% slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10% and less than 20%.
C	Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock (desert landscaping). Irrigated lawns and parks with slopes greater than 10%. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes at 20% or greater. Native grass, weed and shrub areas with clay or clay loam soils, and other soils of very low permeability as classified by SCS Hydrologic Soil Group D.
D	Impervious areas, pavement, and roofs. Ponds, channels, and wetlands, even if seasonally dry

EXISTING CONDITIONS

The project site is currently developed, with stormwater runoff conveyed primarily as sheet flow toward the southern boundary of the property. Off-site, several existing drainage features collect and manage this runoff, including the South Broadway Detention Pond. The pond is equipped with a standpipe that serves as the primary outlet structure, discharging through an outlet pipe that connects to the public storm drain system in William Street.

The site is located within the drainage basin identified as “SJ-1” in the South Broadway Drainage and Storm Water Quality Management Plan. This basin encompasses the project site along with several adjacent properties. Based on a prorated share of the basin area, the allowable outflow for this project site is approximately 17 cubic feet per second (cfs).

PROJECT PURPOSE AND PROPOSED CONDITIONS

Under proposed conditions, the general drainage pattern of the site will be maintained, with stormwater continuing to flow in a southerly direction. However, rather than draining entirely as uncontrolled sheet flow, most of the runoff will now be intercepted by a newly designed storm



drain system that runs through the center of the site, extending from north to south. This internal storm drain system has been engineered to enhance runoff collection and conveyance, minimizing surface flow and efficiently directing stormwater toward an on-site detention facility.

The storm drain network includes multiple inlets strategically placed throughout the site to capture runoff from impervious areas. Flows from the west side of the proposed building will enter the system via a lateral line that connects to the main storm drain. From there, stormwater will be conveyed south through the main line and discharge into an on-site detention pond located near the southern boundary of the property.

In addition to the proposed storm drain system, a portion of the site—specifically Basin 107—will continue to drain via sheet flow directly into the internal detention pond. This flow pattern is consistent with the existing condition and has been accounted for in the overall drainage design to ensure proper function and compliance with the allowable outflow requirements.

The onsite detention pond is designed to manage the 100-year storm event, providing sufficient storage to attenuate peak flows and mitigate downstream impacts. The outflow through a spillway is restricted to a maximum of 16 cubic feet per second (cfs), consistent with the allowable release rate allocated to the project site under the South Broadway Drainage and Storm Water Quality Management Plan (Basin SJ-1). The controlled discharge from the pond will ultimately flow into the adjacent South Broadway Pond, integrating the proposed improvements into the existing regional drainage network.

STORMWATER QUALITY

As part of compliance with the stormwater quality program implemented by the City of Albuquerque in cooperation with the EPA, the proposed detention pond will serve as the stormwater quality management and flood control device. With the utilization of the pond, the stormwater released within the project limits will be effectively treated.

CONCLUSION

This drainage report outlines the existing and proposed stormwater management for the NM Rail Runner O&M Facility, a 10.1-acre site. Currently, the site drains via sheet flow to the south, discharging into off-site drainage facilities. The property lies within Basin SJ-1, with an allowable outflow of 17 cfs.

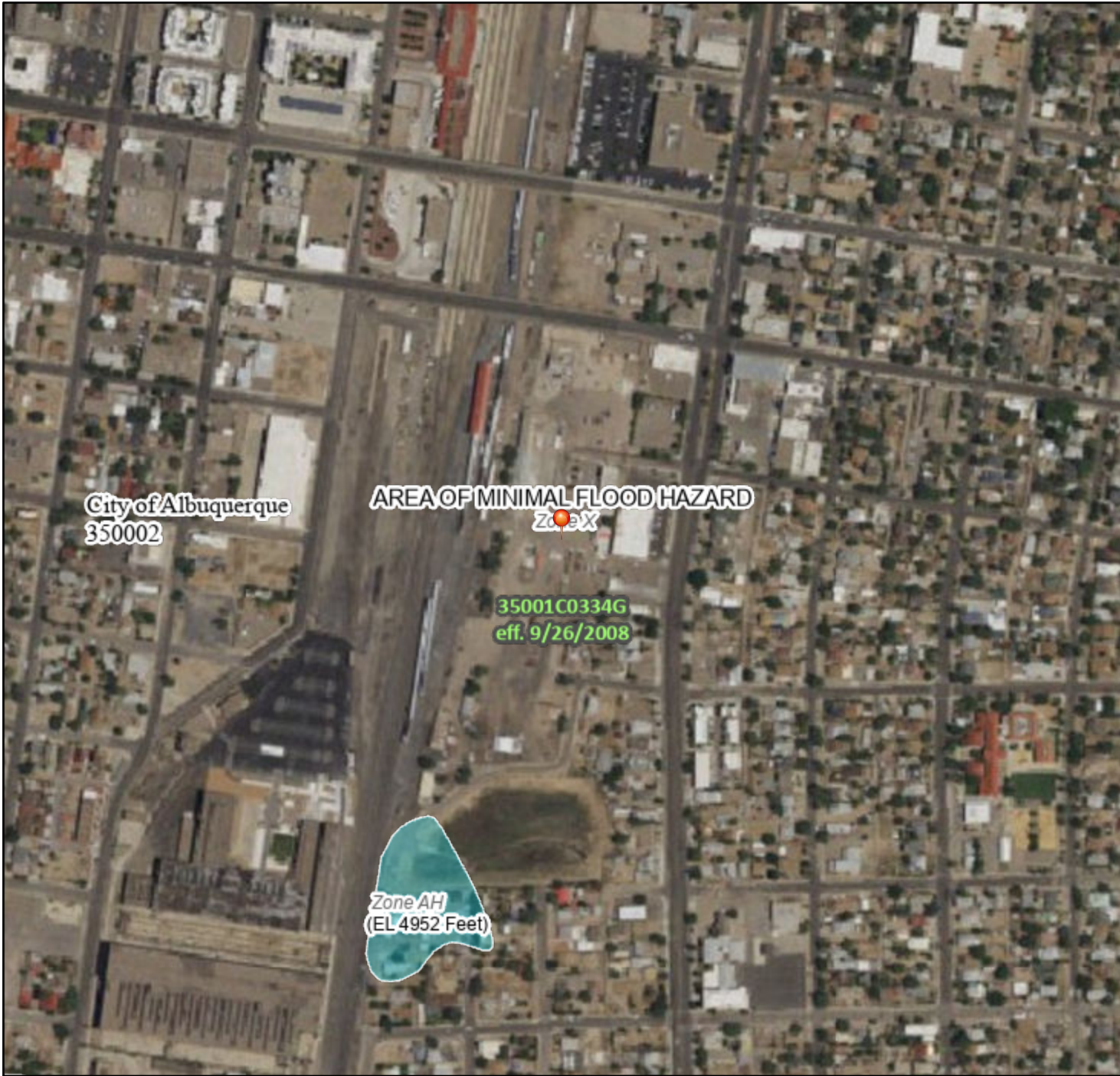
The proposed design maintains the southerly drainage pattern but introduces a centralized storm drain system that collects runoff through inlets and conveys it to an onsite detention pond. This pond is sized for the 100-year storm and limits discharge to the 17 cfs allowable rate with a proposed discharge rate of 16 cfs. The pond spillway will flow toward the adjacent South Broadway Pond.

The proposed improvements ensure compliance with regional drainage requirements and enhance the site's stormwater management efficiency.

National Flood Hazard Layer FIRMMette



106°39'7"W 35°4'56"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

106°38'30"W 35°4'27"N

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
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



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 7/15/2025 at 8:45 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.



NOAA Atlas 14, Volume 1, Version 5
Location name: Albuquerque, New Mexico, USA*
Latitude: 35.0782°, Longitude: -106.6472°
Elevation: 4958 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 & aeriels](#)

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	0.172 (0.149-0.200)	0.223 (0.192-0.259)	0.299 (0.256-0.347)	0.358 (0.306-0.414)	0.438 (0.373-0.507)	0.501 (0.424-0.579)	0.568 (0.476-0.655)	0.637 (0.531-0.735)	0.731 (0.604-0.846)	0.806 (0.661-0.931)
10-min	0.262 (0.226-0.304)	0.339 (0.292-0.394)	0.454 (0.390-0.528)	0.544 (0.466-0.630)	0.667 (0.567-0.771)	0.762 (0.646-0.882)	0.863 (0.725-0.997)	0.969 (0.809-1.12)	1.11 (0.919-1.29)	1.23 (1.01-1.42)
15-min	0.325 (0.280-0.378)	0.420 (0.362-0.489)	0.563 (0.483-0.654)	0.675 (0.577-0.780)	0.827 (0.703-0.956)	0.945 (0.800-1.09)	1.07 (0.899-1.24)	1.20 (1.00-1.39)	1.38 (1.14-1.60)	1.52 (1.25-1.76)
30-min	0.437 (0.377-0.508)	0.566 (0.487-0.658)	0.758 (0.650-0.881)	0.908 (0.777-1.05)	1.11 (0.947-1.29)	1.27 (1.08-1.47)	1.44 (1.21-1.66)	1.62 (1.35-1.87)	1.86 (1.53-2.15)	2.05 (1.68-2.37)
60-min	0.541 (0.467-0.629)	0.700 (0.603-0.814)	0.938 (0.805-1.09)	1.12 (0.962-1.30)	1.38 (1.17-1.59)	1.58 (1.33-1.82)	1.78 (1.50-2.06)	2.00 (1.67-2.31)	2.30 (1.90-2.66)	2.53 (2.08-2.93)
2-hr	0.618 (0.531-0.732)	0.791 (0.678-0.938)	1.05 (0.896-1.24)	1.25 (1.06-1.47)	1.54 (1.30-1.80)	1.76 (1.48-2.07)	2.01 (1.67-2.35)	2.26 (1.87-2.64)	2.62 (2.14-3.06)	2.91 (2.35-3.40)
3-hr	0.658 (0.570-0.776)	0.837 (0.721-0.986)	1.10 (0.947-1.29)	1.30 (1.12-1.52)	1.59 (1.36-1.86)	1.82 (1.54-2.12)	2.07 (1.74-2.41)	2.33 (1.94-2.72)	2.69 (2.22-3.14)	2.99 (2.44-3.49)
6-hr	0.766 (0.666-0.895)	0.964 (0.840-1.13)	1.24 (1.08-1.45)	1.46 (1.27-1.70)	1.76 (1.52-2.05)	1.99 (1.71-2.31)	2.24 (1.91-2.60)	2.50 (2.12-2.90)	2.86 (2.40-3.31)	3.14 (2.61-3.66)
12-hr	0.846 (0.743-0.966)	1.07 (0.938-1.22)	1.35 (1.18-1.54)	1.58 (1.38-1.79)	1.88 (1.63-2.13)	2.11 (1.83-2.39)	2.35 (2.02-2.67)	2.60 (2.22-2.95)	2.94 (2.49-3.34)	3.21 (2.70-3.66)
24-hr	0.967 (0.856-1.10)	1.21 (1.07-1.37)	1.52 (1.34-1.72)	1.75 (1.55-1.98)	2.08 (1.83-2.35)	2.33 (2.04-2.63)	2.59 (2.26-2.92)	2.85 (2.48-3.21)	3.20 (2.76-3.61)	3.47 (2.98-3.91)
2-day	1.00 (0.892-1.13)	1.26 (1.12-1.41)	1.56 (1.39-1.75)	1.80 (1.60-2.02)	2.13 (1.88-2.38)	2.37 (2.10-2.65)	2.63 (2.31-2.94)	2.88 (2.53-3.23)	3.22 (2.82-3.61)	3.48 (3.03-3.95)
3-day	1.09 (0.981-1.20)	1.36 (1.22-1.50)	1.67 (1.50-1.85)	1.92 (1.73-2.12)	2.25 (2.02-2.48)	2.51 (2.24-2.76)	2.76 (2.47-3.05)	3.02 (2.69-3.34)	3.36 (2.98-3.72)	3.62 (3.20-4.03)
4-day	1.17 (1.07-1.28)	1.45 (1.33-1.59)	1.78 (1.62-1.94)	2.04 (1.85-2.22)	2.38 (2.16-2.59)	2.64 (2.39-2.88)	2.90 (2.62-3.16)	3.16 (2.85-3.44)	3.50 (3.15-3.82)	3.75 (3.36-4.10)
7-day	1.33 (1.22-1.45)	1.65 (1.51-1.79)	2.00 (1.84-2.18)	2.28 (2.08-2.47)	2.63 (2.41-2.85)	2.90 (2.65-3.14)	3.16 (2.88-3.42)	3.40 (3.11-3.69)	3.72 (3.40-4.05)	3.96 (3.60-4.31)
10-day	1.47 (1.35-1.60)	1.82 (1.67-1.98)	2.22 (2.04-2.40)	2.53 (2.33-2.74)	2.94 (2.70-3.18)	3.25 (2.98-3.50)	3.56 (3.25-3.84)	3.86 (3.52-4.16)	4.24 (3.85-4.58)	4.52 (4.09-4.89)
20-day	1.82 (1.66-1.99)	2.26 (2.07-2.46)	2.73 (2.51-2.97)	3.09 (2.84-3.36)	3.55 (3.25-3.85)	3.87 (3.54-4.20)	4.19 (3.82-4.53)	4.48 (4.09-4.85)	4.84 (4.41-5.24)	5.09 (4.63-5.52)
30-day	2.18 (2.00-2.35)	2.69 (2.47-2.91)	3.23 (2.97-3.49)	3.63 (3.33-3.91)	4.12 (3.78-4.44)	4.47 (4.09-4.81)	4.79 (4.39-5.16)	5.10 (4.66-5.48)	5.45 (4.98-5.87)	5.69 (5.20-6.13)
45-day	2.66 (2.45-2.88)	3.29 (3.03-3.56)	3.91 (3.60-4.22)	4.34 (4.01-4.68)	4.87 (4.50-5.25)	5.22 (4.82-5.63)	5.54 (5.12-5.96)	5.81 (5.37-6.25)	6.09 (5.64-6.55)	6.25 (5.81-6.71)
60-day	3.06 (2.82-3.31)	3.77 (3.48-4.09)	4.48 (4.15-4.85)	4.99 (4.62-5.39)	5.60 (5.18-6.04)	6.00 (5.56-6.48)	6.37 (5.90-6.88)	6.69 (6.21-7.22)	7.04 (6.54-7.60)	7.24 (6.76-7.82)

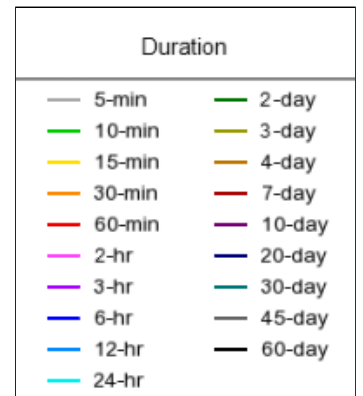
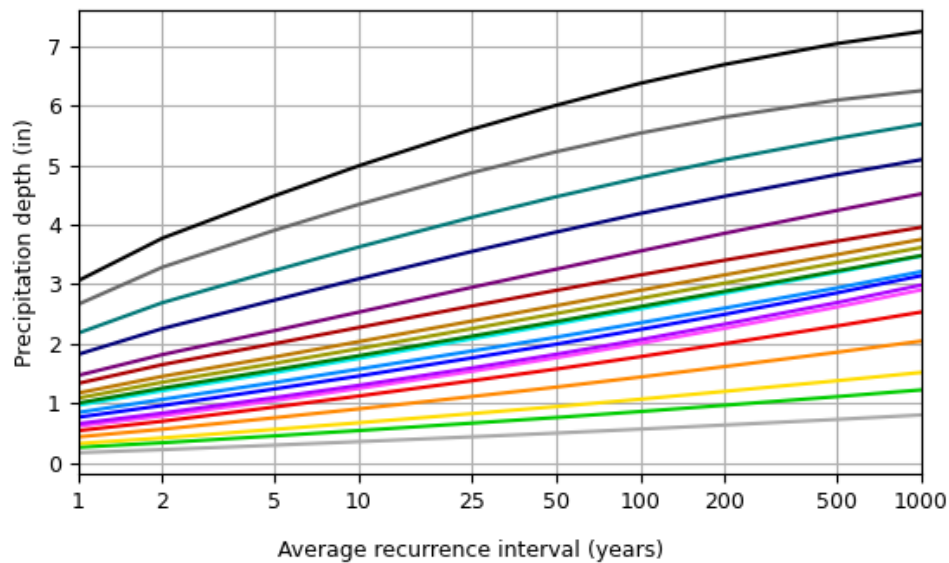
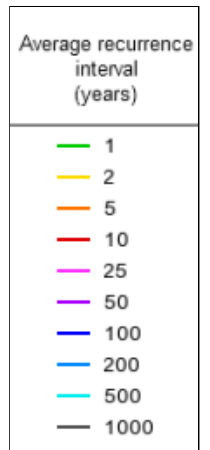
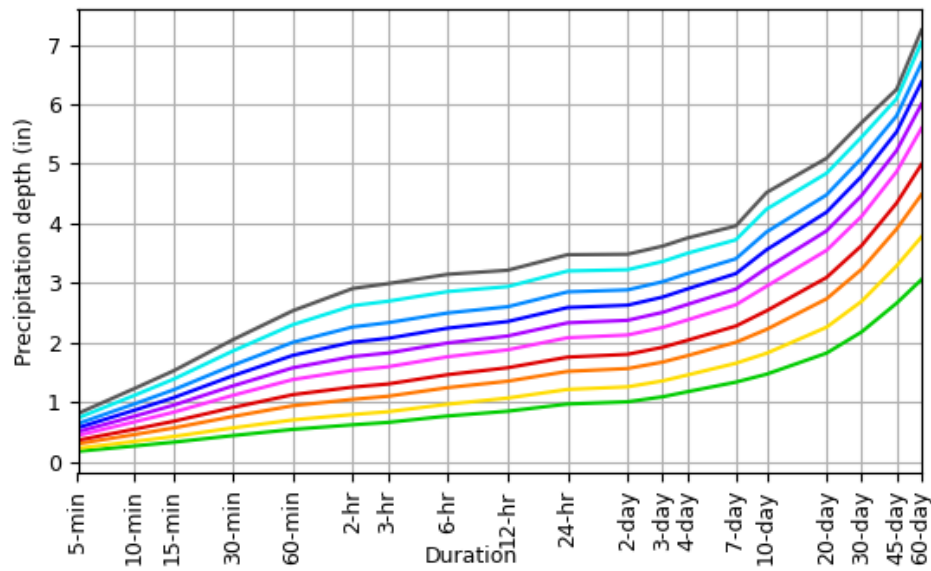
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).
 Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and 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: 35.0782°, Longitude: -106.6472°



NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Tue Jul 15 20:56:45 2025

[Back to Top](#)**Maps & aerials****Small scale terrain**



Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)
[National Oceanic and Atmospheric Administration](#)
[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)

START TIME=0.0 CODE=0 LINES=0

*S NM RAIL RUNNER OCTOBER 2025 HZI NO. R317697.01

*S-----

*S-----

*S 100 - YEAR RAINFALL -----

RAINFALL TYPE=-1 RAIN QUAR=0.0 RAIN ONE= 1.78
RAIN SIX= 2.24 RAIN DAY=2.59 DT=0.0

*S-----

*S-----

*S-----ROUTE RUNOFF THROUGH DETENTION POND ONSITE-----

*S-----

*S-----

*S-----

*S BASIN 101

COMPUTE NM HYD ID=11 HYD NO=101 DA=0.0017 SQ MI
PER A=0.0 PER B=0.0 PER C=5.0 PER D=95.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=11 CODE=1

*S-----

*S BASIN 102

COMPUTE NM HYD ID=12 HYD NO=102 DA=0.0010 SQ MI
PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=12 CODE=1

*S-----

*S BASIN 103

COMPUTE NM HYD ID=13 HYD NO=103 DA=0.0017 SQ MI
PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=13 CODE=1

*S-----

*S BASIN 104

COMPUTE NM HYD ID=14 HYD NO=104 DA=0.0009 SQ MI
PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=14 CODE=1

*S-----

*S BASIN 105

COMPUTE NM HYD ID=15 HYD NO=105 DA=0.0013 SQ MI
PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=15 CODE=1

*S-----

*S BASIN 106

COMPUTE NM HYD ID=16 HYD NO=106 DA=0.0031 SQ MI
PER A=0.0 PER B=0.0 PER C=5.0 PER D=95.0
TP=-.1333 HR MASSRAIN=-1

PRINT HYD ID=16 CODE=1

*S-----

*S BASIN 106A

```

COMPUTE NM HYD      ID=17 HYD NO=106A  DA=0.0012 SQ MI
                    PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
                    TP=-.1333 HR    MASSRAIN=-1
PRINT HYD           ID=17    CODE=1
*S-----
*S BASIN 107
COMPUTE NM HYD      ID=18 HYD NO=107   DA=0.0049 SQ MI
                    PER A=0.0 PER B=0.0 PER C=80.0 PER D=20.0
                    TP=-.1333 HR    MASSRAIN=-1
PRINT HYD           ID=18    CODE=1
*S-----
*S ADD BASINS, 101-107
ADD HYD              ID=75 HYD=SUM IDi=11 IDii=12
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=13
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=14
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=15
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=16
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=17
ADD HYD              ID=75 HYD=SUM IDi=75 IDii=18
PRINT HYD           ID=75 CODE=1
*S-----
*S ROUTE NM RAIL BASINS THROUGH ONSITE POND
ROUTE RESERVOIR      ID=33 HYD=POND INFLOW=75 CODE=10
                    OUTFLOW    STORAGE    ELEV
                    0.01        0.00        4948.0
                    0.02        0.10        4949.0
                    0.03        0.23        4950.0
                    0.04        0.38        4951.0
                    0.05        0.56        4952.0
                    0.06        0.77        4953.0
                    0.07        1.01        4954.0
                    308.7        1.29        4955.0
PRINT HYD           ID=33 CODE=20
*S-----
FINISH

```

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
RUN DATE (MON/DAY/YR) = 10/21/2025
START TIME (HR:MIN:SEC) = 17:29:18 USER NO.= HuittZollSingleA57330653
INPUT FILE = C:\Users\nvilla\Desktop\NM Rail Input_4.txt

START TIME=0.0 CODE=0 LINES=0

*S NM RAIL RUNNER OCTOBER 2025 HZI NO. R317697.01

*S-----

*S-----

*S 100 - YEAR RAINFALL -----

RAINFALL TYPE=-1 RAIN QUAR=0.0 RAIN ONE= 1.78

RAIN SIX= 2.24 RAIN DAY=2.59 DT=0.0

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1

DT = 0.005000 HOURS END TIME = 6.000000 HOURS

*S-----

*S-----

*S-----ROUTE RUNOFF THROUGH DETENTION POND ONSITE-----

*S-----

*S-----

*S-----

*S BASIN 101

COMPUTE NM HYD ID=11 HYD NO=101 DA=0.0017 SQ MI

PER A=0.0 PER B=0.0 PER C=5.0 PER D=95.0

TP=-.1333 HR MASSRAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428

UNIT PEAK = 6.3761 CFS UNIT VOLUME = 0.9980 B = 526.28 P60 = 1.7800

AREA = 0.001615 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784

UNIT PEAK = 0.24943 CFS UNIT VOLUME = 0.9433 B = 391.16 P60 = 1.7800

AREA = 0.000085 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD ID=11 CODE=1

PARTIAL HYDROGRAPH 101.00

RUNOFF VOLUME = 1.93933 INCHES = 0.1758 ACRE-FEET

PEAK DISCHARGE RATE = 4.67 CFS AT 1.525 HOURS BASIN AREA = 0.0017 SQ. MI.

*S-----

*S BASIN 102

COMPUTE NM HYD ID=12 HYD NO=102 DA=0.0010 SQ MI

PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0

TP=-.1333 HR MASSRAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428

UNIT PEAK = 3.9481 CFS UNIT VOLUME = 0.9967 B = 526.28 P60 = 1.7800

AREA = 0.001000 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD ID=12 CODE=1

PARTIAL HYDROGRAPH 102.00

RUNOFF VOLUME = 1.98725 INCHES = 0.1060 ACRE-FEET

PEAK DISCHARGE RATE = 2.78 CFS AT 1.525 HOURS BASIN AREA = 0.0010 SQ. MI.

*S-----

```

*S BASIN 103
COMPUTE NM HYD      ID=13 HYD NO=103  DA=0.0017 SQ MI
                    PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
                    TP=-.1333 HR  MASSRAIN=-1

K = 0.072649HR    TP = 0.133300HR    K/TP RATIO = 0.545000    SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 6.7117 CFS    UNIT VOLUME = 0.9981    B = 526.28    P60 = 1.7800
AREA = 0.001700 SQ MI    IA = 0.10000 INCHES    INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD          ID=13    CODE=1

```

PARTIAL HYDROGRAPH 103.00

```

RUNOFF VOLUME = 1.98725 INCHES = 0.1802 ACRE-FEET
PEAK DISCHARGE RATE = 4.73 CFS AT 1.525 HOURS BASIN AREA = 0.0017 SQ. MI.

```

```

*S-----
*S BASIN 104
COMPUTE NM HYD      ID=14 HYD NO=104  DA=0.0009 SQ MI
                    PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
                    TP=-.1333 HR  MASSRAIN=-1

K = 0.072649HR    TP = 0.133300HR    K/TP RATIO = 0.545000    SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 3.5532 CFS    UNIT VOLUME = 0.9964    B = 526.28    P60 = 1.7800
AREA = 0.000900 SQ MI    IA = 0.10000 INCHES    INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD          ID=14    CODE=1

```

PARTIAL HYDROGRAPH 104.00

```

RUNOFF VOLUME = 1.98725 INCHES = 0.0954 ACRE-FEET
PEAK DISCHARGE RATE = 2.51 CFS AT 1.525 HOURS BASIN AREA = 0.0009 SQ. MI.

```

```

*S-----
*S BASIN 105
COMPUTE NM HYD      ID=15 HYD NO=105  DA=0.0013 SQ MI
                    PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
                    TP=-.1333 HR  MASSRAIN=-1

K = 0.072649HR    TP = 0.133300HR    K/TP RATIO = 0.545000    SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 5.1325 CFS    UNIT VOLUME = 0.9975    B = 526.28    P60 = 1.7800
AREA = 0.001300 SQ MI    IA = 0.10000 INCHES    INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD          ID=15    CODE=1

```

PARTIAL HYDROGRAPH 105.00

```

RUNOFF VOLUME = 1.98725 INCHES = 0.1378 ACRE-FEET
PEAK DISCHARGE RATE = 3.62 CFS AT 1.525 HOURS BASIN AREA = 0.0013 SQ. MI.

```

```

*S-----
*S BASIN 106
COMPUTE NM HYD      ID=16 HYD NO=106  DA=0.0031 SQ MI
                    PER A=0.0 PER B=0.0 PER C=5.0 PER D=95.0
                    TP=-.1333 HR  MASSRAIN=-1

K = 0.072649HR    TP = 0.133300HR    K/TP RATIO = 0.545000    SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 11.627 CFS    UNIT VOLUME = 0.9989    B = 526.28    P60 = 1.7800
AREA = 0.002945 SQ MI    IA = 0.10000 INCHES    INF = 0.04000 INCHES PER HOUR

```

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784
UNIT PEAK = 0.45483 CFS UNIT VOLUME = 0.9690 B = 391.16 P60 = 1.7800
AREA = 0.000155 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD ID=16 CODE=1

PARTIAL HYDROGRAPH 106.00

RUNOFF VOLUME = 1.93933 INCHES = 0.3206 ACRE-FEET
PEAK DISCHARGE RATE = 8.49 CFS AT 1.525 HOURS BASIN AREA = 0.0031 SQ. MI.

*S-----

*S BASIN 106A

COMPUTE NM HYD ID=17 HYD NO=106A DA=0.0012 SQ MI
PER A=0.0 PER B=0.0 PER C=0.0 PER D=100.0
TP=-.1333 HR MASSRAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.7377 CFS UNIT VOLUME = 0.9973 B = 526.28 P60 = 1.7800
AREA = 0.001200 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD ID=17 CODE=1

HYDROGRAPH FROM AREA 106A

RUNOFF VOLUME = 1.98725 INCHES = 0.1272 ACRE-FEET
PEAK DISCHARGE RATE = 3.34 CFS AT 1.525 HOURS BASIN AREA = 0.0012 SQ. MI.

*S-----

*S BASIN 107

COMPUTE NM HYD ID=18 HYD NO=107 DA=0.0049 SQ MI
PER A=0.0 PER B=0.0 PER C=80.0 PER D=20.0
TP=-.1333 HR MASSRAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 3.8691 CFS UNIT VOLUME = 0.9966 B = 526.28 P60 = 1.7800
AREA = 0.000980 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

K = 0.104852HR TP = 0.133300HR K/TP RATIO = 0.786584 SHAPE CONSTANT, N = 4.563784
UNIT PEAK = 11.503 CFS UNIT VOLUME = 0.9988 B = 391.16 P60 = 1.7800
AREA = 0.003920 SQ MI IA = 0.35000 INCHES INF = 0.83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.005000

PRINT HYD ID=18 CODE=1

PARTIAL HYDROGRAPH 107.00

RUNOFF VOLUME = 1.22051 INCHES = 0.3190 ACRE-FEET
PEAK DISCHARGE RATE = 10.37 CFS AT 1.535 HOURS BASIN AREA = 0.0049 SQ. MI.

*S-----

*S ADD BASINS, 101-107

ADD HYD ID=75 HYD=SUM IDi=11 IDii=12
ADD HYD ID=75 HYD=SUM IDi=75 IDii=13
ADD HYD ID=75 HYD=SUM IDi=75 IDii=14

```

ADD HYD          ID=75 HYD=SUM IDi=75 IDii=15
ADD HYD          ID=75 HYD=SUM IDi=75 IDii=16
ADD HYD          ID=75 HYD=SUM IDi=75 IDii=17
ADD HYD          ID=75 HYD=SUM IDi=75 IDii=18
PRINT HYD        ID=75 CODE=1

```

HYDROGRAPH FROM AREA SUM

```

RUNOFF VOLUME =      1.73477 INCHES      =      1.4618 ACRE-FEET
PEAK DISCHARGE RATE =      40.49 CFS AT 1.530 HOURS BASIN AREA = 0.0158 SQ. MI.

```

*S-----

*S ROUTE NM RAIL BASINS THROUGH ONSITE POND

```

ROUTE RESERVOIR      ID=33 HYD=POND INFLOW=75 CODE=10
                                OUTFLOW  STORAGE  ELEV
                                0.01      0.00      4948.0
                                0.02      0.10      4949.0
                                0.03      0.23      4950.0
                                0.04      0.38      4951.0
                                0.05      0.56      4952.0
                                0.06      0.77      4953.0
                                0.07      1.01      4954.0
                                308.7     1.29      4955.0

```

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	4947.00	-0.100	0.00
0.05	0.00	4948.00	0.000	0.01
0.10	0.00	4948.00	0.000	0.01
0.15	0.00	4948.00	0.000	0.01
0.20	0.00	4948.00	0.000	0.01
0.25	0.00	4948.00	0.000	0.01
0.30	0.00	4948.00	0.000	0.01
0.35	0.00	4948.00	0.000	0.01
0.40	0.00	4948.00	0.000	0.01
0.45	0.00	4948.00	0.000	0.01
0.50	0.00	4948.00	0.000	0.01
0.55	0.00	4948.00	0.000	0.01
0.60	0.00	4948.00	0.000	0.01
0.65	0.00	4948.00	0.000	0.01
0.70	0.00	4948.00	0.000	0.01
0.75	0.07	4948.00	0.000	0.01
0.80	0.44	4948.01	0.001	0.01
0.85	0.93	4948.04	0.004	0.01
0.90	1.29	4948.08	0.008	0.01
0.95	1.54	4948.14	0.014	0.01
1.00	1.83	4948.21	0.021	0.01
1.05	2.35	4948.30	0.030	0.01
1.10	3.00	4948.41	0.041	0.01
1.15	3.73	4948.54	0.054	0.02
1.20	4.63	4948.71	0.071	0.02
1.25	5.92	4948.93	0.093	0.02
1.30	7.89	4949.16	0.121	0.02
1.35	11.07	4949.46	0.160	0.02
1.40	16.60	4949.89	0.215	0.03
1.45	28.16	4950.50	0.306	0.04
1.50	38.85	4951.37	0.447	0.04
1.55	39.78	4952.25	0.612	0.05
1.60	34.16	4952.98	0.766	0.06
1.65	26.83	4953.51	0.892	0.07
1.70	20.41	4953.91	0.988	0.07
1.75	15.78	4954.05	1.024	16.02
1.80	12.45	4954.04	1.022	13.10
1.85	10.07	4954.03	1.020	10.55
1.90	8.31	4954.03	1.018	8.66

1.95	6.94	4954.02	1.016	7.22
2.00	5.83	4954.02	1.015	6.06
2.05	4.84	4954.02	1.015	5.05
2.10	4.04	4954.01	1.014	4.20
2.15	3.45	4954.01	1.013	3.57
2.20	2.97	4954.01	1.013	3.07
2.25	2.58	4954.01	1.012	2.66
2.30	2.27	4954.01	1.012	2.33
2.35	2.03	4954.01	1.012	2.07
2.40	1.81	4954.01	1.012	1.86
2.45	1.50	4954.00	1.011	1.58
2.50	1.16	4954.00	1.011	1.23
2.55	0.91	4954.00	1.011	0.96
2.60	0.75	4954.00	1.011	0.78
2.65	0.64	4954.00	1.011	0.66
2.70	0.56	4954.00	1.010	0.57
2.75	0.49	4954.00	1.010	0.51

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

2.80	0.45	4954.00	1.010	0.46
2.85	0.40	4954.00	1.010	0.41
2.90	0.37	4954.00	1.010	0.37
2.95	0.33	4954.00	1.010	0.34
3.00	0.31	4954.00	1.010	0.31
3.05	0.29	4954.00	1.010	0.29
3.10	0.27	4954.00	1.010	0.27
3.15	0.25	4954.00	1.010	0.25
3.20	0.23	4954.00	1.010	0.24
3.25	0.22	4954.00	1.010	0.22
3.30	0.21	4954.00	1.010	0.21
3.35	0.20	4954.00	1.010	0.20
3.40	0.19	4954.00	1.010	0.20
3.45	0.19	4954.00	1.010	0.19
3.50	0.19	4954.00	1.010	0.19
3.55	0.18	4954.00	1.010	0.18
3.60	0.18	4954.00	1.010	0.18
3.65	0.18	4954.00	1.010	0.18
3.70	0.18	4954.00	1.010	0.18
3.75	0.18	4954.00	1.010	0.18
3.80	0.18	4954.00	1.010	0.18
3.85	0.18	4954.00	1.010	0.18
3.90	0.18	4954.00	1.010	0.18
3.95	0.18	4954.00	1.010	0.18
4.00	0.18	4954.00	1.010	0.18
4.05	0.18	4954.00	1.010	0.18
4.10	0.18	4954.00	1.010	0.18
4.15	0.18	4954.00	1.010	0.18
4.20	0.18	4954.00	1.010	0.18
4.25	0.18	4954.00	1.010	0.18
4.30	0.18	4954.00	1.010	0.18
4.35	0.18	4954.00	1.010	0.18
4.40	0.18	4954.00	1.010	0.18
4.45	0.18	4954.00	1.010	0.18
4.50	0.18	4954.00	1.010	0.18
4.55	0.18	4954.00	1.010	0.18
4.60	0.19	4954.00	1.010	0.19
4.65	0.19	4954.00	1.010	0.19
4.70	0.19	4954.00	1.010	0.19
4.75	0.19	4954.00	1.010	0.19
4.80	0.19	4954.00	1.010	0.19
4.85	0.19	4954.00	1.010	0.19
4.90	0.20	4954.00	1.010	0.20
4.95	0.20	4954.00	1.010	0.20
5.00	0.20	4954.00	1.010	0.20
5.05	0.20	4954.00	1.010	0.20
5.10	0.20	4954.00	1.010	0.20
5.15	0.21	4954.00	1.010	0.21
5.20	0.21	4954.00	1.010	0.21
5.25	0.21	4954.00	1.010	0.21

5.30	0.21	4954.00	1.010	0.21
5.35	0.21	4954.00	1.010	0.21
5.40	0.22	4954.00	1.010	0.22
5.45	0.22	4954.00	1.010	0.22
5.50	0.22	4954.00	1.010	0.22
5.55	0.22	4954.00	1.010	0.22

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

5.60	0.23	4954.00	1.010	0.23
5.65	0.23	4954.00	1.010	0.23
5.70	0.23	4954.00	1.010	0.23
5.75	0.24	4954.00	1.010	0.23
5.80	0.24	4954.00	1.010	0.24
5.85	0.24	4954.00	1.010	0.24
5.90	0.24	4954.00	1.010	0.24
5.95	0.25	4954.00	1.010	0.25
6.00	0.25	4954.00	1.010	0.25
6.05	0.25	4954.00	1.010	0.25
6.10	0.21	4954.00	1.010	0.23
6.15	0.14	4954.00	1.010	0.16
6.20	0.08	4954.00	1.010	0.09
6.25	0.05	4954.00	1.010	0.07
6.30	0.03	4954.00	1.010	0.07
6.35	0.03	4954.00	1.010	0.07
6.40	0.02	4954.00	1.010	0.07
6.45	0.02	4954.00	1.009	0.07
6.50	0.01	4954.00	1.009	0.07
6.55	0.01	4954.00	1.009	0.07
6.60	0.00	4953.99	1.009	0.07
6.65	0.00	4953.99	1.008	0.07
6.70	0.00	4953.99	1.008	0.07
6.75	0.00	4953.99	1.008	0.07
6.80	0.00	4953.99	1.007	0.07
6.85	0.00	4953.99	1.007	0.07
6.90	0.00	4953.99	1.007	0.07
6.95	0.00	4953.99	1.007	0.07
7.00	0.00	4953.98	1.006	0.07
7.05	0.00	4953.98	1.006	0.07
7.10	0.00	4953.98	1.006	0.07
7.15	0.00	4953.98	1.005	0.07
7.20	0.00	4953.98	1.005	0.07
7.25	0.00	4953.98	1.005	0.07
7.30	0.00	4953.98	1.005	0.07
7.35	0.00	4953.98	1.004	0.07
7.40	0.00	4953.97	1.004	0.07
7.45	0.00	4953.97	1.004	0.07
7.50	0.00	4953.97	1.003	0.07
7.55	0.00	4953.97	1.003	0.07
7.60	0.00	4953.97	1.003	0.07
7.65	0.00	4953.97	1.003	0.07
7.70	0.00	4953.97	1.002	0.07
7.75	0.00	4953.97	1.002	0.07
7.80	0.00	4953.97	1.002	0.07
7.85	0.00	4953.96	1.001	0.07
7.90	0.00	4953.96	1.001	0.07
7.95	0.00	4953.96	1.001	0.07
8.00	0.00	4953.96	1.001	0.07
8.05	0.00	4953.96	1.000	0.07
8.10	0.00	4953.96	1.000	0.07
8.15	0.00	4953.96	1.000	0.07
8.20	0.00	4953.96	0.999	0.07
8.25	0.00	4953.95	0.999	0.07
8.30	0.00	4953.95	0.999	0.07
8.35	0.00	4953.95	0.998	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

8.40	0.00	4953.95	0.998	0.07
------	------	---------	-------	------

8.45	0.00	4953.95	0.998	0.07
8.50	0.00	4953.95	0.998	0.07
8.55	0.00	4953.95	0.997	0.07
8.60	0.00	4953.95	0.997	0.07
8.65	0.00	4953.94	0.997	0.07
8.70	0.00	4953.94	0.996	0.07
8.75	0.00	4953.94	0.996	0.07
8.80	0.00	4953.94	0.996	0.07
8.85	0.00	4953.94	0.996	0.07
8.90	0.00	4953.94	0.995	0.07
8.95	0.00	4953.94	0.995	0.07
9.00	0.00	4953.94	0.995	0.07
9.05	0.00	4953.94	0.994	0.07
9.10	0.00	4953.93	0.994	0.07
9.15	0.00	4953.93	0.994	0.07
9.20	0.00	4953.93	0.994	0.07
9.25	0.00	4953.93	0.993	0.07
9.30	0.00	4953.93	0.993	0.07
9.35	0.00	4953.93	0.993	0.07
9.40	0.00	4953.93	0.992	0.07
9.45	0.00	4953.93	0.992	0.07
9.50	0.00	4953.92	0.992	0.07
9.55	0.00	4953.92	0.992	0.07
9.60	0.00	4953.92	0.991	0.07
9.65	0.00	4953.92	0.991	0.07
9.70	0.00	4953.92	0.991	0.07
9.75	0.00	4953.92	0.990	0.07
9.80	0.00	4953.92	0.990	0.07
9.85	0.00	4953.92	0.990	0.07
9.90	0.00	4953.92	0.990	0.07
9.95	0.00	4953.91	0.989	0.07
10.00	0.00	4953.91	0.989	0.07
10.05	0.00	4953.91	0.989	0.07
10.10	0.00	4953.91	0.988	0.07
10.15	0.00	4953.91	0.988	0.07
10.20	0.00	4953.91	0.988	0.07
10.25	0.00	4953.91	0.988	0.07
10.30	0.00	4953.91	0.987	0.07
10.35	0.00	4953.90	0.987	0.07
10.40	0.00	4953.90	0.987	0.07
10.45	0.00	4953.90	0.986	0.07
10.50	0.00	4953.90	0.986	0.07
10.55	0.00	4953.90	0.986	0.07
10.60	0.00	4953.90	0.986	0.07
10.65	0.00	4953.90	0.985	0.07
10.70	0.00	4953.90	0.985	0.07
10.75	0.00	4953.90	0.985	0.07
10.80	0.00	4953.89	0.984	0.07
10.85	0.00	4953.89	0.984	0.07
10.90	0.00	4953.89	0.984	0.07
10.95	0.00	4953.89	0.984	0.07
11.00	0.00	4953.89	0.983	0.07
11.05	0.00	4953.89	0.983	0.07
11.10	0.00	4953.89	0.983	0.07
11.15	0.00	4953.89	0.982	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
11.20	0.00	4953.88	0.982	0.07
11.25	0.00	4953.88	0.982	0.07
11.30	0.00	4953.88	0.982	0.07
11.35	0.00	4953.88	0.981	0.07
11.40	0.00	4953.88	0.981	0.07
11.45	0.00	4953.88	0.981	0.07
11.50	0.00	4953.88	0.980	0.07
11.55	0.00	4953.88	0.980	0.07
11.60	0.00	4953.87	0.980	0.07
11.65	0.00	4953.87	0.980	0.07
11.70	0.00	4953.87	0.979	0.07
11.75	0.00	4953.87	0.979	0.07

11.80	0.00	4953.87	0.979	0.07
11.85	0.00	4953.87	0.979	0.07
11.90	0.00	4953.87	0.978	0.07
11.95	0.00	4953.87	0.978	0.07
12.00	0.00	4953.87	0.978	0.07
12.05	0.00	4953.86	0.977	0.07
12.10	0.00	4953.86	0.977	0.07
12.15	0.00	4953.86	0.977	0.07
12.20	0.00	4953.86	0.977	0.07
12.25	0.00	4953.86	0.976	0.07
12.30	0.00	4953.86	0.976	0.07
12.35	0.00	4953.86	0.976	0.07
12.40	0.00	4953.86	0.975	0.07
12.45	0.00	4953.85	0.975	0.07
12.50	0.00	4953.85	0.975	0.07
12.55	0.00	4953.85	0.975	0.07
12.60	0.00	4953.85	0.974	0.07
12.65	0.00	4953.85	0.974	0.07
12.70	0.00	4953.85	0.974	0.07
12.75	0.00	4953.85	0.973	0.07
12.80	0.00	4953.85	0.973	0.07
12.85	0.00	4953.85	0.973	0.07
12.90	0.00	4953.84	0.973	0.07
12.95	0.00	4953.84	0.972	0.07
13.00	0.00	4953.84	0.972	0.07
13.05	0.00	4953.84	0.972	0.07
13.10	0.00	4953.84	0.971	0.07
13.15	0.00	4953.84	0.971	0.07
13.20	0.00	4953.84	0.971	0.07
13.25	0.00	4953.84	0.971	0.07
13.30	0.00	4953.83	0.970	0.07
13.35	0.00	4953.83	0.970	0.07
13.40	0.00	4953.83	0.970	0.07
13.45	0.00	4953.83	0.969	0.07
13.50	0.00	4953.83	0.969	0.07
13.55	0.00	4953.83	0.969	0.07
13.60	0.00	4953.83	0.969	0.07
13.65	0.00	4953.83	0.968	0.07
13.70	0.00	4953.83	0.968	0.07
13.75	0.00	4953.82	0.968	0.07
13.80	0.00	4953.82	0.967	0.07
13.85	0.00	4953.82	0.967	0.07
13.90	0.00	4953.82	0.967	0.07
13.95	0.00	4953.82	0.967	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
14.00	0.00	4953.82	0.966	0.07
14.05	0.00	4953.82	0.966	0.07
14.10	0.00	4953.82	0.966	0.07
14.15	0.00	4953.81	0.966	0.07
14.20	0.00	4953.81	0.965	0.07
14.25	0.00	4953.81	0.965	0.07
14.30	0.00	4953.81	0.965	0.07
14.35	0.00	4953.81	0.964	0.07
14.40	0.00	4953.81	0.964	0.07
14.45	0.00	4953.81	0.964	0.07
14.50	0.00	4953.81	0.964	0.07
14.55	0.00	4953.81	0.963	0.07
14.60	0.00	4953.80	0.963	0.07
14.65	0.00	4953.80	0.963	0.07
14.70	0.00	4953.80	0.962	0.07
14.75	0.00	4953.80	0.962	0.07
14.80	0.00	4953.80	0.962	0.07
14.85	0.00	4953.80	0.962	0.07
14.90	0.00	4953.80	0.961	0.07
14.95	0.00	4953.80	0.961	0.07
15.00	0.00	4953.79	0.961	0.07
15.05	0.00	4953.79	0.960	0.07
15.10	0.00	4953.79	0.960	0.07

15.15	0.00	4953.79	0.960	0.07
15.20	0.00	4953.79	0.960	0.07
15.25	0.00	4953.79	0.959	0.07
15.30	0.00	4953.79	0.959	0.07
15.35	0.00	4953.79	0.959	0.07
15.40	0.00	4953.79	0.958	0.07
15.45	0.00	4953.78	0.958	0.07
15.50	0.00	4953.78	0.958	0.07
15.55	0.00	4953.78	0.958	0.07
15.60	0.00	4953.78	0.957	0.07
15.65	0.00	4953.78	0.957	0.07
15.70	0.00	4953.78	0.957	0.07
15.75	0.00	4953.78	0.957	0.07
15.80	0.00	4953.78	0.956	0.07
15.85	0.00	4953.77	0.956	0.07
15.90	0.00	4953.77	0.956	0.07
15.95	0.00	4953.77	0.955	0.07
16.00	0.00	4953.77	0.955	0.07
16.05	0.00	4953.77	0.955	0.07
16.10	0.00	4953.77	0.955	0.07
16.15	0.00	4953.77	0.954	0.07
16.20	0.00	4953.77	0.954	0.07
16.25	0.00	4953.77	0.954	0.07
16.30	0.00	4953.76	0.953	0.07
16.35	0.00	4953.76	0.953	0.07
16.40	0.00	4953.76	0.953	0.07
16.45	0.00	4953.76	0.953	0.07
16.50	0.00	4953.76	0.952	0.07
16.55	0.00	4953.76	0.952	0.07
16.60	0.00	4953.76	0.952	0.07
16.65	0.00	4953.76	0.951	0.07
16.70	0.00	4953.75	0.951	0.07
16.75	0.00	4953.75	0.951	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
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16.80	0.00	4953.75	0.951	0.07
16.85	0.00	4953.75	0.950	0.07
16.90	0.00	4953.75	0.950	0.07
16.95	0.00	4953.75	0.950	0.07
17.00	0.00	4953.75	0.950	0.07
17.05	0.00	4953.75	0.949	0.07
17.10	0.00	4953.75	0.949	0.07
17.15	0.00	4953.74	0.949	0.07
17.20	0.00	4953.74	0.948	0.07
17.25	0.00	4953.74	0.948	0.07
17.30	0.00	4953.74	0.948	0.07
17.35	0.00	4953.74	0.948	0.07
17.40	0.00	4953.74	0.947	0.07
17.45	0.00	4953.74	0.947	0.07
17.50	0.00	4953.74	0.947	0.07
17.55	0.00	4953.74	0.946	0.07
17.60	0.00	4953.73	0.946	0.07
17.65	0.00	4953.73	0.946	0.07
17.70	0.00	4953.73	0.946	0.07
17.75	0.00	4953.73	0.945	0.07
17.80	0.00	4953.73	0.945	0.07
17.85	0.00	4953.73	0.945	0.07
17.90	0.00	4953.73	0.945	0.07
17.95	0.00	4953.73	0.944	0.07
18.00	0.00	4953.72	0.944	0.07
18.05	0.00	4953.72	0.944	0.07
18.10	0.00	4953.72	0.943	0.07
18.15	0.00	4953.72	0.943	0.07
18.20	0.00	4953.72	0.943	0.07
18.25	0.00	4953.72	0.943	0.07
18.30	0.00	4953.72	0.942	0.07
18.35	0.00	4953.72	0.942	0.07
18.40	0.00	4953.72	0.942	0.07
18.45	0.00	4953.71	0.941	0.07

18.50	0.00	4953.71	0.941	0.07
18.55	0.00	4953.71	0.941	0.07
18.60	0.00	4953.71	0.941	0.07
18.65	0.00	4953.71	0.940	0.07
18.70	0.00	4953.71	0.940	0.07
18.75	0.00	4953.71	0.940	0.07
18.80	0.00	4953.71	0.940	0.07
18.85	0.00	4953.71	0.939	0.07
18.90	0.00	4953.70	0.939	0.07
18.95	0.00	4953.70	0.939	0.07
19.00	0.00	4953.70	0.938	0.07
19.05	0.00	4953.70	0.938	0.07
19.10	0.00	4953.70	0.938	0.07
19.15	0.00	4953.70	0.938	0.07
19.20	0.00	4953.70	0.937	0.07
19.25	0.00	4953.70	0.937	0.07
19.30	0.00	4953.69	0.937	0.07
19.35	0.00	4953.69	0.936	0.07
19.40	0.00	4953.69	0.936	0.07
19.45	0.00	4953.69	0.936	0.07
19.50	0.00	4953.69	0.936	0.07
19.55	0.00	4953.69	0.935	0.07

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
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19.60	0.00	4953.69	0.935	0.07
19.65	0.00	4953.69	0.935	0.07
19.70	0.00	4953.69	0.935	0.07
19.75	0.00	4953.68	0.934	0.07
19.80	0.00	4953.68	0.934	0.07
19.85	0.00	4953.68	0.934	0.07
19.90	0.00	4953.68	0.933	0.07
19.95	0.00	4953.68	0.933	0.07

PEAK DISCHARGE = 16.048 CFS - PEAK OCCURS AT HOUR 1.75
 MAXIMUM WATER SURFACE ELEVATION = 4954.052
 MAXIMUM STORAGE = 1.0245 AC-FT INCREMENTAL TIME= 0.005000HRS

PRINT HYD ID=33 CODE=20

HYDROGRAPH FROM AREA POND

TIME	TIME FLOW HRS CFS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
16.000	0.000	0.0	4.000	0.2	8.000	0.1	12.000	0.1
16.100	0.100	0.0	4.100	0.2	8.100	0.1	12.100	0.1
16.200	0.200	0.0	4.200	0.2	8.200	0.1	12.200	0.1
16.300	0.300	0.0	4.300	0.2	8.300	0.1	12.300	0.1
16.400	0.400	0.0	4.400	0.2	8.400	0.1	12.400	0.1
16.500	0.500	0.0	4.500	0.2	8.500	0.1	12.500	0.1
16.600	0.600	0.0	4.600	0.2	8.600	0.1	12.600	0.1
16.700	0.700	0.0	4.700	0.2	8.700	0.1	12.700	0.1
16.800	0.800	0.0	4.800	0.2	8.800	0.1	12.800	0.1
16.900	0.900	0.0	4.900	0.2	8.900	0.1	12.900	0.1
17.000	1.000	0.0	5.000	0.2	9.000	0.1	13.000	0.1
17.100	1.100	0.0	5.100	0.2	9.100	0.1	13.100	0.1

17.200	1.200	0.0	5.200	0.2	9.200	0.1	13.200	0.1
	0.1							
17.300	1.300	0.0	5.300	0.2	9.300	0.1	13.300	0.1
	0.1							
17.400	1.400	0.0	5.400	0.2	9.400	0.1	13.400	0.1
	0.1							
17.500	1.500	0.0	5.500	0.2	9.500	0.1	13.500	0.1
	0.1							
17.600	1.600	0.1	5.600	0.2	9.600	0.1	13.600	0.1
	0.1							
17.700	1.700	0.1	5.700	0.2	9.700	0.1	13.700	0.1
	0.1							
17.800	1.800	13.1	5.800	0.2	9.800	0.1	13.800	0.1
	0.1							
17.900	1.900	8.7	5.900	0.2	9.900	0.1	13.900	0.1
	0.1							
18.000	2.000	6.1	6.000	0.2	10.000	0.1	14.000	0.1
	0.1							
18.100	2.100	4.2	6.100	0.2	10.100	0.1	14.100	0.1
	0.1							
18.200	2.200	3.1	6.200	0.1	10.200	0.1	14.200	0.1
	0.1							
18.300	2.300	2.3	6.300	0.1	10.300	0.1	14.300	0.1
	0.1							
18.400	2.400	1.9	6.400	0.1	10.400	0.1	14.400	0.1
	0.1							
18.500	2.500	1.2	6.500	0.1	10.500	0.1	14.500	0.1
	0.1							
18.600	2.600	0.8	6.600	0.1	10.600	0.1	14.600	0.1
	0.1							
18.700	2.700	0.6	6.700	0.1	10.700	0.1	14.700	0.1
	0.1							
18.800	2.800	0.5	6.800	0.1	10.800	0.1	14.800	0.1
	0.1							
18.900	2.900	0.4	6.900	0.1	10.900	0.1	14.900	0.1
	0.1							
19.000	3.000	0.3	7.000	0.1	11.000	0.1	15.000	0.1
	0.1							
19.100	3.100	0.3	7.100	0.1	11.100	0.1	15.100	0.1
	0.1							
19.200	3.200	0.2	7.200	0.1	11.200	0.1	15.200	0.1
	0.1							
19.300	3.300	0.2	7.300	0.1	11.300	0.1	15.300	0.1
	0.1							
19.400	3.400	0.2	7.400	0.1	11.400	0.1	15.400	0.1
	0.1							
19.500	3.500	0.2	7.500	0.1	11.500	0.1	15.500	0.1
	0.1							
19.600	3.600	0.2	7.600	0.1	11.600	0.1	15.600	0.1
	0.1							
19.700	3.700	0.2	7.700	0.1	11.700	0.1	15.700	0.1
	0.1							
19.800	3.800	0.2	7.800	0.1	11.800	0.1	15.800	0.1
	0.1							
19.900	3.900	0.2	7.900	0.1	11.900	0.1	15.900	0.1
	0.1							

RUNOFF VOLUME = 0.62838 INCHES = 0.5295 ACRE-FEET
 PEAK DISCHARGE RATE = 16.05 CFS AT 1.745 HOURS BASIN AREA = 0.0158 SQ. MI.

*S-----
 FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 17:29:18

NM Rail Runner Pond Rating Curve					
Elevation (ft)	Area		Volume (ac-ft)	Cumulative Volume	Outlet Q (100' Spillway)
	(sq ft)	(ac)		(ac-ft)	(CFS)
4948	3919	0.090	0	0	0
4949	4920	0.113	0.101	0.10	0
4950	6031	0.138	0.126	0.23	0
4951	7243	0.166	0.152	0.38	0
4952	8522	0.196	0.181	0.56	0
4953	9857	0.226	0.211	0.77	0
4954	11249	0.258	0.242	1.01	0.0
4955	12698	0.292	0.275	1.29	308.7

Bottom of Pond Elevation = 4948.0

Top of Pond Elevation = 4955.0

Spillway Elevation = 4954.0

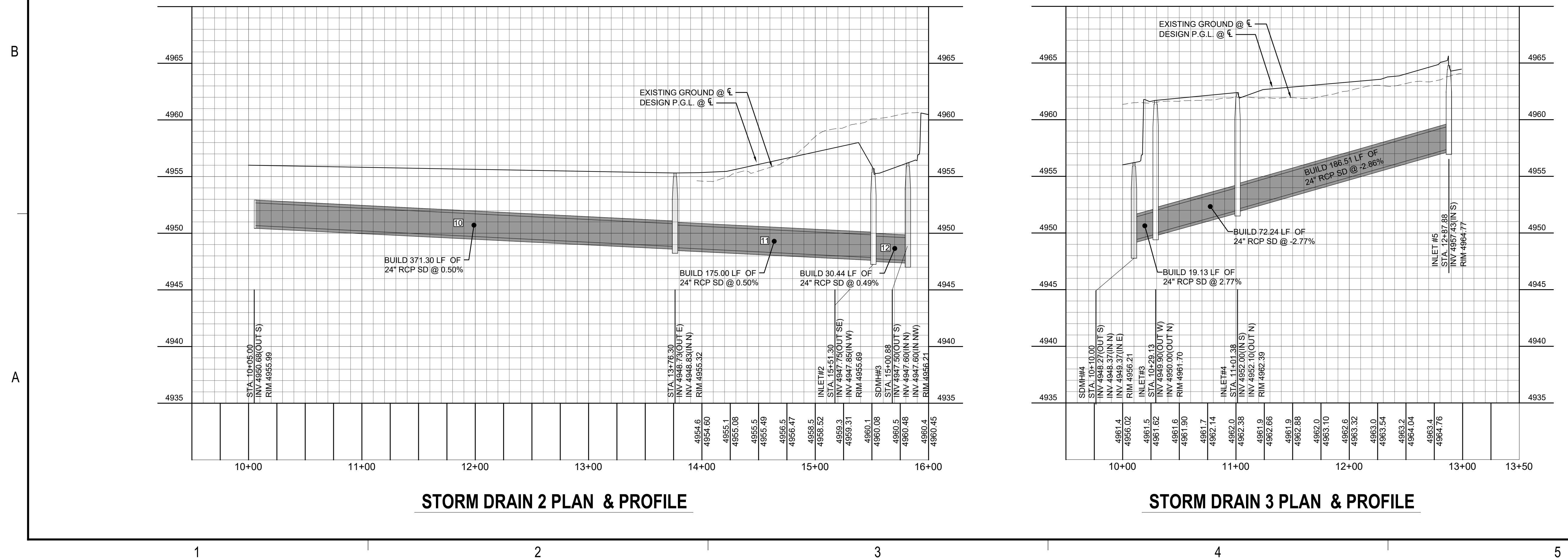
Maximum Water Surface Elevation = 4954.05

Actual Pond Volume = 1.02 AC-FT (at MSEL)

Actual Pond Volume = 1.29 AC-FT (at Top of Pond Elevation)

Allowable 100-year Peak Q = 17 CFS

Actual 100-year Peak Q = 16 CFS



GENERAL SHEET NOTES

- A. CONTRACTOR TO FIELD VERIFY EXISTING SITE CONDITIONS AND NOTIFY ARCHITECT IMMEDIATELY WITH ANY DISCREPANCIES
- B. CONTRACTOR TO PROVIDE EXTRA CARE WHEN TRENCHING OR EXCAVATING DUE TO BURIED UTILITY
- C. WATER LINE PROFILES DEVELOPED BY OTHERS
- D. SEWER LINE PROFILES DEVELOPED BY OTHERS
- E. STORM DRAIN PROFILES DEVELOPED BY OTHERS
- F. EXISTING UNDERGROUND UTILITIES SHOWN WERE DERIVED FROM EXISTING AS-BUILT'S PLANS FOR THE FOLLOWING CITY OF ALBUQUERQUE PROJECTS. CONTRACTOR TO COORDINATE AND PAY FOR WATER AND SANITARY SEWER SERVICE CONNECTION, TAPS, METERS, GAS LINE PLACEMENT REQUIREMENTS, UEC CHARGES, AND ALL DOCUMENTATION REQUIREMENTS. SCHEDULING, PIPE PLACEMENT, INSPECTIONS BY ABCWUA, & NM GAS.
- G. CONTRACTOR IS RESPONSIBLE TO PLAN AHEAD FOR ALL UTILITY INSTALLATIONS.
- H. INSTALL DETECTABLE WARNING TAPE
- I. WATERLINE: MINIMUM BURY IS 3 FEET. **FOR GENERAL CONSTRUCTION.**
- K. RESTRAINT TAPE SHALL BE PROVIDED BY OTHERS
- L. MECHANICAL JOINTS SHALL BE RESTRAINED AT THE FITTING.
- M. THE CONTRACTOR SHALL PROVIDE A MINIMUM PIPE LENGTH OF 20 LF FROM ALL MECHANICAL JOINTS. ALL PIPE JOINTS WITHIN 20 LF OF MJ SHALL BE RESTRAINED.
- N. THE CONTRACTOR SHALL RESTRAIN ALL FIRE HYDRANT JOINTS FROM THE TEE ON THE MAIN TO THE FIRE HYDRANT FLANGE.

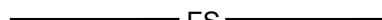
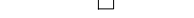
SHEET KEYNOTES

STORM DRAIN

22. INSTALL 24" RCP STORM DRAIN PIPE
23. INSTALL 36" RCP STORM DRAIN PIPE
24. INSTALL 48" RCP STORM DRAIN PIPE
25. INSTALL 12" RCP STORM DRAIN ROOF LEADER. SEE MECH. PLANS FOR CONTINUATION.
26. INSTALL 6" DIAMETER STORM DRAIN MANHOLE
27. INSTALL 8" DIAMETER STORM DRAIN MANHOLE
28. INSTALL STORM INLET TYPE DOUBLE "C" COA STD DWG 2205.
29. INSTALL STORM INLET TYPE DOUBLE "D" COA STD DWG 2206. INSTALL 6-INCH RIP RAP 12" BANCHES DEEP 5-FEET ALL AROUND INLET.
30. INSTALL FLARED END SECTION WITH TRASH RACK AND EROSION CONTROL PER NMDOT STD DWG 602-02-11.
31. INSTALL DUMPED RIPRAP CLASS "A" PER NMDOT STD DWG 602-01-11.
32. INSTALL VIER FOR DOWN OUTLET
33. INSTALL SIDEWALK CULVERT
34. RIPRAP DRAINAGE
35. CURB OPENING
36. INSTALL 4" DIAMETER STORM DRAIN MANHOLE
37. 24" STD SLUG

STORM DRAIN DATA				
PIPE	PIPE DIA	BEARING	LENGTH	SLOPE
1	48"	N22° 00' 23"E	75.00'	0.50%
2	48"	N48° 04' 42"E	305.36'	0.50%
3	36"	N09° 12' 40"E	85.51'	0.51%
4	24"	N09° 12' 40"E	134.27'	0.50%
5	24"	N09° 12' 40"E	61.17'	0.50%
6	24"	N09° 12' 40"E	133.43'	0.50%
7	24"	N09° 12' 40"E	118.10'	0.50%
8	24"	N09° 12' 40"E	87.30'	0.50%
9	24"	N52° 25' 18"W	98.14'	0.53%
10	24"	N09° 12' 40"E	371.30'	0.50%
11	24"	N80° 47' 20"W	175.00'	0.50%
12	24"	N38° 27' 09"W	30.44'	0.49%
13	24"	S84° 54' 51"E	19.13'	2.77%
14	24"	N14° 59' 59"E	72.24'	-2.77%
15	24"	N20° 18' 27"E	186.51'	-2.86%

LEGEND

- | | |
|---|---------------------------------|
|  | NEW WATER LINE |
|  | NEW FIRE SAFETY LINE |
|  | NEW SANITARY SEWER LINE |
|  | NEW GAS LINE |
|  | NEW STORM DRAIN LINE |
|  | NEW GATE VALVE |
|  | NEW FIRE HYDRANT |
|  | NEW CLEANOUTS (SINGLE / DOUBLE) |
|  | PARKING LOT LIGHTS |
|  | SITE LIGHT |
|  | FDC |
|  | PIV |
|  | REMOTE FDC LOCATION |

EXISTING SITE LEGEND

- | | |
|---|----------------------------|
|  SAS | EXISTING SANITARY SEWER |
|  W | EXISTING WATER |
|  G | EXISTING GAS |
|  SD | EXISTING STORM DRAIN |
|  E | EXISTING UNDERGROUND ELEC. |
|  LP | EXISTING LIGHT POLE |
|  TE | EXISTING TELE. PED. |
|  EB | EXISTING ELEC. BOX |
|  CB | EXISTING COMM. BOX |
|  BL | EXISTING BOLLARD |
|  MH | EXISTING MANHOLE |
|  SS | EXISTING STOP SIGN |



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OPERATIONS & MAINTENANCE FACILITY

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RIO METRO REGIONAL TRANSIT DISTRICT

809 COPPER AVENUE NW, ALBUQUERQUE,
NM 87102

ISSUES / REVISIONS LOG:

[illegible]

MARK	DATE	DESCRIPTION
PROJECT NO.:		R317697.01
DRAWN BY:		LT
REVIEWED BY:		NV
APPROVED BY:		SE

SHEET TITLE:

Storm Drain Plan & Profile

SHEET NUMBER:

C-301

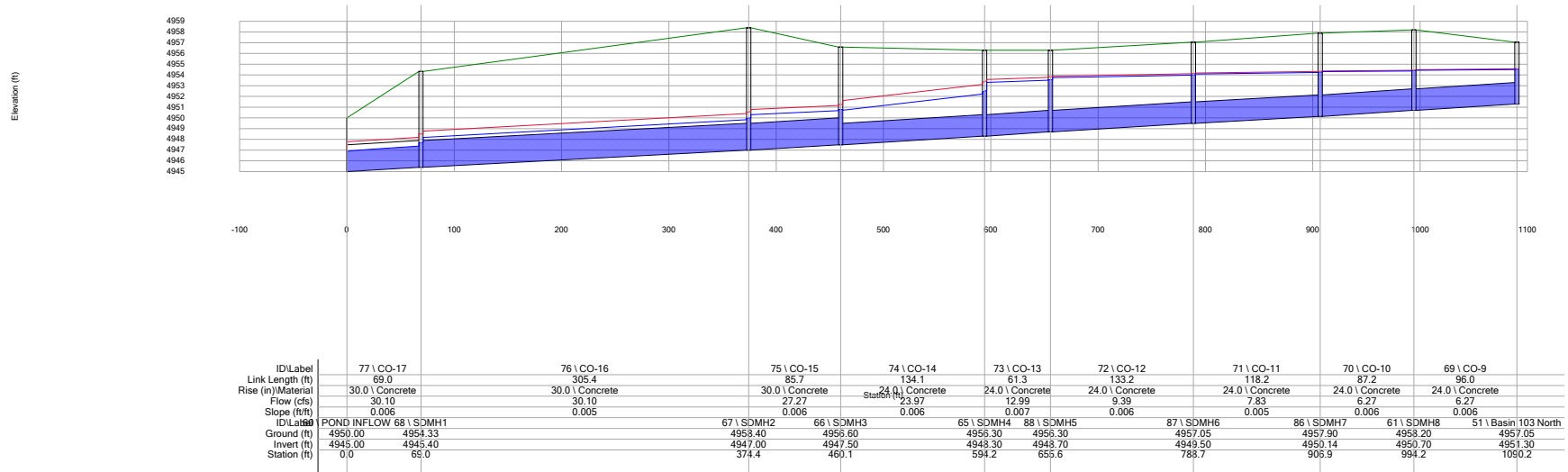
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FlexTable: Conduit Table

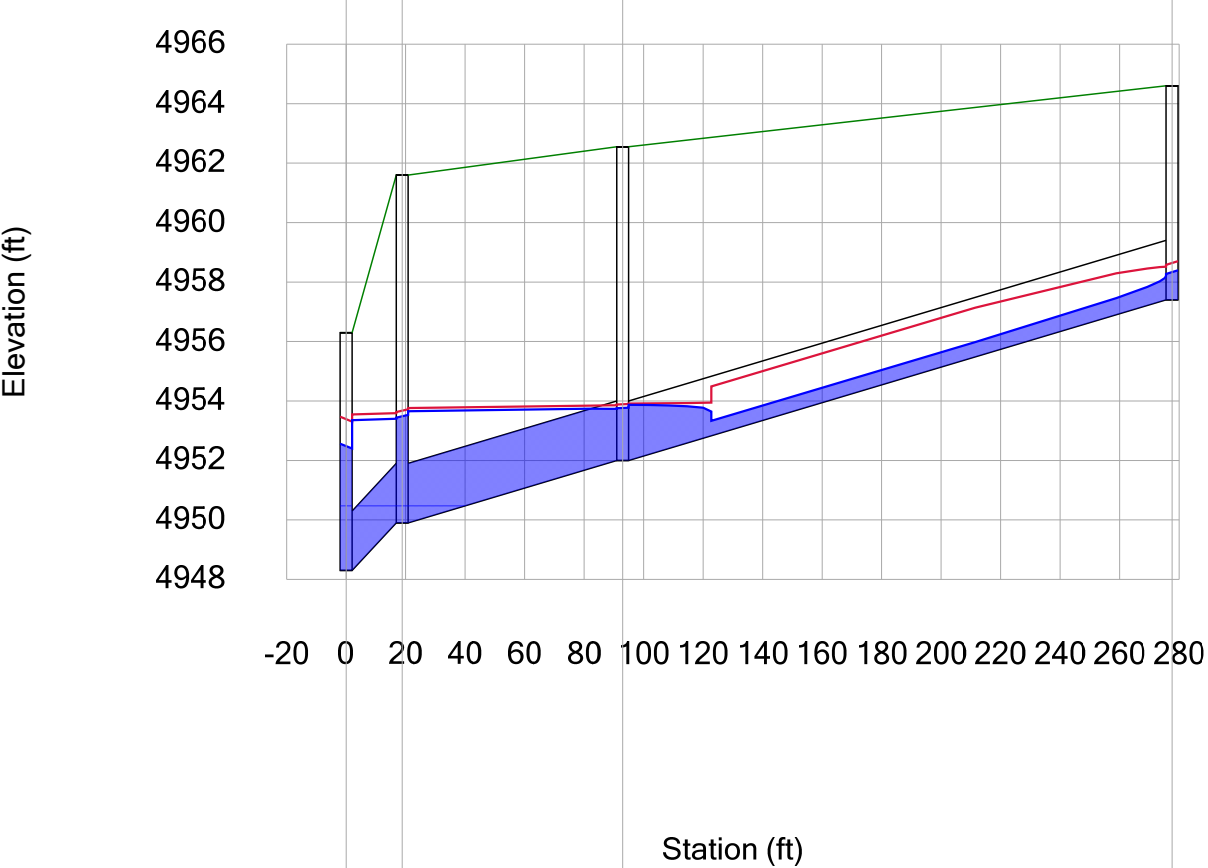
Start Node	Stop Node	Invert (Start) (ft)	Invert (Stop) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Elevation Ground (Start) (ft)	Elevation Ground (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)
BASIN 106 SOUTH	SDMH2	4,947.10	4,947.00	4,950.59	4,950.58	4,958.40	4,958.40	24.2	0.004	24.0	0.013	2.83	0.90
INLET 2	SDMH3	4,947.75	4,947.50	4,951.25	4,951.25	4,957.70	4,956.60	29.0	0.009	24.0	0.013	3.30	1.05
INLET 5	INLET 4	4,957.40	4,952.00	4,958.21	4,953.87	4,964.60	4,962.55	184.7	0.029	24.0	0.013	5.30	8.63
INLET 4	INLET 3	4,952.00	4,949.90	4,953.73	4,953.66	4,962.55	4,961.60	74.1	0.028	24.0	0.013	8.13	9.64
INLET 3	SDMH4	4,949.90	4,948.30	4,953.40	4,953.36	4,961.60	4,956.30	18.8	0.085	24.0	0.013	10.98	3.50
Basin 103 North	SDMH8	4,951.30	4,950.70	4,954.50	4,954.43	4,957.05	4,958.20	96.0	0.006	24.0	0.013	6.27	2.00
SDMH8	SDMH7	4,950.70	4,950.14	4,954.37	4,954.31	4,958.20	4,957.90	87.2	0.006	24.0	0.013	6.27	2.00
SDMH7	SDMH6	4,950.14	4,949.50	4,954.23	4,954.09	4,957.90	4,957.05	118.2	0.005	24.0	0.013	7.83	2.49
SDMH6	SDMH5	4,949.50	4,948.70	4,953.98	4,953.75	4,957.05	4,956.30	133.2	0.006	24.0	0.013	9.39	2.99
SDMH5	SDMH4	4,948.70	4,948.30	4,953.51	4,953.31	4,956.30	4,956.30	61.3	0.007	24.0	0.013	12.99	4.13
SDMH4	SDMH3	4,948.30	4,947.50	4,952.22	4,950.71	4,956.30	4,956.60	134.1	0.006	24.0	0.013	23.97	7.63
SDMH3	SDMH2	4,947.50	4,947.00	4,950.68	4,950.30	4,956.60	4,958.40	85.7	0.006	30.0	0.013	27.27	5.56
SDMH2	SDMH1	4,947.00	4,945.40	4,949.82	4,948.18	4,958.40	4,954.33	305.4	0.005	30.0	0.013	30.10	6.13
SDMH1	POND INFLOW	4,945.40	4,945.00	4,947.37	4,946.87	4,954.33	4,950.00	69.0	0.006	30.0	0.013	30.10	7.25

Profile Report Profile: STORM DRAIN 1

STORM DRAIN 1 - Base



Profile Report
Profile: STORM DRAIN 3
STORM DRAIN 3 - Base



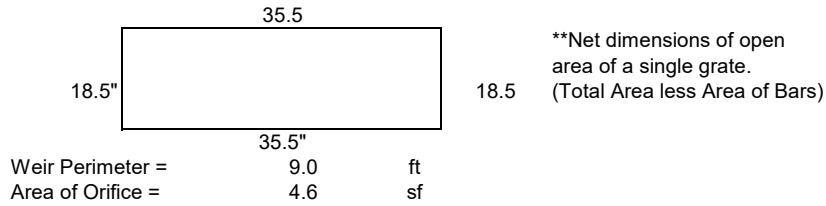
ID\Label	80 \ CO-20 79 \ CO-19		78 \ CO-18	
Link Length (ft)	18.8	74.1	184.7	
Rise (in)\Material	24.0 \ Concrete	24.0 \ Concrete	24.0 \ Concrete	
Flow (cfs)	10.98	8.13	5.30	
Slope (ft/ft)	0.085	0.028	0.029	
ID\Label	65 \ SD INLET 3	53 \ INLET 4	52 \ INLET 5	
Ground (ft)	4956.16	4962.55	4964.60	
Invert (ft)	4948.90	4952.00	4957.40	
Station (ft)	0.0 18.8	92.9	277.6	

Inlet Worksheet for 8" Curbs (Sump Condition)

Objective : Design a Type C or Type D Inlet in Sump Condition for a 100-year flow

- 1 Inlet to collect peak flow amount before overtopping headwall.

- 2 Grate Dimensions



- 3 Calculate Orifice and Weir Flow into Grate at Design Depth (Top of Curb)

Orifice Equation		Weir Equation	
$Q = 0.6 \times A \times (2 \times g \times h)^{1/2}$		$Q = 2.65 \times P \times H^{1/2}$	
Where		Where	
A =	4.6 sq. ft.	P =	9.0 ft
g =	32.2 ft ^{^2} /sec	H =	0.7 ft
h =	0.7 ft		
Therefore		Therefore	
Q =	18.0 cfs	Q =	19.5 cfs

Orifice Equation controls

Grate Capacity = 18.0 cfs

- 4 Apply 25% Clogging Factor to determine allowable design flow into inlet

$$18.0 \times 0.75 = 13 \text{ cfs}$$

Therefore Capacity of Single C/D Inlet in Sump Condition = 13 cfs

Capacity of Double C/D Inlet in Sump Condition = 27 cfs

Capacity of Triple C/D Inlet in Sump Condition = 40 cfs

*Grate Capacities do not account for curb opening inflow. Therefore, inlet capacities are the same for Type C and Type D inlets.