CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

July 25, 2025

Sara Lavy, PE
Parametrix
4041 Jefferson Plaza NE Unit Suite 210
Albuquerque, NM, 87113

RE: Zuni Pennsylvania Detention Pond
Drainage Report - Accepted
Engineer's Stamp Date: 7-18-2025
Hydrology File: L19D081
Case # HYDR-2025-00132

Dear Ms. Lavy:

Based upon the information provided in your submittal received 7/22/2025, the Grading & Drainage Report is approved for Design. Please submit the Grading and Drainage Plans for review and approval for Building Permit, Grading Permit, Paving Permit, and Work Order Permit.

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, 505-924-3420) 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. CFM
Senior Engineer, Hydrology
Planning Department, Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Zuni Pennsylvania Detention Pond Drainage Report

Prepared for
AMAFCA

June 2025

SARA LAVY
NEW MEXICO
15092
REGISTERED PROFESSIONAL ENGINEER
7-18-25

Parametrix

City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION
APPROVED

DATE: 7/25/2025
BY:
HydroTrans # L19D081

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.

Zuni Pennsylvania Detention Pond Drainage Report

Prepared for

AMAFCA
2600 Prospect Avenue NE
Albuquerque, NM 87107

Prepared by

Parametrix
4041 Jefferson Plaza NE, Suite 210
Albuquerque, NM 87109
T. 505.821.4700 F. 1.206.649.6353
www.parametrix.com

June 2025 | 564-6279-003

Citation

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Acronyms and Abbreviations

AHYMO	Arid-Lands Hydrologic Model
AMAFCA	Albuquerque Metropolitan Arroyo Flood Control Authority
Campus Wash	Campus Wash Drainage Report
EPA	U.S. Environmental Protection Agency
HEC-HMS	Hydrologic Engineering Center Hydrologic Modeling System
IDL Pond	International District Library Surge Pond
Moon Mini	San Mateo to Moon Mini Drainage Management Plan
SD	storm drain
SWMM	Storm Water Management Model

1. Introduction

The purpose of this report is to provide the updated hydraulic analysis for a proposed detention pond facility. The new pond will be located at the southeast corner of Zuni Road and Pennsylvania Street (see Figure 1). The analysis will also include the existing detention pond at the International District Library site as the hydraulics of the two ponds are connected. The International District Library Surge Pond (IDL Pond) and the Zuni Pennsylvania Detention Pond (Zuni Penn Pond) are proposed new facilities to contain stormwater flows and reduce the incoming flows to the existing Dallas storm drain system.

The drainage basins in this area of Albuquerque generally drain from east to west, and large-diameter interceptor storm drains are generally located in the north-south-direction streets. The conveyance capacity of these large-diameter storm drains is limited due to the mild south to north slopes. The I-40 Channel is the outfall for all the north-south storm drains. The channel cannot accept additional flows due to capacity limitations.

The Campus Wash Drainage Report (Campus Wash) and San Mateo to Moon Mini Drainage Management Plan (Moon Mini), both by Smith Engineering Company, were prepared in 2008 and 2017, respectively. Since that time, changes to the proposed drainage facilities in the area have occurred. The two proposed detention pond facilities were not included in the previous drainage management plans. The U.S. Environmental Protection Agency (EPA) Storm Water Management Model (SWMM) program, version 5.2, was used to model the existing storm drain facilities in the area and the two proposed ponds to verify that the system will function as desired. See Figure 1 for the study area.

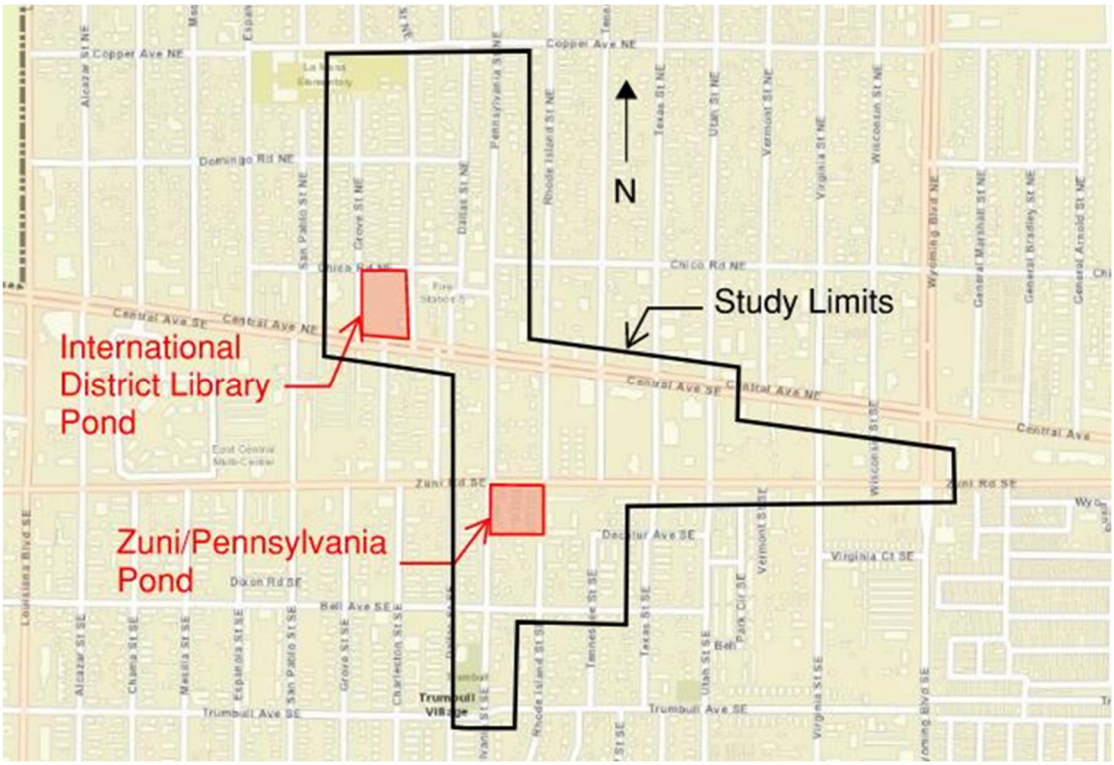


Figure 1. Study Area

2. Existing Conditions

2.1 Previous Reports

- *Drainage Report for the Campus Wash Drainage Basin* (May 2008) – The purpose of this report by Smith Engineering Company was to conduct a drainage analysis and develop a floodplain analysis to determine where Federal Emergency Management Agency-identified floodplains could be eliminated in the drainage basins. This project developed a hydrologic analysis for the area and summarized the flow hydraulics for flows in the streets and storm drains. A detailed field observation of existing drainage patterns and existing infrastructure, including detention ponds, storm drain inlets, street flow split locations, street widths, and curb heights, etc., was conducted. A hydrologic analysis for the 100-year, 24-hour storm using the AHYMO_97 computer program for the "fully developed" conditions was developed.

  The project was generally bounded between Eubank Boulevard to the east, the intersection of Campus Boulevard and Lomas Boulevard to the west, the intersection of Ridgecrest Drive and Louisiana Boulevard to the south, and Central Avenue/Copper Avenue to the north, and it included the Zuni-Pennsylvania Detention Pond site.

- *San Mateo to Moon Mini Drainage Management Plan* (November 2017) – This plan, prepared by Smith Engineering Company, analyzed existing drainage conditions, determined deficiencies, and developed proposed improvements. Some flows from the hydrologic model from the Campus Wash study were input, as it is adjacent to this study and those storm drain systems convey off-site flows into this study area. The Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) was used to model the 2-year, 10-year, and 100-year storms in this study. Several hydrographs from the Campus Wash Drain Management Plan were imported into this study.

  The study area is generally bounded by I-40 to the north, Zuni Road to the south, Eubank to the east, and Washington Street to the west. The Zuni-Pennsylvania Detention Pond is located just south of the study boundary.

- *Zuni Pennsylvania Detention Pond* (October 2022) – This draft report by Parametrix documents the hydraulic analysis and key design features for a new detention pond at the southeast corner of Zuni Road and Pennsylvania Avenue. It was to be updated based on the findings of the SWMM models. This report is superseded by this current report.

- *International District Library Surge Pond Drainage Report* (August 2023) – This report was prepared by High Mesa Consulting Group to document the drainage analysis for a new surge pond that the City of Albuquerque constructed with partial funding from the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The report documents two phases for the pond construction. The first phase will be a retention pond that captures the on-site drainage flows. The second phase will function as a surge pond and include new storm drains in Chico Road to allow the pond flows to outflow to the Dallas storm drain.

- *Zuni Detention Pond, Storm Water Management Model* (August 2024) – This report was prepared by Parametrix and provides the hydraulic analysis for the Zuni-Pennsylvania Detention Pond and the International District Library Surge Pond. The Zuni pond was designed to a depth of 24 feet. Flows would outflow from the pond via a forcemain/pump and a gravity storm drain. EPA SWMM was used to model the two new detention ponds and the existing/proposed storm sewer system.

2.2 Flood Insurance Rate Map (FIRM)

The site is located on Flood Insurance Rate Map 35001C0358H. The map shows that the project site is not within a floodplain (See Figure 2).

Figure 2. FIRM 35001C0358H

2.3 Existing Storm Drains

There is an existing 54” storm drain line in Zuni Road flowing from east to west and an existing 36” storm drain in Pennsylvania Street with flows draining from south to north. In addition, there is an existing 18” storm drain line running along the east side of the site from the end of Rhode Island Street to an existing drop inlet in Zuni Road. The existing 36” and 54” storm drains in Zuni Road and Pennsylvania Street connect at a junction box at the intersection of those two streets. An existing 66” storm drain continues north from the junction box towards Central Avenue. At Central Avenue, the 66” in Pennsylvania connects to a 30” in Central Avenue and then continues north in Dallas Street until it eventually discharges to the I-40 Channel (see Figure 3 and Figure 4).

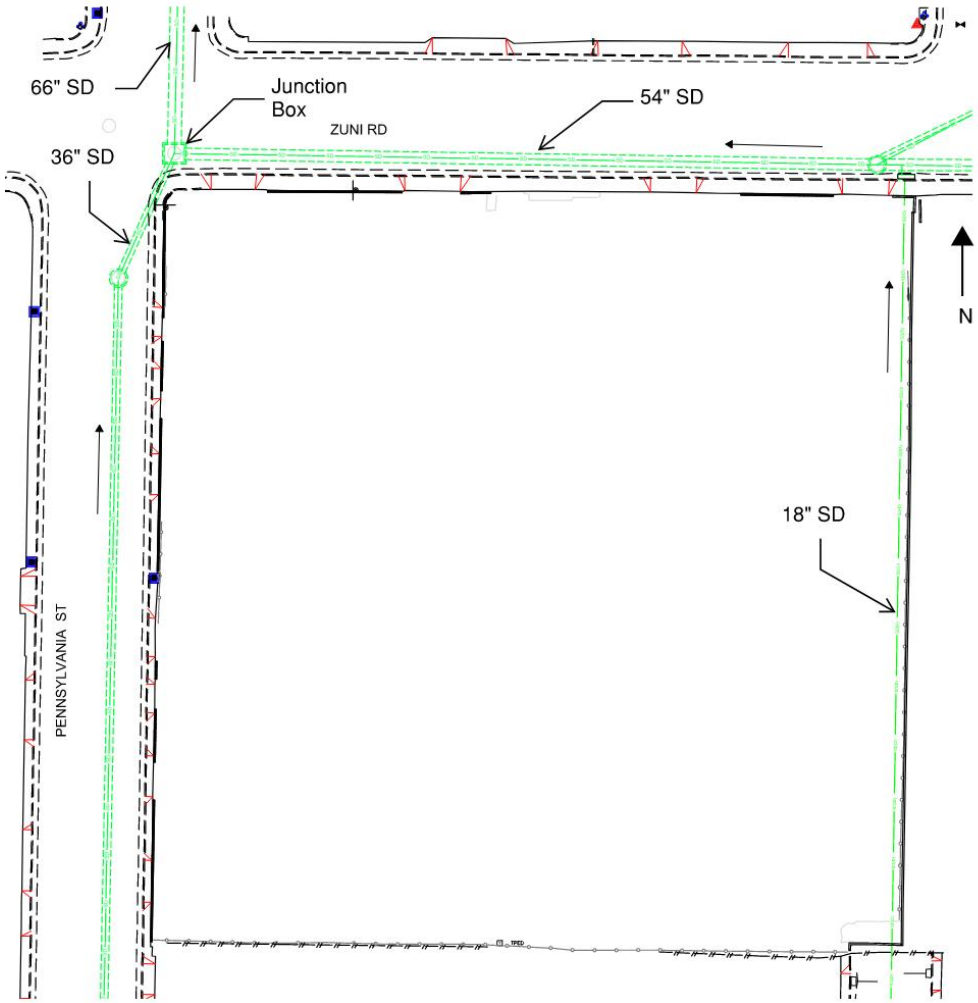


Figure 3. Existing Storm Drain Layout

Figure 4. Existing Storm Drain Layout (Cont'd)

3. Hydrology

3.1 Drainage Basins

This study included drainage basins from the two previous studies in the area: Campus Wash and Moon Mini. The Zuni Penn Pond is located within the Campus Wash study. The Zuni Penn Pond will discharge into the Dallas storm drain, which drains north through the Moon Mini study area. In addition, a new basin (Chico Basin) was added that drains to the IDL Pond. This basin was assumed to flow north in the Moon Mini study and did not impact the IDL Pond in that study. However, after

discussions with AMAFCA and the City of Albuquerque, it was decided that portions of that basin may impact the IDL Pond and that the flows should be included in this study.

3.2 HEC-HMS

HEC-HMS was used to determine the hydrographs for input into the SWMM. The two previous studies in the area, Campus Wash and Moon Mini (see Section 2.1), used different hydrology methods, HEC-HMS and Arid-Lands Hydrologic Model (AHYMO), that had to be considered for this project. As HEC-HMS is currently the only accepted hydrology model for AMAFCA, that was the model used for this project.

The Moon Mini HEC-HMS model was provided by AMAFCA and was the basis for the HEC-HMS model used for this study. The AHYMO basin inputs from the Campus Wash study were input into the Moon Mini HEC-HMS hydrologic model using the AMAFCA white paper *Migrating from AHYMO'97 to HEC-HMS (and USEPA SWMM)* for guidance. As the Campus Wash study encompassed a much larger area than this project, the basins which did not impact the study area were deleted from the model. This helped the model run faster and more efficiently.

Two basins were added to the HEC-HMS model that primarily impact the IDL pond. The IDL Pond basin consists of the property containing the pond and the area east of Dallas Street that drains towards Chico Road.

Table 1 shows the conversion of the AHYMO basin inputs to HEC-HMS inputs. A more detailed summary and figures showing basin locations are located in Appendix A.

Table 1. AHYMO Conversion Summary

Basin ID	Location	SWMM Input Node	AHYMO 100-Year Flow (cfs)	HEC-HMS 100-Year Flow (cfs)	AHYMO 100-Year Volume (ac-ft)	HEC-HMS 100-Year Volume (ac-ft)
70	Moon to Wyoming	Added to 2A Junction	68.5	67.9	4.7	4.8
72	Wyoming to Virginia	Added to 2A Junction	49	50.5	2.88	2.9
Dallas SD	Central SD	1-DallasSD	276.01	273.8	37.8	38.1
Recall 4.94	South of project area	Added to 2A Junction	159.2	159.7		10.9
Junction - 70, 72, and Recall 4.94 Basins	Zuni/ Wyoming	2A-Wyoming	266.5	251.4	18.61	18.6
74	Zuni/Utah	2B Utah	53.2	54.6	3.28	3.3
75	Tennessee/ Decatur	3-Penn	93.3	93.7	5.54	5.6
IDL Pond	IDL Pond Site	5-IDL+ChicoBasin	N/A	8.5	N/A	0.5
Chico Basin		5-IDL+ChicoBasin		183.5		8.4

AHYMO = Aric-Lands Hydrologic Model Conversion; HEC-HMS = Hydrologic Engineering Center Hydrologic Modeling System; cfs = cubic feet per second; ac-ft = acre feet.

The HEC-HMS hydrographs were input into SWMM as time series tables. The hydrographs were input at five locations (indicated by green circles on Figure 5):

- Central/Utah: 1-DallasSD
- Zuni/Wyoming: 2A-Wyoming
- Zuni/Utah: 2B-Utah
- Tennessee/Decatur: 3-Penn
- IDL_Pond: 5-IDL+ChicoBasin

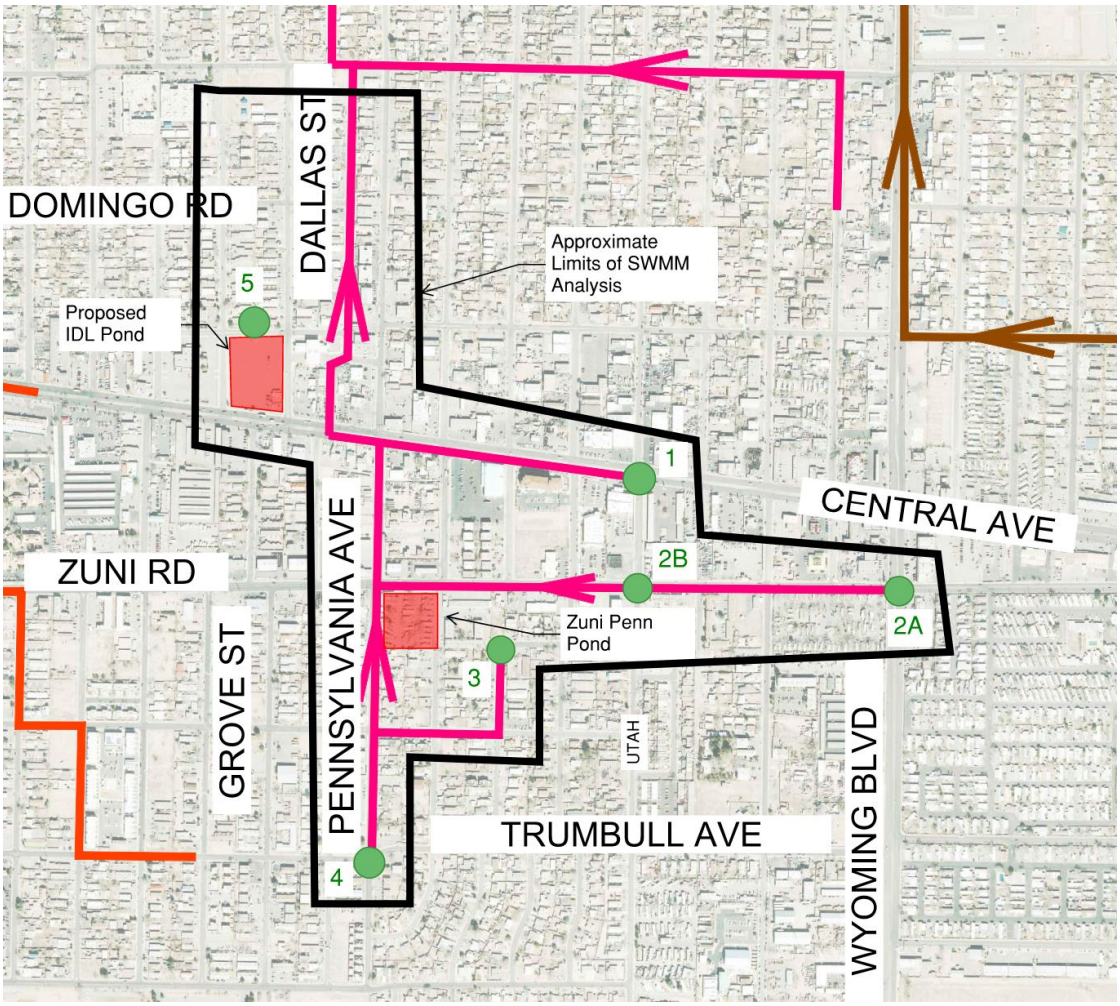


Figure 5. Storm Drain and Pond Schematic

4. Hydraulics

4.1 Roadway Improvements

Zuni Road and Pennsylvania Street border the pond on the north and west sides, respectively. The adjacent roadway widths and curb locations will not be changed with this project. The adjacent sidewalks will be modified to meet current City of Albuquerque standards. Currently, the sidewalk on the east side of Pennsylvania adjacent to the pond is 3.5' wide. This will be widened to 7' with this project. The sidewalk on the south side of Zuni Road is 5.5' wide and will be widened to 6' with an 8' landscape buffer between the sidewalk and curb. The changes will not affect the street hydraulics.

4.2 Storm Drain

Flows from the existing 54" diameter storm drain in Zuni Road will drain into the new detention pond at a new manhole and inlet pipe at the northeast corner of the site. The existing 54" diameter pipe will allow 256.5 cfs from Zuni Road storm drain to enter the new detention pond. The existing 54" diameter will be plugged to the west at the new manhole to prevent the existing flows from continuing west. A new manhole will be added in Zuni Road at the northwest side of the pond and a new 30" diameter outflow pipe from the pond to the Zuni Road storm drain. The junction box located in the intersection of Zuni Road and Pennsylvania Street will remain.

In Pennsylvania Street, a new manhole will be constructed near the northwest corner of the pond to allow flows from the 36" diameter Pennsylvania storm drain to enter the pond. New drop inlets will be added at this location to capture street flows and convey those flows to the pond. The existing 36" diameter storm drain carries 58 cfs and an additional 37.5 cfs will be captured with the new drop inlets. A total of 97.5 cfs will enter the new pond from Pennsylvania Street through a 42" diameter pipe.

The existing 18" storm drain from Rhode Island Street on the east side of the pond will be intercepted and allowed to drain into the proposed detention pond. (See Figure 6).

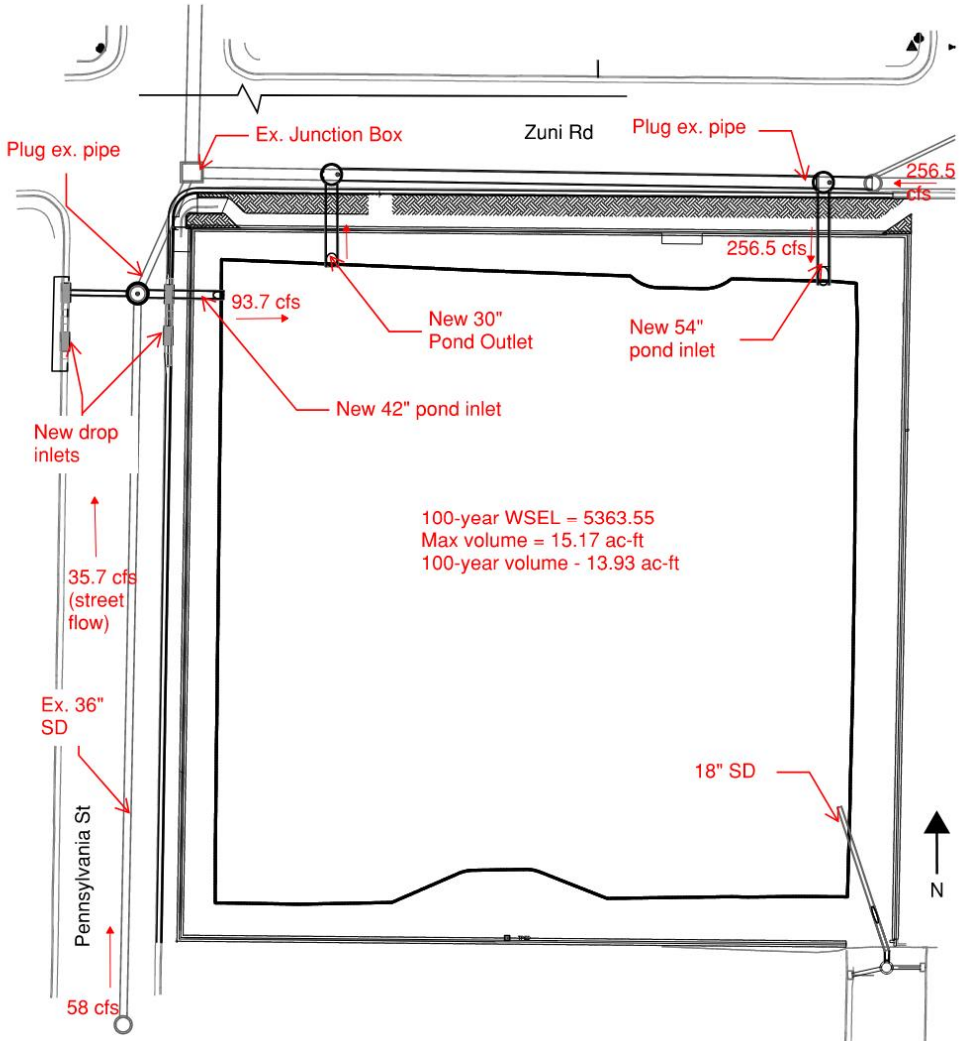


Figure 6. Proposed Storm Drain Layout

4.3 Zuni Pennsylvania Detention Pond

The proposed detention pond will have maximum capacity for 15.17 acre-feet of volume at 10.37 feet deep. The proposed detention pond will provide the necessary volume through a combination of 1.5:1 concrete side slopes and short vertical retaining walls. The lowest point on the pond bottom is 5353.9 and the top of pond elevation is 5364.27. The pond will function at 91.8% of the total capacity during the 100-year storm with an outflow pipe of 30-inch diameter. See Table 2 for a summary of the pond analysis. Water quality at the outflow pipe from the pond will be maintained using a ported riser.

Table 2. 100-year Storm Pond Summary

Pond	Peak Inflow (cfs)	Peak Outflow (cfs)	Inflow Runoff Volume (ac-ft)	Max Pond Storage (ac-ft)	Peak Pond Storage (ac-ft)	Peak Water Surface Elevation	Bottom of Pond Elevation	Max Allowable Water Surface Elevation	Max Pond Depth (ft)
Zuni-Penn Pond	210.4	69.78	27.1	15.17	13.93	5363.55	5353.9	5364.27	10.37

4.4 International District Library Surge Pond

The International District Library Surge Pond is located at the southwest corner of Chico Road and Charleston Street. Phase 1 of the project has been constructed which includes the surge pond and a storm drain stub out to the north for a connection to a future storm drain in Chico Road that will connect to the existing storm drain in Dallas Street.

According to the plans provided to AMAFCA and Parametrix, the surge pond detention pond has a maximum capacity for 5.02 acre-feet of volume at 7.20 feet deep. The lowest point on the pond bottom is 5343.0 and the top of pond elevation is 5350.00. The pond will function at 85.7% of the total capacity during the 100-year storm with an outflow pipe of 36-inch diameter. See Table 3 for a summary of the pond analysis.

Table 3. 100-year Storm Pond Summary

Pond	Peak Inflow (cfs)	Peak Outflow (cfs)	Inflow Runoff Volume (ac-ft)	Max Pond Storage (ac-ft)	Peak Pond Storage (ac-ft)	Peak Water Surface Elevation	Bottom of Pond Elevation	Max Allowable Water Surface Elevation	Max Pond Depth (ft)
IDL Pond	191.06	45.84	8.93	5.02	4.30	5349.56	5343.0	5350.20	7.20

4.5 SWMM

The EPA SWMM is a hydraulic model used to route runoff and inflow through drainage system network of pipes, storage units, and diversion structures. The pipe and catch basin network was modeled to match the existing as-built system provided by AMAFCA (Appendix C) along Zuni Road,

Pennsylvania Avenue, Central Avenue, and Dallas Street, with the outfall at Dallas and Copper Road. Some of the older storm drain as-builts used the NAVD 29 vertical datum. The current plans use the NAVD 88 vertical datum. To account for this difference, 2.723 feet was added to the NAVD 29 elevations to get elevations in NAVD 88. These inputs are provided in Appendix B.

For the Zuni Pond and IDL Pond, proposed designs were incorporated into the model. This included adding catch basins, conveyance pipes, and storage units.

Figure 7 below shows a schematic of the SWMM with flow direction and hydrograph input locations.

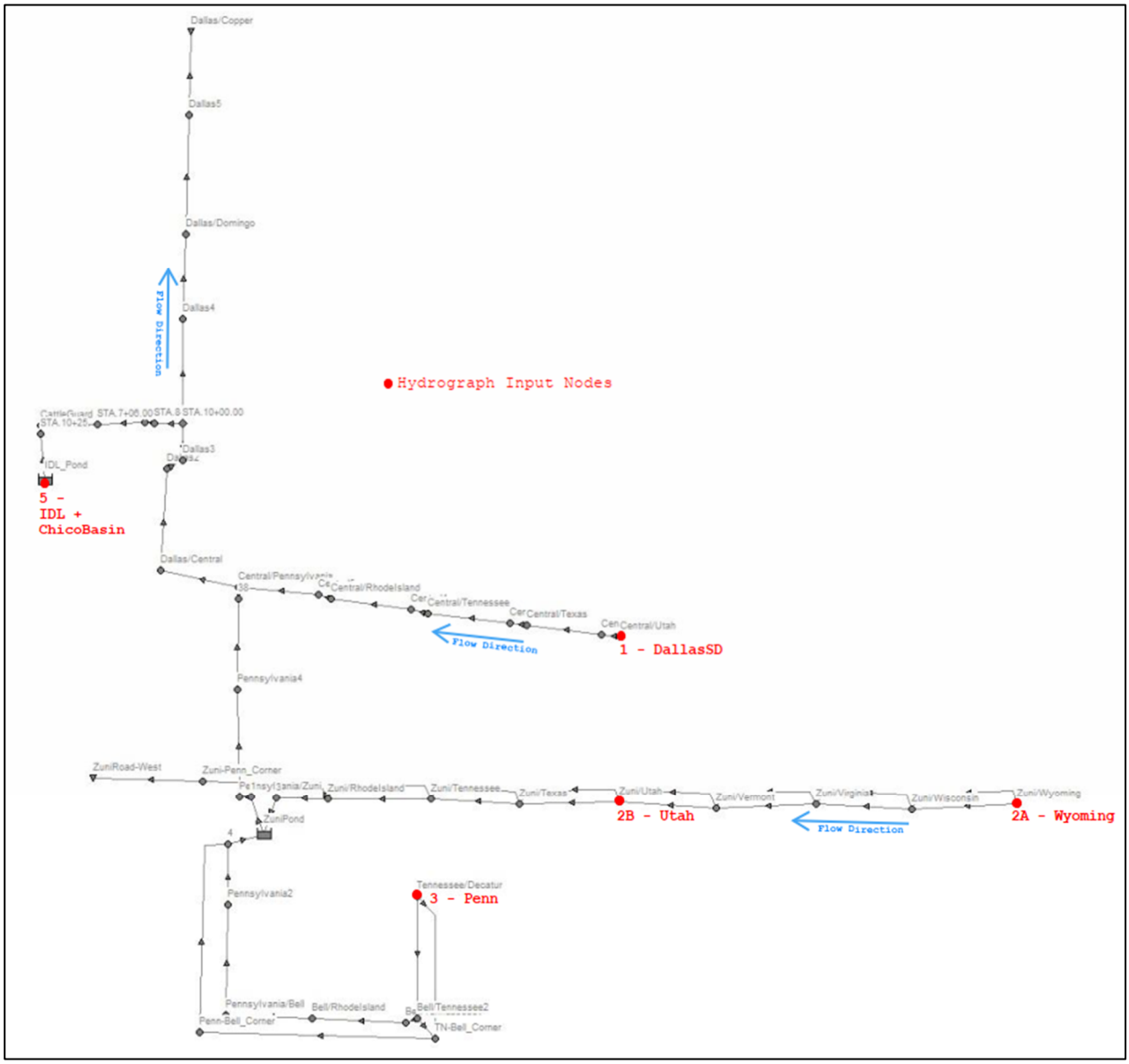


Figure 7. SWMM Model Schematic

4.5.1 Assumptions and Limitations

The SWMM has a few limitations that apply to this analysis:

- Inlet/outlet pipe losses are hard to account for in storm networks.
- Flooding/overtopping is water lost to the system when in reality the water would return to the system downstream at another catch basin inlet.

These limitations were worked around by:

- Based on research about entrance and exit losses in the SWMM, they are considered minor losses, and were accounted for in the model by setting the roughness to 0.013.
- Street network was added beside the conduit system along Tennessee St SE, Bell Ave SE, Pennsylvania St SE, and Zuni Rd SE. to account for overland flow. This allows the water to flow down the road and back into the conveyance system where and when there is capacity.

In addition, some modeling assumptions and reasoning for are noted below:

- To be conservative, the outfall at Dallas Road and Copper Avenue was modeled as full (tailwater condition set to top of existing pipe) to account for the lack of capacity in the system and any backwater that could occur from the network north of Copper Avenue (which was not modeled).
- Dynamic wave routing method was chosen as it allows backwater effects to occur. As the proposed built systems assume some backwater into the proposed ponds.
- The model does not include a conveyance system for the Chico Basin flows to travel to the IDL Pond. The model adds the Chico Basin flows directly to the pond to analyze the capacity of the IDL pond. A future storm drain will need to be designed to convey the Chico Basin flows to the pond. This future storm drain and the required inlets are not included in this SWMM model.
- Street flow was added along Tennessee Street SE, Bell Ave SE, and Pennsylvania Street SE to help account of overland flow and to accurately represent surcharging and flooding at inlets and along the roadway. Street flow was not added along Central Ave SE and thus the model shows flooding and surcharging along the pipe and node network.

5. Conclusions

The hydraulic analysis shows that the proposed storm drain improvements, the proposed Zuni-Pennsylvania Pond, and the IDL Pond will act in concert to successfully reduce the flows entering the Dallas storm drain system. The model shows the Zuni-Pennsylvania Pond is 91.8% full and the IDL Pond is 85.8% full (see Table 4 below).

Table 4. SWMM Pond Summary

Pond	Maximum Volume (ac-ft)	Percent Full
Proposed IDL	7.6	85.7
Zuni Penn	13.93	91.8

Appendix A

Hydrology and Hydraulics Data

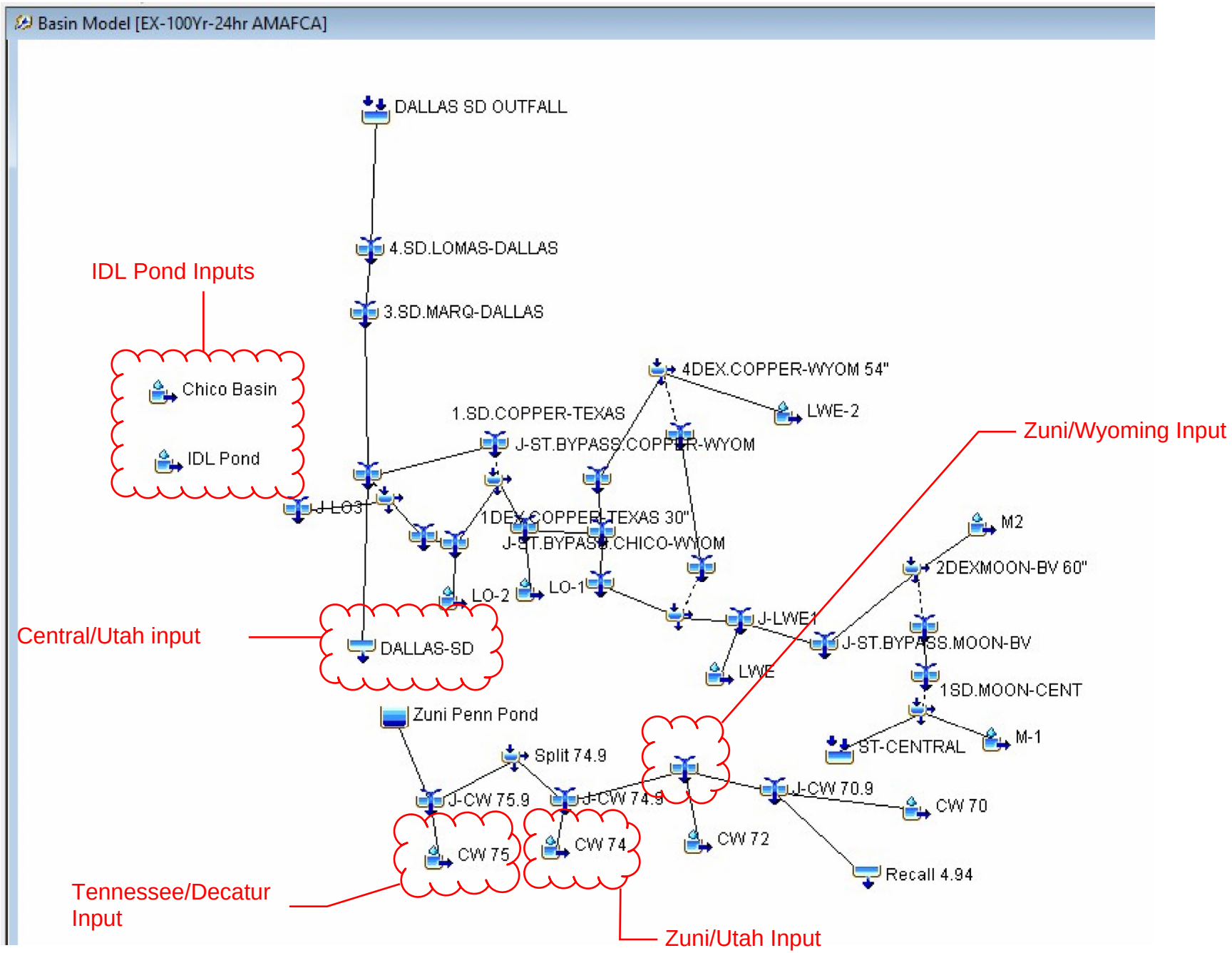
Project: Zuni Pond Model Simulation Run: 100-24hr AMAFCA

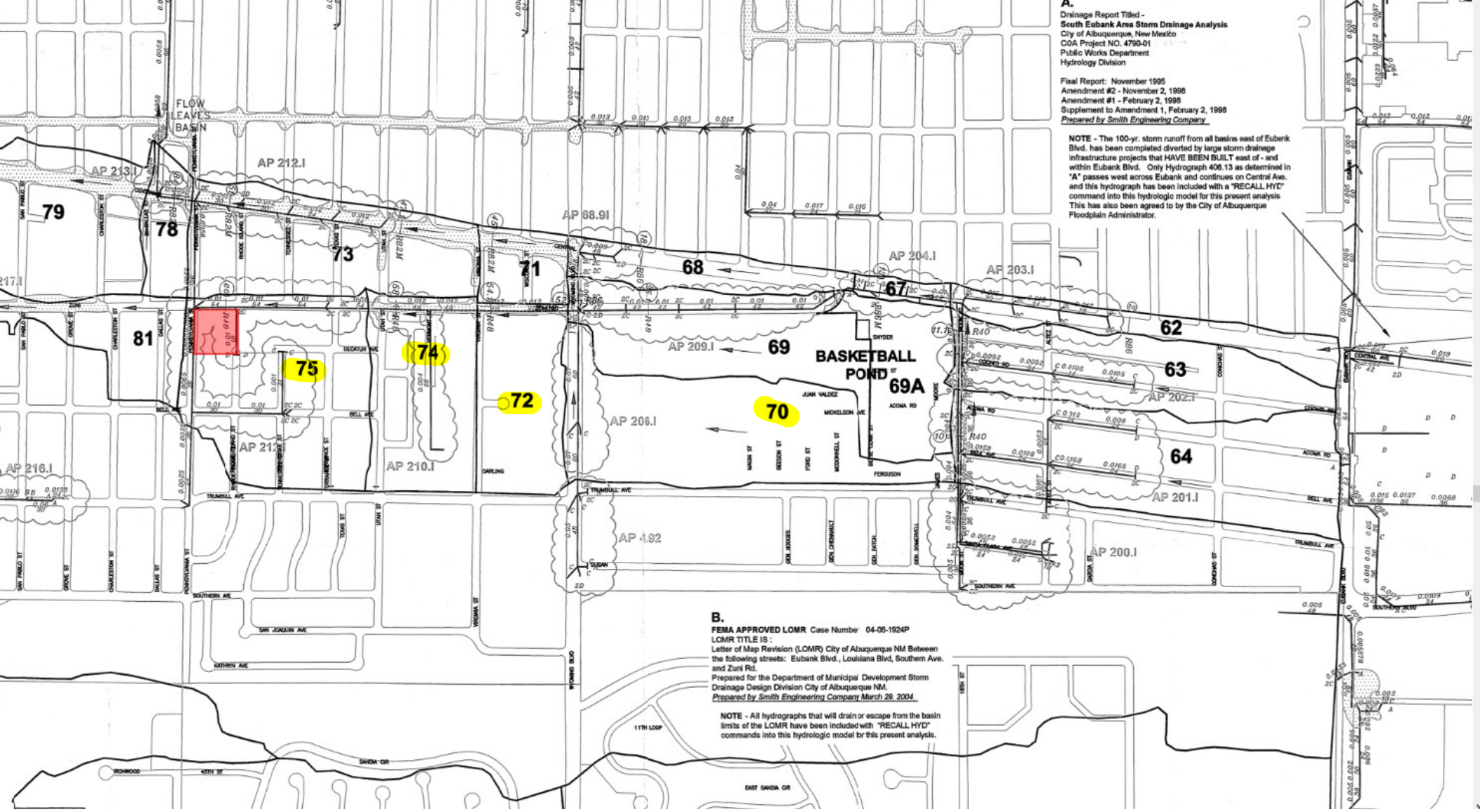
Start of Run: 16May2012, 10:00 Basin Model: EX-100Yr-24hr AMA
End of Run: 18May2012, 10:00 Meteorologic Model: 100-yr 24-hr 25% we
Compute Time: 17Jul2024, 16:29:31 Control Specifications: 4 min interval

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
J-LO3	0.4896	373.4	16May2012, 16:20	21.5
Recall 4.94	0.1424	159.1	16May2012, 16:04	10.9
CW 70	0.06135	67.9	16May2012, 16:16	4.8
J-CW 70.9	0.20375	200.9	16May2012, 16:08	15.7
CW 72	0.02854	50.5	16May2012, 16:08	2.9
CW 74	0.036382	54.6	16May2012, 16:12	3.3
J-CW 74.9	0.268672	301.1	16May2012, 16:08	21.9
Split 74.9	0.268672	259.1	16May2012, 16:08	10.8
CW 75	0.05972	93.7	16May2012, 16:08	5.6
J-CW 69.98	0.23229	251.4	16May2012, 16:08	18.6
J-CW 75.9	0.328392	350.2	16May2012, 16:12	16.5
M2	0.0704	125.8	16May2012, 16:16	8.4
2DEXMOON-BV 60"	0.0704	17.8	16May2012, 16:16	0.2
LWE	0.1145	142.1	16May2012, 16:20	10.0
J-ST.BYPASS.MOON-BV	0.0704	17.8	16May2012, 16:16	0.2
J-LWE1	0.1849	157.8	16May2012, 16:20	10.2
3DEX.CHICO-WYOM 42"	0.1849	98.8	16May2012, 16:20	2.6
J-ST.BYPASS.CHICO-WYOM	0.1849	98.8	16May2012, 16:20	2.6
LWE-2	0.0736	102.7	16May2012, 16:16	6.7
4DEX.COPPER-WYOM 54"	0.0736	42.7	16May2012, 16:16	0.9
J-ST.BYPASS.COPPER-WYOM	0.0736	42.7	16May2012, 16:16	0.9
J-TOTALSTBYPASS.LWE1&2	0.2585	139.2	16May2012, 16:20	3.4
LO-1	0.1352	143.7	16May2012, 16:24	11.2
J-AP10	0.3937	278.7	16May2012, 16:20	14.7
1DEX.COPPER-TEXAS 30"	0.3937	278.7	16May2012, 16:20	14.7
LO-2	0.0959	94.7	16May2012, 16:20	6.9
J-ST.BYPASS.COPPER-TEXAS	0.4896	373.4	16May2012, 16:20	21.5

Zuni Pond Input

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (ACRE-FT)
J-ST.TOTAL. COPPER-DALLAS	0.43896	373.4	16May2012, 16:20	21.5
2DEX.COPPER-DALLAS	0.43896	373.4	16May2012, 16:20	21.5
DALLAS-SD	0.405	273.8	16May2012, 16:04	38.1
1.SD.COPPER-TEXAS	0.0	0.0	16May2012, 10:00	0.0
2.SD.COPPER-DALLAS	0.405	273.8	16May2012, 16:04	38.1
3.SD.MARQ-DALLAS	0.405	273.8	16May2012, 16:04	38.1
4.SD.LOMAS-DALLAS	0.405	273.8	16May2012, 16:04	38.1
DALLAS SD OUTFALL	0.405	273.8	16May2012, 16:04	38.1
Zuni Penn Pond	0.328392	5.0	16May2012, 16:04	15.8
M-1	0.019	53.1	16May2012, 16:08	2.6
1D.EXMOON-CENT 30"	0.019	0.0	16May2012, 10:00	0.0
Chico Basin	0.0619	183.5	16May2012, 16:08	8.4
ST-CENTRAL	0.019	0.0	16May2012, 10:00	0.0
1SD.MOON-CENT	0.0	53.1	16May2012, 16:08	2.6
IDL Pond	0.00352	8.5	16May2012, 16:12	0.5
2SD.MOON-BV	0.0	156.2	16May2012, 16:12	10.8
3SD.CHICO-WYOM	0.0	59.0	16May2012, 16:08	7.6
4SD.COPPER-WYOM	0.0	119.0	16May2012, 16:08	13.4


Basin Model [EX-100Yr-24hr AMAFCA]
DALLAS SD OUTFALL
4.SD.LOMAS-DALLAS
3.SD.MARQ-DALLAS
IDL Pond Inputs
Chico Basin
IDL Pond
4DEX.COPPER-WYOM 54"
LWE-2
1.SD.COPPER-TEXAS
J-ST.BYPASS.COPPER-WYOM
J-LO3
1DEX.COPPER-TEXAS 30"
J-ST.BYPASS.CHICO-WYOM
LO-2
LO-1
Zuni/Wyoming Input
M2
2DEXMOON-BV 60"
J-LWE1
J-ST.BYPASS.MOON-BV
Central/Utah input
DALLAS-SD
LWE
1SD.MOON-CENT
Zuni Penn Pond
M-1
ST-CENTRAL
Split 74.9
J-CW 75.9
J-CW 74.9
J-CW 70.9
CW 70
CW 75
CW 74
CW 72
Recall 4.94
Tennessee/Decatur Input
Zuni/Utah Input


A.
Drainage Report Titled -
South Eubank Area Storm Drainage Analysis
City of Albuquerque, New Mexico
COA Project NO. 4790-01
Public Works Department
Hydrology Division
Final Report: November 1995
Amendment #2 - November 2, 1998
Amendment #1 - February 2, 1998
Supplement to Amendment 1, February 2, 1998
Prepared by Smith Engineering Company
NOTE - The 100-yr. storm runoff from all basins east of Eubank Blvd. has been completed diverted by large storm drainage infrastructure projects that HAVE BEEN BUILT east of - and within Eubank Blvd. Only Hydrograph 406.13 as determined in "A" passes west across Eubank and continues on Central Ave. and this hydrograph has been included with a "RECALL HYD" command into this hydrologic model for this present analysis This has also been agreed to by the City of Albuquerque Floodplain Administrator.
B.
FEMA APPROVED LOMR Case Number 04-06-1924P
LOMR TITLE IS :
Letter of Map Revision (LOMR) City of Albuquerque NM Between the following streets: Eubank Blvd., Louisiana Blvd, Southern Ave. and Zuni Rd.
Prepared for the Department of Municipal Development Storm Drainage Design Division City of Albuquerque NM.
Prepared by Smith Engineering Company March 29, 2004
NOTE - All hydrographs that will drain or escape from the basin limits of the LOMR have been included with "RECALL HYD" commands into this hydrologic model for this present analysis.
FLOW LEAVES BASIN
BASKETBALL POND
AP 213.I
AP 212.I
AP 68.9I
AP 204.I
AP 203.I
AP 209.I
AP 206.I
AP 202.I
AP 216.I
AP 212.I
AP 210.I
AP 201.I
AP 200.I
79
78
73
71
68
67
62
81
75
74
72
69
70
69A
63
64
R40
R19
R18
R12M
R12H
R9
R8
CENTRAL AVE
SNYDER
JUAN VALDEZ
MICKELSON AVE
ACOMA RD
COCHITI RD
BELL AVE
DECATUR AVE
TRUMBULL AVE
SOUTHERN AVE
SAN JOAQUIN AVE
KATHRYN AVE
SANDIA CIR
EAST SANDIA CIR
11TH LOOP
IRONWOOD
45TH ST
SUSAN
CARLING
FERGUSON
SAN PABLO ST
GROVE ST
CHARLESTON ST
SYLVIA ST
ZUNI
SPENCER RD
EUBANK BLVD
SUNNYSIDE ST
SPENCER ST
MOORE ST
ALTEZ ST
WYOMING BLVD
18TH ST

FOOT NOTES:

A
Routing Reach Data:
Reach Name: Arroyo Hondo Arroyo Arundel
Reach Downstream Node: 1
Reach Upstream Node: 2
Flow Routing Equation:
Kinematic Wave

Manning's n: 0.035
Channel Slope: 0.0100
Channel Length: 1,320.00 ft
Equivalent n: 0.0350000 * Channel n: 1.000

B
NOTE: The HEC-1 default value of 0.5 was used for the Muskingum weighting factor (X) for all routing reaches. Hydrologic engineering judgement was used to determine that this value was appropriate for the Arroyo Hondo Arroyo Arundel reach. The Muskingum routing parameters (K and X) for the Arroyo Hondo Arroyo Arundel reach were calculated using the Muskingum-Cunge method. The K and X values were then averaged to get the final Muskingum routing parameters for the reach.

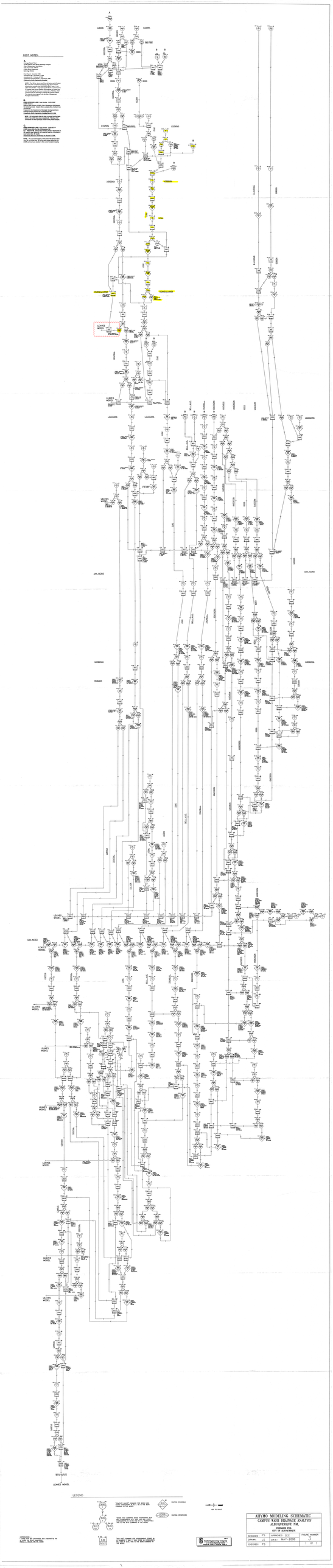
C
NOTE: The Muskingum routing parameters (K and X) for the Arroyo Hondo Arroyo Arundel reach were calculated using the Muskingum-Cunge method. The K and X values were then averaged to get the final Muskingum routing parameters for the reach.

D
NOTE: The Muskingum routing parameters (K and X) for the Arroyo Hondo Arroyo Arundel reach were calculated using the Muskingum-Cunge method. The K and X values were then averaged to get the final Muskingum routing parameters for the reach.

E
NOTE: The Muskingum routing parameters (K and X) for the Arroyo Hondo Arroyo Arundel reach were calculated using the Muskingum-Cunge method. The K and X values were then averaged to get the final Muskingum routing parameters for the reach.

F
NOTE: The Muskingum routing parameters (K and X) for the Arroyo Hondo Arroyo Arundel reach were calculated using the Muskingum-Cunge method. The K and X values were then averaged to get the final Muskingum routing parameters for the reach.

LEGEND



ARHYMO MODELING SCHEMATIC

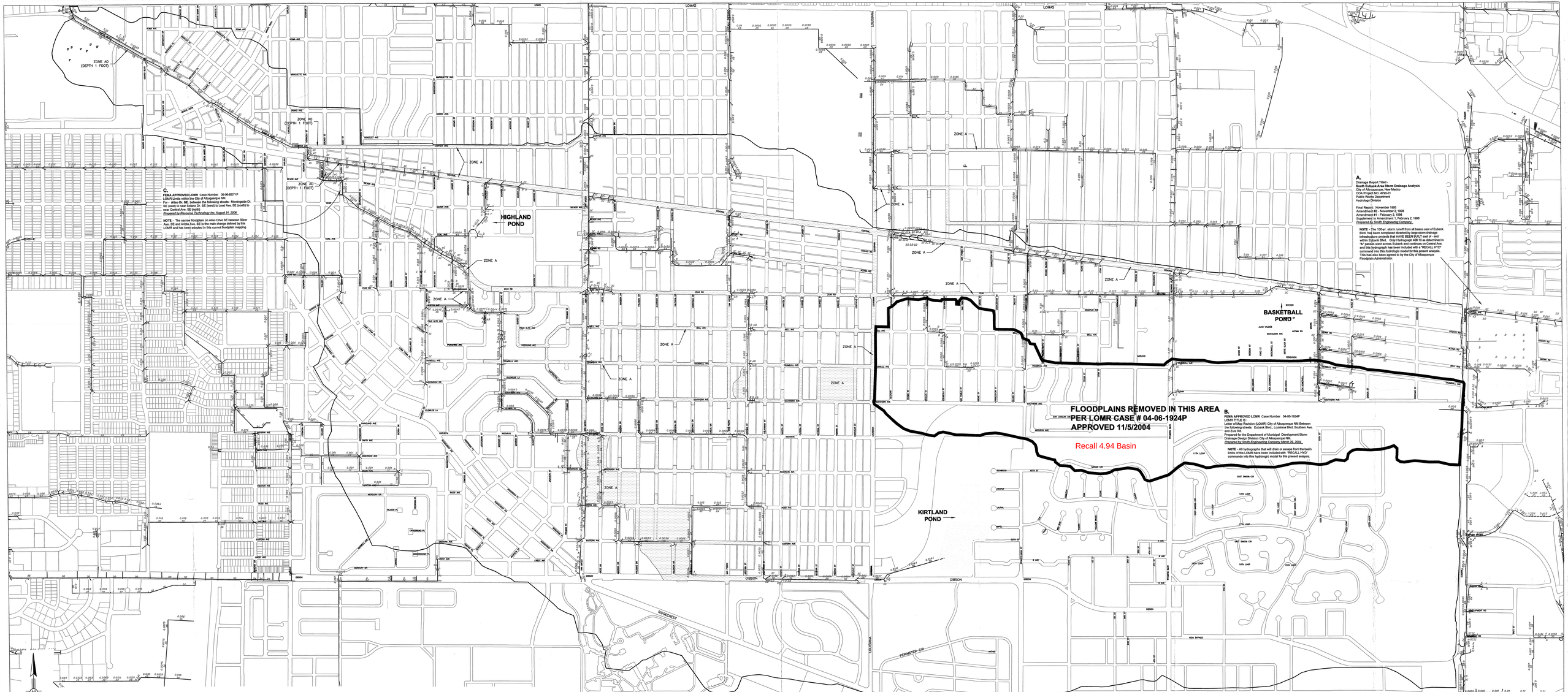
CAMPUS WASH DRAINAGE ANALYSIS

ALBUQUERQUE, NM.

PREPARED FOR:
CITY OF ALBUQUERQUE

DESIGNED:	PS	APPROVED: SCE	FIGURE NUMBER
DRAWN:	LS	DATE: MAY/ 2008	3
CHECKED:	PS		1 OF 1

Smith Engineering Company
5971 Jefferson St. NE, Suite A
Albuquerque, New Mexico 87109



A.
Drainage Report Titled :
South Eubank Area Storm Drainage Analysis
City of Albuquerque, New Mexico
Project No. 4220.90 4790-N
Public Works Department
Hydrology Division

Final Report: November 1996
Amendment #2 - November 2, 1998
Amendment #1 - February 2, 1996
Addendum to Amendment #1 - February 2, 1995
Prepared by Smith Engineering Company

NOTE - The 100-yr. storm runoff from all basins east of Eubank Blvd. has been completed diverted by large storm drainage collection systems to the Recall 4.94 Basin at the corner of Juan Tabo Blvd. / Indian Blvd. Only Hydrograph 456.13 as determined in "A" passes west across Eubank and continues on Central Ave. and this hydrograph has been included with a "RECALL HYD" command into this hydrologic model for this present analysis.
This has also been agreed to by the City of Albuquerque Floodplain Administrator.

B.
FEMA APPROVED LOMR Case Number 04-05-1924P
LOMR TITLE IS :
Letter of Map Revision (LOMR) City of Albuquerque NM Between the following streets: Eubank Blvd., Louisiana Blvd, Southern Ave. and Zuni Rd.
Prepared for the Department of Municipal Development Storm Drainage Design Division City of Albuquerque NM.
Prepared by Smith Engineering Company March 29, 2004

NOTE – All hydrographs that will drain or escape from the basin limits of the LOMR have been included with "RECALL HYD" commands into this hydrologic model for this present analysis.

C.
FEMA APPROVED LOMR Case Number 06-06-B071P
LOMR Limits within the City of Albuquerque NM:
For - Atlas 6 between the following streets: Morningside Dr. and Juan Tabo Blvd. On SE (west) to Lead Ave. SE (east) to south Central Ave. SE (north)
Prepared by Rencorp Technology Inc. August 31, 2006

NOTE - The narrow floodplain on Atlas Drive SE between Silver Ave. SE and Arlota Ave. SE is the main change defined by this LOMR and has been adopted in this current floodplain mapping

LEGEND

- 0.0021 — EXISTING STORM DRAIN SLOPE (FT/FT)
- 24 — EXISTING STORM DRAIN DIAMETER
- EXISTING STORM
- DRAINAGE BASIN BOUNDARY
- REMAINING FLOODPLAINS
- EFFECTIVE FIRM FLOODPLAINS PRELIMINARY (SEPT. 30, 2005) REMOVED PER THIS DRAINAGE ANALYSIS
- DETENTION POND FLOODPLAIN AS DETERMINED PER THIS DRAINAGE ANALYSIS

SCALE: 1" = 400'

SEE AHYMO MODELING SCHEMATICS FOR STORM DRAIN DIVIDE LOCATIONS AND FOR ALL ANALYSIS POINTS AS COMPUTED IN THE AHYMO MODELS

MAP SOURCE

1999 LIDAR MAPPING
OBTAINED FROM CITY OF ALBUQUERQUE

NAD 83(1992)
NAVD 88

MAPPING INFORMATION

The 2 foot interval contours were developed from mapping obtained from the City of Albuquerque, NM. The date of the aerial photography is 1999 and 2 foot contours were developed from LIDAR technology based on various benchmarks within the area. The contours were developed based on the vertical datum NGVD 1988.

Storm Drain Slopes and Diameters

The storm drain slopes and diameters were obtained from As-Builts Plans obtained from the City of Albuquerque NM. The type and number of every storm drain inlet or catch basin was observed and counted in the field by Smith Engineering Company

CERTIFICATION –
I certify that this information was prepared by me or under my direct supervision.
Patrick L. Stovall, NM PE 13830

Z:\Projects\2006\106117 Campus Wash LOMR\CAD\Area West of Eubank\Work Map.dwg

FLOODPLAIN WORK MAP
CAMPUS WASH DRAINAGE ANALYSIS

PREPARED FOR:
CITY OF ALBUQUERQUE

DESIGNED : PS,FC	APPROVED : SEC	FIGURE NUMBER 4
DRAWN: LS	DATE: MAY-2008	
CHECKED: PS		1 OF 1

Campus Wash Hydrology Comparison
100-year, 24-hour

								Land Treatment									
AHYMO Commands	ID	Hyd No	Drainage Area (sq.mi.)	Time to Peak (hrs)	Time to Peak (min)	Lag Time (min)	Lag Time (hrs)	A	B	C	D	CN	Q-AHYMO	Q-HEC-HMS	AHYMO Volume (ac-ft)	HEC-HMS Volume (ac-ft)	Comment
Compute NM HYD	1	70	0.06135	0.32	39	11.52	0.192	21	15	25	39	70	68.5	67.9	4.7085	4.8	
Divide HYD	27	70.I											0				
	26	70.S											68.5		4.7063		
Recall HYD		4.92											159.2	159.7		10.9	
Add HYD	63	70.9											218.8	200.9	15.6026	15.7	68.5 + 159.2 = 227.7
Recall HYD		4.94											218.8				Omit from HEC-HMS due to 0 flow
Add HYD		69.91S											218.8				Omit from HEC-HMS due to 0 flow from 4.94
Compute NM HYD		72	0.02854	0.22		7.92	0.132	15	8	12	65	63	49	50.5	2.88	2.9	
Route HYD		69.8, R86											217.5				Route 69.91S, omitted from HEC-HMS model
Add HYD		69.98											266.5	251.4	18.6136	18.6	Add Basin 72 (49+217.5=266.5)
Route HYD		69.89A, R48											265.3				Route 69.89, omitted from HEC-HMS model
Compute NM HYD		74	0.036382	0.26		9.36	0.156	10	15	25	50	70	53.2	54.6	3.2806	3.3	
Add HYD		74.9											318.5	301.1	21.8943	21.9	Add Basin 74 (265.3+53.2=318.5)
Divide HYD		74.9S											276.5	259.1	11.7179	10.8	
		74.9I											42		10.1764	11.1	Inlet capacity at Zuni & Utah, leaves system (for this analysis)
Compute NM HYD		75	0.05972	0.24		8.64	0.144	12	13	20	55	68	93.3	93.7	5.5457	5.6	
Add HYD (Zuni Pond Input)		**75.9**											**354.5**	**350.2**	**17.2446**	**16.5**	Add Basin 75 (276.5 + 93.3=369.8)
Divide HYD		75.9I											59		6.7101		Inlet Capacity at Zuni and Pennsylvania
		75.9S											295.47		10.5346		Street flow at Zuni and Pennsylvania
Add HYD (Central SD)		213.I											276.01	273.8	37.797	38.1	Dallas SD input
Leaves Model (Moon Mini Input)																	
Option																	
HEC-HMS - Remove 59 cfs from 213.I													276.01	214.8	37.797	13.8	
														59		24.4	Leaves system
International District Library Pond				0.167		6						98		8.5		0.5	
Chico Basin			0.0619		10	6						98		183.5		8.4	

AHYMO Data - From Campus Wash Drainage Report, Vol. 4 Appendix 3
HEC-HMS Data from current model

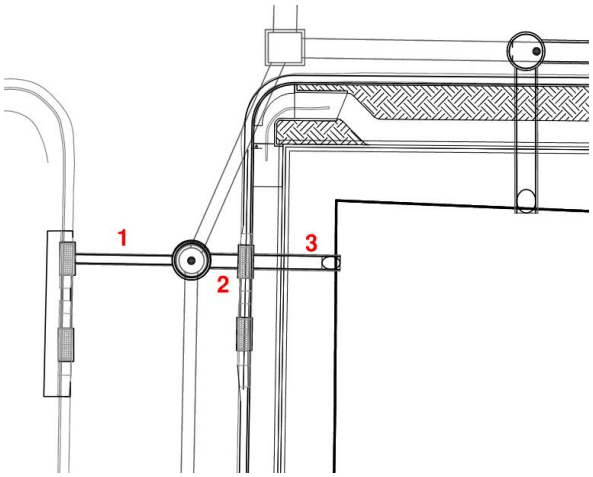
Pipe Capacity

Pipe	Location	D	Slope	Area	R	Q Provided	Q Required	Velocity
		(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
1	Pennsylvania	24	0.7	3.14	0.500	18.98	17.85	5.68
2	Pennsylvania	42	1	9.62	0.875	100.88	75.85	7.88
3	Pennsylvania	42	1	9.62	0.875	100.88	93.70	9.74

Manning's Equation:

Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.013



Worksheet for Combination Inlet On Grade - 4- DBL A DBK W

Project Description	
Solve For	Efficiency

Input Data	
Discharge	17.85 cfs
Slope	0.500 %
Gutter Width	2.00 ft
Gutter Cross Slope	10.000 %
Road Cross Slope	2.000 %
Roughness Coefficient	0.017
Local Depression	0.4 in
Local Depression Width	2.5 in
Grate Width	2.00 ft
Grate Length	6.0 ft
Grate Type	P-50 mm (P-1 -7/8")
Clogging	25.0 %
Curb Opening Length	13.0 ft

Options	
Calculation Option	Use Both
Grate Flow Option	Exclude None

Results	
Efficiency	78.50 %
Intercepted Flow	14.01 cfs
Bypass Flow	3.84 cfs
Spread	24.2 ft
Depth	7.7 in
Flow Area	6.0 ft²
Gutter Depression	1.9 in
Total Depression	2.3 in
Velocity	2.97 ft/s
Splash Over Velocity	12.28 ft/s
Frontal Flow Factor	1.000
Side Flow Factor	0.374
Grate Flow Ratio	0.253
Equivalent Cross Slope	4.396 %
Active Grate Length	4.5 ft
Length Factor	0.275
Total Interception Length	30.9 ft

Messages

Worksheet for Combination Inlet On Grade - 4- DBL A DBK W

Messages		
Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).	

Worksheet for Combination Inlet On Grade - 4 - C DBL W

Project Description	
Solve For	Efficiency

Input Data	
Discharge	3.84 cfs
Slope	0.500 %
Gutter Width	2.00 ft
Gutter Cross Slope	10.000 %
Road Cross Slope	2.000 %
Roughness Coefficient	0.017
Local Depression	0.4 in
Local Depression Width	2.5 in
Grate Width	2.00 ft
Grate Length	7.4 ft
Grate Type	P-50 mm (P-1 -7/8")
Clogging	25.0 %
Curb Opening Length	7.5 ft

Options	
Calculation Option	Use Both
Grate Flow Option	Exclude None

Results	
Efficiency	88.75 %
Intercepted Flow	3.41 cfs
Bypass Flow	0.43 cfs
Spread	12.9 ft
Depth	5.0 in
Flow Area	1.8 ft²
Gutter Depression	1.9 in
Total Depression	2.3 in
Velocity	2.12 ft/s
Splash Over Velocity	14.10 ft/s
Frontal Flow Factor	1.000
Side Flow Factor	0.641
Grate Flow Ratio	0.484
Equivalent Cross Slope	6.582 %
Active Grate Length	5.6 ft
Length Factor	0.153
Total Interception Length	12.7 ft

Messages

Worksheet for Combination Inlet On Grade - 4 - C DBL W

Messages		
Messages	Grate Length should be within the defined range of HEC-22's Chart 5 (approx. 0.5-4.5 ft / 0.15-1.35 m).	

Appendix B

SWMM Data

POND VOLUME CALCULATIONS

Zuni-Pennsylvania Detention Pond

Detention Pond Outlet Discharge Calculations

Elevation	Depth (ft)	Volume (Ac-ft)	Q (cfs)	Comment
53.90	0.00	0.00	0.00	Pond invert assumed
55.00	1.10	0.59	0.00	Invert at upper end of pond
56.90	3.00	3.35	31.27	Top of toe wall at low end
58.00	4.10	4.96	39.90	Top of toe wall at high end
63.27	9.37	13.43	67.35	West curb inlet in Pennsylvania
64.27	10.37	15.17	71.38	Top of Pond
67.97	14.07	21.94	84.63	Rhode Island DI grate

Orifice Equation

Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	30
Area (ft^2)=	4.909
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

POND VOLUME CALCULATIONS

International District Library Surge Pond

Elevation	Depth (ft)	Area (ft^2)	Volume (ft^3)	Volume (Ac-ft)	Comment
5343.00	0.00	1250.00	0.00	0.00	Bottom of pond
5344.00	1.00	3120.00	2185.00	0.05	
5345.00	2.00	22950.00	15220.00	0.35	
5346.00	3.00	31180.00	42285.00	0.97	
5347.00	4.00	36020.00	75885.00	1.74	
5348.00	5.00	41170.00	114480.00	2.63	
5349.00	6.00	46660.00	158395.00	3.64	
5349.56	6.56	52470.00	187519.20	4.30	
5350.00	7.00	52470.00	207960.00	4.77	
5350.20	7.20	53860.00	218593.00	5.02	Top of Pond

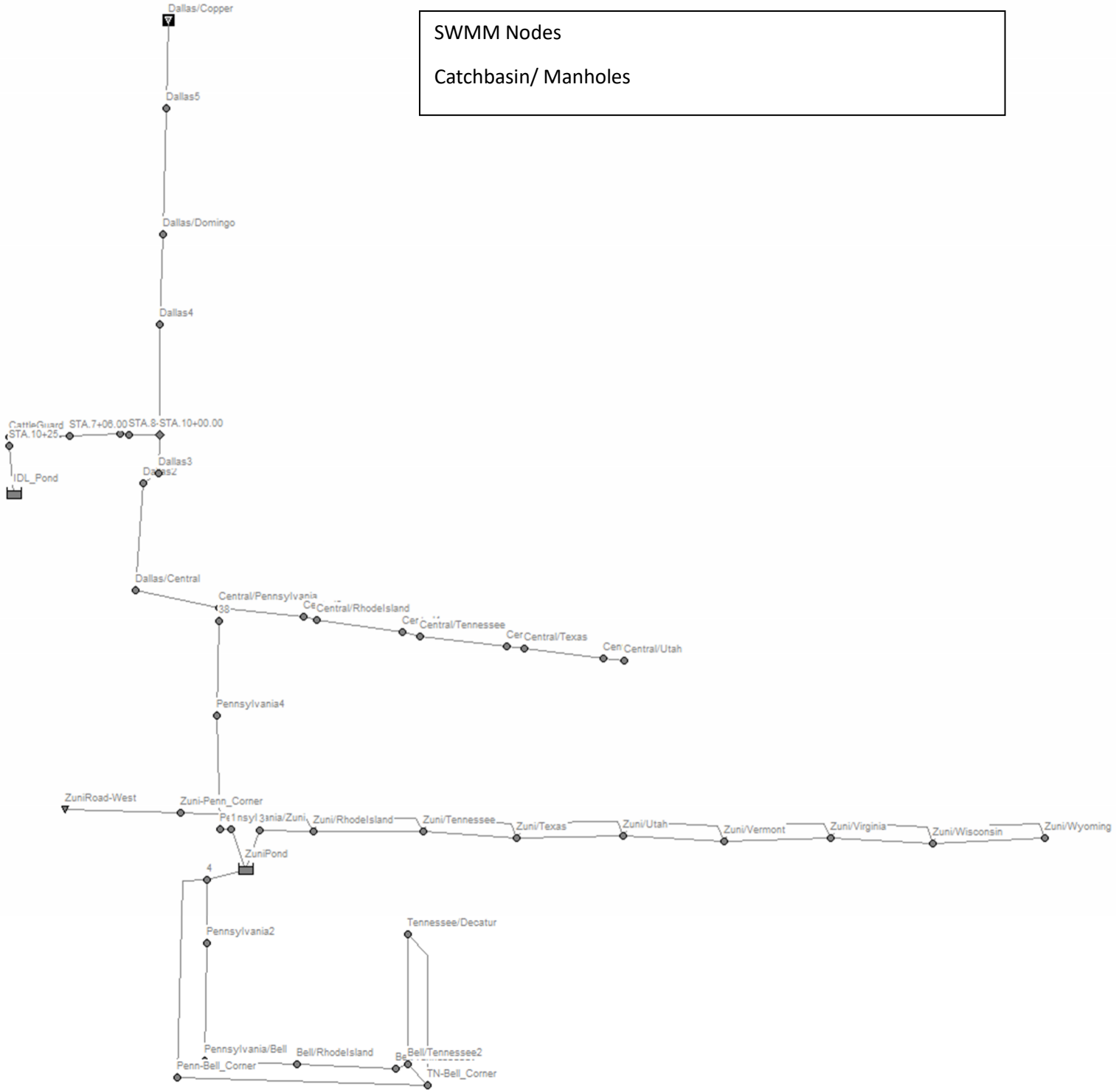
Orifice Equation

Q = CA SQRT(2gH)

C =	0.6
Diameter (in)	30
Area (ft^2)=	4.909
g =	32.2
H (Ft) =	Depth of water above center of orifice
Q (CFS)=	Flow

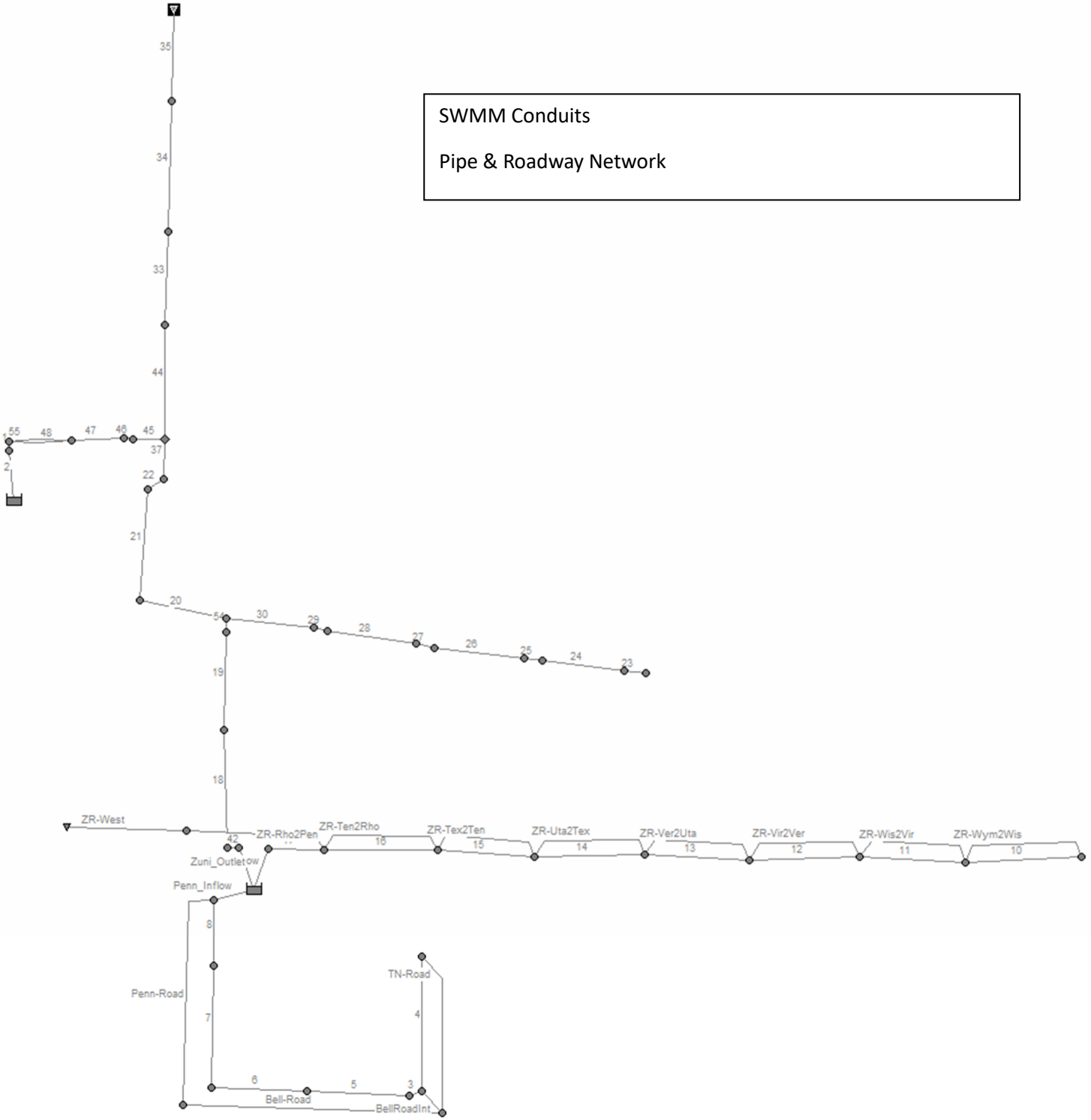
SWMM Nodes

Catchbasin/ Manholes



SWMM Conduits

Pipe & Roadway Network



Storage Unit	Average Volume 1000 ft³	Average Percent Full	Evaporation Loss %	Exfiltration Loss %	Maximum Volume 1000 ft³	Maximum Percent Full	Day of Maximum Volume	Hour of Maximum Volume	Maximum Outflow CFS
IDL_Pond	29.055	14.0	0.0	0.0	178.292	85.7	0	00:57	45.84
ZuniPond	78.723	15.6	0.0	0.0	462.154	91.8	0	01:15	69.78

Storage Volume shows the average volume and percent full for the 100-year storm event. It also tells when the maximum volume is and the peak outflow for the storm event.

Outfall Node	Flow Frequency %	Avgerage Flow CFS	Maximum Flow CFS	Total Volume 10^6 gal
Dallas/Copper	99.99	59.69	192.55	33.399
ZuniRoad-West	8.34	19.26	79.48	0.597

Outfall Loading shows the average and maximum flow through the outfall node. Total volume is how much water leaves the system through the outfall. Total volume in acre-feet is 104.2.

Node	Hours Flooded	Maximum Rate CFS	Day of Maximum Flooding	Hour of Maximum Flooding	Total Flood Volume 10^6 gal	Maximum Ponded Depth Feet
4	1.06	51.89	0	00:57	0.602	0.000
Bell/Rhodelsland	0.01	3.83	0	00:41	0.000	0.001
Central/Rhodelsland	2.00	2.91	0	01:27	0.047	5.316
Central/Tennessee	3.32	10.45	0	00:51	0.256	30.579
Central/Texas	4.05	30.45	0	00:41	0.745	87.547
Central/Utah	4.41	110.67	0	00:29	1.476	191.715
Central2	4.34	87.37	0	00:33	1.408	165.493
Central3	3.91	23.03	0	00:51	0.603	72.104
Central4	2.88	6.68	0	01:11	0.154	17.629
Central5	1.42	1.72	0	01:43	0.021	2.171
Pennsylvania/Bell	0.01	5.41	0	00:41	0.000	0.001

Node Flooding shows which nodes within the SWMM model flood, how long they flood, total volume, and the depth of water in a 1000 sq.ft. Major flooded nodes are Zuni/Wyoming, Tennessee/Decatur, and along Central Avenue. These are either hydrology input nodes or nodes immediately downstream from the flow inputs.

Node	Type	Hours Surcharged	Max Height Above Crown Feet	Min Depth Below Rim Feet
3	JUNCTION	1.83	3.848	3.152
4	JUNCTION	1.06	0.000	0.000
Bell/Rhodelsland	JUNCTION	0.17	4.801	0.000
Bell/TennesseeSt	JUNCTION	0.13	1.534	1.966
CattleGuard	JUNCTION	2.29	2.709	2.291
Central/Rhodelsland	JUNCTION	3.60	12.916	0.000
Central/Tennessee	JUNCTION	4.41	37.679	0.000
Central/Texas	JUNCTION	4.41	94.347	0.000
Central/Utah	JUNCTION	4.41	197.715	0.000
Central2	JUNCTION	4.41	171.493	0.000
Central3	JUNCTION	4.41	79.504	0.000
Central4	JUNCTION	3.66	24.729	0.000
Central5	JUNCTION	3.58	9.771	0.000
Pennsylvania/Bell	JUNCTION	1.26	5.901	0.000
Pennsylvania2	JUNCTION	2.31	3.374	0.726
STA.10+25	JUNCTION	3.52	4.313	3.087
STA.8+45.45	JUNCTION	0.16	0.024	9.496
Tennessee/Decatur	JUNCTION	0.45	2.284	0.000

Node Surcharge shows hour surcharge – time in which each node has experienced a surcharge, max height above crown- quantifies the maximum height that water has risen above the crown of the highest conduit connected to the node, and minimum depth below rim- the depth below the rim of the node to which the water level was receded (this is useful to assess how well the node recovers from surcharge events and returns to normal operating conditions. Overall, the majority of the system surcharges from the pipe.

Node	Type	Average Depth Feet	Maximum Depth Feet	Maximum HGL Feet	Day of Maximum Depth	Hour of Maximum Depth	Maximum Reported Depth Feet
1	JUNCTION	0.75	2.03	5355.93	0	01:15	2.03
3	JUNCTION	1.34	8.35	5364.85	0	01:01	8.35
38	JUNCTION	1.16	4.13	5352.61	0	01:24	4.13
4	JUNCTION	1.32	6.77	5362.50	0	00:47	6.77
Bell/Rhodelsland	JUNCTION	0.32	7.40	5370.19	0	00:41	4.14
Bell/Tennessee2	JUNCTION	0.36	4.49	5371.21	0	00:44	4.21
Bell/TennesseeSt	JUNCTION	0.31	4.03	5370.47	0	00:44	3.79
CattleGuard	JUNCTION	4.69	8.71	5348.71	0	00:58	8.71
Central/Pennsylvania	JUNCTION	3.80	5.82	5350.82	0	02:01	5.82
Central/Rhodelsland	JUNCTION	3.06	15.52	5370.04	0	02:15	15.51
Central/Tennessee	JUNCTION	6.97	39.78	5399.30	0	02:04	39.77
Central/Texas	JUNCTION	16.14	96.45	5459.77	0	01:44	96.40
Central/Utah	JUNCTION	29.17	199.71	5567.43	0	01:18	199.65
Central2	JUNCTION	26.01	173.49	5540.21	0	01:24	173.32
Central3	JUNCTION	13.77	81.50	5443.82	0	01:51	81.49
Central4	JUNCTION	4.87	27.43	5385.35	0	02:10	27.43
Central5	JUNCTION	2.57	12.37	5365.89	0	02:17	12.37
Dallas/Central	JUNCTION	1.27	3.22	5348.44	0	02:01	3.22
Dallas/Copper	OUTFALL	6.00	6.00	5339.71	0	00:00	6.00
Dallas/Domingo	JUNCTION	2.11	3.79	5341.75	0	01:35	3.79
Dallas2	JUNCTION	1.23	3.11	5346.43	0	02:01	3.11
Dallas3	JUNCTION	1.28	3.39	5345.89	0	01:36	3.39
Dallas4	JUNCTION	1.34	3.64	5343.63	0	01:35	3.64
Dallas5	JUNCTION	4.16	5.39	5341.03	0	09:14	5.38
IDL_Pond	STORAGE	2.38	6.42	5349.42	0	00:57	6.41
Penn-Bell_Corner	JUNCTION	0.03	0.49	5371.21	0	00:46	0.49
Pennsylvania/Bell	JUNCTION	0.64	9.00	5368.22	0	00:41	4.92
Pennsylvania/Zuni	JUNCTION	0.67	1.79	5355.59	0	01:15	1.79
Pennsylvania2	JUNCTION	1.19	6.57	5362.97	0	00:41	6.40
Pennsylvania4	JUNCTION	0.73	1.96	5352.47	0	01:16	1.96
STA.10+00.00	DIVIDER	1.32	3.55	5345.44	0	01:34	3.55
STA.10+25	JUNCTION	3.31	7.51	5348.91	0	00:57	7.51
STA.7+06.00	JUNCTION	0.76	3.30	5346.60	0	01:10	3.30
STA.8+45.45	JUNCTION	0.80	3.07	5346.02	0	01:13	3.07
STA.8+65.45	JUNCTION	0.83	3.08	5345.94	0	01:14	3.08
Tennessee/Decatur	JUNCTION	0.89	8.63	5375.79	0	00:37	8.30

TN-Bell_Corner	JUNCTION	0.04	0.70	5373.26	0	00:43	0.69
Zuni/Rhodelsland	JUNCTION	1.42	8.57	5365.37	0	00:56	8.56
Zuni/Tennessee	JUNCTION	1.12	11.68	5370.60	0	00:50	11.68
Zuni/Texas	JUNCTION	0.84	13.30	5375.57	0	00:49	13.30
Zuni/Utah	JUNCTION	0.84	13.69	5379.81	0	00:47	13.67
Zuni/Vermont	JUNCTION	0.76	12.36	5382.90	0	00:45	12.36
Zuni/Virginia	JUNCTION	0.88	11.69	5385.93	0	00:43	11.68
Zuni/Wisconsin	JUNCTION	0.79	12.28	5390.82	0	00:41	12.28
Zuni/Wyoming	JUNCTION	0.80	12.79	5395.33	0	00:39	12.78
Zuni-Penn_Corner	JUNCTION	0.02	0.61	5362.74	0	00:56	0.61
ZuniPond	STORAGE	2.27	9.72	5363.62	0	01:15	9.71
ZuniRoad-West	OUTFALL	0.02	0.61	5361.61	0	00:56	0.61

Node Depth is the deepest water level reached at each node during the simulation. Anything higher than ~12-15 feet, means water is coming out over the rim of the catchbasin/ node. Theis happens at the nodes that are at the hydraulic inputs or immediately downstream. This is due to the “plug” flow into the node instead of being spread out over multiple catchbasins along the roadway.

1	JUNCTION	0.00	69.78	0	01:15	0	7.79	-0.001
3	JUNCTION	0.00	225.91	0	00:42	0	6.55	0.005
38	JUNCTION	0.00	69.78	0	01:16	0	7.79	-0.001
4	JUNCTION	0.00	84.43	0	00:45	0	1.82	-1.231
Bell/Rhodelsland	JUNCTION	0.00	42.33	0	00:41	0	1.36	0.162
Bell/Tennessee2	JUNCTION	0.00	42.90	0	00:42	0	1.37	0.004
Bell/TennesseeSt	JUNCTION	0.00	42.51	0	00:41	0	1.36	0.166
CattleGuard	JUNCTION	0.00	45.84	0	00:55	0	2.84	0.021
Central/Pennsylvania	JUNCTION	0.00	157.89	0	02:01	0	20.2	0.001
Central/Rhodelsland	JUNCTION	0.00	97.16	0	02:05	0	12.4	0.000
Central/Tennessee	JUNCTION	0.00	102.79	0	01:41	0	12.4	-0.000
Central/Texas	JUNCTION	0.00	132.60	0	01:06	0	12.4	-0.008
Central/Utah	JUNCTION	273.80	273.80	0	00:34	12.3	12.4	0.000
Central2	JUNCTION	0.00	188.76	0	00:38	0	12.4	0.012
Central3	JUNCTION	0.00	113.52	0	01:24	0	12.4	0.001
Central4	JUNCTION	0.00	98.89	0	01:53	0	12.4	0.000
Central5	JUNCTION	0.00	96.57	0	02:11	0	12.4	-0.001
Dallas/Central	JUNCTION	0.00	157.89	0	02:01	0	20.2	0.000
Dallas/Copper	OUTFALL	0.00	192.55	0	01:36	0	33.4	0.000
Dallas/Domingo	JUNCTION	0.00	192.54	0	01:35	0	24.9	0.033
Dallas2	JUNCTION	0.00	157.89	0	02:01	0	20.2	-0.006
Dallas3	JUNCTION	0.00	157.89	0	02:02	0	20.2	0.005
Dallas4	JUNCTION	0.00	192.54	0	01:35	0	23.1	0.004
Dallas5	JUNCTION	0.00	192.55	0	01:36	0	30.1	0.244
IDL_Pond	STORAGE	191.06	191.06	0	00:38	2.76	2.91	-0.001
Penn-Bell_Corner	JUNCTION	0.00	47.98	0	00:41	0	0.477	5.277
Pennsylvania/Bell	JUNCTION	0.00	41.27	0	00:40	0	1.36	-0.151
Pennsylvania/Zuni	JUNCTION	0.00	69.78	0	01:15	0	7.79	-0.000
Pennsylvania2	JUNCTION	0.00	40.45	0	00:44	0	1.36	-0.253
Pennsylvania4	JUNCTION	0.00	69.78	0	01:15	0	7.79	-0.000
STA.10+00.00	DIVIDER	0.00	192.54	0	01:35	0	23	-0.000
STA.10+25	JUNCTION	0.00	45.84	0	00:55	0	2.84	0.000
STA.7+06.00	JUNCTION	0.00	45.84	0	00:55	0	2.83	0.000
STA.8+45.45	JUNCTION	0.00	45.78	0	00:55	0	2.83	0.012
STA.8+65.45	JUNCTION	0.00	45.74	0	00:54	0	2.83	-0.014
Tennessee/Decatur	JUNCTION	93.70	93.70	0	00:42	1.69	1.84	-0.139
TN-Bell_Corner	JUNCTION	0.00	74.72	0	00:42	0	0.685	-0.227
Zuni/Rhodelsland	JUNCTION	0.00	271.96	0	00:49	0	7.15	-0.068
Zuni/Tennessee	JUNCTION	0.00	273.69	0	00:48	0	7.14	-0.146
Zuni/Texas	JUNCTION	0.00	278.39	0	00:47	0	7.13	-0.113
Zuni/Utah	JUNCTION	54.60	287.66	0	00:44	0.987	7.14	0.116
Zuni/Vermont	JUNCTION	0.00	241.04	0	00:43	0	6.06	-0.051
Zuni/Virginia	JUNCTION	0.00	246.17	0	00:41	0	6.04	-0.340
Zuni/Wisconsin	JUNCTION	0.00	248.20	0	00:39	0	6.05	0.091
Zuni/Wyoming	JUNCTION	251.39	251.39	0	00:38	5.84	6.06	0.253
Zuni-Penn_Corner	JUNCTION	0.00	79.58	0	00:56	0	0.601	0.669
ZuniPond	STORAGE	0.00	297.34	0	00:42	0	7.79	-0.007
ZuniRoad-West	OUTFALL	0.00	79.48	0	00:56	0	0.597	0.000

Node Inflows shows the total inflow and volume through each conduit/ pipe.

3	CONDUIT	42.51	0	00:41	13.53	2.12	1.00
4	CONDUIT	19.16	0	00:33	8.36	3.70	1.00
5	CONDUIT	42.33	0	00:41	9.49	1.03	1.00
6	CONDUIT	41.27	0	00:40	9.43	1.01	1.00
7	CONDUIT	40.45	0	00:44	6.85	0.75	1.00
8	CONDUIT	40.45	0	00:44	8.58	0.75	1.00
10	CONDUIT	215.15	0	00:33	17.12	1.35	1.00
11	CONDUIT	199.76	0	00:34	15.90	1.27	1.00
12	CONDUIT	189.50	0	00:37	15.08	1.22	1.00
13	CONDUIT	189.82	0	00:40	15.11	1.10	1.00
14	CONDUIT	243.91	0	00:42	15.34	1.24	1.00
15	CONDUIT	251.12	0	00:45	15.79	1.28	1.00
16	CONDUIT	260.85	0	00:49	16.40	1.58	1.00
17	CONDUIT	225.91	0	00:42	14.20	1.81	1.00
18	CONDUIT	69.78	0	01:15	9.77	0.23	0.34
19	CONDUIT	69.78	0	01:16	5.84	0.27	0.55
20	CONDUIT	157.89	0	02:01	10.54	0.68	0.60
21	CONDUIT	157.89	0	02:01	11.15	0.65	0.58
22	CONDUIT	157.89	0	02:02	11.40	0.61	0.57
23	CONDUIT	188.76	0	00:38	>50.00	7.23	1.00
24	CONDUIT	132.60	0	01:06	42.21	5.35	1.00
25	CONDUIT	113.52	0	01:24	36.13	4.35	1.00
26	CONDUIT	102.79	0	01:41	32.72	4.15	1.00
27	CONDUIT	98.89	0	01:53	31.48	3.99	1.00
28	CONDUIT	97.16	0	02:05	19.79	2.16	1.00
29	CONDUIT	96.57	0	02:11	19.67	2.15	1.00
30	CONDUIT	96.39	0	02:17	19.64	2.07	1.00
33	CONDUIT	192.54	0	01:35	11.28	0.75	0.68
34	CONDUIT	192.55	0	01:36	9.81	0.75	0.77
35	CONDUIT	192.55	0	01:36	8.39	0.78	0.99
37	CONDUIT	157.90	0	02:01	10.60	0.62	0.63
42	CONDUIT	69.78	0	01:15	10.83	0.42	0.43
44	CONDUIT	192.54	0	01:35	11.71	0.74	0.65
45	CONDUIT	45.69	0	00:54	6.61	0.77	1.00
46	CONDUIT	45.74	0	00:54	7.32	1.02	1.00
47	CONDUIT	45.78	0	00:55	6.79	1.37	1.00

48	CONDUIT	24.02	0	00:49	7.65	2.44	1.00
Zuni_Inflow	CONDUIT	225.90	0	00:42	14.20	0.57	1.00
Zuni_Outlet	CONDUIT	69.78	0	01:15	14.92	43.37	0.91
Penn_Inflow	CONDUIT	71.77	0	00:42	10.15	0.64	1.00
54	CONDUIT	69.72	0	01:17	22.19	2.60	1.00
55	CONDUIT	22.14	0	00:58	7.32	1.16	0.92
1	CONDUIT	45.84	0	00:55	6.48	0.38	1.00
2	CONDUIT	45.84	0	00:55	6.49	0.39	1.00
TN-Road	CONDUIT	74.72	0	00:42	4.14	3.21	0.97
Bell-Road	CONDUIT	47.98	0	00:41	3.46	0.58	0.71
Penn-Road	CONDUIT	44.80	0	00:46	3.51	0.31	0.82
BellRoadInt	CONDUIT	24.81	0	00:43	1.71	0.20	0.68
ZR-West	CONDUIT	79.48	0	00:56	4.38	0.55	0.80
ZR-Wym2Wis	CONDUIT	78.34	0	00:39	4.63	0.49	0.76
ZR-Wis2Vir	CONDUIT	75.39	0	00:41	4.47	0.46	0.82
ZR-Vir2Ver	CONDUIT	101.70	0	00:44	4.65	0.74	0.89
ZR-Ver2Uta	CONDUIT	90.82	0	00:45	4.46	0.66	0.85
ZR-Uta2Tex	CONDUIT	68.10	0	00:47	4.06	0.48	0.76
ZR-Tex2Ten	CONDUIT	29.75	0	00:49	3.70	0.16	0.52
ZR-Ten2Rho	CONDUIT	11.29	0	00:50	1.11	0.06	0.59
ZR-Rho2Pen	CONDUIT	79.58	0	00:56	4.09	0.67	0.83

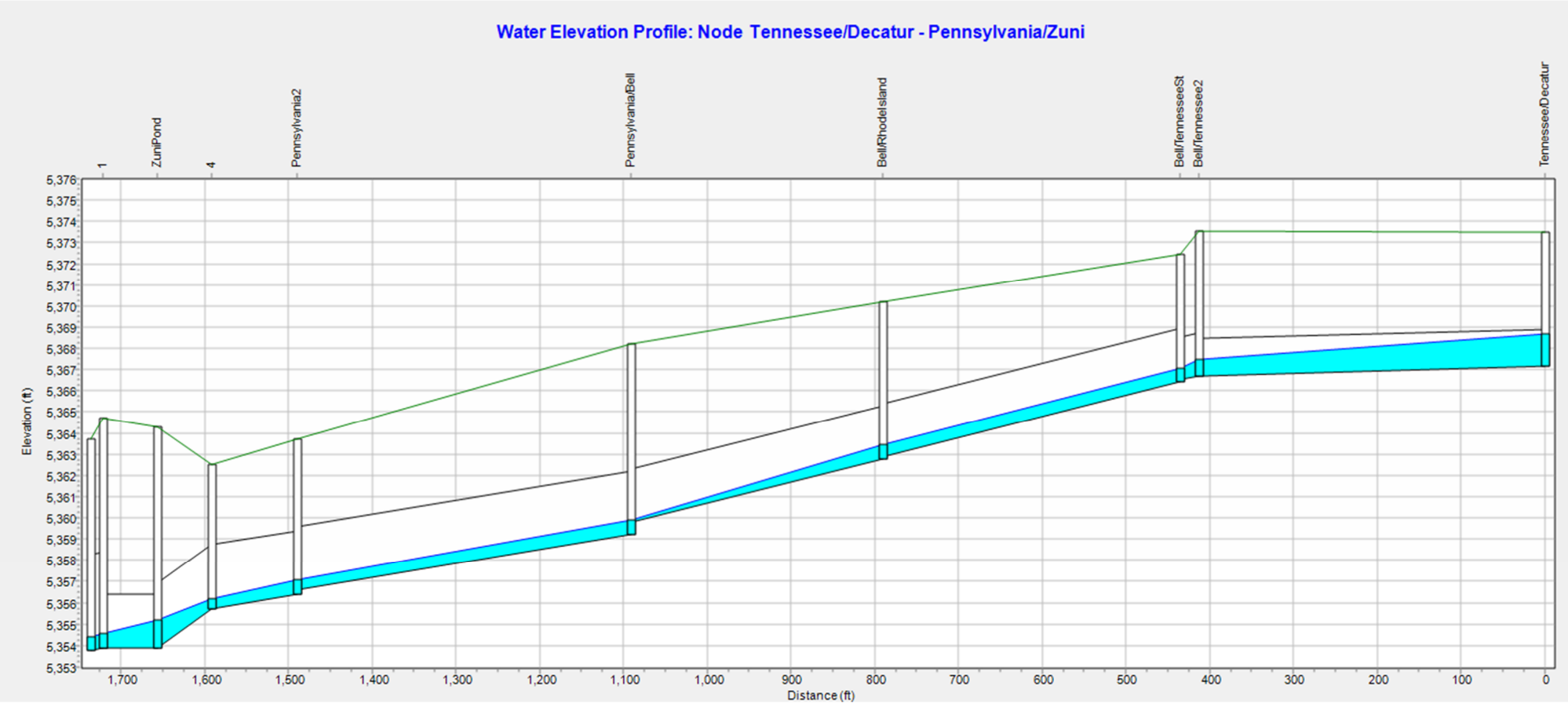
Link Flow shows the maximum flow and velocity through the pipe and how full that pipe is.

Conduit	Hours Both Ends Full	Hours Upstream Full	Hours Downstream Full	Hours Above Normal Flow	Hours Capacity Limited
1	2.29	2.29	3.52	0.01	0.01
10	0.53	0.55	0.55	0.47	0.44
11	0.54	0.55	0.55	0.48	0.44
12	0.52	0.55	0.54	0.19	0.12
13	0.54	0.54	0.56	0.17	0.16
14	0.55	0.55	0.59	0.48	0.46
15	0.59	0.59	0.97	0.46	0.47
16	0.99	1.01	1.77	0.60	0.56
17	1.72	1.77	1.83	0.68	0.56
2	1.19	1.19	3.82	0.01	0.01
23	4.41	4.41	4.41	3.56	3.56
24	4.41	4.41	4.41	4.41	4.41
25	4.41	4.41	4.41	4.42	4.41
26	4.41	4.41	4.41	4.42	4.41
27	4.17	4.41	4.17	4.43	4.17
28	3.60	3.70	3.60	3.83	3.60
29	3.58	3.65	3.58	3.83	3.58
3	0.22	0.33	0.22	0.58	0.22
30	3.04	3.62	3.04	3.77	3.04
35	0.01	0.01	42.50	0.01	0.01
4	0.45	1.42	0.45	1.66	0.45
45	0.01	0.01	2.25	0.01	0.01
46	0.16	0.16	0.19	0.26	0.01
47	0.27	0.64	0.27	1.14	0.27
48	1.99	2.59	1.99	2.81	1.99
5	0.13	0.13	0.17	0.02	0.01
54	3.30	3.50	3.30	3.82	3.30
55	0.01	0.01	2.59	0.66	0.01
6	0.19	0.19	1.26	0.01	0.01
7	1.30	1.30	2.31	0.01	0.01
8	2.40	2.40	2.69	0.01	0.01
Penn_Inflow	2.69	2.69	3.72	0.01	0.07
Penn-Road	0.01	0.01	1.06	0.01	0.01
TN-Road	0.01	0.45	0.01	0.42	0.01
Zuni_Inflow	1.80	1.83	2.83	0.01	0.28
Zuni_Outlet	0.01	4.09	0.01	18.84	0.01

Conduit Surcharge show how full and for how long each conduit is full for.

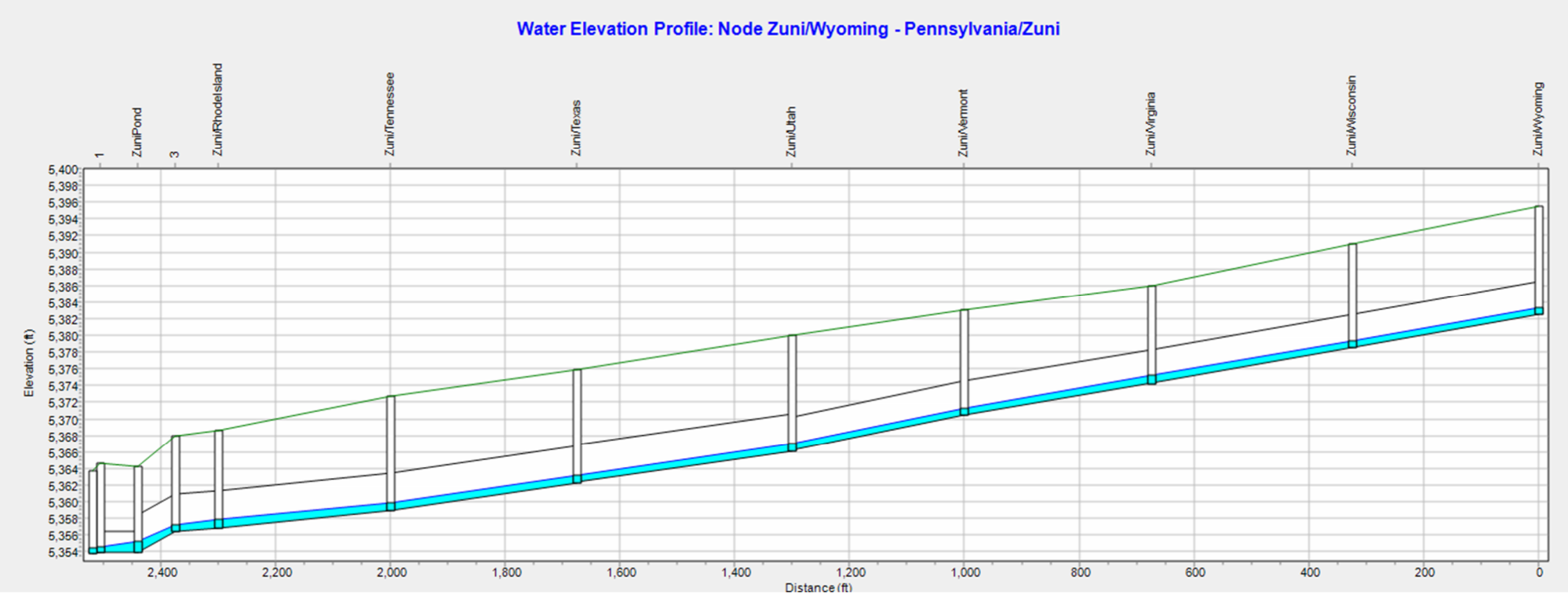
Profiles

Tennessee/ Decatur to Pennsylvania/ Zuni

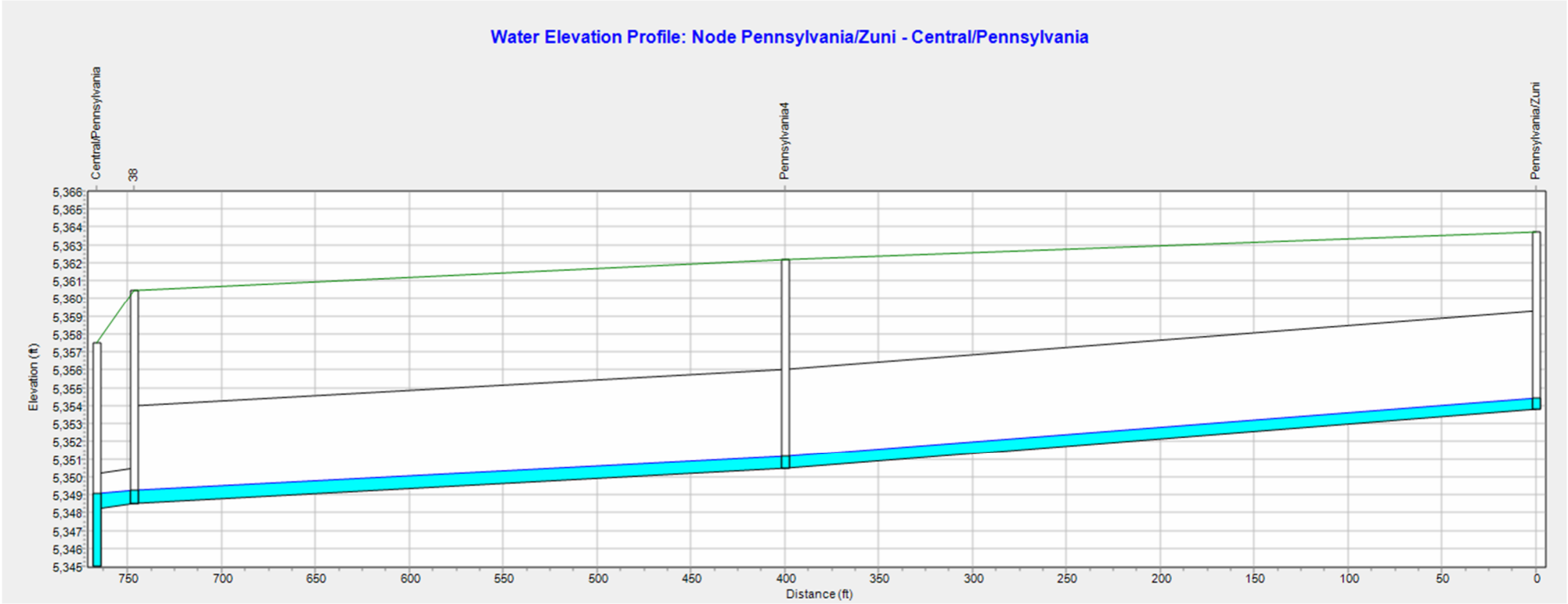


The profile above shows pipe capacity at the peak of the hydrograph.

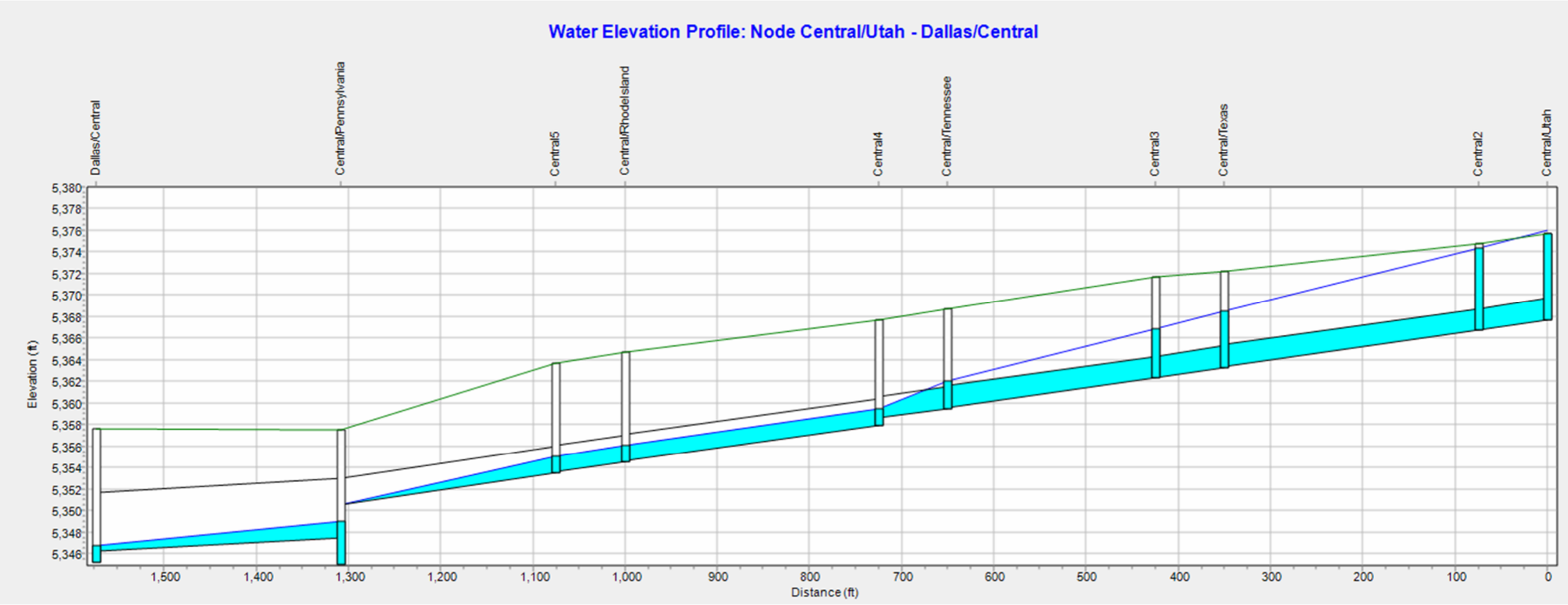
Zuni/ Wyoming to Pennsylvania/ Zuni



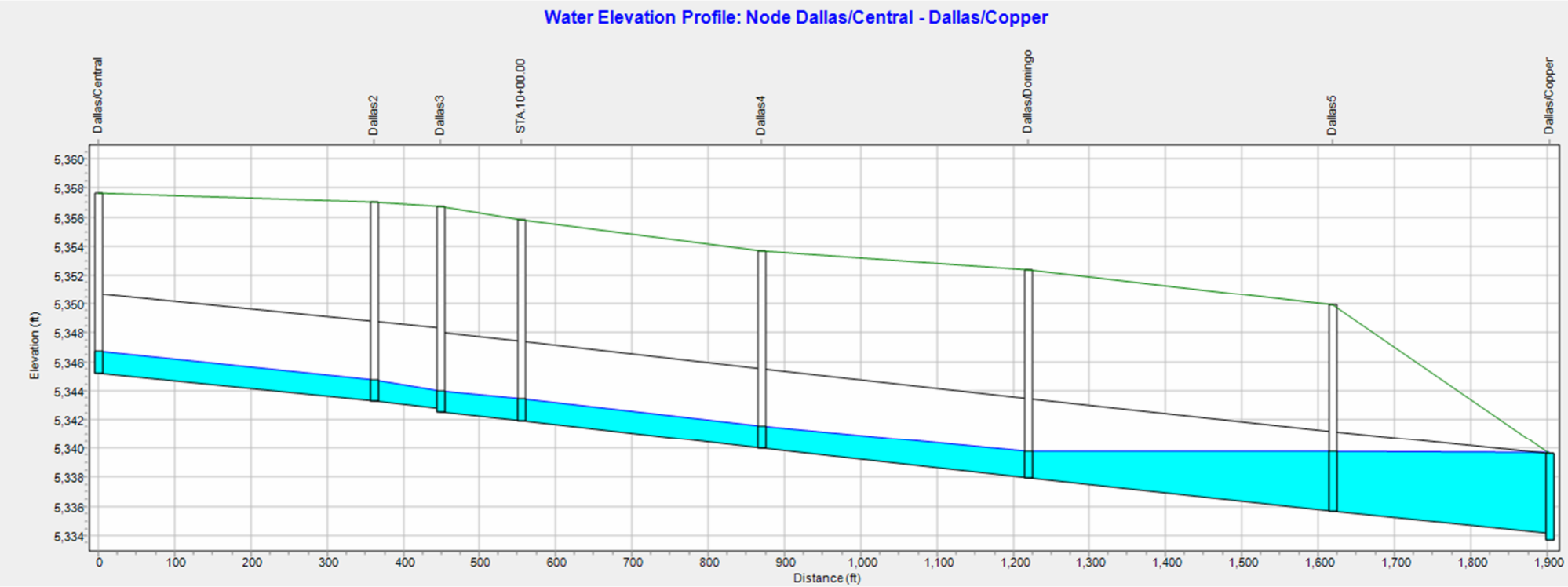
Zuni/Pennsylvania to Central/Pennsylvania



Central/Utah to Dallas/Central



Dallas/Central to Dallas/Copper



Appendix C

Storm Drain As-Builts and Preliminary Pond Plans

B. & R. ADDITION

LINE "A"

New Single "C" Inlet
New Double "C" Inlet
Junction box
New 6'DIA. Type "C" manhole
72" R.C.P.
66" R.C.P.
15" R.C.P.
2" H.P.
5" L.W.S.
6" Steel line
20" N. Steel line
POMA AVE., N.E.
DOMINGO ROAD
Existing ground
Existing single "C" inlet
Existing single "C" inlet
M.H. 4.5' deep
M.H. 10' deep
M.H. 9.92' deep
M.H. 9.95' deep
M.H. 10.3' deep
M.H. 11.89' deep

MESA VERDE ADDITION

B. & R. ADDITION

KAY ADDITION

STA. 0+00 Line F = STA. 53+15.62 Line A

PLAN
SURVEYED
PLOTTED
BLUE PRINTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
RT. OF WAY CHECKED
STRUCTURE NOTATIONS CHK.

PROFILE
SURVEYED
PLOTTED
BLUE PRINTED
NOTE BOOK
NO.
STRUCTURE NOTATIONS CHK.

PLATE 2-PLAN-PROFILE O. P. R. & R. E.
100 S. 1/10 TRANSPARENTIZED TRACING *HARD-MADE IN U.S.A.
CHARLES PFENNING COMPANY, INC.

SHT 9

CAVALIER ADDITION

ROAD, N.E.

DALLAS

DOMINGO

CHICO

KAY

LINE "A"

STREET, N.E.

CENTRAL AVENUE, EAST

Junction Box

New 6' DIA Type 'C' Manhole

M.H. 9.92' deep

M.H. 8.65' deep

M.H. 8.22' deep

M.H. 8.19' deep

M.H. 7.8' deep

M.H. 9.72' deep

M.H. 8.2' deep

66" R.C.P.

48" R.C.P.

42" R.C.P.

36" R.C.P.

24" R.C.P.

4'LWS

5'LWS

6" C.I.

8" C.I.

New Double 'C' Inlet

Alley

Line "J"

STA. 74+83.88 BK = STA. 74+33.52 AH "A" LINE EQUATION

STA. 0+16.62 "J" LINE

2

PLAN

PROFILE

UNITY ADDITION

BLOCK 1

PENNSYLVANIA

ZUNI

ROAD, N.E.

Alley

New 6' DIA Manhole STA. 60+00 INV. ELEV. 5335.24

New 6' DIA Manhole STA. 63+20 INV. ELEV. 5331.27

Existing ground

66" R.C.P. S=0.0058

UNPLATTED

STA. 82+84.65 BK.

EQUATION

STA. 82+85.00 AH.

STA. 82+00.08 Line "B"

STA. 82+00.28 Line "A"

CASAS SERENAS ADDITION

BLOCK 1

S.E. AVENUE, S.E.

STREET, S.E.

Stub out & and plug 36" R.C.P.

New 6' DIA Type 'C' Manhole

36" R.C.P.

GOLDEN VIEW ADDITION

BLOCK 9

BELL

EMIL MANN ADDITION

New 6' DIA Manhole STA. 78+20 INV. ELEV. 5341.79

New 6' DIA Manhole STA. 83+50.00

Stub and plug

PLATE 2-PLAN-PROFILE O.P.H.G.E.

SHT 10

U N I T Y A D D I T I O N

BLOCK 1 | BLOCK 2 | BLOCK 3 | BLOCK 4 | BLOCK 5

PENNSYLVANIA STREET S.E. | M.H. G' Deep | RHODE ISLAND STREET S.E. | TENNESSEE STREET S.E. | W. G' C.I. line | TEXAS STREET S.E. | G' C.I. line | W. UTAH STREET S.E. | 4" C.I. line

Junction Box W' | Line A | G" C.I. line | ZUNI | ROAD S.E.

New G' DIA. Type 'B' M.H. | New G' DIA. TYPE B M.H. | M.H. 8.49' Deep | New G' DIA. Type 'B' M.H. | New Double 'C' Inlet | M.H. | New G' DIA. Type 'B' M.H. | M.H.

P.P. | F.H. | 4' Block Wall | 549.45' | P.P. | 141.05' | 247.01'

Office of B. Line | 8" H.D. | 8" H.D. | B.M. E Lug San. M.H. intersection of PENN. and Zuni. 5359.78.

LINE "B"

U N P L A T T E D I O W A N A A D D I T I O N U N P L A T T E D

Junction Box W' N. INV. = 60.01 E. INV. = 60.27 S. INV. = 61.41

New Type 'B' M.H. W. INV. EL. 5340 E. INV. EL. 5330

New Type 'B' G' DIA M.H. W. INV. EL. 5336 E. INV. EL. 5330

New Type 'B' G' DIA M.H. W. INV. EL. 5341 E. INV. EL. 5325

New G' DIA Type 'B' M.H. W. INV. EL. 5340 E. INV. EL. 5322

Existing Ground | 54" R.C.P. S=0.010 | 48" R.C.P. S=0.012 | 18" R.C.P. S=0.012

5365 | 5360 | 5355 | 5350 | 5345 | 5375 | 5370 | 5365 | 5360 | 5355

0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15

U N I T Y A D D I T I O N

BLOCK 5 | BLOCK 6 | BLOCK 7 | BLOCK 8

VERMONT STREET S.E. | VIRGINIA STREET S.E. | WISCONSIN STREET S.E. | W. 80' Deep WYOMING BLVD. S.E. | Line C

ZUNI | ROAD S.E.

T.P. | 4" C.I. line | M.H. | P.P. | Double 'C' Inlet | 18" R.C.P. | M.H. | Dbl. 'C' inlet | 18" R.C.P. | P.I. Sta. 26+81.67 Line "B" = Sta. 0+00 Line "C" | Stub-out and plug 4' of 42" dia. R.C.P. | Double 'C' Inlet

New G' DIA. Type 'B' M.H. | 247.01' | 36.63' | P.P. | New G' DIA. Type 'B' M.H. | 288.26' | T.P. | New G' DIA. Type 'B' M.H. | New G' DIA. Type 'B' M.H. | F.H. | Signs | 18+45 = 13+36

LINE "B"

B.M. E Lug San. M.H. intersection of ZUNI and WISCONSIN. 5393.47

U N P L A T T E D U N P L A T T E D

6' DIA. Type 'B' M.H. W. INV. EL. 67.82 E. INV. EL. 67.92

6' DIA. Type 'B' M.H. W. INV. EL. 71.52 E. INV. EL. 71.62

6' DIA. Type 'B' M.H. W. INV. EL. 73.02 E. INV. EL. 73.12

48" C.I. Junction Box W. W. INV. EL. 80.90 E. INV. EL. 80.00 N. INV. EL. 81.19

Existing Ground | 48" R.C.P. S=0.012 | 18" R.C.P. S=0.012

5385 | 5380 | 5375 | 5370 | 5365 | 5390 | 5385 | 5380 | 5375 | 5370

15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26

PLAN: SURVEYED PLOTTED ALIGNMENT CHECKED BY TAPE OR RAD. CHECKED NOTE BOOK NO. P. U.

PROFILE: SURVEYED PLOTTED GRADES CHECKED BY LEVEL STRUCTURE NOTATIONS CHK. BY

DATE | BY | SAE | SAE | SAE | GE

PLATE 2 PLAN-PROFILE O. P. R. J. R. E.
100% RAG TRANSLUCENTIZED TRACING PAPER—MADE IN U. S. A.
CHARLES R. BRUNING COMPANY, INC.

SHT 11

2

UNITY ADDITION

BLOCK B

WYOMING BLVD. S.E.

CENTRAL AVE. EAST

New Double "C" Inlet

18" RCP

New 4' Type A Manhole

24" RCP

48" RCP

New 6' Type A Manhole

Junction Box

New Double "C" Inlet

330.24

B.M. East Lug of Sanitary Manhole at Intersection of Zuni and Wyoming. ELEV 5393.47

ZUNI AVE. SE

BLOCK A

WAGGOMAN-DENISON ADDN.

57192

LINE "C"

WAGGOMAN-DENISON ADDN.

BLOCK 1

BLOCK 2

WYOMING BLVD. N.E.

GENERAL MARSHALL STREET N.E.

AVE. EAST

New Double "C" Inlet

18" RCP-S=0.01 CENTRAL

New 6' Dia. Type 'A' Manhole

New Double "D" Inlet

Junction Box

18" RCP

M.H.

Drainage

242.70'

301.96'

57192

BLOCK A

WAGGOMAN-DENISON

BLOCK B

ADDN.

PLAN

5335

5330

5385

5380

5395

5390

5385

5380

N.M. 539.18

S. Inv. 5333.37
N. Inv. 5333.67

Inv. 5333.91

S. Inv. 5334.95
E. Inv. 5335.45

48" RCP S=0.030

48" RCP S=0.0090

New 6' Manhole Sta 2+58

New 4' Manhole 20' N. Sta 2+30

Sta 2+92.03

-5 0 1 2 3 +92.03

S. Inv. 5334.95
E. Inv. 5336.14

Inv. 5336.42

Stub-out and plug - length 48" R.C.P.

48" RCP S=0.0091

Junction Box 252.03

New 6' Manhole Sta 1+74.00

4 5 6 7

CASAS SERENAS ADDN.

BLOCK 1

BLOCK 2

BLOCK 8

BLOCK 7

RHODE ISLAND STREET S.E.

TENNESSEE STREET S.E.

PENNSYLVANIA STREET S.E.

AVE. S.E.

BELL

8" 30" R.C.P. MH-10.95' Deep 30" R.C.P. MH-9.85' Deep 5" LWS.

New 6' Dia. Type 'B' Manhole

New 6' Dia. Type 'B' Manhole

2-New 6' Dia. Type 'A' Manholes

4 C.I.

2-New Double 'C' Inlets with 18" R.C.P. lines.

LINE "D"

56191

TRUMBULL AVE. S.E.

121.04'

20.61'

R-25'

LINE "E"

CASAS SERENAS ADDN.

SOUTHERN TERRACE ADDN.

PROFILE

5370

5365

5360

5355

New 6' Manhole Sta 0+00 E. Inv. 535.07

New 6' Manhole Sta 3+00 W. Inv. 535.07 E. Inv. 536.07

M. Inv. 536.72 E. Inv. 536.82 Inv. 536.92

24" R.C.P. S=0.008

30" R.C.P. S=0.010

30" R.C.P. S=0.010

New 6' Manhole Sta 6+35

New 6' Manhole Sta 6+79

0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7

5375

5370

5365

5360

08 60 4 12 60 01 57192 56191

PLATE 2-PLAN-PROFILE O. P. R & P. E.

SHT 12

MESA VERDE ADD.

BLOCK 24 5

24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

25 " Hub 25

COPPER AVE. N.E.

DOMINGO ROAD N.E.

New 6' DIA Type 'A' Manhole

New 6' DIA Type 'B' Manhole

WISCONSIN STREET N.E. 18" RCP

New 6' DIA. Type 'A' Manhole M.H.

Double 'C' Inlet

Sta 24+9.38 Line 'E' Sta 0+00 Line 'G' for continuation see sheet

25 Hub

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

LINE "G"

BLOCK 23

MESA VERDE ADD.

BLOCK 20 5

24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

COPPER AVE. N.E.

DOMINGO ROAD N.E.

New 6' DIA. Type 'A' Manhole M.H.

New 4' DIA Type 'B' Manhole

New 6' DIA. Type 'A' Manhole

TEXAS STREET N.E. 18" RCP

M.H.

Double 'C' Inlets

Sta 11+71.25 Line 'F' Sta 0+00 Line 'H' for continuation see sheet

1" Iron Pin

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48

LINE "H"

BLOCK 19

NOTE: New curb and gutter by others.

MESA VERDE ADD.

5380 5375 5370 5365 5360

New 6' Manhole STA 0+00 S INV 5364.28 W INV 5364.00

New 6' Manhole STA 3+00 S INV 5366.78 N INV 5366.88

New 6' Manhole STA 6+40 N INV 5369.50

Existing ground

24" RCP S=0.0080

24" RCP S=0.0080

0 1 2 3 4 5 6 7

MESA VERDE ADD.

5360 5355 5350 5345 5340

New 6' Manhole STA 0+00 W INV 5361.50 E INV 5361.64 S INV 5361.80

New 6' Manhole STA 3+00 N INV 5363.80 S INV 5363.90

New 6' Manhole STA 6+40 N INV 5366.60 S INV 5366.70

Existing ground

24" RCP S=0.0090

24" RCP S=0.0090

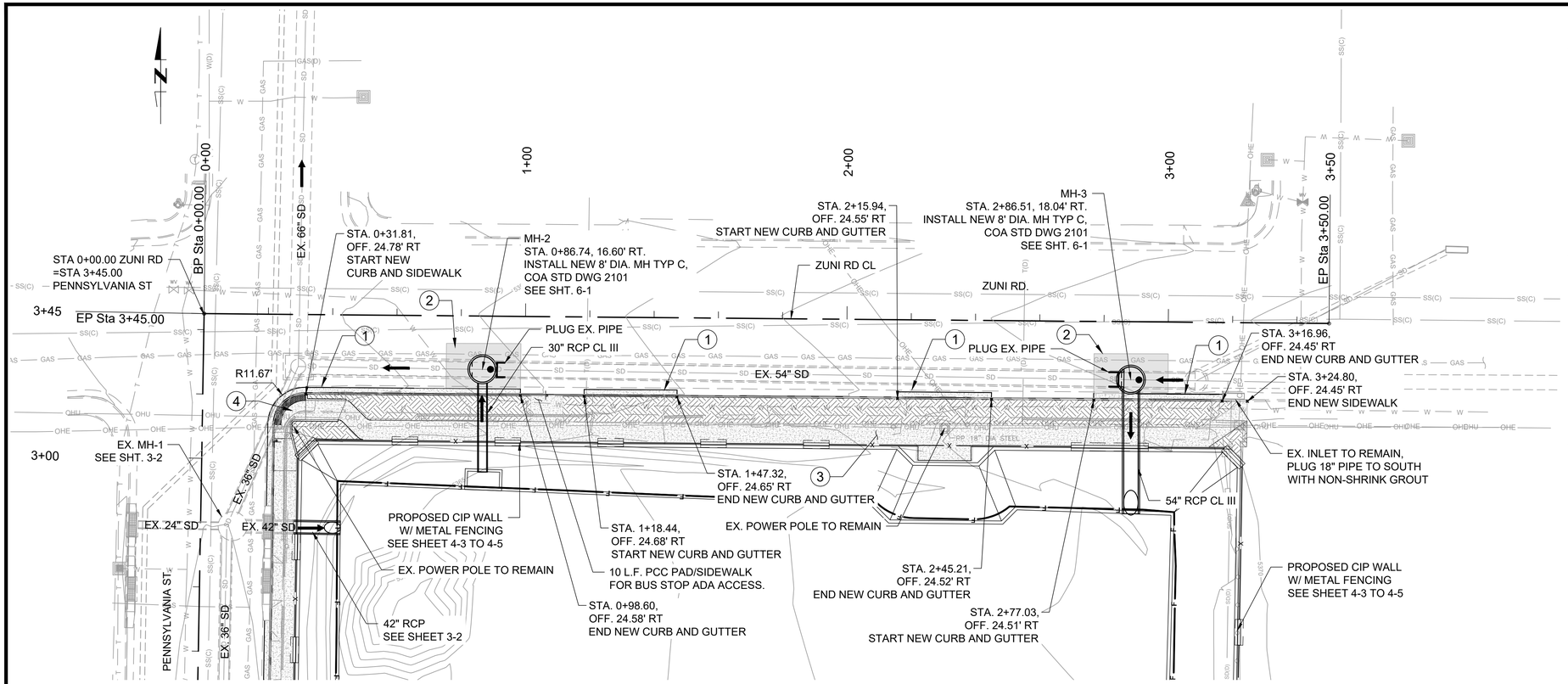
0 1 2 3 4 5 6 7

MESA VERDE ADD.

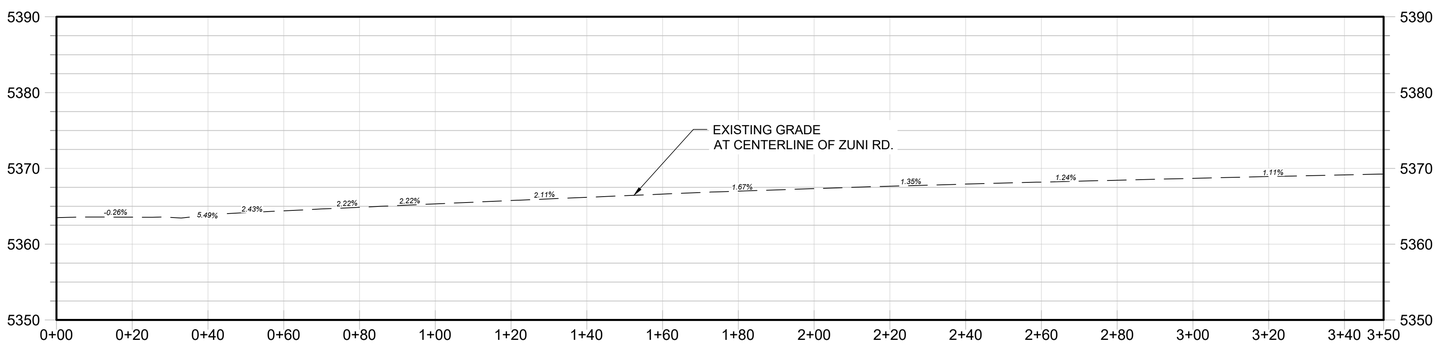
BLOCK 1 BLOCK 2 BLOCK 3 BLOCK 4

1 2 3 4 5 6 7 8 9 10 11

25.16 " " " " " " " " " " " " " " " " " " "



PLAN



PROFILE

KEYED NOTES

1. NEW 8" STANDARD CURB AND GUTTER COA STD. DWG. 2415A
2. NEW ASPHALT CONCRETE PAVEMENT, COA STD. DWG. 2465, ARTERIAL
3. NEW 6' SIDEWALK PER COA STD. DWG. 2430
4. NEW ADA RAMP SEE SHEET 3-7

LEGEND

- NEW ASPHALT
- NEW CONCRETE SIDEWALK / CURB AND GUTTER
- PROPOSED LANDSCAPE BUFFER SWALE, PER COA STD DWG 2414
- FLOW ARROW

NOTES:

1. 1' ASPHALT REPAIR REQUIRED AT NEW CURB AND GUTTER LOCATIONS PER COA STD. DWG. 2465.
2. SEE SHEET 1-6 FOR ASPHALT REMOVAL DETAILS.

20 10 0 20 40

SCALE: 1" = 20' (22"x34" PLOT)
SCALE: 1" = 40' (11"x17" PLOT)

CALL NM ONE-CALL
SYSTEM SEVEN (7) DAYS
PRIOR TO ANY EXCAVATION

Parametrix

CONSULTANTS

AMAFCA

BENCH MARKS

TO REACH THE STATION FROM THE INTERSECTION OF WYOMING BLVD. AND CENTRAL AVE. NE, TRAVEL EAST ON CENTRAL AVE. 0.25 MILES TO THE BENCHMARK ON THE RIGHT. THE MONUMENT IS A 1 3/4" METALLIC DISK EPOXIED TO TOP OF THE CONCRETE CURB, ON THE SOUTH SIDE OF CENTRAL AVE., 143 FT. EAST OF THE CENTERLINE OF GENERAL STILLWELL ST., 159 FT WEST OF THE CENTERLINE OF GENERAL HODGES ST., IN FRONT OF ADDRESS 9100 CENTRAL AVE. SE., STAMPED "ACS BM 13-K20".

SEAL

90% PLANS
NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		AS-BUILT INFORMATION	
		CONTRACTOR:	
		WORK STAKED BY: DATE:	
		INSPECTOR'S ACCEPTANCE BY: DATE:	
		FIELD VERIFICATION BY: DATE:	
		DRAWINGS CORRECTED BY: DATE:	

DESIGNED BY: SL
DRAWN BY: EB
CHECKED BY: JB
DATE 05/2025

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

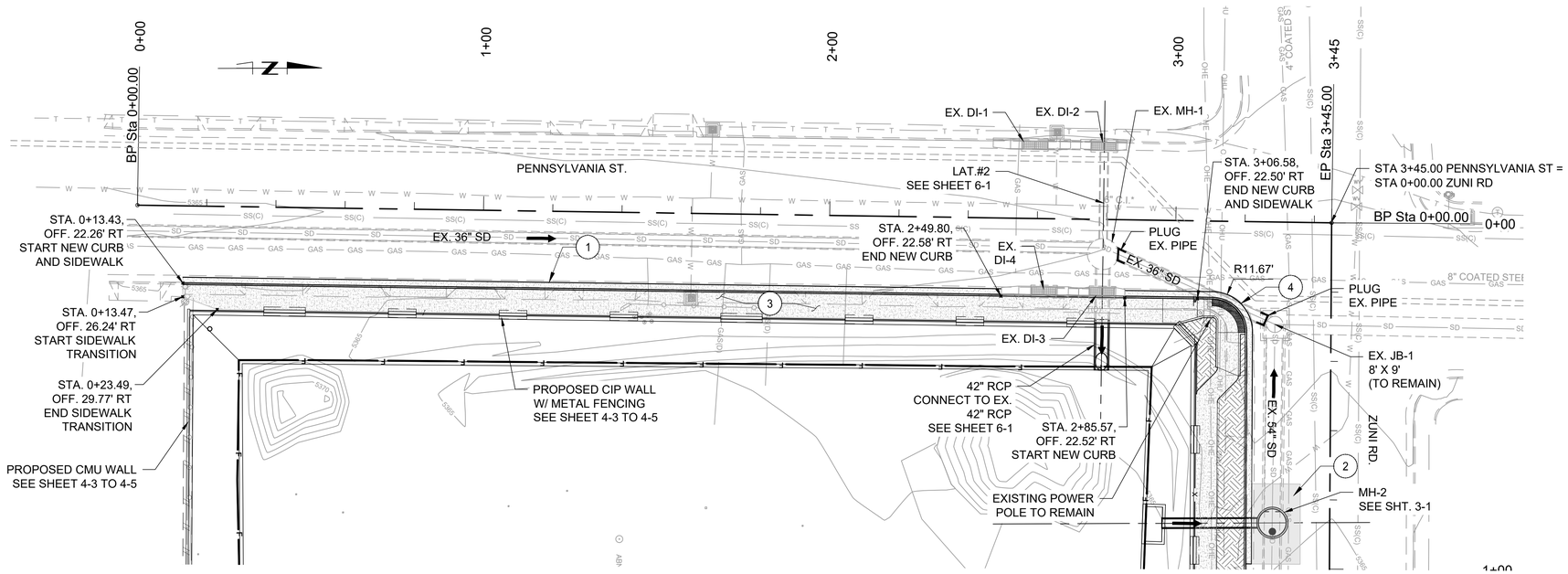
ZUNI - PENNSYLVANIA DETENTION POND ZUNI RD. SE PLAN AND PROFILE

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL

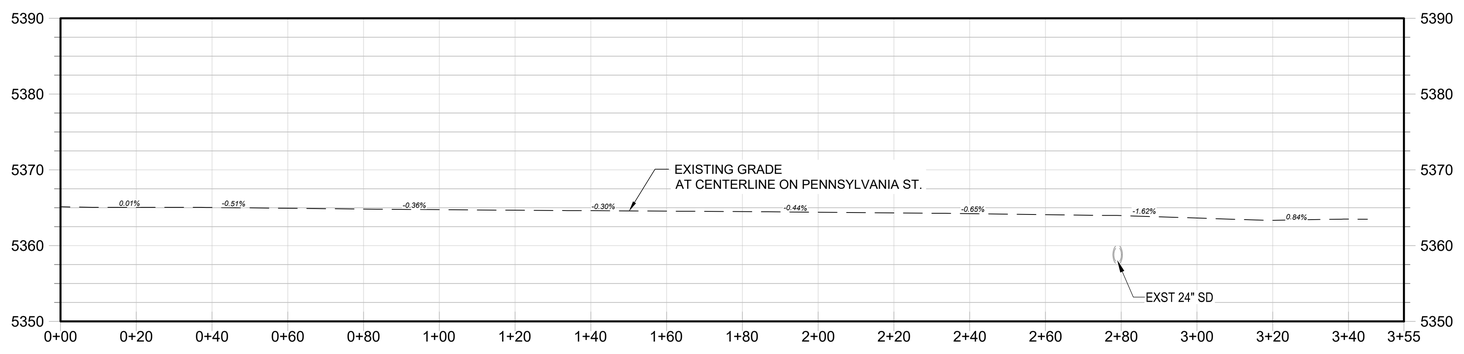
ZONE MAP NO.
K-19 & L-19

CITY PROJECT NO.
558891

SHEET NO.
3 - 1



PLAN



PROFILE

20 10 0 20 40

SCALE: 1" = 20' (22"x34" PLOT)
SCALE: 1" = 40' (11"x17" PLOT)

KEYED NOTES

1. NEW 8" STANDARD CURB AND GUTTER COA STD. DWG. 2415A
2. NEW ASPHALT CONCRETE PAVEMENT, COA STD. DWG. 2465, ARTERIAL
3. NEW 6' SIDEWALK PER COA STD. DWG. 2430
4. NEW ADA RAMP SEE SHEET 3-7

LEGEND

- NEW ASPHALT
- NEW CONCRETE SIDEWALK / CURB AND GUTTER
- PROPOSED LANDSCAPE BUFFER SWALE, PER COA STD. DWG. 2414
- FLOW ARROW

NOTES:

1. 1' ASPHALT REPAIR REQUIRED AT NEW CURB AND GUTTER LOCATIONS, PER COA STD. DWG. 2465.

CALL NM ONE-CALL
SYSTEM SEVEN (7) DAYS
PRIOR TO ANY EXCAVATION

Parametrix

CONSULTANTS

AMAFCA

BENCH MARKS

TO REACH THE STATION FROM THE INTERSECTION OF WYOMING BLVD. AND CENTRAL AVE. NE.: TRAVEL EAST ON CENTRAL AVE. 0.25 MILES TO THE BENCHMARK ON THE RIGHT. THE MONUMENT IS A 1 3/4" METALLIC DISK EPOXIED TO TOP OF THE CONCRETE CURB, ON THE SOUTH SIDE OF CENTRAL AVE., 143 FT. EAST OF THE CENTERLINE OF GENERAL STILLWELL ST., 159 FT WEST OF THE CENTERLINE OF GENERAL HODGES ST., IN FRONT OF ADDRESS 9100 CENTRAL AVE. SE., STAMPED "ACS BM 13-K20".

SEAL

90% PLANS
NOT FOR CONSTRUCTION

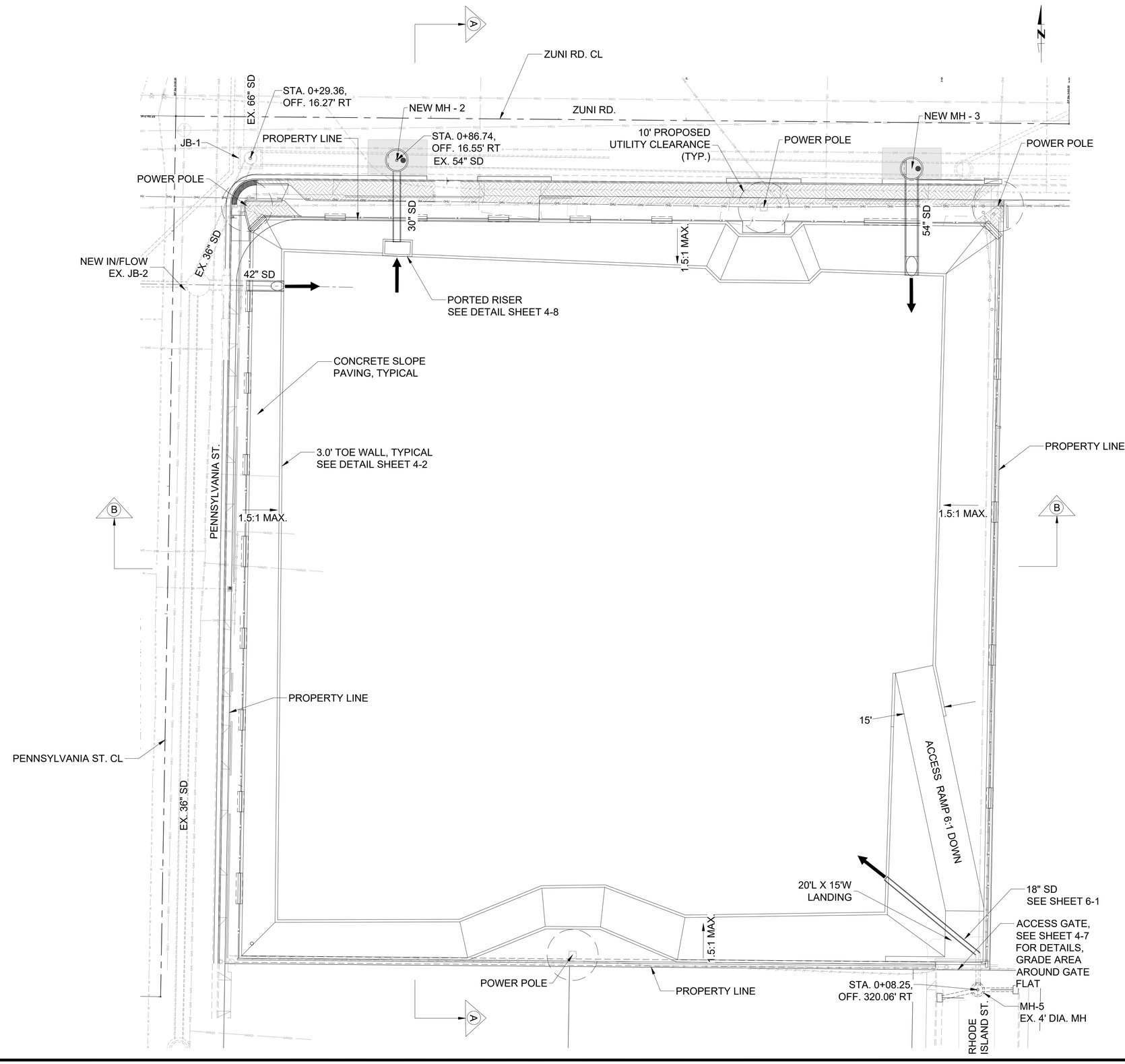
NO.	DATE	DESCRIPTION	BY
		AS-BUILT INFORMATION	
		CONTRACTOR:	
		WORK STAKED BY: DATE:	
		INSPECTOR'S ACCEPTANCE BY: DATE:	
		FIELD VERIFICATION BY: DATE:	
		DRAWINGS CORRECTED BY: DATE:	

DESIGNED BY: SL
DRAWN BY: EB
CHECKED BY: JB
DATE 05/2025

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

ZUNI - PENNSYLVANIA DETENTION POND PENNSYLVANIA ST. SE PLAN AND PROFILE

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	ZONE MAP NO. K-19 & L-19
		CITY PROJECT NO. 558891
		SHEET NO. 3 - 2



NOTES

1. CROSS-SECTIONS A-A AND B-B ARE SHOWN ON SHEET 3-6.

LEGEND

- NEW ASPHALT
- NEW CONCRETE SIDEWALK / CURB AND GUTTER
- PROPOSED LANDSCAPE, PER COA STD DWG 2414
- FLOW ARROW

20 10 0 20 40

SCALE: 1" = 20' (22"x34" PLOT)
SCALE: 1" = 40' (11"x17" PLOT)

811

CALL NM ONE-CALL
SYSTEM SEVEN (7) DAYS
PRIOR TO ANY EXCAVATION

Parametrix

CONSULTANTS

AMAFCA

BENCH MARKS

TO REACH THE STATION FROM THE INTERSECTION OF WYOMING BLVD. AND CENTRAL AVE. NE.: TRAVEL EAST ON CENTRAL AVE. 0.25 MILES TO THE BENCHMARK ON THE RIGHT. THE MONUMENT IS A 1 3/4" METALLIC DISK EPOXIED TO TOP OF THE CONCRETE CURB, ON THE SOUTH SIDE OF CENTRAL AVE., 143 FT. EAST OF THE CENTERLINE OF GENERAL STILLWELL ST., 159 FT WEST OF THE CENTERLINE OF GENERAL HODGES ST., IN FRONT OF ADDRESS 9100 CENTRAL AVE. SE., STAMPED "ACS BM 13-K20".

SEAL

90% PLANS
NOT FOR CONSTRUCTION

NO.	DATE	DESCRIPTION	BY
		AS-BUILT INFORMATION	
		CONTRACTOR:	
		WORK STAKED BY: DATE:	
		INSPECTOR'S ACCEPTANCE BY: DATE:	
		FIELD VERIFICATION BY: DATE:	
		DRAWINGS CORRECTED BY: DATE:	

DESIGNED BY:	SL
DRAWN BY:	EB
CHECKED BY:	JB
DATE	05/2025

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

ZUNI - PENNSYLVANIA DETENTION POND

POND LAYOUT

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL

ZONE MAP NO.	K-19 & L-19
CITY PROJECT NO.	558891
SHEET NO.	3 - 3

TEMPORARY BENCHMARK #1 (T.B.M.)

A MAG NAIL IN ASPHALT PAVEMENT, AS SHOWN ON THIS SHEET.
ELEVATION = 5350.56 FEET (NAVD 1988)

TEMPORARY BENCHMARK #2 (T.B.M.)

A MAG NAIL W/WASHER STAMPED "CARTESIAN SURVEYS PLS 14271" ALSO BEING THE NORTHWEST PROPERTY CORNER OF BLOCK 2, AS SHOWN ON THIS SHEET.
ELEVATION = 5346.72 FEET (NAVD 1988)

TEMPORARY BENCHMARK #3 (T.B.M.)

A MAG NAIL W/WASHER STAMPED "CARTESIAN SURVEYS PLS 14271" ALSO BEING THE NORTHWEST PROPERTY CORNER OF BLOCK 3, AS SHOWN ON THIS SHEET.
ELEVATION = 5350.44 FEET (NAVD 1988)

TEMPORARY BENCHMARK #4 (T.B.M.)

A MAG NAIL W/WASHER STAMPED "CARTESIAN SURVEYS PLS 14271" ALSO BEING THE NORTHEAST PROPERTY CORNER OF BLOCK 3, AS SHOWN ON THIS SHEET.
ELEVATION = 5353.79 FEET (NAVD 1988)

TEMPORARY BENCHMARK #5 (T.B.M.)

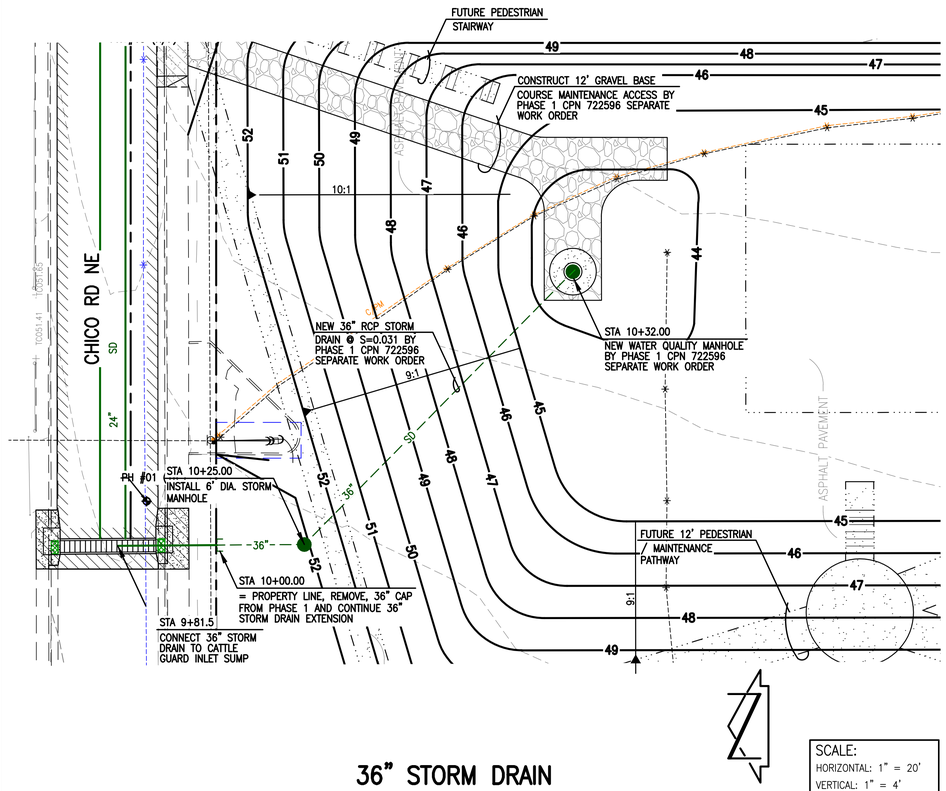
A MAG NAIL W/WASHER STAMPED "CARTESIAN SURVEYS PLS 14271" ALSO BEING THE SOUTHEAST PROPERTY CORNER OF BLOCK 3, AS SHOWN ON THIS SHEET.
ELEVATION = 5354.48 FEET (NAVD 1988)

TEMPORARY BENCHMARK #204 (T.B.M.)

A MAG NAIL W/WASHER IN CONCRETE JOINT, AT THE NORTHEAST QUADRANT OF THE INTERSECTION OF CHICO ROAD AND DALLAS STREET, AS SHOWN ON THIS SHEET.
ELEVATION = 5357.32 FEET (NAVD 1988)

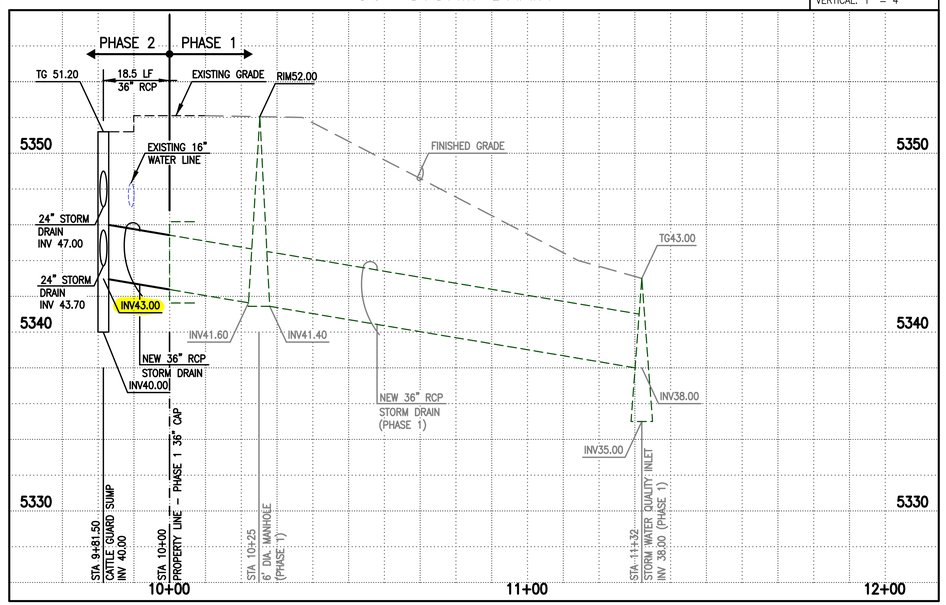
CONSTRUCTION NOTES:

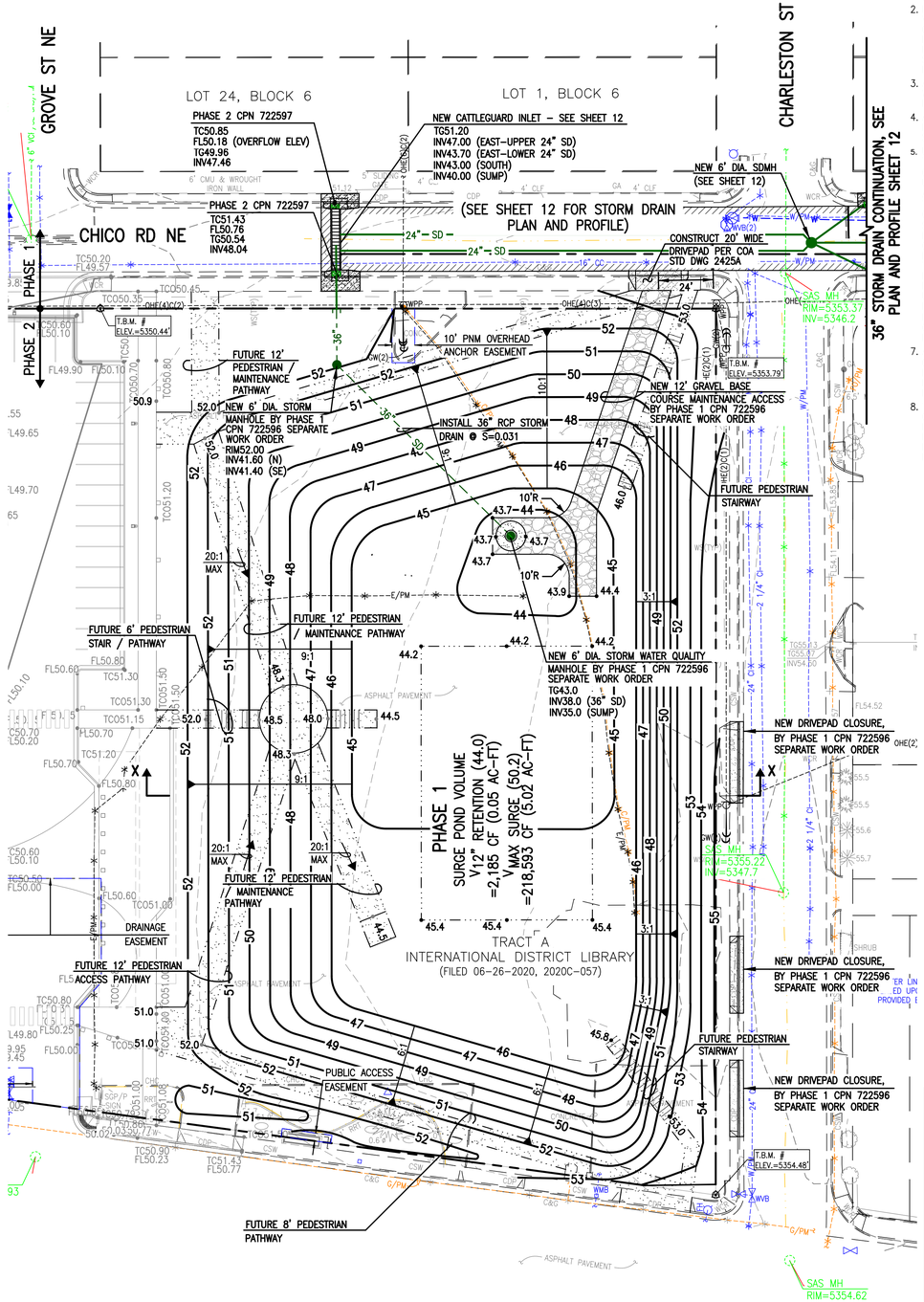
1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
5. UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE TOPOGRAPHIC AND UTILITY SURVEY CONDUCTED BY THIS FIRM DATED 04/30/2018 AND INCLUDED AS SHEETS 3-6 OF THIS PLAN SET. THAT UTILITY SURVEY AND SUBSURFACE UTILITY ENGINEERING EFFORT IS NOT ALL-INCLUSIVE AND MAY NOT REPRESENT UTILITIES/INFRASTRUCTURE THAT HAVE BEEN ABANDONED-IN-PLACE, WERE INACCESSIBLE, OR OTHERWISE UNDETECTABLE DUE TO UNFORESEEN AND UNCONTROLLABLE SITE AND/OR UTILITY CONDITIONS. FURTHER, THAT UTILITY INVESTIGATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFORE. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUES, NEW MEXICO EXCAVATION LAWS (NMB11), MUNICIPAL AND LOCAL ORDINANCES, SITE SPECIFIC RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE UTILITY LINES AND FACILITIES.
7. ALL UTILITIES WITHIN THE PROJECT LIMITS THAT ARE RENDERED OBSOLETE AND / OR UNUSED AS A RESULT OF THIS PROJECT SHALL NOT BE ABANDONED IN PLACE, BUT SHALL INSTEAD BE COMPLETELY REMOVED WITHIN THE PROJECT AREA AND CAPPED AT THE PROJECT LIMITS, UNLESS OTHERWISE NOTED.
8. THE GRADES INDICATED ON THIS PLAN ARE FINISHED GRADES UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING SUBGRADE AT ELEVATIONS THAT SHALL ACCOMMODATE PROPOSED IMPROVEMENTS AS INDICATED ON THE PLANS INCLUDING, BUT NOT LIMITED TO, SURFACE DRAINAGE STRUCTURES, PAVING AND LANDSCAPING SURFACING.



36" STORM DRAIN

SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'





SURGE POND CAPACITY (6:1 MAX SLOPES)				
ELEV FT	AREA SF	VOL CF	∑ VOL CF	∑ VOL AC-FT
5343.0	1250	0	**0**	**0.00**
5344.0	3120	2185	**2,185**	**0.05**
5345.0	22950	13035	**15,220**	**0.35**
5346.0	31180	27065	**42,285**	**0.97**
5347.0	36020	33600	**75,885**	**1.74**
5348.0	41170	38595	**114,480**	**2.63**
5349.0	46660	43915	**158,395**	**3.64**
5350.0	52470	49565	**207,960**	**4.77**
5350.2	53860	10633	**218,593**	**5.02**

SCALE: 1" = 30'
30 0 60
15 30

NOTE:
THIS IS NOT A BOUNDARY SURVEY OR A RIGHT OF WAY SURVEY. APPARENT PROPERTY CORNERS, RIGHT OF WAY LINES, PROPERTY LINES AND EASEMENT LINES AS SHOWN ARE DERIVED FROM A RECORDED PLAT DATED 06/26/2020 (DOC#2020057642) PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 06/2019 (2018.017.2). THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE "TOPOGRAPHIC AND UTILITY SURVEY" PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 04/30/2018 (2018.017.1). SUPPLEMENTAL SURVEY DATED 06/07/2021 (2021.026.1).

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STARTED BY — DATE
WORK STARTED PER CITY'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
AN AGRS BRASS DISK STAMPED "7-K19", SET IN A CONCRETE CYLINDER, ON THE NOSE OF THE ISLAND EAST OF THE INTERSECTION OF CENTRAL AVENUE AND LOUISIANA BOULEVARD.
ELEVATION = 5325.99 FEET (NAVD 1988)

SURVEY INFORMATION
FIELD NOTES
NO. 2017.017.1 — BY HMCG — DATE 4/30/18

ENGINEER'S SEAL
TOBY J. MARTINEZ — NEW MEXICO — 23781 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REMARKS	BY
		Revisions	
		DESIGN	J.D.S. — Date 06-2023
			J.Y.R. — Date 06-2023
			G.M. — Date 06-2023

Designed By
Drawn By
Checked By

HIGH MESA Consulting Group
Engineers, Surveyors & Subsurface Utility Consultants
6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

2021.026.2

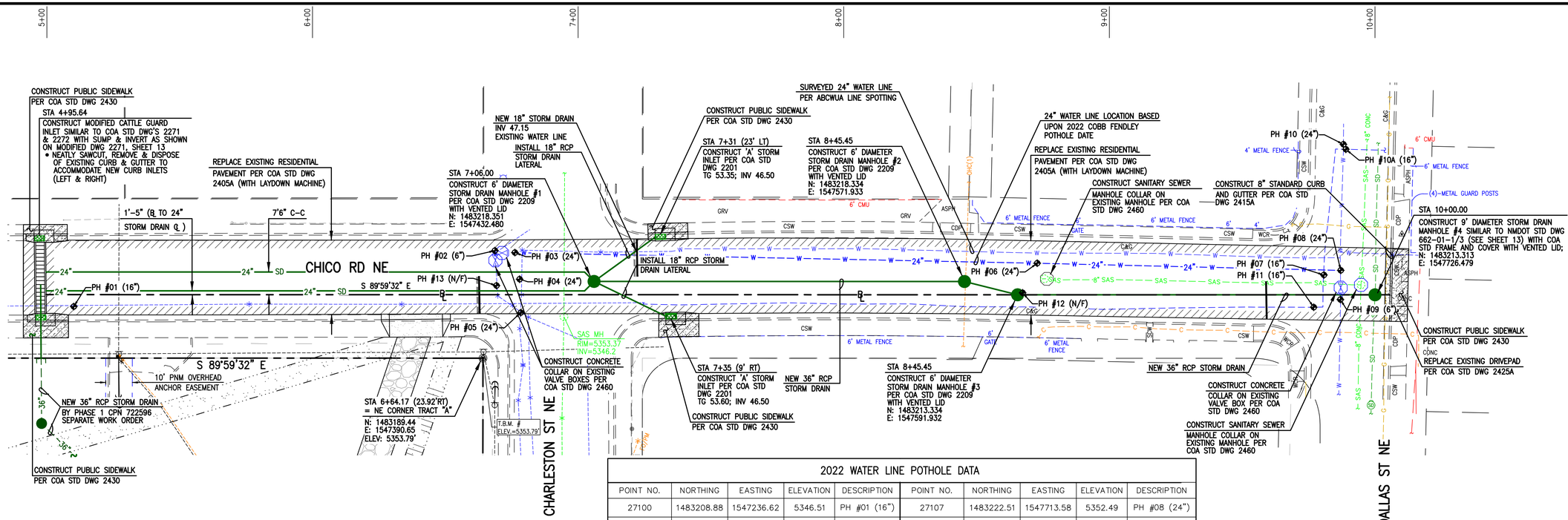
CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

TITLE: INTERNATIONAL DISTRICT LIBRARY
SURGE POND - PHASE 2
GRADING PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. 722597 — Zone Map No. K-19 — Sheet 11 Of 13

File Name: P:\data\2021\2021.026.2\ENG\210262_DesignBase_JDS\6-13.dwg - SH 11 - PH2 Plot Date: 6/14/23 Plot Time: 12:19



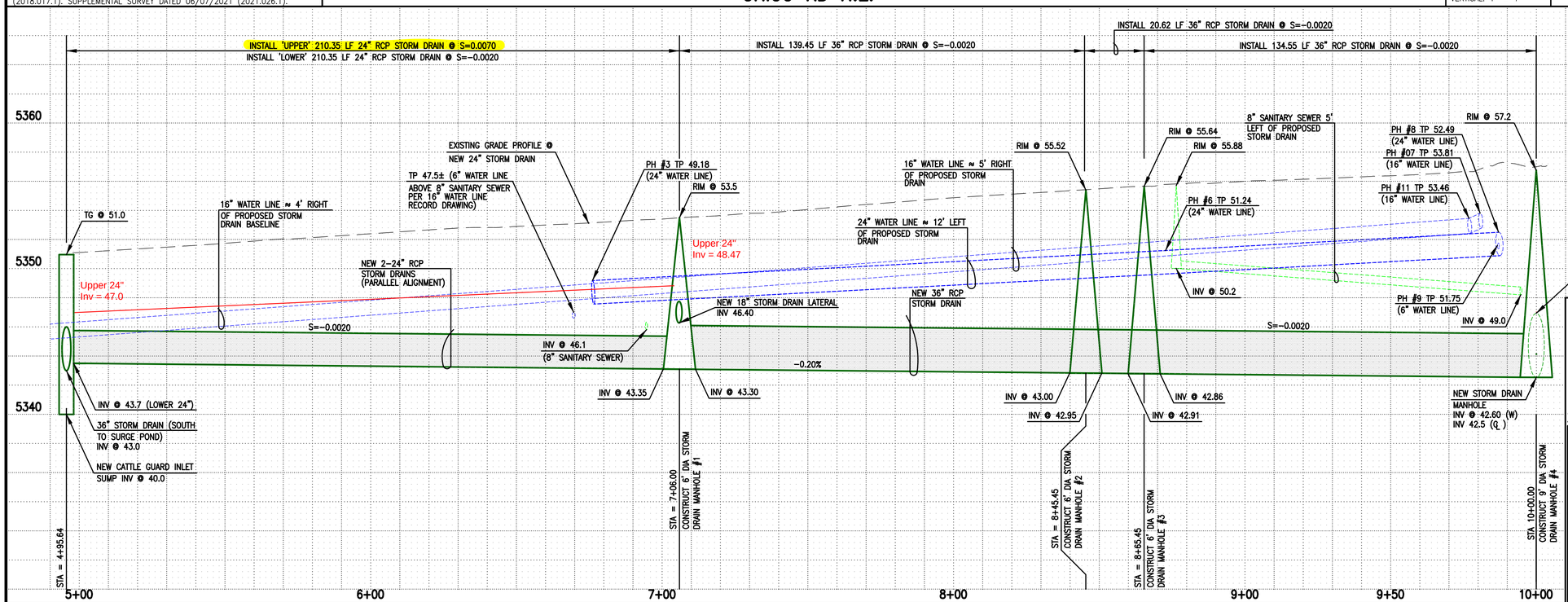
2022 WATER LINE POTHOLE DATA

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
27100	1483208.88	1547236.62	5346.51	PH #01 (16")	27107	1483222.51	1547713.58	5352.49	PH #08 (24")
27101	1483229.96	1547395.15	5348.32	PH #02 (6")	27108	1483211.52	1547713.46	5351.75	PH #09 (6")
27102	1483229.21	1547402.69	5349.18	PH #03 (24")	27109	1483270.04	1547714.56	5352.57	PH #10 (24")
27103	1483219.20	1547404.47	5348.69	PH #04 (24")	27110	1483268.16	1547715.49	5354.45	PH #10A (16")
27104	1483206.59	1547404.88	5348.76	PH #05 (24")	27111	1483208.64	1547703.42	5353.46	PH #11 (16")
27105	1483225.21	1547599.30	5351.24	PH #06 (24")	27112	1483214.07	1547593.80	0.00	PH #12 (N/F)
27106	1483220.78	1547707.23	5353.81	PH #07 (16")	27113	1483216.79	1547395.76	0.00	PH #13 (N/F)

* N/F = WATER LINE NOT FOUND

NOTE:
THIS IS NOT A BOUNDARY SURVEY OR A RIGHT OF WAY SURVEY. APPARENT PROPERTY CORNERS, RIGHT OF WAY LINES, PROPERTY LINES AND EASEMENT LINES AS SHOWN ARE DERIVED FROM A RECORDED PLAT DATED 06/26/2020 (DOC#2020057642) PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 06/2019 (2018.017.2). THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE "TOPOGRAPHIC AND UTILITY SURVEY" PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 04/30/2018 (2018.017.1). SUPPLEMENTAL SURVEY DATED 06/07/2021 (2021.026.1).

SCALE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'



CHICO RD N.E.

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK STARTED BY — DATE
STARTED WORK'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

BENCH MARKS
AN AGRS BRASS DISK STAMPED "7-K19", SET IN A CONCRETE CYLINDER, ON THE NOSE OF THE ISLAND EAST OF THE INTERSECTION OF CENTRAL AVENUE AND LOUISIANA BOULEVARD.
ELEVATION = 5325.99 FEET (NAVD 1988)

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
2017.017.1	HMCG	4/30/18

ENGINEER'S SEAL
REGISTERED PROFESSIONAL ENGINEER — GRADUATE MECHANICAL ENGINEER — "I" MASTER'S DEGREE

NO.	DATE	REMARKS	BY
		Revisions	
		DESIGN	J.D.S. Date 06-2023
			J.Y.R. Date 06-2023
			G.M. Date 06-2023

Designed By
Drawn By
Checked By

HIGH MESA Consulting Group
Engineers, Surveyors & Subsurface Utility Consultants
6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

2021.026.2

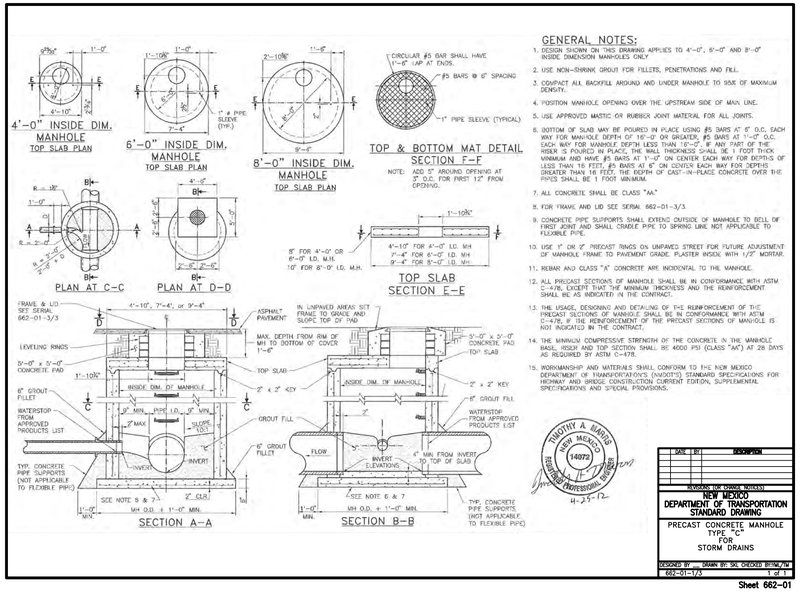
CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

TITLE: INTERNATIONAL DISTRICT LIBRARY
SURGE POND – PHASE 2
STORM DRAIN PLAN AND PROFILE

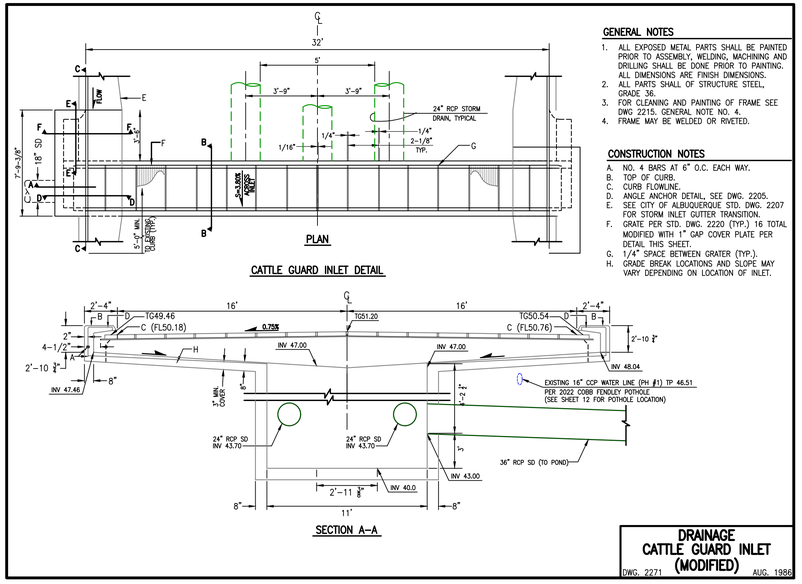
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

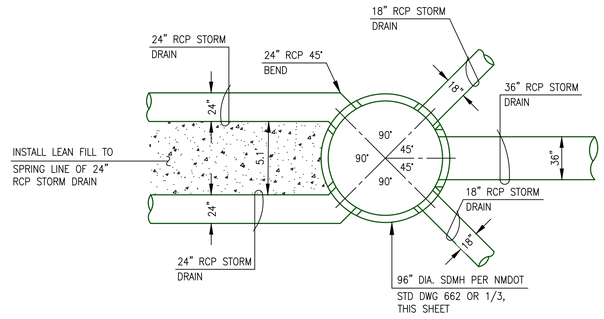
City Project No. 722597 | Zone Map No. K-19 | Sheet 12 Of 13

File Name: P:\data\2021\2021.026.2\ENG\210262_DesignBase_JDS\6-13.dwg - SH 12 - PH2 Plot Date: 6/14/23 Plot Time: 12:20



Sheet 662-01





CHARLESTON STREET SD MH SECTION

SCALE: 1"=5'

NOTE: FOR STORM DRAIN INVERT ELEVATIONS, SEE PROFILE, SHEET 12

AS BUILT INFORMATION
CONTRACTOR — DATE
WORK PERFORMED BY — DATE
STREET/UTILITY ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

BENCH MARKS
AN AGRS BRASS DISK, STAMPED "7"-K19", SET IN A CONCRETE CYLINDER, ON THE NOSE OF THE ISLAND EAST OF THE INTERSECTION OF CENTRAL AVENUE AND LOUISIANA BOULEVARD.
ELEVATION = 5325.99 FEET (NAVD 1988)

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE
2017.017.1	HMCG	4/30/18

ENGINEER'S SEAL
TIMOTHY A. MARTINEZ NEW MEXICO 14972 REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REMARKS	BY
		Revisions	
		DESIGN	J.D.S. 06-2023
			J.Y.R. 06-2023
			G.M. 06-2023

Designed By — Date
Drawn By — Date
Checked By — Date

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2021.026.2

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

TITLE: INTERNATIONAL DISTRICT LIBRARY
SURGE POND – PHASE 2
SECTIONS AND DETAILS

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. 722597 | Zone Map No. K-19 | Sheet 13 Of 13

File Name: P:\data\2021\2021.026.2\ENG\210262_DesignBase_JDS\fl-13.dwg - SH 13 - PH2 Plot Date: 6/14/23 Plot Time: 12:38

Appendix D

Digital Files

- ZuniPond_SWMM_010825.ini
- ZuniPond_SWMM_010825.inp
- ZuniPond_SWMM_010825.out
- ZuniPond_SWMM_010825.rpt