CITY OF ALBUQUERQUE

Planning Department Alan Varela, Director



Mayor Timothy M. Keller

June 10, 2025

Ronald Bohannan, 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. Bohannan:

PO Box 1293 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:

- Albuquerque
- 1. Engineer's Certification, per the DPM Part 6-14 (F): *Engineer's Certification Checklist For Non-Subdivision* is required.
- NM 87103
 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.

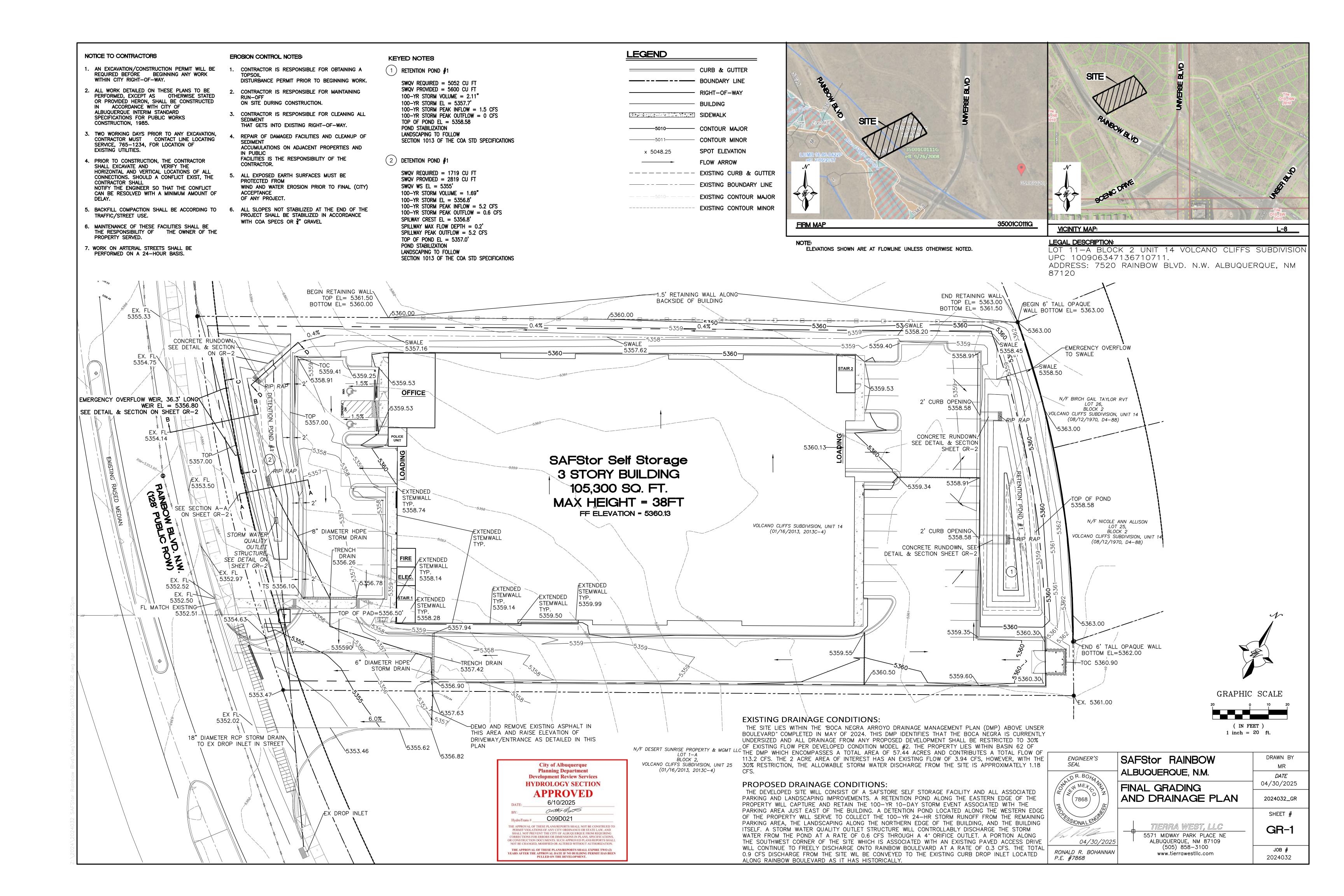
If the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes,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

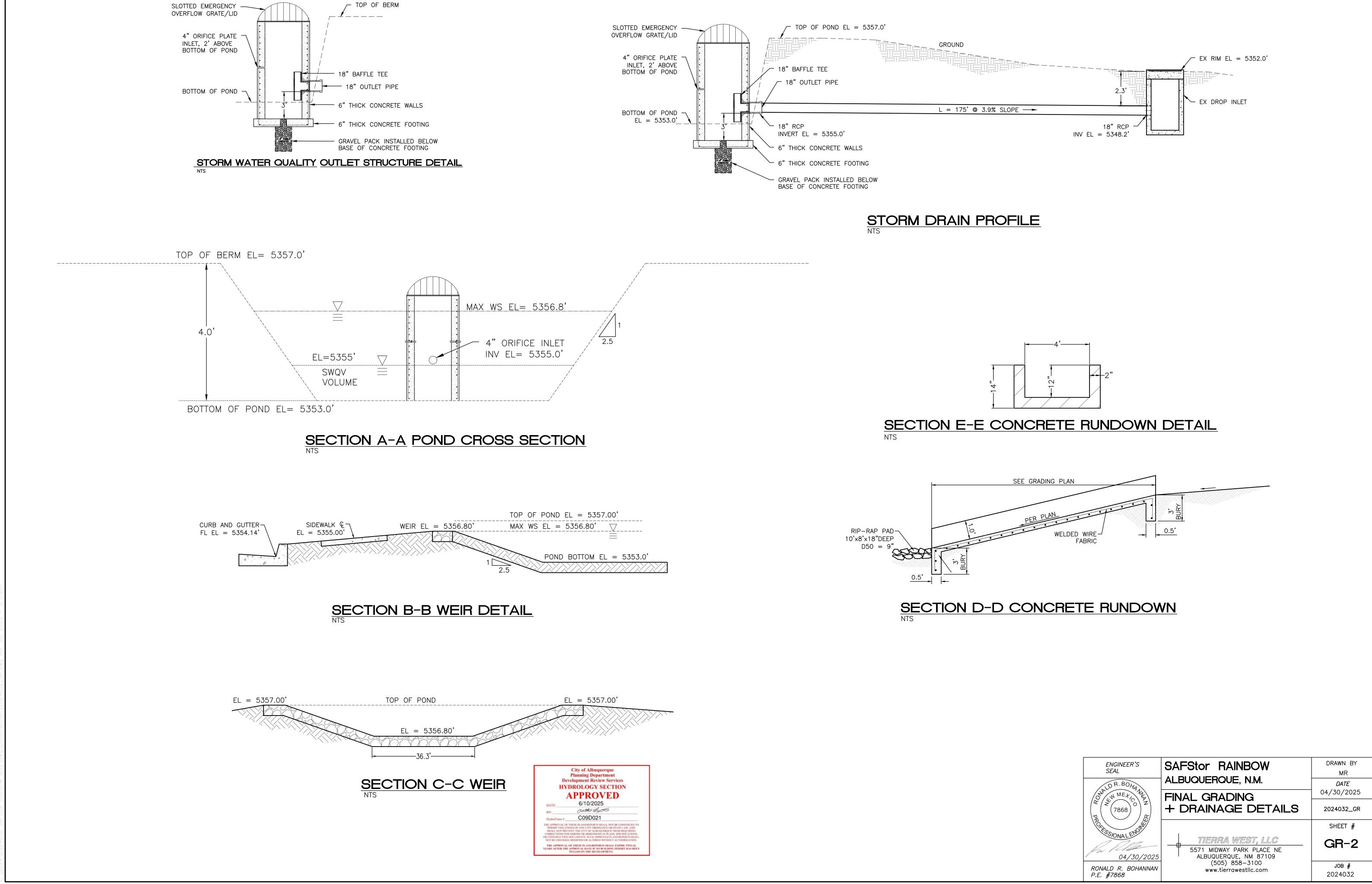
If you have any questions, please contact me at 505-924-3314 or amontoya@cabq.gov.

Sincerely,

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





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Peak Inflow: 1.5 (CFS) Date/Time of Peak Inflow: 20Nov2024, 06:10 Peak Discharge: 0.0 (CFS) Date/Time of Peak Discharge:20Nov2024, 00:00 Inflow Volume: 2.11 (IN) Peak Storage: 0.1 (ACRE-FT) Discharge Volume:0.00 (IN) Peak Elevation: 5357.7 (FT) MEC-HMS MODEL I NTS ore age Design: Elevation-Storage-Discharge Evaluation HEC-HMS MODEL I NTS NTS Detention Storage-Discharge Evaluation HEC-HMS MODEL I NTS Detention Storage-Discharge Evaluation HEC-HMS MODEL I NTS Detention Point: 0.6 (See Section 6-17(8) DMP) A - Area (IT) g c - Gravitational Acceleration 22.2 tt/s ² H = Depth of water above orifice (IT) Detention Point: 0.6 (See Section 6-17(8) DMP) A - Area (IT) g c - Gravitational Acceleration 22.2 tt/s ² H = Depth of water above orifice (IT) NE Detention Point: 0.20 ft ² NE Detention Point: 0.09 ft ² NE Detention Point: 0.09 ft ² NE DETENTION POINT HE SE	Peak Inflow: 1.5 (CFS) Date/Time of Peak Inflow: 20Nov2024, 06:10 Peak Discharge: 0.0 (CFS) Date/Time of Peak Discharge:20Nov2024, 00:00 Inflow Volume: 2.11 (IN) Peak Storage: 0.1 (ACRE-FT) Discharge Volume:0.00 (IN) Peak Elevation: 5357.7 (FT) MEC-HMS MODEL F NS ore nge Design: Elevation-Storage-Discharge Evaluation H: 2024032 vised Date: $4/24/2025$ vised By: AT Ordice Equator: $Q = C + A + \sqrt{2gH}$ Where: Q = Flowrate (cf) C = ordice coefficient 0.6 (See Section 6.17(B) DMP) A = Arca (IT) $g = Gravitational Acceleration 22.2 It/s2 H = Depth of water above orifice (T) Size of Orifice: 4 in Area of Orifice: 0.09 It2 \frac{1}{2353 + 1392 + 1075 + 1075}{2357 + 32522 + 1352 + 1075 + 1075}DETENTION POINT: \frac{1}{2353 + 1392 + 1075 + 1075}{2353 + 1392 + 1075 + 1075 + 1075}$	Peak Inflow: 1.5 (CFS) Date/Time of Peak Inflow: 20Nov2024, 06:10 Peak Discharge: 0.0 (CFS) Date/Time of Peak Discharge:20Nov2024, 00:00 Inflow Volume: 2.11 (IN) Peak Storage: 0.1 (ACRE-FT) Discharge Volume:0.00 (IN) Peak Elevation: 5357.7 (FT) HEC-HMS MODEL F NS HEC-HMS MODEL F NS Ore nage Design: Elevation-Storage-Discharge Evaluation te 2024032 wised Date: $4/24/2025$ wised Date: 2.2 ft/s^3 Peak Elevation Storage Table Detention Pond: 2.2 ft/s^3 H = Depth of water above orifice (ft) Size of Orifice: 4 in Area of Orifice: 0.09 ft ² Detention Pond: Detention P			Volume	Units: 🔾 I		-FT			
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bre age Design: Elevation-Storage-Discharge Evaluation #. 2024032 vised Date: $4/24/2025$ vised By: AT Orifice Equation: $Q = C * A * \sqrt{2gH}$ $\frac{Vhere:}{Q} = Flowrate (cfs)$ C = Orifice Coefficient 0.6 (See Section 6-17(B) DMP) $A \operatorname{Area}(ft)^{2}$ $g = \operatorname{Gravitational} Acceleration 32.2 ft/s^{2}$ H = Depth of water above orifice (ft) $\boxed{Detention Pond:}{Size of Orifice: 4 in Area of Orifice: 0.09 ft^{2}}$ $\boxed{Detention Pond:}{Size of Orifice: 0.09 ft^{2}}$ $\boxed{Detention Pond:}{Size of Orifice: 2.0.99 ft^{2}}$ $\boxed{Detention Pond:}{Size of Orifice: 3.0.99 ft^{2}}$	bre age Design: Elevation-Storage-Discharge Evaluation #. 2024032 vised Date: $4/24/2025$ vised 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 = Arca (tr) g = Gravitational Acceleration 32.2 ft/s2 H = Depth of water above orifice (tt) $\boxed{Detention Pond:}$ $\boxed{Size of Orifice: 4 in Acea of Orifice: 0.09 ft2}$ $\boxed{Detention Coefficient 0.09 ft2}$ $\boxed{Detention Pond - Elevation/Storage Table}{\frac{53553}{758} \frac{0}{0} \frac{0}{0}}{\frac{5355}{1352} \frac{13262}{1352} \frac{1075}{1075}}{\frac{1075}{1075} \frac{1075}{1075}}{\frac{1075}{1075}}$	bre age Design: Elevation-Storage-Discharge Evaluation # 2024032 vised Date: $4/24/2025$ vised Date: $4/24/2025$ vised By: AT Ordice Equation: $Q = C * A * \sqrt{2gH}$ Where: Q = Flowrate (cfs) C = Ordifice Coefficient 0.6 (see Section 6-17(B) DMP) A = Area (ft) g = Gravitational Acceleration 3.2.2 ft/s2 H = Depth of water above orifice (ft) $\boxed{Detention Pond:}$ $\boxed{Size of Orifice: 4 in Area of Orifice: 0.09 ft2}$ $\boxed{Detention Coefficient 0.09 ft2}$ $\boxed{Detention Pond - Elevation/Storage Table}{\frac{5353}{758} \frac{1075}{1075} 1$									
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			age Design: E #: vised Date: vised By: Orifice Equation: Q = Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
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			nage Design: E ct #: evised Date: evised By: Orifice Equation: Q = Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
			ct #: evised Date: evised By: <i>Orifice Equation:</i> <u>Where:</u> Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
			nage Design: E et #: evised Date: evised By: Orifice Equation: Q = Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
			nage Design: E et #: evised Date: evised By: Orifice Equation: Q = Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
			age Design: E :#: vised Date: vised By: Orifice Equation: Q = Q = C = A = g =	2024032 4/24/2025 AT $Q = C * A * \sqrt{2gH}$ Flowrate (cfs) Orifice Coefficient Area (ft ²) Gravitational Acceleratio Depth of water above original Detention P Size of Orifice:	0.6 (See in ifice (ft) Pond: 4 in	e Section 6-17(B)	Detention P Elevation (ft) A 5353 5 5355 5 5356 4	ond - Elevat rea (ft²) 758 1392 2096 2850 3652 3652 3	ion/Storage Table olume Cumulativ olume Cumulativ (ft³) Volume (f 0 0 1075 1075 1744 2819 2473 5292 3251 8543	ve 5t ³)	Elevatio 535 535 535 535
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Global Summary Res	sults for Run "Run 8 - D	etPondReconfigure"		– 🗆 🗙
	Project: SafStore Si	imulation Run: Run 8 -	DetPondReconfigure	
End of Run:	20Nov2024, 00:00 21Nov2024, 00:05 :DATA CHANGED, REC	Meteor	odel: Develop ologic Model: Met 1 Specifications:Control	oed - Retention 1
Show Elements: All	Elements 🗸 Volum	ne Units: 🗿 IN 🔿 AC	RE-FT Sorting: Wa	atershed Explorer $ \sim$
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

TS - 100YR-24HR STORM

SafStore	
Drainage Design	: Retention Pond Sizing
Project #:	2024032
Last Revised Date:	#########
Last Revised By:	AT

Broad creste	ed Weir overflow C	alculation	
Q = 1.6LH^(3	/2)		
	Q =	5.2 cfs	HEC-HMS, Q100
	H =	0.2 ft	2.4 Inches
	Req'd L =	36.3 ft	

Deten	Detention Pond - Storage/Discharge Table								
ond	Depth above	Cumulative	Cumulative	Discharge					
h (ft)	Orifice (ft)	Volume (ft ³)	Volume (ac-ft)	(cfs)					
0	0	0	0.000	0.00					
1	0	1075	0.025	0.00					
2	0	2819	0.065	0.00					
3	1	5292	0.121	0.42					
4	2	8543	0.196	0.59					

CALCULATIONS

Notes:

Notes.		
	V _{10-DAY} =V _{6HR} +A _D (P _{10DA}	_{YS} -P _{6HR})/12 IN/FT
Pond Bottom Elevation	P _{6HR}	2.17 in
Orifice Invert Elevation approximately 2' above pond bottom	P _{24HR}	2.49 in
Top of Pond Elevation	P _{10DAYS}	3.9 in



Peak Discharge (cfs/acre) Zone 1 100-Year 10 - Year Q_a 1.54 0.3 $Q_{\rm b}$ 2.16 0.81

6-Hour Precipitation Data -

DPM Table 6.2.14

				11				
	Q _b	2.16	0.81		Eb	0.73	0.26	
	Q _c	2.87	1.46		Ec	0.95	0.43	
	Q _d	4.12	2.57		Ed	2.24	1.43	
	Area	Land	Weighted E	Volume	Volume (ft ³) -	Volume (ft ³) -	Volume (ft ³) -	_
Contributing Basin	(acre)	Treatment	- (In)	(ac-ft)	100 Yr - 6 Hr	100 Yr - 24 Hr	100 Yr - 10 Day	
Sub-Basin 1	0.152	С	0.95	0.01207	525.55	702.58		Not impervious and thus does not attribute a 10-day volume, just the 24-hr volume
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

10 - Year

0.11



RETENTION POND #1 SIZING CALCULATIONS

	Retention Pc				
Elevation (ft)	Area (ft²)	Volume (ft³)	Cumulative Volume (ft ³)	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 Supplie

6-Hour Precipitation Data - DPM Table 6.2.13

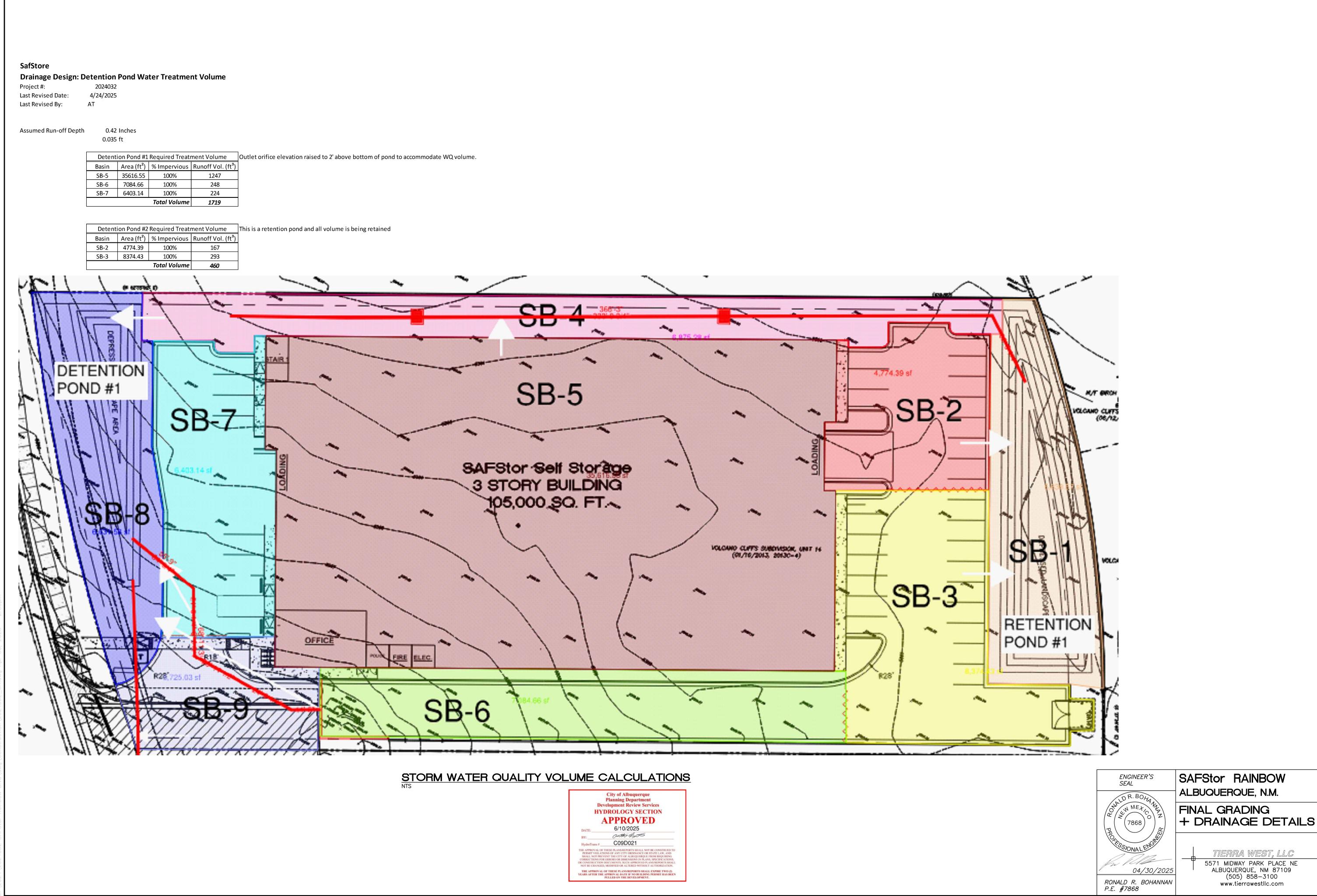
Excess Precipitation, E (inches)

100-Year

0.55

Zone 1

Ea



DRAWN BY MR DATE 04/30/2025 2024032_GR SHEET #

JOB # 2024032

GR-3.1