

# CITY OF ALBUQUERQUE

Planning Department  
Alan Varela, Director



Mayor Timothy M. Keller

February 10, 2026

Evan Babcock  
CDM Smith  
6110 Indian School Road NE  
Albuquerque, NM, 87110

**RE: Volcano Cliffs Arsenic Treatment Facility**  
**6600 81<sup>st</sup> St NW**  
**Grading and Drainage Plan**  
**Engineer's Stamp Date: 02/03/2026**  
**Hydrology File: E09D001**  
**Case # HYDR-2026-00042**

Dear Mr. Babcock:

PO Box 1293

Based upon the information provided in your submittal received 02/03/2026, the Grading & Drainage Plans are **not** approved for Grading Permit or Building Permit. The following comments need to be addressed for approval of the above referenced project:

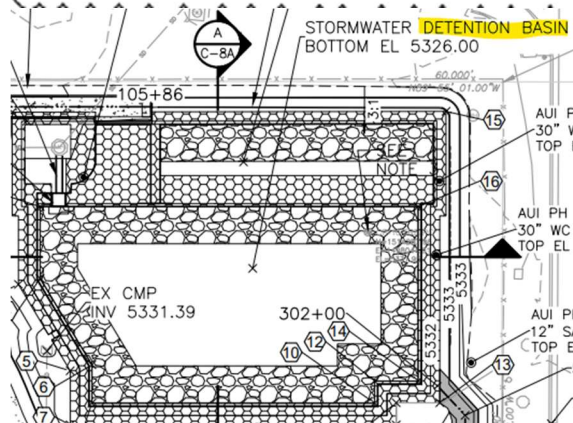
Albuquerque

1. Please provide the FIRM Map and floodplain note with effective date.
2. Please provide the legal description of the property.
3. Pg 6 of 6 – Correct the sentence: Should this be a Detention Pond?

NM 87103

> CFS. FINALLY, THE PROPOSED **ETENTION** POND BOTTOM ELEVATION IS AT  
> 5326.00 FT, WHICH IS APPROXIMATELY 1 FT BELOW THE ORIFICE INVERT  
> ELEVATION AND PROVIDES APPROXIMATELY 7,087 CF OF STORAGE WHICH  
> EXCEEDS THE REQUIRED SWQV.

www.cabq.gov



4. Wall Height - Provide the existing and proposed grades on both sides of the proposed cut-off wall. Provide the top of wall elevations.
5. Show the elevation of the Evaporative Cooling Unit to ensure proper elevation.

# CITY OF ALBUQUERQUE

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6. Pg 2 of 6 – Is there enough clearance or does lean fill need to be placed around the 8" FM or the 30" WC?
7. Please provide the Benchmark information (location, description and elevation) for the survey contour information provided.

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](mailto: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](mailto:amontoya@cabq.gov).

Sincerely,

A handwritten signature in black ink, appearing to read 'Anthony Montoya, Jr.', is written over a light blue rectangular background.

PO Box 1293

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

Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)

CUT/FILL SUMMARY				
NAME	2D AREA	CUT	FILL	NET
CUT AND FILL VOLUME	118,175 SQ FT	3048 CU YD	1319 CU YD	1729 CU YD<CUT>

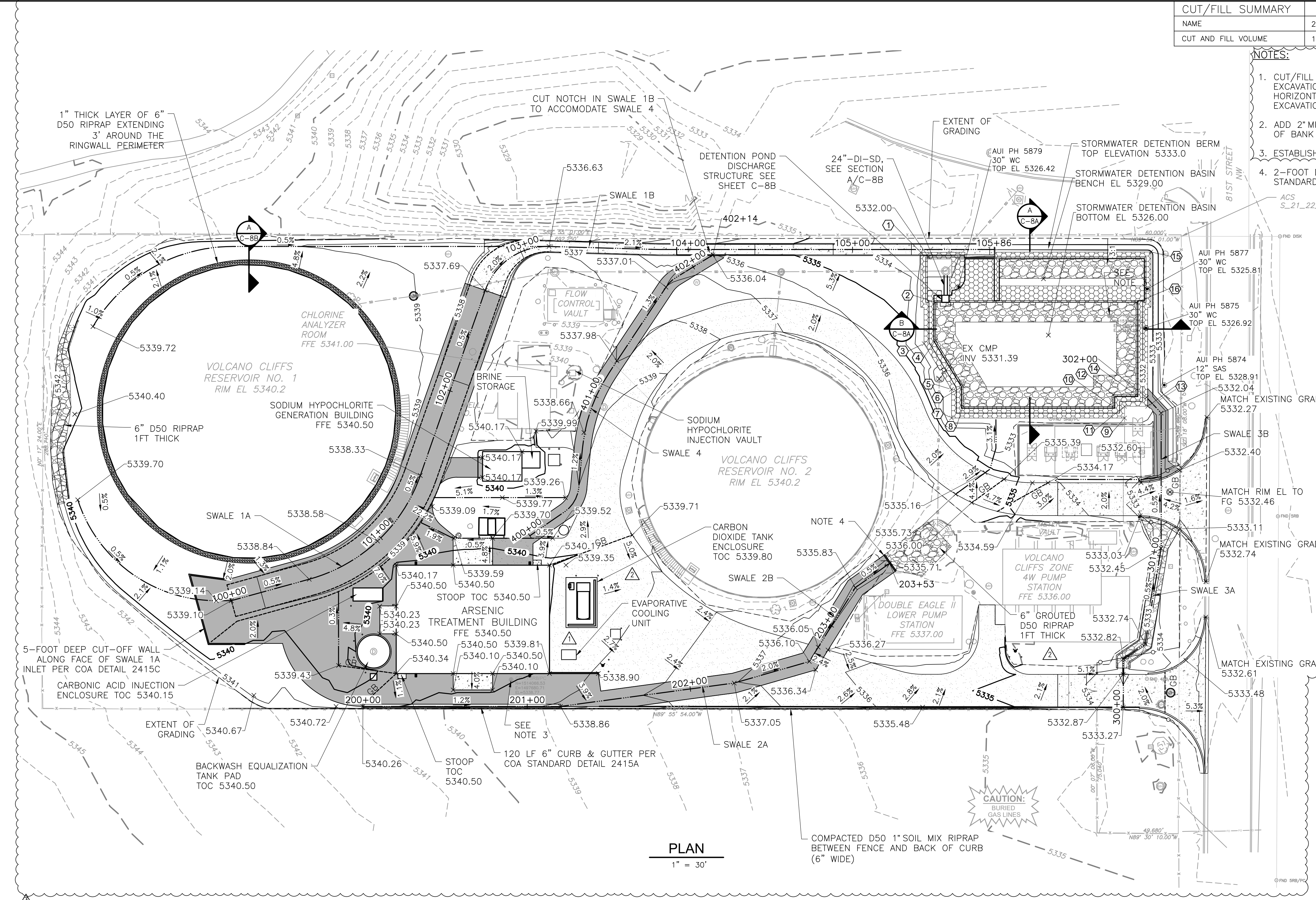
- NOTES:**
- CUT/FILL ESTIMATED VALUES DO NOT INCLUDE SOIL SWELL OR EXCAVATION VOLUMES FOR THE FOUNDATIONS BEYOND THE HORIZONTAL LIMITS OF STRUCTURES. THE VALUES INCLUDE OVER EXCAVATION OF 3 VERTICAL FEET BELOW THE FOUNDATIONS.
  - ADD 2" MIN THICK LAYER OF COMPACTED D50 1" RIPRAP TO TOP OF BANK AND 2FT BEYOND SPILLWAY IN DETENTION BASIN.
  - ESTABLISH NEW CP MONUMENTS TO REPLACE EXISTING.
  - 2-FOOT DEEP CUT-OFF WALL END OF SWALE 2B PER COA STANDARD DETAIL 2415C.

**LEGEND**

	CONCRETE PAVEMENT
	ASPHALT PAVEMENT
	GRAVEL ACCESS ROAD
	RIP RAP
	GABION WALL

**POINT TABLE**

POINT NO.	ELEVATION	NORTHING	EASTING
①	5332.00	1514326.68	1497930.10
②	5326.00	1514296.21	1497939.11
③	5332.00	1514271.11	1497932.10
④	5326.00	1514273.05	1497939.11
⑤	5332.00	1514243.23	1497948.80
⑥	5326.00	1514245.17	1497955.81
⑦	5332.00	1514225.80	1497948.80
⑧	5326.00	1514232.81	1497955.81
⑨	5332.00	1514225.80	1498054.12
⑩	5326.00	1514232.81	1498047.11
⑪	5332.00	1514232.91	1498054.12
⑫	5326.00	1514239.92	1498047.11
⑬	5332.00	1514232.91	1498068.18
⑭	5326.00	1514239.92	1498061.17
⑮	5332.00	1514326.92	1498070.18
⑯	5326.00	1514296.21	1498061.17



**PLAN**  
1" = 30'

THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

NO.	DATE	REVISION NO. & DESCRIPTION	BY
3	02/03/2026	FIELD ORDER NO. 27	EB
2	03/05/2025	FIELD ORDER NO. 22	EB
1	07/25/2024	FIELD ORDER NO. 4	PT

SCALE:		DESIGN TRACKING	
1" = 30'		DESIGNED BY: M. WAINWRIGHT	DATE: XX/XX/2025
ATTENTION		DRAWN BY: M. WAINWRIGHT	DATE: XX/XX/2025
0 1/2" 1"		CHECKED BY: P. TAURASI	DATE: XX/XX/2025
GRAPHIC SCALE		CROSS CHK'D BY: J. YOSHIMURA	DATE: XX/XX/2025
THIS BAR MEASURES 1" AT FULL SCALE (ANSI D)		APPROVED BY: J. CHILL	DATE: XX/XX/2025

**CDM Smith**  
6001 Indian School Road, N.E. Suite 310  
Albuquerque, New Mexico 87110  
Tel: (505) 243-3200

**MAPS/RECORDS INFO.**

SUBMITTED BY:		AS BUILT INFORMATION		ENGINEER'S SEAL	
CONTRACTOR COMPANY NAME		CONSTRUCTION BEGIN DATE			
INSPECTOR'S ACCEPTANCE BY		DATE MMM. YYYY			
INSPECTOR'S NAME		DATE MMM. YYYY			
SUBSTANTIAL COMPLETION DATE		DATE MMM. YYYY			
DRAWINGS CORRECTED BY		DATE MMM. YYYY			

**ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY**

**TITLE: VOLCANO CLIFFS ARSENIC TREATMENT FACILITY AND PUMP STATION UPGRADES GRADING PLAN**

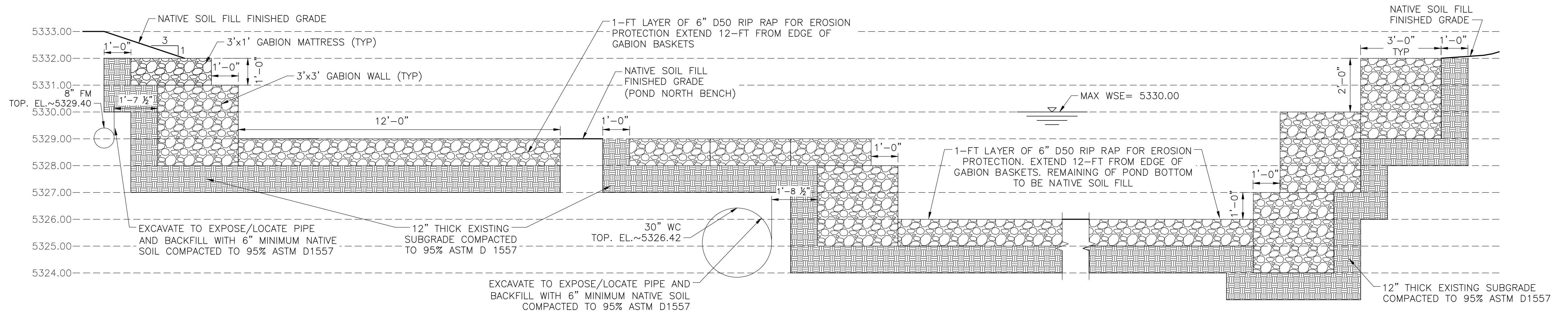
WATER AUTHORITY CONSTRUCTION PROJECT NO. **2822.0** ZONE MAP NO. **D-09-Z** SHEET **C-8**

FOR CONSTRUCTION

XREFS: [Volcano Cliffs Boundary, CEPO00ST, ABCVUA\_22-04, CWP001ST, JMC - STAMP, EWP001TP] Images: []  
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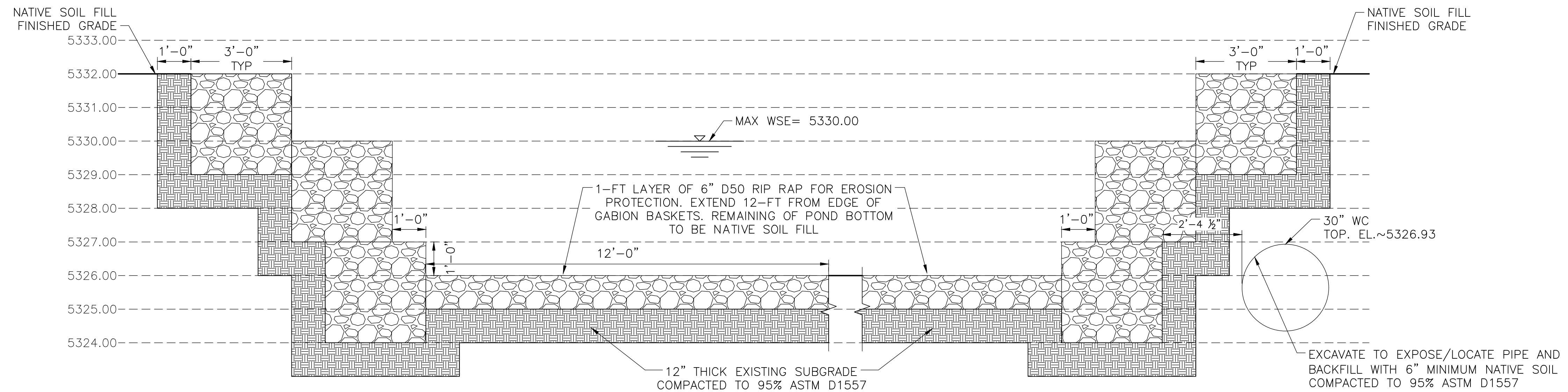
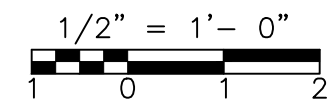
**GABION WALL NOTES:**

- HAND PLACE STONE INFILL AT EXPOSED FACES AND TOP OF WALL. PLACE INDIVIDUAL STONES TO MINIMIZE GAPS AND MAXIMIZE FLAT SIDES FACING OUTWARDS.
- ALL EXPOSED STONE SURFACES SHALL HAVE A SMOOTH AND NEAT APPEARANCE. NO SHARP EDGES SHALL PROJECT THROUGH THE WIRE MESH.
- PLACE STONE INFILL IN NOMINAL 12 INCH DEEP LAYERS TO ENSURE PROPER ALIGNMENT OF BASKETS, AVOID BULGES, AND PROVIDE A MINIMUM OF VOIDS.
- THE LAST LAYER OF STONE FILL IN EACH BASKET SHALL SLIGHTLY OVERFILL THE BASKET SUCH THAT THE LID WILL REST ON STONE WHEN IT IS CLOSED.
- GABION WALLS TO HAVE 4"-8" ANGULAR STONE INFILL. FURNISH EACH AGGREGATE MATERIAL FROM A SINGLE SOURCE.
- PLACE GABIONS AS INDICATED IN THE DRAWINGS. ASSEMBLE EACH GABION PER MANUFACTURER'S INSTRUCTIONS.
- SEE SHEET C-8 FOR OVERALL GRADING PLAN AND GABION WALL EXTENTS.



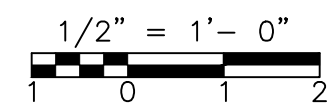
**SECTION A**

SCALE: 1/2" = 1'-0"



**SECTION B**

SCALE: 1/2" = 1'-0"

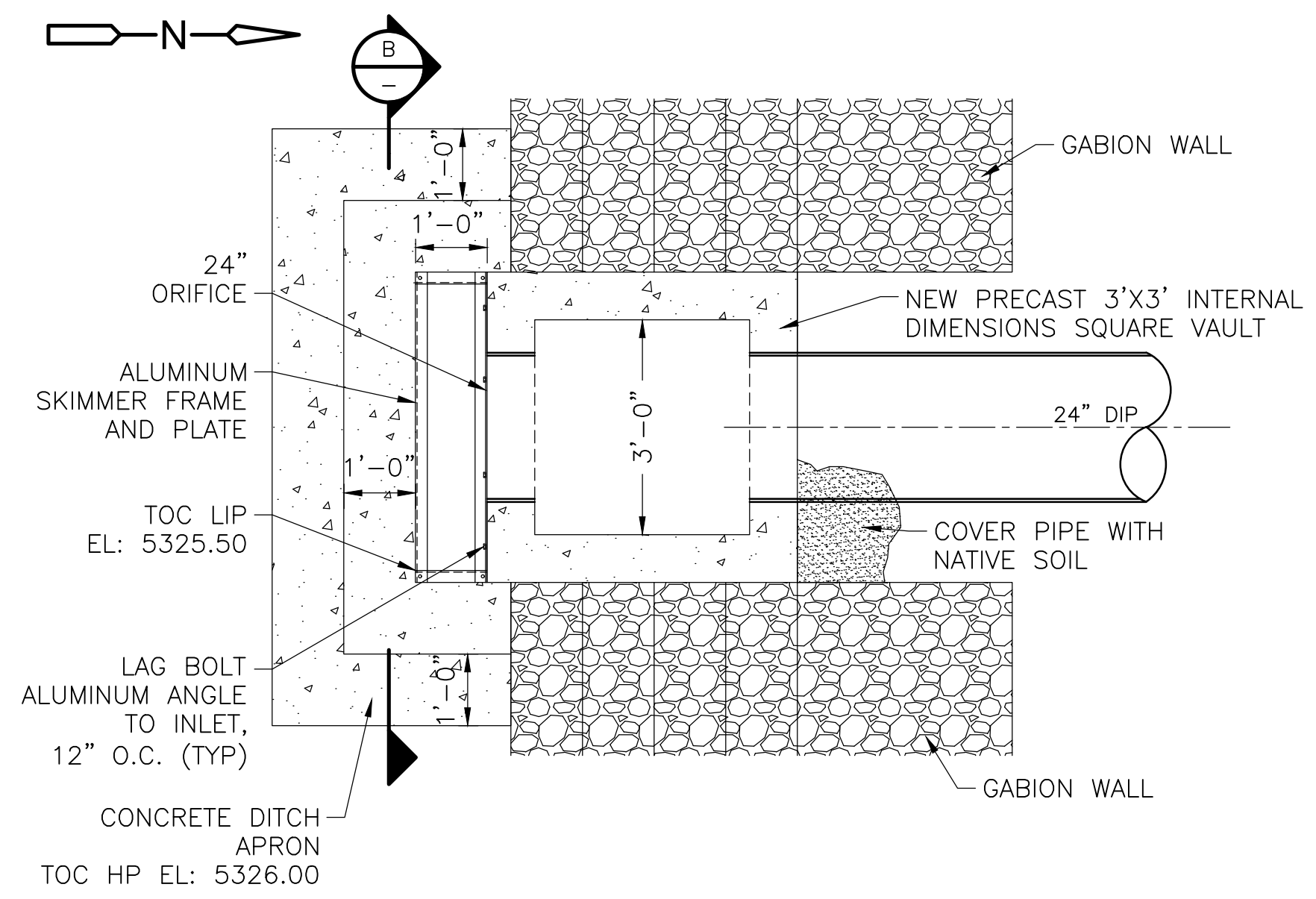


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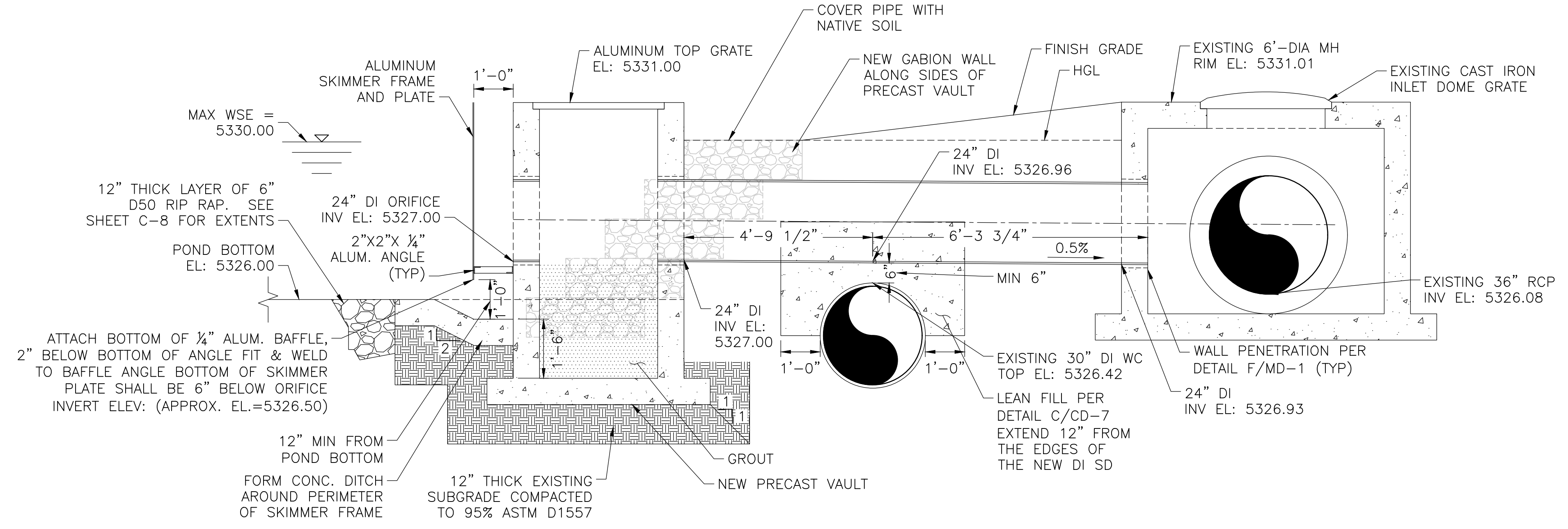
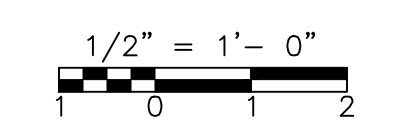
<p>SCALE: 1" = 30'</p> <p>ATTENTION 0 1/2" 1"</p> <p>GRAPHIC SCALE</p>		<p><b>DESIGN TRACKING</b></p> <p>DESIGNED BY: E. BABCOCK DATE: XX/XX/2025</p> <p>DRAWN BY: R. THOMAS DATE: XX/XX/2025</p> <p>CHECKED BY: P. TAURASI DATE: XX/XX/2025</p> <p>CROSS CHK'D BY: B. DIFFENDERFER DATE: XX/XX/2025</p> <p>APPROVED BY: J. CHILL DATE: XX/XX/2025</p>		<p><b>SUBMITTED BY:</b></p> <p><b>CDM Smith</b></p> <p>6001 Indian School Road, N.E. Suite 310 Albuquerque, New Mexico 87110 Tel: (505) 243-3200</p>		<p><b>AS BUILT INFORMATION</b></p> <p>CONTRACTOR COMPANY NAME</p> <p>CONSTRUCTION BEGIN DATE MMM. YYYY</p> <p>INSPECTOR'S ACCEPTANCE BY COMPANY NAME DATE MMM. YYYY</p> <p>INSPECTOR'S NAME NAME</p> <p>SUBSTANTIAL COMPLETION DATE MMM. YYYY</p> <p>DRAWINGS CORRECTED BY COMPANY NAME DATE MMM. YYYY</p>		<p><b>ENGINEER'S SEAL</b></p> <p>JONATHAN CHILL NEW MEXICO 25668 Digitally signed by Jonathan Chill Date: 2026.02.03 17:16:43 -0700 PROFESSIONAL ENGINEER</p>		<p><b>ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY</b></p> <p>TITLE: VOLCANO CLIFFS ARSENIC TREATMENT FACILITY AND PUMP STATION UPGRADES GRADING PLAN DETAILS &amp; SECTIONS I</p>	
NO.	DATE	FIELD ORDER NO. & DESCRIPTION	BY	<p><b>MAPS/RECORDS INFO.</b></p>		<p>WATER AUTHORITY CONSTRUCTION PROJECT NO. 2822.0</p>		<p>ZONE MAP NO. D-09-Z SHEET C-8A</p>			

FOR CONSTRUCTION

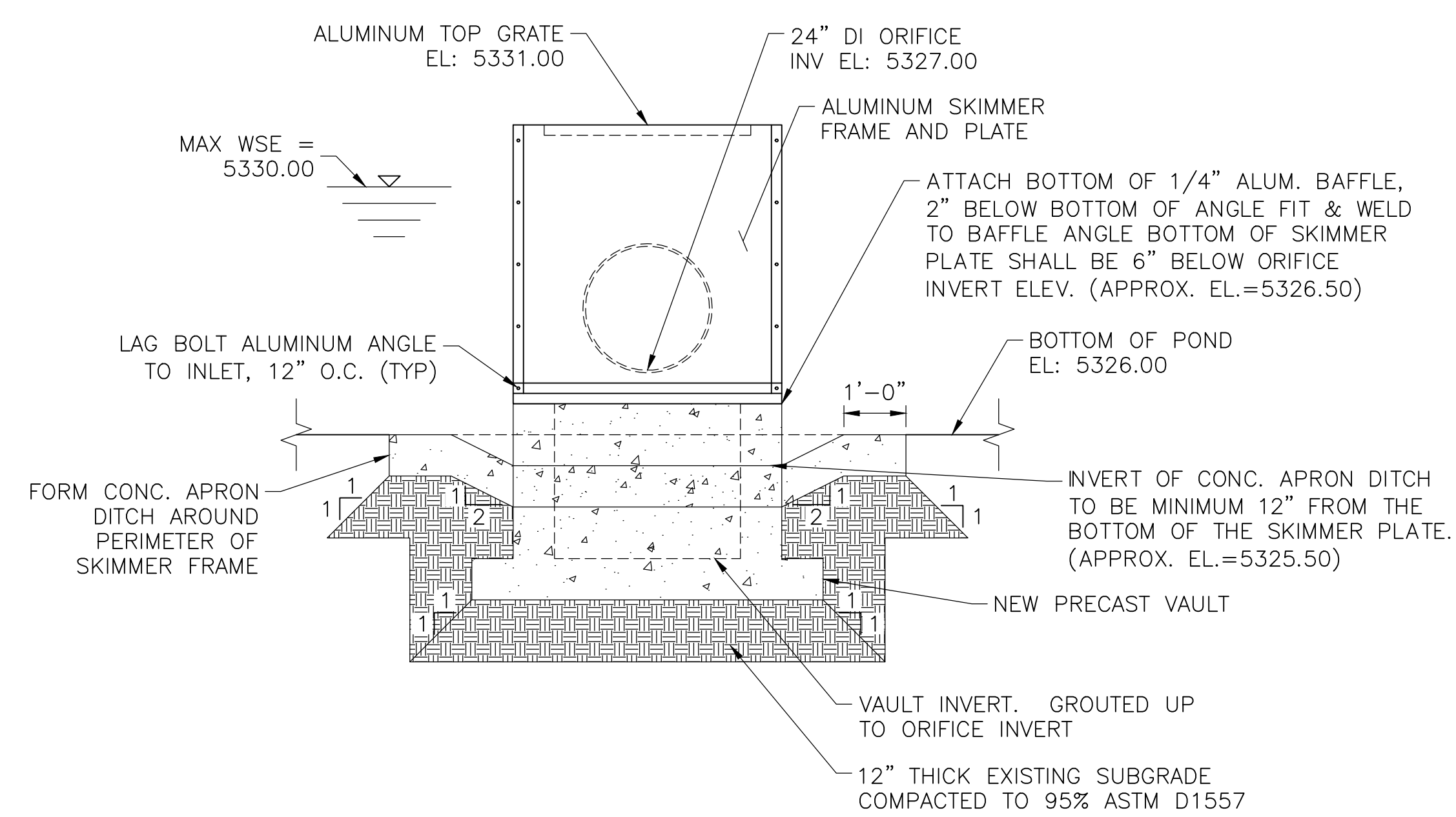
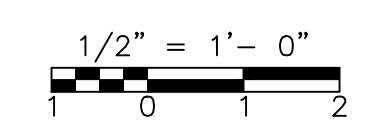
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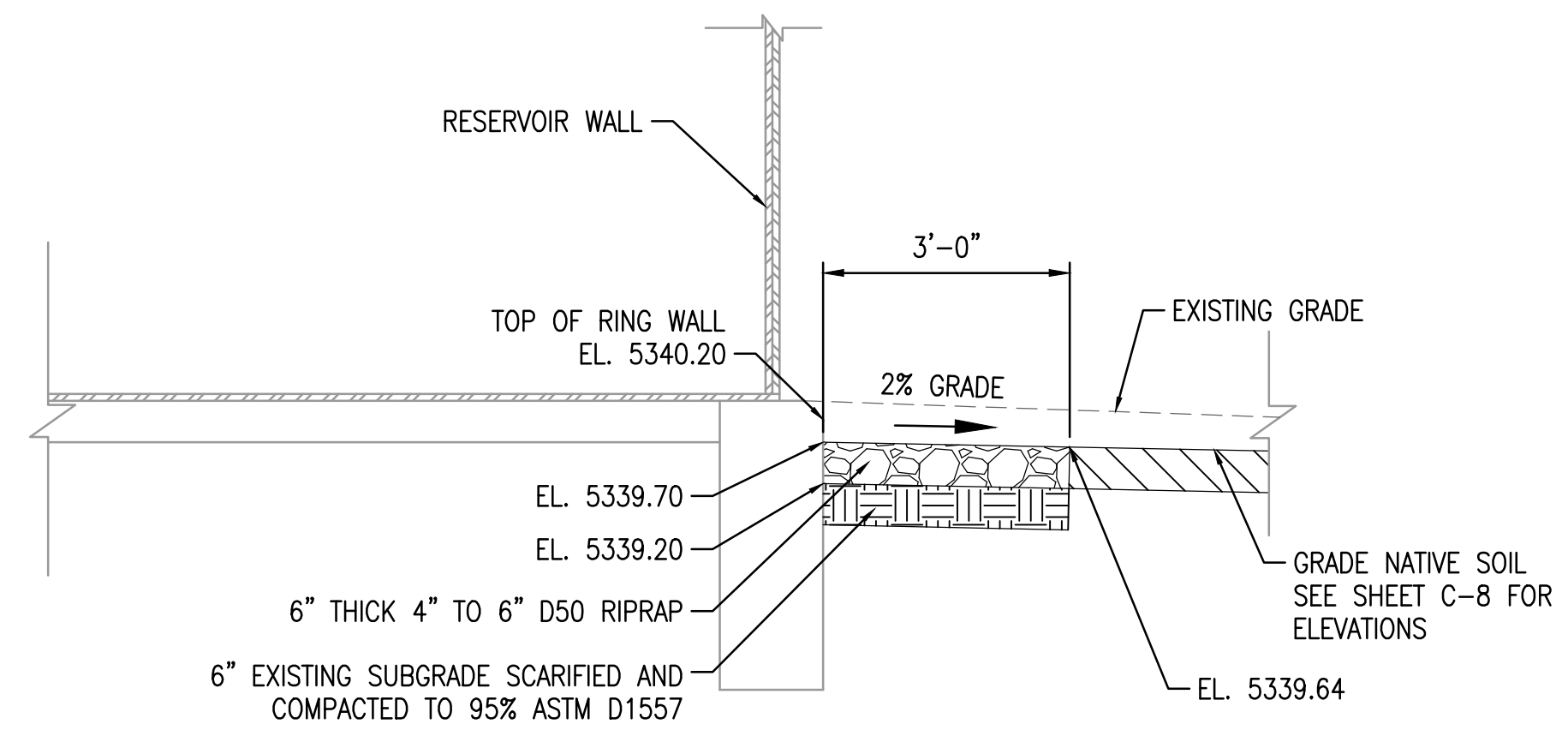
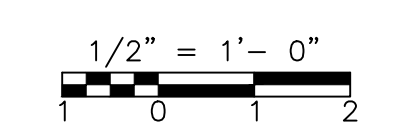
**DETENTION POND DISCHARGE STRUCTURE ENLARGED PLAN**  
SCALE: 1/2" = 1'-0"



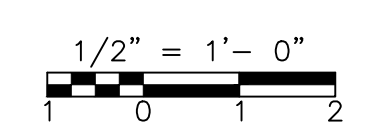
**SECTION A**  
SCALE: 1/2" = 1'-0"



**SECTION B**  
SCALE: 1/2" = 1'-0"



**SECTION C**  
SCALE: 1/2" = 1'-0"



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NO.	DATE	REVISION NO. & DESCRIPTION	BY
1	02/03/2026	FIELD ORDER NO. 27	EB

SCALE:		DESIGN TRACKING	
1" = 30'		DESIGNED BY: E. BABCOCK	DATE: XX/XX/2025
ATTENTION		DRAWN BY: R. THOMAS	DATE: XX/XX/2025
0 1/2" 1"		CHECKED BY: P. TAURASI	DATE: XX/XX/2025
GRAPHIC SCALE		CROSS CHK'D BY: B. DIFFENDERFER	DATE: XX/XX/2025
		APPROVED BY: J. CHILL	DATE: XX/XX/2025

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		CONSTRUCTION BEGIN DATE	MMM. YYYY
		INSPECTOR'S ACCEPTANCE BY COMPANY NAME	DATE MMM. YYYY
		INSPECTOR'S NAME	
		SUBSTANTIAL COMPLETION DATE	MMM. YYYY
		DRAWINGS CORRECTED BY COMPANY NAME	DATE MMM. YYYY

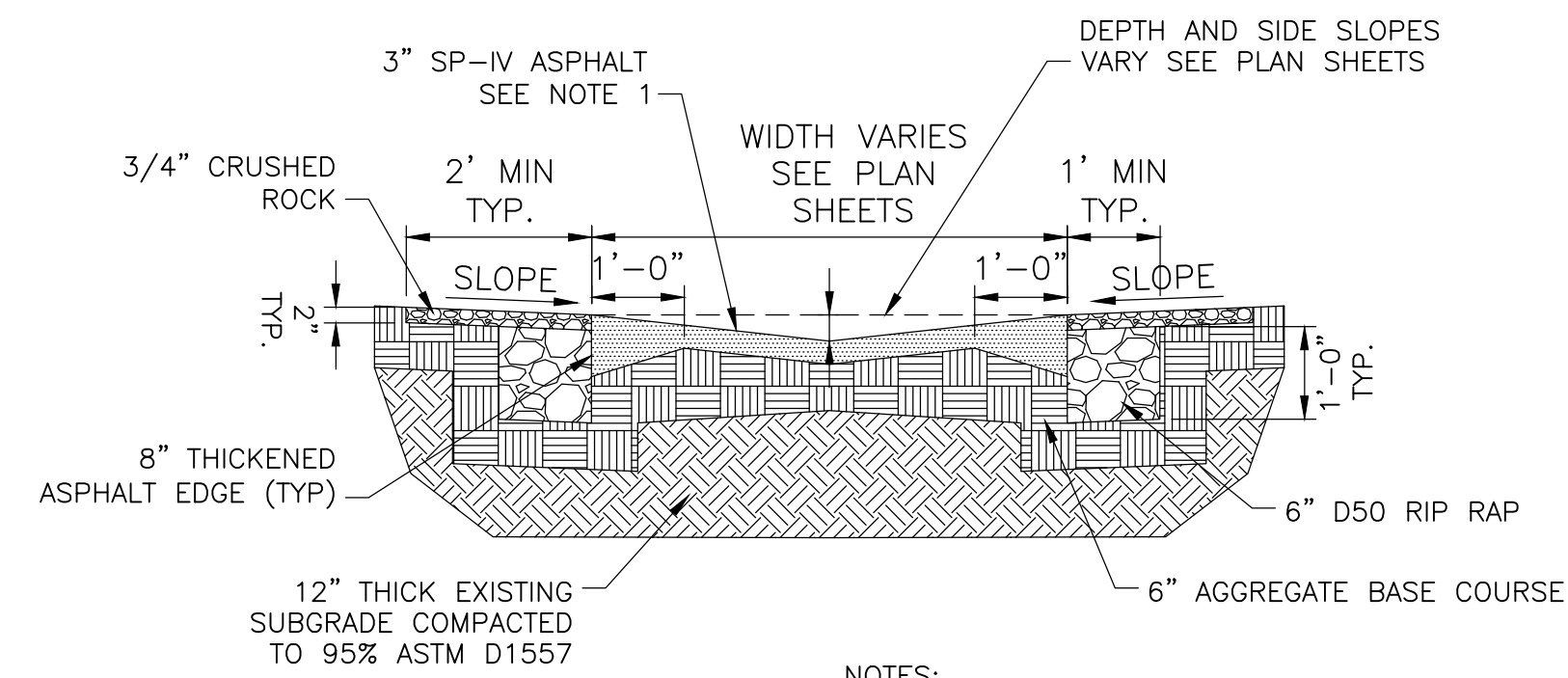
**ENGINEER'S SEAL**

JOYATHON CHILL  
NEW MEXICO  
25668  
PROFESSIONAL ENGINEER

ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY			
TITLE: VOLCANO CLIFFS ARSENIC TREATMENT FACILITY AND PUMP STATION UPGRADES			
GRADING PLAN SWALE DETAILS & SECTIONS II			
WATER AUTHORITY CONSTRUCTION PROJECT NO.	2822.0	ZONE MAP NO. D-09-Z	SHEET C-8B

FOR CONSTRUCTION

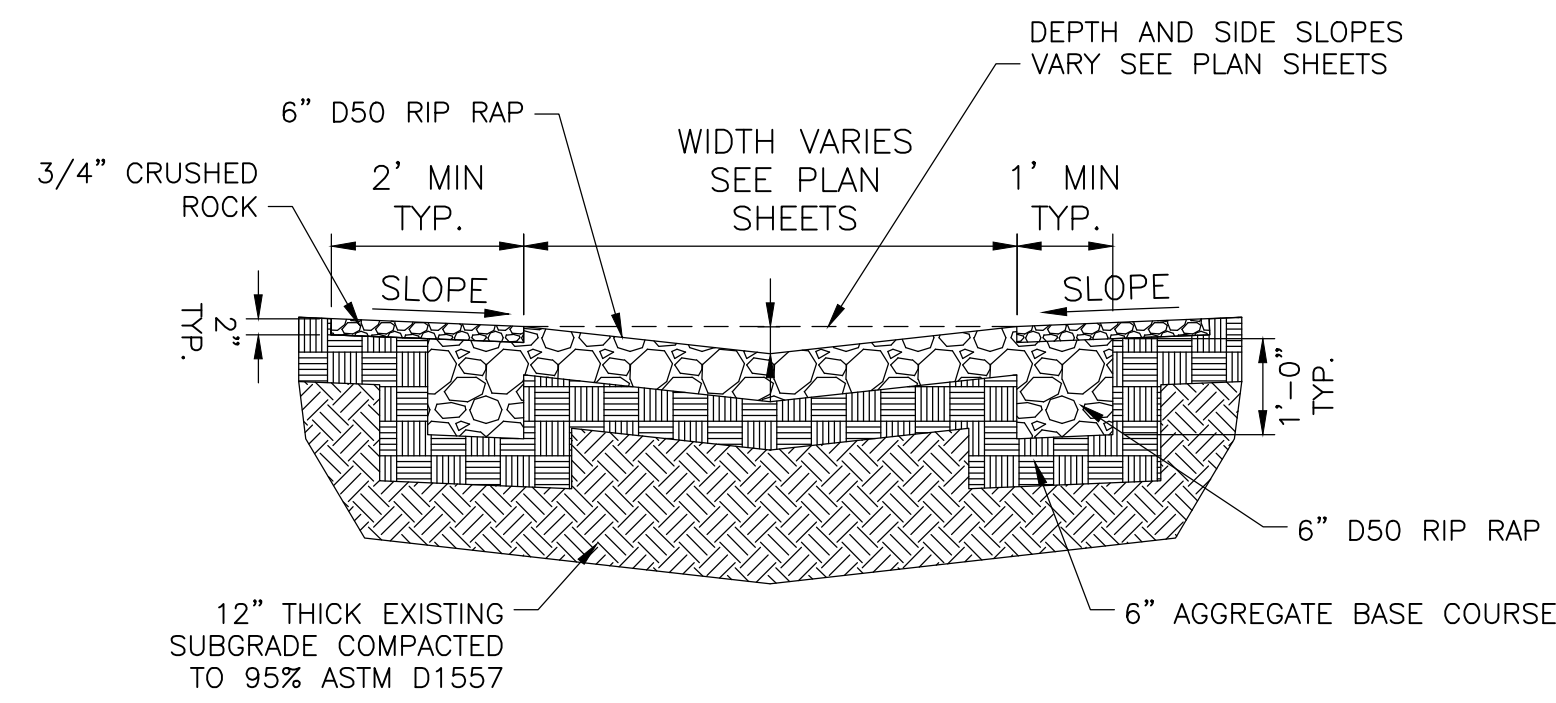
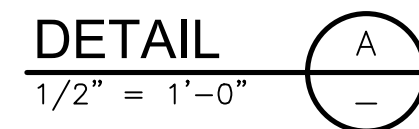
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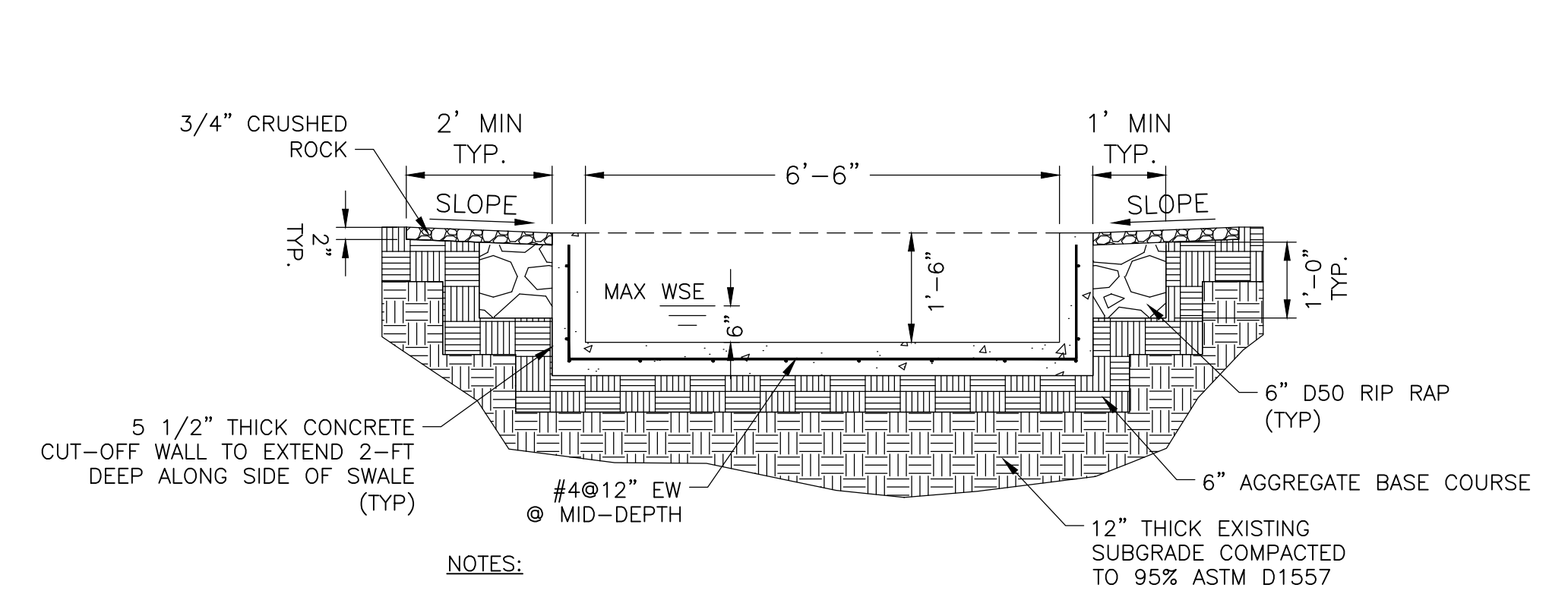
**NOTES:**

1. SP-IV ASPHALT TO CONFORM TO COA STANDARD SPECIFICATION SECTION 116.
2. TYPICAL DETAIL FOR SWALES 2A, 2B, 3B, AND 4. SEE SWALE GEOMETRY TABLE ON C-8E FOR DIMENSIONS.

**ASPHALT SWALE TYPICAL SECTION**



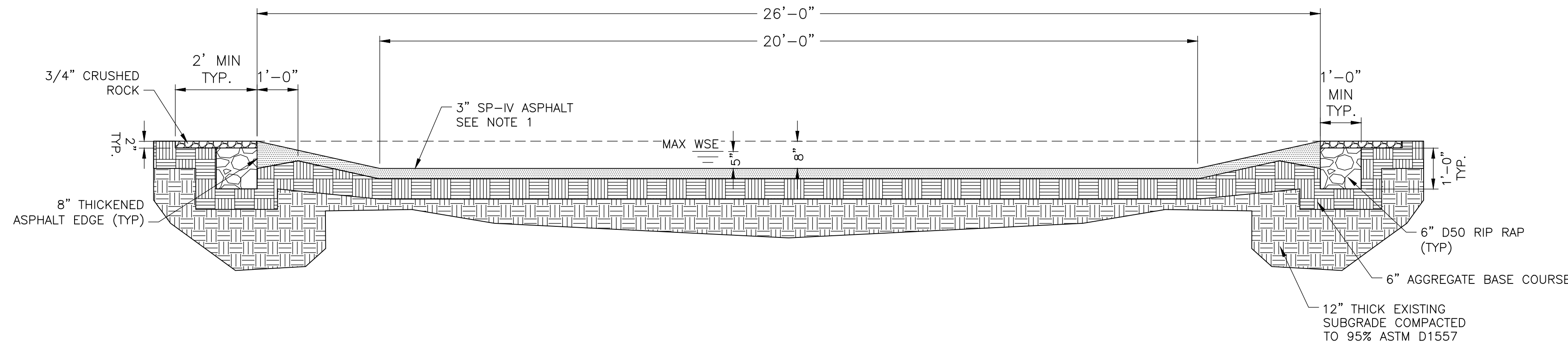
**SWALE 3A TYPICAL SECTION (RIP RAP SWALE)**



**NOTES:**

1. CONSTRUCTION CONTROL JOINTS AT 15' O.C. MAX.
2. SEALED 1/2" EXPANSION JOINTS AT 50' O.C. MAX.
3. REINFORCEMENT SHALL NOT CONTINUE THROUGH EXPANSION JOINTS.

**SWALE 1B TYPICAL SECTION (CONCRETE SWALE)**



**NOTES:**

1. SP-IV ASPHALT TO CONFORM TO COA STANDARD SPECIFICATION SECTION 116.

**SWALE 1A TYPICAL SECTION (ASPHALT SWALE)**



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<p>SCALE: 1" = 30'</p> <p>ATTENTION</p> <p>0 1/2" 1"</p> <p>GRAPHIC SCALE</p> <p>THIS BAR MEASURES 1" AT FULL SCALE (ANSI D)</p>		<p><b>DESIGN TRACKING</b></p> <p>DESIGNED BY: E. BABCOCK DATE: XX/XX/2025</p> <p>DRAWN BY: R. THOMAS DATE: XX/XX/2025</p> <p>CHECKED BY: P. TAURASI DATE: XX/XX/2025</p> <p>CROSS CHK'D BY: B. DIFFENDERFER DATE: XX/XX/2025</p> <p>APPROVED BY: J. CHILL DATE: XX/XX/2025</p>		<p><b>SUBMITTED BY:</b></p> <p><b>CDM Smith</b></p> <p>6001 Indian School Road, N.E. Suite 310 Albuquerque, New Mexico 87110 Tel: (505) 243-3200</p>		<p><b>AS BUILT INFORMATION</b></p> <p>CONTRACTOR COMPANY NAME</p> <p>CONSTRUCTION BEGIN DATE MMM. YYYY</p> <p>INSPECTOR'S ACCEPTANCE BY COMPANY NAME DATE MMM. YYYY</p> <p>INSPECTOR'S NAME NAME</p> <p>SUBSTANTIAL COMPLETION DATE MMM. YYYY</p> <p>DRAWINGS CORRECTED BY COMPANY NAME DATE MMM. YYYY</p>		<p><b>ENGINEER'S SEAL</b></p> <p>JONATHAN CHILL NEW MEXICO 25658 Digitally signed by Jonathon Chill Date: 2026.03.17:17:20:07-07 PROFESSIONAL ENGINEER</p>		<p><b>ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY</b></p> <p>TITLE: VOLCANO CLIFFS ARSENIC TREATMENT FACILITY AND PUMP STATION UPGRADES <b>GRADING PLAN SWALE DETAILS &amp; SECTIONS I</b></p>	
NO.	DATE	REVISION NO. & DESCRIPTION	BY	<p><b>MAPS/RECORDS INFO.</b></p>		<p>WATER AUTHORITY CONSTRUCTION PROJECT NO. <b>2822.0</b></p>		<p>ZONE MAP NO. <b>D-09-Z</b> SHEET <b>C-8C</b></p>			

**FOR CONSTRUCTION**

XREFS: \Volcano\_Cliffs\_Boundary\_CEP000ST\_ABCWUA\_22-04\_XX-Elec\_Site\_Plan - For CDM, JMC - STAMP\_CWP001\ST Images -  
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**SWALE GEOMETRY TABLE**

SWALE NO.	TOP WIDTH (FT)	BOTTOM WIDTH (FT)	SIDE SLOPE	SLOPE	DEPTH	MAX WATER DEPTH	SURFACE MATERIAL	DETAIL
1A	26	20	22%	0.5%	0.67	0.41	ASPHALT	C-8C/D
1B	6.5	6.5	VERTICAL	2.13%	1.50	0.50	CONCRETE	C-8C/C
2A	12	0	4%	2%	0.24	0.20	ASPHALT	C-8C/A
2B	12	0	10%	0.5%	0.60	0.36	ASPHALT	C-8C/A
3A	8.5	0	33%	0.5%	1.40	0.76	RIP RAP	C-8C/B
3B	8.5	0	8%	0.5%	0.34	0.30	ASPHALT	C-8C/A
4	10	0	5%	1%	0.20	0.20	ASPHALT	C-8C/A

\*SWALE GEOMETRIES VARY ALONG SWALE LENGTHS. SEE DIMENSIONS ON C-8 AND POINT TABLES ON THIS SHEET.

**SWALE 1 POINT TABLE**

STATION	NORTHING	EASTING	INVERT ELEV	MAXIMUM WSE
100+00.00 - BOA	1514114.61	1497510.49	5339.10	5339.51
100+10.00	1514117.27	1497520.14	5339.05	5339.46
100+20.00	1514119.92	1497529.78	5338.99	5339.40
100+30.00	1514122.58	1497539.42	5338.94	5339.35
100+40.00	1514125.23	1497549.06	5338.89	5339.30
100+49.16 - PC	1514127.66	1497557.89	5338.84	5339.25
100+50.00	1514127.89	1497558.70	5338.83	5339.24
100+60.00	1514131.10	1497568.16	5338.78	5339.19
100+70.00	1514135.25	1497577.26	5338.73	5339.14
100+80.00	1514140.28	1497585.90	5338.67	5339.08
100+90.00	1514146.16	1497593.98	5338.62	5339.03
100+97.26 - Mid	1514150.91	1497599.46	5338.58	5338.99
101+00.00	1514152.81	1497601.44	5338.57	5338.98
101+10.00	1514160.18	1497608.19	5338.51	5338.92
101+20.00	1514168.19	1497614.18	5338.46	5338.87
101+30.00	1514176.76	1497619.33	5338.41	5338.82
101+40.00	1514185.80	1497623.59	5338.36	5338.77
101+45.36 - PT	1514190.81	1497625.50	5338.33	5338.74
101+50.00	1514195.18	1497627.03	5338.30	5338.71
101+60.00	1514204.62	1497630.34	5338.25	5338.66
101+70.00	1514214.06	1497633.65	5338.20	5338.61
101+80.00	1514223.50	1497636.95	5338.14	5338.55
101+90.00	1514232.94	1497640.26	5338.09	5338.50
102+00.00	1514242.37	1497643.56	5338.04	5338.45
102+10.00	1514251.81	1497646.87	5337.98	5338.39
102+20.00	1514261.25	1497650.18	5337.93	5338.34
102+30.00	1514270.69	1497653.48	5337.88	5338.29
102+40.00	1514280.12	1497656.79	5337.82	5338.23
102+50.00	1514289.56	1497660.10	5337.77	5338.18
102+60.00	1514299.00	1497663.40	5337.72	5338.13
102+64.77 - PC	1514303.50	1497664.98	5337.69	5338.10
102+70.00	1514308.31	1497667.03	5337.58	5337.99
102+80.00	1514316.58	1497672.60	5337.37	5337.78
102+90.00	1514323.22	1497680.04	5337.16	5337.66
102+90.01 - Mid	1514323.23	1497680.05	5337.16	5337.66
103+00.00	1514327.81	1497688.90	5336.95	5337.45
103+10.00	1514330.07	1497698.61	5336.74	5337.24
103+15.24 - PT	1514330.26	1497703.85	5336.63	5337.13
103+20.00	1514330.13	1497708.60	5336.53	5337.03
103+30.00	1514329.85	1497718.60	5336.32	5336.82
103+40.00	1514329.57	1497728.59	5336.11	5336.61
103+50.00	1514329.30	1497738.59	5335.90	5336.40
103+60.00	1514329.02	1497748.59	5335.69	5336.19
103+70.00	1514328.74	1497758.58	5335.48	5335.98
103+80.00	1514328.46	1497768.58	5335.27	5335.77
103+82.59 - PI	1514328.39	1497771.17	5335.22	5335.72
103+90.00	1514328.39	1497778.58	5335.06	5335.56
104+00.00	1514328.39	1497788.58	5334.85	5335.35
104+10.00	1514328.39	1497798.58	5334.64	5335.14
104+20.00	1514328.39	1497808.58	5334.43	5334.93
104+30.00	1514328.39	1497818.58	5334.22	5334.72
104+40.00	1514328.39	1497828.58	5334.01	5334.51
104+50.00	1514328.39	1497838.58	5333.80	5334.30
104+60.00	1514328.39	1497848.58	5333.59	5334.09
104+70.00	1514328.39	1497858.58	5333.38	5333.88
104+80.00	1514328.39	1497868.58	5333.17	5333.67
104+90.00	1514328.39	1497878.58	5332.96	5333.46
105+00.00	1514328.39	1497888.58	5332.75	5333.25
105+10.00	1514328.39	1497898.58	5332.54	5333.04
105+20.00	1514328.39	1497908.58	5332.33	5332.83
105+30.00	1514328.39	1497918.58	5332.12	5332.62
105+40.00	1514328.39	1497928.58	5331.91	5332.41
105+50.00	1514328.39	1497938.58	5331.70	5332.20
105+60.00	1514328.39	1497948.58	5331.49	5331.99
105+70.00	1514328.39	1497958.58	5331.28	5331.78
105+80.00	1514328.39	1497968.58	5331.07	5331.57
105+86.23 - EOA	1514328.39	1497974.81	5330.94	5331.35

**SWALE 2 POINT TABLE**

STATION	NORTHING	EASTING	INVERT ELEV	MAXIMUM WSE
200+00.00 - BOA	1514050.23	1497590.56	5340.26	5340.46
200+10.00	1514050.23	1497600.56	5340.14	5340.34
200+20.00	1514050.23	1497610.56	5340.03	5340.23
200+30.00	1514050.23	1497620.56	5339.91	5340.11
200+40.00	1514050.23	1497630.56	5339.79	5339.99
200+50.00	1514050.23	1497640.56	5339.68	5339.88
200+60.00	1514050.23	1497650.56	5339.56	5339.76
200+60.12 - PI	1514050.23	1497650.68	5339.56	5339.76
200+70.00	1514050.23	1497660.56	5339.45	5339.65
200+80.00	1514050.23	1497670.56	5339.33	5339.53
200+90.00	1514050.23	1497680.56	5339.21	5339.41
201+00.00	1514050.23	1497690.56	5339.10	5339.30
201+10.00	1514050.23	1497700.56	5338.98	5339.18
201+20.00	1514050.23	1497710.56	5338.87	5339.07
201+20.25 - PI	1514050.23	1497710.81	5338.86	5339.06
201+30.00	1514051.53	1497720.47	5338.70	5338.90
201+40.00	1514052.86	1497730.38	5338.53	5338.73
201+50.00	1514054.20	1497740.29	5338.36	5338.56
201+60.00	1514055.53	1497750.20	5338.19	5338.39
201+70.00	1514056.87	1497760.11	5338.02	5338.22
201+80.00	1514058.20	1497770.02	5337.85	5338.05
201+90.00	1514059.54	1497779.94	5337.68	5337.88
202+00.00	1514060.87	1497789.85	5337.51	5337.71
202+10.00	1514062.21	1497799.76	5337.34	5337.54
202+20.00	1514063.54	1497809.67	5337.17	5337.37
202+26.94 - PI	1514064.47	1497816.55	5337.05	5337.25
202+30.00	1514065.31	1497819.49	5336.99	5337.19
202+40.00	1514068.07	1497829.10	5336.79	5336.99
202+50.00	1514070.83	1497838.71	5336.59	5336.79
202+60.00	1514073.59	1497848.32	5336.39	5336.59
202+70.00	1514076.35	1497857.93	5336.19	5336.39
202+74.49 - PI	1514077.59	1497862.25	5336.10	5336.30
202+80.00	1514082.27	1497865.16	5336.07	5336.27
202+90.00	1514090.75	1497870.45	5336.02	5336.38
203+00.00	1514099.24	1497875.73	5335.97	5336.33
203+10.00	1514107.73	1497881.02	5335.92	5336.28
203+20.00	1514116.22	1497886.31	5335.87	5336.23
203+27.48 - PI	1514122.56	1497890.26	5335.83	5336.19
203+30.00	1514124.02	1497892.32	5335.82	5336.18
203+40.00	1514129.80	1497900.48	5335.77	5336.13
203+50.00	1514135.58	1497908.64	5335.72	5336.08
203+53.01 - EOA	1514137.32	1497911.10	5335.71	5336.07

**SWALE 3 POINT TABLE**

STATION	NORTHING	EASTING	INVERT ELEV	MAXIMUM WSE
300+00.00 - BOA	1514049.73	1498053.32	5333.27	5334.03
300+10.00	1514059.73	1498053.32	5333.07	5333.83
300+20.00	1514069.73	1498053.32	5332.87	5333.63
300+29.41 - PI	1514079.14	1498053.32	5332.82	5333.58
300+30.00	1514079.47	1498053.81	5332.82	5333.58
300+40.00	1514085.13	1498062.06	5332.77	5333.53
300+45.62 - PI	1514088.31	1498066.69	5332.74	5333.50
300+50.00	1514092.63	1498067.41	5332.72	5333.48
300+60.00	1514102.49	1498069.05	5332.67	5333.43
300+70.00	1514112.35	1498070.69	5332.62	5333.38
300+80.00	1514122.22	1498072.33	5332.57	5333.33
300+90.00	1514132.08	1498073.97	5332.52	5333.28
301+00.00	1514141.95	1498075.61	5332.47	5333.23
301+04.61 - PI	1514146.50	1498076.36	5332.45	5333.21
301+10.00	1514151.89	1498076.36	5332.42	5333.18
301+20.00	1514161.89	1498076.36	5332.37	5333.13
301+30.00	1514171.89	1498076.36	5332.32	5333.08
301+40.00	1514181.89	1498076.36	5332.27	5333.03
301+50.00	1514191.89	1498076.36	5332.22	5332.98
301+60.00	1514201.89	1498076.36	5332.17	5332.93
301+70.00	1514211.89	1498076.36	5332.12	5332.88
301+80.00	1514221.89	1498076.36	5332.07	5332.83
301+86.95 - PI	1514228.84	1498076.36	5332.04	5332.80
301+90.00	1514231.07	1498074.28	5332.02	5332.78
302+00.00 - EOA	1514238.38	1498067.46	5331.97	5332.73

**SWALE 4 POINT TABLE**

STATION	NORTHING	EASTING	INVERT ELEV	MAXIMUM WSE
400+00.00 - BOA	1514154.13	1497692.14	5339.54	5339.74
400+10.00	1514159.82	1497700.37	5339.42	5339.62
400+20.00	1514165.50	1497708.60	5339.30	5339.50
400+25.76 - PC	1514168.77	1497713.34	5339.23	5339.43
400+30.00	1514171.53	1497716.55	5339.18	5339.38
400+34.47 - Mid	1514175.10	1497719.22	5339.12	5339.32
400+40.00	1514180.19	1497721.33	5339.06	5339.26
400+43.18 - PT	1514183.32	1497721.88	5339.02	5339.22
400+50.00	1514190.11	1497722.53	5338.94	5339.14
400+60.00	1514200.07	1497723.48	5338.81	5339.01
400+67.59 - PC	1514207.62	1497724.21	5338.72	5338.92
400+70.00	1514210.02	1497724.46	5338.70	5338.90
400+80.00	1514219.87	1497726.15	5338.60	5338.80
400+90.00	1514229.51	1497728.81	5338.50	5338.70
400+92.14 - Mid	1514231.53			

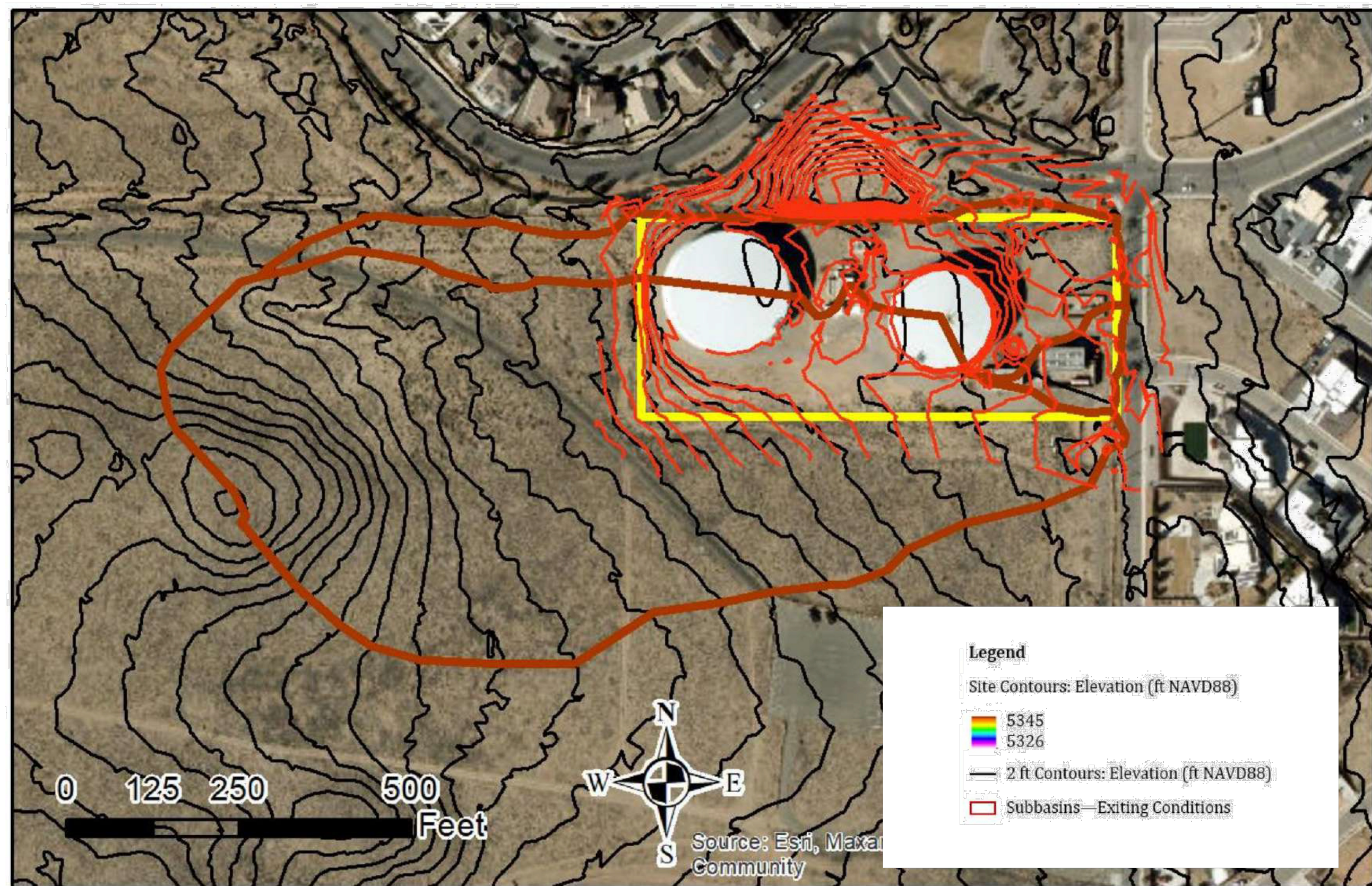


Figure 1: Subbasins with Current Conditions

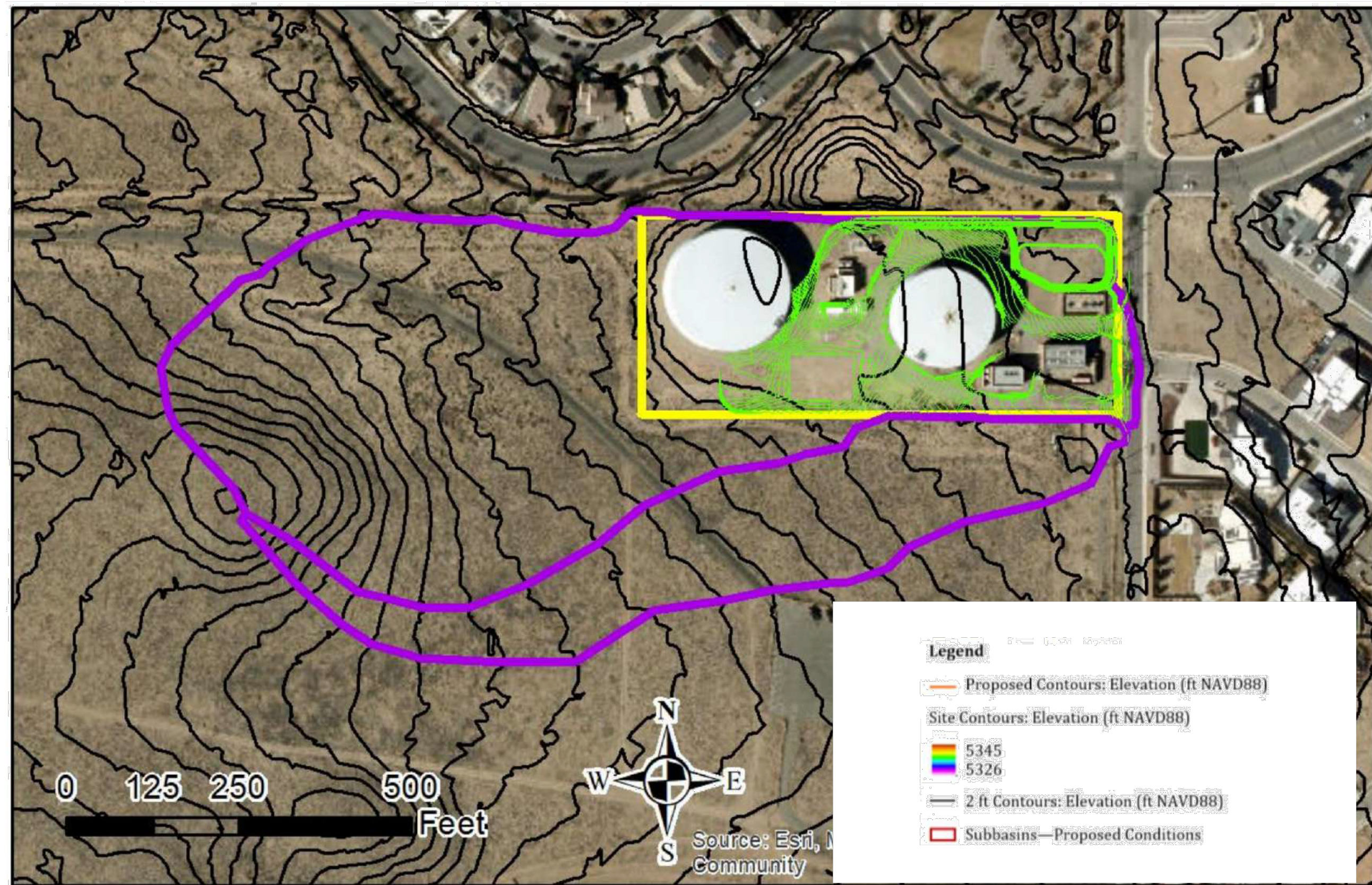
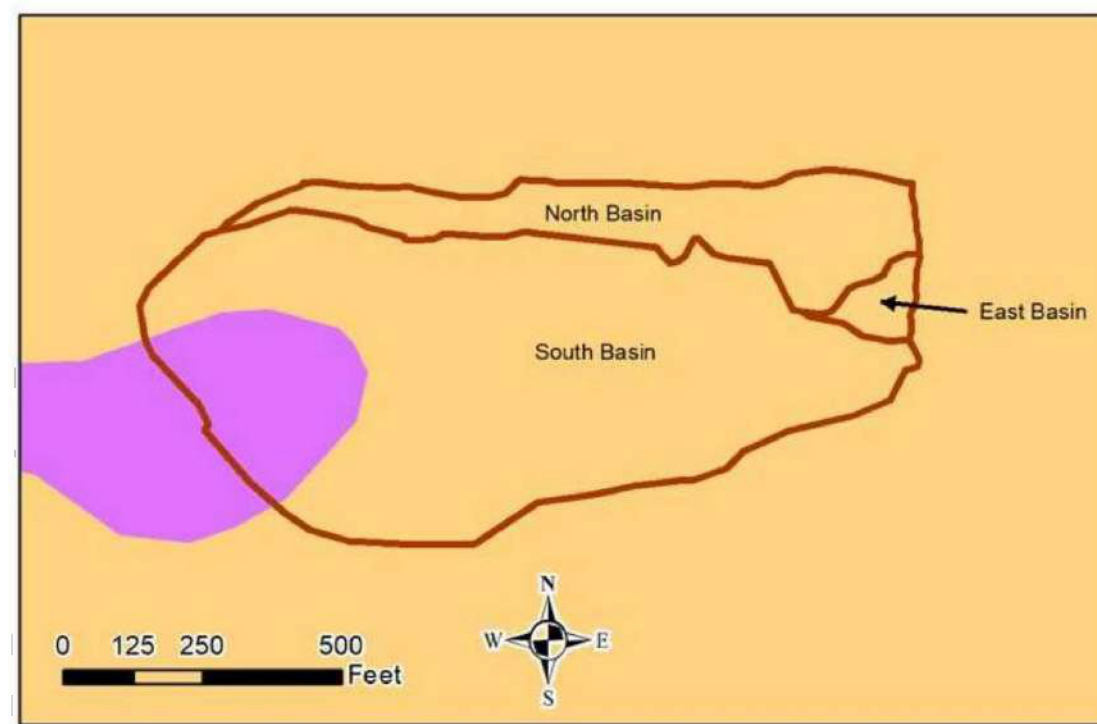


Figure 2: Subbasins with Proposed Development and Grading

Existing Conditions



DRAINAGE ANALYSIS APPROACH:

THE DRAINAGE ANALYSIS FOR THE SITE WAS PERFORMED IN ACCORDANCE WITH METHODS OUTLINED IN THE DEVELOPMENT PROCESS MANUAL (DPR) CHAPTER 6, ARTICLE 6-2, SECTION 6.2 (A), ENTITLED "PROCEDURE FOR 40-ACRE OR SMALLER BASINS." THE DESIGN STORM USED FOR BOTH EXISTING AND DEVELOPED CONDITIONS IS THE 100-YEAR 6-HOUR STORM EVENT FOR RUNOFF. RUNOFF VOLUMES FOR BOTH EXISTING AND PROPOSED CONDITIONS WERE CALCULATED WITH 100-YEAR 6 HOUR EXCESS PRECIPITATION VALUES FROM THE DPM BASED ON ZONE 1. PEAK DISCHARGE FLOW RATES WERE CALCULATED USING THE RATIONAL METHOD FOR THE 100-YEAR EVENT ASSUMING A TIME OF CONCENTRATION DURATION OF 12 MINUTES IN ZONE 1. THE REQUIRED STORMWATER QUALITY VOLUME (SWQV) WAS CALCULATED AS SPECIFIED FOR REDEVELOPMENT PROJECTS IN THE DPM PER PART 6-12 STORMWATER QUALITY AND LOW-IMPACT DEVELOPMENT.

Basins	Area (acres)		Impervious Area (acres)		Volume (ft <sup>3</sup> )		SWQV (ft <sup>3</sup> )	
	Existing	Proposed	Existing	Proposed	Excess Precip Method	Proposed	Existing	Proposed
North Basin	3.14	12.38	0.92	2.74	13,145	56,429	873	2,588
East Basin	0.37	0.00	0.17	0.00	1,871	0	162	0
South Basin	12.76	3.80	1.11	0.08	49,786	11,330	1,049	73
<b>Total</b>	<b>16.27</b>	<b>16.18</b>	<b>2.21</b>	<b>2.82</b>	<b>64,802</b>	<b>67,759</b>	<b>1,774</b>	<b>2,287</b>

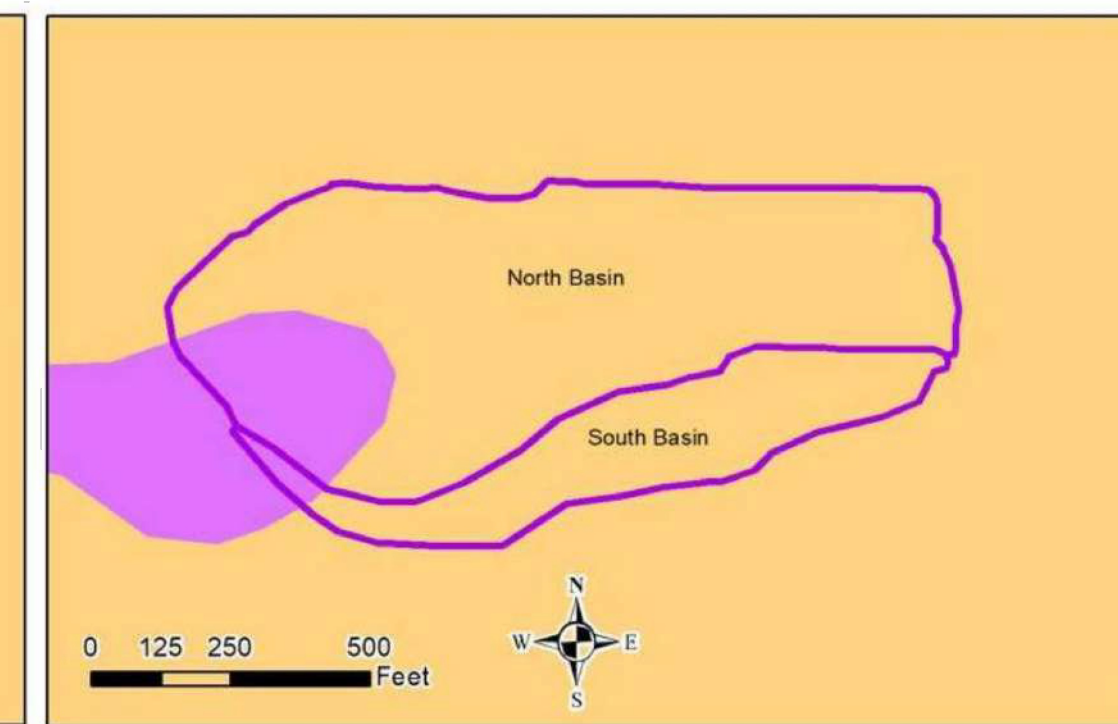
DRAINAGE ANALYSIS RESULTS:

FOR THE THREE IMPACTED SUBBASINS, THE PEAK RUNOFF VOLUME UNDER EXISTING CONDITIONS IS 64,802 CF DURING A 100-YEAR 6-HOUR STORM EVENT. FOR THE THREE IMPACTED SUBBASINS, THE PEAK RUNOFF VOLUME AND FLOW UNDER PROPOSED CONDITIONS IS WITHOUT ATTENUATION IS 67,759 CF AND 44.3 CFS. DURING A 100-YEAR 6-HOUR STORM EVENT. FOR THE THREE IMPACTED SUBBASINS, THE SWQV UNDER PROPOSED CONDITIONS IS 2,287 CF TO BE RETAINED ON SITE.

TO ATTENUATE THE POST-DEVELOPMENT 100-YEAR 6-HOUR HYDROGRAPH, THE DETENTION POND IN THE NE CORNER OF THE SITE IS PROPOSED TO PROVIDE STORAGE VOLUME TO CAPTURE HIGHER STORM INFLOW BEFORE DISCHARGING TO THE ON SITE STORM DRAIN PIPE ON THE NORTH SIDE OF THE SITE. THE EXISTING STORM DRAIN IS 36" WITH THE ONLY UPSTREAM FLOWS COMING FROM THE TWO ON SITE RESERVOIR OVERFLOW STORM DRAINS. THIS STORM DRAIN THEN CONNECTS TO A LARGER 48" STORM DRAIN INTERCEPTOR OFF SITE JUST NORTH OF THE SITE. BASED ON A MEETING WITH THE CITY OF ALBUQUERQUE, A SIGNIFICANT FRACTION OF THE FLOW CAPACITY OF THE EXISTING 36" STORM DRAIN IS ACCEPTABLE TO DISCHARGE FROM THE DETENTION POND.

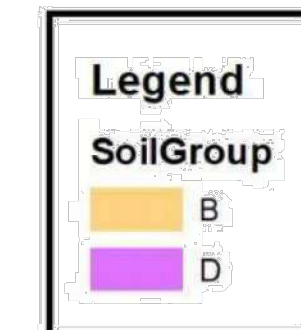
A SWMM MODEL WAS DEVELOPED ALONG WITH A SIMPLIFIED HYDROGRAPH TO ROUTE THE 100-YEAR 6-HOUR STORM THROUGH THE DETENTION POND. THE HYDROGRAPH PLACED THE PEAK FLOW RATE OF 44.3 CFS LINEARLY INTERPOLATED VALUES FROM TIME 0:00 AND 6:00, AND THEN APPLIED A CONSTANT REDUCTION FACTOR TO EACH INTERPOLATED VALUE UNTIL THE TOTAL RUNOFF VOLUME EQUATED TO TOTAL BASIN RUNOFF OF 67,759 CF. THE SYNTHETICALLY DEVELOPED SITE INFLOW HYDROGRAPH WAS ENTERED INTO THE SWMM MODEL AS A TIME-SERIES WITH 10-MINUTE INCREMENTS AND RESULTS WERE CALCULATED ON 1-MINUTE INCREMENTS. THE MODEL WAS RUN FOR A TOTAL OF 8 HOURS TO ENSURE ALL FLOW WAS EITHER RETAINED OR DISCHARGED. THE GRAPH TO THE RIGHT SHOWS THE INFLOW AND OUTFLOW HYDROGRAPHS ALONG WITH THE POND STORAGE OVER TIME. THE MODEL SHOWS THAT WITH A 24 INCH ORIFICE SET AT INVERT ELEVATION 5327.06 FT, THE RESULTING PEAK SURFACE ELEVATION 5330.0 FT DURING THE 100-YEAR, 6-HOUR STORM AND THE PEAK ATTENUATED DISCHARGE FLOW RATE TO THE EXISTING 36" STORM DRAIN IS APPROXIMATELY 21.9 CFS. FREEBOARD BEFORE WATER MAY SPILL ONTO THE ADJACENT PROPERTY IS 2- FEET. THE RECEIVING 36" STORM DRAIN IS ASSUMED TO HAVE A CAPACITY OF APPROXIMATELY 47 CFS. FINALLY, THE PROPOSED DETENTION POND BOTTOM ELEVATION IS AT 5326.00 FT, WHICH IS APPROXIMATELY 1 FT BELOW THE ORIFICE INVERT ELEVATION AND PROVIDES APPROXIMATELY 7,087 CF OF STORAGE WHICH EXCEEDS THE REQUIRED SWQV.

Proposed Conditions



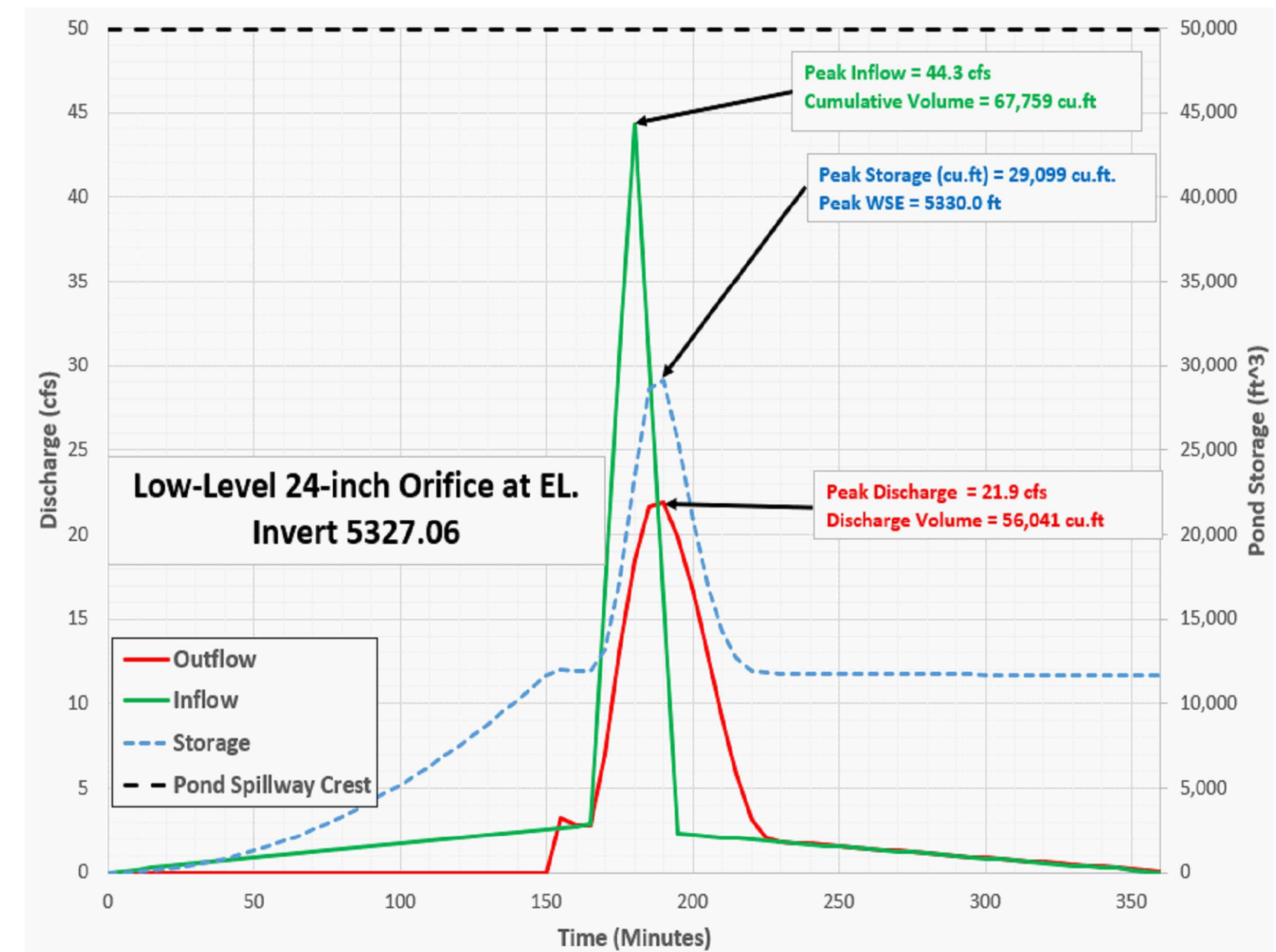
NOTES:

FOR SOIL GROUP DESCRIPTIONS REFER TO CHAPTER 7 OF PART 630 HYDROLOGY OF THE USDA NRCS NATIONAL ENGINEERING HANDBOOK.



DRAINAGE PLAN SUMMARY:

EXISTING GRADE WITHIN THE IMPROVEMENT AREA CONSISTS OF GENTLE SLOPES BETWEEN 0% AND 10%. 80% OF THE SITE IS BELOW 5% SLOPE. THE AREA WEST AND SOUTHWEST OF THE SITE BOUNDARY SLOPES 2% AND 7% TOWARD THE SITE. THERE IS A STEEP TO MODERATE SLOPE DOWN FROM THE NORTH BOUNDARY. SOME SURFACE FLOW IS DIRECTED OFF SITE TO THE NORTH AND INTO AN EXISTING DETENTION BASIN. MOST OF THE SURFACE FLOW PASSES SOUTH OF THE EXISTING TANKS TOWARD THE EAST PROPERTY LINE AND EVENTUALLY OFF THE SOUTH BOUNDARY ABOUT 130' WEST OF 81ST ST NW. THE NEW SITE LAYOUT PLACES A NEW ARSENIC TREATMENT BUILDING WHERE SURFACE FLOW CURRENTLY PASSES THROUGH THE SOUTHERN PART OF THE SITE. THE GRADING PLAN EXTENDS THE DRIVEWAY AREA WEST OF THE NEW STRUCTURE, WHERE MOST OF THE OFF-SITE FLOW IS COLLECTED BY A SHALLOW DRAINAGE SWALE AND DIRECTED TO THE NORTH ON THE EAST SIDE OF RESERVOIR NO. 1. THE SWALE ENDS BY DISCHARGING TO A NEW DETENTION BASIN LOCATED IN THE NORTHEAST CORNER OF THE SITE. SOME SURFACE WATER EAST OF RESERVOIR NO. 1 WILL BE DIRECTED TO THE NEW BASIN ON THE NE CORNER OF THE SITE. SURFACE WATER SOUTH OF THE NEW ARSENIC TREATMENT BUILDING AND SOUTH OF RESERVOIR NO. 2 WILL FLOW TO A NEW SWALE LOCATED BETWEEN RESERVOIR NO. 2 AND THE DOUBLE EAGLE LOWER PUMP STATION. FLOW THEN ENTERS AN EXISTING DEPRESSION AND STORM PIPE DISCHARGING INTO THE NEW DETENTION BASIN. RESIDUAL DRAINAGE AREA EAST OF RESERVOIR NO. 2 WILL BE CAPTURED VIA A NEW SWALE FLOWING NORTH ALONG THE PROPERTY BOUNDARY ULTIMATELY DISCHARGING TO THE NEW DETENTION BASIN. PROPOSED GRADES AROUND THE SITE ARE MOSTLY 5% OR LESS, EXCEPT FOR DRAINAGE SWALES AND CUT/FILL SLOPES, WHICH ARE STEEPER THAN 3:1.



THIS CONTRACT ALLOWS THE OWNER TO MAKE PAYMENT WITHIN 45 DAYS AFTER SUBMISSION OF AN UNDISPUTED REQUEST FOR PAYMENT.

NO.	DATE	REVISION NO. & DESCRIPTION	BY
1	02/03/2026	FIELD ORDER NO. 27	EB

DESIGN TRACKING		SUBMITTED BY:		AS BUILT INFORMATION		ENGINEER'S SEAL	
DESIGNED BY:	E. BABCOCK	DATE:	XX/XX/2025	CONTRACTOR COMPANY NAME			
DRAWN BY:	A. PAWAR	DATE:	XX/XX/2025	CONSTRUCTION BEGIN DATE	MMM. YYYY		
CHECKED BY:	P. TAURASI	DATE:	XX/XX/2025	INSPECTOR'S ACCEPTANCE BY	COMPANY NAME DATE MMM. YYYY		
CROSS CHK'D BY:	J. YOSHIMURA	DATE:	XX/XX/2025	INSPECTOR'S NAME	NAME		
APPROVED BY:	J. CHILL	DATE:	XX/XX/2025	SUBSTANTIAL COMPLETION DATE	MMM. YYYY		
				DRAWINGS CORRECTED BY		COMPANY NAME	DATE MMM. YYYY

ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY			
TITLE: VOLCANO CLIFFS ARSENIC TREATMENT FACILITY AND PUMP STATION UPGRADES DRAINAGE PLAN			
WATER AUTHORITY CONSTRUCTION PROJECT NO.	2822.0	ZONE MAP NO.	D-09-Z
		SHEET	C-9

FOR CONSTRUCTION