



**PRELIMINARY DRAINAGE REPORT
FOR
5TH & GOLDWATER**

September 5, 2025
WP# 245619

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1.0 INTRODUCTION

1.1 General Background

5th & Goldwater (Site) is a proposed mixed-use development located on five (5) parcels with an approximate net area of 4.8-acres within Scottsdale, Arizona (APN#173-48-047D, 173-48-047A, 173-48-056A, 173-48-055E, 173-48-050A). The Site is currently developed and will be demolished prior to the new development. The Site will include 232 dwelling units comprised of studio, one-bedroom, and two-bedroom apartments, 12,000 square-feet of retail space, 16,300 square-feet of restaurant space, and 2,500 square-feet of flexible use building space, and an onsite parking garage with all associated landscape, hardscape, and utility services. The Site is located on the northwest corner of Indian School Road and Goldwater Boulevard within Section 22, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to Exhibit 1 – *Vicinity Map* for project location.

1.2 Topography

The Site currently consists of a vacant restaurant, a vacant hotel, and five (5) retail buildings, including existing parking and site improvements. The existing topography of the Site generally slopes from north to south with an approximate elevation change of 6 feet and slope of 1.0%.

1.3 FEMA Regulated Flood Zones

The Federal Emergency Management Agency (FEMA) has published Flood Insurance Rate Map (FIRM) information for communities that adhere to FEMA regulations. The FEMA FIRM panel for this Site is 04013C2235M, effective date September 18, 2020, and indicates the Site falls within “Zone X” shaded. (Refer to Exhibit 2 - *FEMA FIRM*)

Zone “X” shaded is defined by FEMA as follows:

“Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood”.

1.4 Scope of Drainage Report

This Preliminary Drainage Report has been prepared with Wood, Patel & Associates, Inc.’s (WOODPATEL’s) understanding of the City of Scottsdale technical requirements within the *City of Scottsdale Design Standards and Policies Manual, 2018*, as applicable for the Site. The purpose of this Report is to address the following drainage design considerations for the Site:

- Stormwater retention calculations for the proposed retention system design from contributing offsite and onsite drainage areas
- Peak flow determination for conveyance system design from contributing offsite and onsite drainage areas

2.0 HYDROLOGY ANALYSIS

2.1 Offsite Hydrology

There are no offsite flows contributing to the Site. Offsite runoff is currently conveyed to existing stormwater infrastructure in the right-of-way.

2.2 Onsite Hydrology

Grading is designed so that onsite runoff will flow away from the buildings toward proposed conveyance structures that will be directed to a first flush treatment system and ultimately outfalls into existing stormwater infrastructure in Indian School Road or Goldwater Boulevard. Two (2) first flush treatment systems are proposed to treat the first flush stormwater for sub basins A and B. The proposed first flush device (Model JDS120-6764) located on the west side of the site will treat stormwater collected from all A-sub basins before ultimately out falling into the existing stormwater infrastructure within Indian School Road. The first flush device (Model JDS120-6782) located within the southeast corner of the Site will treat stormwater from all B sub basins before ultimately out falling into the existing stormwater infrastructure in Indian School Road. Runoff from the C1 and C2 sub basins will ultimately outfall into 5th Avenue and maintain historical drainage patterns. Runoff from sub basin D will ultimately outfall into the existing stormwater infrastructure in Indian School Road. Runoff collected from sub basin E will ultimately outfall into the existing stormwater infrastructure in Goldwater Boulevard. Runoff collected from sub basin F will be captured in a 6-inch retention basin to treat the first flush volume (Refer to Exhibit 7 – *5th & Goldwater Preliminary Improvement Plan*).

Onsite peak flow estimates for the proposed developments were generated using the Rational Method, as outlined in the *Drainage Design Manual for Maricopa County, Arizona; Hydrology Volume* (Ref. 2). NOAA Atlas 14 precipitation data was obtained and utilized to develop Intensity-Duration-Frequency (I-D-F) curves for the Site. Rational method peak flows were computed at concentration points within the Site at key design locations. Runoff coefficients were estimated to reflect post-development land use conditions for the 10-year and 100-year events. (Refer to Appendix A – *Hydrology Calculations*)

2.3 Retention & First Flush Treatment

The existing development provides no onsite stormwater storage, therefore the proposed development is not required to provide onsite stormwater storage since there is minimal increase in discharge flow rate to the city system from pre- to post-development. Since the Site is over one (1) acre, a first flush treatment device is required onsite prior to connection to the city system for water quality control. This has been discussed and agreed upon with City of Scottsdale staff.

One (1) 6-inch surface retention is proposed to capture runoff from sub basin F. This is due to the landscape area north of the patio area with no way of surface draining to North Goldwater Boulevard.

The onsite storm drain conveyance system will be designed to capture and convey runoff from the 100-

year storm event to the public storm drain outfalls. Two (2) onsite hydrodynamic separator devices are proposed onsite prior to the public storm drain outfall connections. The runoff generated from the first flush storm event will be treated in two (2) first flush treatment systems and ultimately outfalls to existing City of Scottsdale storm infrastructure in Indian School Road and Goldwater Boulevard. The first flush devices have been sized accordingly to treat the discharge from sub basins A and B. (Refer to Appendix A - *Hydrology Calculations*)

The City of Scottsdale required first flush flow rate is determined as follows:

$Q_{FF} = CIA$, where:

Q_{FF} = Required first flush flow rate (cfs)

I = First Flush Rainfall Intensity = 0.25 inches/hour

A = Area in acres of total disturbed area

C = First flush weighted average runoff coefficient = 1.0

2.4 Lowest Livable Finish Floor Elevation

The proposed building finished floor elevations are sufficiently elevated above the adjacent roadway curbs to provide protection from the design 100-year storm event while maintaining accessible sidewalk access to the buildings. The lowest livable finish floor elevation occurs at the southeast corner of the project, a proposed retail space, at 1267.00. The Site's ultimate outfall location occurs at the southeast corner of the development at an elevation of 1266.1. Therefore, the lowest livable finish floor is approximately 0.9-feet above the Site's ultimate outfall. The project includes a sub-terrain garage level. (Refer to Exhibit 7 – *5th & Goldwater Preliminary Improvement Plan*)

3.0 HYDRAULIC ANALYSIS

Proposed catch basins will capture onsite runoff. Storm drains are proposed to convey collected onsite runoff to a first flush treatment system. The proposed storm drain system will be designed to capture and convey the anticipated 100-year peak flow. (Refer to Exhibit 5 – *Storm Drain Layout* and Appendix B – *Hydraulic Calculations*)

3.1 Pipe Capacity Calculation

The proposed private storm drain system for the Site will consist of H.D.P.E. storm drain pipes designed to convey stormwater from the 100-year storm event to the proposed first flush treatment system and ultimately into the City storm drain system. (Refer to Appendix B – *Hydraulic Calculations*)

Onsite storm drain analysis was conducted using StormCAD (2023) utilizing Manning's equation. Pipes were modeled as H.D.P.E storm drain with a roughness coefficient of 0.012.

The existing system capacity was modeled using StormCAD (2023) and Manning's equation by setting the tailwater condition to match the existing gutter elevations at the outfall locations. This reflects the

worst-case scenario by having the existing condition fully surcharged. (Refer to Appendix B - *100-Year Storm Event with Existing System Surcharged*)

The onsite storm drain system was modeled for the 10-year and 100-year event, as well as the 100-year event assuming the downstream public storm drain system was fully surcharged (up to existing gutter elevation). In all three scenarios the proposed onsite storm drain system has sufficient capacity.

Additionally, the downstream public storm drain system was modeled for the proposed onsite 100-year peak flow plus the existing flows within the *Lower Indian Bend Wash Area Drainage Master Study – Hydrology & Hydraulics Report* dated December 2017 (Refer to Exhibit 6). From the master drainage study, existing flows were modeled in StormCAD (2023) based on the existing flow locations. Onsite flows were added at the proposed connection points to the offsite system to model the future public storm drain system and check capacity.

Results indicate the existing public storm drain system has sufficient capacity for the existing and proposed flows.

3.2 Storm Drain Inlet Calculation

Catch basins are proposed within drive lanes of the parking lot and in landscape areas around the Site's perimeter to capture onsite runoff. Storm drains are proposed to convey collected runoff to the first flush treatment system. The proposed storm drain system will be designed to capture and convey the anticipated 100-year flow. Catch basins CB-A1.1, CB-A1.2, and CB-A1.3 will have roof drains tied directly to the storm drain from the subbasin areas A1.1, A1.2, and A1.3 respectively. Catch basin RD-1 will have a roof drain tie directly to the storm drain from the subbasin areas B1, B2, and B3. These basins are not included in the inlet summary because the surface grate is not capturing any flow. Please refer to Appendix B for a summary of the catch basin inlet and storm drain capacities.

4.0 MAINTENANCE

Ongoing maintenance of the designed and recommended drainage systems is required to preserve the system's integrity. Failure to provide maintenance can prevent the drainage system from performing its intended design purpose and can result in reduced performance. Maintenance within the public right-of-way is the responsibility of the governing municipality. The property owner shall be solely responsible for the operation and maintenance of facilities on private property and within drainage easements, including private streets. An Operations and Maintenance (O&M) Manual will be requested from the first flush treatment device manufacturer and provided for reference with the final construction document submittal to the City of Scottsdale.

5.0 SPECIAL CONDITIONS

There are no washes with 100-year flows greater than 25 cfs traversing the Site and there are no designated Section 404 washes within the Site. Therefore, a Section 404 permit is not required for development.

6.0 CONCLUSIONS

Based on our analysis of the Site, the following conclusions can be made:

1. This preliminary Drainage Report has been prepared in accordance with WOODPATEL's understanding of the *City of Scottsdale Design Standards & Policies Manual*, 2018 requirements and the *Drainage Design Manuals for Maricopa County Hydrology and Hydraulics* (2018), as applicable to the Site.
2. The Site is within a FEMA designated "Zone X" shaded.
3. The Site does not receive offsite flows.
4. Stormwater runoff from all onsite A and B subbasin areas will be treated by a first flush treatment system. Treatment is provided for the first flush storm event. Two (2) first flush storm drain systems are proposed for the project.
5. The proposed storm drain system will be designed to capture and convey the anticipated 100-year stormwater flow peak to the first flush storm drain systems and ultimately into the City storm drain system.
6. The proposed building finished floor elevations are sufficiently elevated above the adjacent roadway curbs to provide protection from the design 100-year storm event while maintaining accessible sidewalk access to the buildings. The lowest livable finish floor is approximately 1.5-feet above the Site's ultimate outfall. The project includes a sub-terrain garage level.
7. Ongoing maintenance is required for the proposed drainage systems to maintain design performance. Maintenance is the responsibility of the property owner.

7.0 REFERENCES

1. *Drainage Design Manual, Hydrology, Edition 4*, Flood Control District of Maricopa County, December 14, 2018.
2. *Drainage Design Manual, Hydraulic, Edition 4*, Flood Control District of Maricopa County, December 14, 2018.
3. *Design Standards and Policies Manual, Chapter 4: Grading and Drainage*, City of Scottsdale, January 2018

APPENDIX A – HYDROLOGY CALCULATIONS

IDF DATA FROM FCDMC NOAA ATLAS 14 PRECIPITATION DATA



SITE I-D-F CURVE

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

RAINFALL DEPTHS, INCHES

Duration	Average Recurrence Interval (years)					
	2	5	10	25	50	100
5-min	0.240	0.326	0.392	0.481	0.550	0.620
10-min	0.364	0.495	0.596	0.732	0.837	0.944
15-min	0.452	0.614	0.739	0.907	1.040	1.170
30-min	0.608	0.827	0.995	1.220	1.400	1.580
60-min	0.753	1.020	1.230	1.510	1.730	1.950
2-hr	0.863	1.160	1.380	1.680	1.920	2.160
3-hr	0.929	1.220	1.450	1.780	2.040	2.310
6-hr	1.100	1.420	1.670	2.010	2.280	2.560
12-hr	1.230	1.560	1.820	2.170	2.440	2.720
24-hr	1.490	1.930	2.280	2.760	3.140	3.540

RAINFALL INTENSITY, INCHES/HOUR

Duration minutes	Frequency, years					
	2	5	10	25	50	100
5	2.88	3.91	4.70	5.77	6.60	7.44
10	2.18	2.97	3.58	4.39	5.02	5.66
15	1.81	2.46	2.96	3.63	4.16	4.68
30	1.22	1.65	1.99	2.44	2.80	3.16
60	0.75	1.02	1.23	1.51	1.73	1.95
120	0.43	0.58	0.69	0.84	0.96	1.08
180	0.31	0.41	0.48	0.59	0.68	0.77
360	0.18	0.24	0.28	0.34	0.38	0.43
720	0.10	0.13	0.15	0.18	0.20	0.23
1440	0.06	0.08	0.10	0.12	0.13	0.15

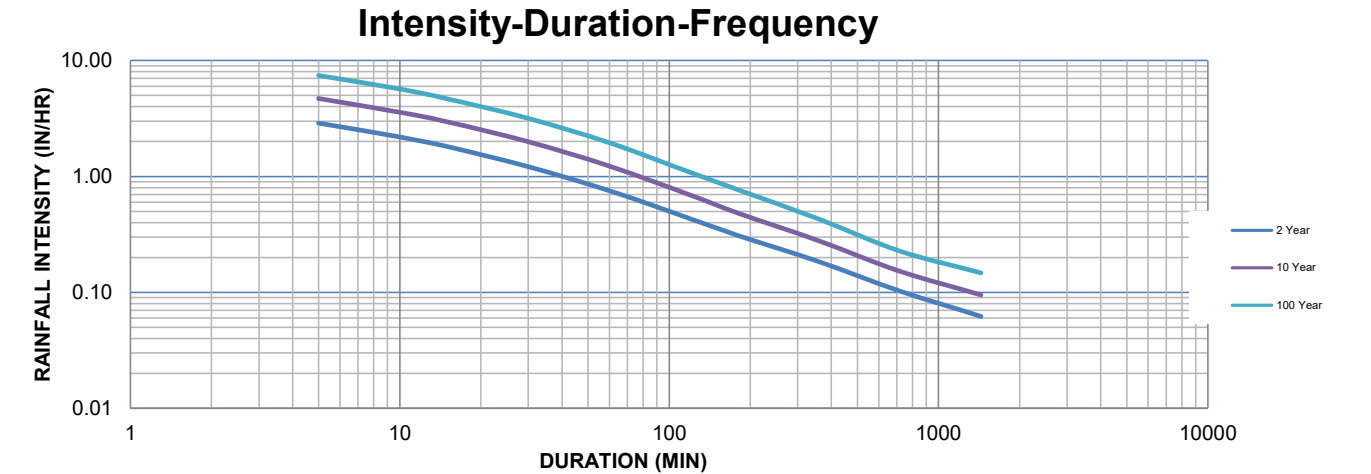


TABLE 1 – WEIGHTED C VALUES

**COMPOSITE WEIGHTED "C"
FACTOR CALCULATIONS
100 YEAR**

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

Drainage Subbasin ID	Area	Desert Landscaping		Paved streets, parking lots, roofs, driveways, etc.		100 YR Runoff Coefficient
(Description/ID)	(Acres)	%	"C"	%	"C"	"C"
A1.1	0.35	0	0.45	100	0.95	0.95
A1.2	0.56	0	0.45	100	0.95	0.95
A1.3	0.57	0	0.45	100	0.95	0.95
A2	0.21	31	0.45	69	0.95	0.79
A3	0.16	36	0.45	64	0.95	0.77
A5	0.07	54	0.45	46	0.95	0.68
A6	0.26	30	0.45	70	0.95	0.80
A7	0.22	10	0.45	90	0.95	0.90
A8	0.16	42	0.45	58	0.95	0.74
B1	0.81	0	0.45	100	0.95	0.95
B2	0.70	0	0.45	100	0.95	0.95
B3	0.15	0	0.45	100	0.95	0.95
C1	0.06	62	0.45	38	0.95	0.64
C2	0.06	34	0.45	66	0.95	0.78
D1	0.16	48	0.45	52	0.95	0.71
D2	0.09	58	0.45	42	0.95	0.66
E	0.39	27	0.45	73	0.95	0.82
F	0.07	50	0.45	50	0.95	0.72

TABLE 2 – RATIONAL METHOD SUMMARY



RATIONAL METHOD SUMMARY
100 YEAR, 10 YEAR, 2 YEAR

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

PROPOSED ON-SITE WATERSHEDS										100 YEAR				10 YEAR				2 YEAR				Q100 Flow Total (cfs)
Drainage Subbasin ID	Longest Watercourse 'L' (ft)	Longest Watercourse 'L' (mi)	Drainage Area 'A' (sf)	Drainage Area 'A' (Acres)	'K _b ' Type ¹	Watershed Resistance Coefficient 'K _b '	Top Elevation	Bottom Elevation	Basin Slope 'S' (ft/mi)	Calculated Q100 'Tc' (See Note 2) (min)	100 YEAR Intensity 'i' (in/hr)	100 YR Runoff Coefficient 'C'	Q100 Flow (cfs)	Calculated Q10 'Tc' (See Note 2) (min)	10 YEAR Intensity 'i' (in/hr)	10 YR Runoff Coefficient 'C'	Q10 Flow (cfs)	Calculated Q2 'Tc' (See Note 2) (min)	2 YEAR Intensity 'i' (in/hr)	2 YR Runoff Coefficient 'C'	Q2 Flow (cfs)	
A1.1	210	0.040	15,323	0.35	B	0.0862	1272.0	1260.0	301.7	3.0	7.44	0.95	2.49	3.6	4.70	0.95	1.57	4.5	2.56	0.95	0.9	16.9
A1.2	192	0.036	24,347	0.56	B	0.0835	1272.0	1260.0	330.0	2.8	7.44	0.95	3.95	3.3	4.70	0.95	2.50	4.2	2.56	0.95	1.4	
A1.3	165	0.031	24,848	0.57	B	0.0834	1272.0	1260.0	384.0	2.4	7.44	0.95	4.03	2.9	4.70	0.95	2.55	3.7	2.56	0.95	1.4	
A2	118	0.022	9,163	0.21	B	0.0893	1273.0	1272.0	44.7	4.2	7.44	0.79	1.24	5.0	4.70	0.79	0.78	6.1	2.73	0.79	0.5	
A3	90	0.017	6,959	0.16	B	0.0910	1272.0	1271.0	58.7	3.4	7.44	0.77	0.92	4.0	4.70	0.77	0.58	4.9	2.88	0.77	0.4	
A5	165	0.031	2,898	0.07	B	0.0962	1271.0	1269.0	64.0	4.6	7.44	0.68	0.34	5.5	4.59	0.68	0.21	6.8	2.63	0.68	0.1	
A6	143	0.027	11,341	0.26	B	0.0880	1272.0	1271.0	36.9	4.8	7.44	0.80	1.55	5.9	4.50	0.80	0.94	7.3	2.56	0.80	0.5	
A7	106	0.020	9,783	0.22	B	0.0889	1271.9	1271.0	44.8	4.0	7.44	0.90	1.50	4.7	4.70	0.90	0.95	5.7	2.78	0.90	0.6	
A8	114	0.022	6,911	0.16	B	0.0910	1272.0	1271.9	4.6	8.4	7.44	0.74	0.87	10.0	4.70	0.74	0.55	12.0	2.88	0.74	0.3	16.0
B1	278	0.053	35,332	0.81	B	0.0813	1267.0	1260.0	132.9	4.4	7.44	0.95	5.73	5.2	4.66	0.95	3.59	6.4	2.69	0.95	2.1	
B2	350	0.066	30,328	0.70	B	0.0822	1270.0	1260.0	150.9	4.7	7.44	0.95	4.92	5.7	4.55	0.95	3.01	7.1	2.59	0.95	1.7	
B3	140	0.027	6,374	0.15	B	0.0915	1272.0	1268.0	150.9	3.2	7.44	0.95	1.03	3.8	4.70	0.95	0.65	4.8	2.53	0.95	0.4	0.6
C1	34	0.006	2,643	0.06	B	0.0967	1272.0	1271.0	155.3	1.6	7.44	0.64	0.29	1.9	4.70	0.64	0.18	2.3	2.88	0.64	0.1	
C2	32	0.006	2,644	0.06	B	0.0967	1271.5	1271.2	49.5	2.2	7.44	0.78	0.35	2.6	4.70	0.78	0.22	3.2	2.88	0.78	0.1	1.3
D1	100	0.019	7,150	0.16	B	0.0908	1270.0	1267.0	158.4	2.6	7.44	0.71	0.87	3.1	4.70	0.71	0.55	3.8	2.88	0.71	0.3	
D2	190	0.036	3,865	0.09	B	0.0945	1270.0	1267.0	83.4	4.5	7.44	0.66	0.44	5.4	4.70	0.66	0.28	6.5	2.88	0.66	0.2	2.4
E	215	0.041	16,878	0.39	B	0.0857	1272.0	1268.0	98.2	4.3	7.44	0.82	2.37	5.2	4.68	0.82	1.49	6.5	2.53	0.82	0.8	
F	110	0.021	2,914	0.07	B	0.0962	1272.0	1268.0	192.0	2.7	7.44	0.72	0.36	3.2	4.68	0.72	0.23	4.0	2.53	0.72	0.1	0.4

EXISTING ON-SITE WATERSHEDS																					
EX-A	400	0.076	144,910	3.33	B	0.0728	1272.0	1260.0	158.4	4.7	7.44	0.85	21.0	5.6	4.57	0.85	12.9	7.0	2.56	0.85	7.2
EX-B	120	0.023	50,503	1.16	B	0.0791	1273.0	1272.0	44.0	4.0	7.44	0.85	7.3	4.7	4.70	0.85	4.6	6.0	2.56	0.85	2.5
EX-C	90	0.017	23,981	0.55	B	0.0836	1272.0	1271.0	58.7	3.2	7.44	0.89	3.6	3.9	4.70	0.89	2.3	4.9	2.56	0.89	1.3

Notes
1. Per Drainage Design Manual for Maricopa County, Vol. I, Hydrology (2013), Table 3.1: Equation for Estimating Kb in the Tc Equation
2. Minimum Tc is 5 minutes.

TABLE 3 – FIRST FLUSH TREATMENT



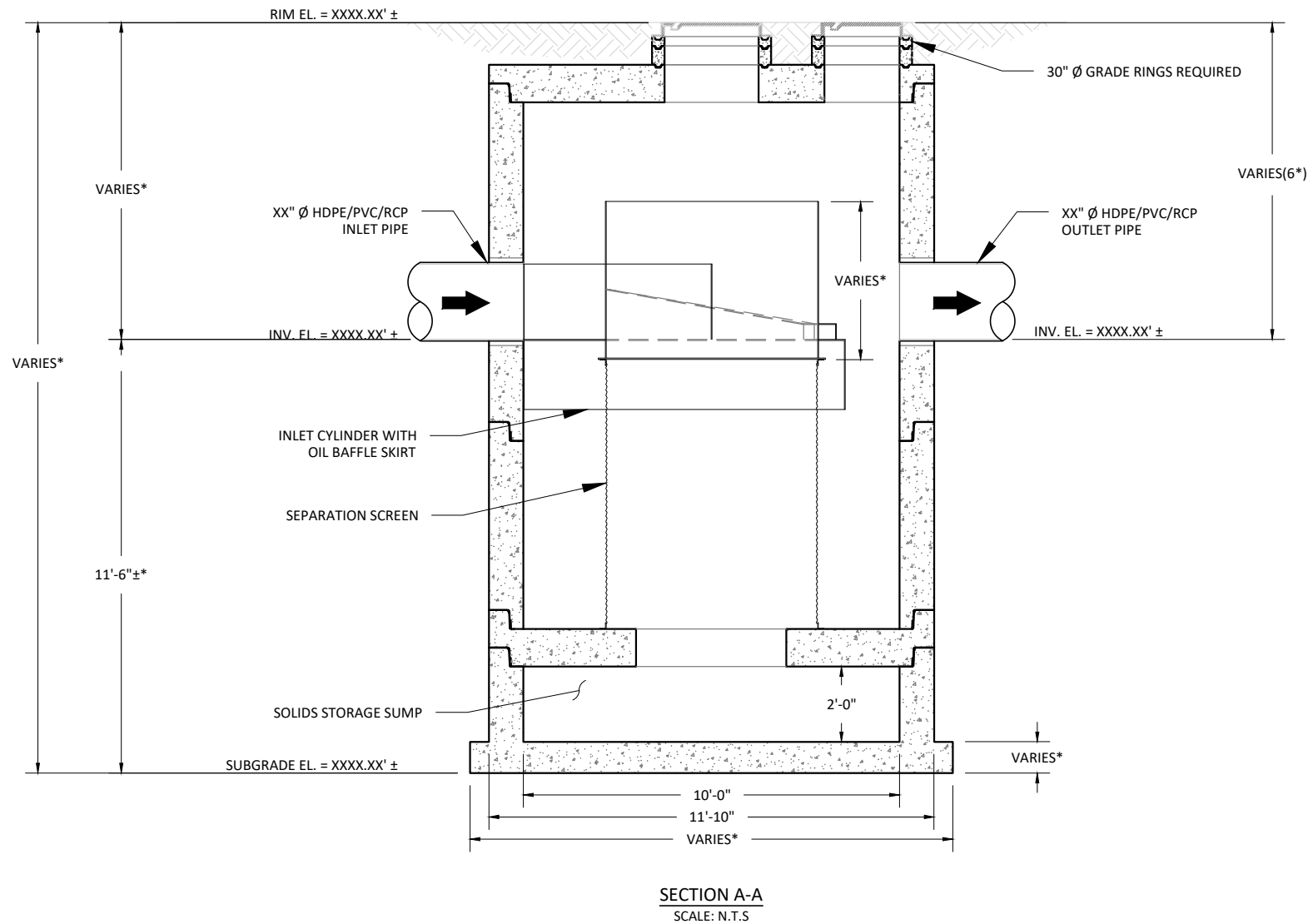
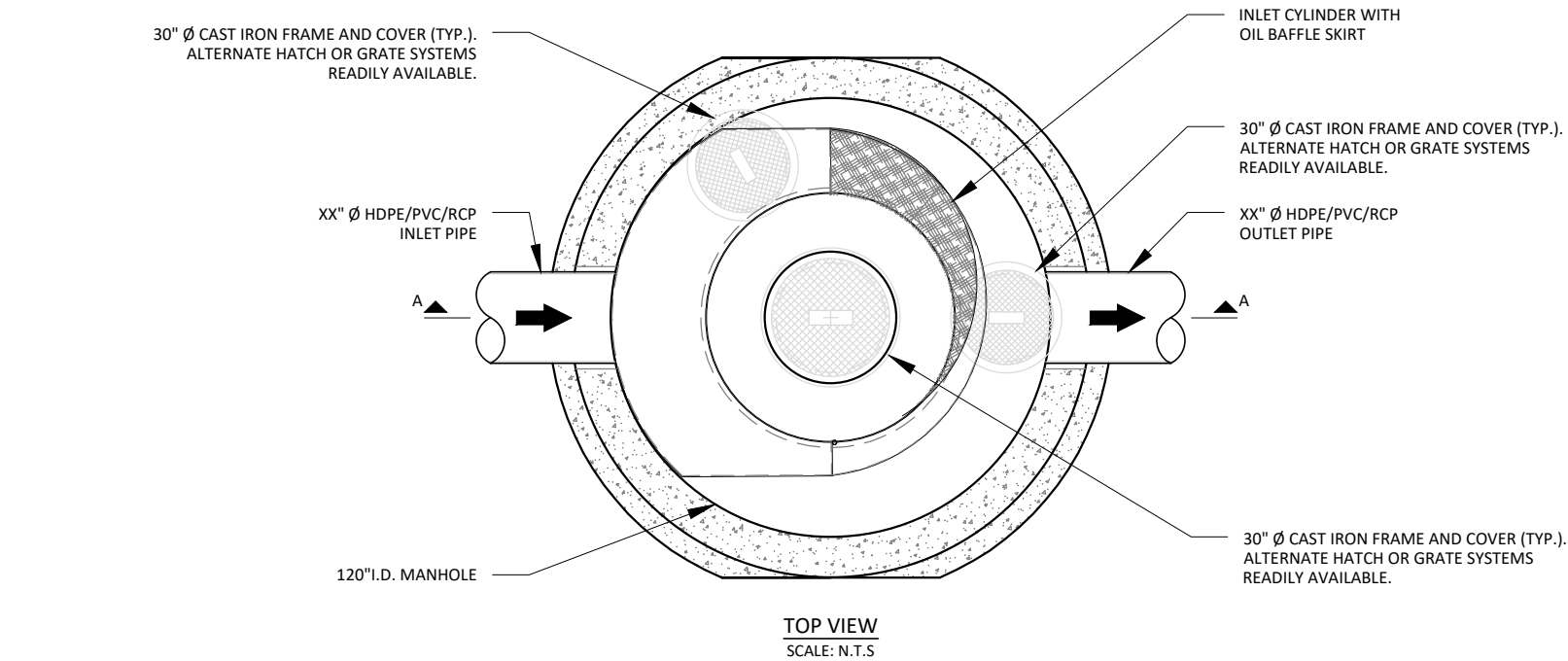
FIRST FLUSH TREATMENT

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

100 Year Rainfall Intensity "I" = 7.44 First Flush Rainfall Intensity "I" = 0.25

Drainage Subbasin ID	Retention Basin ID	Drainage Area "A" (Acres)	Runoff Coefficient "C"	A*C	Q100 (cfs)	Q100 (cfs)	Q (First Flush) (cfs)	Q (First Flush) (cfs)
A1.1	A	0.35	0.94	0.33	2.5	17.9	0.09	0.64
A1.2		0.56	0.94	0.53	3.9		0.14	
A1.3		0.57	0.94	0.54	4.0		0.14	
A2		0.21	0.94	0.20	1.5		0.05	
A3		0.16	0.94	0.15	1.1		0.04	
A5		0.07	0.94	0.06	0.5		0.02	
A6		0.26	0.94	0.24	1.8		0.07	
A7		0.22	0.94	0.21	1.6		0.06	
A8		0.16	0.94	0.15	1.1		0.04	
B1	B	0.81	0.94	0.76	5.7	11.6	0.20	0.41
B2		0.70	0.94	0.65	4.9		0.17	
B3		0.15	0.94	0.14	1.0		0.04	
TOTAL		4.22						

Calculated Values
100 Year Discharge = Q100 = C*I*A
First Flush Discharge = QFF = C*I*A



JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6782

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 19.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

- CERTIFIED FOR 100% CAPTURE FOR TRASH & DEBRIS BY CALIFORNIA STATE WATER RESOURCES CONTROL BOARD.
- CERTIFIED FOR 50% TOTAL SUSPENDED SOLIDS (TSS) REMOVAL BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
- JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
- JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
- CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
 - TOTAL SUSPENDED SOLIDS (TSS)
 - HEAVY METALS
 - OIL & GREASE
 - NUTRIENTS
 - FECAL COLIFORM

GENERAL NOTES :

- STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
- FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
- FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
- GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
- JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.
- OUTLET INVERT ELEVATION TYPICALLY SET EQUAL TO INLET ELEVATION OR SET 1" LOWER THAN INLET.

INSTALLATION NOTES :

- CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
- PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
- CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
- CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

MATERIALS :

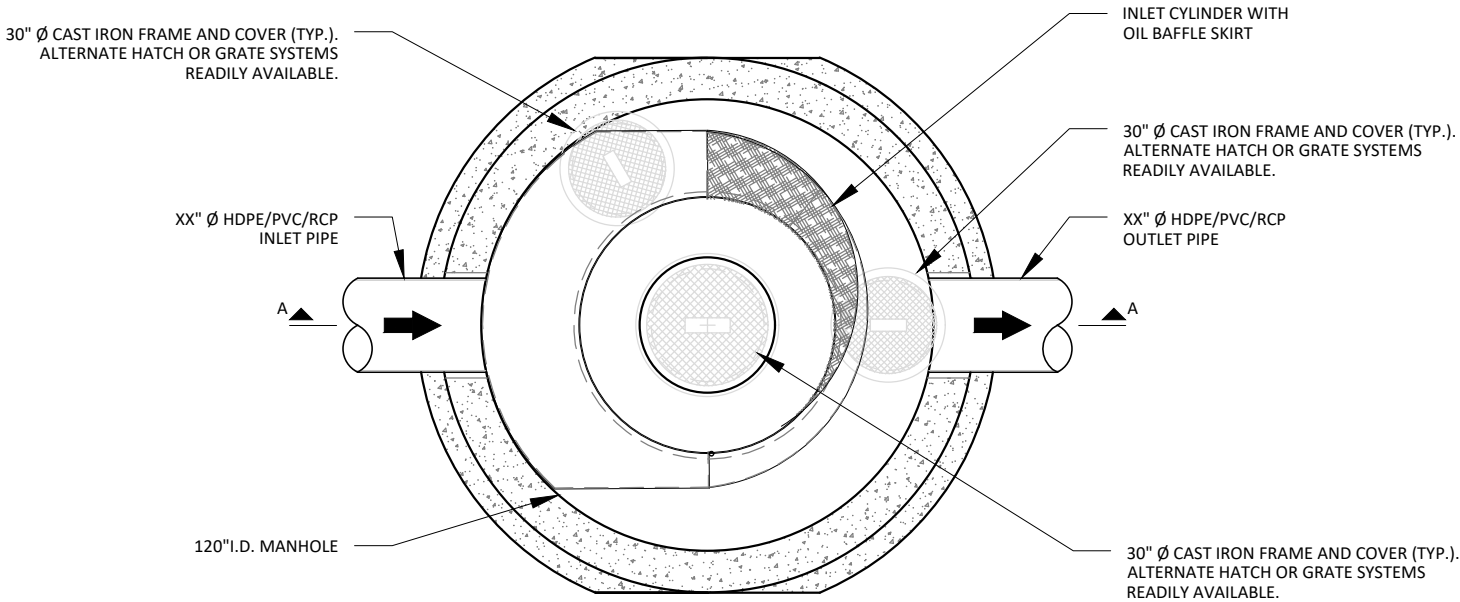
- ALL DIMENSIONS ARE IN FOOT-INCH.
- PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
- CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
- THE PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II/V HIGH SULFATE RESISTANT CEMENT IN ACCORDANCE WITH ASTM CLASS M C-150.
- MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199.
- FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING.
- ALL PRECAST CONCRETE COMPONENTS TO BE MANUFACTURED IN AN NPCA CERTIFIED PLANT.

QTY.	COMPONENT DESCRIPTION	RESPONSIBLE PROVIDER	RESPONSIBLE INSTALLER
1	SEPARATION SCREEN AND INLET CYLINDER	JENSEN	CONTRACTOR
1	XX" Ø HDPE/PVC/RCP INLET PIPE	CONTRACTOR	JENSEN
1	XX" Ø HDPE/PVC/RCP OUTLET PIPE	CONTRACTOR	JENSEN
3	30" Ø CAST IRON FRAME AND COVER, H2O RATED	JENSEN	CONTRACTOR
X	3" TALL 36" Ø GRADE RINGS	JENSEN	CONTRACTOR
X	6" TALL 36" Ø GRADE RING	JENSEN	CONTRACTOR

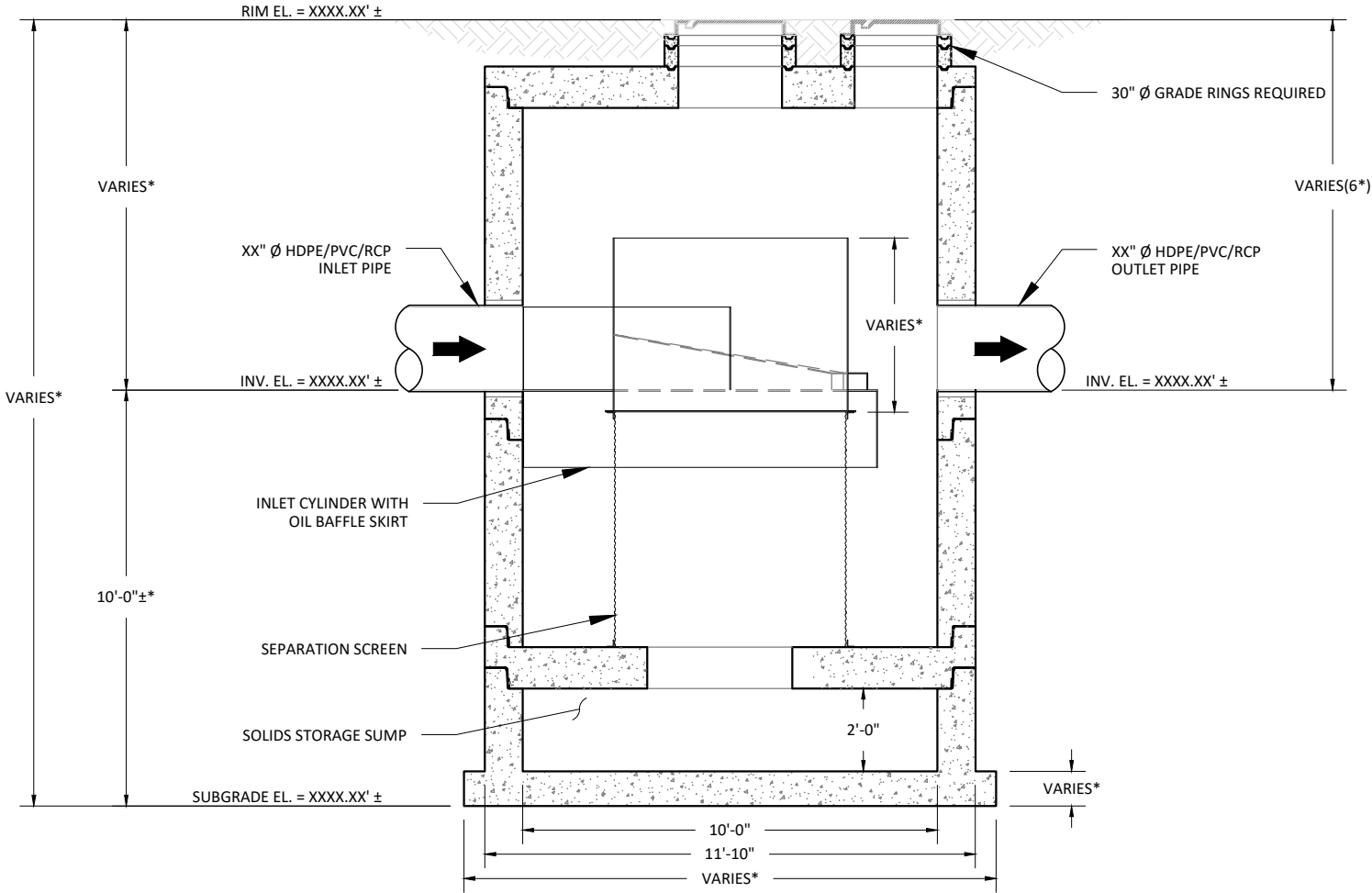
(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESS VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCES.

MODEL: JDS120-6782 JENSEN DEFLECTIVE SEPARATOR		PROJECT: PROJECT NAME CITY, STATE		 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT		ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX
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TOP VIEW
SCALE: N.T.S



SECTION A-A
SCALE: N.T.S

JENSEN DEFLECTIVE SEPARATOR, MODEL JDS120-6764

HYDRAULICS AND TREATMENT :

STORMWATER QUALITY DESIGN FLOW (SQDF)	≤ 14.0 - CFS
STORM DRAIN DESIGN CONVEYANCE FLOW	XX.XX - CFS
RETURN FREQUENCY/PERIOD OF PEAK DESIGN CONVEYANCE FLOW	XX - YRS
SUGGEST MAXIMUM INTERNAL BYPASS FLOW	≤ 50 - CFS

STORMWATER TREATMENT UNIT EMPLOYING THE CONTINUOUS DEFLECTIVE SEPARATION TREATMENT PROCESS TO PRODUCE A NON-BLOCKING SCREENING SYSTEM WITH SWIRL CONCENTRATION. THIS HYDRODYNAMIC SEPARATION TREATMENT IS EQUIPPED WITH AN INTERNAL BYPASS THAT PROVIDES COMPLETE BYPASS OF STORM DRAIN PIPELINE CONVEYANCE FLOW WITHOUT SCOUR OF CAPTURED GROSS SOLIDS .

TREATMENT :

1. CERTIFIED FOR 100% CAPTURE FOR TRASH & DEBRIS BY CALIFORNIA STATE WATER RESOURCES CONTROL BOARD.
2. CERTIFIED FOR 50% TOTAL SUSPENDED SOLIDS (TSS) REMOVAL BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION.
3. JENSEN DEFLECTIVE SEPARATOR IS A NON-BLOCKING SCREENING UNIT.
4. JENSEN DEFLECTIVE SEPARATOR DESIGNED TO PROCESS ENTIRE SQDF.
5. CAPTURE OF OTHER WATER QUALITY CONSTITUENTS INCLUDE:
 - TOTAL SUSPENDED SOLIDS (TSS)
 - HEAVY METALS
 - OIL & GREASE
 - NUTRIENTS
 - FECAL COLIFORM

GENERAL NOTES :

1. STANDARD CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE READILY AVAILABLE. CONTACT JENSEN STORMWATER SYSTEMS FOR CUSTOM DESIGNS, www.jensenengineeredsystems.com.
2. FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN STORMWATER SYSTEMS.
3. FOUNDATION, SUBGRADE, AND BACKFILL TO BE DESIGNED BY OTHERS.
4. GROUNDWATER ELEVATION IS ASSUMED TO BE BELOW THE BOTTOM OF PRECAST STRUCTURE. CONTACT JENSEN STORMWATER SYSTEMS FOR HIGH GROUNDWATER CONDITIONS.
5. JENSEN STORMWATER SYSTEMS TO PROVIDE ALL MATERIALS AS SHOWN, UNLESS OTHERWISE NOTED.
6. OUTLET INVERT ELEVATION TYPICALLY SET EQUAL TO INLET ELEVATION OR SET 1" LOWER THAN INLET.

INSTALLATION NOTES :

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO INSTALLATION.
2. PRECAST CONCRETE JOINTS TO BE SEALED USING BUTYL RUBBER COMPOUND SUPPLIED BY JENSEN PRECAST.
3. CONTRACTOR TO GROUT ALL PIPE PENETRATIONS IN PRECAST CONCRETE OPENINGS IN FIELD AS NECESSARY.
4. CONTRACTOR TO ADJUST ELEVATION OF FRAME AND COVER IN FIELD AS NECESSARY.

MATERIALS :

1. ALL DIMENSIONS ARE IN FOOT-INCH.
2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-478, C-857 AND LACSD S-A-206, WHEN IN LA COUNTY.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH F'c = 5,000-psi AT 28-DAYS.
4. THE PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II/V HIGH SULFATE RESISTANT CEMENT IN ACCORDANCE WITH ASTM CLASS M C-150.
5. MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM, C-478 AND AASHTO M199.
6. FLAT TOPS AND BASE SLABS ARE DESIGNED FOR ASSHTO HS-20 WHEEL LOADING.
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QTY.	COMPONENT DESCRIPTION	RESPONSIBLE PROVIDER	RESPONSIBLE INSTALLER
1	SEPARATION SCREEN AND INLET CYLINDER	JENSEN	CONTRACTOR
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1	XX" Ø HDPE/PVC/RCP OUTLET PIPE	CONTRACTOR	JENSEN
3	30" Ø CAST IRON FRAME AND COVER, H20 RATED	JENSEN	CONTRACTOR
X	3" TALL 36" Ø GRADE RINGS	JENSEN	CONTRACTOR
X	6" TALL 36" Ø GRADE RING	JENSEN	CONTRACTOR

(*) REGIONAL MANUFACTURING DIFFERENCE :

THESE ARE TEMPLATE SITE DESIGN DRAWINGS. JOINTS ORIENTATIONS, AND FINAL SEPARATION AND BASE SLAB THICKNESS VARY ACROSS JENSEN'S REGIONAL MANUFACTURING FACILITIES. CONFIRM FINAL JOINT ORIENTATION AND THICKNESS PER CONSTRUCTION SUBMITTAL DRAWINGS. ADJUST FINAL DIMENSIONS TO EXTERIOR INVERT AND SUBGRADE ELEVATION PER REGION DIFFERENCES.

MODEL: JDS120-6764 JENSEN DEFLECTIVE SEPARATOR		PROJECT: PROJECT NAME CITY, STATE		 521 DUNN CIRCLE, SPARKS, NV 89431-6312 (877) 649-0095 FAX (775) 440-2013 www.jensenengineeredsystems.com		
HYDRODYNAMIC SEPARATOR (HDS), SWIRL CONCENTRATING, FULL CAPTURE, NON-BLOCKING SCREENING UNIT		ORG. DWG. DATE XX/XX/XXXX	REV. DWG. DATE XX/XX/XXXX	SCALE: AS SHOWN	SHEET SIZE 11" X 17"	DRAWN BY X.XXXX
				SHEET NUMBER JDS120-6764		

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TABLE 4 – RETENTION PROVIDED



RETENTION VOLUME PROVIDED
ON-SITE RETENTION

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

Surface Retention

Volume Method Used		Average End Area								
Drainage Subbasin ID	Retention Basin ID	Bottom Elevation	Top Elevation	Bottom Area (sf)	Top Area (sf)	Volume (cf)	Cumulative Volume (cf)	Cumulative Volume (AF)	Total Volume Provided (CF)	Volume Required First Flush Retention (CF)
F	F	1,267.5	1,268.0	306	584	223	223	0.01	223	87

TABLE 5 – INLET SUMMARY

CATCH BASIN INLET SUMMARY
CATCH BASIN INTERCEPTION CAPACITY AND BY-PASS FLOWS

Project 5th & Goldwater
Location Scottsdale AZ
Project Number 245619
Project Engineer Aaron Morrison, PE

Catch Basin ID	Catch Basin Type	On-Grade or Sump	Post Q10 Flow (cfs)	Post Q100 Flow (cfs)	Intercept Capacity		By-Pass Flow	
					Q10in (cfs)	Q100in (cfs)	Q10by-pass (cfs)	Q100by-pass (cfs)
CB-A2.1	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.2	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.3	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.4	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.5	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.6	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.7	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.8	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.9	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.10	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.11	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.12	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.13	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.14	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.15	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.16	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.17	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A2.18	8" ADS	Sump	0.04	0.07	0.2	0.2	0.0	0.0
CB-A3.1	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.2	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.3	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.4	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.5	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.6	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.7	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.8	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.9	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.10	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.11	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.12	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.13	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.14	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.15	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A3.16	8" ADS	Sump	0.04	0.06	0.2	0.2	0.0	0.0
CB-A5.1	30" ADS	Sump	0.10	0.17	3.8	3.8	0.0	0.0
CB-A5.2	30" ADS	Sump	0.10	0.17	3.8	3.8	0.0	0.0
CB-A6.1	12" ADS	Sump	0.16	0.26	0.8	0.8	0.0	0.0
CB-A6.2	12" ADS	Sump	0.16	0.26	0.8	0.8	0.0	0.0
CB-A6.3	12" ADS	Sump	0.16	0.26	0.8	0.8	0.0	0.0
CB-A6.4	12" ADS	Sump	0.16	0.26	0.8	0.8	0.0	0.0
CB-A6.5	12" ADS	Sump	0.16	0.26	0.8	0.8	0.0	0.0
CB-A6.6	30" ADS	Sump	0.16	0.26	3.8	3.8	0.0	0.0
CB-A7.1	MAG 534	Sump	0.32	0.50	9.4	9.4	0.0	0.0
CB-A7.2	MAG 534	Sump	0.32	0.50	9.4	9.4	0.0	0.0
CB-A7.3	12" ADS	Sump	0.32	0.50	1.0	1.0	0.0	0.0
CB-A8	12" ADS	Sump	0.55	0.87	0.8	0.8	0.0	0.1
CB-D2.1	30" ADS	Sump	0.09	0.15	3.8	3.8	0.0	0.0
CB-D2.2	30" ADS	Sump	0.09	0.15	3.8	3.8	0.0	0.0
CB-D2.3	30" ADS	Sump	0.09	0.15	3.8	3.8	0.0	0.0
CB-E	MAG 532	Sump	1.49	2.37	5.0	5.0	0.0	0.0

Notes

1. The capacity of the 30-in Nyloplast Standard Grates was determined from the ADS Nyloplast Grate Inlet Capacity Charts with the assumption of a 0.5 clogging factor.

APPENDIX B – HYDRAULIC CALCULATIONS

STORM DRAIN ANALYSIS

10-YEAR STORM EVENT

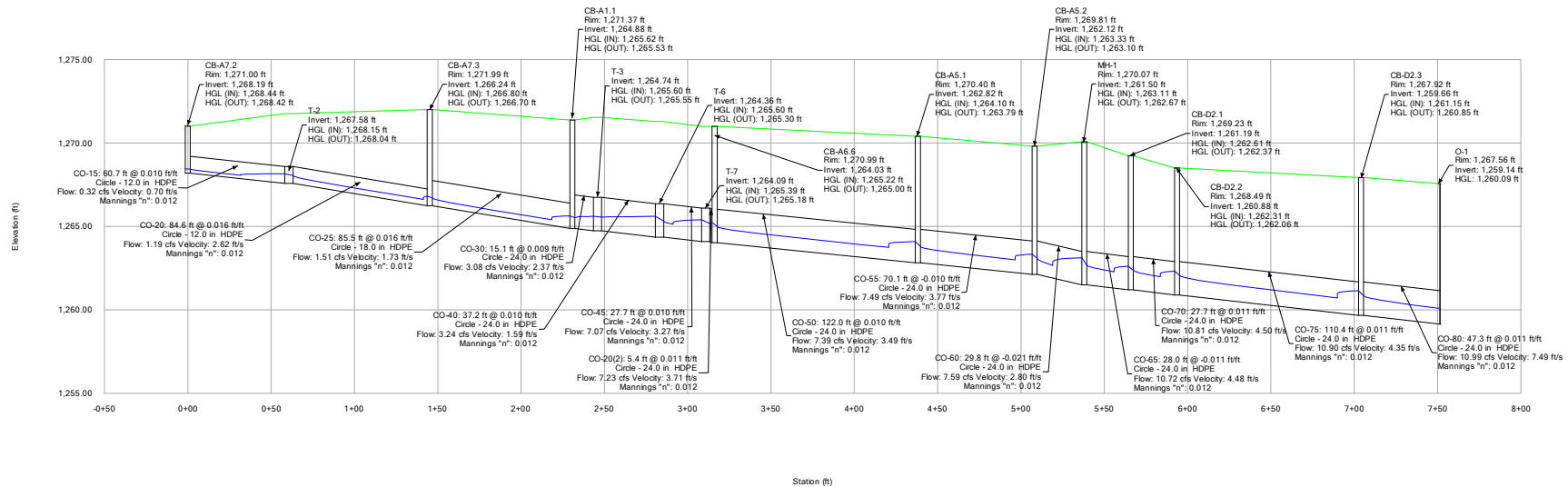
Active Scenario: 10-YR
FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Flow (Local In) (cfs)
CB-A1.1	1,271.37	1,264.88	3.08	3.50	1.57
CB-A1.2	1,271.06	1,264.97	3.35	2.77	2.57
CB-A1.3	1,270.54	1,262.44	3.13	4.90	2.55
CB-A2	1,270.20	1,265.95	0.78	2.72	0.78
CB-A3	1,270.52	1,263.33	0.58	2.51	0.58
CB-A5.1	1,270.40	1,262.82	7.49	4.94	0.10
CB-A5.2	1,269.81	1,262.12	7.59	4.96	0.10
CB-A6.1	1,271.15	1,265.38	0.16	1.50	0.16
CB-A6.2	1,270.60	1,265.61	0.16	0.70	0.16
CB-A6.3	1,270.95	1,265.31	0.32	0.61	0.16
CB-A6.4	1,270.60	1,265.31	0.16	0.41	0.16
CB-A6.5	1,270.30	1,264.70	0.16	0.28	0.16
CB-A6.6	1,270.99	1,264.03	7.39	4.92	0.16
CB-A7.1	1,270.60	1,267.96	0.32	1.20	0.32
CB-A7.2	1,271.00	1,268.19	0.32	2.30	0.32
CB-A7.3	1,271.99	1,266.24	1.51	3.27	0.32
CB-A8	1,271.00	1,268.50	0.55	2.67	0.55
CB-D2.1	1,269.23	1,261.19	10.81	5.61	0.09
CB-D2.2	1,268.49	1,260.88	10.90	5.63	0.09
CB-D2.3	1,267.92	1,259.66	10.99	5.65	0.09
DRAIN BASIN	1,267.00	1,260.88	7.25	5.53	0.00
RD-1	1,267.00	1,261.00	7.25	9.23	7.25

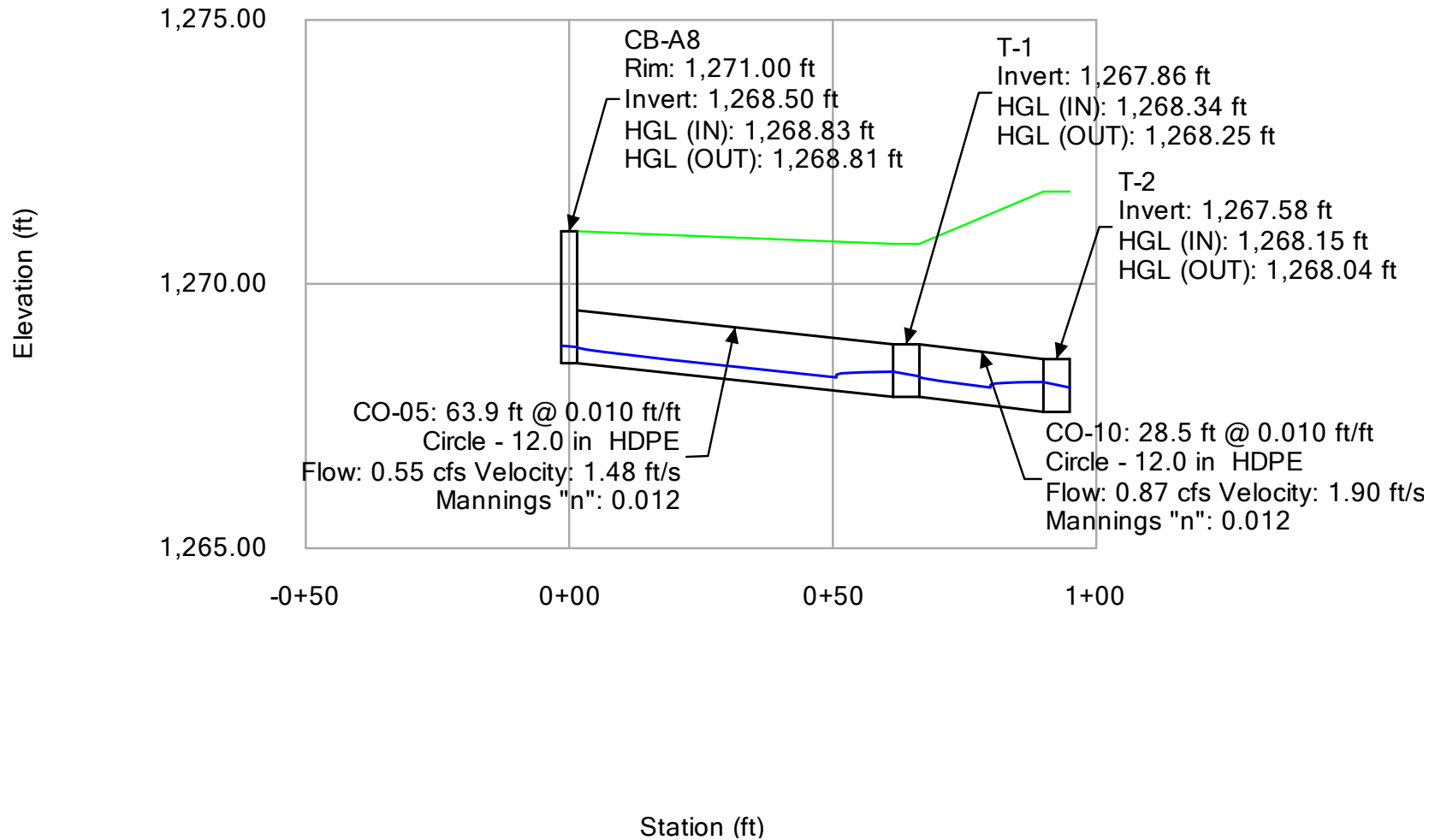
Active Scenario: 10-YR

Profile Report

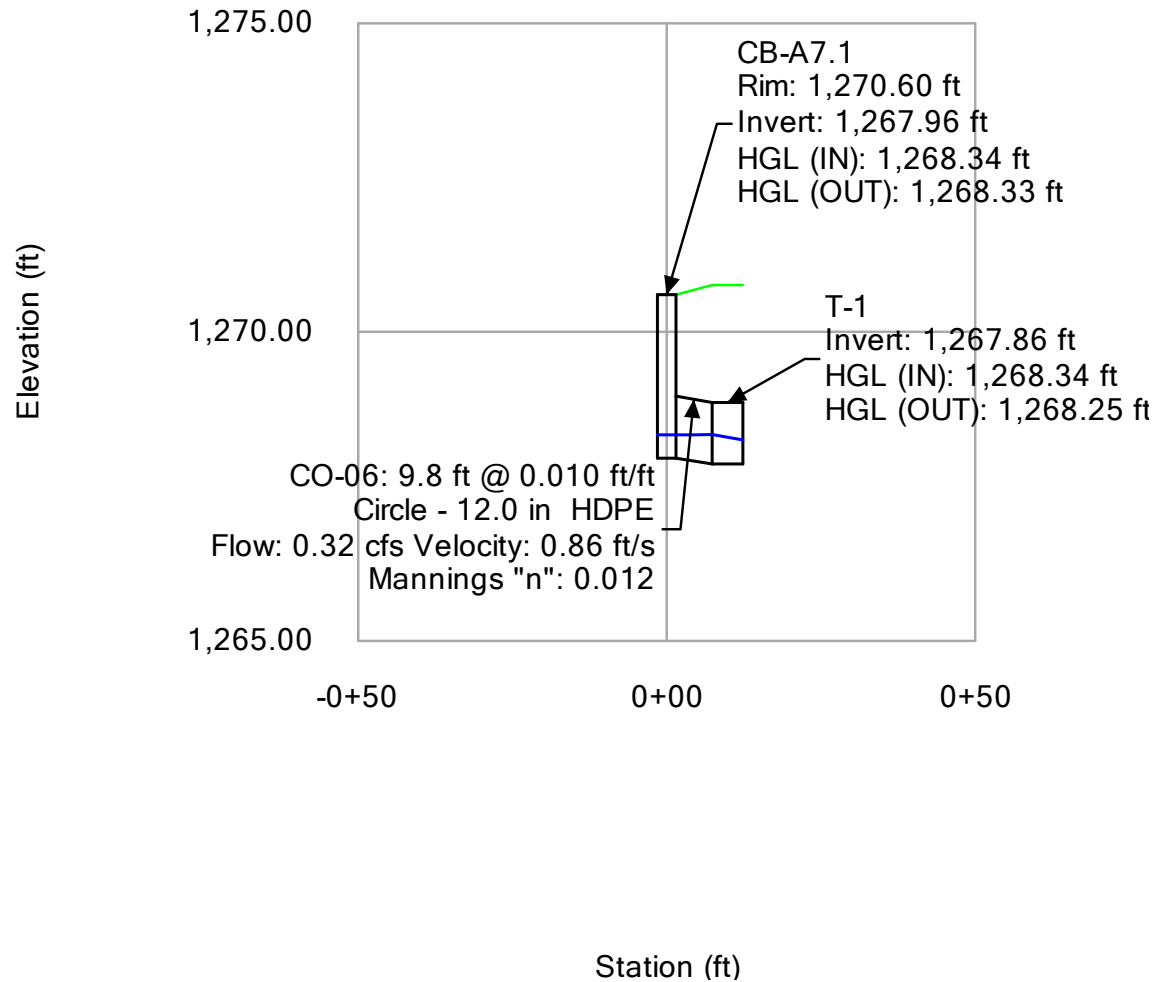
Engineering Profile - CB-A7.2 TO O-1 (5619-StormCAD.stsw)



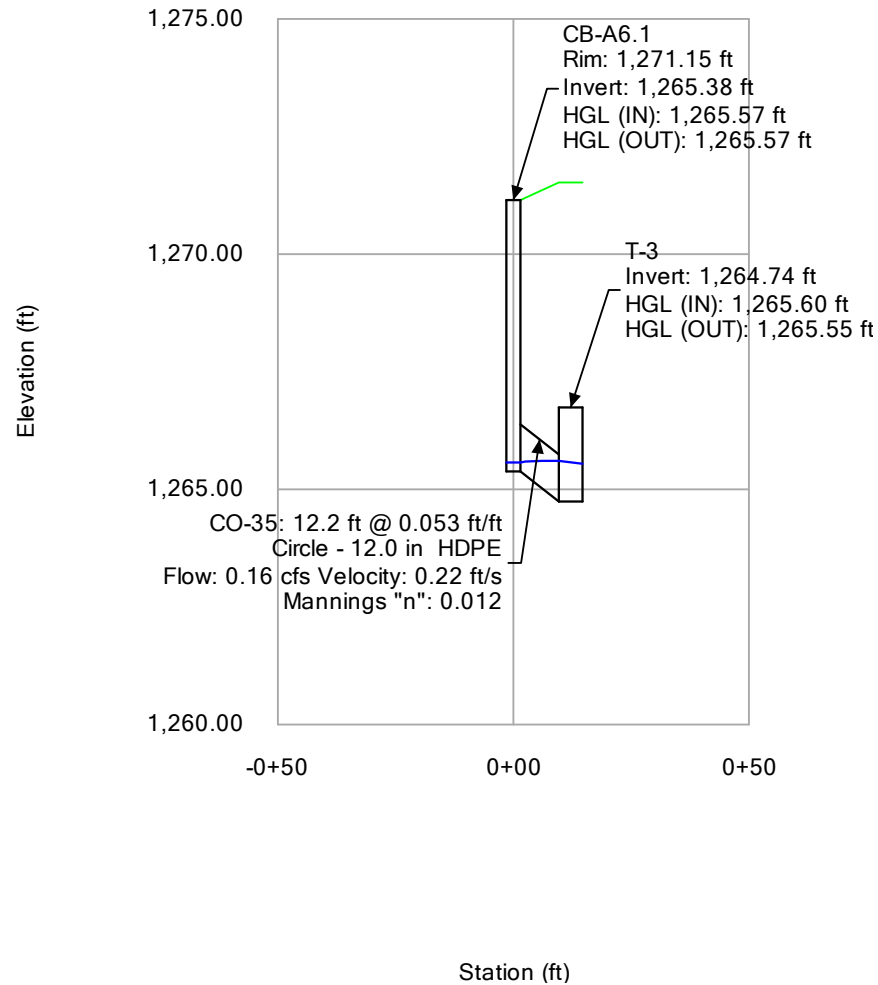
Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A8 TO T-2 (5619-StormCAD.stsw)



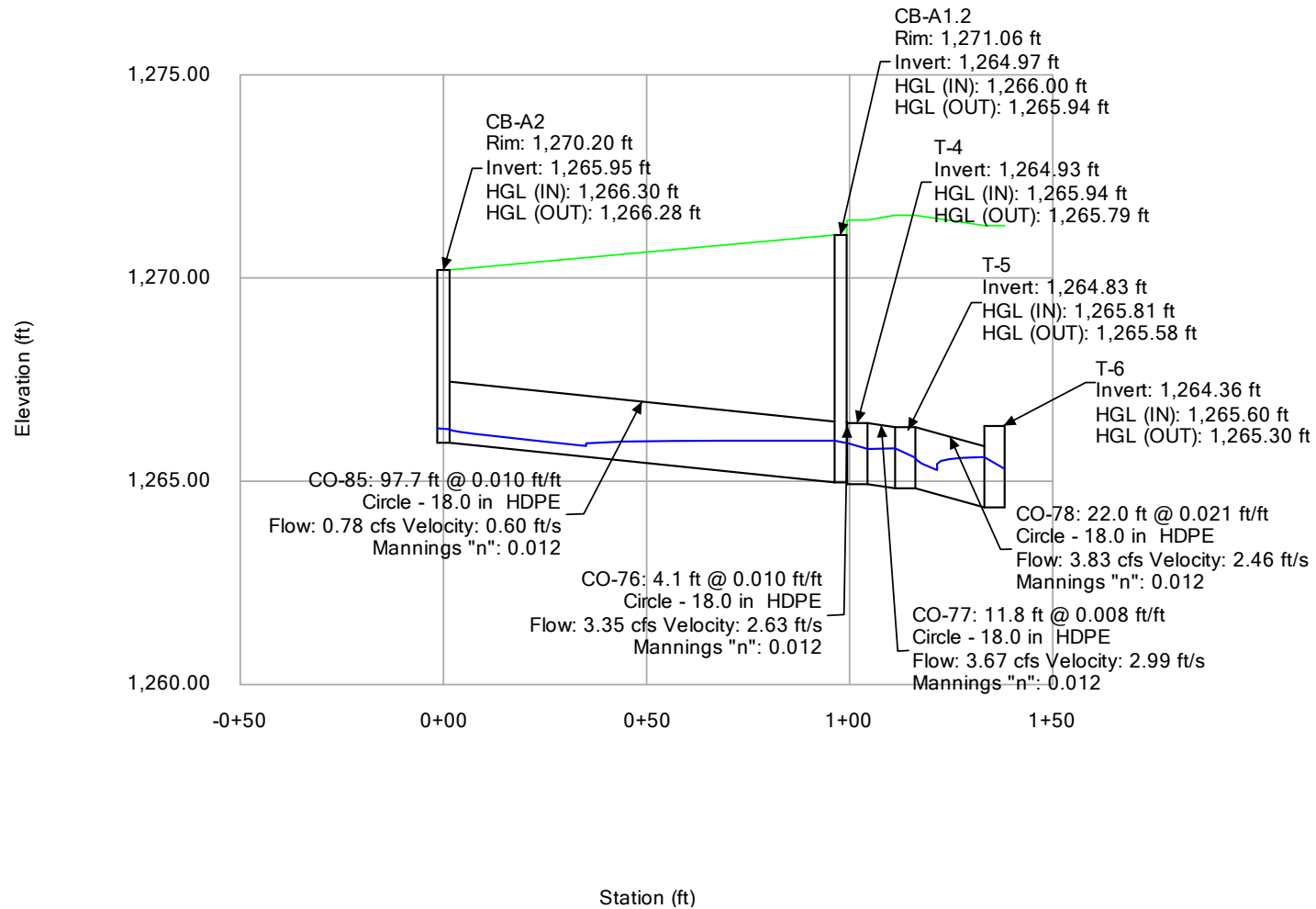
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Profile Report
Engineering Profile - CB-A7.1 TO T-1 (5619-StormCAD.stsw)



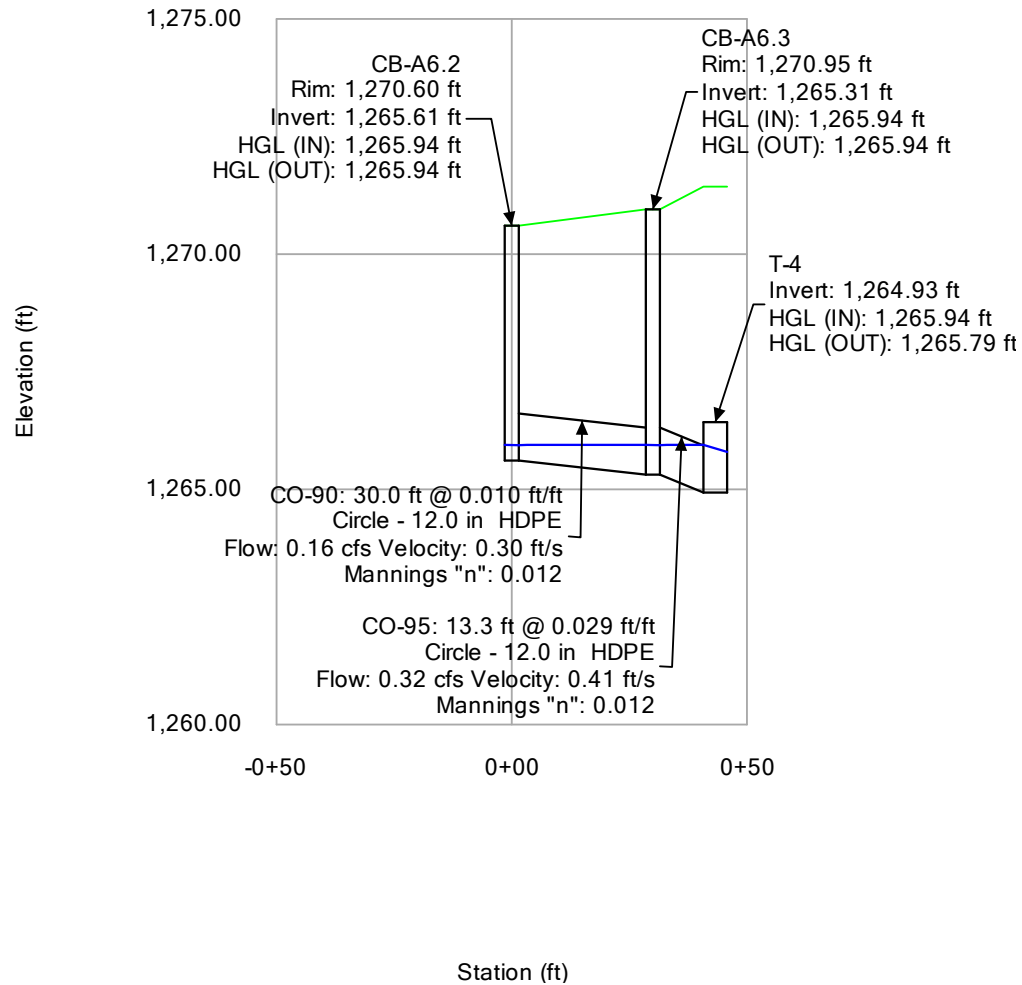
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Profile Report
Engineering Profile - CB-A6.1 TO T-3 (5619-StormCAD.stsw)



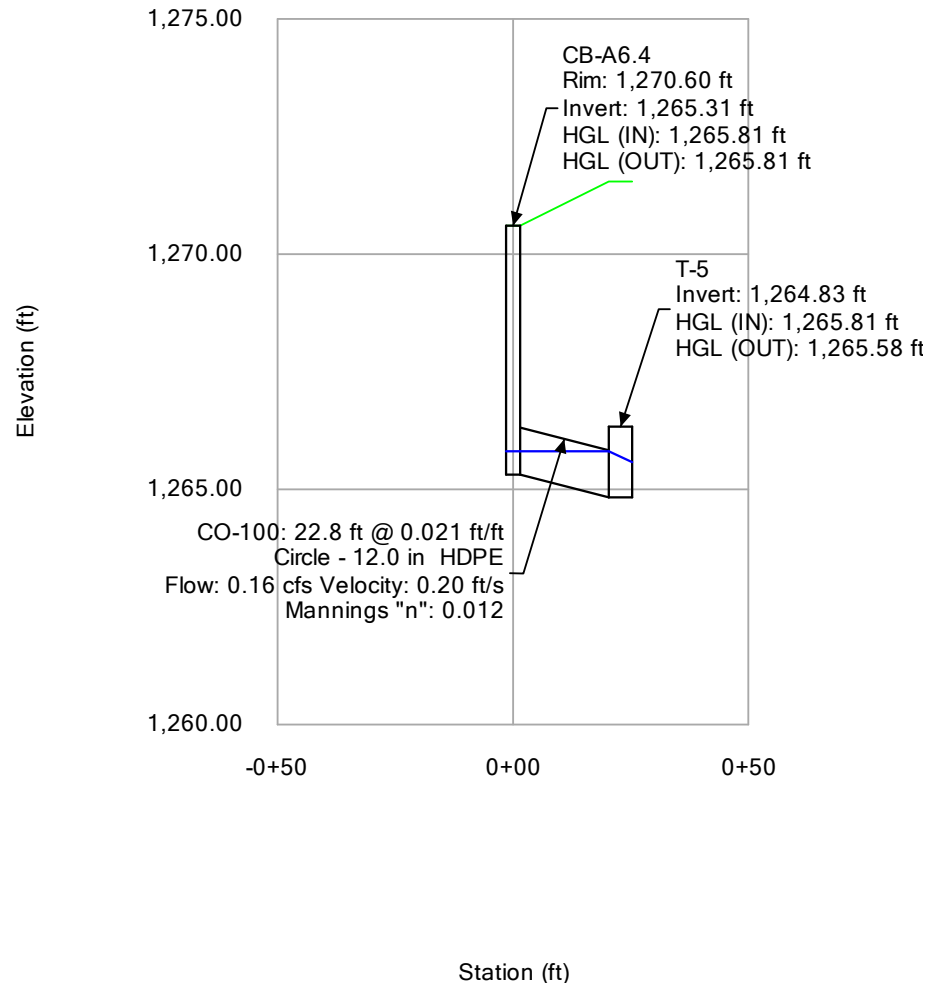
Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A2 TO T-6 (5619-StormCAD.stsw)



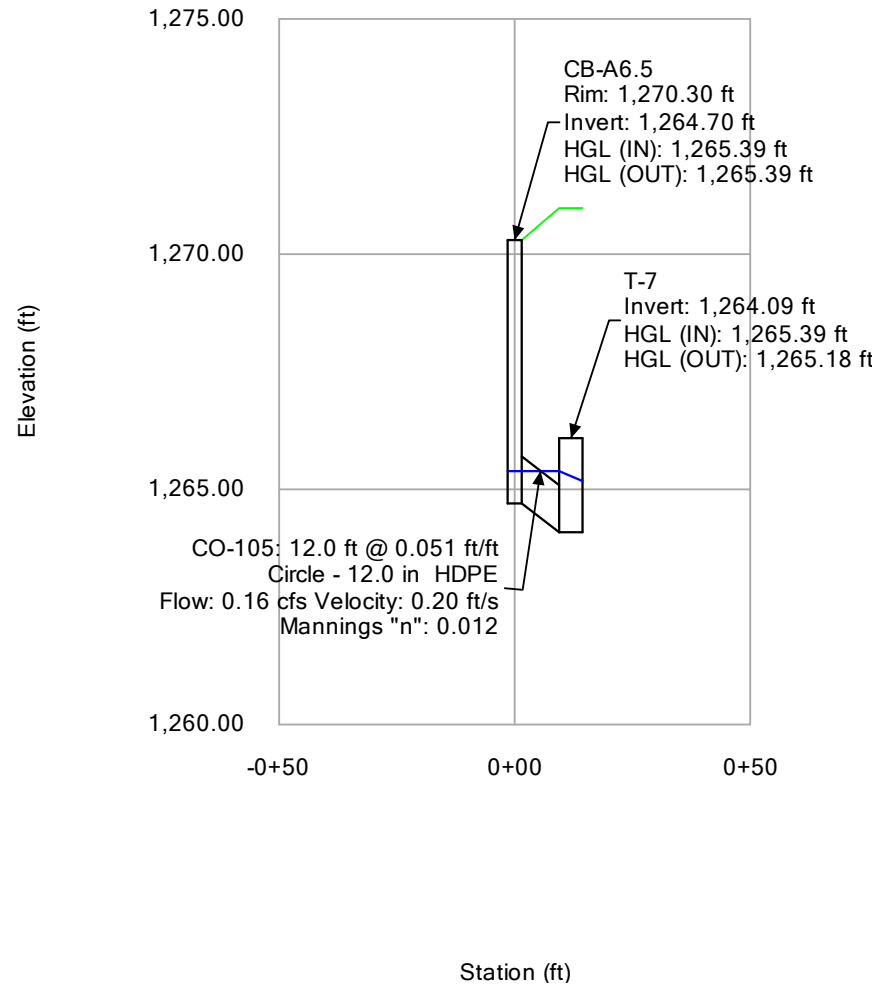
Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A6.2 TO T-4 (5619-StormCAD.stsw)



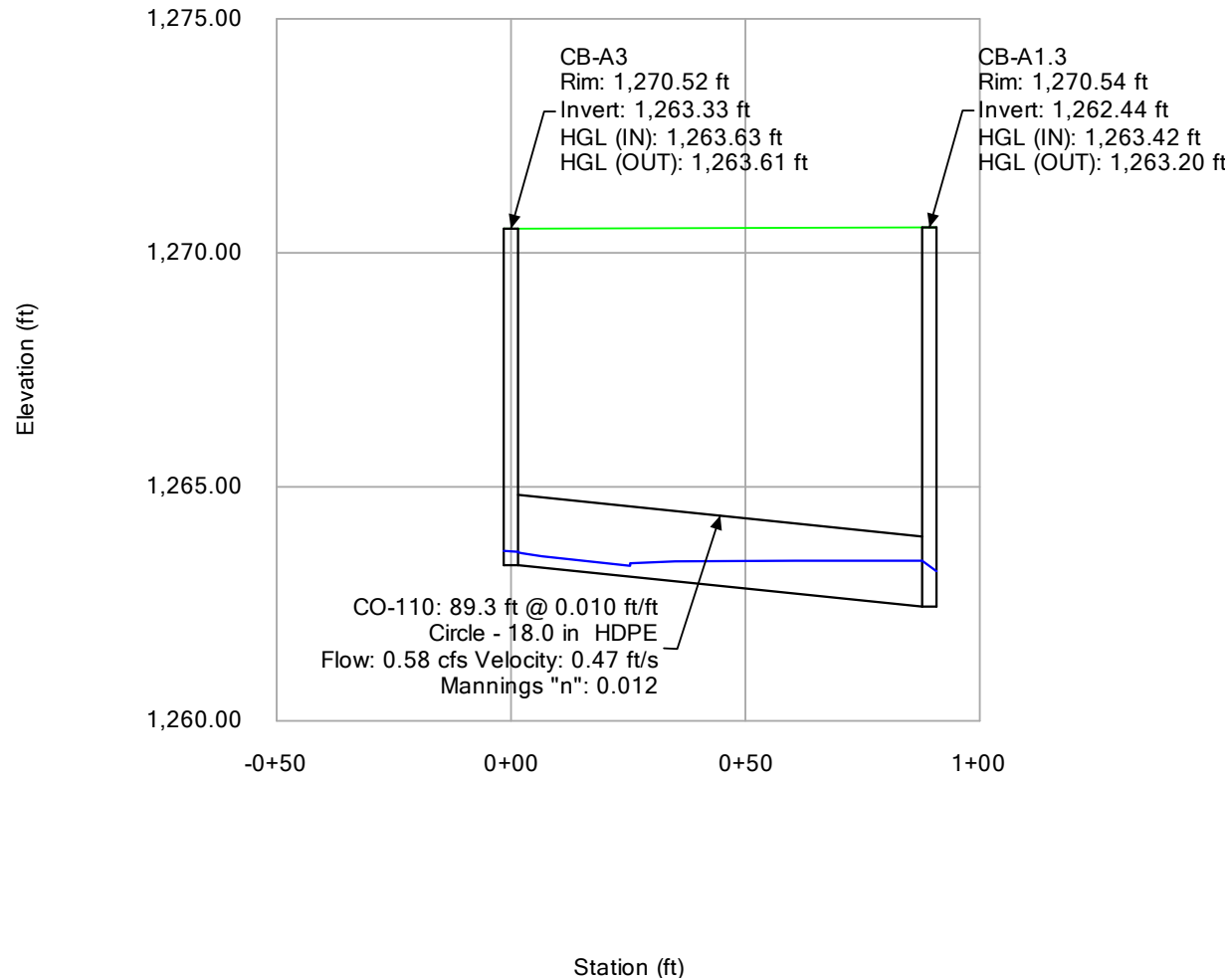
Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A6.4 TO T-6 (5619-StormCAD.stsw)



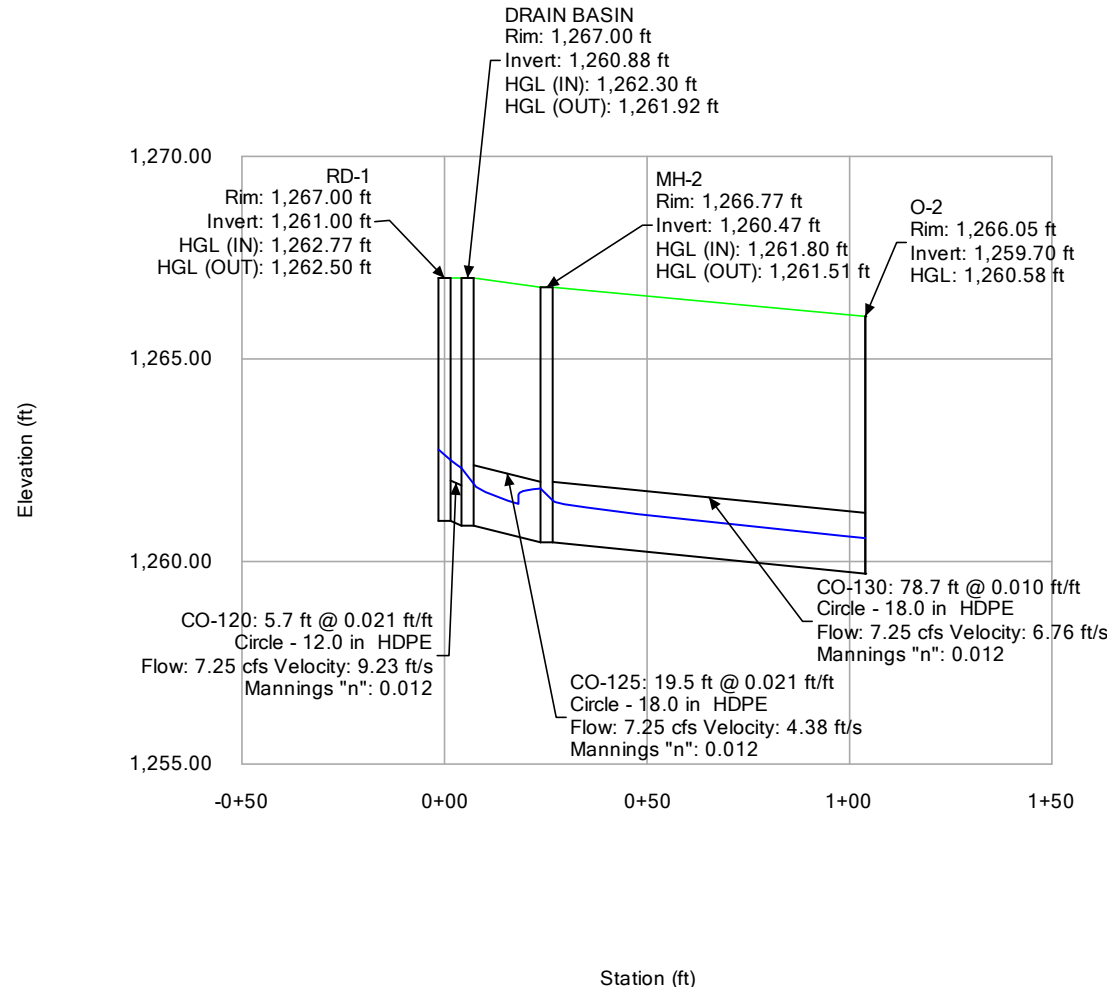
Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A6.5 TO T-7 (5619-StormCAD.stsw)



Active Scenario: 10-YR
Profile Report
Engineering Profile - CB-A3 TO CB-A1.3 (5619-StormCAD.stsw)



Active Scenario: 10-YR
Profile Report
Engineering Profile - RD-1 to O-2 (5619-StormCAD.stsw)

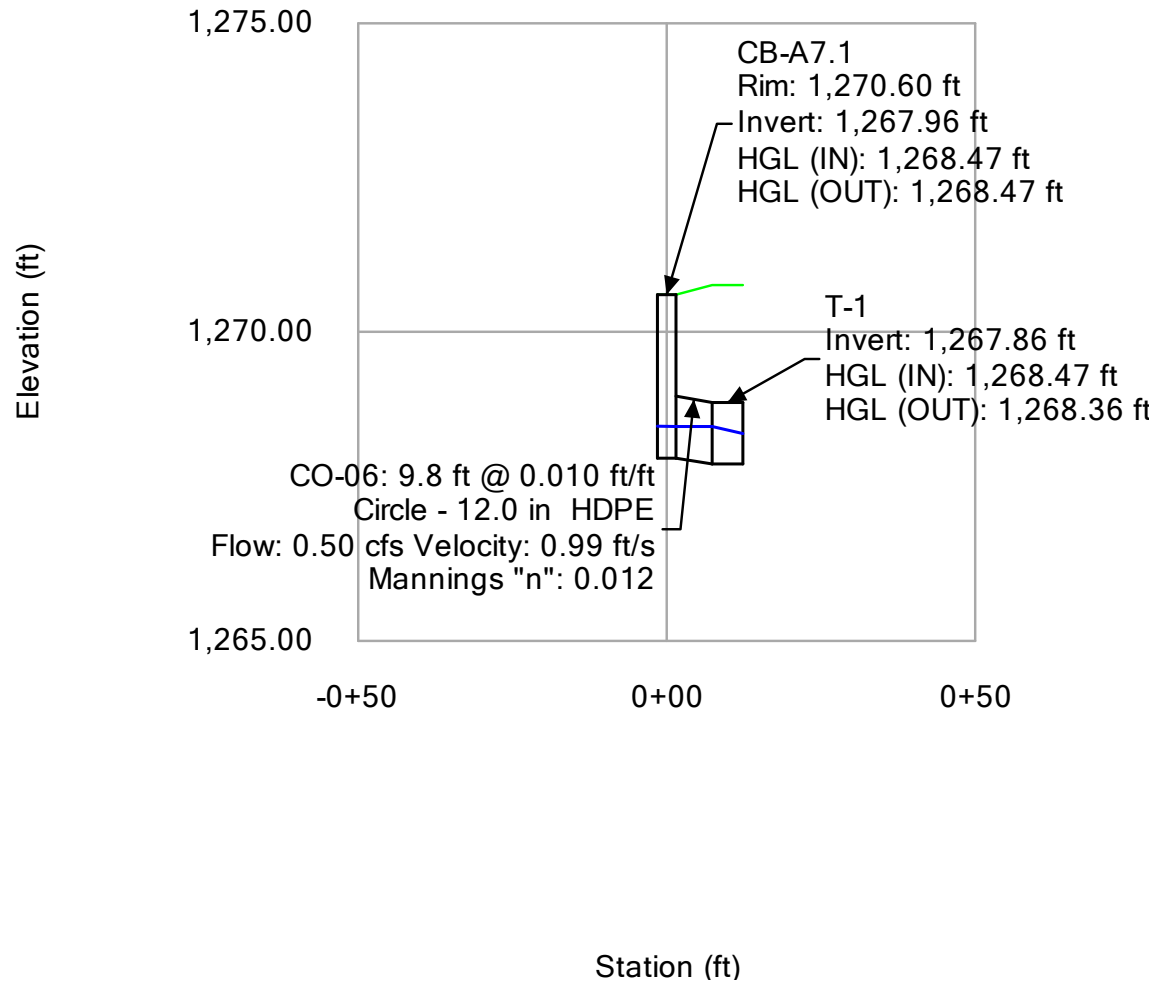


100-YEAR STORM EVENT

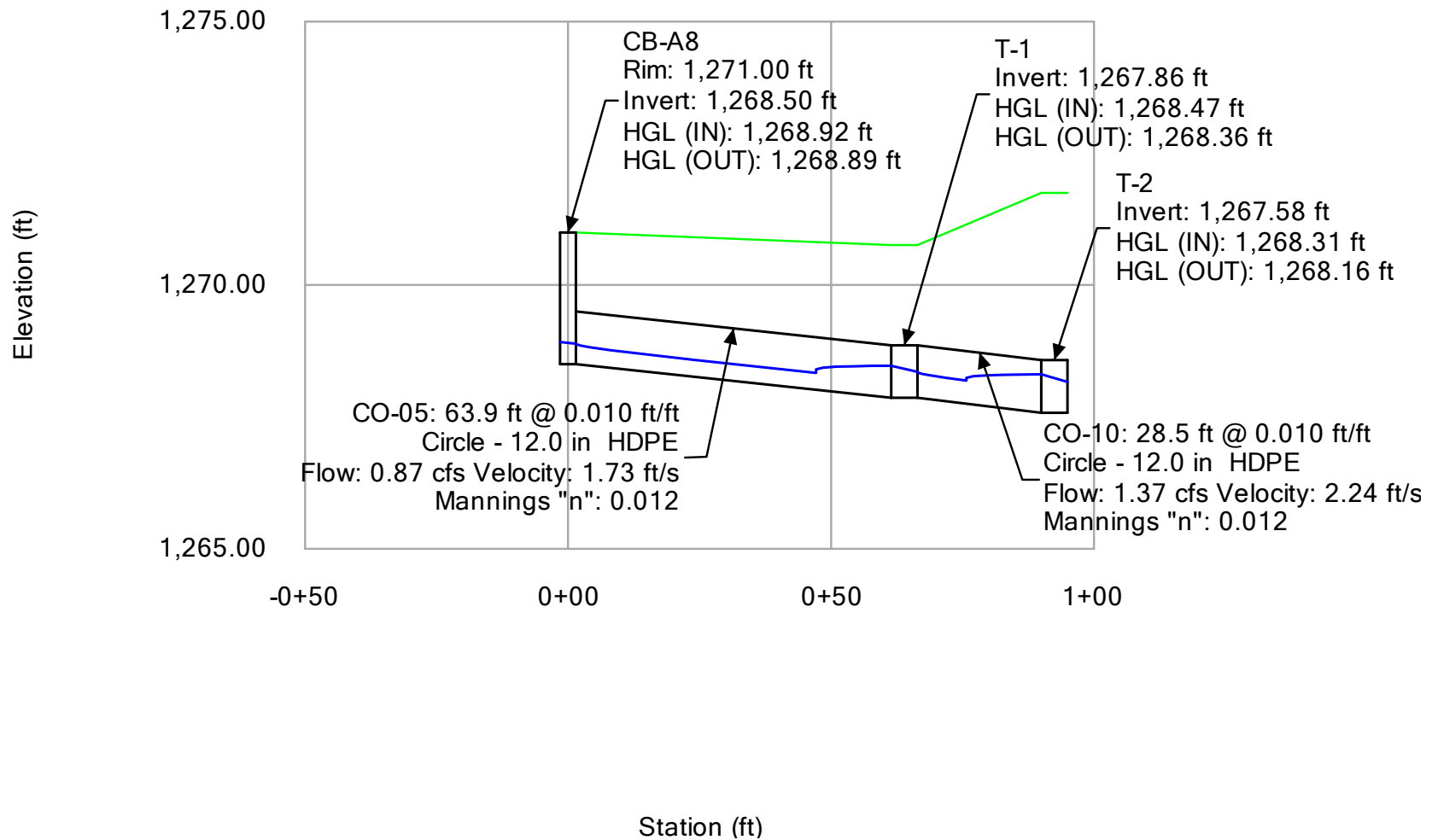
Active Scenario: 100-YR
FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Flow (Local In) (cfs)
CB-A1.1	1,271.37	1,264.88	4.86	2.56	2.49
CB-A1.2	1,271.06	1,264.97	5.19	2.99	3.95
CB-A1.3	1,270.54	1,262.44	4.95	6.30	4.03
CB-A2	1,270.20	1,265.95	1.24	2.68	1.24
CB-A3	1,270.52	1,263.33	0.92	0.88	0.92
CB-A5.1	1,270.40	1,262.82	11.78	5.80	0.17
CB-A5.2	1,269.81	1,262.12	11.95	5.12	0.17
CB-A6.1	1,271.15	1,265.38	0.26	0.46	0.26
CB-A6.2	1,270.60	1,265.61	0.26	0.39	0.26
CB-A6.3	1,270.95	1,265.31	0.52	0.66	0.26
CB-A6.4	1,270.60	1,265.31	0.26	0.34	0.26
CB-A6.5	1,270.30	1,264.70	0.26	0.33	0.26
CB-A6.6	1,270.99	1,264.03	11.61	5.76	0.26
CB-A7.1	1,270.60	1,267.96	0.50	1.25	0.50
CB-A7.2	1,271.00	1,268.19	0.50	2.61	0.50
CB-A7.3	1,271.99	1,266.24	2.37	3.74	0.50
CB-A8	1,271.00	1,268.50	0.87	3.06	0.87
CB-D2.1	1,269.23	1,261.19	17.05	6.80	0.15
CB-D2.2	1,268.49	1,260.88	17.20	6.83	0.15
CB-D2.3	1,267.92	1,259.66	17.35	6.86	0.15
DRAIN BASIN	1,267.00	1,260.88	11.68	6.61	0.00
RD-1	1,267.00	1,261.00	11.68	14.87	11.68

Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A7.1 TO T-1 (5619-StormCAD.stsw)



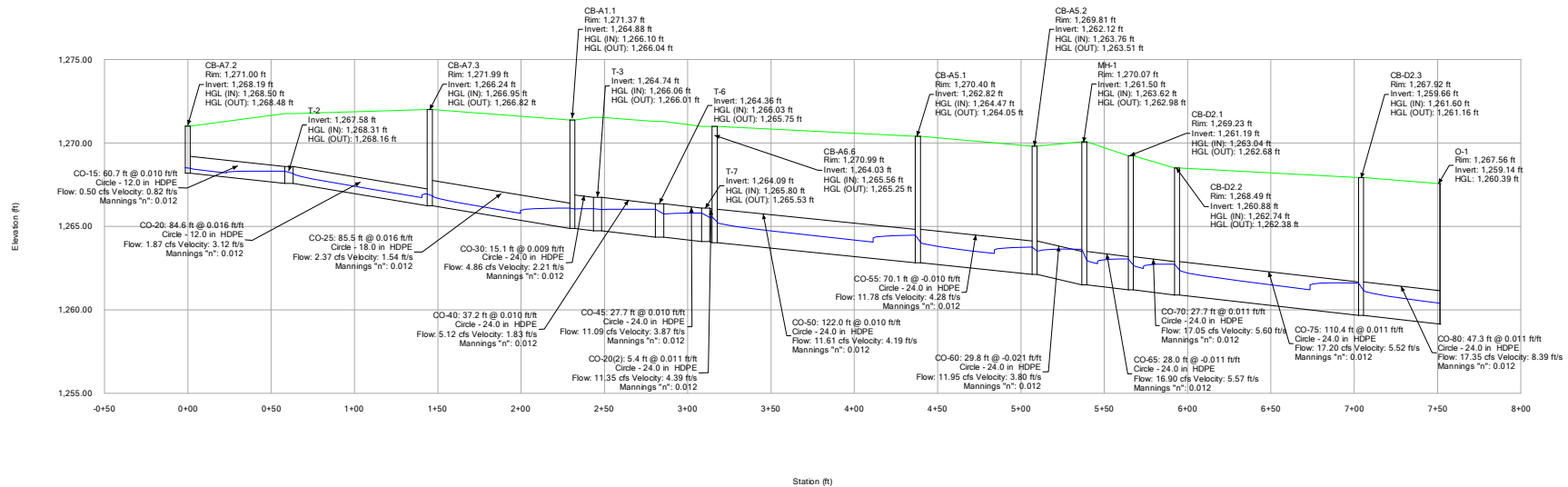
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A8 TO T-2 (5619-StormCAD.stsw)



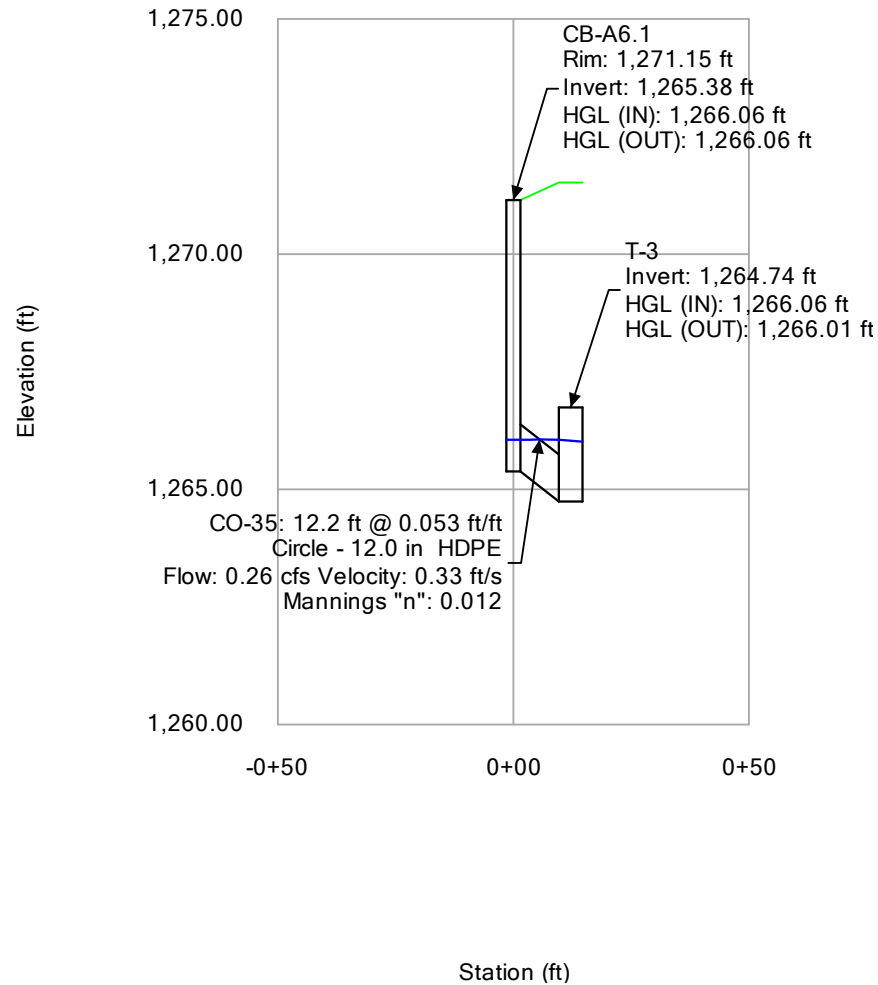
Active Scenario: 100-YR

Profile Report

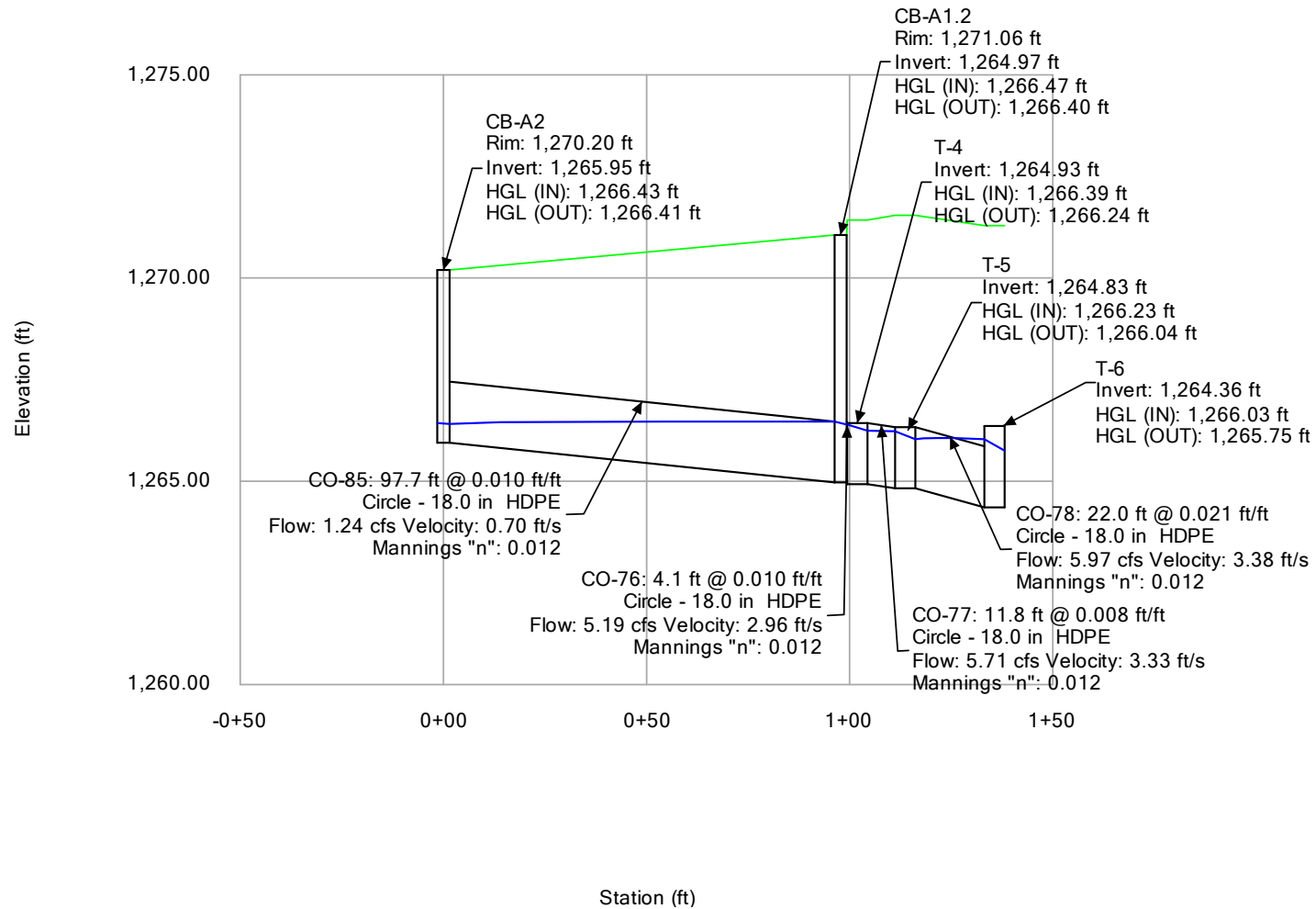
Engineering Profile - CB-A7.2 TO O-1 (5619-StormCAD.stsw)



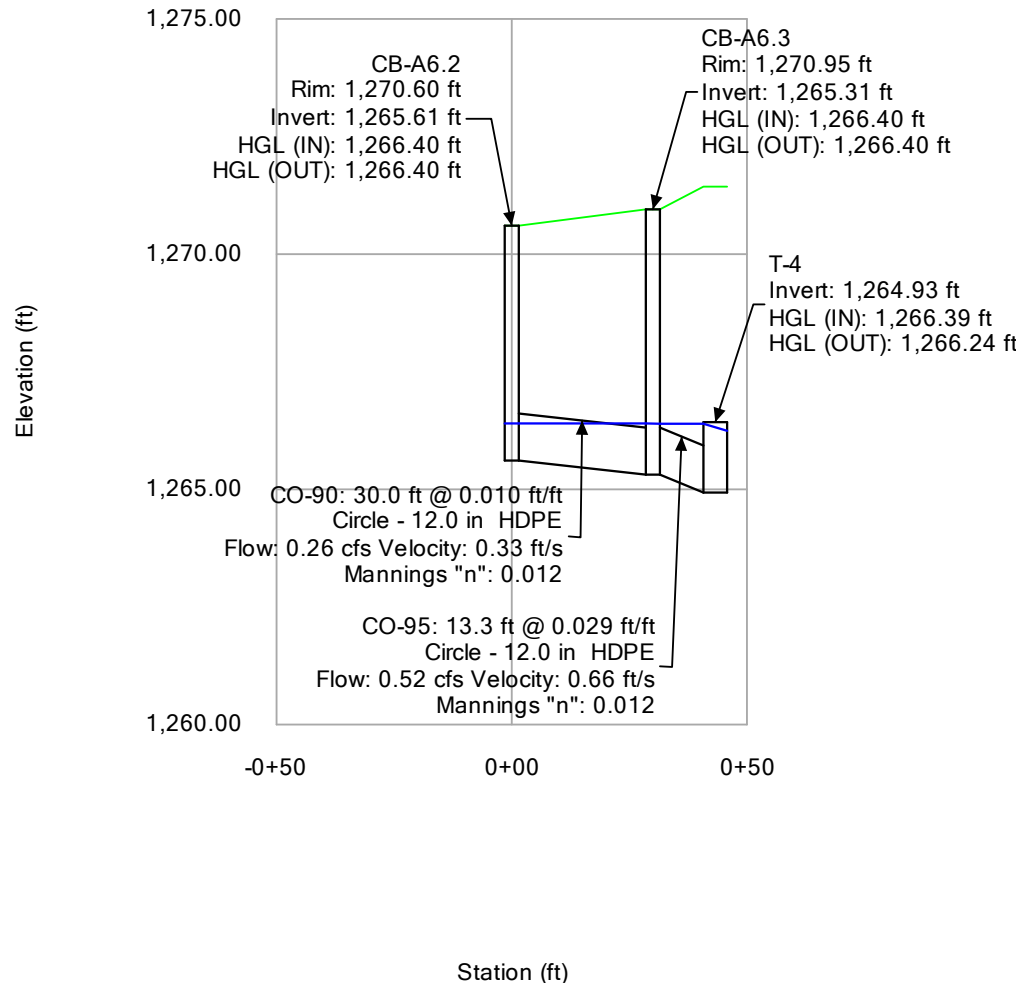
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A6.1 TO T-3 (5619-StormCAD.stsw)



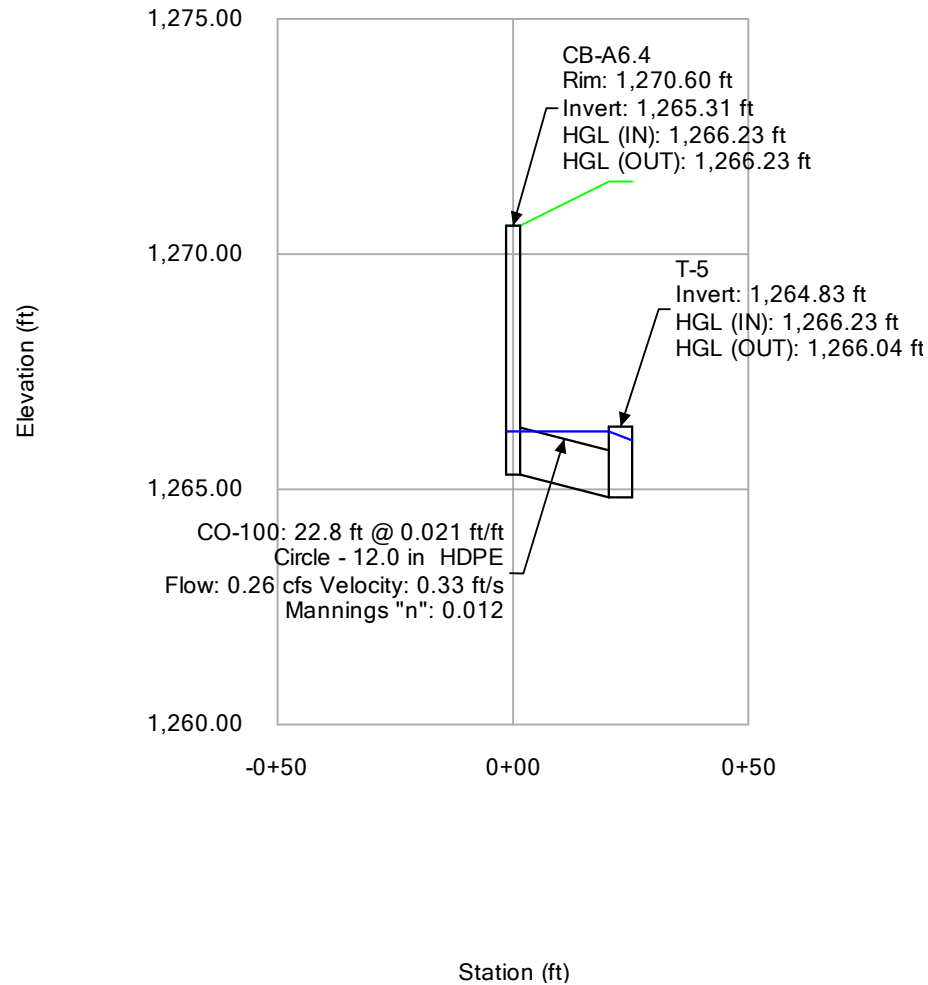
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A2 TO T-6 (5619-StormCAD.stsw)



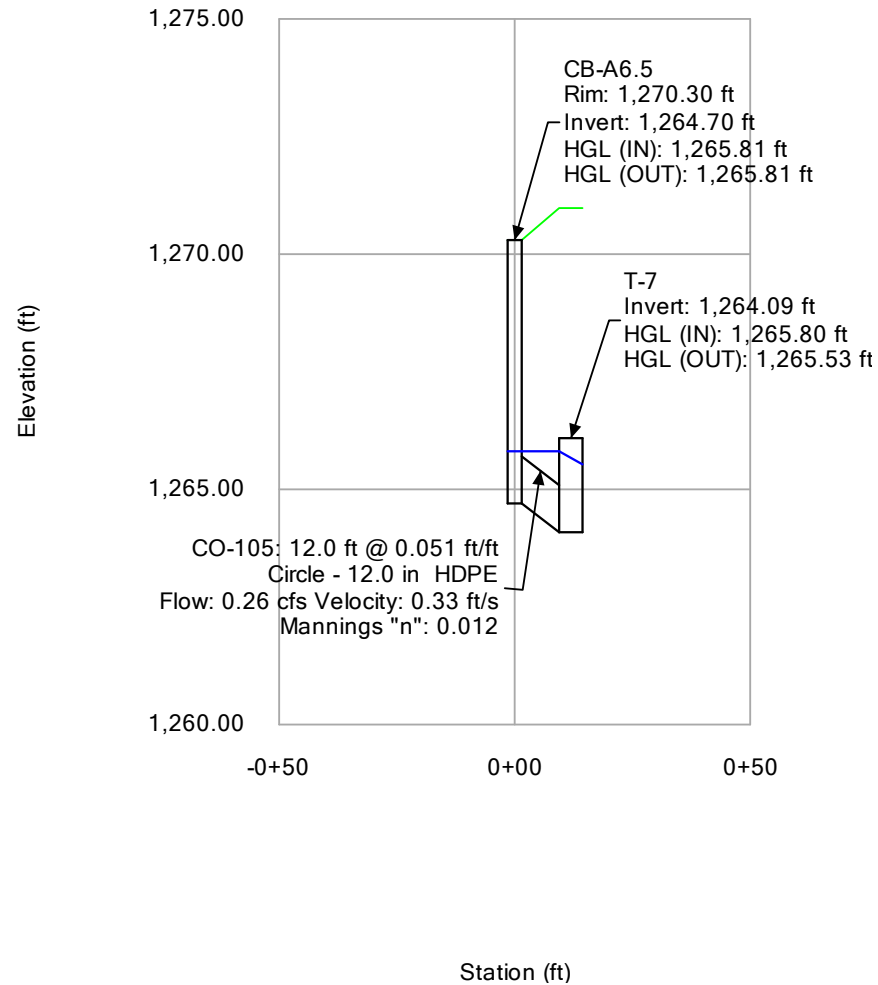
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A6.2 TO T-4 (5619-StormCAD.stsw)



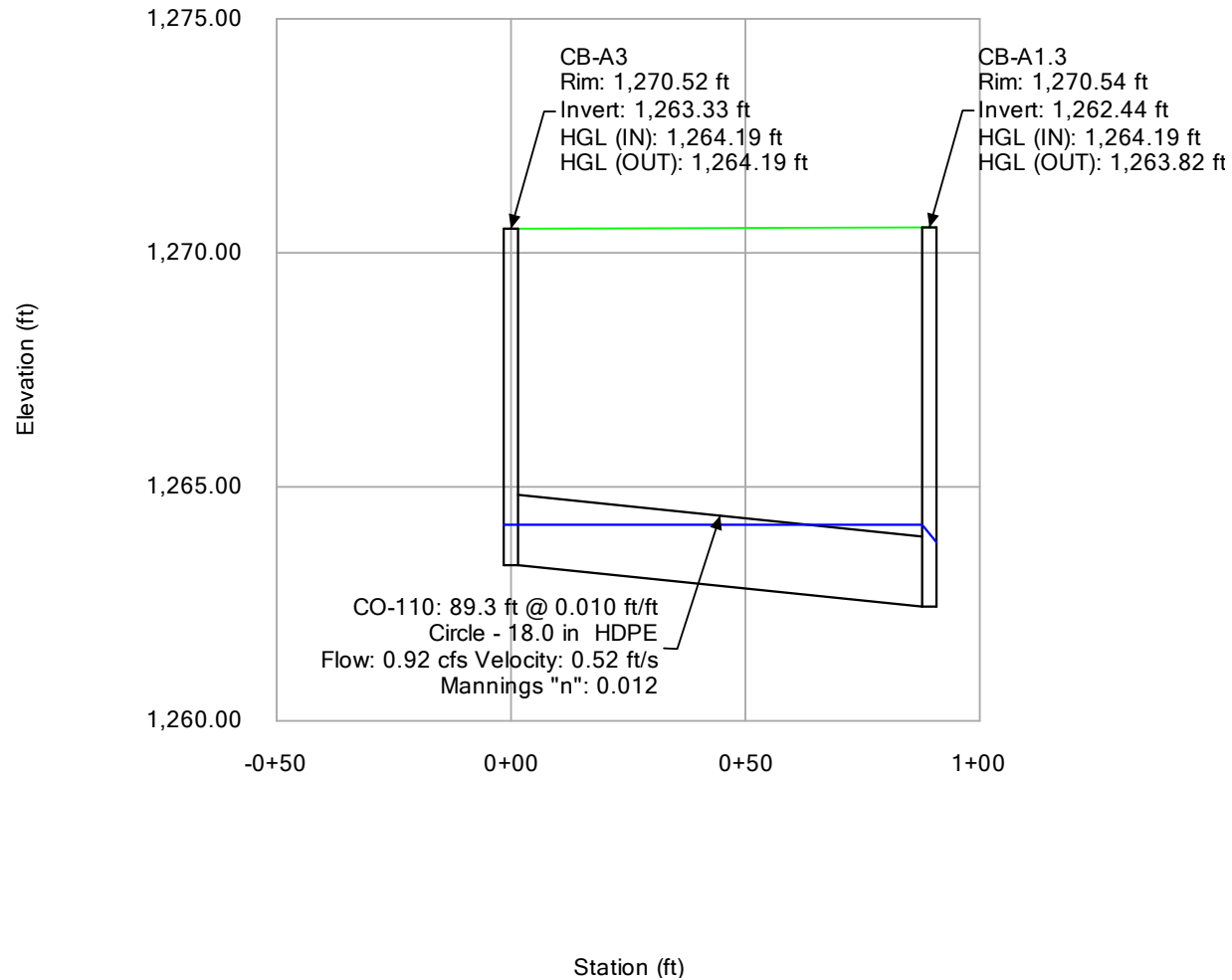
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A6.4 TO T-6 (5619-StormCAD.stsw)



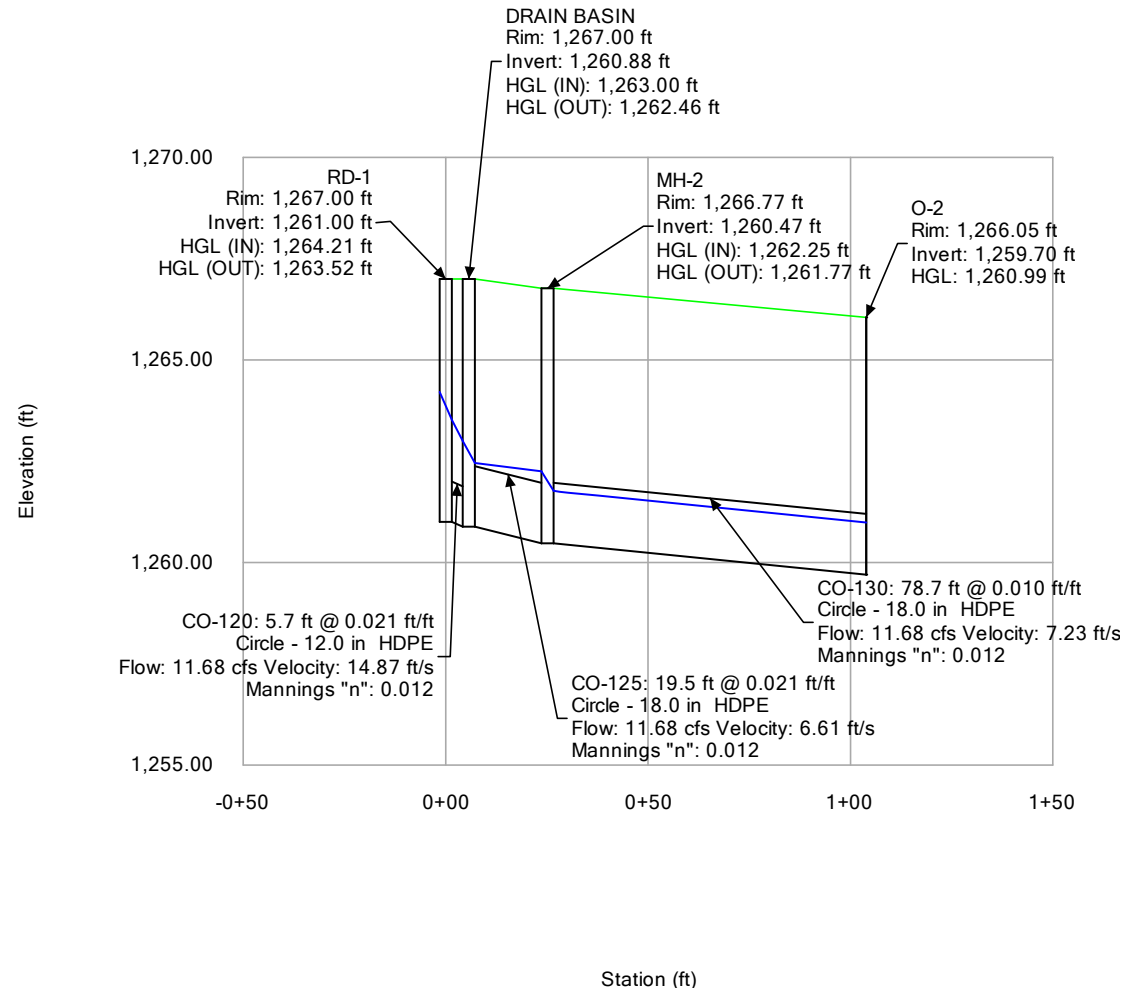
Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A6.5 TO T-7 (5619-StormCAD.stsw)



Active Scenario: 100-YR
Profile Report
Engineering Profile - CB-A3 TO CB-A1.3 (5619-StormCAD.stsw)



Active Scenario: 100-YR
Profile Report
Engineering Profile - RD-1 to O-2 (5619-StormCAD.stsw)



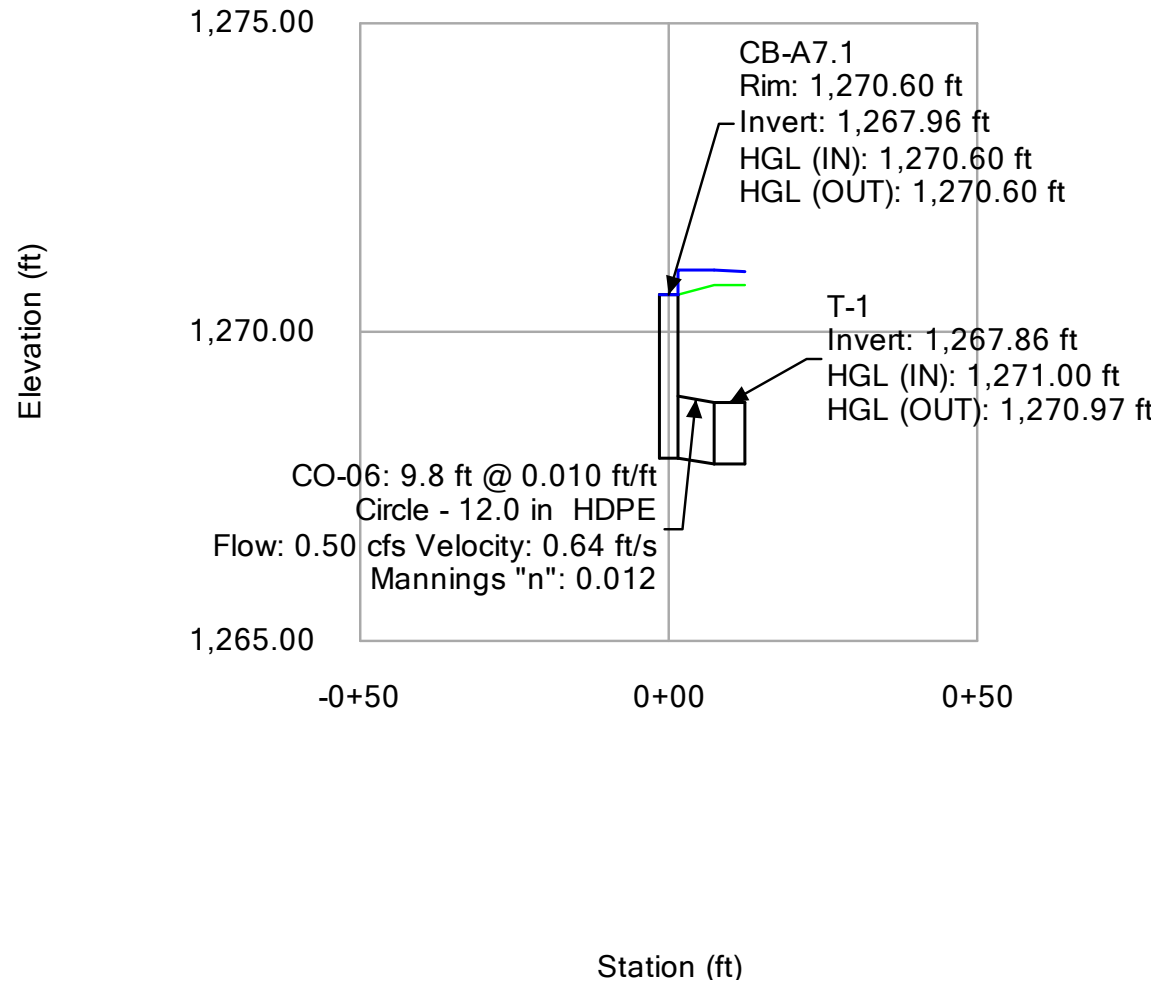
100-YEAR STORM EVENT WITH EXISTING SYSTEM SURCHARGED

Active Scenario: 100-YR SURCHARGE CONDITION

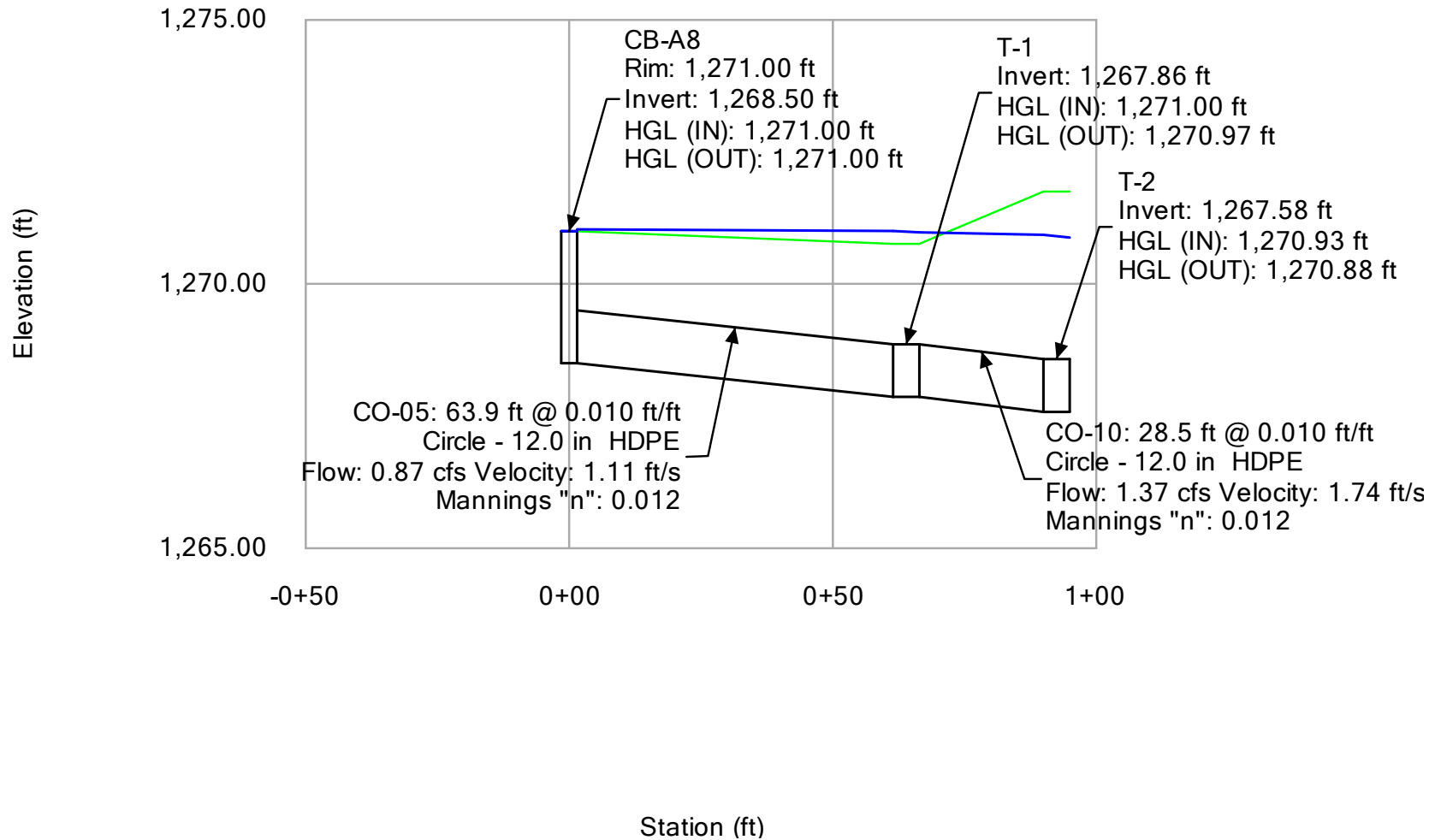
FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Flow (Local In) (cfs)
CB-A1.1	1,271.37	1,264.88	4.86	1.55	2.49
CB-A1.2	1,271.06	1,264.97	5.19	2.94	3.95
CB-A1.3	1,270.54	1,262.44	4.95	6.30	4.03
CB-A2	1,270.20	1,265.95	1.24	0.70	1.24
CB-A3	1,270.52	1,263.33	0.92	0.52	0.92
CB-A5.1	1,270.40	1,262.82	11.78	3.75	0.17
CB-A5.2	1,269.81	1,262.12	11.95	3.80	0.17
CB-A6.1	1,271.15	1,265.38	0.26	0.33	0.26
CB-A6.2	1,270.60	1,265.61	0.26	0.33	0.26
CB-A6.3	1,270.95	1,265.31	0.52	0.66	0.26
CB-A6.4	1,270.60	1,265.31	0.26	0.33	0.26
CB-A6.5	1,270.30	1,264.70	0.26	0.33	0.26
CB-A6.6	1,270.99	1,264.03	11.61	3.70	0.26
CB-A7.1	1,270.60	1,267.96	0.50	0.64	0.50
CB-A7.2	1,271.00	1,268.19	0.50	0.64	0.50
CB-A7.3	1,271.99	1,266.24	2.37	1.34	0.50
CB-A8	1,271.00	1,268.50	0.87	1.11	0.87
CB-D2.1	1,269.23	1,261.19	17.05	5.43	0.15
CB-D2.2	1,268.49	1,260.88	17.20	5.47	0.15
CB-D2.3	1,267.92	1,259.66	17.35	5.52	0.15
DRAIN BASIN	1,267.00	1,260.88	11.68	6.61	0.00
RD-1	1,267.00	1,261.00	11.68	14.87	11.68

Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A7.1 TO T-1 (5619-StormCAD.stsw)



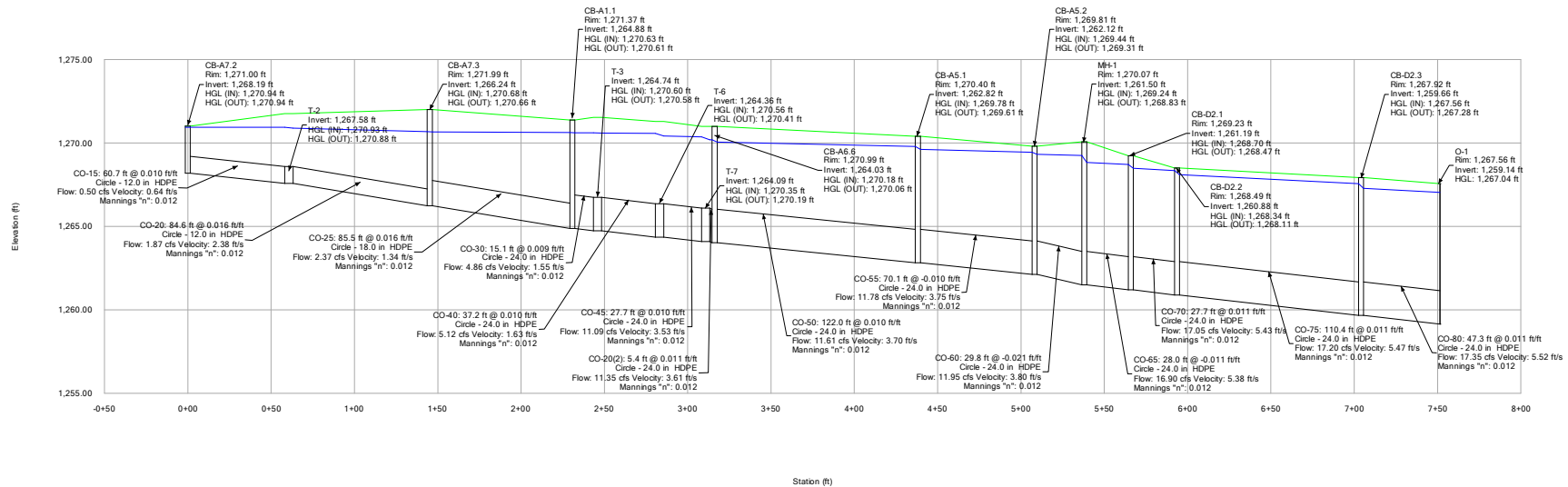
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A8 TO T-2 (5619-StormCAD.stsw)



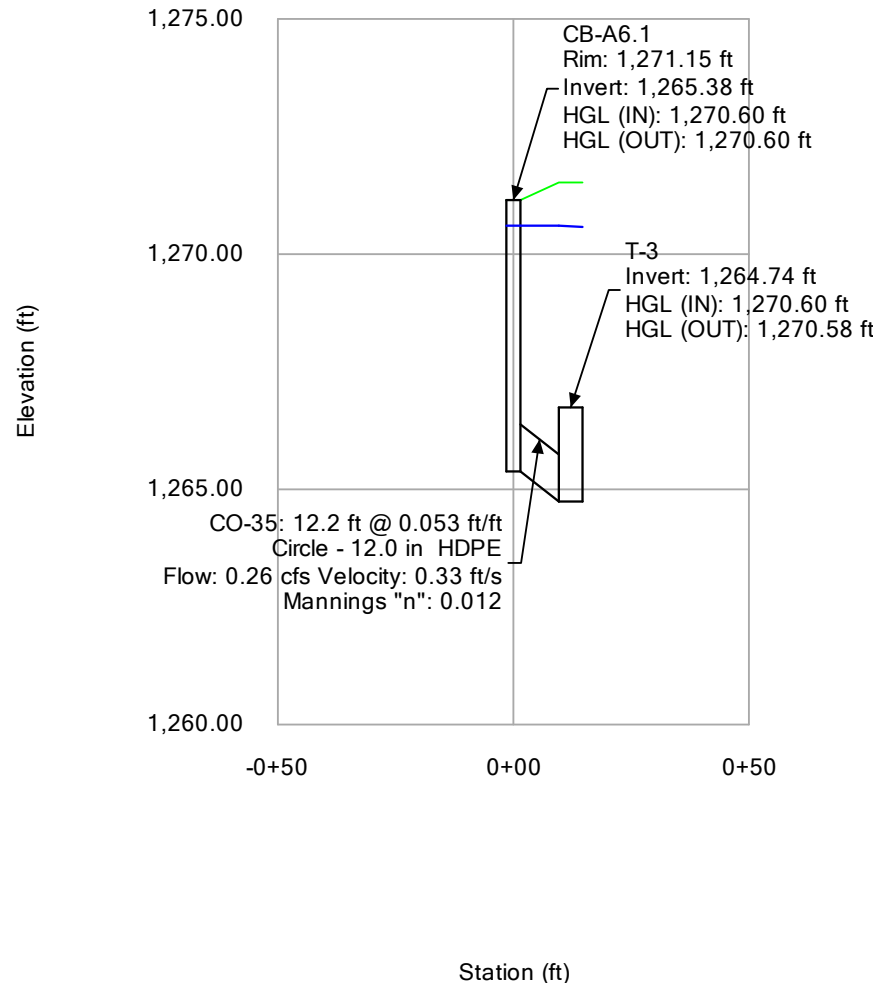
Active Scenario: 100-YR SURCHARGE CONDITION

Profile Report

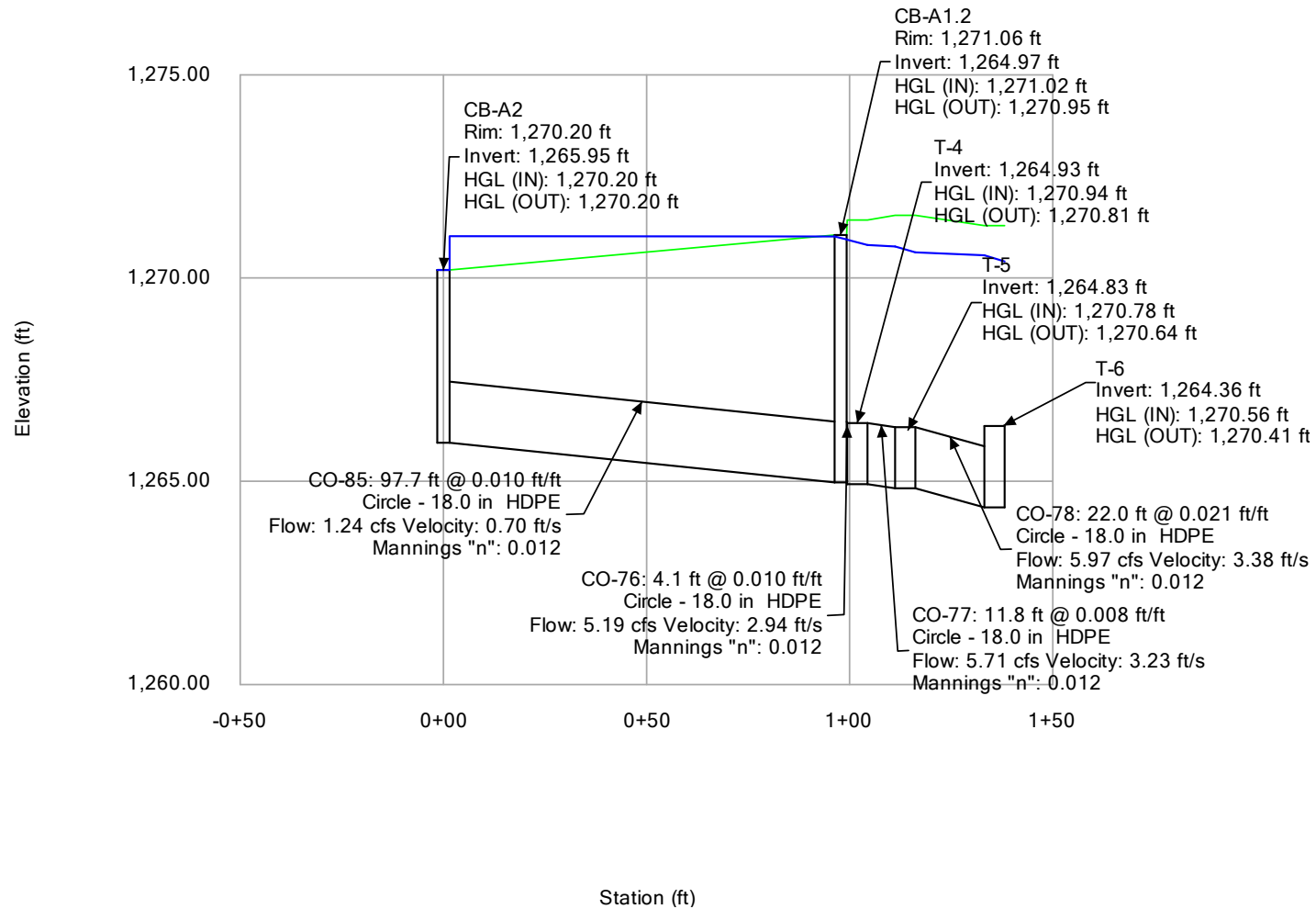
Engineering Profile - CB-A7.2 TO O-1 (5619-StormCAD.stsw)



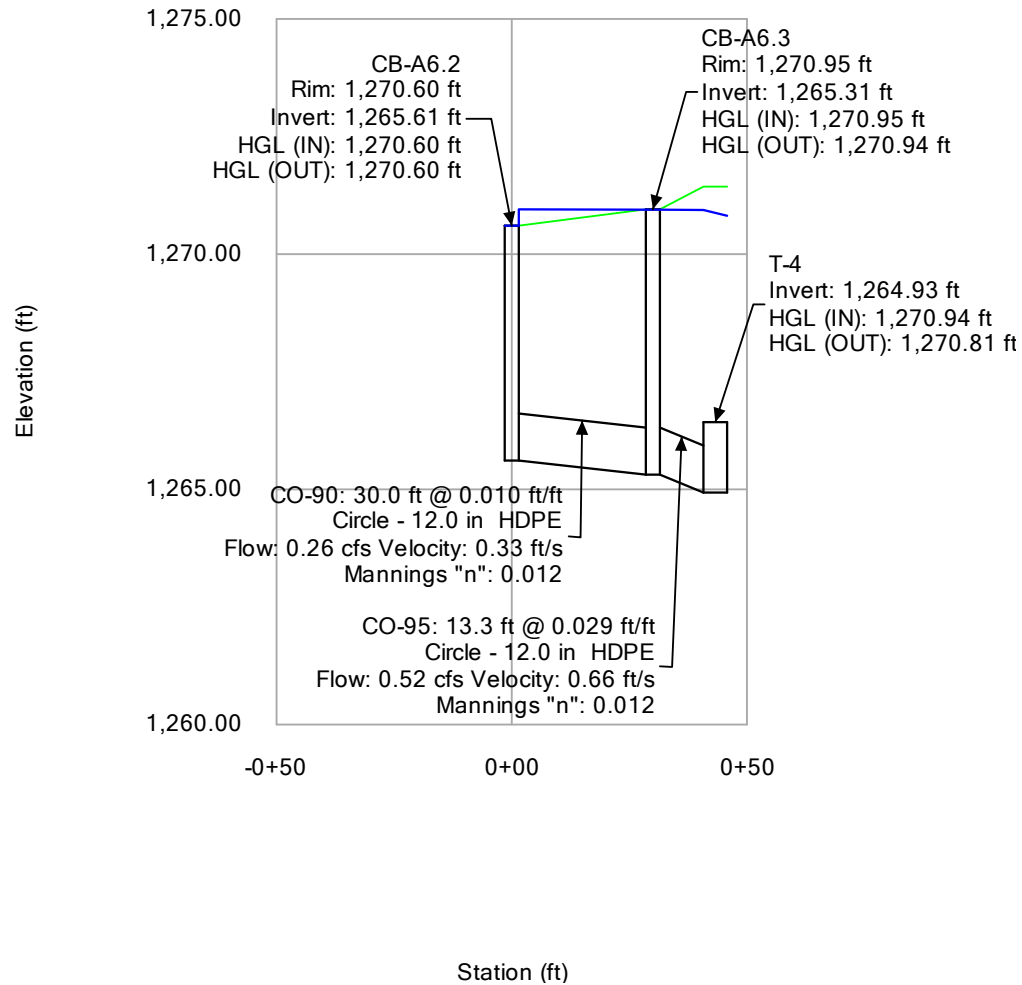
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A6.1 TO T-3 (5619-StormCAD.stsw)



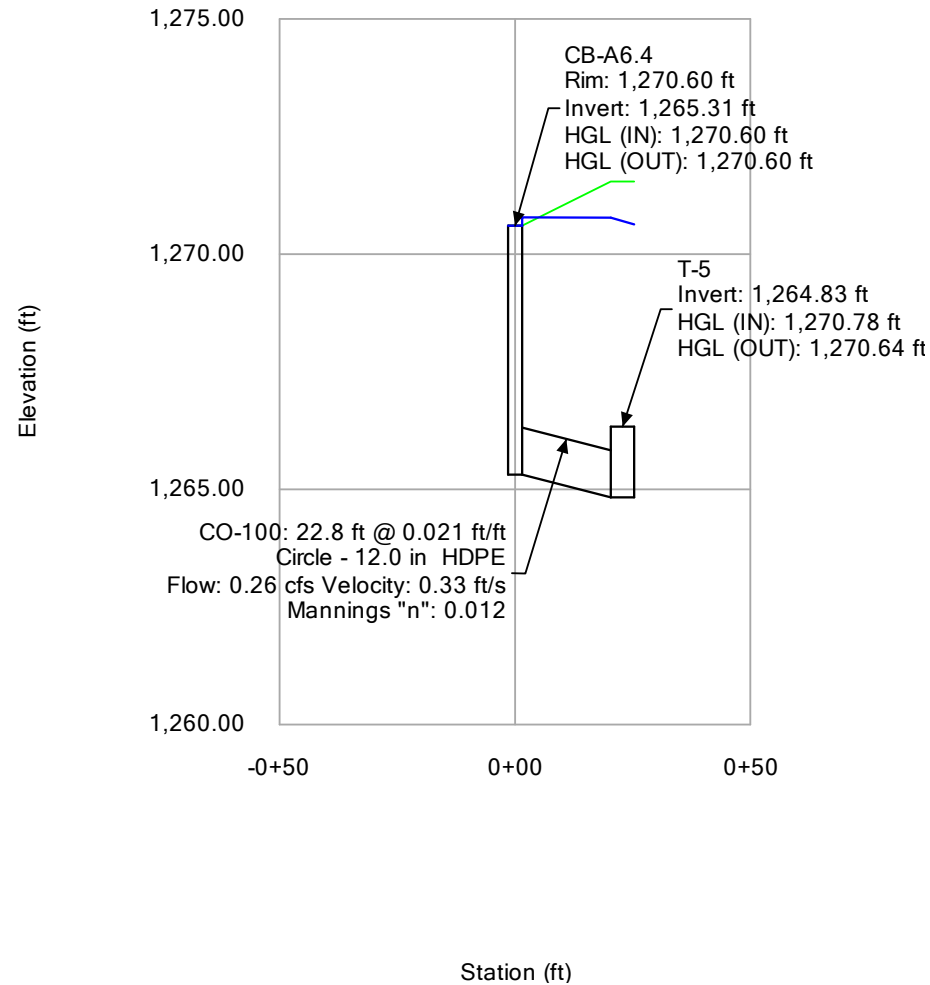
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A2 TO T-6 (5619-StormCAD.stsw)



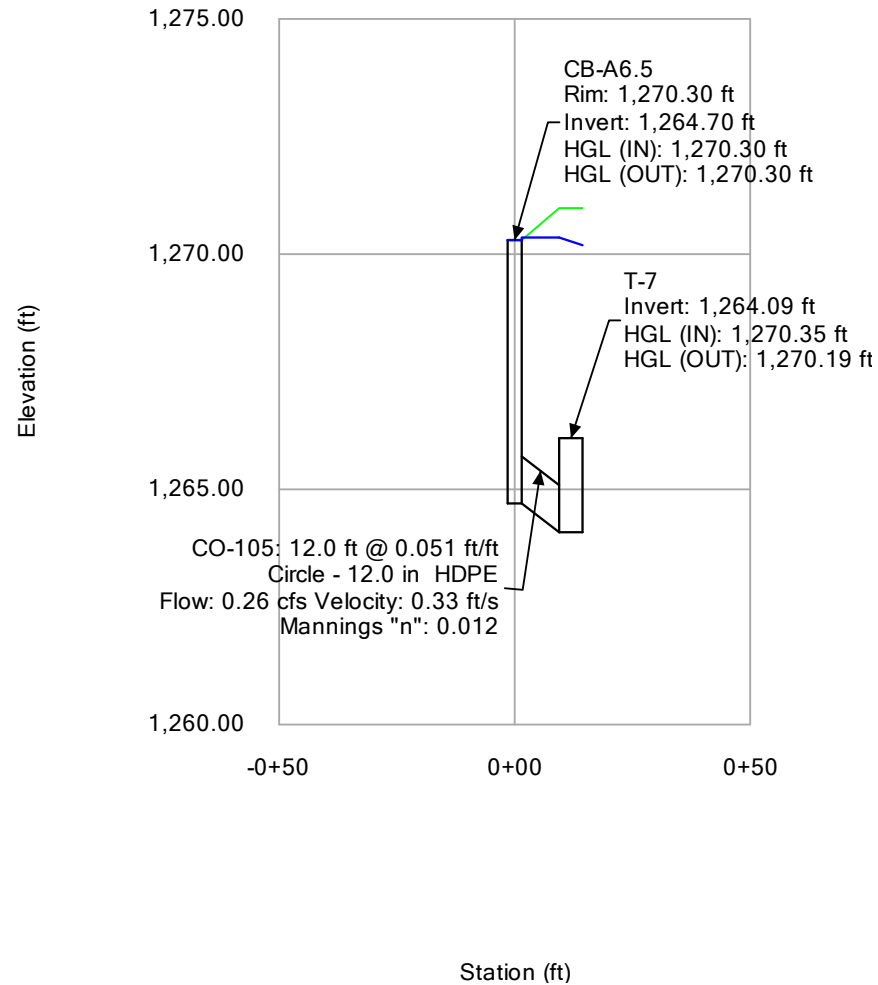
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A6.2 TO T-4 (5619-StormCAD.stsw)



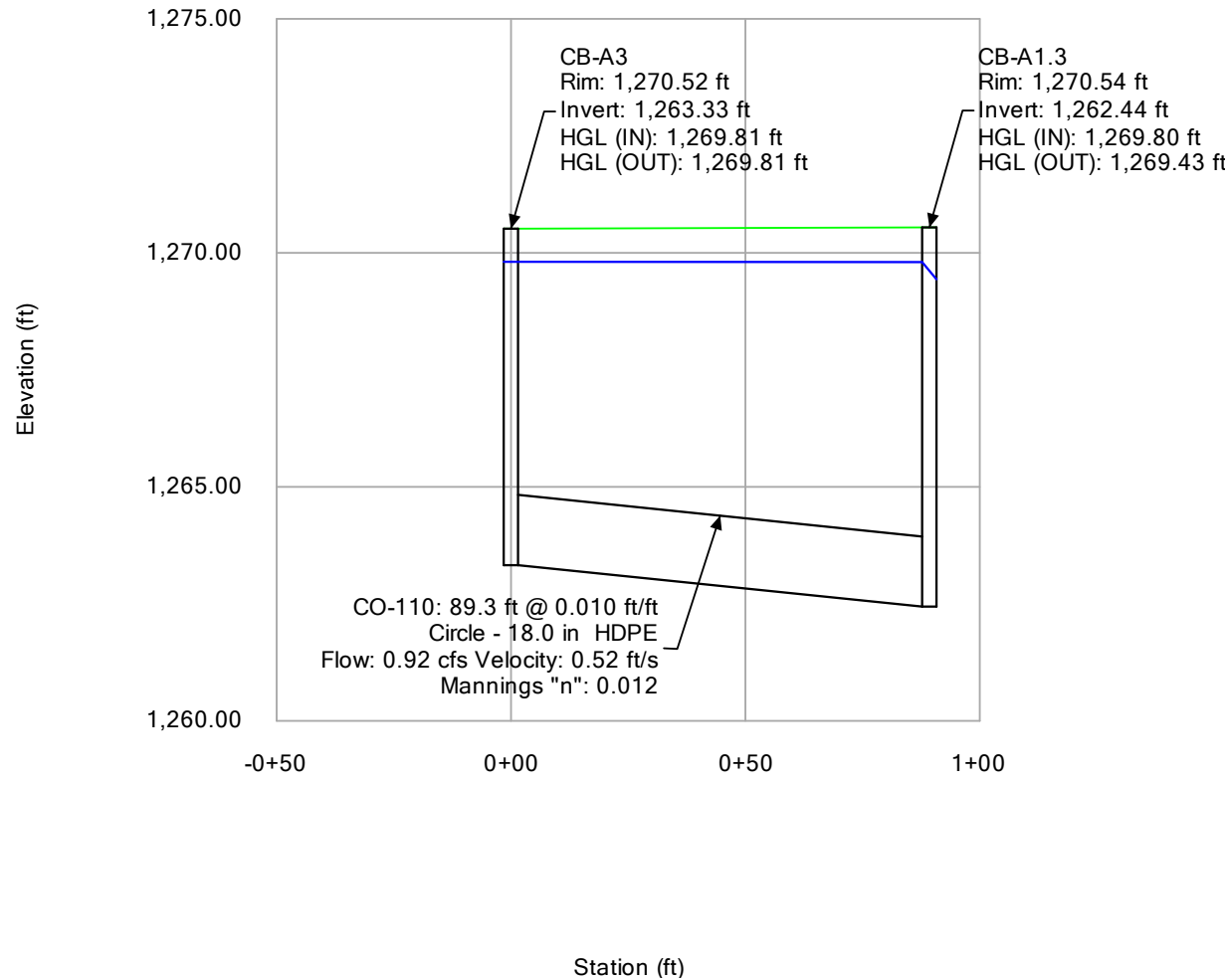
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A6.4 TO T-6 (5619-StormCAD.stsw)



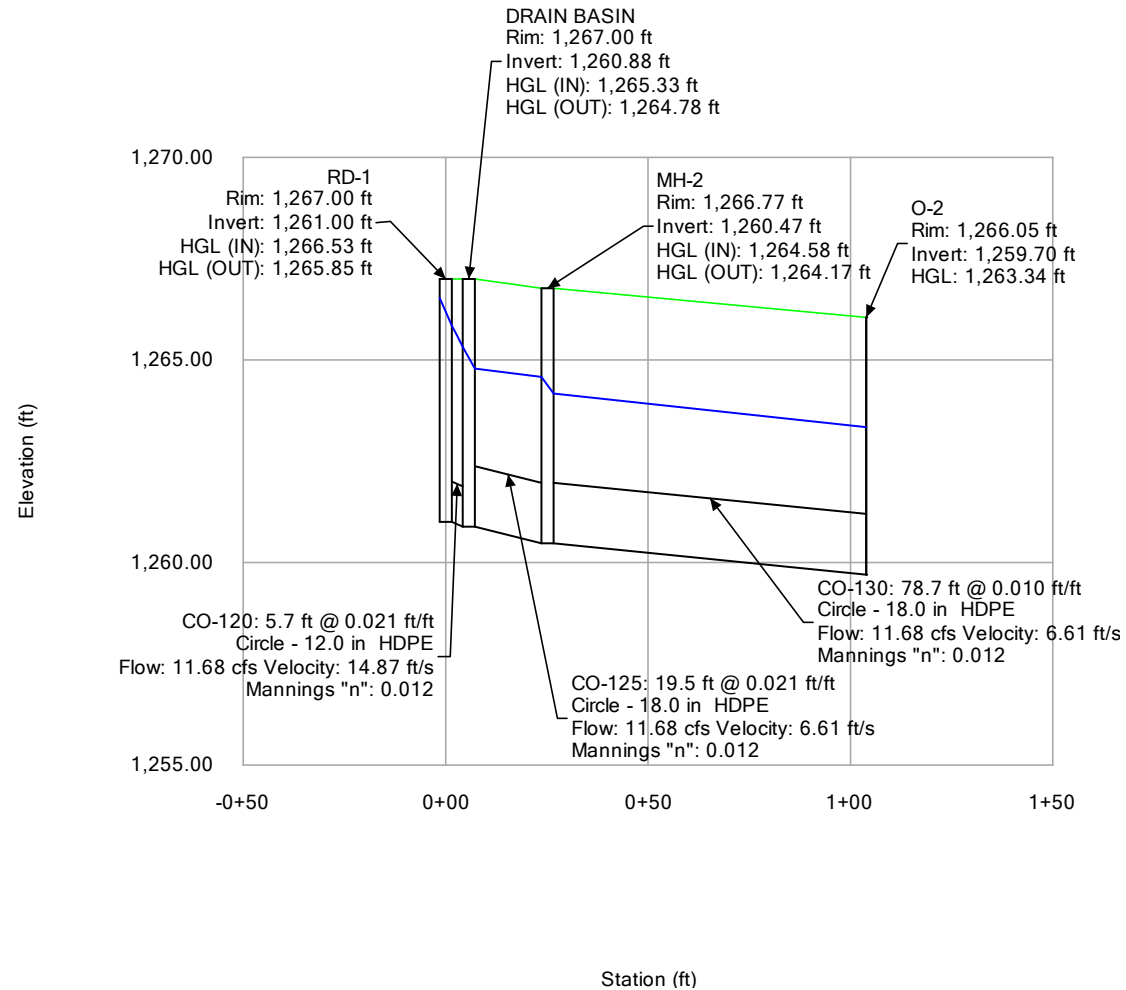
Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A6.5 TO T-7 (5619-StormCAD.stsw)



Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - CB-A3 TO CB-A1.3 (5619-StormCAD.stsw)



Active Scenario: 100-YR SURCHARGE CONDITION
Profile Report
Engineering Profile - RD-1 to O-2 (5619-StormCAD.stsw)



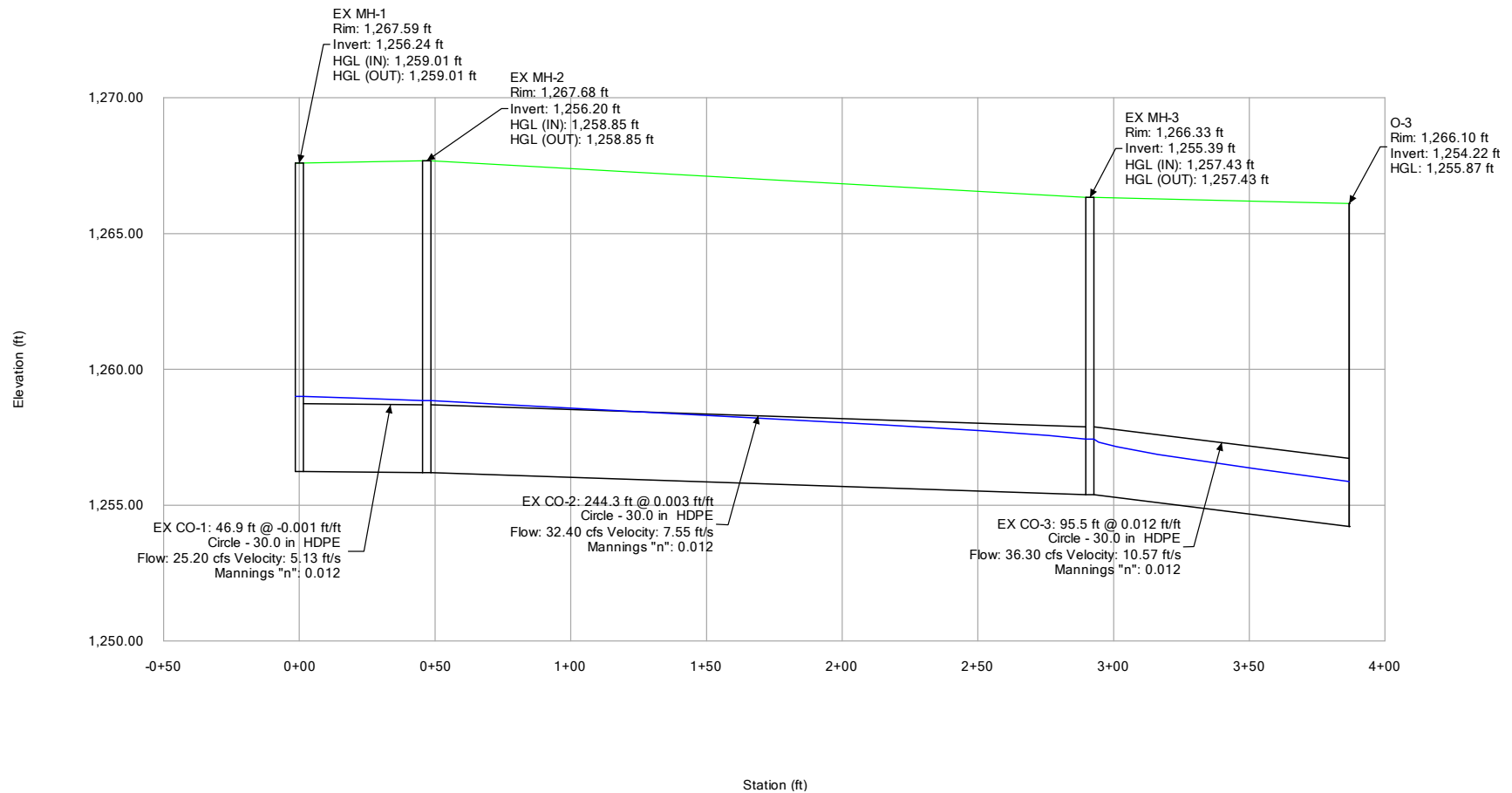
DOWNSTREAM EXISTING STORM DRAIN 100-YEAR EVENT

Active Scenario: 100- YR EXISTING DOWNSTREAM

FlexTable: Catch Basin Table

Label	Elevation (Ground) (ft)	Elevation (Invert) (ft)	Flow (Total Out) (cfs)	Velocity (Out) (ft/s)	Flow (Local In) (cfs)
EX MH-1	1,267.59	1,256.24	25.20	5.13	25.20
EX MH-2	1,267.68	1,256.20	32.40	6.60	7.20
EX MH-3	1,266.33	1,255.39	36.30	8.45	3.90
EX MH-4	1,268.06	1,260.00	29.20	6.82	29.20
EX MH-5	1,266.32	1,256.42	34.80	7.30	5.60

Active Scenario: 100- YR EXISTING DOWNSTREAM **Profile Report** **Engineering Profile - EX MH-1 TO O-3 (5619-StormCAD.stsw)**



Active Scenario: 100- YR EXISTING DOWNSTREAM **Profile Report** **Engineering Profile - EX MH-4 TO O-3 (5619-StormCAD.stsw)**

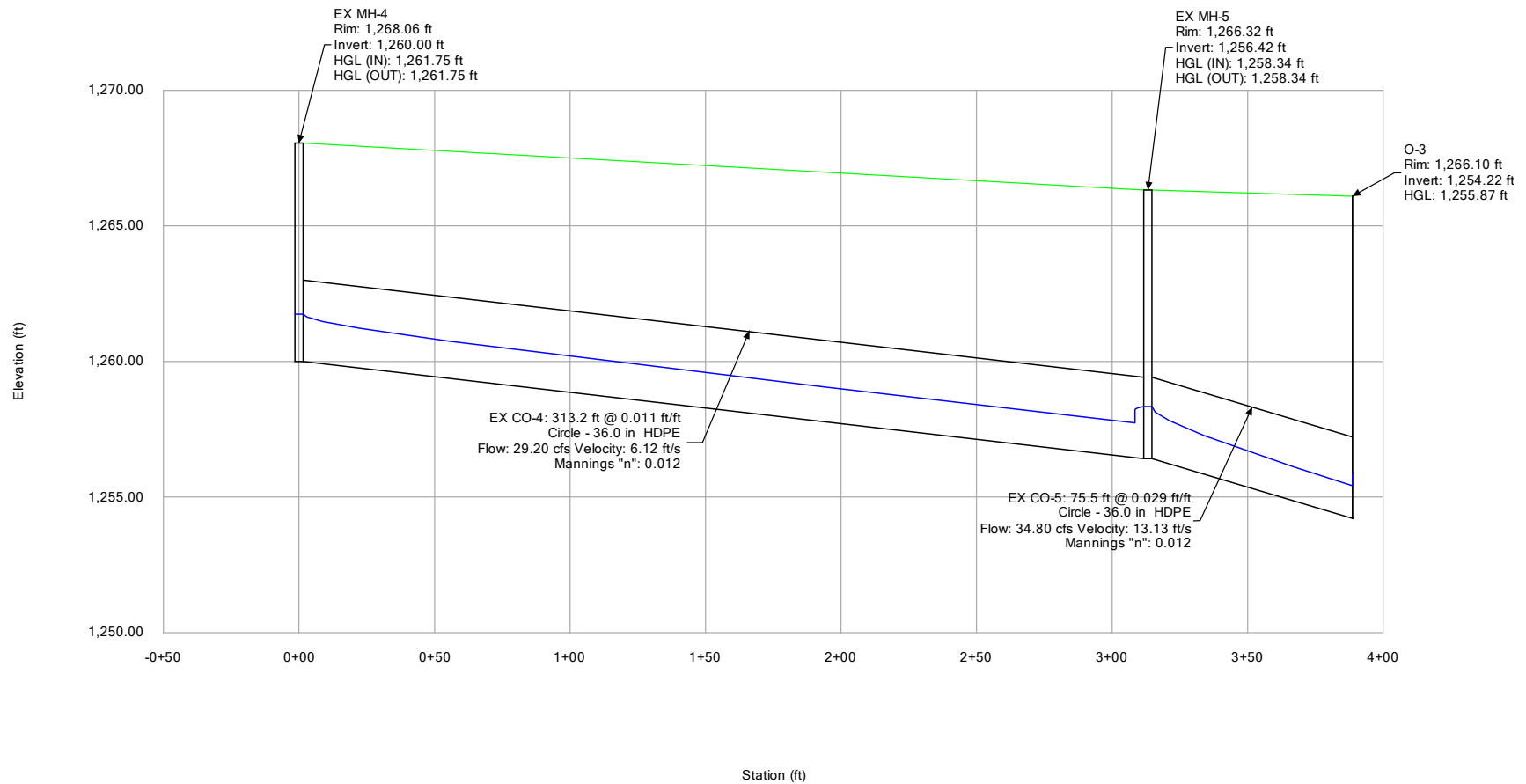
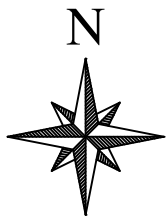
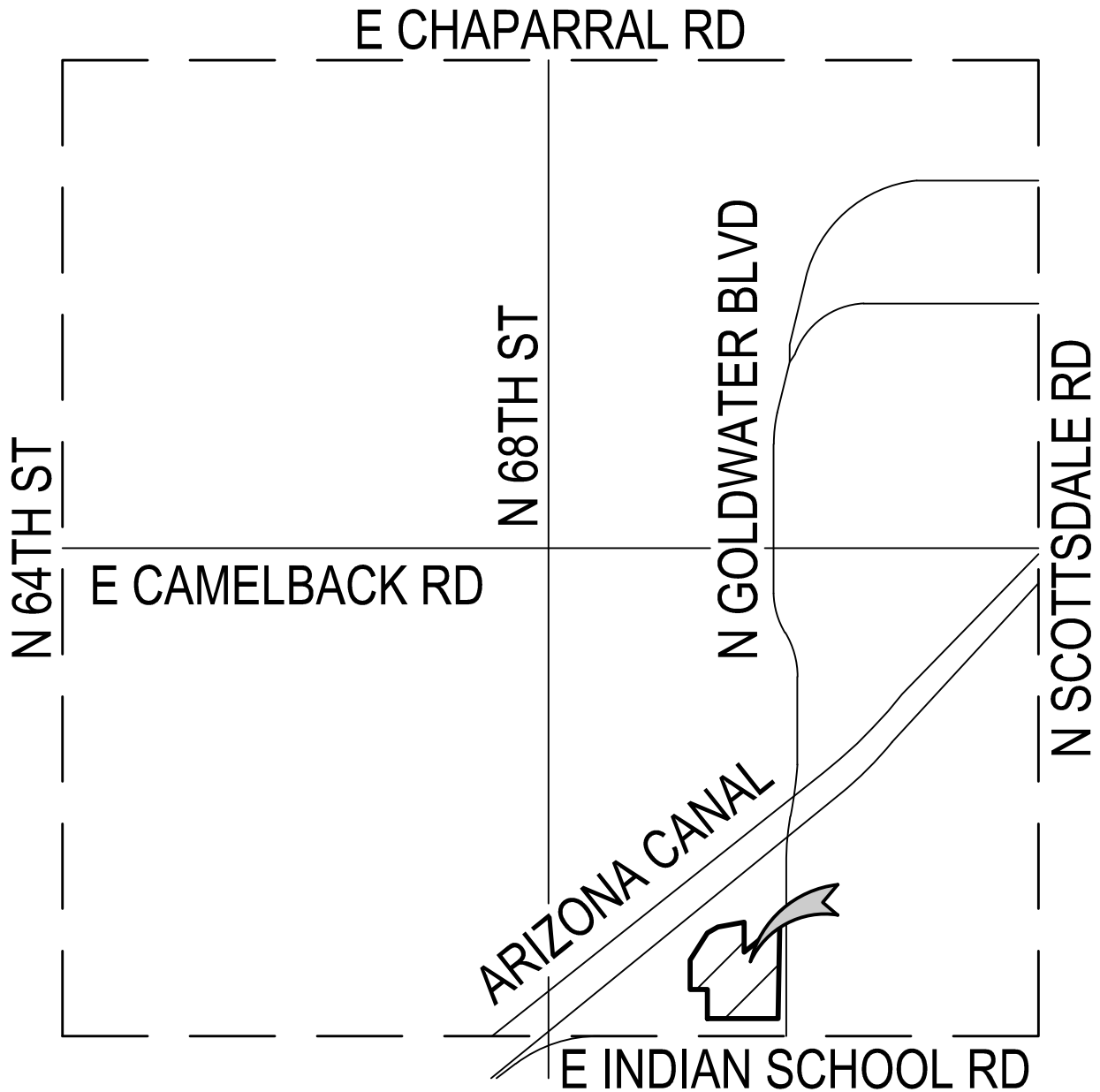


EXHIBIT 1 – VICINITY MAP



VICINITY MAP

N.T.S.

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OR RECORDING**

**WOOD
PATEL**

5TH & GOLDWATER

VICINITY MAP

DATE	08/08/2025	SCALE	N/A	SHEET	1 OF 1
JOB NO.	245619	DESIGN	JS	CHECK	AM
		DRAWN	JS	RFI #	N/A

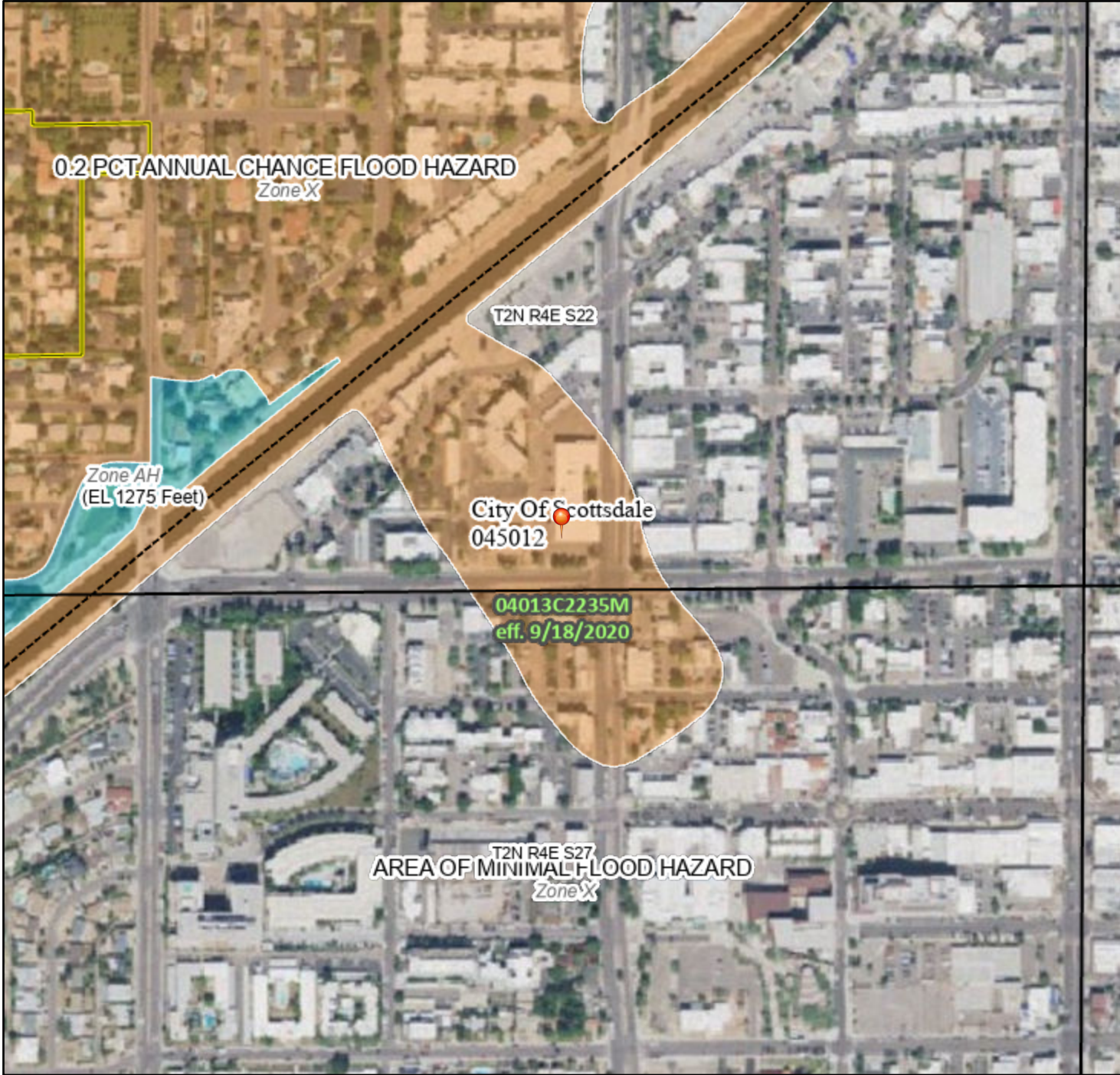
Z:\2024\245619\Project Support\Reports\Drainage\Exhibits\5619-EXH1-VM.dwg

EXHIBIT 2 – FEMA FIRM

National Flood Hazard Layer FIRMette



111°56'10"W 33°29'58"N



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

1:6,000

111°55'32"W 33°29'28"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		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.

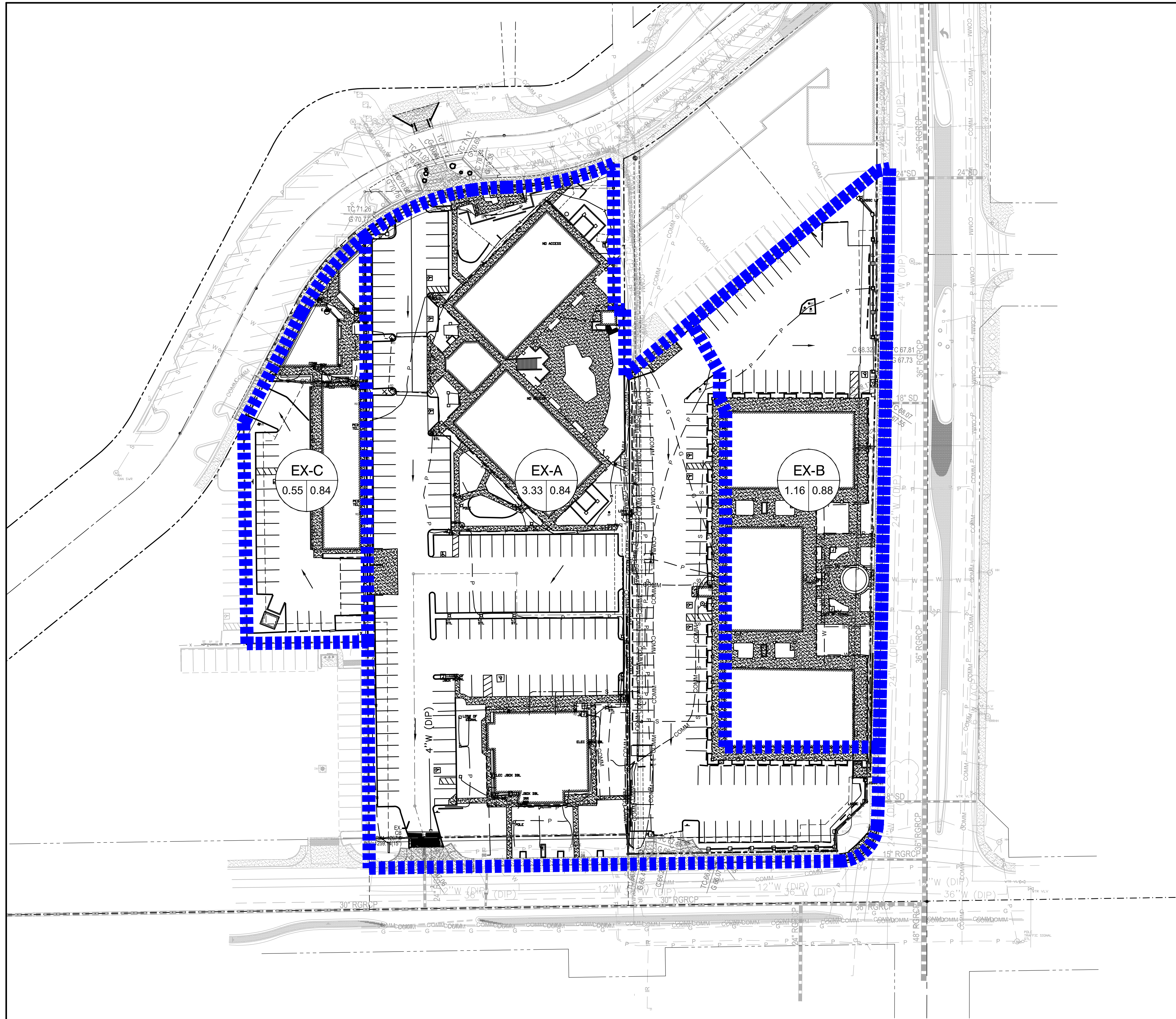


This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/17/2024 at 1:46 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.

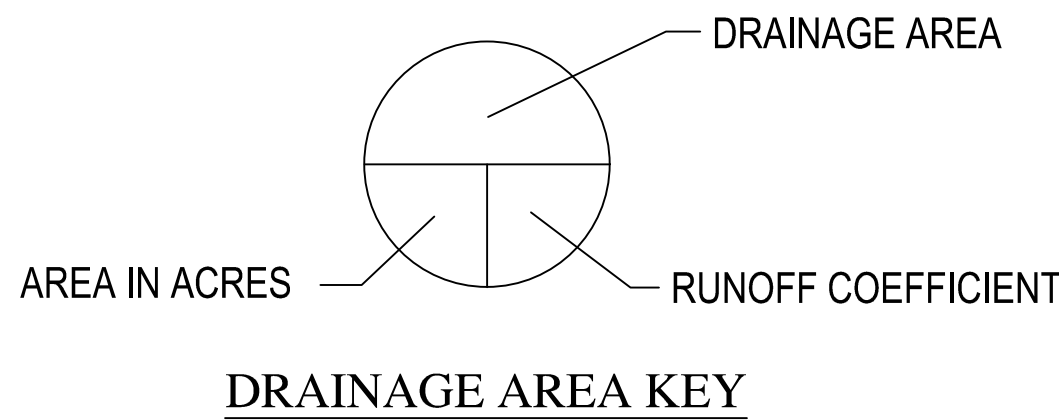
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory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

EXHIBIT 3 – EXISTING DRAINAGE AREA MAP

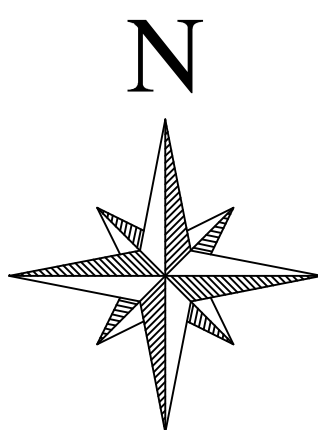


LEGEND

- DRAINAGE AREAS
- STORM DRAIN CATCH BASIN
- STORM DRAIN
- FLOW ARROW



0 40 80
Horz. 1 in. = 40 ft.



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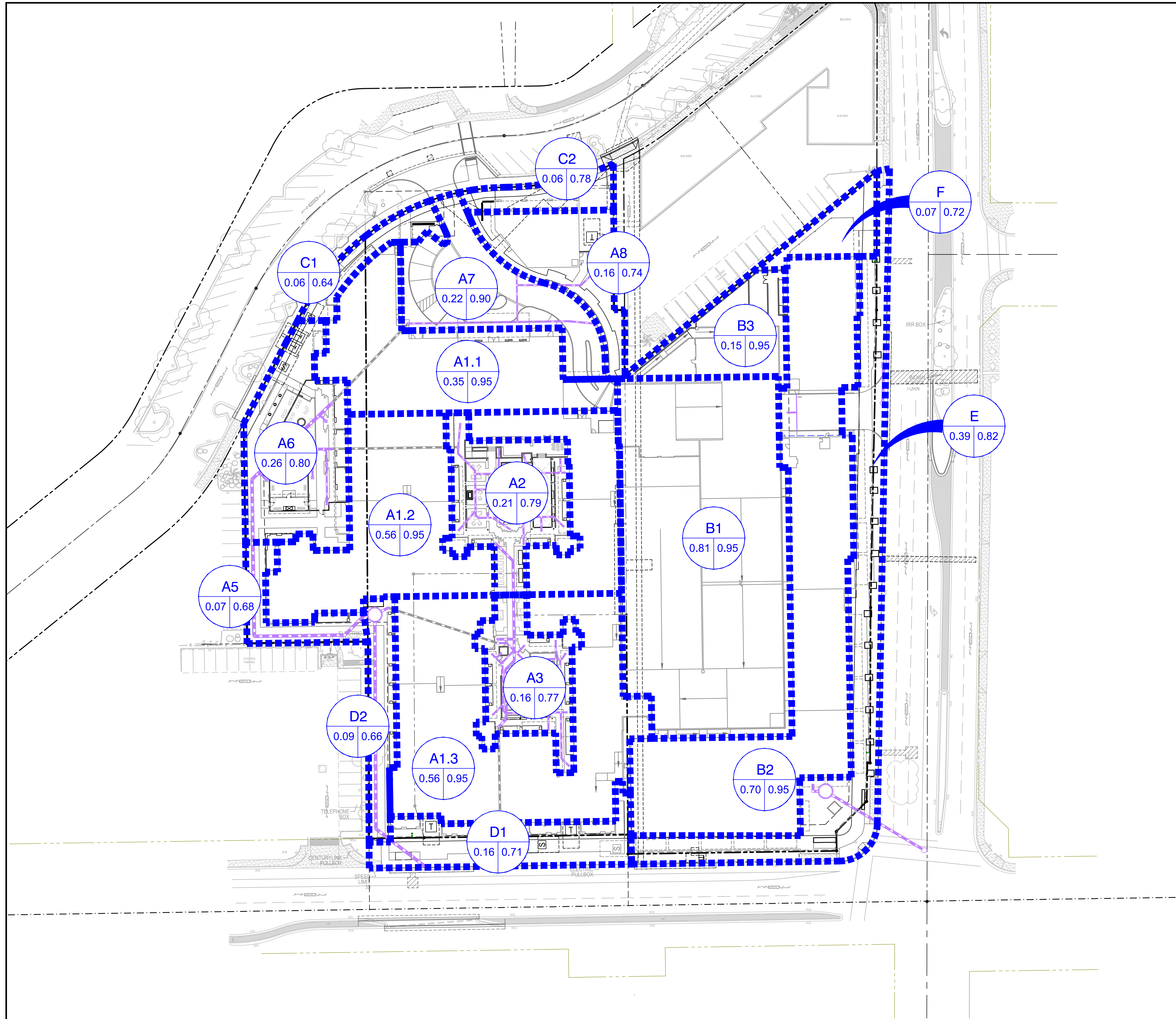
5TH & GOLDWATER

EXISTING DRAINAGE MAP

DATE	08/08/2025	SCALE	1" = 40'	SHEET	1 OF 1
JOB NO	245619	DESIGN	APM	DRAWN	KML

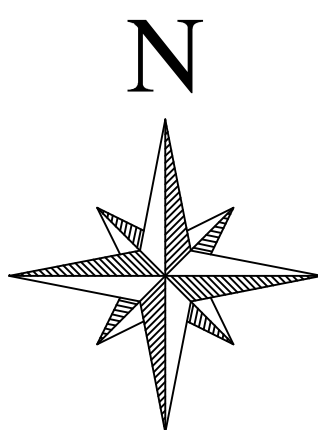
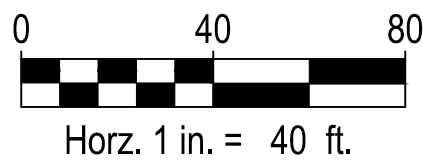
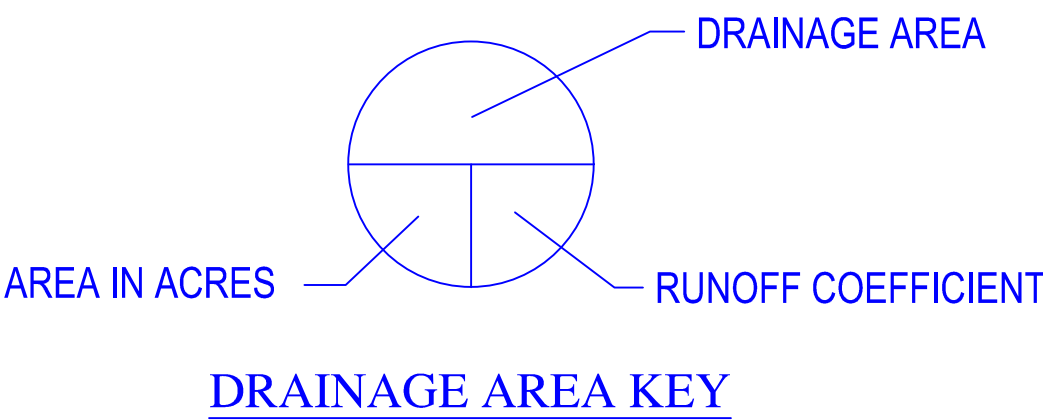
Z:\2024\245619\Project Support\Reports\Drainage\Exhibits\5619-EX-ONDM.dwg

EXHIBIT 4 – PROPOSED DRAINAGE AREA MAP



LEGEND

- DRAINAGE AREAS
- STORM DRAIN CATCH BASIN
- STORM DRAIN
- FLOW ARROW



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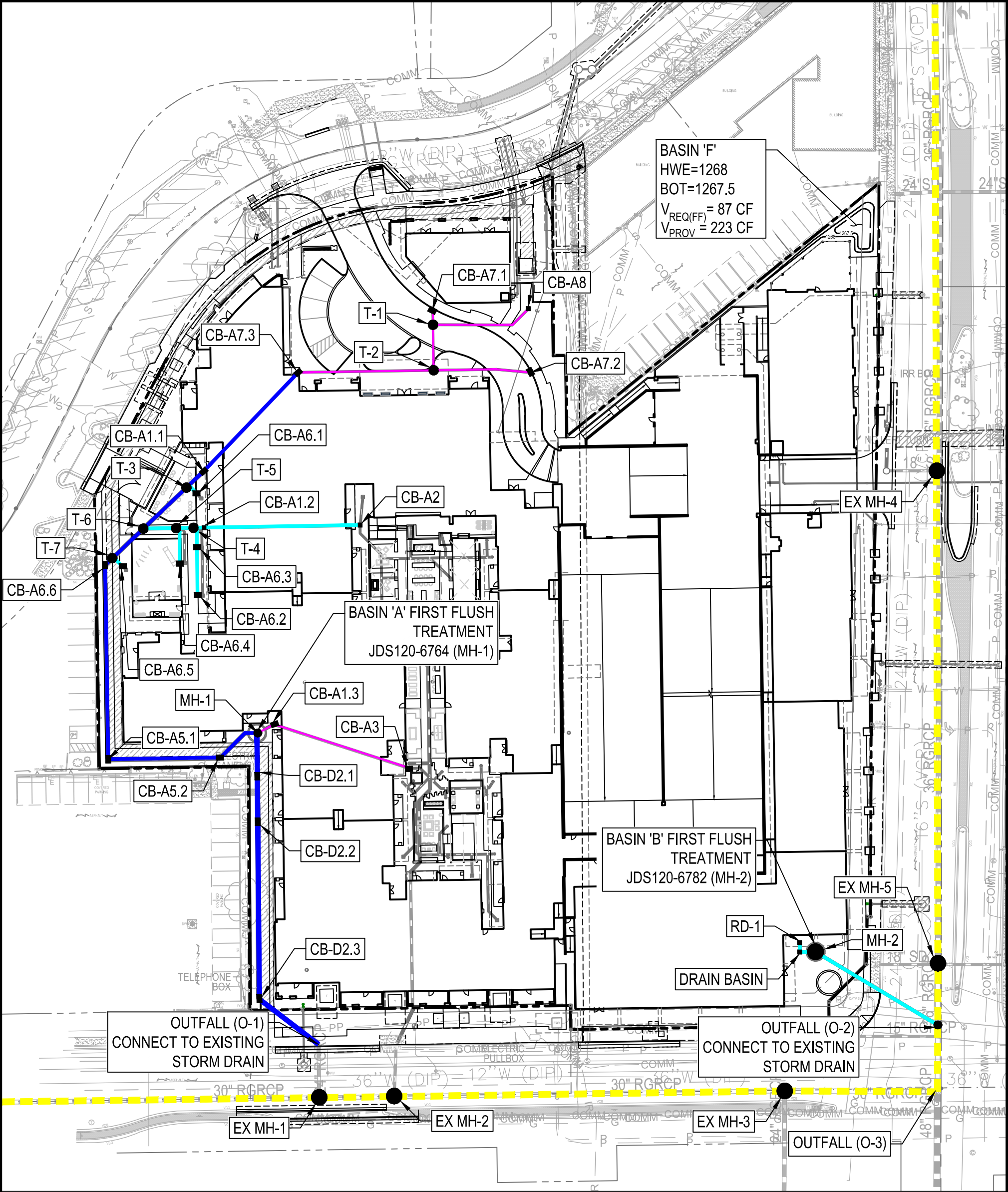
WOOD
PATEL

5TH & GOLDWATER

PROPOSED DRAINAGE MAP

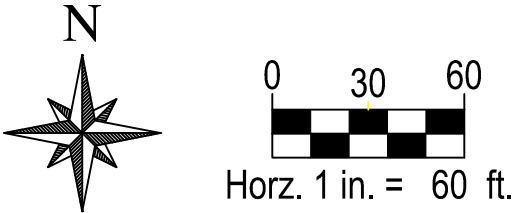
DATE	08/08/2025	SCALE	1" = 40'	SHEET	1 OF 1
JOB NO	245619	DESIGN	APM	DRAWN	APM
Z:\2024\245619\Project Support\Reports\Drainage\Exhibits\5619-ONDM.dwg					

EXHIBIT 5 – STORM DRAIN LAYOUT



LEGEND

-
-
-
-
-



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OR RECORDING

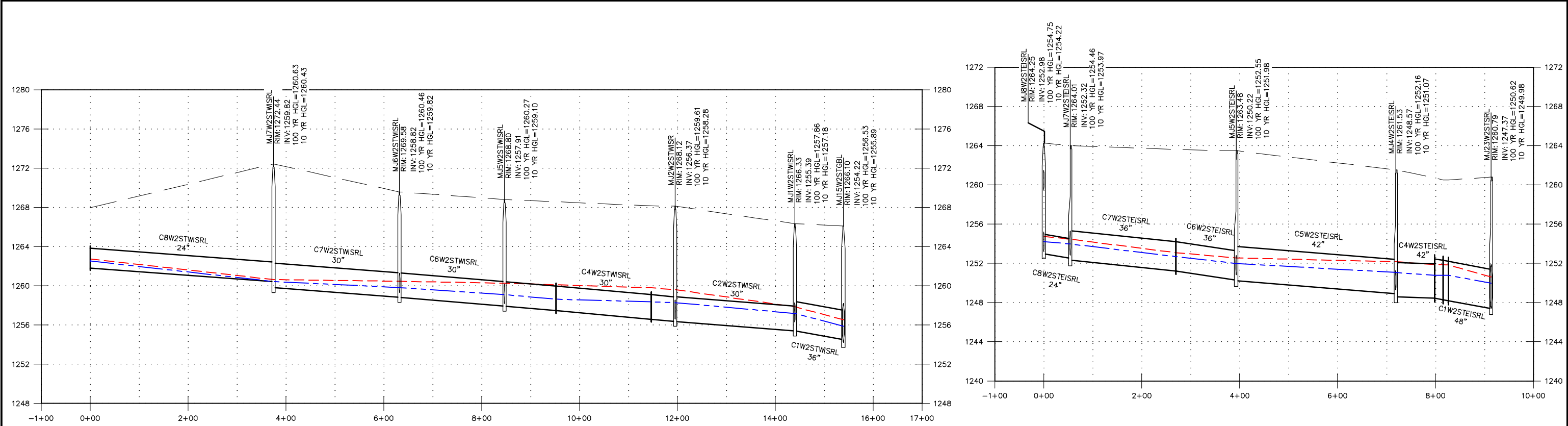
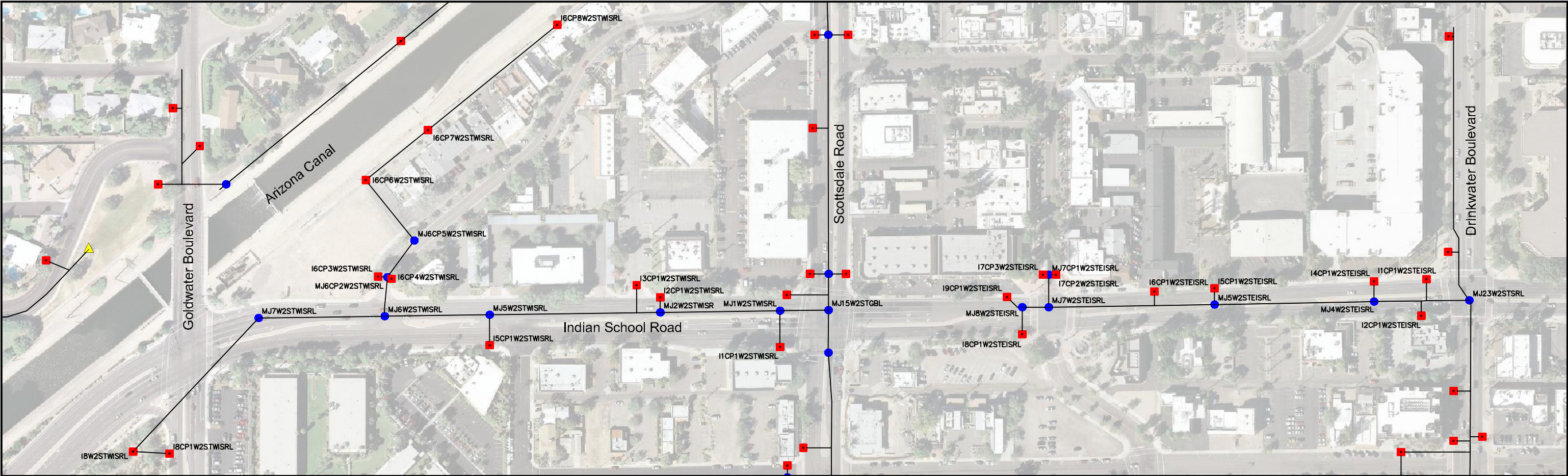


5TH & GOLDWATER

STORM DRAIN LAYOUT

DATE	08-08-2025	SCALE	1" = 60'	SHEET	1 OF 1
JOB NO	245619	DESIGN	BAS	CHECK	APM
		DRAWN	BAS	RFI #	N/A

**EXHIBIT 6 – LOWER INDIAN BEND WASH AREA DRAINAGE MASTER STUDY –
HYDROLOGY AND HYDRAULICS REPORT**



Legend (Plan)

- Inlet & SWMM Identifier
- Manhole & SWMM Identifier
- Outlet & SWMM Identifier
- Storm Drain Pipes

Legend (Profile)

- Ground Elevation
- Hydraulic Grade Line (100yr, 6-hr)
- Hydraulic Grade Line (10yr, 6-hr)

LOWER INDIAN BEND WASH ADMS/P

STUDY AREA-SOUTH

SHEET SD29 OF SD121

SWMM Outfall: **W2STIBWOUTFALL**
(West 2nd Street S.D. Outfall)

	By	Date
Prepared	AJA	12/18/2017
Checked	MTG	12/18/2017

Scale: 1"=200' Horizontal
1"=10' Vertical

Inlet Summary Table										
SWMM Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
I32CP1W2ST	C32CP1W2ST	14.4	0.5	0.5	0.5	0.5	0.3	0.3	0.4	0.4
I32CP2W2ST	C32CP2W2ST	14.4	0.9	0.9	10	10	0.6	0.6	0.7	0.7
I2CP1W2STSRL	C2CP1W2STSRL	7.2	4.9	4.9	5.4	5.4	3.4	3.4	4.0	4.0
I1CP1W2STSRL	C1CP1W2STSRL	7.2	15	14	3.0	3.0	0.5	0.5	0.6	0.6
I4CP1W2STSRL	C4CP1W2STSRL	7.2	5.6	5.6	6.4	6.4	2.5	2.5	3.5	3.5
I6CP1W2STSRL	C6CP1W2STSRL	4.8	15	15	17	17	10	10	12	12
I7CP1W2STSRL	C7CP1W2STSRL	9.6	7.3	7.3	8.6	8.6	4.0	4.0	5.1	5.0
I8CP1W2STSRL	C8CP1W2STSRL	4.8	0.7	0.7	0.8	10	0.4	0.5	0.5	0.5
I9CP1W2STSRL	C9CP1W2STSRL	4.8	0.9	0.9	18	18	0.6	0.6	0.7	0.7
I5CP2W2STSRL	C5CP2W2STSRL	9.6	6.7	6.7	8.1	8.1	3.8	3.8	4.7	4.7
I5CP3W2STSRL	C5CP3W2STSRL	14.4	14.8	14.7	15.6	15.6	11.4	11.4	12.7	12.7
I21CP1W2STSRL	C21CP1W2STSRL	12.0	4.7	4.6	5.9	5.8	2.7	2.7	3.3	3.3
I20CP1W2STSRL	C20CP1W2STSRL	12.0	2.7	2.7	4.0	4.0	15	15	18	18
I19CP1W2STSR	C19CP1W2STSR	12.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
I17CP1W2STSRL	C17CP1W2STSRL	4.8	11	11	13	13	0.6	0.6	0.7	0.7
I16CP1W2STSRL	C16CP1W2STSRL	4.8	19	19	2.2	2.2	0.9	0.9	11	11
I15CP1W2STSRL	C15CP1W2STSRL	4.8	4.0	4.0	4.2	4.2	2.9	2.9	3.3	3.3
I14CP1W2STSRL	C14CP1W2STSRL	4.8	2.0	2.0	3.0	3.0	0.3	0.3	0.4	0.4
I13CP1W2STSRL	C13CP1W2STSRL	7.2	3.3	3.2	3.8	3.8	16	15	2.0	2.0
I10CP2W2STSRL	C10CP2W2STSRL	12.0	13.8	13.8	15.0	15.0	6.7	6.7	9.2	9.2
I10CP3W2STSRL	C10CP3W2STSRL	12.0	12	12	3.2	3.1	0.5	0.5	0.6	0.6
I12CP1W2STSRL	C12CP1W2STSRL	12.0	16	15	2.1	2.0	0.7	0.7	0.9	0.9
I18CP2W2STSRL	C18CP2W2STSRL	14.4	8.4	8.3	9.9	9.8	5.3	5.3	6.2	6.2
I18CP1W2STSRL	C18CP1W2STSRL	8.7	11	9.4	14	11.2	0.5	5.7	0.6	6.8
I20CP1W2ST	C20CP1W2ST	32.2	11	11	2.0	2.3	0.3	0.3	0.5	0.5
I21CP1W2ST	C21CP1W2ST	32.2	9.7	9.7	14.5	14.5	3.5	3.5	5.3	5.3
I20CP2W2ST	C20CP2W2ST	32.2	0.8	0.8	16	16	0.3	0.3	0.4	0.4
I1W2STBAL	C1W2STBAL	32.2	119	29.0	16.8	34.7	5.5	20.9	7.3	23.4
I24CP2W2ST	C24CP2W2ST	2.6	16	16	2.0	2.0	10	10	12	12
I24CP4W2ST	C24CP4W2ST	2.6	19	19	2.3	2.2	11	11	14	14
I33CP1W2ST	C33CP1W2ST	20.0	15	15	19	19	0.9	0.9	11	11
I34CP1W2ST	C34CP1W2ST	20.0	13	12	16	16	0.7	0.7	0.9	0.9
I35CP1W2ST	C35CP1W2ST	20.0	18	18	2.3	2.3	10	10	12	12
I37CP1W2ST	C37CP1W2ST	32.2	8.9	8.9	10.4	10.4	5.8	5.8	7.0	7.0
I37CP2W2ST	C37CP2W2ST	32.2	3.0	3.0	3.6	3.6	18	18	2.2	2.2
I36CP1W2ST	C36CP1W2ST	20.0	8.7	8.7	10.6	10.6	4.7	4.7	6.1	6.1
I43CP1W2ST	C43CP1W2ST	32.2	110	110	13.2	13.1	5.5	5.5	6.7	6.7
I47CP1W2ST	C47CP1W2ST	32.2	5.8	5.8	6.7	6.7	3.7	3.7	4.5	4.5
I46CP1W2ST	C46CP1W2ST	17.4	16	16	2.0	2.0	0.8	0.8	11	11
I2CP1W2ST69STL	C2CP1W2ST69STL	2.6	0.9	0.9	10	10	0.5	0.5	0.6	0.6
I1CP1W2ST69STL	C1CP1W2ST69STL	2.6	3.1	3.1	3.2	3.2	17	17	2.0	2.0
I9CP1W2STBAL	C9CP1W2STBAL	2.6	18	3.9	3.2	6.2	19	3.7	2.1	4.0
I9CP2W2STBAL	C9CP2W2STBAL	2.6	19	2.0	3.1	3.0	2.0	2.2	2.0	2.1
I7CP1W2STBAL	C7CP1W2STBAL	2.6	2.0	19	2.6	2.5	4.3	19	2.1	2.1
I4CP1W2STBAL	C4CP1W2STBAL	3.6	5.5	5.4	5.9	5.9	5.4	5.3	5.4	5.3

INLET SUMMARY TABLE NOTES:

1. The curb high/soffit high inflow discharge were calculated according to the procedures outlined in the District's Hydraulics Manual.
2. The inflow discharge is the peak hydrograph discharge taken from the SWMMQIN.OUT file.
3. The pipe Max Discharge is the peak hydrograph discharge taken from the 'Link Results' in the SWMM.RTP file.

Inlet Summary Table										
SWMM M Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
I2CP1W2STEISRL	C2CP1W2STEISRL	17.4	7.9	7.9	10.5	10.6	3.1	3.1	4.5	4.5
I1CP1W2STEISRL	C1CP1W2STEISRL	20.0	10.1	10.0	13.1	13.0	3.5	3.6	5.6	5.6
I26CP1W2STSRL	C26CP1W2STSRL	4.8	5.8	5.7	7.6	7.5	3.6	3.6	4.4	4.4
I5CP1W2STEISRL	C5CP1W2STEISRL	13.9	7.2	7.2	7.8	7.8	5.1	5.1	6.1	6.0
I4CP1W2STEISRL	C4CP1W2STEISRL	20.0	14.9	14.9	17.0	17.0	10.7	10.7	12.2	12.1
I6CP1W2STEISRL	C6CP1W2STEISRL	3.4	3.9	3.9	4.3	4.3	2.7	2.7	3.2	3.2
I9CP1W2STEISRL	C9CP1W2STEISRL	17.4	7.1	7.1	8.2	8.2	5.0	5.0	5.9	5.8
I8CP1W2STEISRL	C8CP1W2STEISRL	3.1	2.3	2.3	2.7	2.7	16	16	19	19
I7CP2W2STEISRL	C7CP2W2STEISRL	5.2	8.5	8.5	8.9	8.8	5.5	5.5	6.2	6.2
I7CP3W2STEISRL	C7CP3W2STEISRL	13.1	10.9	10.8	12.7	12.7	7.4	7.3	8.9	8.9
I2CP1W2STWISRL	C2CP1W2STWISRL	7.8	7.2	7.1	8.4	8.4	4.7	4.7	5.5	5.5
I3CP1W2STWISRL	C3CP1W2STWISRL	5.4	9.2	9.1	10.6	10.6	5.6	5.6	7.0	6.9
I1CP1W2STWISRL	C1CP1W2STWISRL	4.8	3.9	3.9	4.6	4.6	2.5	2.5	2.9	2.9
I16CP1W2STGBL	C16CP1W2STGBL	17.4	3.9	3.9	4.4	4.4	2.6	2.6	3.1	3.1
I8W2STWISRL	C8W2STWISRL	5.0	3.6	4.6	4.3	5.4	2.2	2.8	2.7	3.4
I5CP1W2STWISRL	C5CP1W2STWISRL	4.8	4.0	4.0	4.3	4.3	3.1	3.1	3.4	3.4
I8CP1W2STWISRL	C8CP1W2STWISRL	3.1	10	10	12	12	0.7	0.7	0.8	0.8
I6CP6W2STWISRL	C6CP6W2STWISRL	5.0	13	4.1	16	4.8	0.7	2.3	0.8	2.8
I6CP7W2STWISRL	C6CP7W2STWISRL	5.0	2.0	2.8	2.4	3.3	12	16	15	2.0
I6CP3W2STWISRL	C6CP3W2STWISRL	2.6	17	17	2.0	2.0	13	13	15	15
I6CP4W2STWISRL	C6CP4W2STWISRL	2.6	17	17	2.0	2.0	13	13	15	15
I6CP8W2STWISRL	C6CP8W2STWISRL	5.0	0.7	0.7	0.9	0.9	0.4	0.4	0.5	0.5
I5CP1W2ST69STL	C5CP1W2ST69STL	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I5CP1W2ST	C5CP1W2ST	7.2	6.1	6.0	7.4	7.1	3.5	3.4	4.3	4.3
I2CP1W2STGBL	C2CP1W2STGBL	5.2	12	4.7	16	5.9	0.6	2.5	0.8	3.1
I2CP2W2STGBL	C2CP2W2STGBL	5.2	3.5	3.5	4.4	4.4	18	18	2.3	2.3
I3CP1W2STGBL	C3CP1W2STGBL	17.4	7.3	7.3	9.1	9.1	3.6	3.6	4.7	4.6
I4CP3W2STGBL	C4CP3W2STGBL	7.8	7.6	7.5	8.1	8.0	5.1	5.1	5.9	5.9
I4CP2W2STGBL	C4CP2W2STGBL	5.2	15	15	18	18	0.8	0.8	10	10
I6CP1W2STGBL	C6CP1W2STGBL	3.6	18	18	2.1	2.1	13	13	15	15
I5CP1W2STGBL	C5CP1W2STGBL	17.4	6.4	6.4	8.0	8.0	3.3	3.3	4.4	4.4
I7CP3W2STGBL	C7CP3W2STGBL	11.3	4.3	4.3	5.0	5.0	2.8	2.8	3.3	3.3
I7CP2W2STGBL	C7CP2W2STGBL	5.2	3.8	3.8	4.3	4.3	2.7	2.7	3.1	3.1
I8CP1W2STGBL	C8CP1W2STGBL	5.2	0.5	0.5	0.6	0.6	0.3	0.3	0.4	0.4
I9CP1W2STGBL	C9CP1W2STGBL	17.4	3.7	3.6	5.6	5.5	0.9	0.9	14	13
I10CP3W2STGBL	C10CP3W2STGBL	17.4	5.8	5.8	6.9	6.9	3.4	3.4	4.1	4.1
I10CP2W2STGBL	C10CP2W2STGBL	7.8	4.1	4.1	4.7	4.7	2.7	2.7	3.2	3.2
I11CP1W2STGBL	C11CP1W2STGBL	17.4	8.4	8.3	10.2	10.1	4.3	4.3	5.8	5.7
I17CP2W2STGBL	C17CP2W2STGBL	17.4	3.8	3.8	4.8	4.7	2.2	2.2	2.8	2.8
I17CP1W2STGBL	C17CP1W2STGBL	17.4	3.1	3.1	3.8	3.8	19	19	2.4	2.4
I18CP1W2STGBL	C18CP1W2STGBL	17.4	3.5	3.5	4.7	4.7	15	15	2.0	2.0
I21CP3W2STGBL	C21CP3W2STGBL	4.8	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
I21CP1W2STGBL	C21CP1W2STGBL	5.0	0.2	0.2	0.3	0.3	0.1	0.1	0.2	0.2
I21CP2W2STGBL	C21CP2W2STGBL	4.8	0.0	0.2	0.0	0.3	0.0	0.1	0.0	0.2
I19CP1W2STGBL	C19CP1W2STGBL	7.0	2.5	2.5	3.0	3.0	15	15	19	19

Inlet Summary Table										
SWMM Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
I19CP2W2STGBL	C19CP2W2STGBL	7.0	4.3	4.3	4.9	4.9	2.8	2.7	3.3	3.3
I20CP7W2STGBL	C20CP7W2STGBL	5.0	0.7	0.7	0.8	0.8	0.4	0.4	0.5	0.5
I20CP10W2STGBL	C20CP10W2STGBL	7.0	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
I20CP9W2STGBL	C20CP9W2STGBL	7.0	5.9	5.9	6.9	6.9	3.8	3.8	4.6	4.6
I20CP4W2STGBL	C20CP4W2STGBL	7.0	5.2	5.2	5.8	5.8	3.6	3.6	4.2	4.2
I20CP5W2STGBL	C20CP5W2STGBL	7.0	2.0	2.0	2.5	2.4	12	12	14	14
I20CP2W2STGBL	C20CP2W2STGBL	5.0	13	13	15	15	0.7	0.7	0.8	0.8
I8CP2W2STBAL	C8CP2W2STBAL	3.1	10	10	11	11	0.7	0.7	10	11
I29CP1W2STSRL	C29CP1W2STSRL	113	113	112	12.4	12.4	8.6	8.5	9.6	9.6
I7CP1W2ST	C7CP1W2ST	3.4	15	15	17	16	11	11	12	12
I9CP1W2ST	C9CP1W2ST	3.4	2.7	2.7	2.9	2.9	2.1	2.1	2.3	2.3
I6ACP1W2ST	C6ACP1W2ST	5.2	10.2	10.2	10.8	10.9	8.3	8.3	8.6	8.6
I5CP1W2STCCL	C5CP1W2STCCL	10.8	0.6	0.6	0.7	0.7	0.4	0.4	0.4	0.4
I8CP1W2STCCL	C8CP1W2STCCL	2.5	2.5	2.5	2.9	2.9	16	16	19	19
I4CP3W2STCCL	C4CP3W2STCCL	2.5	2.3	2.3	2.8	2.8	13	13	16	16
I4CP2W2STCCL	C4CP2W2STCCL	2.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
I11CP1W2STCCL	C11CP1W2STCCL	2.5	0.4	11	0.5	13	0.2	0.6	0.3	0.8
I11CP2W2STCCL	C11CP2W2STCCL	2.5	0.7	0.7	0.9	0.9	0.4	0.4	0.5	0.5
I11CP3W2STCCL	C11CP3W2STCCL	2.5	0.5	2.0	0.5	2.4	0.3	12	0.4	15
I11CP4W2STCCL	C11CP4W2STCCL	2.5	16	16	19	19	0.9	0.9	12	12
I10CP1W2STCCL	C10CP1W2STCCL	2.5	0.9	0.9	10	10	0.5	0.5	0.6	0.6
I9CP1W2STCCL	C9CP1W2STCCL	2.5	14	14	17	17	0.9	0.9	11	11
I6CP1W2STCCL	C6CP1W2STCCL	10.8	0.4	0.4	0.5	0.5	0.2	0.2	0.3	0.3
I7CP1W2STCCL	C7CP1W2STCCL	2.5	16	16	2.0	2.0	0.8	0.8	11	11
I2CP2W2STBAL	C2CP2W2STBAL	4.4	3.0	3.0	3.3	3.3	2.4	2.3	2.6	2.6
I2CP1W2STBAL	C2CP1W2STBAL	2.6	18	4.8	2.1	5.4	11	3.5	14	4.0
I37ACP2W2ST	C37ACP2W2ST	2.6	3.3	3.3	3.7	3.7	2.6	2.6	2.9	2.9
I10ACP1W2ST	C10ACP1W2ST	3.5	3.0	3.0	3.3	3.3	2.4	2.4	2.6	2.6
I10ACP2W2ST	C10ACP2W2ST	3.6	18	18	2.0	2.0	11	11	14	13
I3CP5W2STDBL	C3CP5W2STDBL	17.0	111	110	117	117	5.9	5.9	7.3	7.2
I3CP4W2STDBL	C3CP4W2STDBL	110	8.5	32.3	17.9	38.2	14	17.4	19	215
I3CP6W2STDBL	C3CP6W2STDBL	17.0	14.7	14.2	14.8	14.0	10.3	10.2	12.6	12.6
I3CP2W2STDBL	C3CP2W2STDBL	17.0	9.2	9.1	10.0	9.7	4.7	4.7	5.9	5.9
I3CP1W2STDBL	C3CP1W2STDBL	20.4	2.4	19.4	6.1	22.4	10	10.0	13	12.4
I3CP3W2STDBL	C3CP3W2STDBL	17.0	8.5	8.5	9.3	9.9	4.5	4.5	5.5	5.5
I12BCP1W2ST	C12BCP1W2ST	4.7	0.3	0.3	0.4	13	0.2	0.2	0.2	0.2
I11BCP2W2ST	C11BCP2W2ST	314	4.3	4.3	5.0	4.9	2.9	2.9	3.4	3.4
I11BCP1W2ST	C11BCP1W2ST	19.5	2.4	6.7	3.0	7.8	14	4.3	17	5.1
I11ACP1W2ST	C11ACP1W2ST	3.6	0.5	0.5	0.6	0.6	0.3	0.3	0.3	0.3
I12BCP2W2ST	C12BCP2W2ST	3.5	0.9	0.9	10	12	0.6	0.6	0.7	0.7
I11BCP4W2ST	C11BCP4W2ST	7.6	8.8	8.8	10.3	10.1	5.2	5.2	6.3	6.3
I11BCP5W2ST	C11BCP5W2ST	7.8	5.5	5.5	6.8	6.6	2.8	2.8	3.6	3.5
I19BCP2W2ST	C19BCP2W2ST	3.5	2.5	2.5	2.9	2.9	16	15	19	19
I19BCP1W2ST	C19BCP1W2ST	3.2	19	4.3	2.4	5.3	12	2.8	14	3.2
I19ACP1W2ST	C19ACP1W2ST	3.4	13	13	17	16	0.8	0.8	10	10

INLET SUMMARY TABLE NOTES:

1. The curb high/soffit high inflow discharge were calculated according to the procedures outlined in the District's Hydraulics Manual.

2. The inflow discharge is the peak hydrograph discharge taken from the SWMMQIN.OUT file.

3. The pipe Max Discharge is the peak hydrograph discharge taken from the 'Link Results' in the SWMM.RTP file.

EXHIBIT 7 – 5TH & GOLDWATER PRELIMINARY IMPROVEMENT PLAN

5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
A PORTION OF SECTION 22, TOWNSHIP 2 NORTH, RANGE 4 EAST
OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

OWNER / DEVELOPER

WOOD PARTNERS
8777 EAST VIA DE VENTURA, SUITE 201
SCOTTSDALE, ARIZONA 85258
CONTACT: TODD TAYLOR
PHONE: (480) 567-0069

ENGINEER

WOOD, PATEL & ASSOCIATES, INC.
2051 WEST NORTHERN AVENUE, SUITE 100
PHOENIX, ARIZONA 85021
CONTACT: DEREK C. NICHOLS, PE
PHONE: (602) 335-8500

ARCHITECT

NELSEN PARTNERS
15210 NORTH SCOTTSDALE ROAD
SUITE 300
SCOTTSDALE, ARIZONA 85254
CONTACT: JEFF BRAND
PHONE: (480) 949-6800

PROJECT SITE DATA

ASSESSOR PARCEL NUMBER(S):
173-48-055E, 173-48-056A, 173-48-047A,
173-48-047D, 173-48-050A
PROJECT SITE ADDRESS:
NWC INDIAN SCHOOL RD AND GOLDWATER BLVD
SCOTTSDALE, ARIZONA 85251
PROJECT SITE AREA(S):
NET AREA = 4.82 AC
DISTURBED AREA = 4.8± AC
ZONING:
D/OC-2 PBD DO (COS 12-ZN-2007)

PUBLIC UTILITIES

WATER CITY OF SCOTTSDALE
SEWER CITY OF SCOTTSDALE
ELECTRIC ARIZONA PUBLIC SERVICE
TELEPHONE LUMEN
NATURAL GAS SOUTHWEST GAS
CABLE TV COX COMMUNICATIONS

BENCHMARK

THE VERTICAL DATUM FOR THIS SURVEY IS BASED ON A 3-INCH
CITY OF SCOTTSDALE BRASS CAP IN HANDHOLE, LOCATED AT
THE INTERSECTION OF SCOTTSDALE ROAD AND INDIAN SCHOOL
ROAD, HAVING AN ELEVATION OF 1260.37, CITY OF SCOTTSDALE
NAVD 88 DATUM.
BRASS CAP IN HANDHOLE AT THE
EAST 1/4 COR. SEC. 27
MCDOT POINT #3892
GDACS 40089012
EL.=1260.37 NAVD '88

BENCHMARK CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED
ON THIS PLAN ARE BASED ON NAVD 1988 AND MEET THE
FEMA BENCHMARK MAINTENANCE (BMM) CRITERIA.

BASIS OF BEARING

THE HORIZONTAL DATUM FOR THIS SURVEY IS BASED ON
INFORMATION OBTAINED FROM OPUS (ON-LINE POSITIONING USER
SERVICE) PROVIDED BY THE NATIONAL GEODETIC SURVEY (NGS)
WEBSITE WWW.NGS.NOAA.GOV. FOR OPUS SOLUTION 05072240.240
OP1724779219506 ON AUGUST 27, 2024.

PROJECTION: ARIZONA CENTRAL ZONE, NAD 83,
(EPOCH 2010)
DATUM: GRS-80
UNITS: INTERNATIONAL FEET
GEOID MODEL: GEOID 2018

LATITUDE: 33°29'43.83632"N
LONGITUDE: 111°55'52.97786"W
ELLIPSOID HEIGHT: 357.465 (METERS)
DESCRIPTION: WOODPATEL CONTROL POINT 100 -
SET 1/2-INCH REBAR WITH TRAVERSE CAP

MODIFIED TO GROUND AT (GRID) N: 907816.965, E: 695513.817, USING
A SCALE FACTOR OF 1.0001561118.

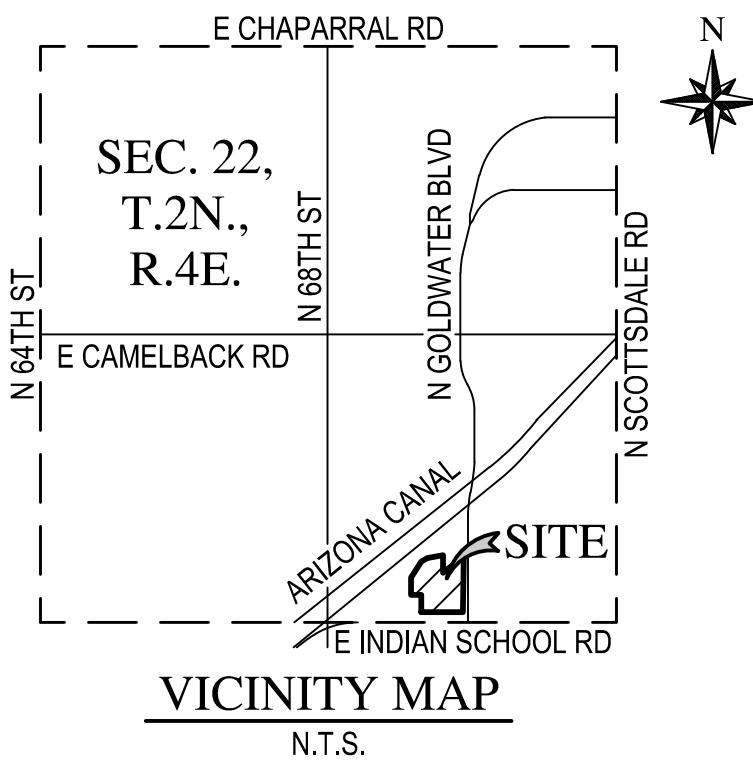
HORIZONTAL ADJUSTMENT: NONE
HORIZONTAL ROTATION: NONE

ABBREVIATIONS

AL	AREA LIGHT	MIN	MINIMUM
BB	BOTTOM OF BANK	N.T.S.	NOT TO SCALE
C	CONCRETE ELEVATION	NG	NATURAL GRADE
CB	CATCH BASIN	P	PAVEMENT ELEVATION
COS	CITY OF SCOTTSDALE	PL	PARKING LIGHT
CTR	CABLE TV RISER	PNMAE	NON-MOTORIZED ACCESS EASEMENT
CTV	CABLE TV	RD	ROOF DRAIN
DW	DRYWELL	RIM	RIM ELEVATION
E.S.V.A.E.	EMERGENCY VEHICLE ACCESS EASEMENT	S	SLOPE
ECB	ELECTRICAL CABINET BOX	SCO	SEWER CLEANOUT
EJB	ELECTRICAL JUNCTION BOX	SD	STORM DRAIN
EO	ELECTRICAL OUTLET	SE	SEWER EASEMENT
EVT	ELECTRICAL VAULT	SL	STREET LIGHT
EX	EXISTING	SLM	STREET LIGHT MAST ARM
FF	FINISH FLOOR	SS	SANITARY SEWER
FG	FINISH GRADE	STD	STANDARD
FH	FIRE HYDRANT	TB	TOP OF BANK
FL	FLOWLINE	TC	TOP OF CURB
G	GUTTER ELEVATION	TF	TOP OF FOOTING
GB	GRADE BREAK	TW	TOP OF WALL
GR	GAS REGULATOR	U.E.	UTILITY EASEMENT
IJB	IRRIGATION JUNCTION BOX	UG	UNDERGROUND
INV	INVERT	VNAE	VEHICLE NON-ACCESS EASEMENT
IRR	IRRIGATION	W.I.	WROUGHT IRON
IV	IRRIGATION VALVE	WF	WIRE FENCE
IVB	IRRIGATION VALVE BOX	WM	WATER METER
LF	LENIER FEET	WV	WATER VALVE
LFF	LOWEST FINISH FLOOR		

INDEX MAP LEGEND

CX GRADING & DRAINAGE
CX WATER & SEWER



SHEET INDEX

C1 - COVER SHEET
C2 - PRELIMINARY GRADING AND DRAINAGE PLAN
C3 - PRELIMINARY GRADING AND DRAINAGE PLAN
C4 - PRELIMINARY WATER AND SEWER PLAN
C5 - PRELIMINARY WATER AND SEWER PLAN
C6 - PRELIMINARY SECTIONS
C7 - PRELIMINARY SECTIONS

DRAINAGE REPORT NOTE

PLEASE REFER TO THE PRELIMINARY DRAINAGE REPORT FOR 5TH &
GOLDWATER PREPARED BY WOODPATEL DATED DECEMBER 24, 2024.

FEMA FIRM NOTE (ZONE X)

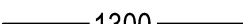
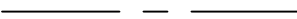
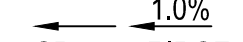
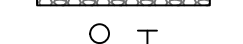
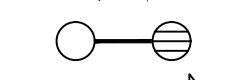
ACCORDING TO FEMA FLOOD INSURANCE RATE MAPPING, THE SUBJECT PROPERTY IS LOCATED IN 'OTHER FLOOD
AREAS' 'ZONE X' (ZONE X SHADED). ZONE X SHADED IS DESCRIBED AS: 'AREAS OF 0.2% ANNUAL CHANCE FLOOD';
AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS
LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.'

FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

MAP NUMBER	COMMUNITY NUMBER	PANEL NUMBER	SUFFIX	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH)
04013C	045012	2235	M	09/18/2020	X	N/A

THE LOWEST FLOOR ELEVATION(S) AND/OR FLOOD PROOFING
ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE
PROTECTION FROM FLOODING CAUSED BY A 100-YEAR STORM, AND
ARE IN ACCORDANCE WITH SCOTTSDALE REVISED CODE, CHAPTER
37 - FLOODPLAIN AND STORMWATER REGULATIONS.

LEGEND

EXISTING SURVEY	PROPOSED GRADING, DRAINAGE & PAVING
 SECTION LINE	 MAJOR CONTOUR
 RIGHT OF WAY	 MINOR CONTOUR
 PROPERTY LINE	 SPOT ELEVATIONS
 ROAD CENTERLINE	 STORM DRAIN PIPE
 EASEMENT	 STORM DRAIN CATCH BASIN
 SURVEY MARKER	 SLOPE ARROW
 UG ELECTRIC (BURIED CABLE)	 GRADE BREAK/RIDGE
 UG ELECTRIC (CONDUIT)	 RIP RAP
 UG ELECTRIC (DUCT BANK)	 ROOF DRAIN/RAIN ARROW
 OVERHEAD ELECTRIC	 DRYWELL
 OVERHEAD TELEPHONE	 SITE ULTIMATE OUTFALL LOCATION & ELEVATION
 UG TELEPHONE	 WALL
 CABLE TELEVISION	 STREET/PARKING LIGHT
 OVERHEAD CABLE TELEVISION	
 TELEPHONE DUCT BANK	
 BARBED WIRE FENCE	
 CHAIN LINK FENCE	
 WOOD FENCE	
 BLOCK WALL	
 GAS LINE	
 SEWER LINE	
 STORM DRAIN PIPE	
 IRRIGATION LINE	
 WATER LINE	
 CURB	
 SIDEWALK	
 MAJOR CONTOUR	
 MINOR CONTOUR	
 VEGETATION	
 BUILDING	
 SEWER MANHOLE	
 STORM DRAIN MANHOLE	
 TELEPHONE MANHOLE	
SPOT ELEVATION	
SIGN	
JUNCTION BOX/RISER	
FIRE HYDRANT	
WATER VALVE	
STREET/PARKING LIGHT	
UTILITY POLE	
CATCH BASIN	



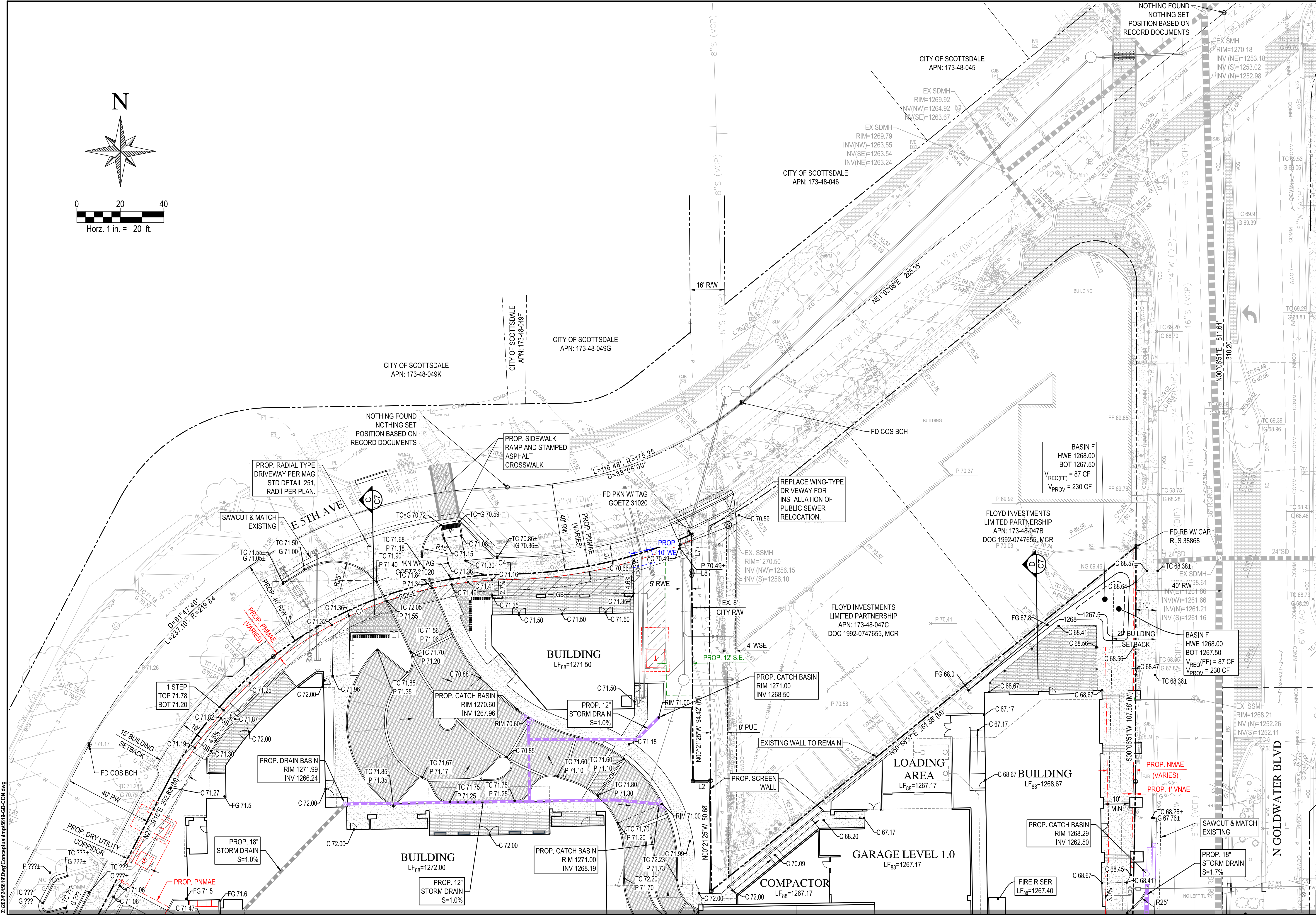
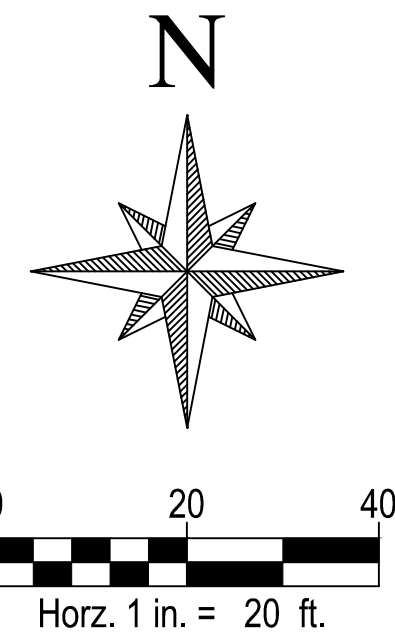
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Construction Management
602.335.8500
www.woodpatel.com



5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
COVER SHEET

DATE	
DESCRIPTION	
REV	
SCALE (HORIZ.) N/A SCALE (VERT.) N/A DATE 09/05/2025 JOB NUMBER 245619 SHEET C1 OF 7	

CHECKED BY: DCN DESIGNED BY: APM DRAFTED BY: JRS



MATCH SHEET C3

CHECKED BY: DCN DESIGNED BY: APM DRAFTED BY: JRS

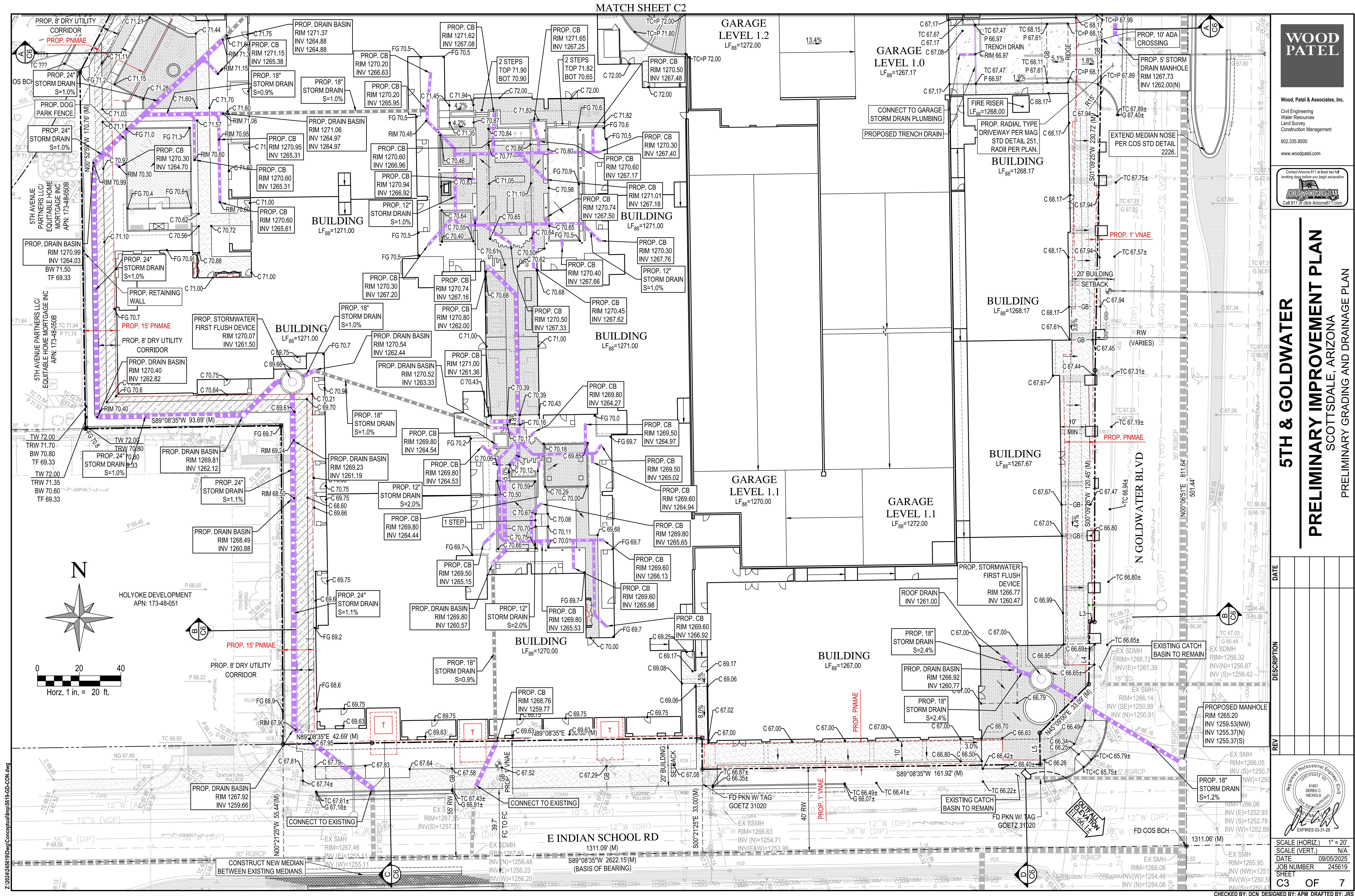
**WOOD
PATEL**

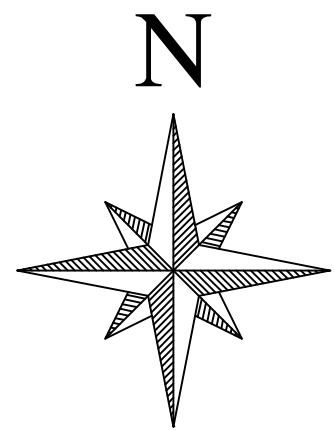
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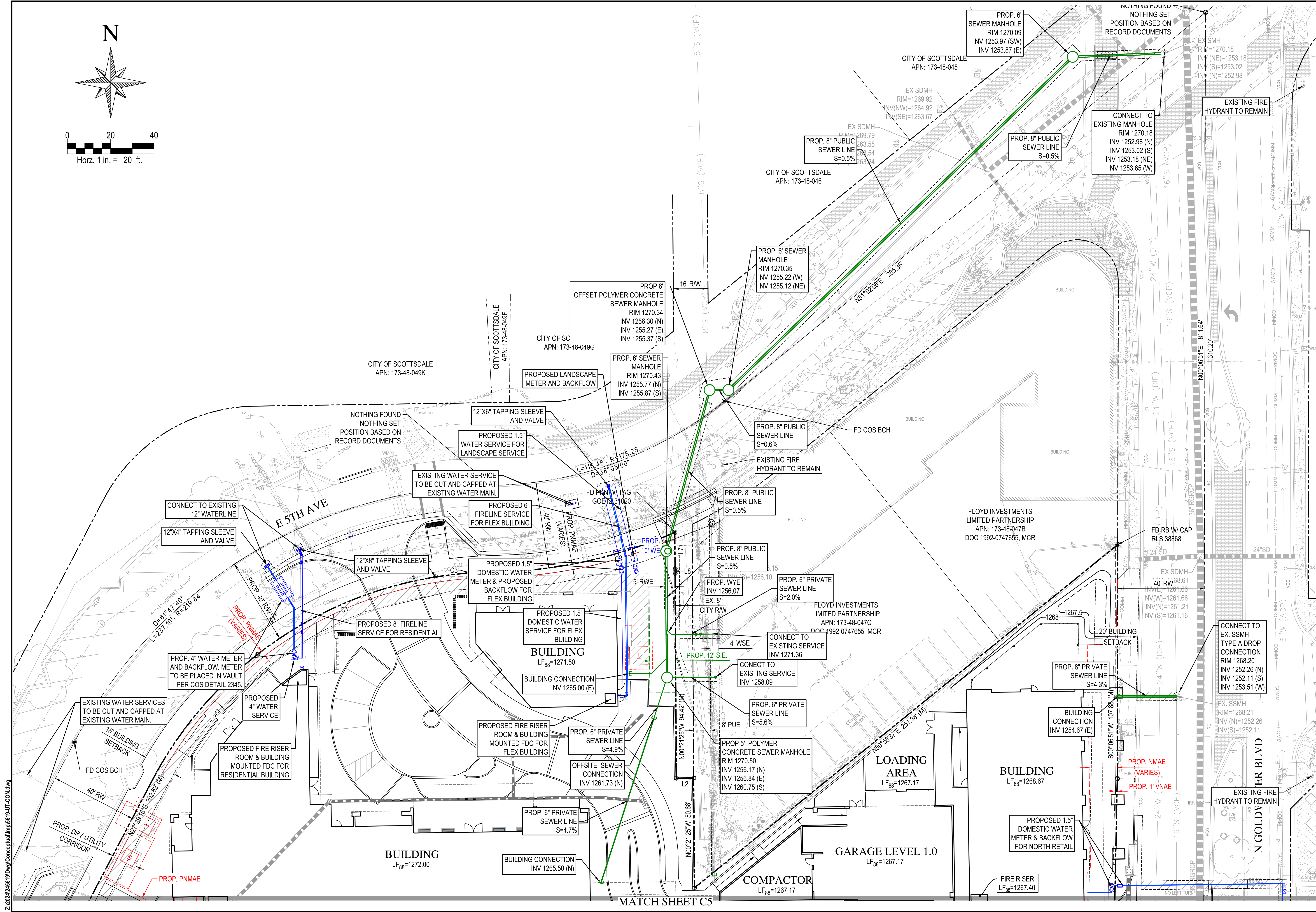
5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
PRELIMINARY GRADING AND DRAINAGE PLAN

DATE	
DESCRIPTION	
REV	
SCALE (HORIZ.)	1" = 20'
SCALE (VERT.)	N/A
DATE	09/05/2025
JOB NUMBER	245619
SHEET	C2 OF 7





0 20 40
Horz. 1 in. = 20 ft.



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PATEL

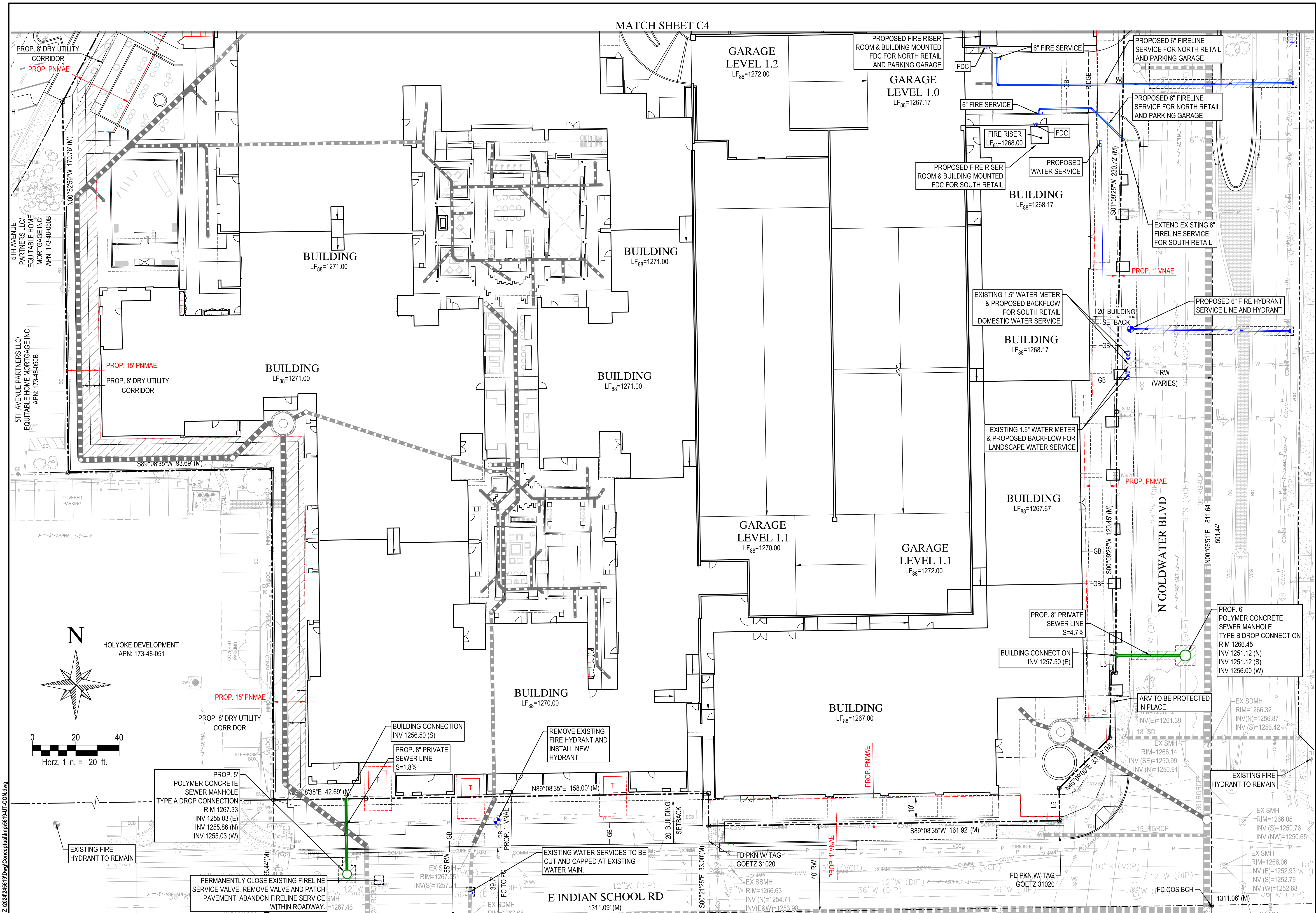
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5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
PRELIMINARY WATER AND SEWER PLAN

DATE	
DESCRIPTION	
REV	
61901 DEREK C. NICHOLS REGISTERED PROFESSIONAL ENGINEER (CIVIL) EXPIRES 03-31-28	
SCALE (HORIZ.) 1" = 20'	
SCALE (VERT.) N/A	
DATE 09/05/2025	
JOB NUMBER 245619	
SHEET C4 OF 7	

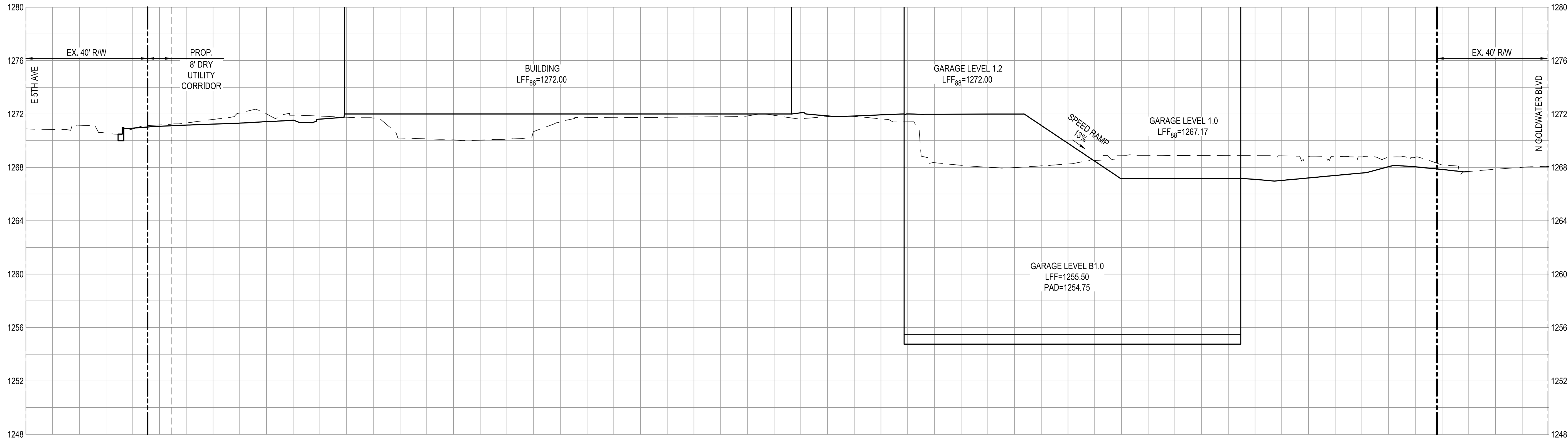
CHECKED BY: DCN DESIGNED BY: APM DRAFTED BY: JRS



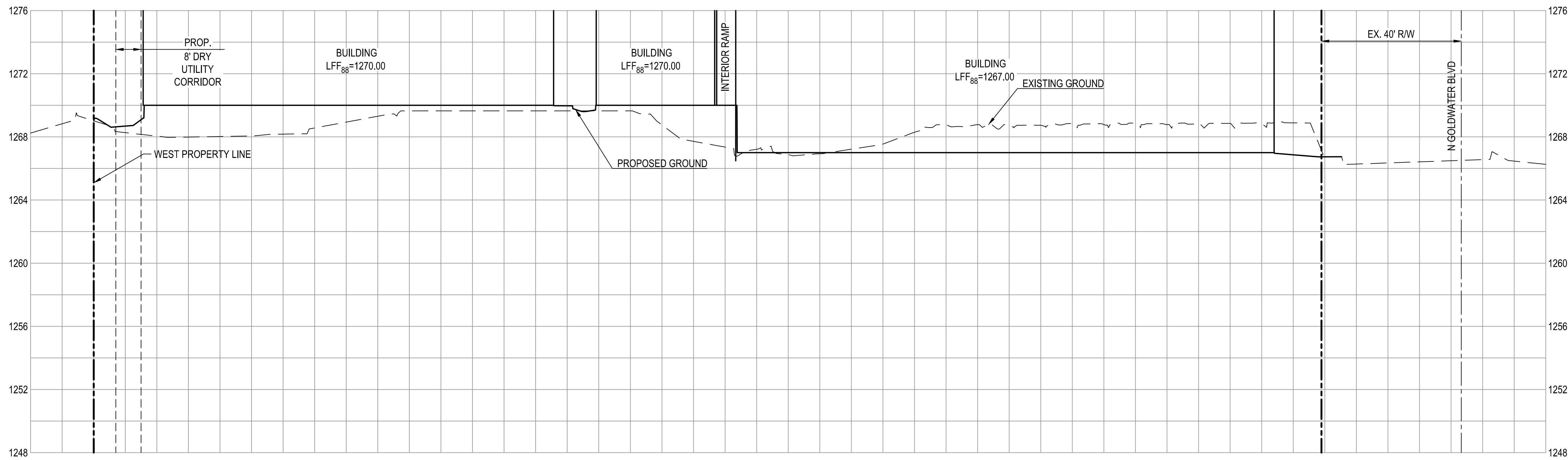
5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
PRELIMINARY WATER AND SEWER PLAN

[illegible]

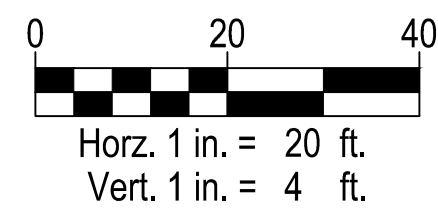
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SECTION 'A'



SECTION 'B'

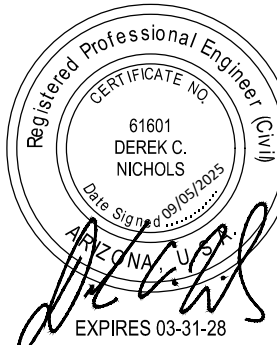


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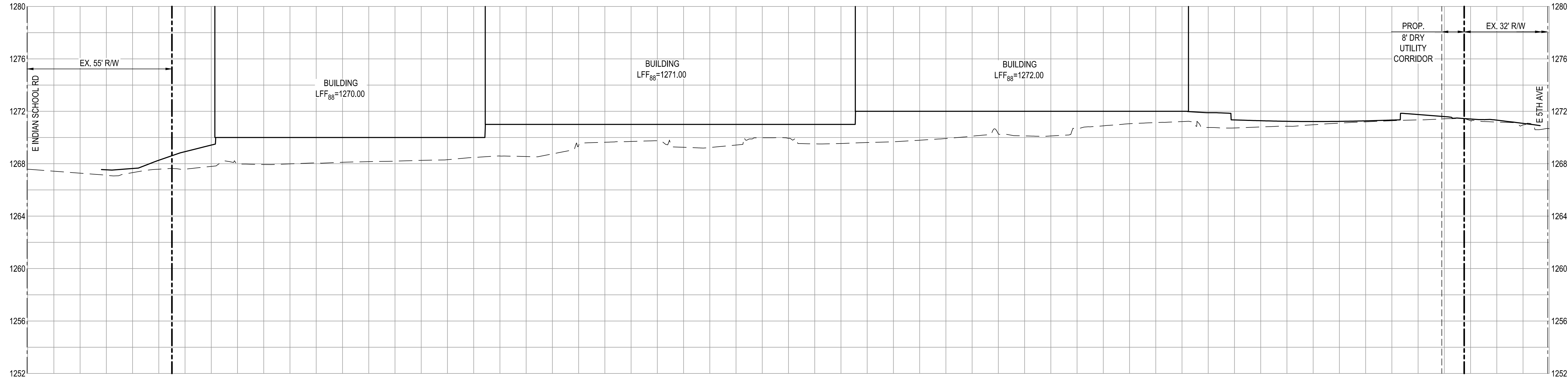
5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
PRELIMINARY SECTIONS

REV	DESCRIPTION	DATE

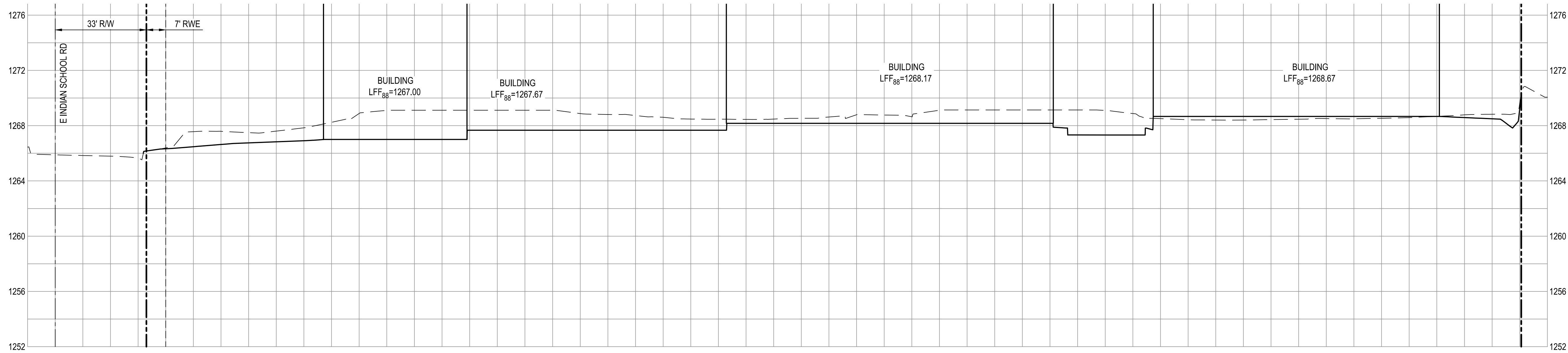


SCALE (HORIZ.) 1" = 20'
SCALE (VERT.) 1" = 4'
DATE 09/05/2025
JOB NUMBER 245619
SHEET C6 OF 7

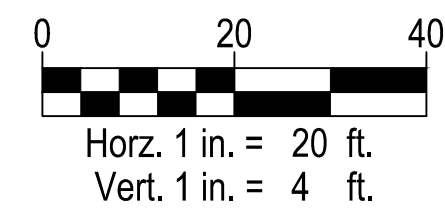
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SECTION 'C'



SECTION 'D'

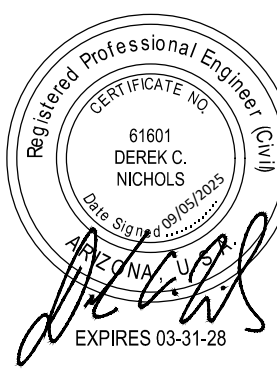


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5TH & GOLDWATER
PRELIMINARY IMPROVEMENT PLAN
SCOTTSDALE, ARIZONA
PRELIMINARY SECTIONS

REV	DESCRIPTION	DATE



SCALE (HORIZ.) 1" = 20'
SCALE (VERT.) 1" = 4'
DATE 09/05/2025
JOB NUMBER 245619
SHEET C7 OF 7