

STORMWATER CONTROL PLAN

Dutch Bros. Coffee

NEQ of 98th Street NW and Volcano Road Albuquerque, NM 87121

> Prepared for: Dutch Bros. LLC C/O Russ Orsi 110 S.W. 4th Street Grants Pass, OR 97526 (925) 640-8441

> > June 2022 Our Job No. 22187



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Sheet Index:

1.	Introduction and BackgroundPag	ge 3
2.	Existing ConditionsPa	ge 3
3.	Proposed ConditionsPag	je 4
4.	Design AssumptionsPag	je 4
5.	Hydrologic and Hydraulic MethodsPag	e 4
	5.1. Existing Peak Flow Stormwater CalculationsPag	je 5
	5.2. Proposed Peak Flow Stormwater CalculationsPag	je 5
	Calculation of Treatment AreaPag	e 7

Appendices

- A. NOAA Precipitation Data
- B. ALTA Survey
- C. Exhibits
 - Pre-developed Drainage Exhibit
 - Post-Condition Drainage Management Area Exhibit

1. Introduction and Background:

The following stormwater control plan has been prepared for the proposed commercial development project located on the northeast quadrant of 98th Street NW and Volcano Road, in the City of Albuquerque, New Mexico. The proposed design has been developed in conformance with the City of Albuquerque and Bernalillo County Standards. The proposed development will consist of a 950 square feet Dutch Bros Coffee building, along with vehicular parking and maneuvering areas, amenities for pedestrians and landscaped areas.

2. Existing Conditions:

The project site is located within a 0.57 acre parcel that is bounded to the north by future development, to the west by 98th Street NW, to the south by Private Road C, and to the east by Private Road A. The site is zoned for NR/BP – Non Residential/Business Park Zone District. The existing site is currently vacant land. Majority of the site generally sheet flows to the southwest to an existing drainage basin.

The proposed uses are approved within the development per the City of Albuquerque. Existing topographic features and current land use including all existing utilities, roads, and easements are depicted on the ALTA Survey – Appendix B.

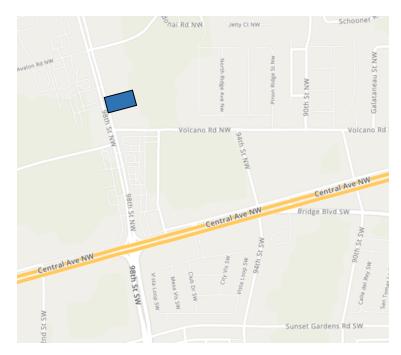


Figure 1: Site Location Map

3. Proposed Conditions:

The project proposes approximately 0.57 acre development consisting of a Dutch Bros. Coffee commercial building with a 950 square-foot footprint. A major portion of the site is proposed to be paved vehicular parking and drive areas with landscaping buffers on the north, south, and west sides as well as scattered landscape area islands. The proposed conditions focus on reducing impervious areas to the maximum extent feasible, while proposing pervious areas to reduce generated stormwater runoff. The proposed development contains one drainage area.

The building roof is designed to drain to downspouts, then to trench drain systems installed in the sidewalk into a drive aisle or landscaping is conveyed to one of the detention basins. Runoff from DMA#1 and DMA#2 will be conveyed to onsite detention basins. Runoff from DMA#3 will follow the proposed grading and sheet flow out towards Private Road C towards the detention basin for the overall development located on west of the site, which can accommodate up to runoff from approximately 12,000 sf impervious area of the Dutch Bros site.

4. Design Assumptions:

The following assumptions were utilized as part of the hydraulic analysis for the project:

- Hydromodification requirements do not apply to the developed site
- Low Impact Development (LID) requirements do apply to the developed site. The development will implement the following BMP measures: Detention Basins.

5. Hydrologic and Hydraulic Methods:

The hydrologic and hydraulic methods utilized for this analysis include:

- The Rational Method was used to determine the peak flow rate for 100-year storm per NOAA 14 and Table 6.2 of the Development Process Manual for City of Albuquerque, for a peak storm using a time of concentration (Tc) of 5 minutes
- A design storm depth of 0.42 inches for new development was used to determine minimum storage capacity for the underground detention system
- Runoff coefficients for Impervious Areas were assumed to be 0.90 for 100-yr storm event
- Runoff coefficients for Pervious Areas were assumed to be 0.47 for 100-yr storm event

5.1. Existing Peak Flow Calculations (Rational Method)

DMA#1

Pervious = 0.57 ac Impervious = 0.00 ac

$$C = \frac{A_1C_1 + A_2C_2}{\sum Areas} = \frac{(0.57 \ AC)(0.47) + (0.00 \ AC)(0.90)}{0.57 \ AC} = 0.47$$

Assume TC = 5 minutes, i = 7.01 in/hr for 100-yr Q = CiA C = 0.47 i = 7.01 in/hr (100 YR) A = 0.57 acres Q100 = 1.87 cfs

5.2. Proposed Peak Flow Calculations (Rational Method)

DMA#1: Total Area = 0.13 ac Pervious = 0.04 ac Impervious = 0.09 ac

$$C = \frac{A_1C_1 + A_2C_2}{\sum Areas} = \frac{(0.04 \ AC)(0.47) + (0.09 \ AC)(0.90)}{0.13 \ AC} = 0.76$$

Assume TC = 5 minutes, i=7.01 in/hr for 100-yr Q = CiA C = 0.76 i = 7.01 in/hr (100 YR) A = 0.13 acres Q100 = 0.69 cfs **DMA#2:** Total Area = 0.12 ac Pervious = 0.03 ac Impervious = 0.09 ac

$$C = \frac{A_1C_1 + A_2C_2}{\sum Areas} = \frac{(0.03 \ AC)(0.47) + (0.09 \ AC)(0.90)}{0.12 \ AC} = 0.79$$

Assume TC = 5 minutes, i=7.01 in/hr for 100-yr Q = CiA

C = 0.79 i = 7.01 in/hr (100 YR) A = 0.12 acres Q100 = 0.66 cfs

DMA#3: Total Area = 0.32 ac Pervious = 0.07 ac Impervious = 0.25 ac

$$C = \frac{A_1C_1 + A_2C_2}{\sum Areas} = \frac{(0.07 \ AC)(0.47) + (0.25 \ AC)(0.90)}{0.32 \ AC} = 0.80$$

Assume TC = 5 minutes, i=7.01 in/hr for 100-yr

Q = CiA

C = 0.80 i = 7.01 in/hr (100 YR) A = 0.32 acres Q100 = 1.79 cfs

Pond#1 Calculation:

<u>Given:</u>

Contributing Drainage Area: 0.13 ac ~ 5,580 sf Impervious = ~3,610 sf Imperviousness: 0.65 Design Storm Depth (d): 0.42 inches for new development Design Infiltration Rate: 15 min/in ~ 4 in/hour per Geotech Study by Terracon

Calculations:

Water Quality Volume, WQV WQV = 0.42 inches * impervious area WQV = 0.42 inches (1 ft/12 inch) * 3,610 sf = 126 CF

Minimum footprint, Amin

Amin = (12)(Safety Factor)(WQV)/kt Amin = (12)(1.5)(126 cf) / (4 in/hr)(24 hours) Amin = 23 sf Aprovided = 109 sf

Pond#2 Calculation:

Given:

Contributing Drainage Area: 0.12 ac ~ 5,230 sf Impervious = ~3,990 sf Imperviousness: 0.76 Design Storm Depth (d): 0.42 inches for new development Design Infiltration Rate: 15 min/in ~ 4 in/hour per Geotech Study by Terracon

Calculations:

Water Quality Volume, WQV

WQV = 0.42 inches * impervious area WQV = 0.42 inches (1 ft/12 inch) * 3990 sf = 139 CF

Minimum footprint, Amin

Amin = (12)(Safety Factor)(WQV)/kt Amin = (12)(1.5)(139 cf) / (4 in/hr)(24 hours) Amin = 26 sf Aprovided = 116 sf

Appendix A

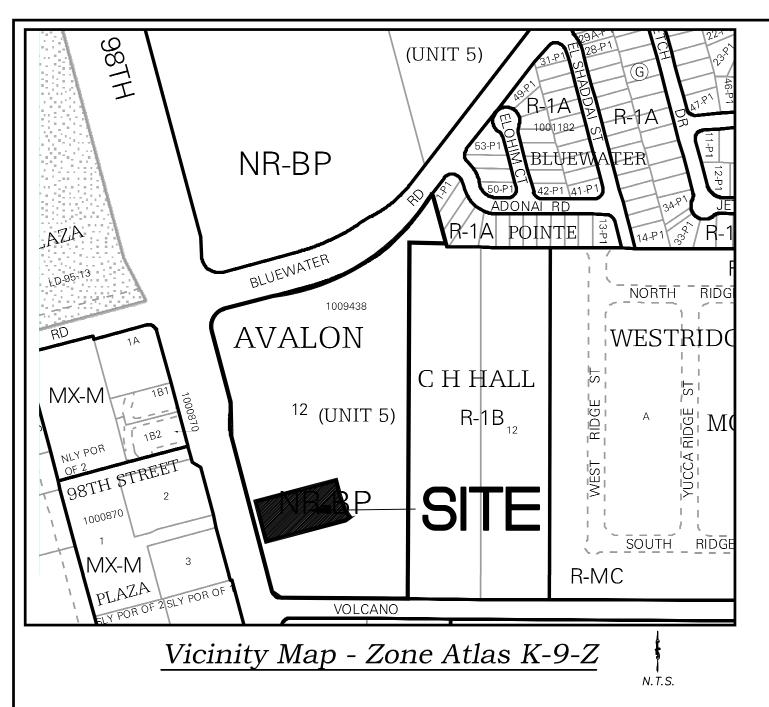
NOAA Precipitation Data

TABLE 6.2 PARTICIPATION FOR ZONES 1-4										
Partial		500	year	100) year	10	year	2 year		
Dura	ation	Depth (in)	Intensity in/hr	Depth (in)	Intensity in/hr	Depth (in)	Intensity in/hr	Depth (in)	Intensity in/hr	
ZONE	3									
5	min.	0.753	9.04	0.584	7.01	0.368	4.42	0.228	2.74	
10	min.	1.150	6.90	0.889	5.33	0.560	3.36	0.348	2.09	
12	min.	-	6.41	-	4.96	-	3.12	-	1.94	
15	min.	1.420	5.68	1.100	4.40	0.693	2.77	0.431	1.72	
30	min.	1.910	3.82	1.480	2.96	0.934	1.87	0.580	1.16	
60	min.	2.370	2.37	1.840	1.84	1.160	1.16	0.718	0.72	
2	min.	2.810	1.41	2.150	1.08		0.67	0.845	0.42	
3	min.	2.890	0.96	2.220	0.74	1.400	0.47	0.895	0.30	
6	min.	3.090	0.52	2.430	0.41	1.570	0.26	1.010	0.17	
24	min.	3.570	0.15	2.840	0.12	1.900	0.08	1.300	0.05	
4	day	4.000	0.04	3.290	0.03	2.290	0.02	1.620	0.02	
10	day	4.940	0.02	4.100	0.02	2.890	0.01	2.060	0.01	
ZONE	4									
5	min.	0.798	9.58	0.624	7.49	0.398	4.78	0.249	2.99	
10	min.	1.210	7.26	0.950	5.70	0.606	3.64	0.380	2.28	
12	min.	-	6.77	-	5.31	-	3.38	-	2.12	
15	min.	1.510	6.04	1.180	4.72	0.751	3.00	0.471	1.88	
30	min.	2.030	4.06	1.590	3.18	1.010	2.02	0.634	1.27	
60	min.	2.510	2.51	1.960	1.96	1.250	1.25	0.784	0.78	
2	min.	3.010	1.51	2.330	1.17	1.470	0.74	0.933	0.47	
3	min.	3.120	1.04	2.420	0.81	1.530	0.51	0.991	0.33	
6	min.	3.340	0.56	2.640	0.44	1.730	0.29	1.150	0.19	
24	min.	4.490	0.19	3.600	0.15	2.400	0.10	1.640	0.07	
4	day	5.910	0.06	4.750	0.05	3.200	0.03	2.200	0.02	
10	day	7.760	0.03	6.270	0.03	4.260	0.02	2.950	0.01	

The principal design storm is the 100-year event defined by the NOAA Atlas 14 Volume 1 Version 5, and subsequent updates. Tables A-2, A-8, and A-9 will be updated when NOAA Atlas 14 precipitation depths are updated. For certain applications (e.g., street drainage, low flow channels and sediment transport) storms of greater frequency than the 100-year storm must be considered and the 500-year storm is used for some floodplains.

Appendix B

ALTA Survey



Exceptions 9-13

- RESERVATIONS CONTAINED IN PATENT FROM UNITED STATES OF AMERICA, RECORDED IN 9 BOOK 35, PAGE 91, RECORDS OF BERNALILLO COUNTY, NEW MEXICO. AFFECTS SUBJECT PROPERTY-BLANKET IN NATURE
- 10 INTENTIONALLY OMITTED
- 11 A TEN FOOT (10') PUBLIC UTILITY EASEMENT AND AN ELEVEN AND SIXTY-NINE HUNDREDTHS FOOT (11.69') PUBLIC UTILITY EASEMENT AS SHOWN ON THE PLAT RECORDED IN PLAT BOOK 2014C, PAGE 46, RECORDS OF BERNALILLO COUNTY, NEW MEXICO.
- AFFECTS TRACT 12 BUT NOT PROPOSED TRACT D
- 12 NOTICE OF SUBDIVISION PLAT CONDITIONS, RECORDED MAY 22, 2013 AS DOCUMENT NO. 2014040956, RECORDS OF BERNALILLO COUNTY, NEW MEXICO. AFFECTS SUBJECT PROPERTY-BLANKET IN NATURE
- 13 EASEMENT IN FAVOR OF PUBLIC SERVICE COMPANY OF NEW MEXICO, AND RIGHTS INCIDENT THERETO, RECORDED SEPTEMBER 9, 2019, AS DOCUMENT NO. 2019076475, RECORDS OF BERNALILLO COUNTY, NEW MEXICO. AFFECTS TRACT 12, BUT NOT PROPOSED TRACT D

Zoning Notes

No zoning report was provided by the client; however, according to the City of Albuquerque Official IDO Website, http://cabq.maps.arcgis.com, on May 24, 2021, the subject property is zoned "NR-BP" (Non-Residential - Business Park Zone District), the subject property is subject to the following conditions:

Front Setback: 20 ft. minimum Side Setback: 10 ft. minimum Rear Setback: 10 ft. minimum Building Height: 65 ft. maximum Building Coverage: 50% maximum Lot Width: 100 Ft. minimum

* In the NR-BP zone district, a Master Development Plan or Site Plan is required prior to platting action on unsubdivided land. Subsequent platting must conform to the approved plan.

Flood Notes

BASED UPON SCALING, THIS PROPERTY LIES WITHIN FLOOD ZONE X WHICH IS DEFINED AS AN AREA OF MINIMAL FLOOD HAZARD AS DETERMINED BY F.E.M.A. AND SHOWN ON THE FLOOD INSURANCE RATE MAP NO. 35001C0328J DATED NOVEMBER 04, 2016.

Indexing Information

Projected Section 21, Township 10 North, Range 2 East, N.M.P.M. Town of Atrisco Grant Subdivision: Avalon Subdivision, Unit 5 Owner: RS Bluewater LLC UPC #: TBD (Proposed Tract D)

Record Legal Description-Being a Portion of:

TRACT NUMBERED TWELVE (12), PLAT OF TRACTS 1 THROUGH 12, OF AVALON SUBDIVISION UNIT 5, ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT OF SAID SUBDIVISION, FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON MAY 22, 2014, IN PLAT BOOK 2014C, FOLIO 46 AS DOCUMENT NO. 2014040949.

Measured Legal Description

PROPOSED TRACT D OF RS BLUEWATER ADDITION, AS SHOWN AND DESIGNATED ON THE PLAT ENTITLED "PLAT FOR TRACTS A THRU F, RS BLUEWATER ADDITION, BEING COMPRISED OF TRACT 12, AVALON SUBDIVISION, UNIT 5, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON _____, ___, IN BOOK ____, PAGE

THE PARCEL DESCRIBED HEREON IS THE SAME AS SHOWN ON THE TITLE COMMITMENT PROVIDED BY OLD REPUBLIC NATIONAL TITLE, HAVING FILE NO. 2008521 AND AN EFFECTIVE DATE OF OCTOBER 07, 2020.

Benchmark - NAVD88

ACS MONUMENT "7 K9" HAVING AN ELEVATION OF 5140.082.

Notes

- 1. FIELD SURVEY PERFORMED IN MAY 2021 AND ADDITIONAL DATA IN APRIL 2022.
- 2. ALL DISTANCES ARE GROUND DISTANCES: U.S. SURVEY FOOT.
- 83-CENTRAL ZONE).
- PERTAINING TO TABLE A OPTION 7, NO BUILDINGS EXISTING ON THE SURVEYED PROPERTY.
- PERTAINING TO TABLE A OPTION 11, WITH REGARD TO UNDERGROUND UTILITY LOCATIONS, SOURCE INFORMATION FROM PLANS AND MARKINGS WERE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.iv. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, WHICH MAY AFFECT THIS SURVEYOR'S ASSESSMENT OF THF LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY. INVERT DATA SHOWN WITH A \pm SHOULD BE CONSIDERED TAKEN FROM AS-BUILTS. (NM811 TICKET NO. 21MY060486 AND 22AP050552)
- 6. PERTAINING TO TABLE A OPTION 17, WHILE NO SPECIFIC INFORMATION IS AVAILABLE BY THE CONTROLLING JURISDICTION CONCERNING PLANNED STREET WIDENING, THE SURVEYOR REFERS TO THE FOLLOWING WEBSITE FOR LONG RANGE STREET CLASSIFICATION, THE STREET WIDTH AND RETURN REQUIREMENTS FOR THE DIFFERENT CLASSIFICATIONS AND EVEN SPECIAL PLANNED CORRIDOR AND MASTER PLANS: HTTP: //WWW.CABQ.GOV/GIS. THE CITY DOES REVIEW THE RIGHT OF WAY LOCATION AND ROUTINELY REQUIRES ADDITIONAL RIGHT OF WAY DEDICATION WHEN THE PLAT IS BEING PROCESSED FOR THE SUBDIVISION THAT IS CURRENTLY UNDER REVIEW AND THAT RIGHT OF WAY WAS REQUIRED ALONG 98TH STREET NW AND WILL BE DEDICATED WITH THE FILING OF THE PLAT. THAT RIGHT OF WAY IS SHOWN HEREON.
- 7. PERTAINING TO TABLE A OPTION 16, NO EVIDENCE OBSERVED INDICATING RECENT EARTHWORK, BUILDING CONSTRUCTION OR ADDITIONS.
- 8. THE COORDINATES SHOWN HEREON ARE MODIFIED NM STATE PLANE COORDINATES (NAD 83-GROUND-CENTRAL ZONE) USING A G-G FACTOR OF 0.999679308 WITH AN ORIGIN OF (0.0).
- 9. PERTAINING TO TABLE A OPTION 2, THE ADDRESS SHALL BE ASSIGNED AFTER THE PLAT IS FILED.
- 10. THIS PARCEL IS CURRENTLY IN THE PROCESS OF BEING REPLATTED. CONVEYING TITLE OF PROPOSED TRACT D WITHOUT FINALIZING THE REPLAT AND RECORDING THE REPLAT WOULD VIOLATE THE NEW MEXICO SUBDIVISION ACT. THE PURPOSE OF THIS SURVEY IS NOT TO AID IN THE CONVEYANCE PREMATURELY. BUT PROVIDE THE BUYERS AN OPPORTUNITY TO CONDUCT DUE DILIGENCE INSPECTION OF THE PREMISES AS IT CURRENTLY RESTS AND REFLECTED ON THE TITLE COMMITMENT.
- 11. PERTAINING TO TABLE A OPTION 9. NO PARKING SPACES WERE OBSERVED ON SUBJECT LOT DURING THE COURSE OF THIS SURVEY.
- 12. PERTAINING TO TABLE A OPTION 13. THE OWNERS OF THE PROPOSED TRACTS ADJACENT TO PROPOSED TRACT D ARE NOT KNOWN AT THIS TIME.



3. THE BASIS OF BEARINGS REFERENCES NEW MEXICO STATE PLANE COORDINATES (NAD

Preliminary Boundary Survey, ALTA/NSPS Land Title Survey and Topographic Map Proposed Tract D **RS** Bluewater Addition (aka A Portion of Tract 12, Avalon Subdivision, Unit 5) City of Albuquerque Bernalillo County, New Mexico May 2022 Surveyor's Certificate for Topographic Map I, WILL PLOTNER JR., A NEW MEXICO REGISTERED PROFESSIONAL

LAND SURVEYOR DO HEREBY CERTIFY THAT THE TOPOGRAPHIC MAP SHOWN HEREON IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

12022 Will Plotner Jr. N.M.R.P.S. No.

Surveyor's Certificate for ALTA Survey

To: RSDGP, LLC a Texas limited liability company, Old Republic National Title Insurance Company, Majec, LLC, a New Mexico limited liability company, Century Bank, and RS Bluewater, LLC DB Holding AZ, LLC, an Oregon limited liability company, DB Francising USA, LLC, an Oregon limited liability company, Dutch Bros LLC, an Oregon limited liability company, Dutch Mafia, LLC, a Delaware limited liability company, Boersma Bros, LLC, an Oregon limited liability company, Dutch Bros Inc., a Delaware Corporation:

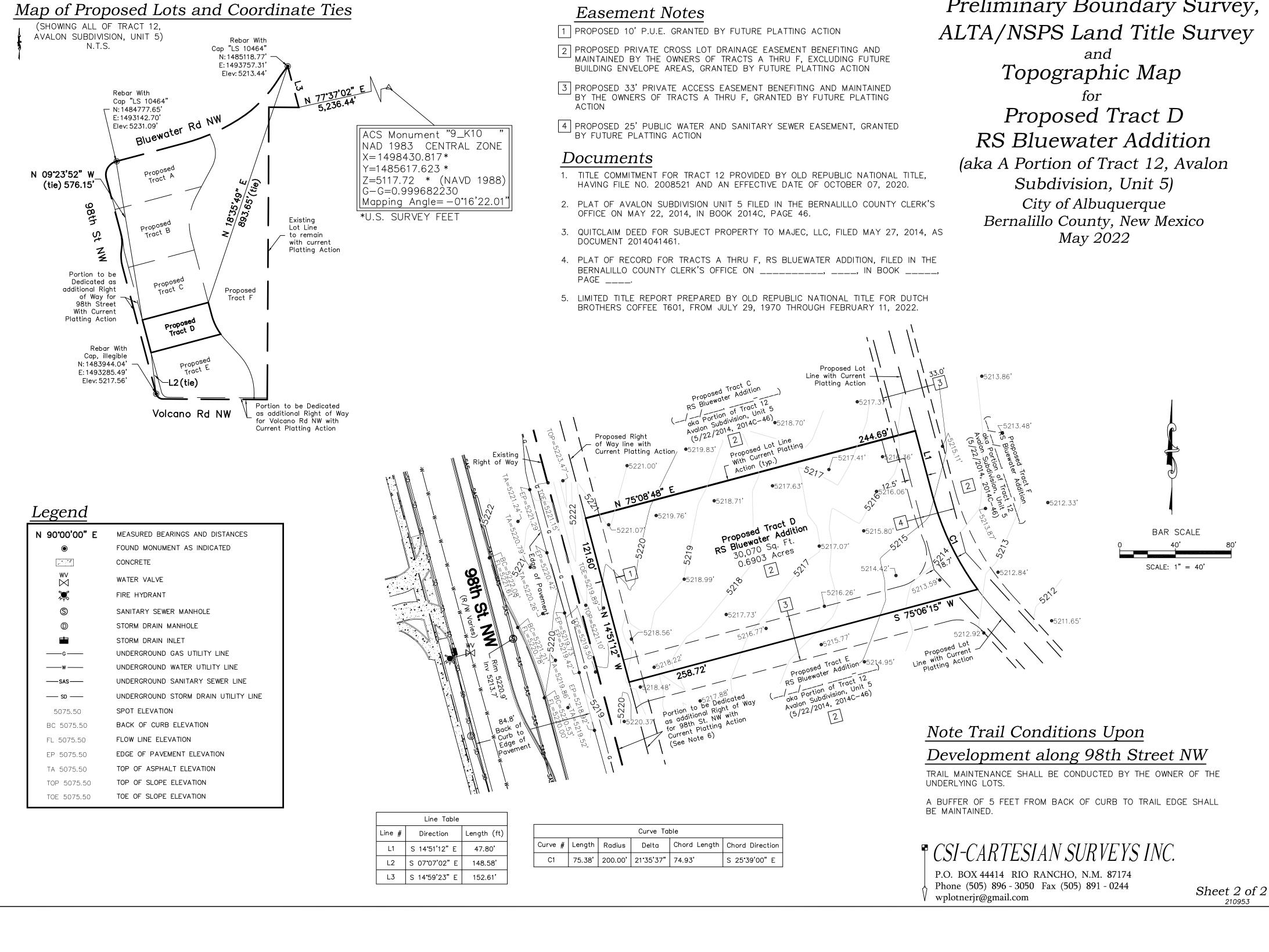
This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1-4, 5, 6(b), 7(a), 7(b1), 7(c), 8, 9, 11(a), 11(b), 13, 14, 16 and 17 of Table A thereof. The Field Work was completed on April 19, 2022.

N.M.R.P.S. No. 14271 4/27/2022 - Preliminary-Waiting for plat **Revisions:** to be finalized and recorded. 5/16/2022 - Revised certification

Surveyor's Certificate for Boundary Survey

I, Will Plotner Jr., New Mexico Professional Surveyor No. 14271, do hereby certify that this boundary survey plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the minimum standards for surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico subdivision act and that this instrument is a boundary survey plat of an existing tract or tracts.

N.M.R.P.S. No. 14271 14271 P.O. BOX 44414 RIO RANCHO, N.M. 87174 Phone (505) 896 - 3050 Fax (505) 891 - 0244 Sheet 1 of 2 wplotnerjr@gmail.com 210953



Preliminary Boundary Survey,

Appendix C

Basin Calculations

TABLE 6.9 COEFFICIENT C										
Zone		atment								
	А	В	С	D						
100 YEAR PEAK DISCHARGE (CSF/ACRE)										
1	0.34	0.47	0.63	0.90						
2	0.36	0.49	0.63	0.90						
3	0.37	0.50	0.64	0.91						
4	0.39	0.51	0.64	0.90						
2 YEAR PEAK DISCHARGE (CSF/ACRE)										
1	0.00	0.01	0.28	0.89						
2	0.00	0.04	0.33	0.89						
3	0.00	0.08	0.37	0.89						
4	0.00	0.13	0.41	0.89						
10 YEA	R PEAK DISCHAI	RGE (CSF/ACRE)								
1	0.11	0.28	0.51	0.90						
2	0.14	0.32	0.53	0.90						
3	0.16	0.34	0.54	0.90						
4	0.21	0.38	0.56	0.90						

Note the quote from the <u>ASCE Manual and Report on Engineering Practice No. 37 (1969)</u>. The commonly reported Rational C values "are applicable for storms to 5- to 10-yr. frequencies. Less frequent, higher intensity storms will require the use of higher coefficients because infiltration and other losses have a proportionally smaller effect on runoff." Thus higher C's realized under heavy precipitation might be expected.)

EXAMPLE 4 Recompute <u>"EXAMPLE 3"</u> using the Rational Method.

- Q = C | A
- = (0.27 * 4.02 * 3) + (0.43 * 4.02 * 5) + (0.61 * 4.02 * 2) + (0.93 * 4.02 * 4)
- = 37.13 cfs

6-1(A)(6) USE OF RATIONAL METHOD FOR WATERSHEDS LARGER THAN 40 ACRES

Peak rates of discharge may be computed for watersheds larger than 40 acres by using the Rational Method Coefficients (C's) from <u>Table 6.11</u> and modifying the Intensity (in/hr) for a larger time of concentration (t_c). This method may be used to establish peak flow rates for off-site flow areas when sizing channels, pipes and road crossings. On-site areas should be divided into 40 acre or smaller sub- basins and should not use this procedure. For watersheds larger than 40 acres, the rational method should not be used to establish allowable historic flow rates since it will tend to give somewhat larger values than those computed by unit hydro graph procedures.

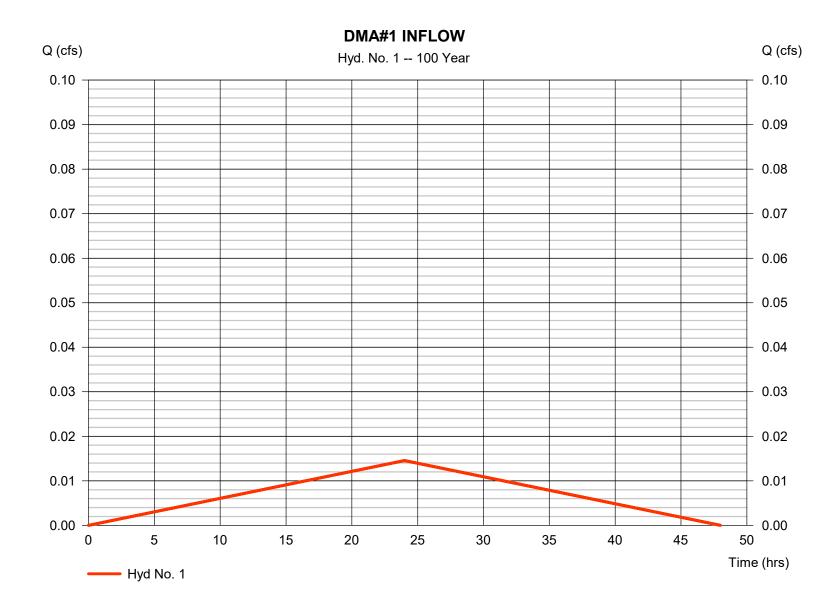
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 1

DMA#1 INFLOW

Hydrograph type	= Rational	Peak discharge	= 0.015 cfs
Storm frequency	= <mark>100 yrs</mark>	Time to peak	= 24.00 hrs
Time interval	= 1 min	Hyd. volume	= 1,257 cuft
Drainage area	= <mark>_0.130 ac</mark>	Runoff coeff.	= <mark>0.76</mark>
Intensity	= 0.147 in/hr	Tc by User	= <mark>1440.00 min</mark>
IDF Curve	= 22187 - Albuquerque.IDF	Asc/Rec limb fact	= 1/1



Friday, 06 / 3 / 2022

Hydrograph Report

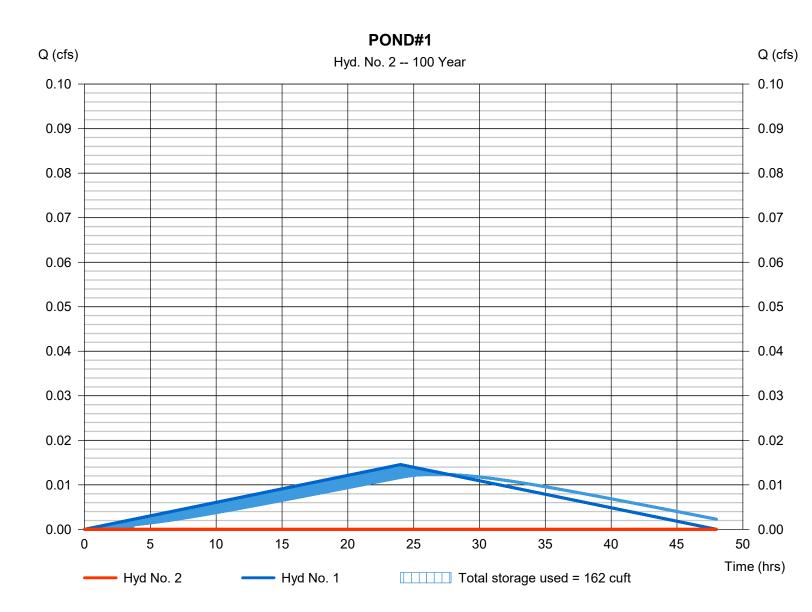
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 2

POND#1

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= <mark>100 yrs</mark>	Time to peak	= 21.57 hrs
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 1 - DMA#1 INFLOW	Max. Elevation	= <mark>_5217.70 ft</mark>
Reservoir name	= POND#1	Max. Storage	= 162 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



2

Friday, 06 / 3 / 2022

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Pond No. 1 - POND#1

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 5217.10 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	5217.10	109	0	0
1.00	5218.10	470	268	268

Culvert / Orifice Structures

Culvert / Orifice Structures					Weir Structu	res			
	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00	Crest Len (ft)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00	Crest El. (ft)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert EI. (ft)	= 0.00	0.00	0.00	0.00	Weir Type	=			
Length (ft)	= 0.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 0.00	0.00	0.00	n/a					INFILTRATION RATE PER
N-Value	= .013	.013	.013	n/a					GETECH REPORT (4 IN/HR)
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 2.000 (by	/ Contour)	K	WITH SAFETY FACTOR OF 2
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage	Storage	Elevation	Clv A	Clv B	Clv C	PrfRsr	Wr A	Wr B	Wr C	Wr D	Exfil	User	Total
ft	cuft	ft	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs	cfs
0.00 1.00	0 268	5217.10 5218.10									0.000 0.022		0.000 0.022

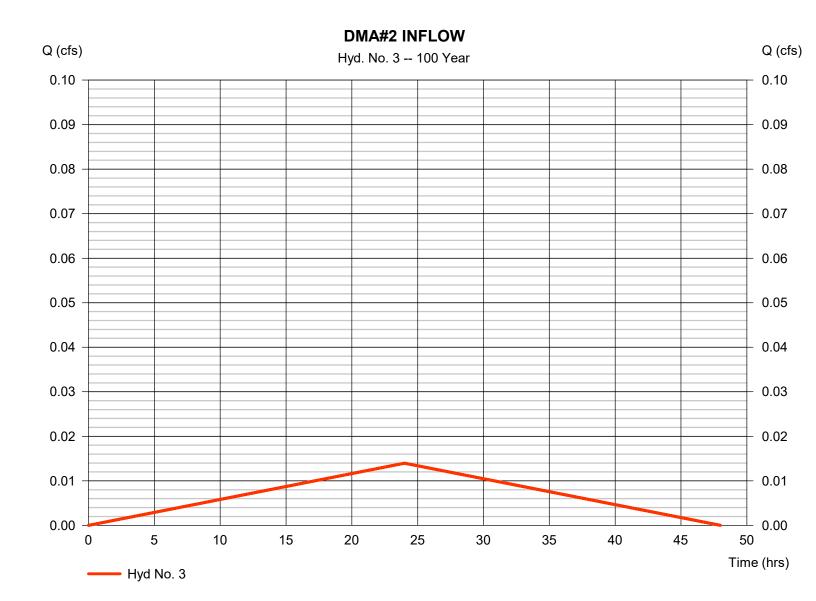
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 3

DMA#2 INFLOW

I Peak discharge	= 0.014 cfs
Time to peak	= 24.00 hrs
Hyd. volume	= 1,206 cuft
c Runoff coeff.	= 0.79
/hr Tc by User	= <mark>1440.00 min</mark>
Albuquerque.IDF Asc/Rec limb fact	= 1/1
	Time to peak Hyd. volume Runoff coeff. /hr Tc by User



Friday, 06 / 3 / 2022

Hydrograph Report

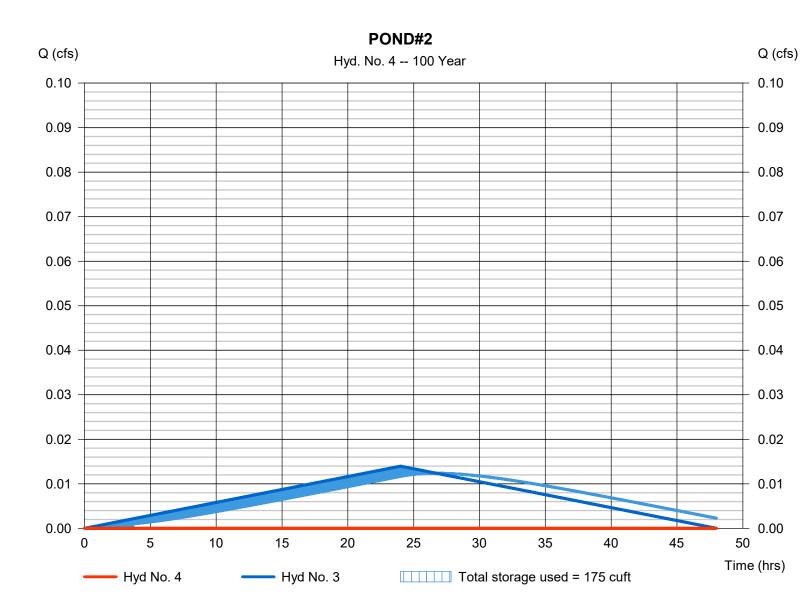
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 4

POND#2

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= <mark>100 yrs</mark>	Time to peak	= 18.68 hrs
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 3 - DMA#2 INFLOW	Max. Elevation	= <mark>_5217.49 ft</mark>
Reservoir name	= POND#2	Max. Storage	= 175 cuft

Storage Indication method used. Exfiltration extracted from Outflow.



5

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Pond No. 2 - POND#2

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 5216.65 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	5216.65	116	0	0
1.00	5217.65	320	210	210

Culvert / Orifice Structures

Culvert / Orif	fice Structu		Weir Structu	res					
	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 0.00	0.00	0.00	0.00	Crest Len (ft)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00	Crest El. (ft)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 0.00	0.00	0.00	0.00	Weir Type	=			
Length (ft)	= 0.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 0.00	0.00	0.00	n/a				INF	FILTRATION RATE PER
N-Value	= .013	.013	.013	n/a			,	/ GE	TECH REPORT (4 IN/HR)
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 2.000 (by	/ Contour	- WI	TH SAFETY FACTOR OF 2
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

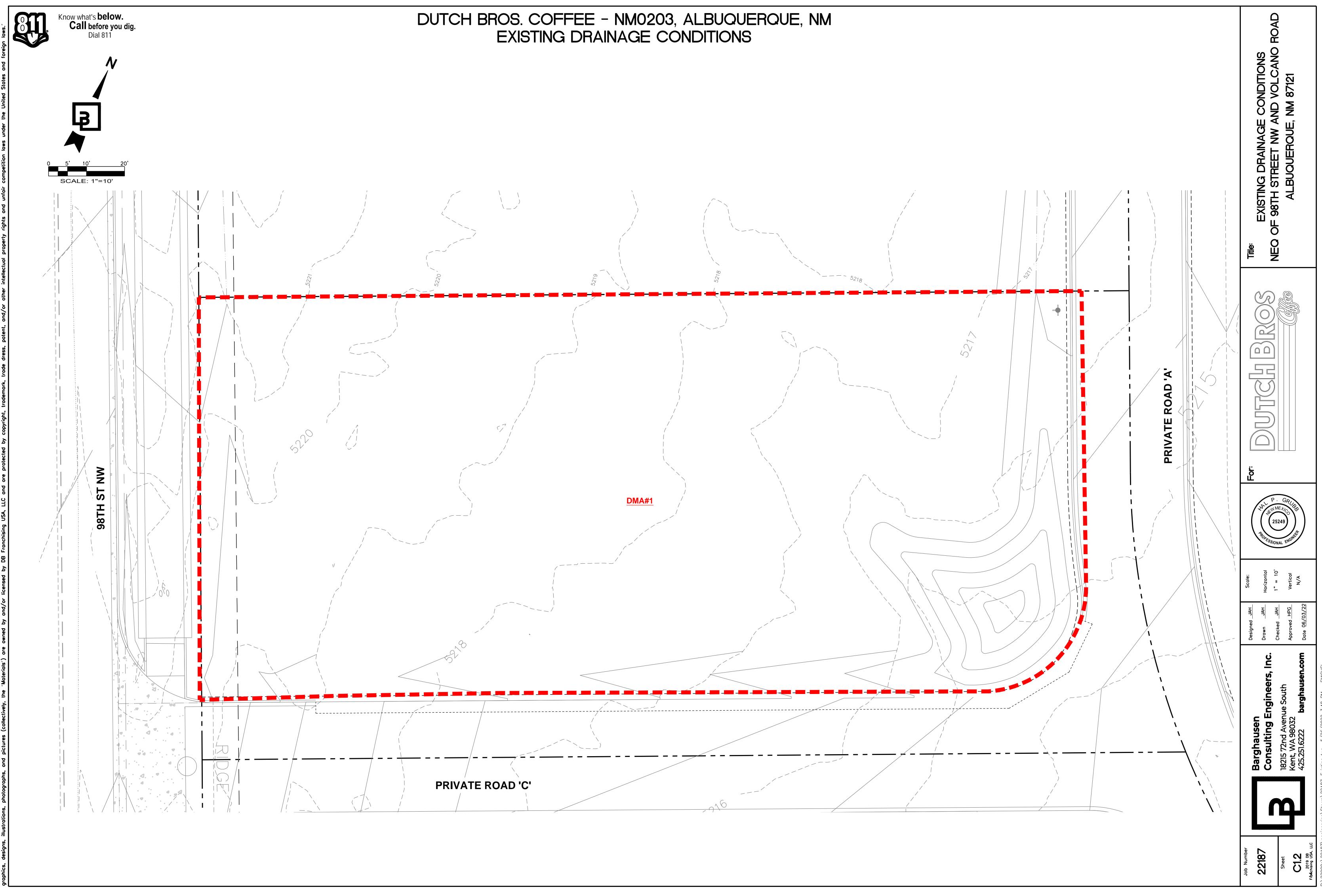
Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

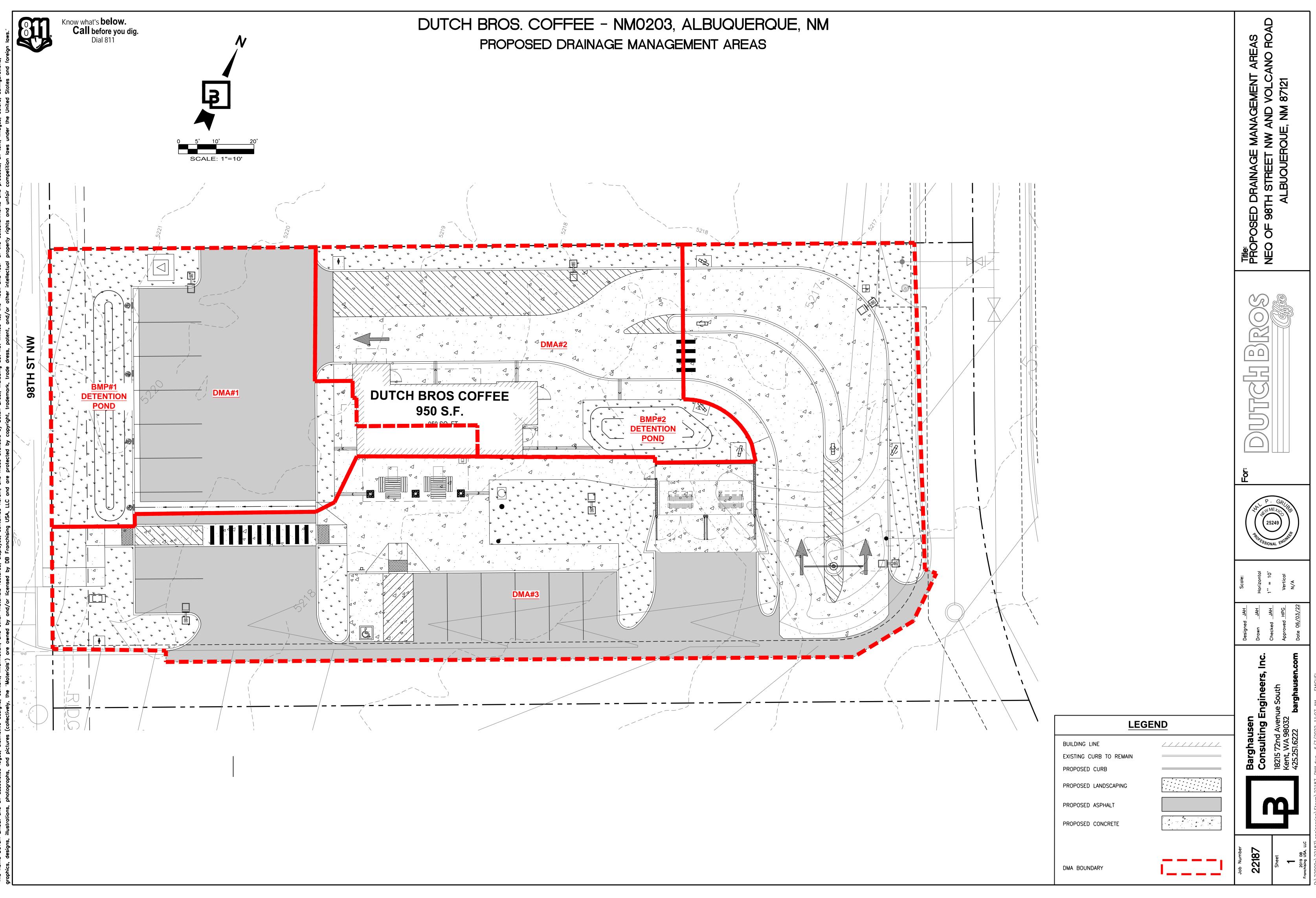
Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	5216.65									0.000		0.000
1.00	210	5217.65									0.015		0.015

Appendix D

Pre-Developed Drainage Exhibit Proposed Drainage Management Areas Exhibit



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