

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director



Mayor Timothy M. Keller

June 10, 2025

Ronald Bohannon, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

**RE: SAFStor Rainbow
7520 Rainbow Blvd NW
Grading and Drainage Plan
Engineer's Stamp Date: 04/30/2025
Hydrology File: C09D021
Case # HYDR-2025-00086**

Dear Mr. Bohannon:

Based upon the information provided in your submittal received 5/01/2025, the Grading & Drainage Plans are approved for Building Permit, and Grading Permit. Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

PRIOR TO CERTIFICATE OF OCCUPANCY:

1. Engineer's Certification, per the DPM Part 6-14 (F): *Engineer's Certification Checklist For Non-Subdivision* is required.
2. Please provide the executed paper Drainage Covenant (latest revision) printed on one-side only with Exhibit A and a check for **\$25.00** made out to "**Bernalillo County**" for the stormwater quality pond per Article 6-15(C) of the DPM to Hydrology for review at Plaza de Sol.

If the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 505-924-3420) 14 days prior to any earth disturbance.

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

Sincerely,

Anthony Montoya, Jr., P.E. CFM
Senior Engineer, Hydrology
Planning Department, Development Review Services

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

EROSION CONTROL NOTES

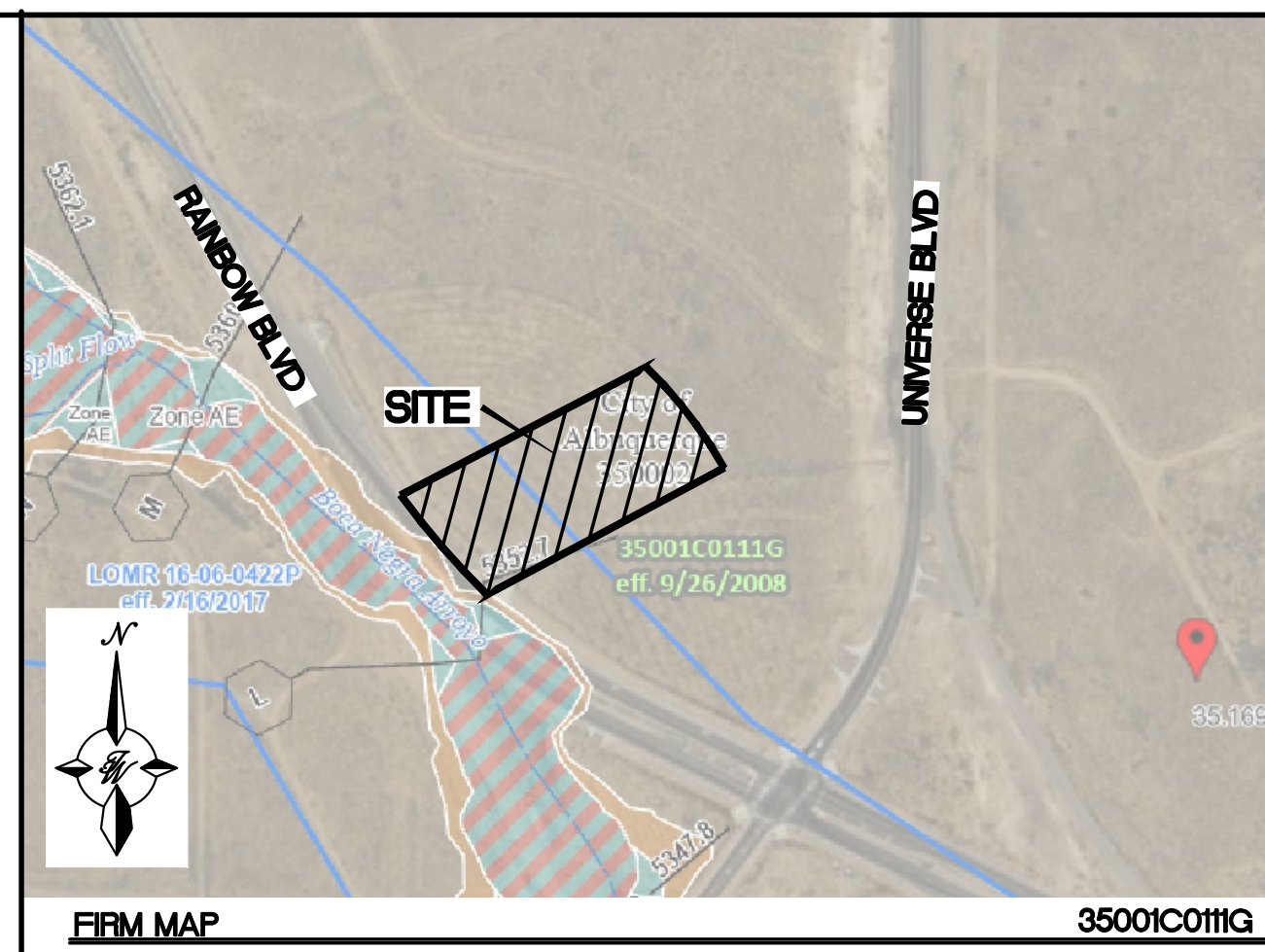
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.
6. ALL SLOPES NOT STABILIZED AT THE END OF THE PROJECT SHALL BE STABILIZED IN ACCORDANCE WITH COA SPECS OR $\frac{1}{2}$ " GRAVEL.

KEYED NOTES

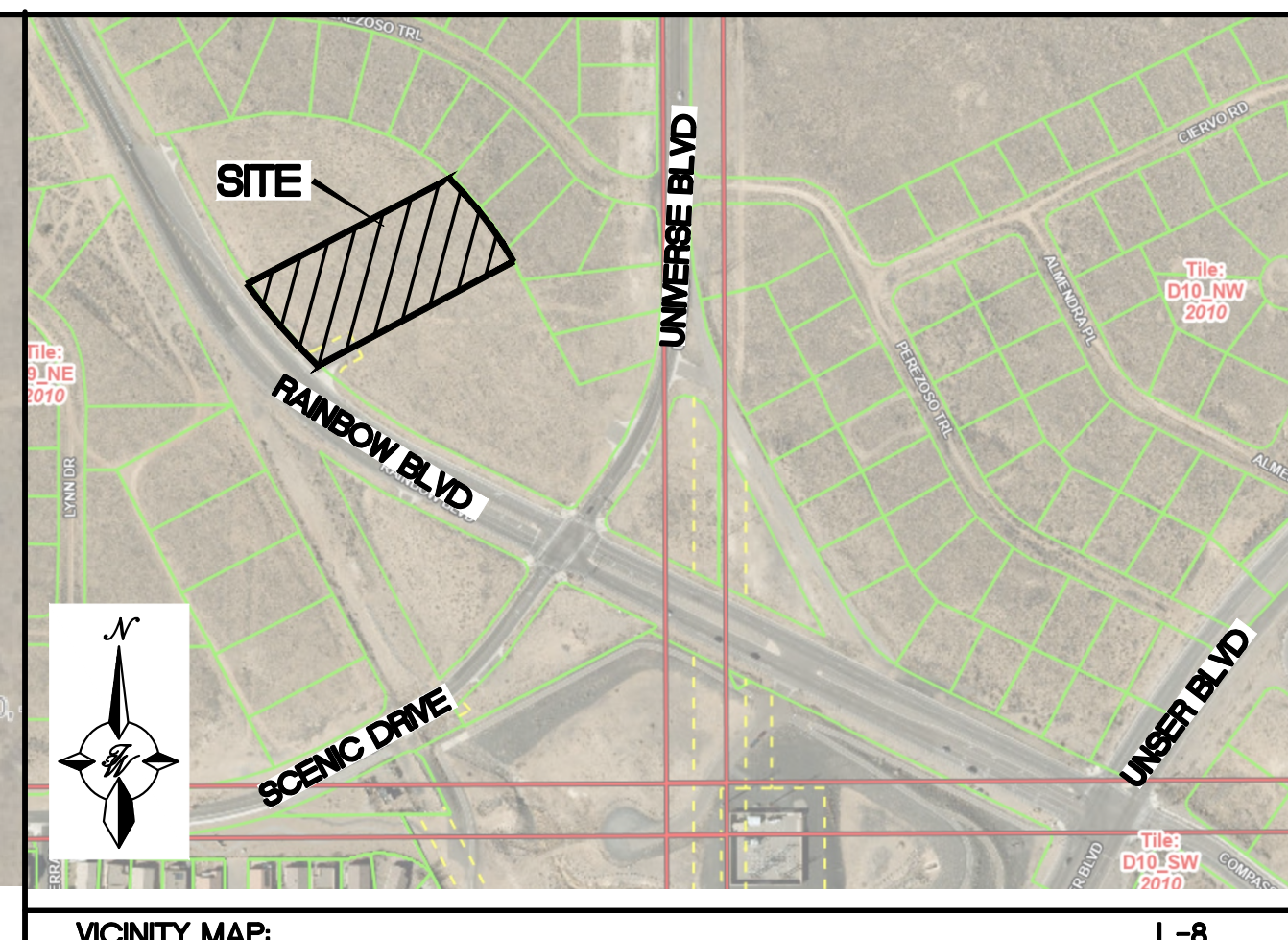
- ① RETENTION POND #1
SWQV REQUIRED = 5052 CU FT
SWQV PROVIDED = 5600 CU FT
100-YR STORM VOLUME = 2.11"
100-YR STORM EL = 5357.7'
100-YR STORM PEAK INFLOW = 1.5 CFS
100-YR STORM PEAK OUTFLOW = 0 CFS
TOP OF POND EL = 5358.58
POND STABILIZATION
LANDSCAPING TO FOLLOW
SECTION 1013 OF THE COA STD SPECIFICATIONS
- ② DETENTION POND #1
SWQV REQUIRED = 1719 CU FT
SWQV PROVIDED = 2819 CU FT
SWQV WS EL = 5355'
100-YR STORM VOLUME = 1.69"
100-YR STORM EL = 5356.8'
100-YR STORM PEAK INFLOW = 5.2 CFS
100-YR STORM PEAK OUTFLOW = 0.6 CFS
SPILLWAY CREST EL = 5356.8'
SPILLWAY MAX FLOW DEPTH = 0.2'
SPILLWAY PEAK OUTFLOW = 5.2 CFS
TOP OF POND EL = 5357.0'
POND STABILIZATION
LANDSCAPING TO FOLLOW
SECTION 1013 OF THE COA STD SPECIFICATIONS

LEGEND

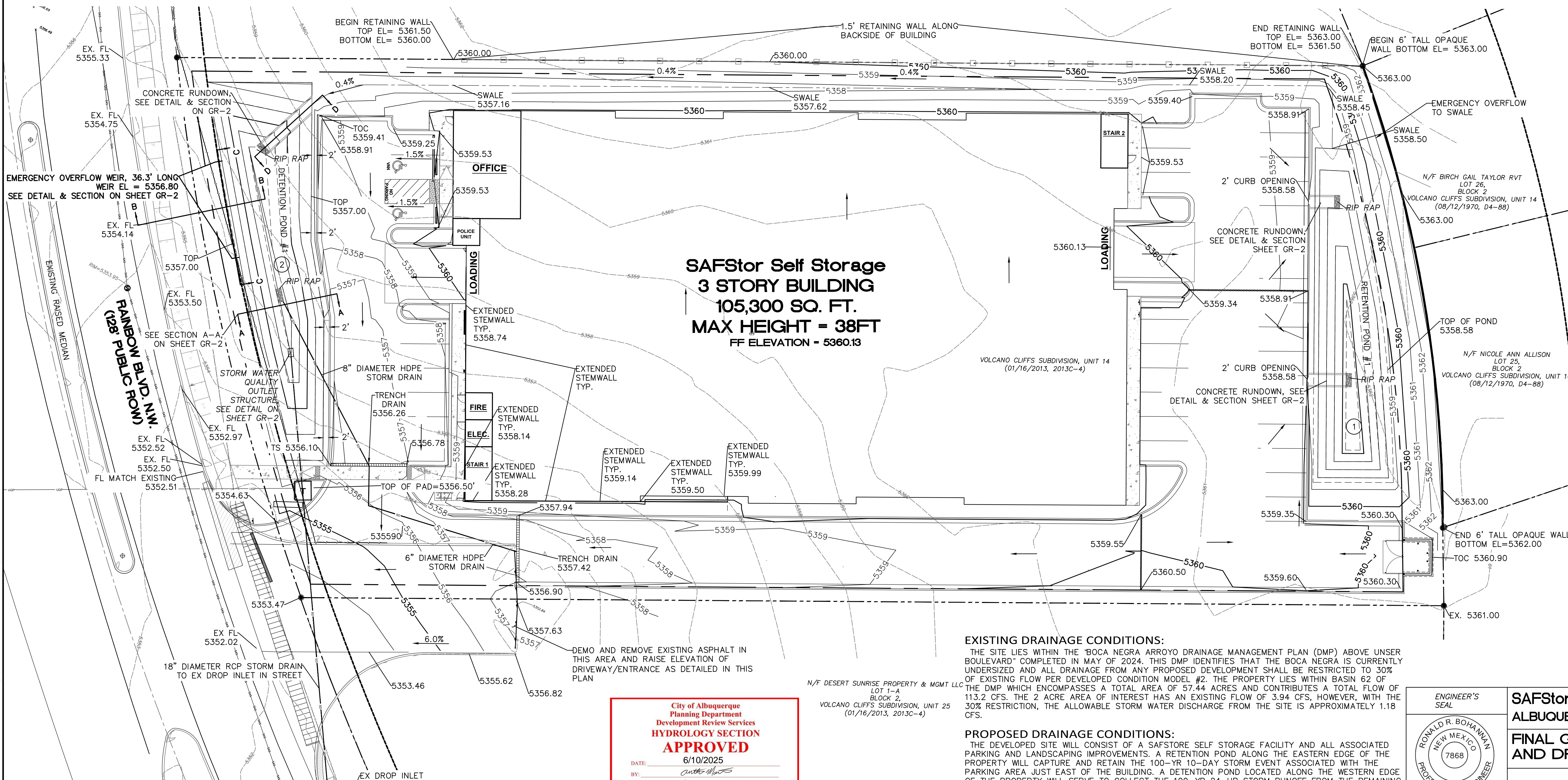
- CURB & GUTTER
--- BOUNDARY LINE
--- RIGHT-OF-WAY
— BUILDING
— SIDEWALK
— 5010 — CONTOUR MAJOR
— 5011 — CONTOUR MINOR
x 5048.25 SPOT ELEVATION
→ FLOW ARROW
--- EXISTING CURB & GUTTER
--- EXISTING BOUNDARY LINE
--- 5010 --- EXISTING CONTOUR MAJOR
--- EXISTING CONTOUR MINOR



NOTE:
ELEVATIONS SHOWN ARE AT FLOWLINE UNLESS OTHERWISE NOTED.



LEGAL DESCRIPTION:
LOT 11-A BLOCK 2 UNIT 14 VOLCANO CLIFFS SUBDIVISION
UPC 100906347136710711.
ADDRESS: 7520 RAINBOW BLVD. N.W. ALBUQUERQUE, NM 87120

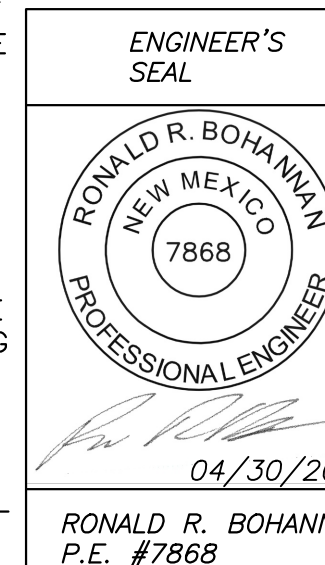
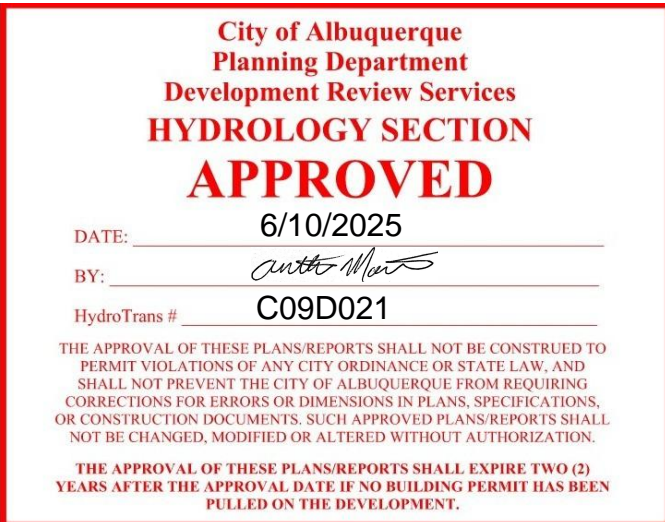


EXISTING DRAINAGE CONDITIONS:

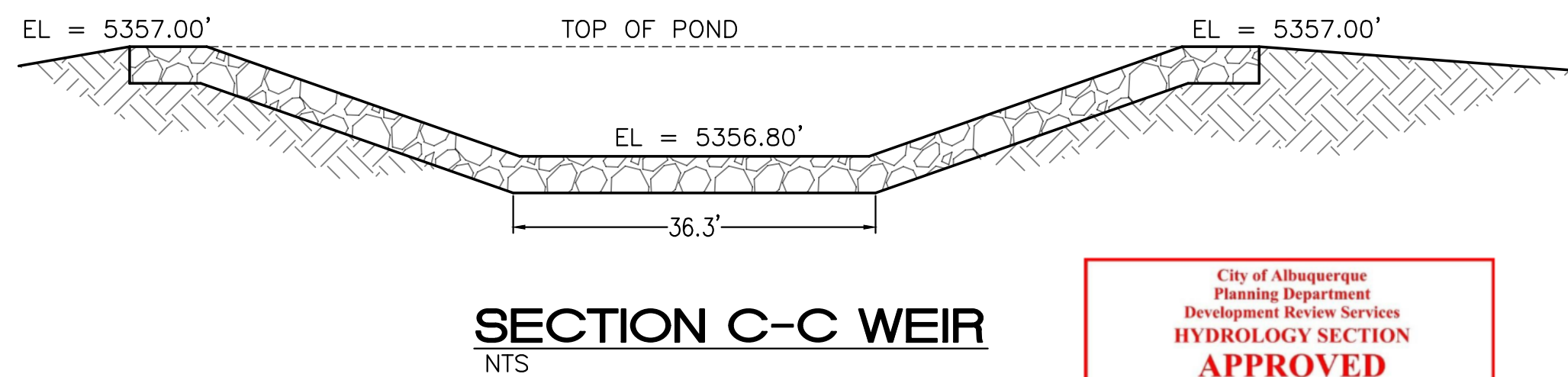
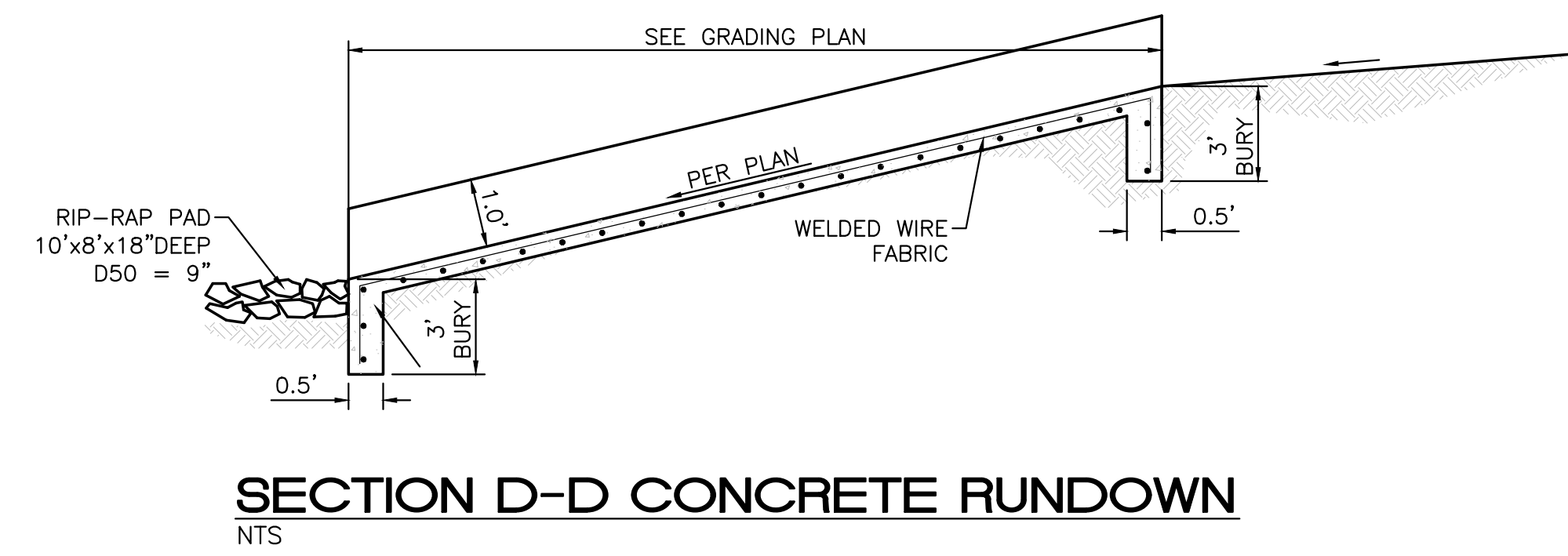
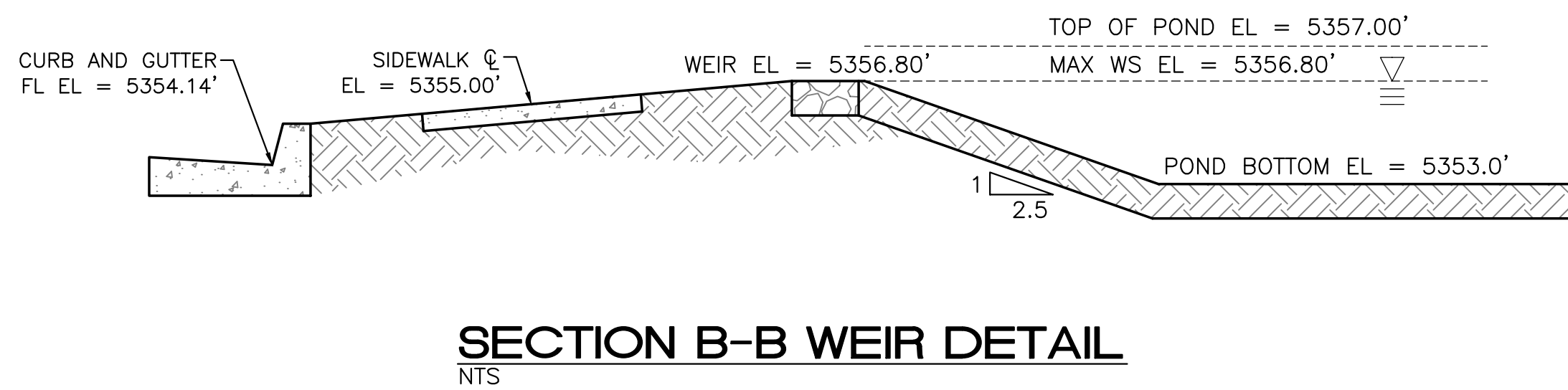
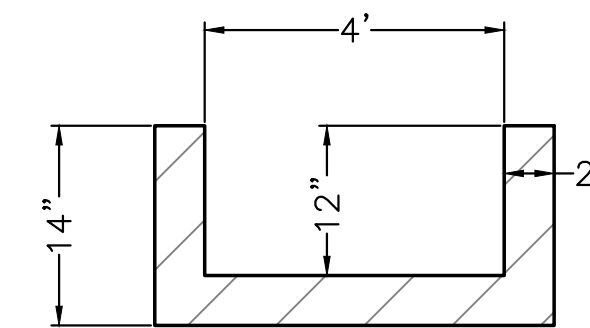
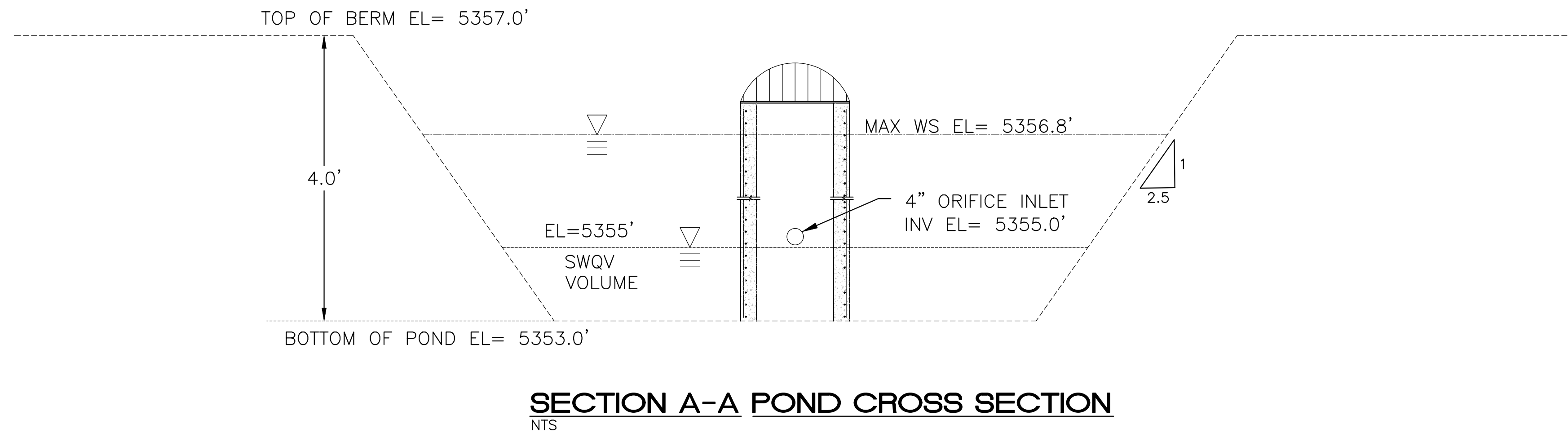
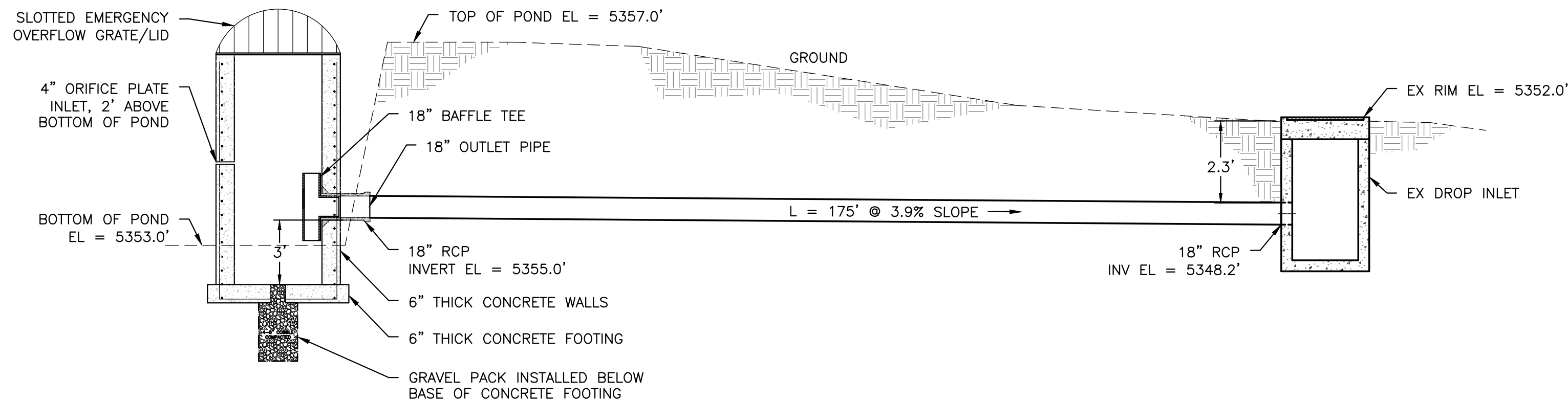
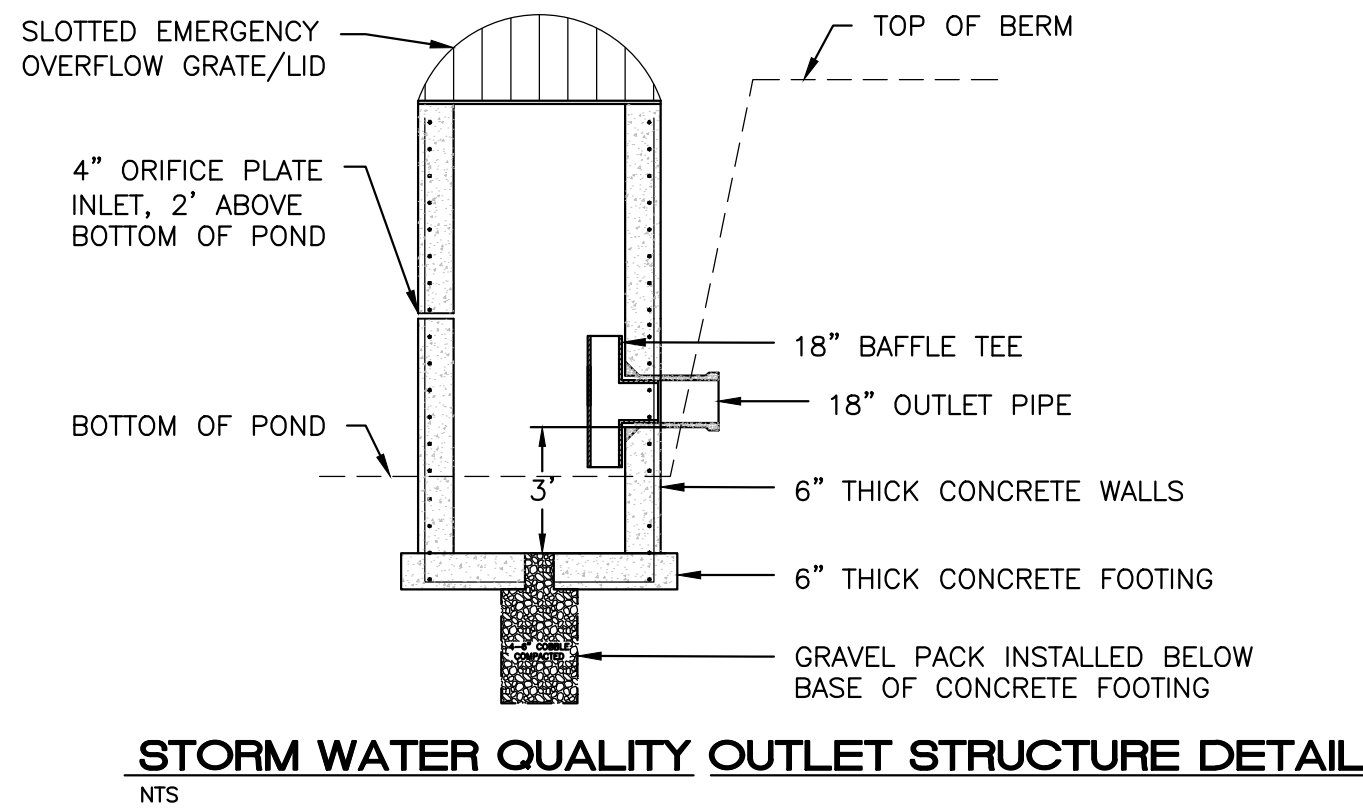
THE SITE LIES WITHIN THE "BOCA NEGRA ARROYO DRAINAGE MANAGEMENT PLAN (DMP) ABOVE UNSER BOULEVARD" COMPLETED IN MAY OF 2024. THIS DMP IDENTIFIES THAT THE BOCA NEGRA IS CURRENTLY UNDERSIZED AND ALL DRAINAGE FROM ANY PROPOSED DEVELOPMENT SHALL BE RESTRICTED TO 30% OF EXISTING FLOW PER DEVELOPED CONDITION MODEL #2. THE PROPERTY LIES WITHIN BASIN 62 OF THE DMP WHICH ENCOMPASSES A TOTAL AREA OF 57.44 ACRES AND CONTRIBUTES A TOTAL FLOW OF 113.2 CFS. THE 2 ACRE AREA OF INTEREST HAS AN EXISTING FLOW OF 3.94 CFS, HOWEVER, WITH THE 30% RESTRICTION, THE ALLOWABLE STORM WATER DISCHARGE FROM THE SITE IS APPROXIMATELY 1.18 CFS.

PROPOSED DRAINAGE CONDITIONS:

THE DEVELOPED SITE WILL CONSIST OF A SAFSTOR SELF STORAGE FACILITY AND ALL ASSOCIATED PARKING AND LANDSCAPING IMPROVEMENTS. A RETENTION POND LOCATED ALONG THE WESTERN EDGE OF THE PROPERTY WILL CAPTURE AND RETAIN THE 100-YR 10-DAY STORM EVENT ASSOCIATED WITH THE PARKING AREA JUST EAST OF THE BUILDING. A DETENTION POND LOCATED ALONG THE WESTERN EDGE OF THE PROPERTY WILL SERVE TO COLLECT THE 100-YR 24-HR STORM RUNOFF FROM THE REMAINING PARKING AREA, THE LANDSCAPING ALONG THE NORTHERN EDGE OF THE BUILDING, AND THE BUILDING ITSELF. A STORM WATER QUALITY OUTLET STRUCTURE WILL CONTROLLABLY DISCHARGE THE STORM WATER FROM THE POND AT A RATE OF 0.6 CFS THROUGH A 4" ORIFICE OUTLET. A PORTION ALONG THE SOUTHWEST CORNER OF THE SITE WHICH IS ASSOCIATED WITH AN EXISTING PAVED ACCESS DRIVE WILL CONTINUE TO FREELY DISCHARGE ONTO RAINBOW BOULEVARD AT A RATE OF 0.3 CFS. THE TOTAL 0.9 CFS DISCHARGE FROM THE SITE WILL BE CONVEYED TO THE EXISTING CURB DROP INLET LOCATED ALONG RAINBOW BOULEVARD AS IT HAS HISTORICALLY.



SAFStor RAINBOW ALBUQUERQUE, N.M.	DRAWN BY MR
	DATE 04/30/2025
FINAL GRADING AND DRAINAGE PLAN	2024032_GR
	SHEET # GR-1
TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrowestllc.com	JOB # 2024032



ENGINEER'S SEAL RONALD R. BOHANNAN P.E. #7868	SAFStor RAINBOW ALBUQUERQUE, N.M.	DRAWN BY MR
	FINAL GRADING + DRAINAGE DETAILS	DATE 04/30/2025
	TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrowestllc.com	SHEET # GR-2
		JOB # 2024032

Summary Results for Reservoir "DET-1"

Project:SafStoreSimulation Run:Run 8 - DetPondReconfigureReservoir:DET-1

Start of Run:20Nov2024, 00:00End of Run:21Nov2024, 00:05Compute Time:DATA CHANGED, RECOMPUTE

Basin Model:Developed - RetentionMeteorologic Model:Met 1Control Specifications:Control 1

Volume Units:☒ IN ☐ ACRE-FT

Computed Results

Peak Inflow:5.2 (CFS)Peak Discharge:0.6 (CFS)Inflow Volume:2.26 (IN)Discharge Volume:1.69 (IN)

Date/Time of Peak Inflow:20Nov2024, 06:10Date/Time of Peak Discharge:20Nov2024, 06:45Peak Storage:0.2 (ACRE-FT)Peak Elevation:5356.8 (FT)

Summary Results for Reservoir "Ret-1"

Project:SafStoreSimulation Run:Run 8 - DetPondReconfigureReservoir:Ret-1

Start of Run:20Nov2024, 00:00End of Run:21Nov2024, 00:05Compute Time:DATA CHANGED, RECOMPUTE

Basin Model:Developed - RetentionMeteorologic Model:Met 1Control Specifications:Control 1

Volume Units:☒ IN ☐ ACRE-FT

Computed Results

Peak Inflow:1.5 (CFS)Peak Discharge:0.0 (CFS)Inflow Volume:2.11 (IN)Discharge Volume:0.00 (IN)

Date/Time of Peak Inflow:20Nov2024, 06:10Date/Time of Peak Discharge:20Nov2024, 00:00Peak Storage:0.1 (ACRE-FT)Peak Elevation:5357.7 (FT)

Global Summary Results for Run "Run 8 - DetPondReconfigure"				
Project:SafStoreSimulation Run:Run 8 - DetPondReconfigure				
Start of Run:20Nov2024, 00:00End of Run:21Nov2024, 00:05Compute Time:DATA CHANGED, RECOMPUTE				
Basin Model:Developed - RetentionMeteorologic Model:Met 1Control Specifications:Control 1				
Show Elements:All ElementsVolume Units: <input checked="" type="radio"/> IN <input type="radio"/> ACRE-FTSorting:Watershed Explorer				
Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
SB-9	0.00013	0.3	20 November 202...	2.54
SB-3	0.00030	0.8	20 November 202...	2.54
SB-1	0.00024	0.3	20 November 202...	1.26
SB-2	0.00017	0.4	20 November 202...	2.54
Ret-1	0.00071	0.0	19 November 202...	0.00
SB-5	0.00128	3.3	20 November 202...	2.54
SB-4	0.00025	0.3	20 November 202...	1.26
J-1	0.00152	3.6	20 November 202...	2.33
SB-6	0.00025	0.7	20 November 202...	2.54
P-2	0.00025	0.7	20 November 202...	2.54
SB-7	0.00023	0.6	20 November 202...	2.54
J-2	0.00048	1.2	20 November 202...	2.54
P-3	0.00048	1.2	20 November 202...	2.54
SB-8	0.00024	0.3	20 November 202...	1.26
DET-1	0.00225	0.6	20 November 202...	1.69
P-4	0.00225	0.6	20 November 202...	1.69
SD_Connection	0.00225	0.6	20 November 202...	1.69

HEC-HMS MODEL RESULTS - 100YR-24HR STORM

NTS

SafStore Drainage Design: Elevation-Storage-Discharge Evaluation

Project #: 2024032
Last Revised Date: 4/24/2025
Last Revised By: AT

Orifice Equation: $Q = C * A * \sqrt{2gH}$

Where:
Q = Flowrate (cfs)
C = Orifice Coefficient 0.6 (See Section 6-17(B) DMP)
A = Area (ft²)
g = Gravitational Acceleration 32.2 ft/s²
H = Depth of water above orifice (ft)

Detention Pond:	
Size of Orifice:	4 in
Area of Orifice:	0.09 ft²

Detention Pond - Elevation/Storage Table			
Elevation (ft)	Area (ft²)	Volume (ft³)	Cumulative Volume (ft³)
5353	758	0	0
5354	1392	1075	1075
5355	2096	1744	2819
5356	2850	2473	5292
5357	3652	3251	8543

Detention Pond - Storage/Discharge Table					
Elevation (ft)	Pond Depth (ft)	Depth above Orifice (ft)	Cumulative Volume (ft³)	Cumulative Volume (ac-ft)	Discharge (cfs)
5353	0	0	0	0.000	0.00
5354	1	0	1075	0.025	0.00
5355	2	0	2819	0.065	0.00
5356	3	1	5292	0.121	0.42
5357	4	2	8543	0.196	0.59

Broad crested Weir overflow Calculation
 $Q = 1.6LH^{3/2}$
Q = 5.2 cfs
H = 0.2 ft
Req'd L = 36.3 ft
HEC-HMS, Q100
2.4 Inches

Notes:

Pond Bottom Elevation

Orifice Invert Elevation approximately 2' above pond bottom

Top of Pond Elevation

SafStore Drainage Design: Retention Pond Sizing

Project #: 2024032
Last Revised Date: #####
Last Revised By: AT

6-Hour Precipitation Data - DPM Table 6.2.14

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10-Year
Q _a	1.54	0.3
Q _b	2.16	0.81
Q _c	2.87	1.46
Q _d	4.12	2.57

6-Hour Precipitation Data - DPM Table 6.2.13

Excess Precipitation, E (inches)		
Zone 1	100-Year	10-Year
E _a	0.55	0.11
E _b	0.73	0.26
E _c	0.95	0.43
E _d	2.24	1.43

Contributing Basin	Area (acre)	Land Treatment	Weighted E (in)	Volume (ac-ft)	Volume (ft³) - 100 Yr - 6 Hr	Volume (ft³) - 100 Yr - 24 Hr	Volume (ft³) - 100 Yr - 10 Day	
Sub-Basin 1	0.152	C	0.95	0.01207	525.55	702.58		
Sub-Basin 2	0.110	D	2.24	0.02046	891.22	1018.54	1579.527358	
Sub-Basin 3	0.192	D	2.24	0.03589	1563.23	1786.55	2770.540592	
Sum:	0.302			0.056	2454.446	2805.082	4350.068	5052.650 Total Retention Volume Required

$V_{10-DAY} = V_{6HR} + A_D(P_{10DAYS} - P_{6HR})/12$ IN/FT

P_{6HR} 2.17 in

P_{24HR} 2.49 in

P_{10DAYS} 3.9 in

Retention Pond - Elevation/Storage Table				
Elevation (ft)	Area (ft²)	Volume (ft³)	Cumulative Volume (ft³)	Cumulative Volume (ac-ft)
5354.58	174.37	0	0	0
5355.58	647.79	411.08	411.08	0.009
5356.58	1317.47	982.63	1393.71	0.032
5357.58	2086.87	1702.17	3095.88	0.071
5358.58	2921.05	2503.96	5599.84	0.129

Total Retention Volume Supplied

RETENTION POND #1 SIZING CALCULATIONS

NTS

DETENTION POND #1 SIZING CALCULATIONS

NTS

<div>ENGINEER'S SEAL</div> <div></div>	SAFstor RAINBOW ALBUQUERQUE, N.M.	DRAWN BY MR
		DATE 04/30/2025
	FINAL GRADING + DRAINAGE DETAILS	2024032_GR
		SHEET # GR-3
<div> TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com</div>	JOB # 2024032	

Drainage Design: Detention Pond Water Treatment Volume

Project #: 2024032

Last Revised Date: 4/24/2025

Last Revised By: AT

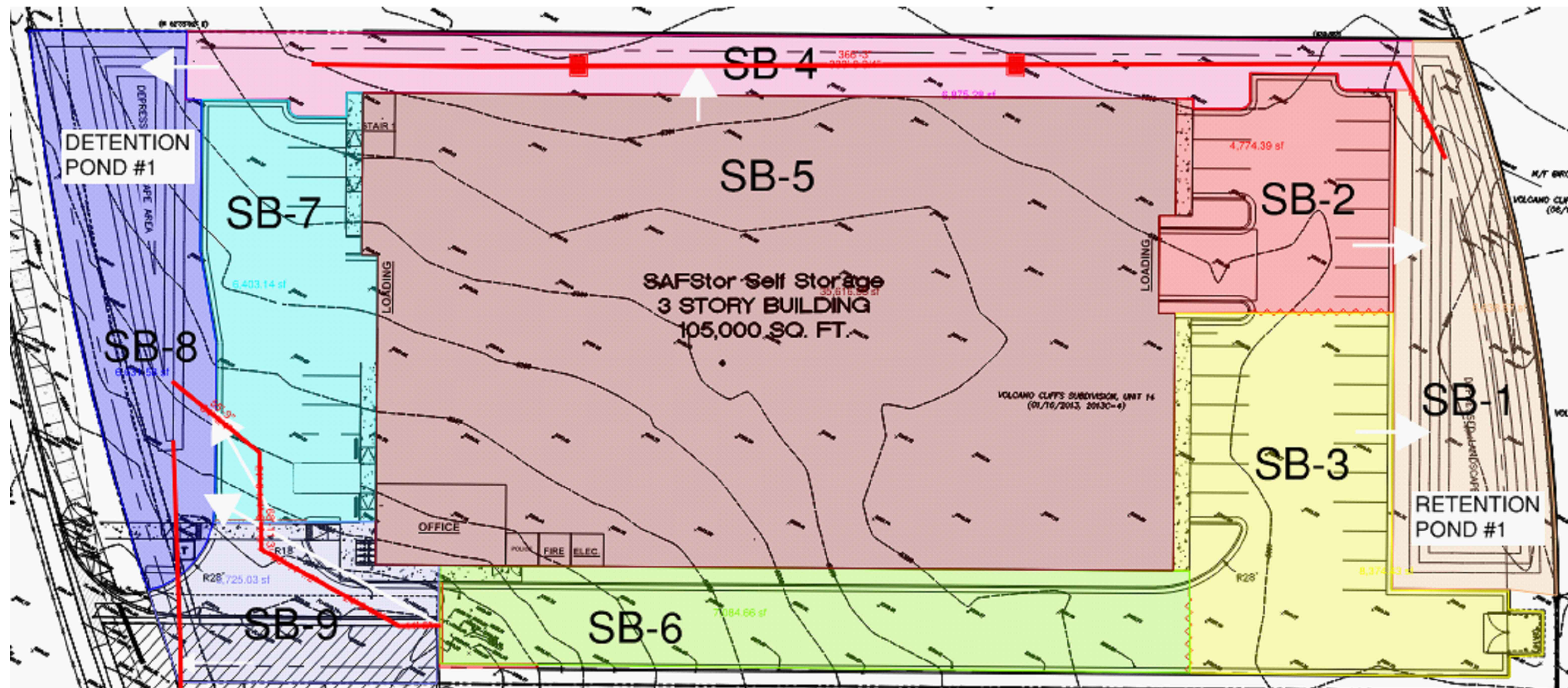
Assumed Run-off Depth	0.42 Inches
	0.035 ft

Detention Pond #1 Required Treatment Volume			
Basin	Area (ft ²)	% Impervious	Runoff Vol. (ft ³)
SB-5	35616.55	100%	1247
SB-6	7084.66	100%	248
SB-7	6403.14	100%	224
Total Volume			1719

☐ Outlet orifice elevation raised to 2' above bottom of pond to accommodate WQ volume.



Detention Pond #2 Required Treatment Volume			
Basin	Area (ft ²)	% Impervious	Runoff Vol. (ft ³)
SB-2	4774.39	100%	167
SB-3	8374.43	100%	293
Total Volume			460

☐ This is a retention pond and all volume is being retained



STORM WATER QUALITY VOLUME CALCULATIONS



<p>ENGINEER'S SEAL</p>	<p>SAFStor RAINBOW ALBUQUERQUE, N.M.</p>	<p>DRAWN BY MR</p>
	<p>FINAL GRADING + DRAINAGE DETAILS</p>	<p>DATE 04/30/2025</p>
<p><i>Ronald R. Bohannan</i> 04/30/2025</p> <p>RONALD R. BOHANNAN P.E. #7868</p>	 <p>TERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com</p>	<p>SHEET # GR-3.1</p> <p>JOB # 2024032</p>