

# CITY OF ALBUQUERQUE

Planning Department  
Alan Varela, Director



Mayor Timothy M. Keller

October 01, 2024

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

**RE: Retail at Bar 7  
Conceptual Grading Plan and Conceptual Drainage Report  
Engineer's Stamp Date: 09/25/2024  
Hydrology File: B14D010D**

Dear Mr. Bohannon:

Based upon the information provided in your submittal received 09/27/2024, the Conceptual Grading Plan and Conceptual Drainage Report are preliminarily approved for action by the Development Facilitation Team (DFT) on the Site Plan for a Building Permit.

**PRIOR TO BUILDING PERMIT / WORK ORDER:**

1. Please submit a more detailed Grading & Drainage Plan to Hydrology for review and approval. This digital (.pdf) is emailed to [PLNDRS@cabq.gov](mailto:PLNDRS@cabq.gov) along with the Drainage Transportation Information Sheet.

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 505-924-3362 or [richardmartinez@cabq.gov](mailto:richardmartinez@cabq.gov).

Sincerely,

Richard Martinez, P.E.  
Senior Engineer, Hydrology  
Planning Department



# City of Albuquerque

Planning Department  
Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (DTIS)

Project Title: \_\_\_\_\_ Hydrology File # \_\_\_\_\_

Legal Description: \_\_\_\_\_

City Address, UPC, OR Parcel: \_\_\_\_\_

Applicant/Agent: \_\_\_\_\_ Contact: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Applicant/Owner: \_\_\_\_\_ Contact: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Email: \_\_\_\_\_

(Please note that a DFT SITE is one that needs Site Plan Approval & ADMIN SITE is one that does not need it.)

**TYPE OF DEVELOPMENT:** PLAT (#of lots) \_\_\_\_\_ RESIDENCE  
DFT SITE ADMIN SITE

RE-SUBMITTAL: YES NO

**DEPARTMENT:** TRANSPORTATION HYDROLOGY/DRAINAGE

**Check all that apply under Both the Type of Submittal and the Type of Approval Sought:**

### TYPE OF SUBMITTAL:

- ENGINEER/ARCHITECT CERTIFICATION
- PAD CERTIFICATION
- CONCEPTUAL G&D PLAN
- GRADING & DRAINAGE PLAN
- DRAINAGE REPORT
- DRAINAGE MASTER PLAN
- CLOMR/LOMR
- TRAFFIC CIRCULATION LAYOUT (TCL)  
ADMINISTRATIVE
- TRAFFIC CIRCULATION LAYOUT FOR DFT  
APPROVAL
- TRAFFIC IMPACT STUDY (TIS)
- STREET LIGHT LAYOUT
- OTHER (SPECIFY) \_\_\_\_\_

### TYPE OF APPROVAL SOUGHT:

- BUILDING PERMIT APPROVAL
- CERTIFICATE OF OCCUPANCY
- CONCEPTUAL TCL DFT APPROVAL
- PRELIMINARY PLAT APPROVAL
- FINAL PLAT APPROVAL
- SITE PLAN FOR BLDG PERMIT DFT  
APPROVAL
- SIA/RELEASE OF FINANCIAL GUARANTEE
- FOUNDATION PERMIT APPROVAL
- GRADING PERMIT APPROVAL
- SO-19 APPROVAL
- PAVING PERMIT APPROVAL
- GRADING PAD CERTIFICATION
- WORK ORDER APPROVAL
- CLOMR/LOMR
- OTHER (SPECIFY) \_\_\_\_\_

DATE SUBMITTED: \_\_\_\_\_

# 7 Bar Retail CONCEPTUAL DRAINAGE REPORT

August 2024



**PREPARED FOR:**

**A Management Inc.,  
4461 Irving Blvd NW  
Albuquerque, NM 87114**

**PREPARED BY:**



**Tierra West, LLC  
5571 Midway Park Place NE  
Albuquerque, NM 87109**

City of Albuquerque Planning Department Development Review Services HYDROLOGY SECTION	
<b>PRELIMINARY APPROVED</b>	
DATE:	10/01/2024
BY:	<i>[Signature]</i>
HydroTrans #	B14D010D
THESE PLANS AND/OR REPORT ARE CONCEPTUAL ONLY. MORE INFORMATION MAY BE NEEDED IN THEM AND SUBMITTED TO HYDROLOGY FOR BUILDING PERMIT APPROVAL.	

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# 1. Executive Summary

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This Drainage Report updates the previously approved report for the site and defines the drainage strategy for the proposed 7 Bar Retail development in Albuquerque, NM. The development, envisioned by A Management Inc., aims to integrate a mix of residential and commercial entities, including 14 townhomes, a sit-down restaurant, a cannabis retail outlet, and an office building. Spanning an area of 3.14 acres within the Cottonwood Crossings Major Site Plan, the 7 Bar Retail site is set to leverage existing infrastructure to meet its drainage needs, thereby negating the necessity for additional ponding capacity. The site is located on the west side of Albuquerque west of the intersection of Seven Bar Loop and Coors Bypass. The overall site is partially developed with a Popeye's, a Take-5 car wash, Nusenda Credit Union.

The analysis builds upon previously established drainage frameworks, specifically referencing the Tract 14A and 14B Black Ranch Drainage Report from October 2003. Through detailed study, it is determined that the 7 Bar Retail development will not exceed previously approved discharge rates. This conclusion is supported by a thorough examination of the site's current and developed conditions, including land treatments, precipitation, flood hazard zones, street and storm drain hydraulics and stormwater quality considerations.

This analysis follows the original approval and analysis utilizing the Weighted E methodology, as per the City of Albuquerque's Development Process Manual (Revised September 2020), for runoff and volume calculations. This method, alongside the project's adherence to the city's IDO requirements, ensures that the development's impact on local drainage systems remains within acceptable limits.

Significant findings include the adjustment of on-site drainage basins to reflect recent developments, slight modifications to the drainage basins that ultimately results in a reduction in directed drainage area to the AMAFCA Pond. The original approval for the site allowed a discharge of 46.61 cfs and the updated flow rate shows a reduction of 9.63 cfs to 36.98 cfs., affirming that the current infrastructure is adequately equipped to handle the proposed development's drainage needs without additional modifications. A volume analysis/comparison was also completed via the weighted E method and it has been shown that there is an overall decrease of .05 ac-feet needed. The total volume of the pond remains unaffected.

In conclusion, the 7 Bar Retail Drainage Report presents a well-structured plan that harmonizes new development with existing drainage capabilities, ensuring environmental compliance and sustainable urban growth. The proactive approach to stormwater management exemplified in this report signifies a commitment to responsible development practices, highlighting the project's potential to contribute positively to the Albuquerque community.

# 2. Introduction

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This drainage report is to present a final grading and drainage solution for the proposed mixed-use development of the 7 Bar Retail Development and highlight the effects on the previously approved Drainage Report titled Tract 14A and 14B Black Ranch dated October 2023. The analysis will show that

previous development within the Major Site Plan and the changes brought about by the 7 Bar Retail development to the Major Site Plan require no additional ponding capacity to the existing AMAFCA ponding facility within the Major Site Plan and that previously approved discharge rates are not exceeded.

### **3. Project Location & Major Site Plan Background**

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The proposed 7 Bar Retail development is located just East of the intersection of Coors Rd NW and Seven Bar Loop in Northwest Albuquerque. The exact location of the site is shown highlighted in Blue in Figure 1 below, which is wholly within the Cottonwood Crossings Major Site Plan shown in Red. The 7 Bar Retail site totals 3.1388 acres and are zoned MX-T (Mixed Use-Transition) and MX-L (Mixed Use-Low Intensity), legally described as Lot 2-A and 2-B of Lots 2-A, 2-B, 2-C and 2-D Cottonwood Crossing Phase II (Being a Replat of Tract 2 Cottonwood Crossing Phase II).

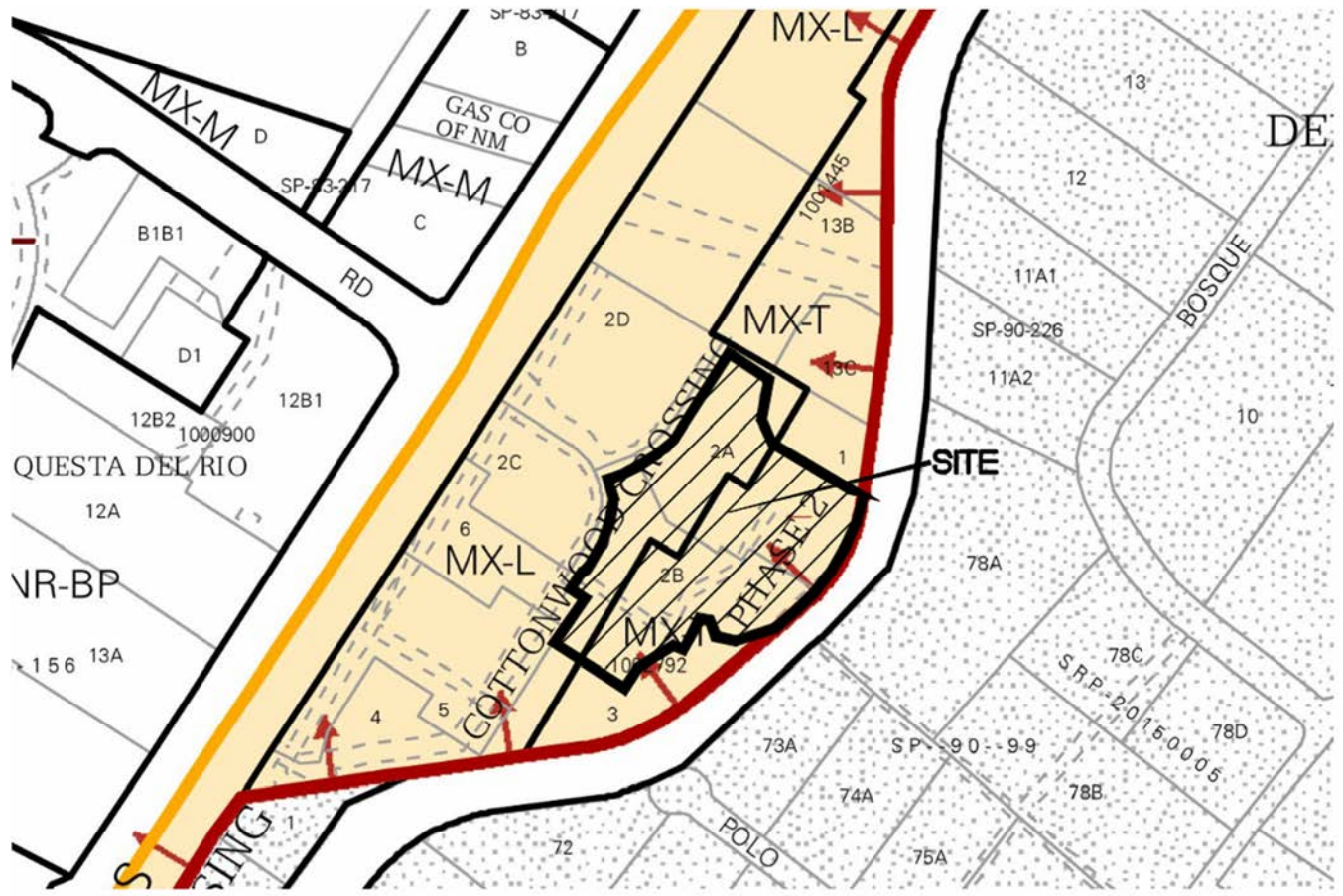
The limits of the Major Site Plan are located along Coors Blvd. It is bounded by Coors Blvd to the West, an undeveloped MX-T and MX-L lot to the North, Corrales Main Canal and Maintenance road to the East and South East, and a Bernalillo County commercial property to the South. The Major Site Plan is approximately 9.4 acres more or less. A Vicinity map can be seen in **Figure 1** for both the 7 Bar Retail Development and the Cottonwood Crossing Major Site Plan.

Since the approval of the Drainage Report for Tract 14A and 14B Black Ranch and the approval of the Cottonwood Crossing Major Site Plan the following uses have been developed;

#### **Developed**

- Commercial Services (Nusenda Bank)
- Fast Food Restaurant (Popeye's)
- Car Wash (Take 5)
- Drainage Pond (AMAFCA)

In addition, Lot 1 of the Major Site Plan is an Archeological Site that has been dedicated to the City of Albuquerque



VICINITY MAP

B-14

Figure 1 - Vicinity Map





Figure 2 - Vicinity Map with Major Site Plan Boundary Delineated

## 4. Relevant Drainage Reports & Drainage Plans

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- Drainage Report for “Tract 14A and 14B Black Ranch” dated October 2003. prepared by Tierra West LLC.
- Popeye’s Chicken – Grading and Drainage Plan
- Take 5 – Cottonwood Crossings Car Wash - Drainage Plan prepared by RESPEC.
- Nusenda – Existing Drainage Plan

## 5. Flood Hazard Zones

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The site is located on FEMA Map 35001C0109H as shown in figure 3 below. The map shows that the site lies within an unshaded Zone -X (minimal flood risk), but adjacent to a shaded Zone-X (protected by Levee) and an approximate Zone A (for the AMAFCA Drainage facility).

The following *italicized* text is directly from the Drainage Report for “Tract 14A and 14B Black Ranch” dated October 2003. *The offsite drainage area consists of fourteen (14) sub-basins as outlined in the*

- *Alameda West Shopping Center Drainage Report*
- *Questa Del Rio Drainage Management Plan*
- *North Coors Drainage Management Plan.*

All of the flows from the off-site drainage area are subsequently routed to the AMAFCA detention pond on Tract 14 via a storm sewer system. Nearly half of the off-site flows are collected in a detention pond located in the Alameda West Shopping Center where it is released into the existing storm sewer at a controlled rate of 42.14 cfs. The flow then combines with the peak flow of 66.14 cfs generated by Questa Del Rio and the adjacent sub-basins. The combined peak flow is then routed to Tract 14 for a resulting flow of 103.59 cfs. These flows are then contained in the AMAFCA detention pond where the outflow is controlled to release 14 cfs into the Corrales Main Canal. To our knowledge at the time of this report these off-site flows have not been changed and our project lies outside the limits of the above areas.

Note that the flows entering the AMAFCA pond from the new development on the subject site are shown to be less than the previously approved flows from the original EPC approved Site Plan referenced in the Drainage Report for “Tract 14A and 14B Black Ranch”.

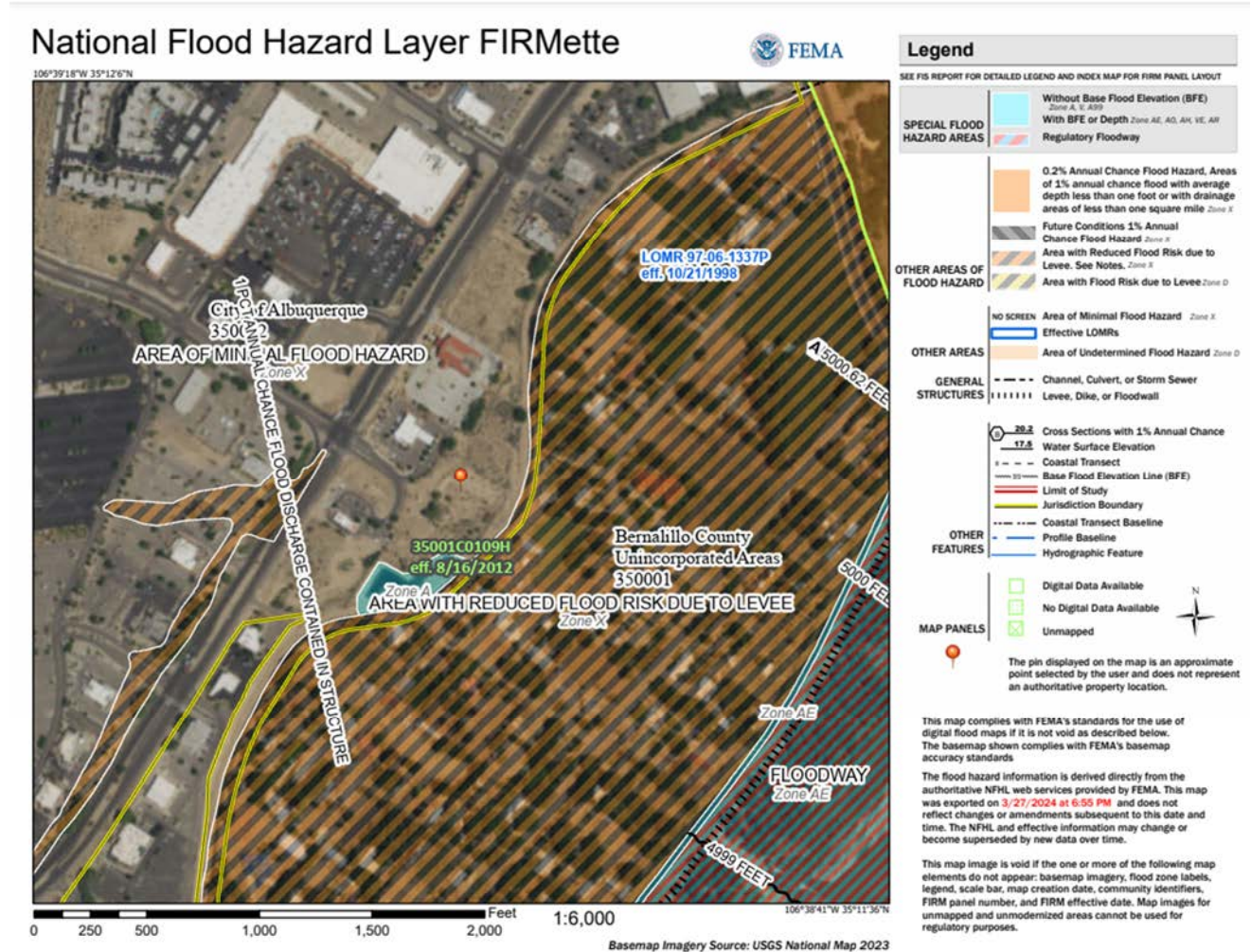


Figure 3 - FEMA FIRMette Map

## 6. Methodology

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This drainage study is based on the procedures as outlined in the City of Albuquerque’s Development Process Manual, Revised September 2020. This drainage study uses the Weighted E method and is used to calculate the runoff and volume for the site based on a 100-year, 6-hour storm event. The Weighted E Tables for On-Site and Off-Site flows can be referenced in this report and have also been provided in the Appendices.

## 7. Precipitation

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The 100-yr 6-hr design storm was used for this analysis. These values were obtained from the COA Design Process Manual dated September 4<sup>th</sup> 2020 from Table 6.2.8 titled Precipitation for Zones 1-4. These values can be found in Appendix A.

## 8. Land Treatments

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The land treatments used in the Weighted E are as described in the City of Albuquerque Development Process Manual, summarized below:

- Land Treatment A – Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unlined Arroyos.
- Land Treatment B – Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
- Land Treatment C – Soil compacted by human activity. Unpaved parking, roads and trail. Most vacant lots. Gavel or rock on plastic (desert landscaping)
- Land Treatment D – Impervious areas, pavement and roofs.

The overall project contains a mixed use of proposed developments which includes both commercial, residential, and open space.

## 9. Approved Conditions

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The approved Drainage Report for “Tract 14A and 14B Black Ranch” dated October 2003 which is associated with the Cottonwood Crossing Major Site Plan dated 10-20-2003 shows Eleven (11) drainage basins

associated with the Major Site Plan. Six (6) of these basins are on-site basins totaling 36.29 cfs and Five (5) off-site basins totaling 7.32 cfs for a combined total of 43.61 cfs.

In regards to the on-site basins, the site is divided into Six (6) Sub-Basins with Sub-Basins 1 - 3 sheet flowing to the AMAFCA Detention Pond. The AMAFCA detention pond is itself defined as Basin 5. Basin 4, which is mostly comprised of the Archeological site, also sheet flows into the Corrales Main Canal. It should be noted that in the original Drainage Report for “Tract 14A and 14B Black Ranch” dated October 2003 the flow from the Archeological site was attributed to the AMAFCA pond in error. The total developed discharge into the pond from all six on site basins is 36.29 cfs. Additionally In the above referenced drainage report The on-site AMAFCA Pond is shown to have a total volume of 3.3770 acre-feet | 187,308 ft<sup>3</sup>

Since the approval of the Cottonwood Crossing Major Site Plan and associated Drainage Report for “Tract 14A and 14B Black Ranch” there have been a number of parcels within the Major Site Plan that had been developed without an update to the Major Site Plan or the above referenced Drainage Report. As noted in Section 3 of this report, the newly developed uses are as follows.

- Commercial Services (Nusenda Bank)
  - Overall Grading Plan shows that Off-Site Basin #5 from *DR Tract 14A and 14B Black Ranch* now sheet flows north and eventually sheet flows into Corrales Main Canal.
  - Remaining on-site flows sheet flow to the AMAFCA Pond.
- Fast Food Restaurant (Popeye’s)
  - On-site flows sheet flow to AMAFCA Pond
- Car Wash (Take 5)
  - On-site flows sheet flow to AMAFCA Pond

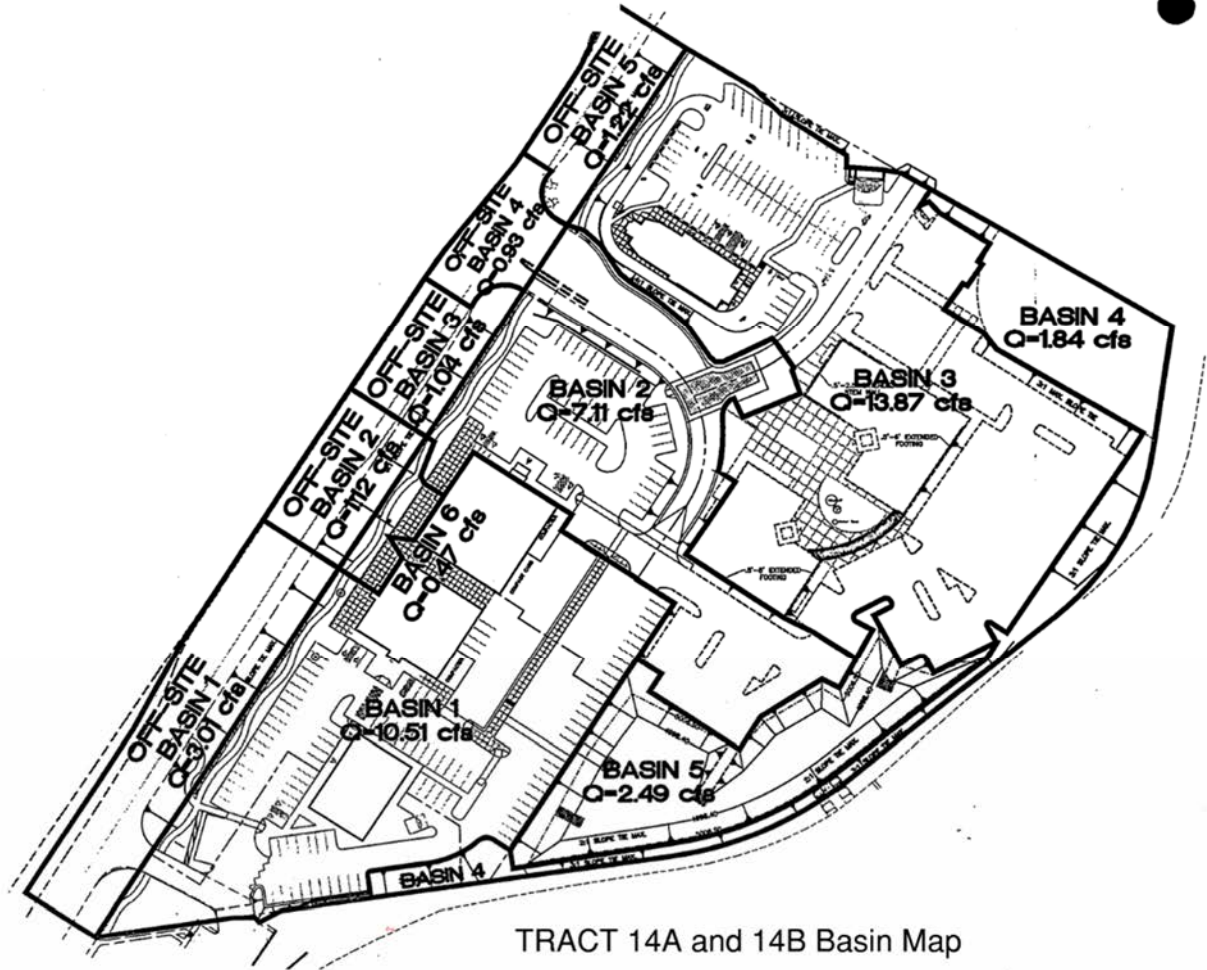


Figure 4: Tract 14A & 14B Basin Map from Original Drainage Report

## 10. Developed Conditions

The proposed project is a mixed-use development that will be comprised of 3 commercial spaces and 14 townhomes. In relation to Coors Boulevard the 3 proposed commercial spaces are situated approximately 250'-300' from Coors with 3 existing commercial uses between the site and Coors. The existing buildings west of the proposed development include a fast food drive through, a carwash facility, and credit union with drive through. The new uses to be developed are commercial office, restaurant, cannabis retail and residential town home lots that will include paved roads, curbs, and sidewalks within the Cotton Wood Crossings Major Site Plan.

# 10.1. Basins

Within the recently updated and amended Major Site Plan that reflects recently developed projects and resulting changes to the basins there are now (16) Sixteen total basins within the major site plan boundary (5) five of which are off-site basins with (11) on-site basins. (Reference Basin map in Appendices)

In regards to the AMAFCA ponding facility, (4) off-site basins and (8) on-site basins are contributing storm water runoff into the facility in the amounts of 6.41 CFS and 30.57 CFS as can be references in Table 1 below. Of the remaining (4) basins 6.41 CFS sheet flow into the Corrales Main Canal via other routes.

It should be noted that the Basin associated with the archeological site as well as the basin comprised of the AMAFCA Access easement along the canal were both removed from the developed conditions that contribute to the pond as the site sheet flows into the Corrales Main Canal. This results in overall less drainage area being directed to the AMAFCA Pond than identified in the previous study.

The on-site basins were figured to have 85% land Treatment D and 15% land Treatment B in line with City of Albuquerque IDO requirements. Note that Basin #9 the AMAFCA Pond was figured at 100% Treatment D to account for the Shotcrete impervious materials. For the (8) Eight on-site basins the resulting developed discharge was calculated to be 30.57 cfs which is 5.72 CFS below the 36.29 CFS originally designed for and approved in the Drainage Report for “Tract 14A and 14B Black Ranch”

Table 1: On-Site Developed Weighted E Table

**DPM Weighted E Method**

Precipitation Zone 1  
 COORS BLVD NW  
 RETAIL @ 7BAR  
 TWLLC Date: 09/25/2024  
 Reference Document DPM dated 09/2020

Basin Descriptions												100-Year Excess Precipitation			10-Year Excess Precipitation			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
OFF-SITE BASIN #1	Coors Blvd	33,734.50	0.774	0.00121	0%	0.00	0%	0.00	0%	0.00	100%	0.77	2.24	0.14	3.19	1.43	0.09	1.99
OFF-SITE BASIN #2	Coors Blvd	15,064.40	0.346	0.00054	0%	0.00	0%	0.00	0%	0.00	100%	0.35	2.24	0.06	1.42	1.43	0.04	0.89
OFF-SITE BASIN #3	Coors Blvd	11,158.80	0.256	0.00040	0%	0.00	0%	0.00	0%	0.00	100%	0.26	2.24	0.05	1.06	1.43	0.03	0.66
OFF-SITE BASIN #4	Coors Blvd	7,793.50	0.179	0.00028	0%	0.00	0%	0.00	0%	0.00	100%	0.18	2.24	0.03	0.74	1.43	0.02	0.46
<b>Total</b>		<b>67,751.20</b>	<b>1.555</b>	<b>0.00243</b>		<b>0.00</b>		<b>0.00</b>		<b>0.00</b>		<b>1.56</b>	<b>V<sub>360</sub> = 0.29</b>	<b>6.41</b>		<b>0.19</b>	<b>4.00</b>	

**Proposed Conditions - Updated Major Site Plan - Contributing**

Basin Descriptions												100-Year Excess Precipitation			10-Year Excess Precipitation			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
BASIN #1	Undeveloped	101,659.50	2.334	0.00365	0%	0.00	15%	0.35	0%	0.00	85%	1.98	2.01	0.39	8.93	1.25	0.24	5.38
BASIN #2	Popeyes	25,915.70	0.595	0.00093	0%	0.00	15%	0.09	0%	0.00	85%	0.51	2.01	0.10	2.28	1.25	0.06	1.37
BASIN #3	Take 5	34,146.13	0.784	0.00122	0%	0.00	15%	0.12	0%	0.00	85%	0.67	2.01	0.13	3.00	1.25	0.08	1.81
BASIN #4	Nusenda	60,271.00	1.384	0.00216	0%	0.00	15%	0.21	0%	0.00	85%	1.18	2.01	0.23	5.29	1.25	0.14	3.19
BASIN #5	7 Bar - B, C, TH 8-14	68,859.35	1.581	0.00247	0%	0.00	15%	0.24	0%	0.00	85%	1.34	2.01	0.27	6.05	1.25	0.17	3.65
BASIN #6	7 Bar - Upper Inlet	8,742.27	0.201	0.00031	0%	0.00	15%	0.03	0%	0.00	85%	0.17	2.01	0.03	0.77	1.25	0.02	0.46
BASIN #7	Building A, TH 1-7	12,726.87	0.292	0.00046	0%	0.00	15%	0.04	0%	0.00	85%	0.25	2.01	0.05	1.12	1.25	0.03	0.67
BASIN #9	AMAFCA Pond	33,203.30	0.762	0.00119	0%	0.00	0%	0.00	0%	0.00	100%	0.76	2.24	0.14	3.14	1.43	0.09	1.96
<b>Total</b>		<b>345,524.12</b>	<b>7.992</b>	<b>0.01239</b>		<b>0.00</b>		<b>1.08</b>		<b>0.00</b>		<b>6.86</b>	<b>V<sub>360</sub> = 1.35</b>	<b>30.57</b>		<b>0.84</b>	<b>18.49</b>	

**Non-contributing Basins (Sheet flow to Corrales Main Canal or Retained On-Site)**

Basin Descriptions												100-Year Excess Precipitation			10-Year Excess Precipitation			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
OFF-SITE BASIN #5	Coors Blvd	14,353.10	0.330	0.00051	0%	0.00	0%	0.00	0%	0.00	100%	0.33	2.24	0.06	1.36	1.43	0.04	0.85
BASIN #8	NR-PO-B	18,807.10	0.432	0.00067	0%	0.00	100%	0.43	0%	0.00	0%	0.00	0.73	0.03	0.93	0.26	0.01	0.35
Access Easement Basins	Access Easement Basins	3,940.00	0.090	0.00014	0%	0.00	0%	0.00	100%	0.09	0%	0.00	0.95	0.01	0.26	0.43	0.00	0.13
Basin #11	TH Backyards	11,121.00	0.255	0.00040	0%	0.00	100%	0.26	0%	0.00	0%	0.00	0.73	0.02	0.55	0.26	0.01	0.21
<b>Total</b>		<b>48,221.20</b>	<b>1.107</b>	<b>0.00173</b>		<b>0.00</b>		<b>0.69</b>		<b>0.09</b>		<b>0.33</b>	<b>V<sub>360</sub> = 0.11</b>	<b>3.10</b>		<b>0.06</b>	<b>1.54</b>	

## 10.2. Pond Volume Comparison

Page 15 of the Drainage Report titled *Tract 14A and 14B Black Ranch* dated October 2023 shows the previous Weighted E Method table for the site post development and the resulting calculated Volume ( $V_{360}$ ) as a result of both the 100-yr event and the 10-year event for the previously approved Site Plan. The existing off-site basins were shown to contribute volumes of 0.27 ac-ft and 0.16 ac-ft for the 100-yr and 10-yr event respectively. The Developed On-Site Sub-Basins, including the sidewalk culvert basins, were shown to contribute 1.43 ac-ft and 0.85 ac-ft for the 100-yr and 10-yr event respectively. In total the contributing flows resulted in a Volume of 1.69 ac-ft for the 100-yr event and 1.01 ac-ft for the 10-yr event.

The updated Weighted E Method table developed for the new site plan (reference Table 1) shows that the existing off-site basins will contribute volumes of 0.29 ac-ft and 0.19 ac-ft for the 100-yr and 10-yr event respectively. The new Developed On-Site Sub-Basins are shown to contribute 1.35 ac-ft and 0.84 ac-ft for the 100-yr and 10-yr event respectively. In total the contributing flows resulted in a Volume of 1.64 ac-ft for the 100-yr event and 1.03 ac-ft for the 10-yr event.

In Summary and as shown in Table 2 below the 100-yr volume from the proposed site plan is shown to have an overall decrease of .05 ac-feet and therefore does not adversely impact the designed storage capacity of the existing AMAFCA facility.

Table 2 - Volume Comparison from Previously Approved Drainage Report

Contributing Volume Comparison				
	New - 7 Bar	Old - Cottonwood	New - 7 Bar	Old - Cottonwood
Basins	100-yr		10-yr	
Off Site Contributing (ac-ft)	0.29	0.27	0.19	0.16
On-Site Contributing (ac-ft)	1.35	1.43	0.84	0.85
	<b>1.64</b>	<b>1.69</b>	<b>1.03</b>	<b>1.01</b>

## 10.3. Backyard Ponding

Due to AMAFCA's direction that requires that the fenced in portion of the Private TH's not to drain into the access easement and drainage canal, individual backyard detention ponds have been sized to account for and hold the precipitation for a 100yr-10day rain event. The SF of the Backyard area and the pond depth required to accommodate this precipitation amount is shown in Table 3 - Backyard Pond Size Tables

below. The grading and drainage plan submitted with this narrative reflects backyard ponds with these minimum storage amounts accounted for in the grading and drainage of the properties.

Table 3 - Backyard Pond Size Tables

DPM			Backyard Ponding Requirements					
100yr   10day								
Rainfall	3.9	in	Townhome	Drainage Area (SF)	Total Volume (CF)	Ponding Area (SF)	Reqd Depth (FT)	Reqd. Depth (in)
	0.325	ft						
			TH1	384.4	124.9	384.4	0.3	3.9
			TH2	393.4	127.9	393.4	0.3	3.9
			TH3	393.4	127.9	393.4	0.3	3.9
			TH4	370.6	120.4	370.6	0.3	3.9
			TH5	330.7	107.5	330.7	0.3	3.9
			TH6	280.1	91.0	280.1	0.3	3.9
			TH7	131.3	42.7	131.3	0.3	3.9
			TH8	300.6	97.7	300.6	0.3	3.9
			TH9	459.2	149.2	459.2	0.3	3.9
			TH10	378.7	123.1	378.7	0.3	3.9
			TH11	715.5	232.5	715.5	0.3	3.9
			TH12	811.8	263.8	811.8	0.3	3.9
			TH13	666.9	216.7	666.9	0.3	3.9
			TH14	474.5	154.2	474.5	0.3	3.9
			<b>Totals</b>	<b>6,091.10</b>	<b>1,979.61</b>	<b>6,091.10</b>		

## 10.4. Street Hydraulics

For the analysis of Street Hydraulic Design the program Flow Master by Bentley was used and the most conservative street cross sections were used to show compliance with DPM section 6-9(A) Street Hydraulic Design Criteria;

- The calculated hydraulic grade line (HGL) for the 100-year design storm discharge may not exceed curb height.
  - Note that for a sump condition, which is present on the site, the HGL for the 100-year storm may extend to the street ROW.
- The calculated energy grade line (EGL) shall be contained within the street ROW.
- The product of depth x velocity shall not exceed 6.5 in any location in any street in the event of a 10-year design storm.

The design of the site has 3 unique conditions (See Figure 5 below) in which the analysis was performed in accordance with the requirements of section 6-9(A)



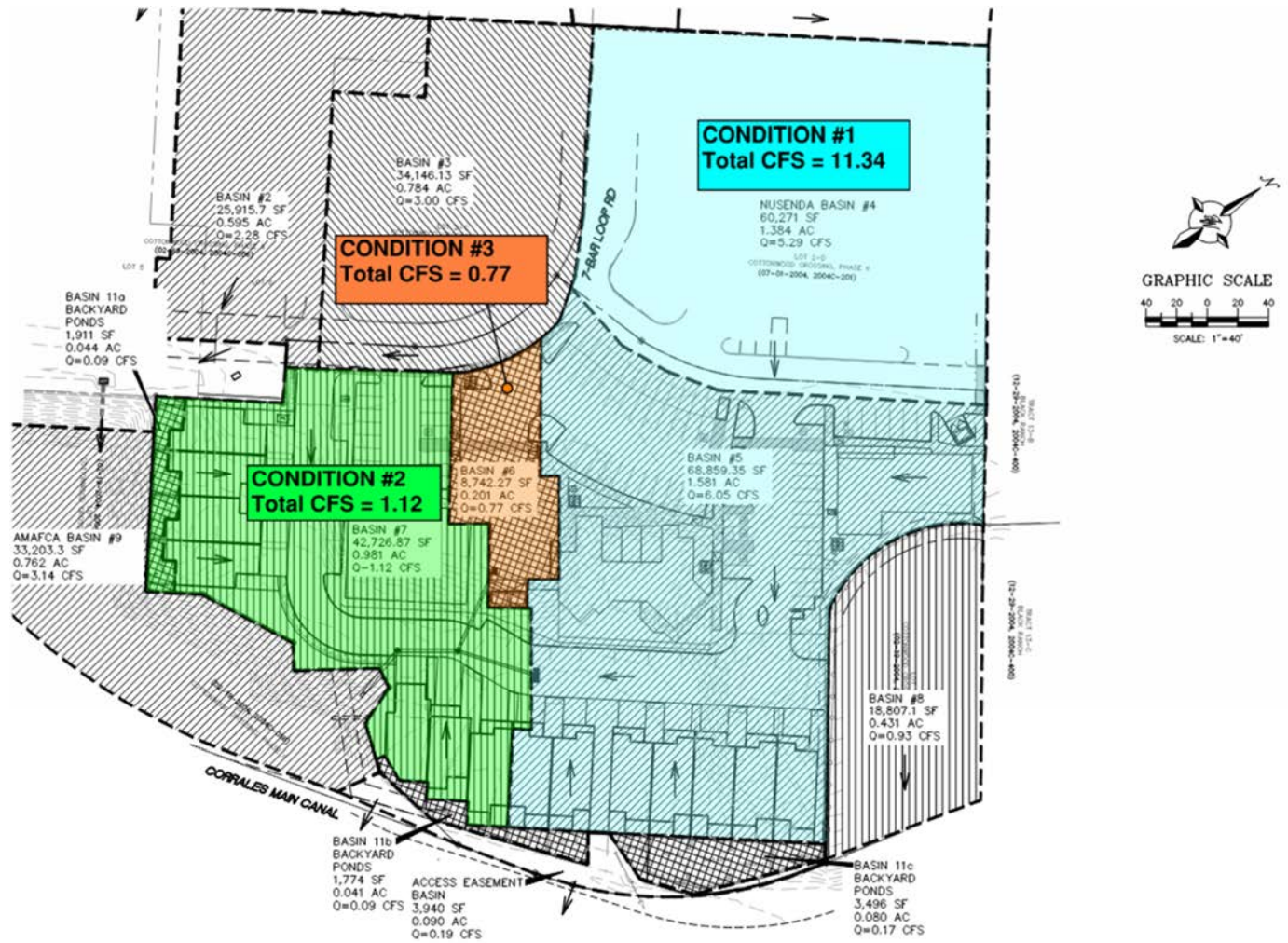


Figure 5 - Street Hydraulic Conditions

### Condition #1 – Basins 4 & 5

In this condition Basin #4 (Nusenda Basin) sheet flows through and combines with proposed Basin #5. The combined 100-yr Q of these two basins is 11.34 CFS. The cross section 1 shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following;

- 100-yr HGL: 3.4in | .28 ft
- 100-yr EGL: 6.0in | .50 ft
- Depth x velocity: |  $3.75\text{ft/s} \times .22\text{ft} = 0.825 < 6.5$  OK

### Cross Section for Condition - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	3.4 in
Discharge	11.34 cfs

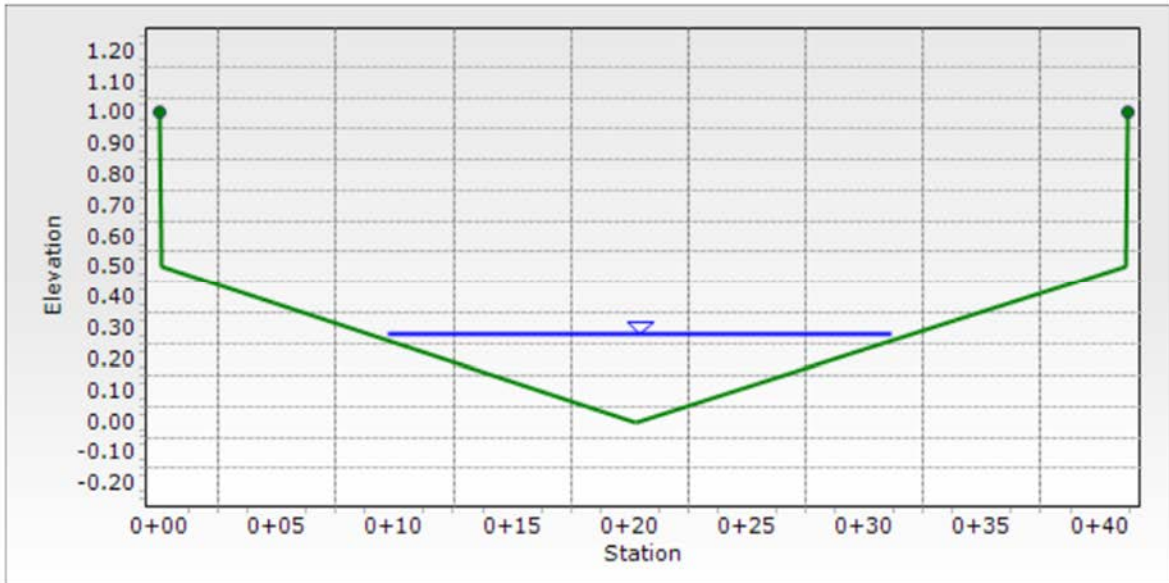


Figure 6 - Street Cross Section and Flow Master Results – Cross Section 1

### Condition #2 – Basin #7

In this condition Basin #7 sheet flows through the parking lot and roadway to the drainage inlet. The 100-yr Q of this basins is 1.12 CFS. The cross section shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following in compliance with 6-9(A);

- 100-yr HGL: 1.3 in | .11 ft
- 100-yr EGL: 2.0 in | 0.17 ft
- Depth x velocity: 1.99 ft/s x .11ft = .22 < 6.5 **OK**

### Cross Section for Condition - 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

---

Input Data	
Channel Slope	0.025 ft/ft
Normal Depth	1.3 in
Discharge	1.12 cfs

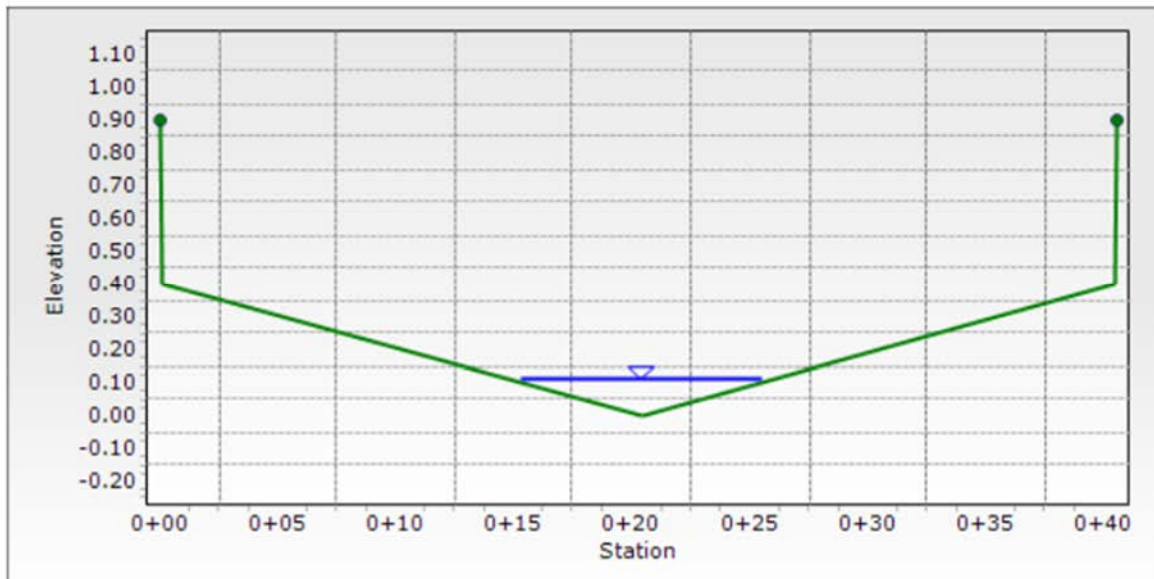


Figure 7 Street Cross Section and Flow Master Results – Cross Section 2

**Condition #3 – Basin #6**

In this condition Basin #6 sheet flows through the parking lot and drive aisle to the drainage inlet. The 100-yr Q of this basins is 0.77 CFS. The cross section shown below occurs just upstream from the inlet and is where the greatest flow would occur. The analysis in flow master shows the following in compliance with 6-9(A);

- 100-yr HGL: 1.1in | 0.1 ft
- 100-yr EGL: 1.92in | 0.16ft
- Depth x velocity: 2.18 ft/s x 0.1ft = .22 < 6.5 **OK**

**Cross Section for Condition - 3**

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Channel Slope	0.040 ft/ft
Normal Depth	1.1 in
Discharge	0.77 cfs

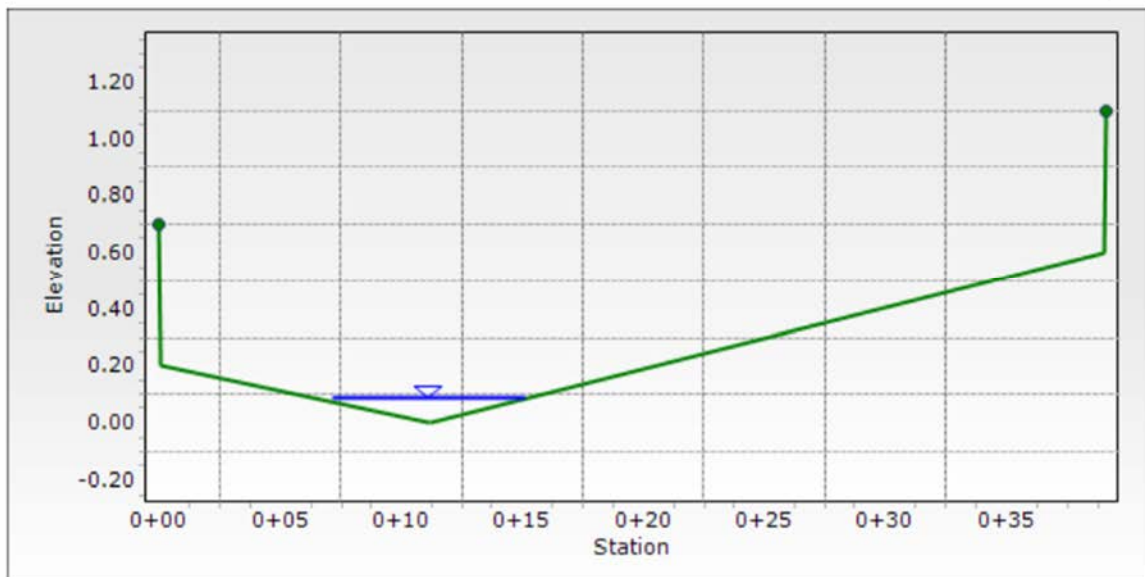


Figure 8 - Street Cross Section and Flow Master Results – Cross Section 3

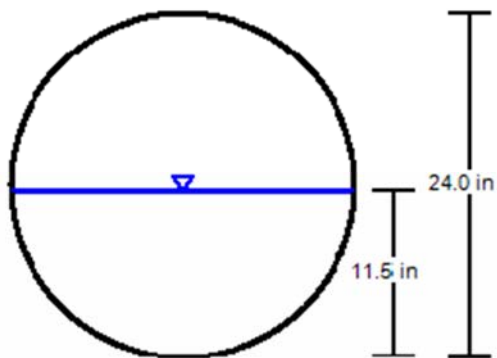
## 10.5. Pipe Calculations


### Cross Section for Circular Pipe - 1

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.017
Channel Slope	0.024 ft/ft
Normal Depth	11.5 in
Diameter	24.0 in
Discharge	12.46 cfs



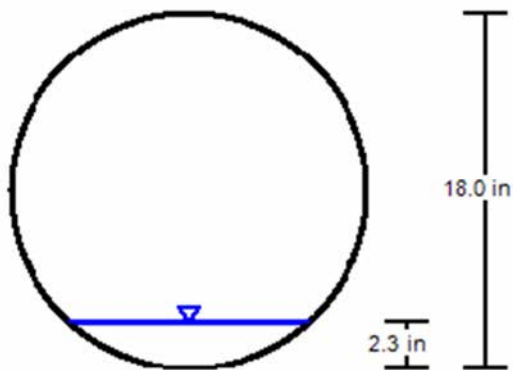
V: 1   
H: 1


## Cross Section for Circular Pipe - 2

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

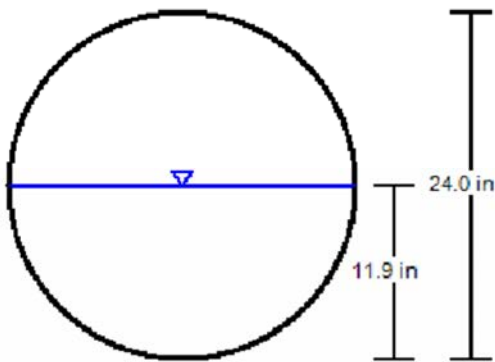
Input Data	
Roughness Coefficient	0.017
Channel Slope	0.073 ft/ft
Normal Depth	2.3 in
Diameter	18.0 in
Discharge	0.77 cfs



V: 1   
H: 1

### Cross Section for Circular Pipe - 3

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth
Input Data	
Roughness Coefficient	0.017
Channel Slope	0.024 ft/ft
Normal Depth	11.9 in
Diameter	24.0 in
Discharge	13.23 cfs



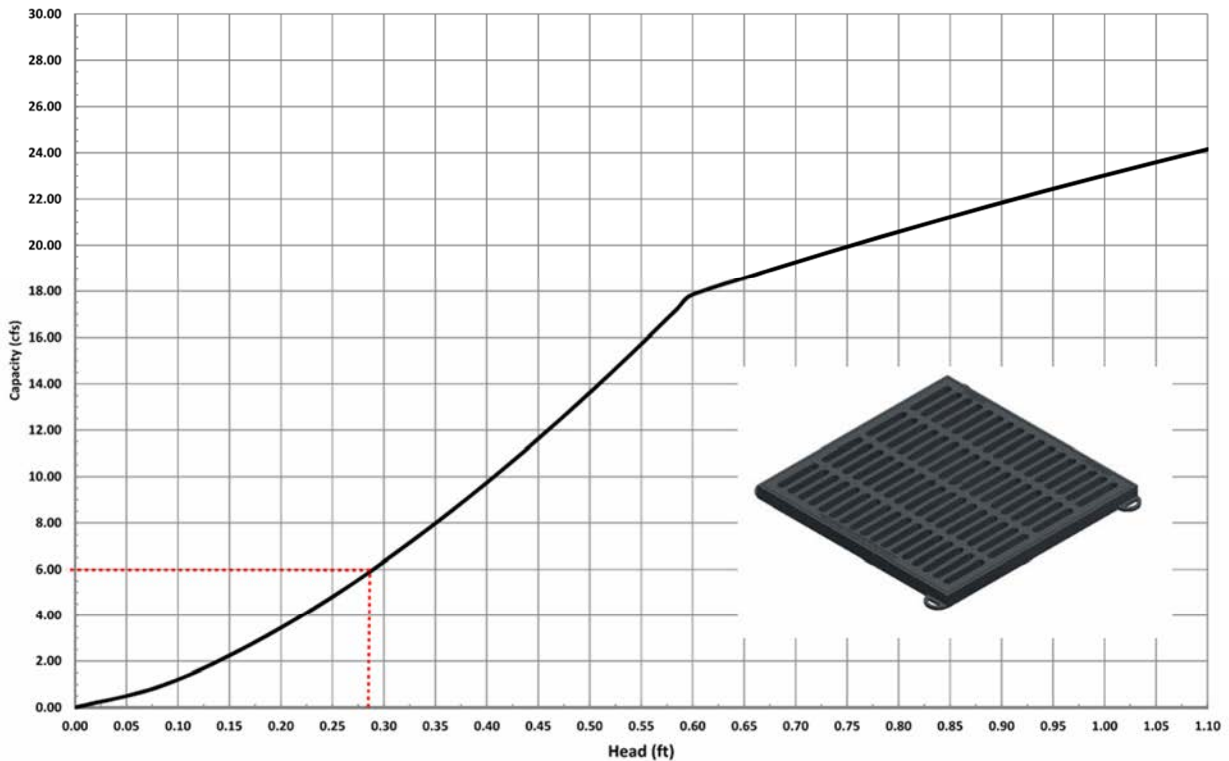
V: 1  
H: 1

## 10.6. Inlets

Sheet flows will be captured via Nyoplast Road Inlets at (2) locations. The first location of the drop inlets are located in Basin 6 and receives 0.77 cfs.

The second location straddles Basin #7 and Basin #5 where the inlets will receive a combined 12.46 cfs. We propose to place 3 inlets in-line such that the normal depth of .28 feet shown in section 10.4 *Street Hydraulics* results in a total flow capacity of 18 CFS. The additional 4.77 CFS capacity is in excess of the 15% capacity increase requirement outlined in the DPM to address reduced flow from clogging.

Nyloplast 3' x 3' Road & Highway Inlet Capacity Chart



3130 Verona Avenue • Buford, GA 30518  
 (866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490  
 © Nyloplast Inlet Capacity Charts June 2012

Figure 9 - Nyloplast Inlet Sizing Chart

## 10.7. Orifice

The storm drain system will convey flows to the AMAFCA pond from the inlets via 24" RCP pipe to a common point and then routed to the AMAFCA pond. The configuration of which can be referenced in the Grading and Drainage plan for the project, note that AMAFCA approved penetration details have been used in the documents for outlet into the pond. The outlet into the pond has been sized to 24" via the previously provided SD hydraulic analysis above and via the Orifice equation as shown below referenced in the DPM Part 6-16(B). The Orifice flow capacity is shown to be 41.30 cfs, which is approximately 10.73 cfs in excess capacity of the 30.57 cfs generated by the proposed development.



Orrifice Center Elevation	5007	ft	<b>EQUATION 6.65</b> $Q = CA(2gh)^{1/2}$  <b>where:</b> <b>Q</b> = Discharge in cfs <b>C</b> = Discharge coefficient use 0.6. If a discharge coefficient other than 0.6 is to be used, provide justification in the drainage submittal. <b>A</b> = Area of opening in square feet <b>g</b> = 32.2 ft/sec <sup>2</sup> <b>h</b> = Depth of water measured from the center of the opening
Diameter	2	ft	
A =	3.14159	ft <sup>2</sup>	
h =	7.45	ft	
C =	0.6		
g =	32.2		
<b>Q =</b>	<b>41.2878</b>		

Notes:  
 Dop Inlet Elevation 14.10'  
 Head from Inlet .35'

## 11. Stormwater Quality

The U.S. Environmental Protection Agency (EPA) Report, Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, TetraTech, April 2014, EPA Publication Number 832R-14-007, yields runoff values of 0.42 inches for the 90th percentile storm. To calculate the required stormwater quality volume (SWQV), we multiply the impervious area by 0.42 inches for new development sites. A summary table of the calculations is provided in Appendix B.

For this project we are seeking cash in-lieu to account for the SWQ treatment. There are numerous constraints on the site that are not typical of other lots seeking to build a mixed use development that hinder the ability to install a storm water quality treatment facility. These constraints include but are not limited to;

- Irregular lot geometries and reduced buildable areas as a result of
  - Irregular property line created by the adjacent AMAFCA Pond.
  - AMAFCA Access easement running through the eastern portion of the property.
  - PNM utility easement for 750 KV line running through the middle of the MX-T portion of the property and through the southern portion of the MX-L property.
  - MPOS buffer along the Northern portion of the property to protect the existing Archeological Site.

It is also worth noting that the existing pond is acting as a SWQ treatment facility for the flows that it receives.

Referencing the Proposed Conditions portion of the Weighted E table (Table 1) from section 10.1 in this report, it has been shown that the total new impervious area as a result of the new development (Basins 5, 6, and 7) is 1.76 acres. Using the DPM requirement of 0.42in of rainfall to account for the Storm Water Quality Volume of a new development, the resulting volume is 2,687.3 CF or 0.06 Acre-Feet.

Table 4 - SWQV Table

Stormwater Quality Volume					
Acres	SF	Rainfall (in)	Rainfall (ft)	SWQV (CF)	SWQV (Acre-Ft)
1.76	76,779.22	0.42	0.035	2,687.3	0.06

Per the DPM Section 6-12( C)(1) **Payment-in-lieu** The amount of payment in lieu for this project is \$8/cubic-ft of impervious on September of 2020 adjusted by the increase in 12 month increase of the CPI from the preceding April.

The following table shows the CPI changes for the periods following the 2020 adoption. And the adjusted payment in-lieu rate would now be approximately \$9.92/Cubic Foot. Resulting in an estimated Payment-in-lieu fee of \$26,658.00

Table A. West region CPI-U 1-month and 12-month percent changes, all items index, not seasonally adjusted

Month	2020		2021		2022		2023		2024	
	1-month	12-month	1-month	12-month	1-month	12-month	1-month	12-month	1-month	12-month
January	0.3	2.9	0.2	1.4	0.9	7.7	0.9	6.3	0.7	3.3
February	0.4	3.1	0.5	1.6	0.8	8.1	0.5	6.0	0.4	3.2
March	-0.2	2.5	0.7	2.4	1.3	8.7	0.5	5.1	0.9	3.6
April	-0.4	1.3	1.0	3.9	0.7	8.3	0.5	4.9	0.6	3.7
May	0.1	0.8	0.8	4.7	0.8	8.3	0.4	4.5	0.1	3.3
June	0.4	1.2	0.9	5.1	1.2	8.8	0.3	3.5	-0.2	2.8
July	0.5	1.7	0.6	5.2	0.1	8.3	0.1	3.5	-0.1	2.6
August	0.3	1.9	0.2	5.0	0.0	8.1	0.4	3.9	0.1	2.2
September	0.0	1.6	0.2	5.3	0.3	8.3	0.4	3.9		
October	0.2	1.2	0.8	6.0	0.7	8.1	0.1	3.3		
November	0.0	1.4	0.5	6.5	-0.4	7.1	-0.4	3.3		
December	-0.1	1.5	0.4	7.1	-0.4	6.2	-0.1	3.6		

## 12. Conclusion

This report shows that the revised developed flows as a result of the reconfigured Major Site Plan and the Site Plan – EPC result in flows to the existing facility that are 5.72 cfs below the original design flow of 36.29 cfs. And it has been shown that there are no increases required for the 100-yr storm volume. Therefore no additional retention volume or facilities are needed to accommodate the storm water flows for this site.

**DRAINAGE REPORT  
FOR**

***Tract 14A and 14B  
Black Ranch***

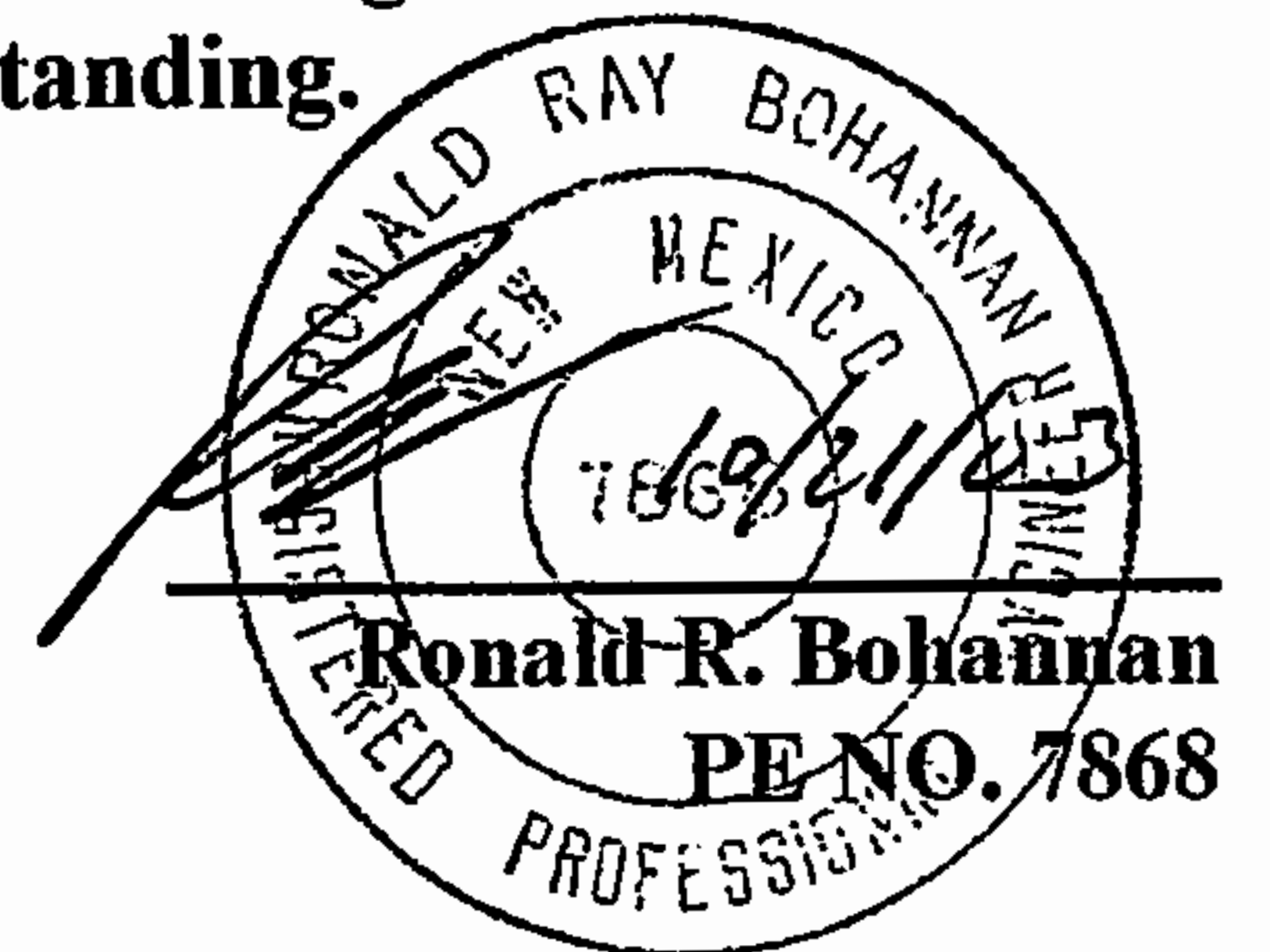
**Prepared by:**

**Tierra West, LLC  
8509 Jefferson NE  
Albuquerque, New Mexico 87113**

**Prepared for:  
John Black**

**October, 2003**

**I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.**



**Job No 220097**

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### MAP POCKET

Grading and Drainage Plan

**Section I**

**Report**

## **Prelude**

This report is being prepared at the request of the current owner, John Black, who proposes to develop a small commercial center containing three restaurants and three office buildings.

## **Location**

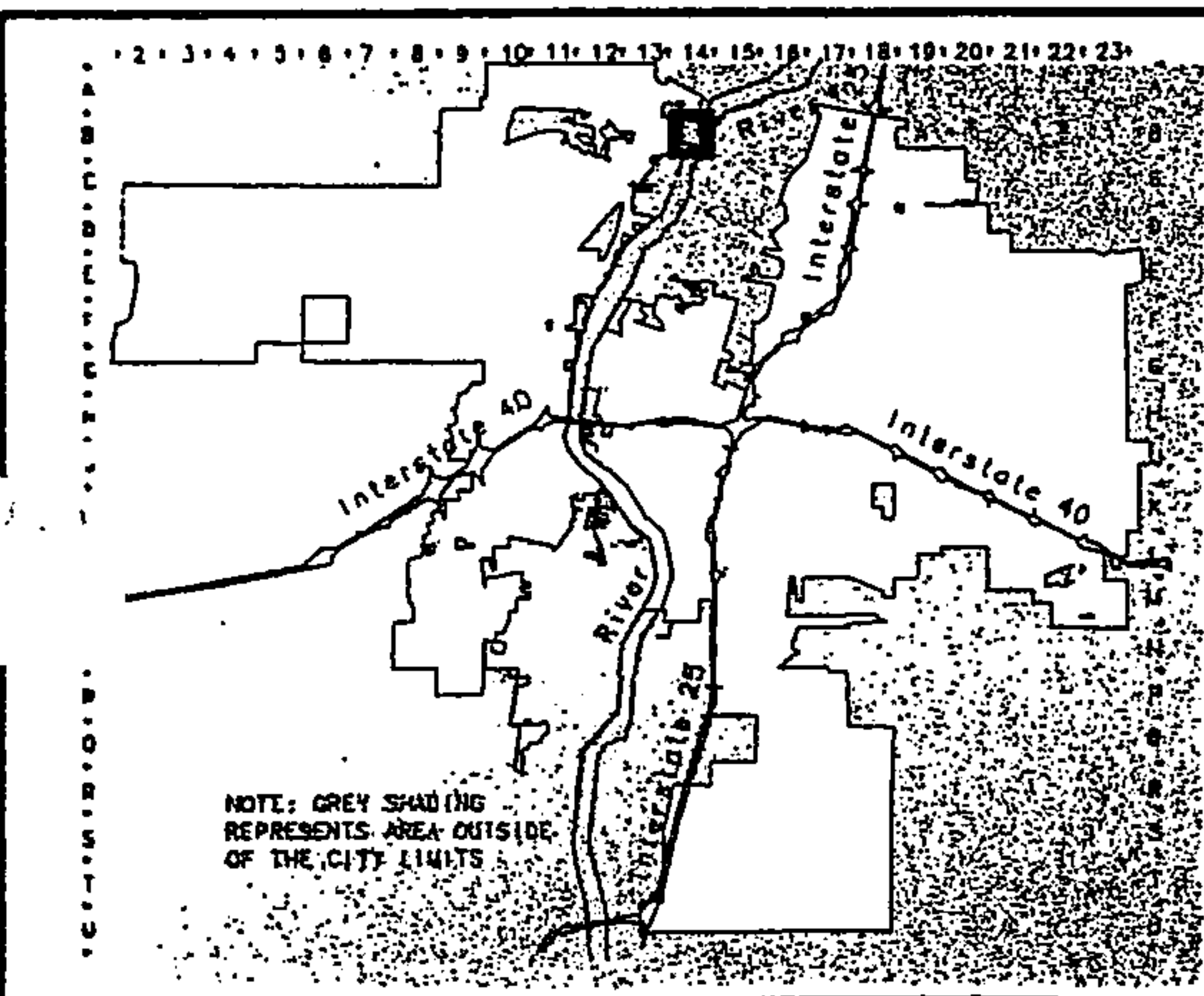
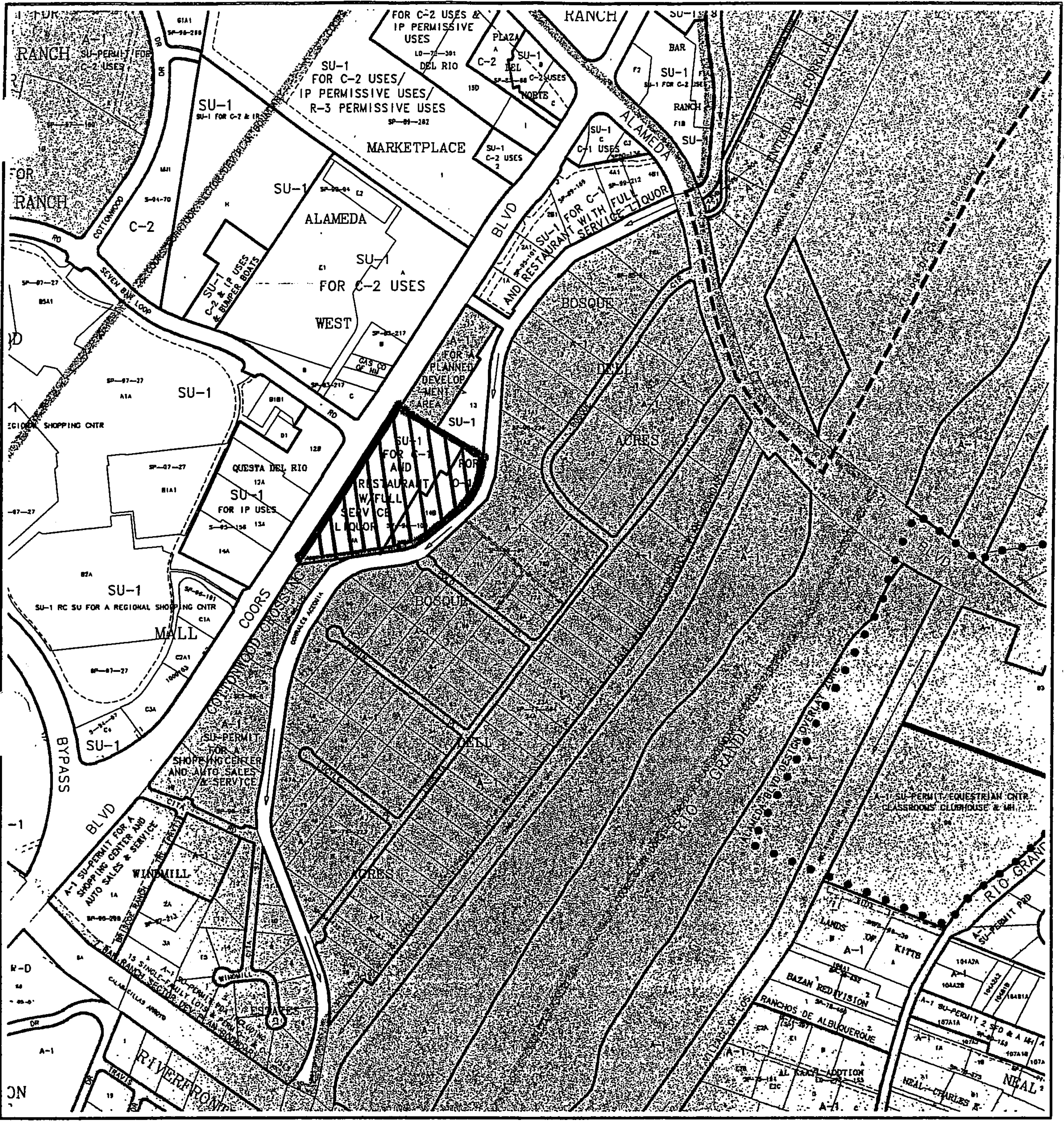
The subject site is located just east of the intersection of Coors Road NW and Seven Bar Loop in Northwest Albuquerque and consists of Tract 14-A and 14-B, Black Ranch. The exact location of the site is shown highlighted on the enclosed Zone Atlas page number B-14. The site will be built in one phase and contains 9.40 acres more or less.

## **Purpose**

The purpose of this drainage report is to present a final grading and drainage solution for the proposed commercial center as well as deal with the off-site flows entering the site. The current pond is detention and is limiting the discharge. This report will also seek to discharge more flows into the Corrales Main Canal to the design capacity of that facility there by reducing the existing detention pond.

## **Existing Drainage Conditions**

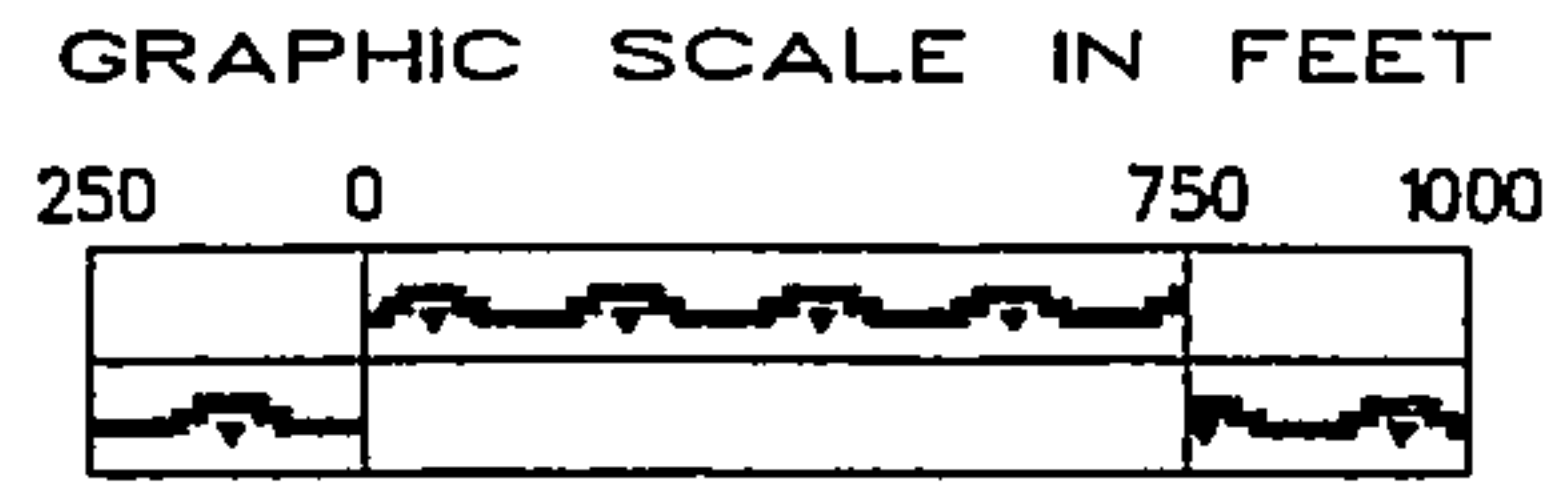
The site is currently undeveloped and existed, in the past, as a dairy farm with corrals and barns. Also, a portion of Tract 14 A and B consists of an archeological site believed to be an ancient pueblo.



CITY OF Albuquerque

Albuquerque Geographic Information System  
PLANNING DEPARTMENT

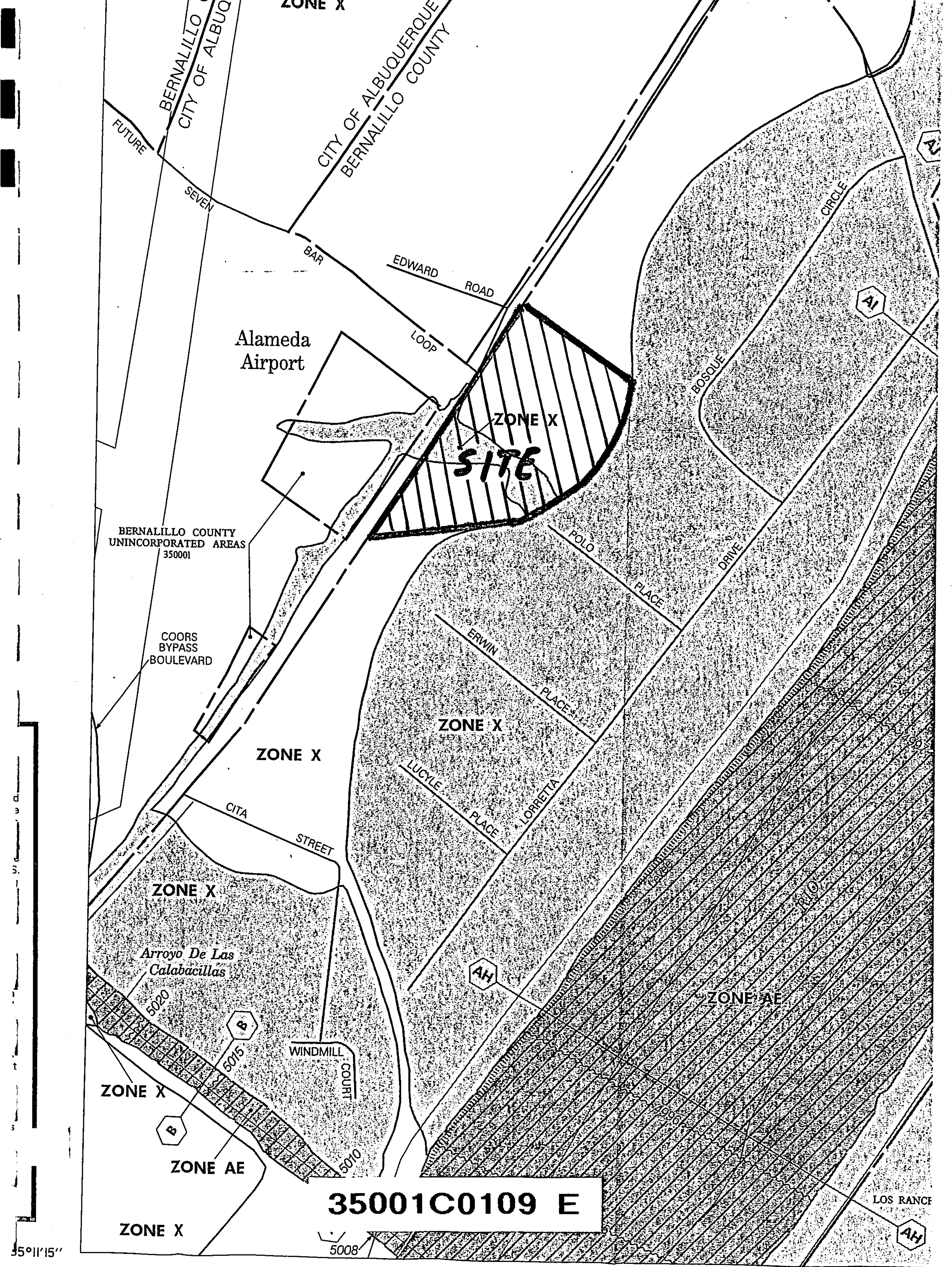
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Zone Atlas Page

**B-14-Z**

Map Amended through July 27, 2000



ZONE X

BERNALILLO COUNTY  
CITY OF ALBUQUERQUE

CITY OF ALBUQUERQUE  
BERNALILLO COUNTY

FUTURE  
SEVEN

BAR  
EDWARD ROAD  
LOOP

Alameda  
Airport

ZONE X  
SITE

BERNALILLO COUNTY  
UNINCORPORATED AREAS  
350001

COORS  
BYPASS  
BOULEVARD

ZONE X

ZONE X

ZONE X

Arroyo De Las  
Calabacillas

5020

5015

WINDMILL  
COURT

5010

ZONE X

ZONE AE

35001C0109 E

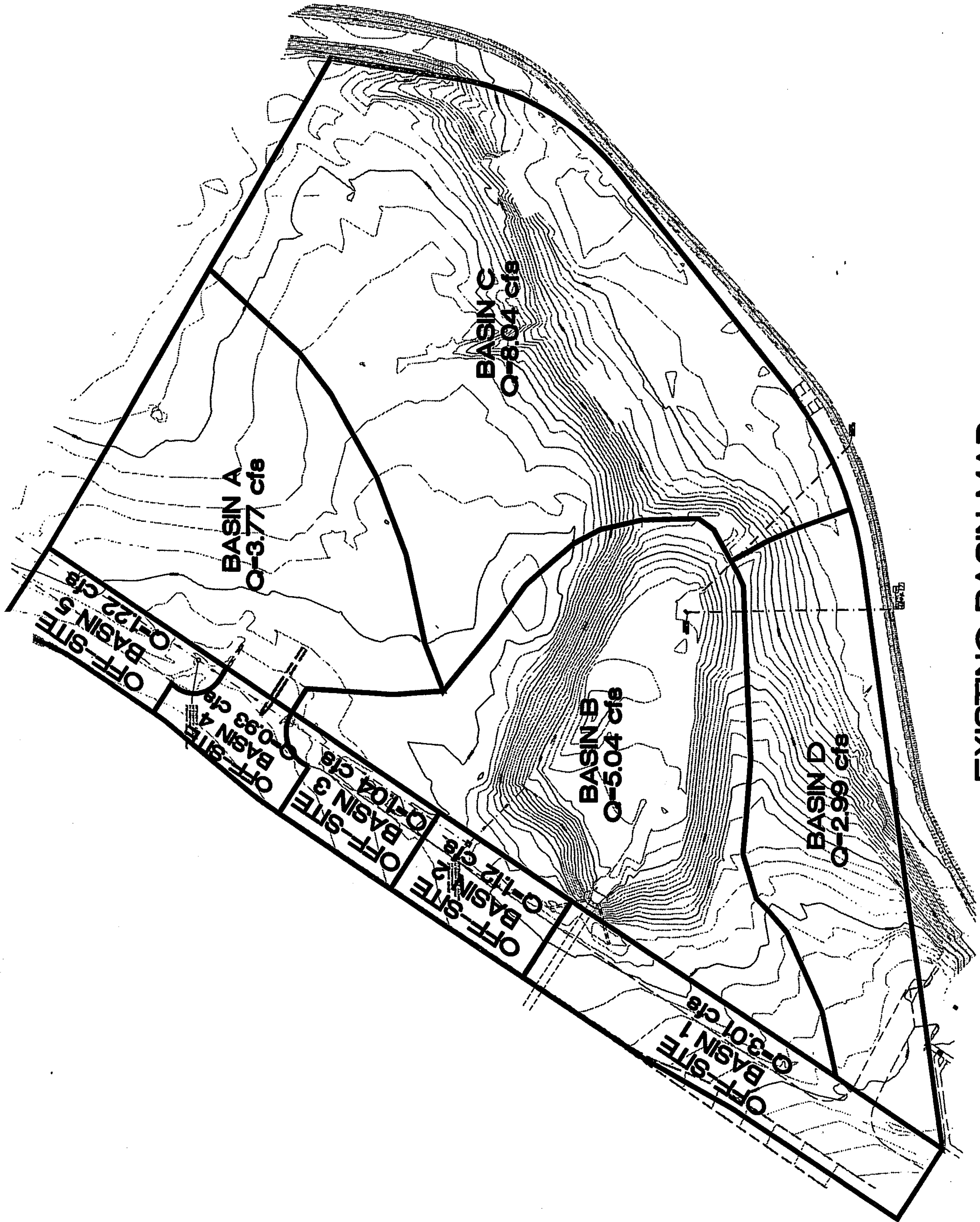
ZONE X

5008

LOS RANCHO

35°11'15"





EXISTING BASIN MAP

The site currently receives storm runoff from four off-site areas through various storm sewer pipes ranging in size from 18 inches to 60 inches. The offsite drainage area consists of fourteen (14) sub-basins as outlined in the Alameda West Shopping Center Drainage Report, the Questa Del Rio Drainage Management Plan and the North Coors Drainage Management Plan. Exhibits 1 and 2 in Appendix C delineate these basins. All of the flows from the off-site drainage area are subsequently routed to a detention pond on Tract 14 via a storm sewer system. Nearly half of the off-site flows are collected in a detention pond located in the Alameda West Shopping Center where it is released into the existing storm sewer system at a controlled flow rate of 42.14 cfs. This flow then combines with the peak flow of 66.14 cfs generated by Questa Del Rio and the adjacent sub-basins. The combined peak flow is then routed to Tract 14 for a resulting flow of 103.59 cfs. These flow are then contained in a detention pond where the out-flow is controlled to release 14 cfs into the Corrales Main Canal. The size of the existing pond is approximately 4.3 acre-feet.

The on-site drainage area consists of Tract 14 with most of the tract sheet flowing into the Corrales Main Canal and the rest draining to the existing pond.

### **Flood Plain**

The site is located on FEMA Map 35001C0109 E as shown on the attached excerpt. The map shows that the site lies in a Zone X shaded area which is defined as areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. However, the flows that dictate this area are now contained in a pipe and distributed to a new detention pond located on the east side of the property. A LOMR will be completed to revise the flood plain.

## **Proposed Conditions and On-Site Drainage Management Plan**

The original detention pond on Tract 14 was required to release only 14 cfs into the canal based on calculations provided in the North Coors Drainage Management Plan (NCDMP) revised September 11, 1992 by Wilson & Co. However, this report will demonstrate that the original drainage solutions changed allowing for a greater discharge rate from Tract 14.

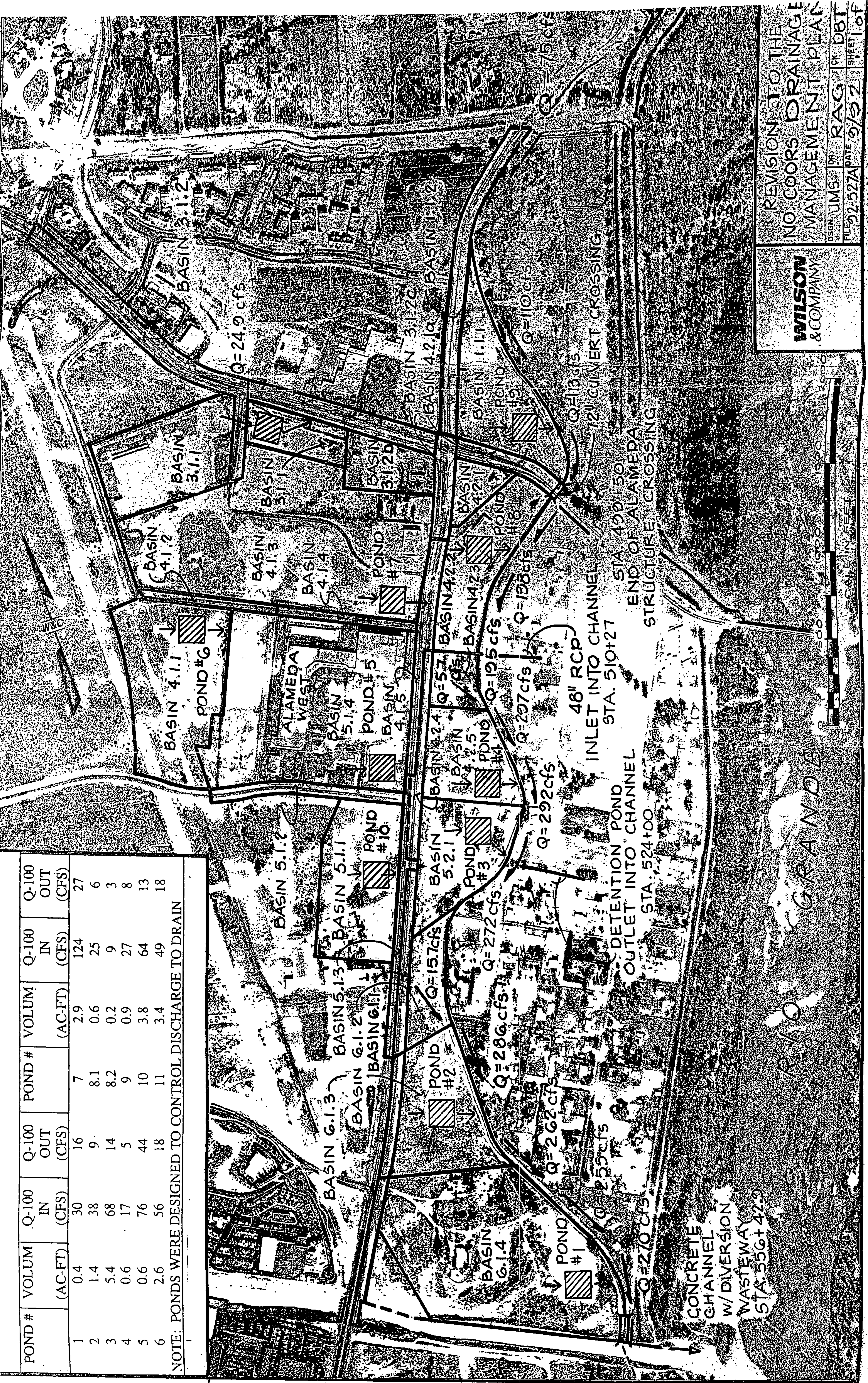
The NCDMP analyzed all of the areas contributing storm runoff to the Corrales Main Canal and assigned developed land treatments of 15% land area "B" and 85% land area "D." Since the report was completed, several of the basins were developed and the individual drainage solutions are different than what was proposed in the North Coors Drainage Management Plan.

According to the NCDMP, Tract 14 falls within Basin 5.2.1 as well as a portion (approximately one-third) of Basin 4.2.5 as shown on the attached exhibit. Basin 5.2.1 is allowed a discharge rate of 14 cfs while Basin 4.2.5 is allowed a discharge rate of 5 cfs. This combination should allow Tract 14 a combined discharge rate of 15.67 cfs.

Also, the NCDMP shows Basin 6.1.2 and Basin 6.1.3 were allowed to contribute a combined total of 24.7 cfs to the Corrales Main Canal. Basin 6.1.2 was allowed to freely discharge 15.4 cfs directly to the canal while Basin 6.1.3 was allowed to discharge 9 cfs to the canal by way of a detention pond. These basins consist of the Cottonwood Corners commercial center, which was constructed in 1997. According to the approved drainage report completed by Tierra West Development Management Services in January 1996, all of the flows from these basins were captured in a storm sewer and directed to the Calabacillas Arroyo. This would allow for 24.7 cfs assigned to the Corrales Main Canal to be released from another site up stream.

POND #	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)	VOLUM (AC-FT)	Q-100 IN (CFS)	Q-100 OUT (CFS)
1	0.4	30	16	2.9	124	27
2	1.4	38	9	0.6	25	6
3	5.4	68	14	0.2	9	3
4	0.6	17	5	0.9	27	8
5	0.6	76	44	3.8	64	13
6	2.6	56	18	3.4	49	18

NOTE: PONDS WERE DESIGNED TO CONTROL DISCHARGE TO DRAIN



REVISION TO THE  
**NO. COORS DRAINAGE  
MANAGEMENT PLAN**

**WILSON  
& COMPANY**

DESIGN: UMS  
DATE: 9/92  
PK: RAG  
SHEET: 1 of 10

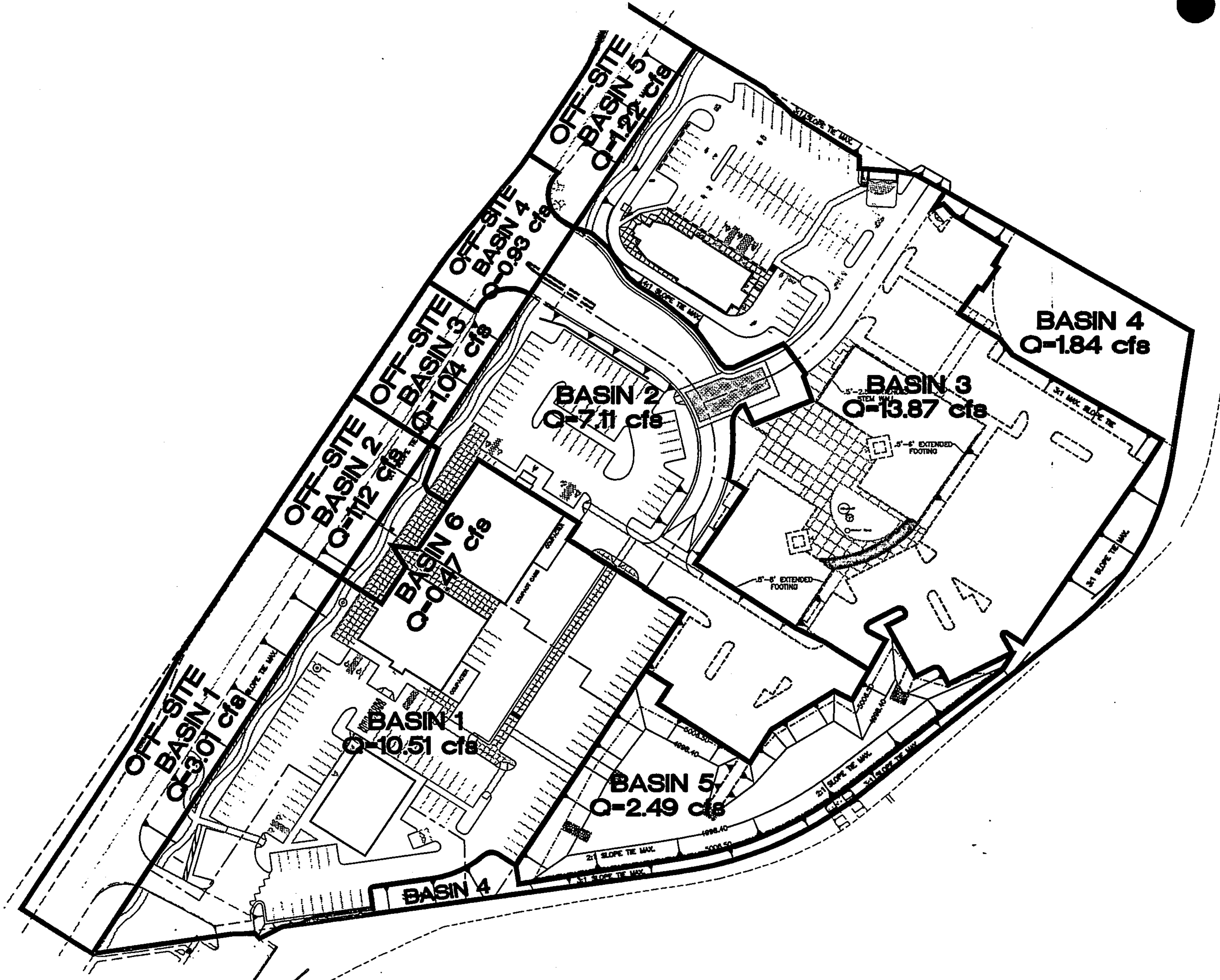
CONCRETE CHANNEL W/ DIVERSION WASTEWAY STA. 556+42.9

DETENTION POND INLET INTO CHANNEL STA. 510+27 48" RCP  
OUTLET INTO CHANNEL STA. 524+00

12" CULVERT CROSSING

SCALE IN FEET

0 100 200 300 400 500 600 700 800 900 1000



PROPOSED BASIN MAP

With the assigned discharge of 15.67 cfs for Tract 14 and the 24.7 cfs from Basins 6.1.2 and 6.1.3 Tract 14 should be allowed to discharge 40.37 cfs. A check of the irrigation structure down stream of the site shows there is an additional capacity of 101.33 cfs available, far exceeding the additional 24.7 cfs proposed to pass through the structure. The additional 24.7 cfs only raises the flood elevation six inches.

There is currently an existing 30" RCP stubbed into Tract 14 from the Corrales Main Canal that has capacity for this amount of discharge. The existing canal will not need to be modified in any way to release a higher discharge from Tract 14.

The proposed site is divided into six basins with Basins 1-3 sheet flowing to the new detention pond, which consists of Basin 5. Basin 4 sheet flows into the Corrales Main Canal. A large portion of Basin 4 consists on an archeological site that will be left undisturbed from its present state. Basin 6 is a small Basin along Coors Boulevard that consists of a landscape area that will drain to an area drain and be routed through the storm sewer system to the retention pond. The total developed discharge into the pond from all six basins is 36.29 cfs.

The off-site flows will be collected into one storm sewer pipe and routed to the new detention pond. The new detention pond is sized to contain all of the off-site flows as well as the flows generated on site. The discharge to the Corrales Main Canal will be controlled to release at a rate of approximately 40.31 cfs.

### **Summary**

There are six drainage basins for this tract with the storm runoff being directed to a detention pond on-site. The pond is sized to accept the on-site flows as well as the off-site flows and discharge at a rate of 40.31 cfs into the Corrales Main Canal. Based on the findings of this report

port, and the drainage reports mentioned previously, the pond on Tract 14 should be allowed an increased discharge rate from 14 cfs to 40.37 cfs.

### **Calculations**

The weighted E method from the "City of Albuquerque Development Process Manual Volume 11 – Design Criteria, 1997 Revision" was used to calculate the runoff and volume for the site.

## **Section II**

# **Runoff Calculations**



## Weigh E Method

### Existing On-Site Basins

Basin	Area (sf)	Area (acres)	Treatment								100-Year			10-Year		
			Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
			%	(acres)	%	(acres)	%	(acres)	%	(acres)						
A	80,957	1.86	0%	0	100%	1.86	0%	0.00	0%	0.00	0.670	0.104	3.77	0.220	0.034	1.41
B	108,049	2.48	0%	0	100%	2.48	0%	0.00	0%	0.00	0.670	0.138	5.04	0.220	0.045	1.89
C	172,441	3.96	0%	0	100%	3.96	0%	0.00	0%	0.00	0.670	0.221	8.04	0.220	0.073	3.01
D	64,201	1.47	0%	0	100%	1.47	0%	0.00	0%	0.00	0.670	0.082	2.99	0.220	0.027	1.12
<b>Total</b>	<b>425,648</b>	<b>9.77</b>		<b>0</b>		<b>9.77</b>		<b>0.00</b>		<b>0.00</b>		<b>0.546</b>	<b>19.84</b>		<b>0.179</b>	<b>7.43</b>

### Existing Off-Site Basins

Basin	Area (sf)	Area (acres)	Treatment								100-Year			10-Year		
			Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
			%	(acres)	%	(acres)	%	(acres)	%	(acres)						
1	33,559	0.77	0%	0	20%	0.15	0%	0.00	80%	0.62	1.710	0.110	3.01	1.036	0.067	1.90
2	12,478	0.29	0%	0	20%	0.06	0%	0.00	80%	0.23	1.710	0.041	1.12	1.036	0.025	0.71
3	11,646	0.27	0%	0	20%	0.05	0%	0.00	80%	0.21	1.710	0.038	1.04	1.036	0.023	0.66
4	9,287	0.21	0%	0	0%	0.00	0%	0.00	100%	0.21	1.970	0.035	0.93	1.240	0.022	0.62
5	13,614	0.31	0%	0	20%	0.06	0%	0.00	80%	0.25	1.710	0.045	1.22	1.036	0.027	0.77
<b>Total</b>	<b>80,584</b>	<b>1.85</b>		<b>0</b>		<b>0.33</b>		<b>0.00</b>		<b>1.52</b>		<b>0.268</b>	<b>7.32</b>		<b>0.163</b>	<b>4.65</b>

### Developed On-Site Sub-Basins

Basin	Area (sf)	Area (acres)	Treatment								100-Year			10-Year		
			Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
			%	(acres)	%	(acres)	%	(acres)	%	(acres)						
1	113,877	2.61	0%	0	15%	0.39	0%	0.00	85%	2.22	1.775	0.387	10.51	1.087	0.237	6.72
2	77,101	1.77	0%	0	15%	0.27	0%	0.00	85%	1.50	1.775	0.262	7.11	1.087	0.160	4.55
3	150,335	3.45	0%	0	15%	0.52	0%	0.00	85%	2.93	1.775	0.510	13.87	1.087	0.313	8.87
4	39,456	0.91	0%	0	100%	0.91	0%	0.00	0%	0.00	0.670	0.051	1.84	0.220	0.017	0.69
5	39,676	0.91	0%	0	70%	0.64	0%	0.00	30%	0.27	1.060	0.080	2.49	0.526	0.040	1.27
6	5,103	0.12	0%	0	15%	0.02	0%	0.00	85%	0.10	1.775	0.017	0.47	1.087	0.011	0.30
<b>Total</b>	<b>425,548</b>	<b>9.77</b>		<b>0</b>		<b>2.74</b>		<b>0.00</b>		<b>7.03</b>		<b>1.307</b>	<b>36.29</b>		<b>0.777</b>	<b>22.40</b>

### Developed On-Site Sidewalk Culvert Basin

Basin	Area (sf)	Area (acres)	Treatment								100-Year			10-Year		
			Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
			%	(acres)	%	(acres)	%	(acres)	%	(acres)						
SW	31,330	0.72	0%	0	0%	0.00	0%	0.00	100%	0.72	1.970	0.118	3.14	1.240	0.074	2.08

### Equations:

$$\text{Weighted E} = E_a \cdot A_a + E_b \cdot A_b + E_c \cdot A_c + E_d \cdot A_d / (\text{Total Area})$$

$$\text{Volume} = \text{Weighted D} \cdot \text{Total Area}$$

$$\text{Flow} = Q_a \cdot A_a + Q_b \cdot A_b + Q_c \cdot A_c + Q_d \cdot A_d$$

Excess Precipitation, E (inches)		
Zone 1	100-Year	10 - Year
E <sub>a</sub>	0.44	0.08
E <sub>b</sub>	0.67	0.22
E <sub>c</sub>	0.99	0.44
E <sub>d</sub>	1.97	1.24

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10 - Year
Q <sub>a</sub>	1.29	0.24
Q <sub>b</sub>	2.03	0.76
Q <sub>c</sub>	2.87	1.49
Q <sub>d</sub>	4.37	2.89

# VOLUME CALCULATIONS

## POND

Ab - Bottom Of The Pond Surface Area  
 At - Top Of The Pond Surface Area  
 D - Water Depth  
 Dt - Total Pond Depth  
 C - Change In Surface Area / Water Depth

$$\text{Volume} = \text{Ab} * \text{D} + 0.5 * \text{C} * \text{D}^2$$

$$\text{C} = (\text{At} - \text{Ab}) / \text{Dt}$$

$$\text{Ab} = 15,208.96$$

$$\text{At} = 30,100.00$$

$$\text{Dt} = 8.10$$

$$\text{C} = 1838.40$$

ACTUAL ELEV.	DEPTH (FT)	VOLUME (AC-FT)	Q (CFS)
5000.00	0.00	0.00	0.0000
5003.00	3.00	1.0474	21.3924
5004.00	4.00	1.4177	26.2002
5005.00	5.00	1.8302	30.2534
5006.00	6.00	2.2848	33.8243
5007.00	7.00	2.7817	37.0527
5008.10	8.10	3.3770	40.3063

### Orifice Equation

$$Q = CA \text{ SQRT}(2gH)$$

$$C = 0.6$$

$$\text{Diameter (in)} = 24$$

$$\text{Area (ft}^2\text{)} = 3.142$$

$$g = 32.2$$

$$H \text{ (Ft)} = \text{Depth of water above center of orifice}$$

$$Q \text{ (CFS)} = \text{Flow}$$

TRACT14

\*\*\*\*\*  
\*  
\* TRACT 14 BLACK RANCH STORM DRAINAGE ANALYSIS \*  
\* FOR ON-SITE DETENTION POND \*  
\* PROPOSED CONDITIONS (100-YEAR STORM) \*  
\*  
\*\*\*\*\*

START TIME=0.0 HR  
RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=1.87 IN RAIN SIX=2.20 IN  
RAIN DAY=0.00 IN DT=0.05 HR

\*\*\*\*\*  
\* DEVELOPED CONDITION \*  
\*\*\*\*\*

\*\*\*\*\*BASIN 4B ALAMEDA WEST\*\*\*\*\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=750 FT SLOPE=0.015 K=2.0  
KN=0.033 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=2 HYD NO=102 AREA=0.005359 SQ MI  
PER A=0 PER B=15.00 PER C=0.00 PER D=85.00  
TP=0 HR MASS RAINFALL=-1  
PRINT HYD ID=2 CODE=1

\*\*\*\*\*BASIN 4C ALAMEDA WEST\*\*\*\*\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=950 FT SLOPE=0.013 K=1.0  
KN=0.033 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=3 HYD NO=103 AREA=0.005359 SQ MI  
PER A=0 PER B=15.00 PER C=0.00 PER D=85.00  
TP=0 HR MASS RAINFALL=-1  
PRINT HYD ID=3 CODE=1

\*\*\*\*\*BASIN 4E ALAMEDA WEST\*\*\*\*\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=385ft SLOPE=0.028 K=3.0  
KN=0.021 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=4 HYD NO=104 AREA=0.001016 SQ MI  
PER A=0 PER B=5.00 PER C=0.00 PER D=95.00  
TP=0 HR MASS RAINFALL=-1  
PRINT HYD ID=4 CODE=1

\*\*\*\*\*BASIN 4F ALAMEDA WEST\*\*\*\*\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=1070 FT SLOPE=0.007 K=3.0  
KN=0.021 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=5 HYD NO=105 AREA=0.005531 SQ MI  
PER A=0 PER B=5.00 PER C=0.00 PER D=95.00  
TP=0 HR MASS RAINFALL=-1  
PRINT HYD ID=5 CODE=1

\*\*\*\*\*BASIN 4G ALAMEDA WEST\*\*\*\*\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=1220 FT SLOPE=0.016 K=3.0  
KN=0.021 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=6 HYD NO=106 AREA=0.012547 SQ MI

TRACT14

PER A=0 PER B=5.00 PER C=0.00 PER D=95.00  
TP=0 HR MASS RAINFALL=-1  
ID=6 CODE=1

PRINT HYD

\*

\*\*\*\*\*BASIN 4H ALAMEDA WEST\*\*\*\*\*

\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=850 FT SLOPE=0.012 K=3.0  
KN=0.021 CENTROID RATIO=0.50

COMPUTE NM HYD ID=7 HYD NO=107 AREA=0.012375 SQ MI  
PER A=0 PER B=5.00 PER C=0.00 PER D=95.00  
TP=0 HR MASS RAINFALL=-1

PRINT HYD

\*

\*\*\*\*\*BASIN 4I ALAMEDA WEST\*\*\*\*\*

\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=280 FT SLOPE=0.024 K=0.7  
KN=0.025 CENTROID RATIO=0.50

COMPUTE NM HYD ID=8 HYD NO=108 AREA=0.001313 SQ MI  
PER A=0 PER B=100.00 PER C=0.00 PER D=0.00  
TP=0 HR MASS RAINFALL=-1

PRINT HYD

\*

\*\*\*\*\*BASIN 4K ALAMEDA WEST\*\*\*\*\*

\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=320 FT SLOPE=0.018 K=2.0  
KN=0.025 CENTROID RATIO=0.50

COMPUTE NM HYD ID=9 HYD NO=109 AREA=0.000938 SQ MI  
PER A=0 PER B=46.00 PER C=0.00 PER D=54.00  
TP=0 HR MASS RAINFALL=-1

PRINT HYD

\*

\*\*\*\*\*BASIN 4N ALAMEDA WEST\*\*\*\*\*

\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=500 FT SLOPE=0.028 K=2.0  
KN=0.025 CENTROID RATIO=0.50

COMPUTE NM HYD ID=10 HYD NO=110 AREA=0.002422 SQ MI  
PER A=0 PER B=46.00 PER C=0.00 PER D=54.00  
TP=0 HR MASS RAINFALL=-1

PRINT HYD

\*

\*\*\*\*\*ADD HYDROGRAPHS FOR 4B AND 4E\*\*\*\*\*

\*

ADD HYD ID=11 HYD=301 ID=2 ID=4

\*

PRINT HYD ID=11 CODE=1

\*

\*\*\*\*\*ROUTE 301 THROUGH PIPE\*\*\*\*\*

\*

COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.005  
DIA=1.5 FT N=0.013

\*

COMPUTE TRAVEL TIME ID=12 REACH=1 NO VS=1 L=755 SLP=0.005

\*

ROUTE ID=12 HYD NO=302 INFLOW ID=11 DT=0.0333

\*

PRINT HYD ID=12 CODE=1

\*

\*\*\*\*\*ADD HYDROGRAPHS FOR 302 AND 4G\*\*\*\*\*

\*

TRACT14

ADD HYD ID=13 HYD=303 ID=12 ID=6

\*

PRINT HYD ID=13 CODE=1

\*

\*\*\*\*\*POND 5 ROUTING\*\*\*\*\*

\*

ROUTE RESERVOIR	ID=14	HYD NO=304	INFLOW ID=13	CODE=6
	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)	
	0.00	0.000	5024.30	
	1.05	0.100	5025.00	
	2.03	0.301	5026.00	
	2.67	0.648	5027.00	
	3.19	1.016	5028.00	
	3.87	1.690	5029.60	

PRINT HYD ID=14 CODE=1

\*

\*\*\*\*\*ROUTE 4C THROUGH 4F\*\*\*\*\*

\*

COMPUTE RATING CURVE CID=1 VS NO=101 NO SEGS=1  
 MIN ELEV=5031.0 MAX ELEV=5031.63  
 CH SLP=0.005 FP SLP=0.005 N=0.015  
 DIST=65

DIST	ELEV
0	5031.63
32.5	5031.00
65.0	5031.63

\*

COMPUTE TRAVEL TIME ID=15 REACH=4 NO VS=1 L=870 SLP=0.005

\*

ROUTE ID=15 HYD NO=401 INFLOW ID=3 DT=0.0

\*

PRINT HYD ID=15 CODE=1

\*

\*\*\*\*\*ADD HYDROGRAPHS FOR 401 AND 4F\*\*\*\*\*

\*

ADD HYD ID=16 HYD=402 ID=15 ID=5

\*

PRINT HYD ID=16 CODE=1

\*

\*\*\*\*\*ROUTE 402 THROUGH PIPE\*\*\*\*\*

\*

COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.005  
 DIA=2.25 FT N=0.013

\*

COMPUTE TRAVEL TIME ID=17 REACH=5 NO VS=1 L=593 SLP=0.005

\*

ROUTE ID=17 HYD NO=403 INFLOW ID=16 DT=0.0

\*

PRINT HYD ID=17 CODE=1

\*

\*THIS IS WHERE BASIN 4H IS ROUTED THROUGH THE PARKING POND\*\*\*  
 \*BEFORE IT IS COMBINED WITH THE FLOWS FROM 4C AND 4F\*\*\*\*\*

\*

\*\*\*\*\*PARKING LOT POND ROUTING\*\*\*\*\*

\*

ROUTE RESERVOIR	ID=18	HYD NO=501	INFLOW ID=7	CODE=4
	OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)	
	0.00	0.00000	5028.00	
	4.70	0.07202	5028.50	
	18.0	0.43354	5029.00	
	37.0	1.04375	5029.60	

\*

\*PRINT HYD ID=18 CODE=1

TRACT14

```
*
*****ADD HYDROGRAPHS FOR PARKING POND AND 403*****
*
ADD HYD          ID=19  HYD=601  ID=17  ID=18
*
PRINT HYD        ID=19  CODE=1
*
*****ADD HYDROGRAPHS FOR 4I AND 601*****
*
ADD HYD          ID=20  HYD=701  ID=8   ID=19
*
PRINT HYD                ID=20  CODE=1
*
*****ADD HYDROGRAPHS FOR 304 AND 701*****
*
ADD HYD          ID=21  HYD=801  ID=14  ID=20
*
PRINT HYD        ID=21  CODE=1
*
*THIS MARKS THE END OF THE ALAMEDA WEST FLOWS THAT CONTRIBUTE
*TO THE DETENTION POND IN TRACT 14*****
*
*****BEGINNING OF QUESTA DEL RIO HYDROLOGY*****
*
*****QUESTA DEL RIO*****
*
COMPUTE NM HYD    ID=22  HYD NO=111 AREA=0.015627 SQ MI
                  PER A=0 PER B=19.00 PER C=12.00 PER D=69.00
                  TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD        ID=22  CODE=1
*
*****SEVEN BAR LOOP ROAD*****
*FROM SEVEN BAR/COORS INTERSECTION TO 1520' WEST OF COORS CL
*
COMPUTE NM HYD    ID=23  HYD NO=112 AREA=0.004828 SQ MI
                  PER A=0 PER B=8.00 PER C=0.00 PER D=92.00
                  TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD        ID=23  CODE=1
*
*****MONTGOMERY WARD AUTO CENTER*****
*****COTTONWOOD MALL BASINS D-1, D-2, D-3*****
*
COMPUTE NM HYD    ID=24  HYD NO=113 AREA=0.004300 SQ MI
                  PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                  TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD        ID=24  CODE=1
*
*****FLOWS CONVEYED BY MALL TO QUESTA DEL RIO*****
*
COMPUTE NM HYD    ID=25  HYD NO=114 AREA=0.000203 SQ MI
                  PER A=0 PER B=15.00 PER C=0.00 PER D=85.00
                  TP=0.13333 HR MASS RAINFALL=-1
PRINT HYD        ID=25  CODE=1
*
*****ADD AUTO CENTER AND SEVEN BAR FLOWS*****
*
ADD HYD          ID=26  HYD=201 ID=24 ID=23
*
PRINT HYD                ID=26  CODE=1
*
*****ADD FLOWS FROM MALL TO SEVEN BAR FLOWS*****
*
ADD HYD          ID=27  HYD=202 ID=25 ID=26
```

TRACT14

\*

PRINT HYD ID=17 CODE=1

\*

\*\*\*ROUTE 202 THROUGH STORM DRAIN TO 60" RCP UNDER COORS\*\*\*\*\*

\*

COMPUTE RATING CURVE CID=1 VS NO=101 CODE=-1 SLP=0.010  
DIA=2.0 FT N=0.013

\*

COMPUTE TRAVEL TIME ID=28 REACH=2 NO VS=1 L=38- SLP=0.10

\*

ROUTE ID=28 HYD NO=203 INFLOW ID=27 DT=0.0333

\*

PRINT HYD ID=28 CODE=1

\*

\*\*\*\*\*ADD SD FLOWS (203) TO QUESTA DEL RIO\*\*\*\*\*

\*

ADD HYD ID=29 HYD=204 ID=28 ID=22

\*

PRINT HYD ID=29 CODE=1

\*

\*\*\*\*\*STREET FLOWS FROM COORS BLVD\*\*\*\*\*

\*

COMPUTE NM HYD ID=30 HYD NO=115 AREA=0.002266 SQ MI  
PER A=0 PER B=26.00 PER C=0.00 PER D=74.00  
TP=0.13333 HR MASS RAINFALL=-1

PRINT HYD

ID=30 CODE=1

\*

\*\*\*\*\*ADD STREET FLOWS FROM COORS TO FLOWS ENTERING 60" SD\*\*\*\*

\*

ADD HYD ID=31 HYD=205 ID=30 ID=29

\*

PRINT HYD ID=31 CODE=1

\*

\*\*\*\*\*THIS IS THE EXTENT OF THE FLOWS GENERATED BY LANDS\*\*\*\*\*  
\*\*\*\*\*SURROUNDING QUESTA DEL RIO\*\*\*\*\*

\*

\*\*\*\*\*ADD QUESTA DEL RIO AND ALEMEDA WEST FLOWS\*\*\*\*\*

\*

ADD HYD ID=32 HYD=206 ID=31 ID=21

\*

PRINT HYD ID=32 CODE=1

\*

\*\*\*\*\*PROPOSED TRACT 14 FLOW\*\*\*\*\*

\*

COMPUTE LT TP LCODE=1 NK=0 ISLOPE=-1  
LENGTH=180ft SLOPE=0.010 K=2.0  
KN=0.033 CENTROID RATIO=0.50  
COMPUTE NM HYD ID=33 HYD NO=207 AREA=0.015375 SQ MI  
PER A=0 PER B=15.00 PER C=0.00 PER D=85.00  
TP=0 HR MASS RAINFALL=-1

PRINT HYD

ID=33 CODE=1

\*

\*\*\*\*\*ADD TRACT 14 FLOWS TO OFF SITE FLOWS\*\*\*\*\*

\*

ADD HYD ID=34 HYD=208 ID=33 ID=32

\*

PRINT HYD ID=34 CODE=1

\*

\*\*\*\*\*POND 3 (TRACT 14)\*\*\*\*\*

\*

ROUTE RESERVOIR ID=35 HYD NO=1 INFLOW ID=34 CODE=6  
OUTFLOW(CFS) STORAGE(AC-FT) ELEVATION(FT)  
0.00 0.00 5000.00

21.3924	TRACT14	
26.2002	1.0474	5003.00
30.2534	1.4177	5004.00
33.8243	1.8302	5005.00
37.0527	2.2848	5006.00
40.3063	2.7817	5007.00
	3.3770	5008.10

PRINT HYD ID=35 CODE=1

\*  
\*  
\*  
\*

FINISH





# Channel Inlet Capacity

Weir Equation:

$$Q = CLH^{3/2}$$

Q = Flow

C = 2.95

L = Length of weir

H = Height of Weir

## Irrigation Structure (Corrales Main Canal)

$$Q = 2.95 * 24 * 1.27^{3/2}$$

Q = 101.33 cfs

101.33 cfs > 24.70 cfs

Structure has capacity

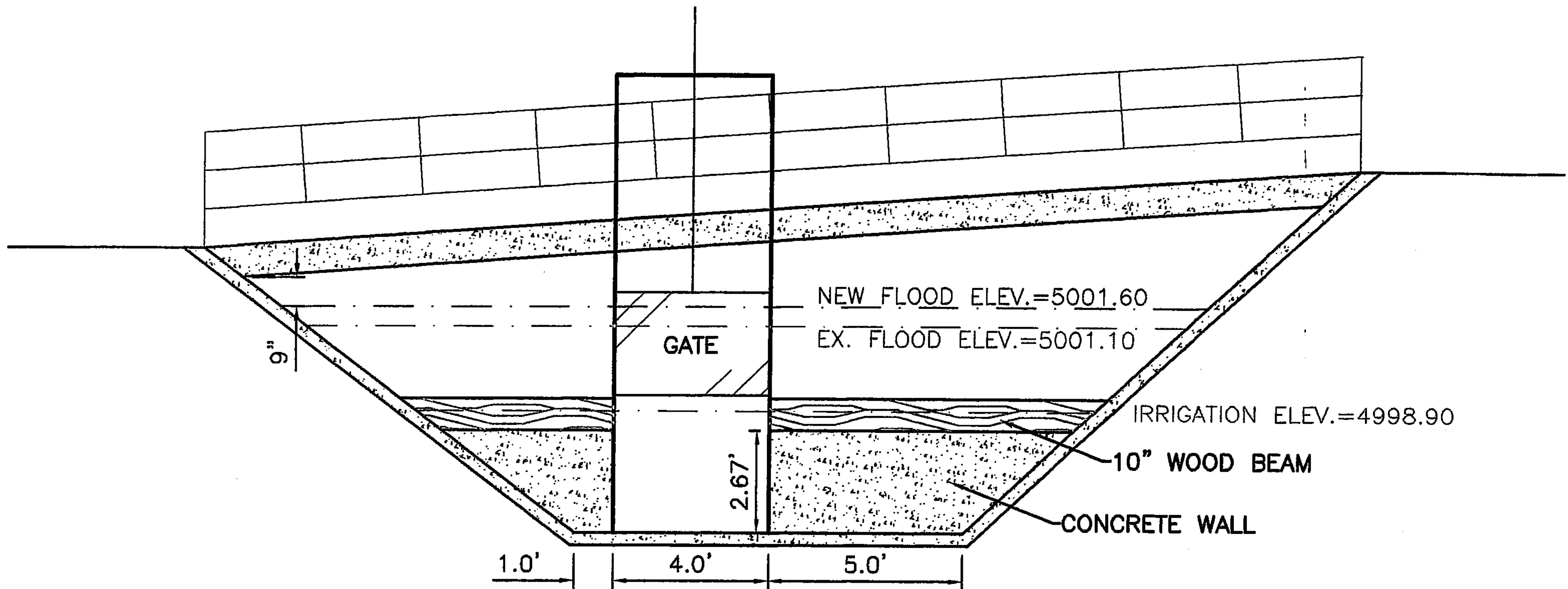
## Emergency Overflow

$$Q = 2.95 * 100 * 1.0^{3/2}$$

Q = 295.00 cfs

295.00 cfs > 284.74 cfs

Overflow has capacity



**CHECK STRUCTURE CAPACITY ANALYSIS**

SCALE: NTS

## Channel Capacity

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft <sup>2</sup> )	(ft)		(%)	(cfs)	(cfs)	(ft/s)
Basin 1	4	4	0.5	2.00	5.00	0.4000	50	88.00	13.52	6.76
Basin 2	10	10	0.5	5.00	11.00	0.4545	15	131.21	9.08	1.82
Basin 3	4	4	0.5	2.00	5.00	0.4000	50	88.00	15.09	7.55

### Manning's Equation:

$$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$$

A = Area

R = D/4

S = Slope

n = 0.013

## *Pipe Capacity*

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft <sup>2</sup> )		(cfs)	(cfs)	(ft/s)
1	48	1.28	12.57	1.000	162.95	103.59	8.24
2	18	2	1.77	0.375	14.90	13.52	7.65

### Manning's Equation:

$$Q = 1.49/n * A * R^{(2/3)} * S^{(1/2)}$$

A = Area  
 R = D/4  
 S = Slope  
 n = 0.013

## *Drop Inlet Calculations*

Basin	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
1	Single D	4.21	13.52	0.4459	0.67
2	Single C	4.36	9.08	0.1871	0.67
3	Single C	4.36	15.09	0.5167	0.67
6	Grate	0.81	1.59	0.1652	0.92

### ORIFICE EQUATION

$$Q = CA \sqrt{2gH}$$

C = 0.6

g = 32.2

**STORM DRAIN INLET**  
**EFFECTIVE AREA ASSUMING A 50% CLOGGING FACTOR**

**DOUBLE D:**

Area at the grate: \_\_\_\_\_

$$\begin{aligned} L &= 76.75'' - 14 (1/2'' \text{ middle bars}) - 6'' \text{ center piece} \\ &= 63.75'' \\ &= 5.3125' \end{aligned}$$

$$\begin{aligned} W &= 25.5'' - 13 (1/2'' \text{ middle bars}) \\ &= 19'' \\ &= 1.583' \end{aligned}$$

$$\begin{aligned} \text{Area} &= 1.583' \times 5.3125' \\ &= 8.410 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Effective Area} &= 8.410 - .5 (8.410) \\ &= 4.205 \text{ ft}^2 \end{aligned}$$

## Single 'C' Drop Inlet EFFECTIVE AREA

### Area at the grate:

$$\begin{aligned} L &= 38.375'' - 7(2@ \text{ middle bars}) \\ &= 34.875'' \\ &= 2.906' \end{aligned}$$

$$\begin{aligned} W &= 25.5'' - 13(2@ \text{ middle bars}) \\ &= 19'' \\ &= 1.583' \end{aligned}$$

$$\begin{aligned} \text{Area} &= 1.583' \times 2.906' \\ &= 4.601 \text{ ft}^2 \end{aligned}$$

$$\begin{aligned} \text{Effective Area:} &= 4.601 - 4.601 (0.5 \text{ clogging factor}) \\ &= 2.30 \text{ ft}^2 \text{ at the grate} \end{aligned}$$

### Area at the throat:

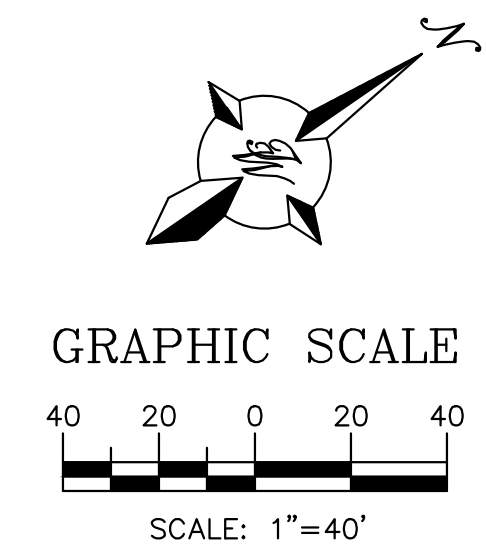
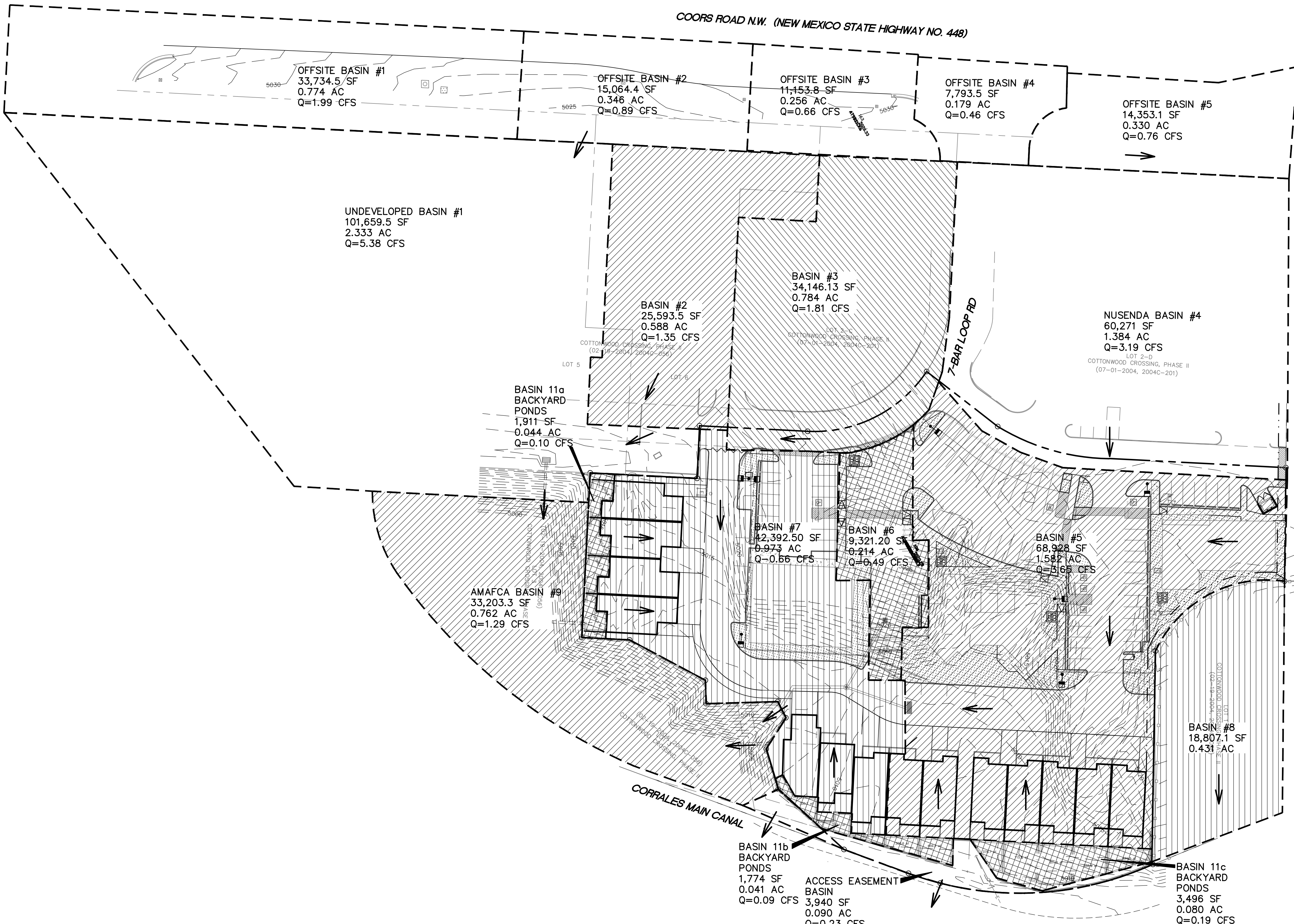
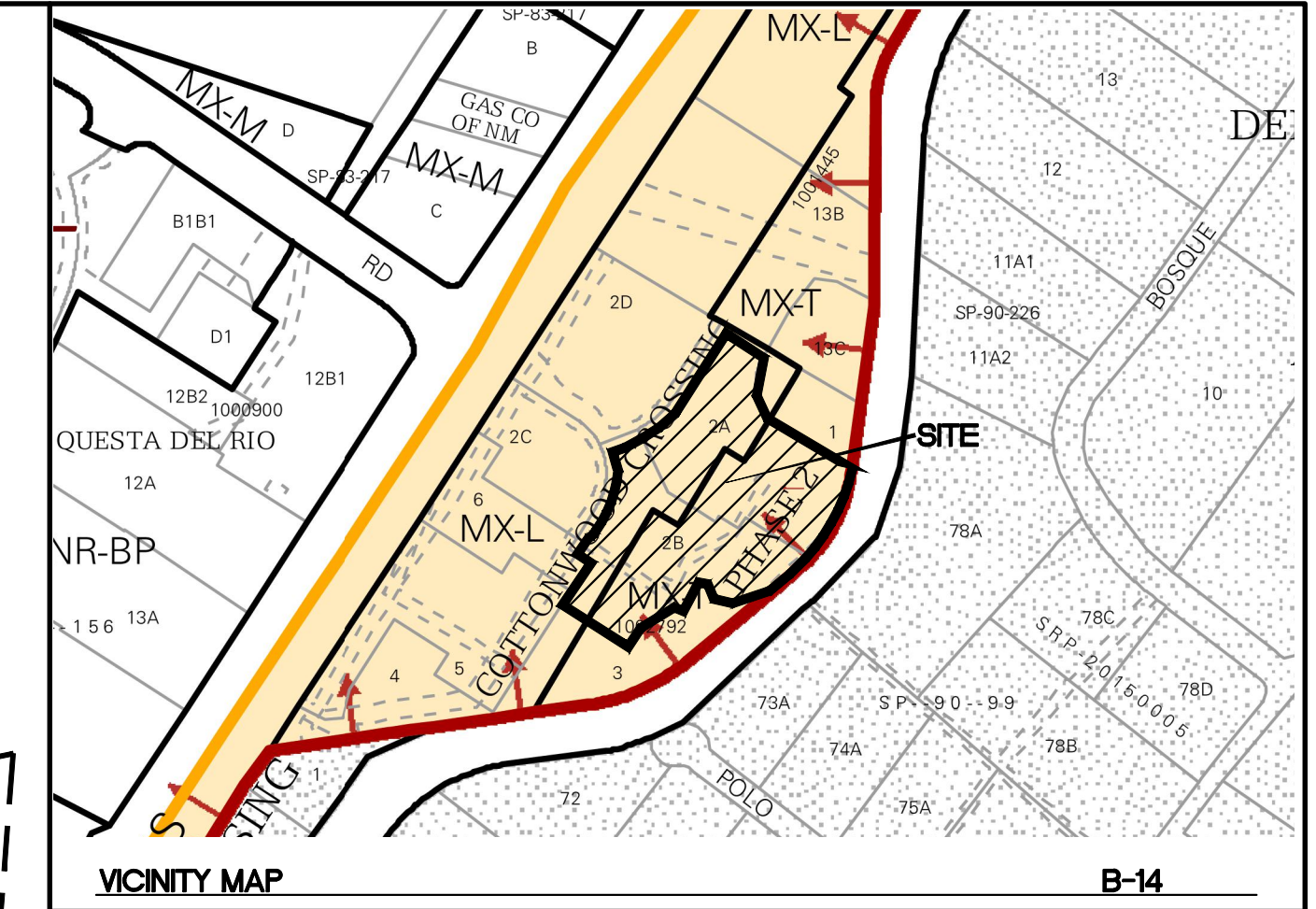
$$\begin{aligned} L &= 47.375@ \\ &= 3.95' \end{aligned}$$

$$\begin{aligned} H &= 10:@ - 42@ \\ &= 63@ \\ &= 0.5208' \end{aligned}$$

$$\begin{aligned} \text{Area} &= 3.95' \times 0.5208' \\ &= 2.06 \text{ ft}^2 \text{ at the throat} \end{aligned}$$

### Total Area:

$$\begin{aligned} \text{Area} &= 2.30_{\text{grate}} + 2.06_{\text{throat}} \\ &= 4.36 \text{ ft}^2 \end{aligned}$$



CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/as
	<b>BASIN EXHIBIT</b>	DATE 04-08-24
	5571 MIDWAY PARK PL NE, ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-GR
04-08-24 RONALD R. BOHANNAN P.E. #7868		SHEET # <b>8</b>
		JOB # 2023004



**DPM Weighted E Method**

Precipitation Zone 1  
 COORS BLVD NW  
 RETAIL @ 7BAR  
 TWLLC  
 Reference Document

Date: 06/17/2024  
 DPM Version XX dated 09/2020

**Existing Contributing Off-Site Basins**

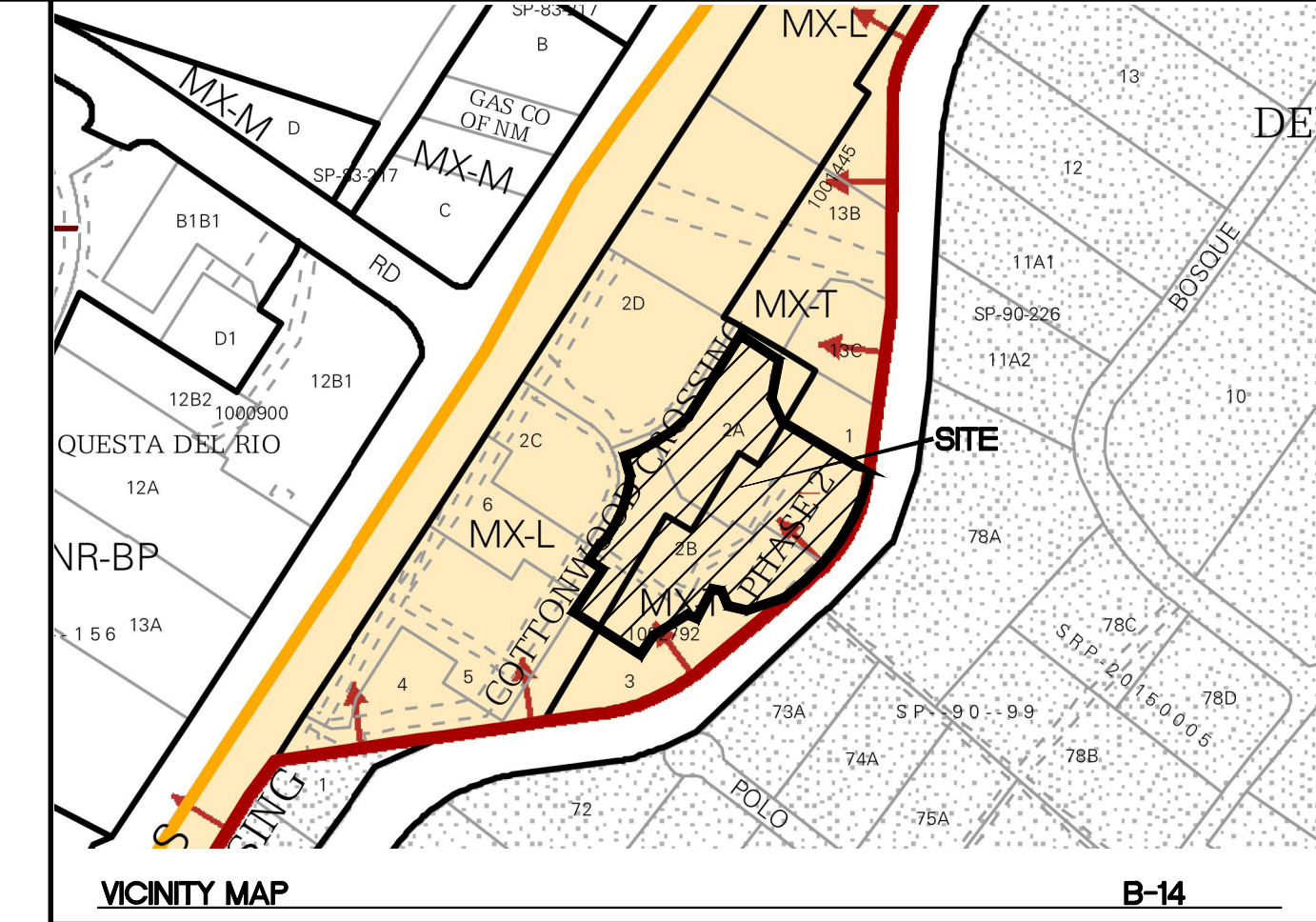
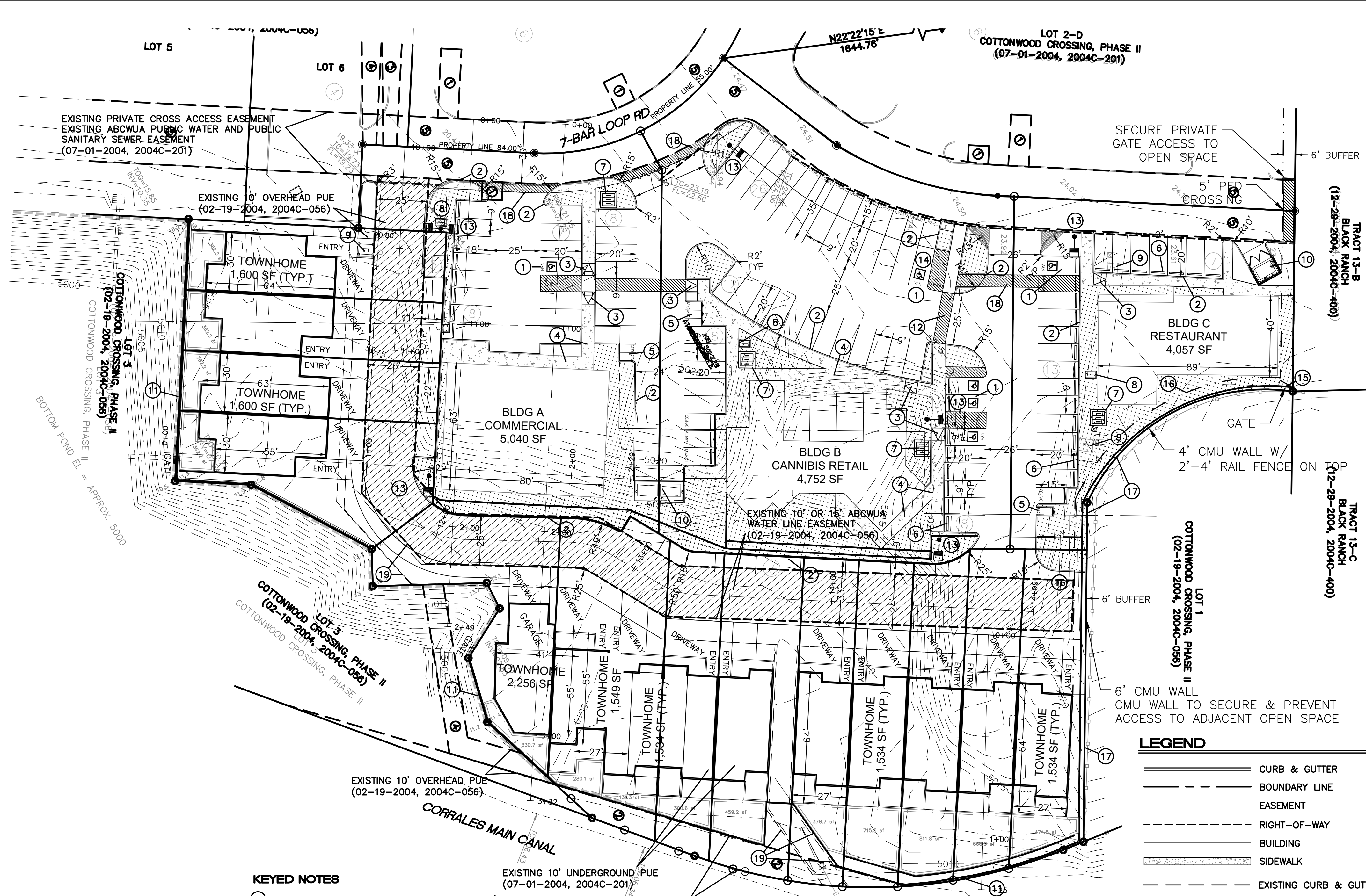
Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
OFF-SITE BASIN #1	Coors Blvd	33,734.50	0.774	0.00121	0%	0.000	0%	0.000	0%	0.000	100%	0.774	2.240	0.145	3.19	1.430	0.092	1.99
OFF-SITE BASIN #2	Coors Blvd	15,064.40	0.346	0.00054	0%	0.000	0%	0.000	0%	0.000	100%	0.346	2.240	0.065	1.42	1.430	0.041	0.89
OFF-SITE BASIN #3	Coors Blvd	11,158.80	0.256	0.00040	0%	0.000	0%	0.000	0%	0.000	100%	0.256	2.240	0.048	1.06	1.430	0.031	0.66
OFF-SITE BASIN #4	Coors Blvd	7,793.50	0.179	0.00028	0%	0.000	0%	0.000	0%	0.000	100%	0.179	2.240	0.033	0.74	1.430	0.021	0.46
<b>Total</b>		<b>67,751.20</b>	<b>1.555</b>	<b>0.00243</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>1.555</b>	<b>V<sub>360</sub> =</b>	<b>0.290</b>	<b>6.41</b>		<b>0.185</b>	<b>4.00</b>

**Proposed Conditions - Updated Major Site Plan - Contributing**

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
BASIN #1	Undeveloped	101,659.50	2.334	0.00365	0%	0.000	15%	0.350	0%	0.000	85%	1.984	2.014	0.392	8.93	1.255	0.244	5.38
BASIN #2	Popeyes	25,593.50	0.588	0.00092	0%	0.000	15%	0.088	0%	0.000	85%	0.499	2.014	0.099	2.25	1.255	0.061	1.35
BASIN #3	Take 5	34,146.13	0.784	0.00122	0%	0.000	15%	0.118	0%	0.000	85%	0.666	2.014	0.132	3.00	1.255	0.082	1.81
BASIN #4	Nusenda	60,271.00	1.384	0.00216	0%	0.000	15%	0.208	0%	0.000	85%	1.176	2.014	0.232	5.29	1.255	0.145	3.19
BASIN #5	7 Bar - B, C, TH 8-14	68,928.00	1.582	0.00247	0%	0.000	15%	0.237	0%	0.000	85%	1.345	2.014	0.266	6.05	1.255	0.165	3.65
BASIN #6	7 Bar - Upper Inlet	9,321.20	0.214	0.00033	0%	0.000	15%	0.032	0%	0.000	85%	0.182	2.014	0.036	0.82	1.255	0.022	0.49
BASIN #7	Building A, TH 1-7	12,392.50	0.284	0.00044	0%	0.000	15%	0.043	0%	0.000	85%	0.242	2.014	0.048	1.09	1.255	0.030	0.66
BASIN #9	AMAFCA Pond	33,203.30	0.762	0.00119	0%	0.000	50%	0.381	0%	0.000	50%	0.381	1.485	0.094	2.39	0.845	0.054	1.29
<b>Total</b>		<b>345,515.13</b>	<b>7.932</b>	<b>0.01239</b>		<b>0.000</b>		<b>1.457</b>		<b>0.000</b>		<b>6.475</b>	<b>V<sub>360</sub> =</b>	<b>1.297</b>	<b>29.82</b>		<b>0.803</b>	<b>17.82</b>

**Non-contributing Basins (Sheet flow to Corrales Main Canal or Retained On-Site)**

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr			
Basin ID	Descriptor	Area (sf)	Area (acres)	Area (sq miles)	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E (in)	Volume (ac-ft)	Flow cfs	Weighted E (in)	Volume (ac-ft)	Flow cfs
					%	(acres)	%	(acres)	%	(acres)	%	(acres)						
<i>OFF-SITE BASIN #5</i>	<i>Coors Blvd</i>	<i>14,353.10</i>	<i>0.330</i>	<i>0.00051</i>	<i>0%</i>	<i>0.000</i>	<i>0%</i>	<i>0.000</i>	<i>0%</i>	<i>0.000</i>	<i>100%</i>	<i>0.330</i>	<i>2.240</i>	<i>0.062</i>	<i>1.36</i>	<i>1.430</i>	<i>0.039</i>	<i>0.85</i>
<i>BASIN #8</i>	<i>NR-PO-B</i>	<i>18,807.10</i>	<i>0.432</i>	<i>0.00067</i>	<i>0%</i>	<i>0.000</i>	<i>100%</i>	<i>0.432</i>	<i>0%</i>	<i>0.000</i>	<i>0%</i>	<i>0.000</i>	<i>0.730</i>	<i>0.026</i>	<i>0.93</i>	<i>0.260</i>	<i>0.009</i>	<i>0.35</i>
<i>Access Easement Basins</i>	<i>Access Easement Basins</i>	<i>3,940.00</i>	<i>0.090</i>	<i>0.00014</i>	<i>0%</i>	<i>0.000</i>	<i>0%</i>	<i>0.000</i>	<i>100%</i>	<i>0.090</i>	<i>0%</i>	<i>0.000</i>	<i>0.950</i>	<i>0.007</i>	<i>0.26</i>	<i>0.430</i>	<i>0.003</i>	<i>0.13</i>
<i>Basin #11</i>	<i>TH Backyards</i>	<i>7,181.00</i>	<i>0.165</i>	<i>0.00026</i>	<i>0%</i>	<i>0.000</i>	<i>100%</i>	<i>0.165</i>	<i>0%</i>	<i>0.000</i>	<i>0%</i>	<i>0.000</i>	<i>0.730</i>	<i>0.010</i>	<i>0.36</i>	<i>0.260</i>	<i>0.004</i>	<i>0.13</i>
<b>Total</b>		<b>44,281.20</b>	<b>1.017</b>	<b>0.00159</b>		<b>0.000</b>		<b>0.597</b>		<b>0.090</b>		<b>0.330</b>	<b>V<sub>360</sub> =</b>	<b>0.105</b>	<b>2.91</b>		<b>0.055</b>	<b>1.46</b>



**LEGAL DESCRIPTION:**  
 LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5908 AC  
 LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5483 AC  
 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

**SITE DATA**

LOT AREA	136744 SF (3.20 ACRES)
ZONING	MX-L & MX-T
<b>BUILDING A</b> PROPOSED USE	COMMERCIAL
BUILDING FOOTPRINT	5040 SF
<b>BUILDING B</b> PROPOSED USE	CANNABIS RETAIL
BUILDING FOOTPRINT	4752 SF
<b>BUILDING C</b> PROPOSED USE	RESTAURANT
BUILDING FOOTPRINT	4057 SF
<b>DWELLING UNIT</b> PROPOSED USE	RESIDENTIAL
15 OF UNITS	1740± SF EACH
TOTAL AREA	23951 SF

**COMMERCIAL PARKING**

<b>BUILDING A</b>	18 SPACES (3.5 SPACES/1000 SF GFA)
PARKING REQUIRED	28 SPACES
PARKING PROVIDED	1 SPACE VAN ACCESSIBLE
ACCESSIBLE SPACES REQUIRED	1 SPACE
ACCESSIBLE SPACES PROVIDED	1 SPACE VAN ACCESSIBLE
<b>MOTORCYCLE SPACES REQUIRED AND PROVIDED</b>	1 SPACE
<b>BICYCLE SPACES REQUIRED AND PROVIDED</b>	2
<b>BUILDING B</b>	
TWO-STORY CANNABIS RETAIL	
PARKING SPACES REQUIRED	33 SPACES (4 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	53 SPACES (10 SHARED W/BLDG C)
ACCESSIBLE SPACES REQUIRED	2 SPACES
ACCESSIBLE SPACES PROVIDED	3 SPACES (1 VAN ACCESSIBLE)
<b>MOTORCYCLE SPACES REQUIRED AND PROVIDED</b>	1 SPACE
<b>MOTORCYCLE SPACES PROVIDED</b>	3 SPACES
<b>BICYCLE SPACES REQUIRED AND PROVIDED</b>	5
<b>BUILDING C</b>	
PARKING SPACES REQUIRED	23 SPACES (5.6 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	20 SPACES (10 SHARED W/BLDG B)
ACCESSIBLE SPACES REQUIRED AND PROVIDED	1 SPACE (1 VAN ACCESSIBLE)
<b>MOTORCYCLE SPACES REQUIRED AND PROVIDED</b>	1 SPACE
<b>BICYCLE SPACES REQUIRED AND PROVIDED</b>	3

**RESIDENTIAL PARKING**

TOWNHOMES	2 SPACE/PER UNIT
TOTAL PARKING REQUIRED	28 SPACES
GARAGE PARKING	28 SPACES
LANDSCAPE REQUIRED	14847 SF (15% NET AREA)
LANDSCAPE PROVIDED	19880 SF

THE REQUIRED 10% PARKING REDUCTION IS INCLUDED PURSUANT TO IDO 5-5(C)(5) FOR PROXIMITY TO TRANSIT.

THE REQUEST IS TO ADD THE RESTAURANT, CANNABIS RETAIL, OFFICE, AND TOWNHOMES USES TO THE CONTROLLING SITE PLAN.

**KEYED NOTES**

- 1 ACCESSIBLE PARKING PER ADA STANDARDS W/SIGN
- 2 STD CURB AND GUTTER PER COA STD DWG 2415A
- 3 ACCESSIBLE RAMP SEE DETAIL C5.0
- 4 CONCRETE SIDEWALK
- 5 MOTORCYCLE SPACE W/SIGN (4'X8' MIN)
- 6 WHEEL STOP (TYP)
- 7 BICYCLE RACK SEE DETAIL SHEET C5.0
- 8 TRANSFORMER
- 9 TRANSFORMER TO BE REMOVED
- 10 DOUBLE / SINGLE DUMPSTER SEE DETAIL SHEET C5.1
- 11 EXISTING WALL
- 12 PEDESTRIAN CROSSING
- 13 SITE LIGHTING FIXTURES WITH FULL CUT OFF.
- 14 MPO VAN ACCESSIBLE PARKING
- 15 MPO PEDESTRIAN ACCESS GATE
- 16 MPO 6' LANDSCAPE BUFFER
- 17 WALLS & FOOTING ADJACENT TO MPO WILL BE WHOLLY CONTAINED WITHIN BUFFER
- 18 PER IDO 5-3(D)(3)(C) MATERIALS TO ALERT MOTORIST
- 19 PNM EASEMENT

**GENERAL NOTES - SITE PLANS:**

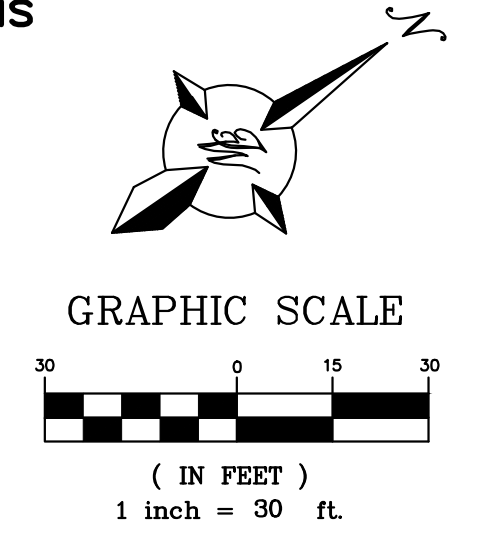
1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING THIS WORK. IN CASE OF ANY DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND WORK SHALL NOT COMMENCE WITHOUT APPROVAL FROM THE ARCHITECT.
2. WRITTEN DIMENSIONS OF DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE GENERAL CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE BUILDING SITE, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
3. GC AND LIGHTING CONTRACTOR TO ENSURE SITE LIGHTING FIXTURE HEADS HAVE THE CORRECT ORIENTATION. REFER TO PHOTOMETRIC DRAWINGS FOR HEAD PLACEMENT.
4. GC TO COORDINATE SITE SECURITY LAYOUT AND CONDUIT SIZE & LOCATION WITH THE OWNER.
5. GC TO ENSURE PAVING AT ALL EXITS SHALL NOT EXCEED A 2% MAX SLOPE IN ALL DIRECTIONS.
6. PAVING SHALL BE LOWER THAN THE BUILDING SLAB BY THE FOLLOWING AMOUNTS UNO:
  - 1/2" @ ALL EXIT DOORS
  - 1/2" @ ALL SHOWROOM GLAZING LOCATIONS
  - 1 1/2" @ OVERHEAD DOORS
  - 1 1/2" @ PRE-FAB METAL WALL PANELS
7. PARKING LOT SHALL BE ASPHALT PAVING
8. SITE ACREAGE IS 3.2 ACRE PORTION OF LARGER 10 ACRE CONTROLLING SITE DEVELOPMENT AREA
9. VARIANCE BEING REQUESTED FOR 45' BUFFER AT MPO EDGE TO BE REDUCED TO 6' BUFFER. VA-20236-000315 (MPOS VA)
10. REFERENCE VA-2023-000315 (MPOS VA)
11. GENERAL NOTE: HEIGHTS OF BUILDINGS SUBJECT FOR VARIANCE REQUEST TO VPO - BUILDINGS HEIGHT STANDARDS VA-2023-000314 (VPO-1 VA)
12. SITE PLAN DESIGNED IN COMPLIANCE W/ CPO-2 STANDARDS PURSUANT TO IDO 3-4 (c)

**LEGEND**

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- - - RIGHT-OF-WAY
- ▭ BUILDING
- ▭ SIDEWALK
- - - EXISTING CURB & GUTTER
- - - EXISTING BOUNDARY LINE
- - - EXISTING RETAINING WALL
- ▨ LANDSCAPE

**INDEX TO DRAWINGS**

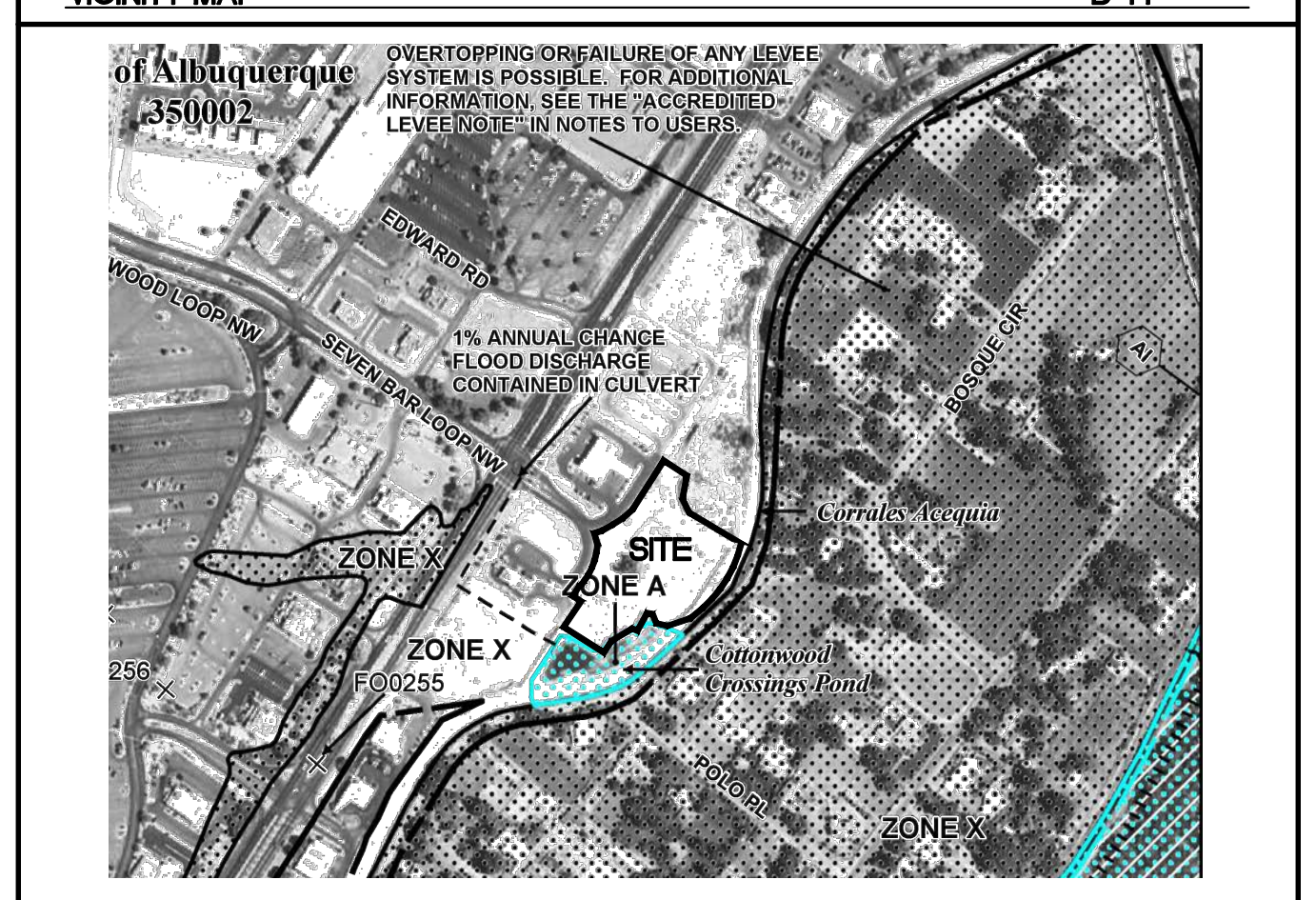
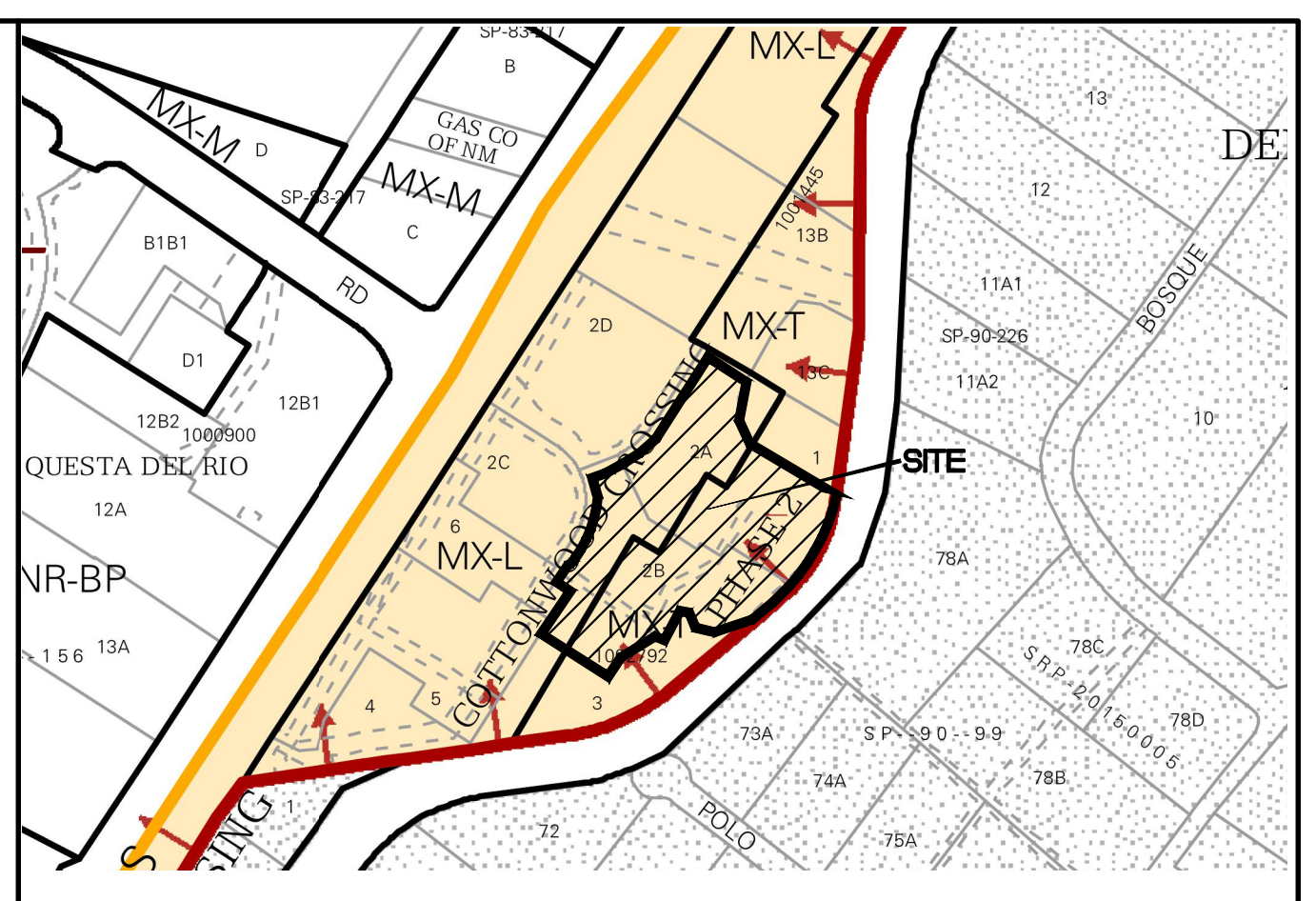
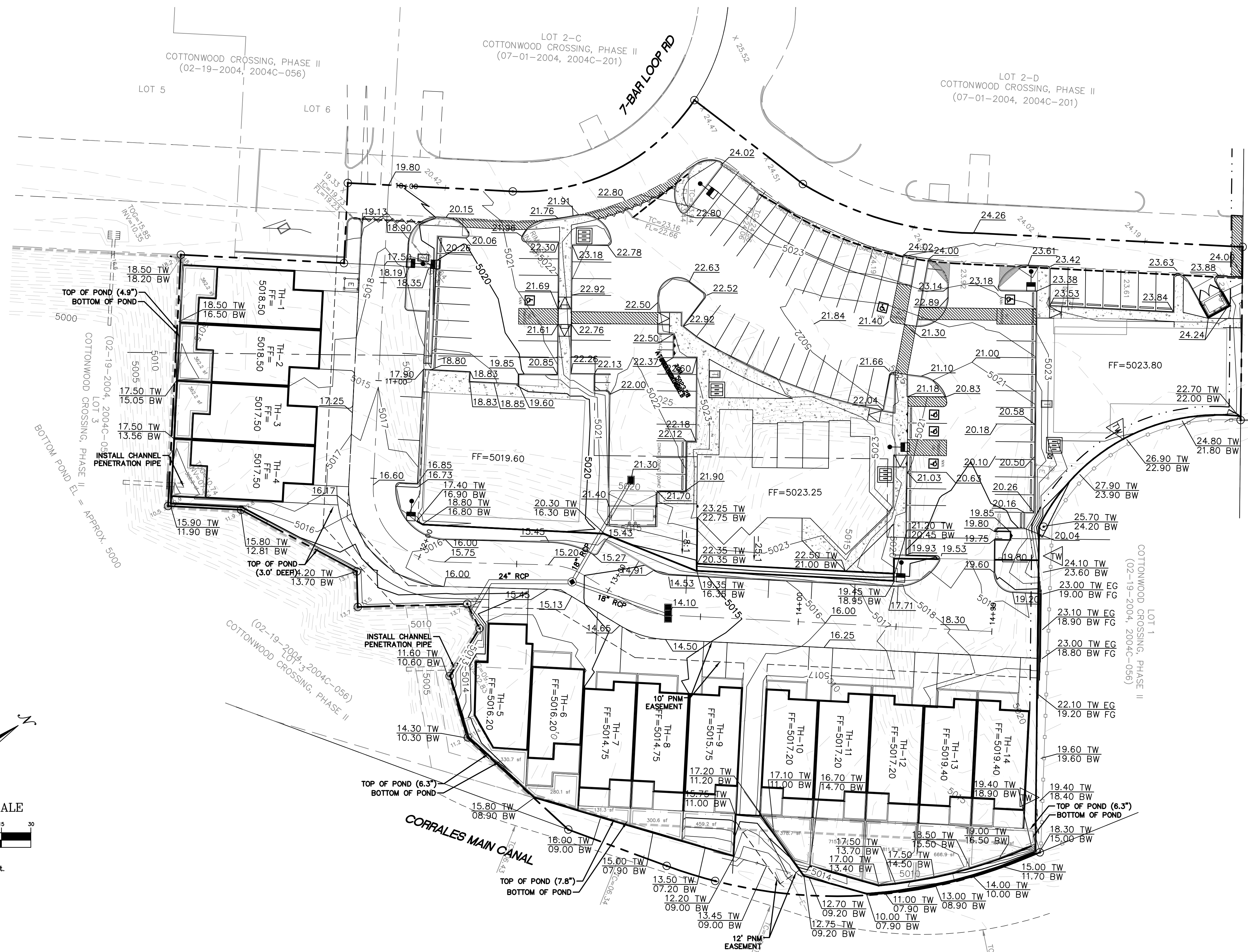
- C1.0 SITE PLAN FOR BUILDING PERMIT
- C1.1 SITE PLAN- VIEW PLANE ANALYSIS
- C1.2 SITE PLAN- VIEW PLANE ANALYSIS
- C2.0 CONCEPTUAL GRADING AND DRAINAGE PLAN
- C2.1 EXISTING BASIN
- C2.2 PROPOSED BASIN
- C3.0 CONCEPTUAL MASTER UTILITY PLAN
- C4.0 BUILDING ELEVATIONS
- C4.1 BUILDING ELEVATIONS
- C4.2 BUILDING ELEVATIONS
- C4.3 BUILDING ELEVATIONS
- C4.4 BUILDING ELEVATIONS
- C5.0 DETAIL SHEET
- C5.1 DETAIL SHEET
- LS101 LANDSCAPING PLAN



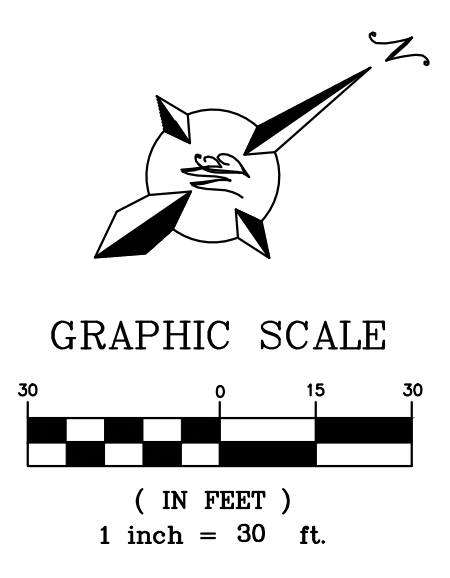
PROJECT NUMBER: PR-2023009105  
 APPLICATION NUMBER: SI-2023-01402

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	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/os
	<b>SITE PLAN - EPC</b> (NOT BUILDING PERMIT SET)	DATE 04-08-24
		DRAWING 2023004-SP
SHEET # <b>4</b>		JOB # 2023004



**LEGAL DESCRIPTION:**  
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 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN



- LEGEND**
- ==== CURB & GUTTER
  - BOUNDARY LINE
  - EASEMENT
  - CENTERLINE
  - RIGHT-OF-WAY
  - ===== BUILDING
  - ===== SIDEWALK
  - EXISTING CURB & GUTTER
  - EXISTING BOUNDARY LINE
  - EXISTING RETAINING WALL

- NOTICE TO CONTRACTORS**
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
  - 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.
  - TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
  - 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.
  - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
  - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
  - WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

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

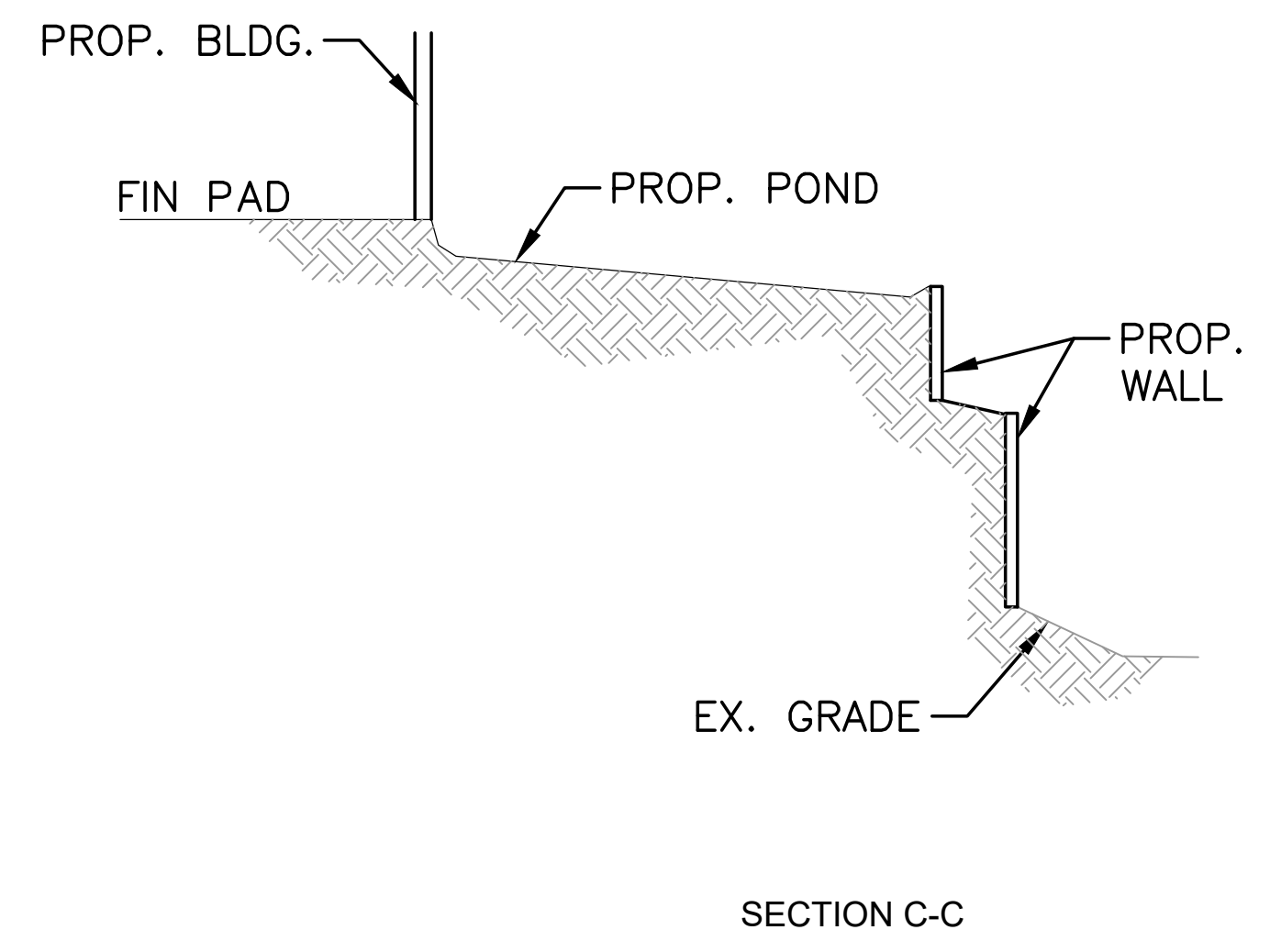
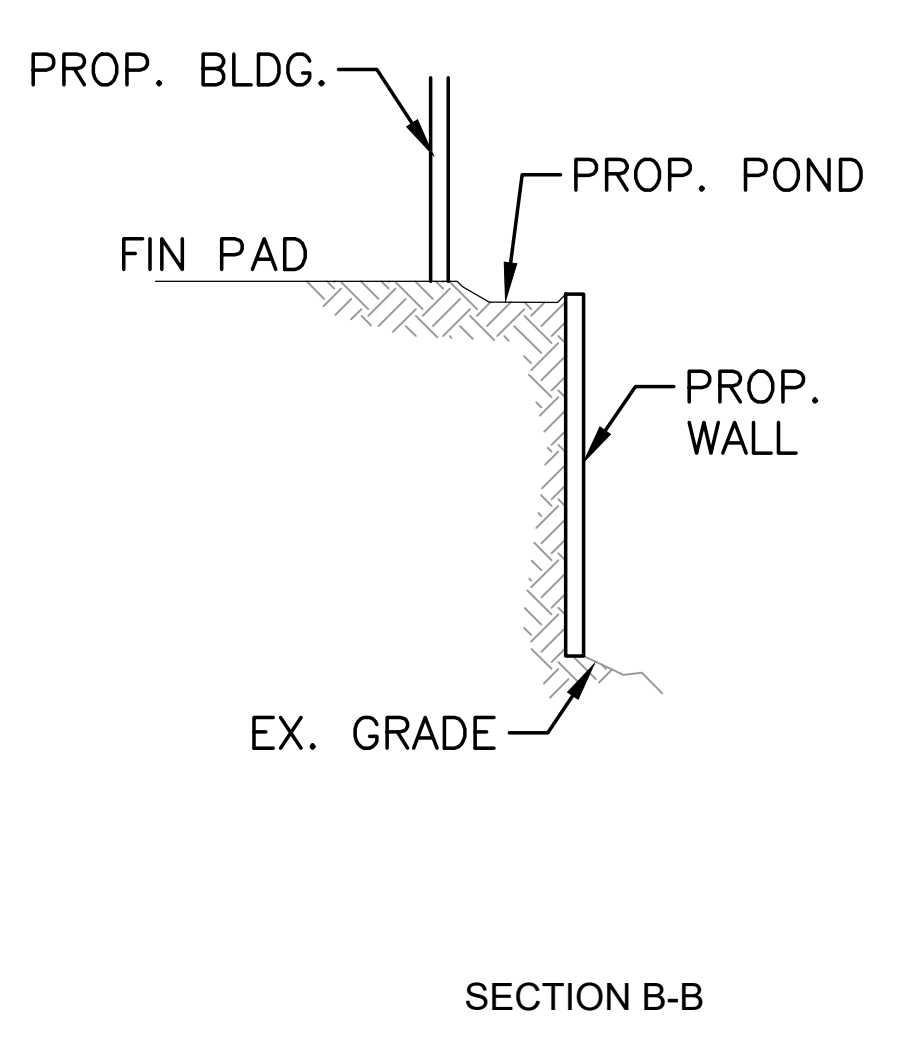
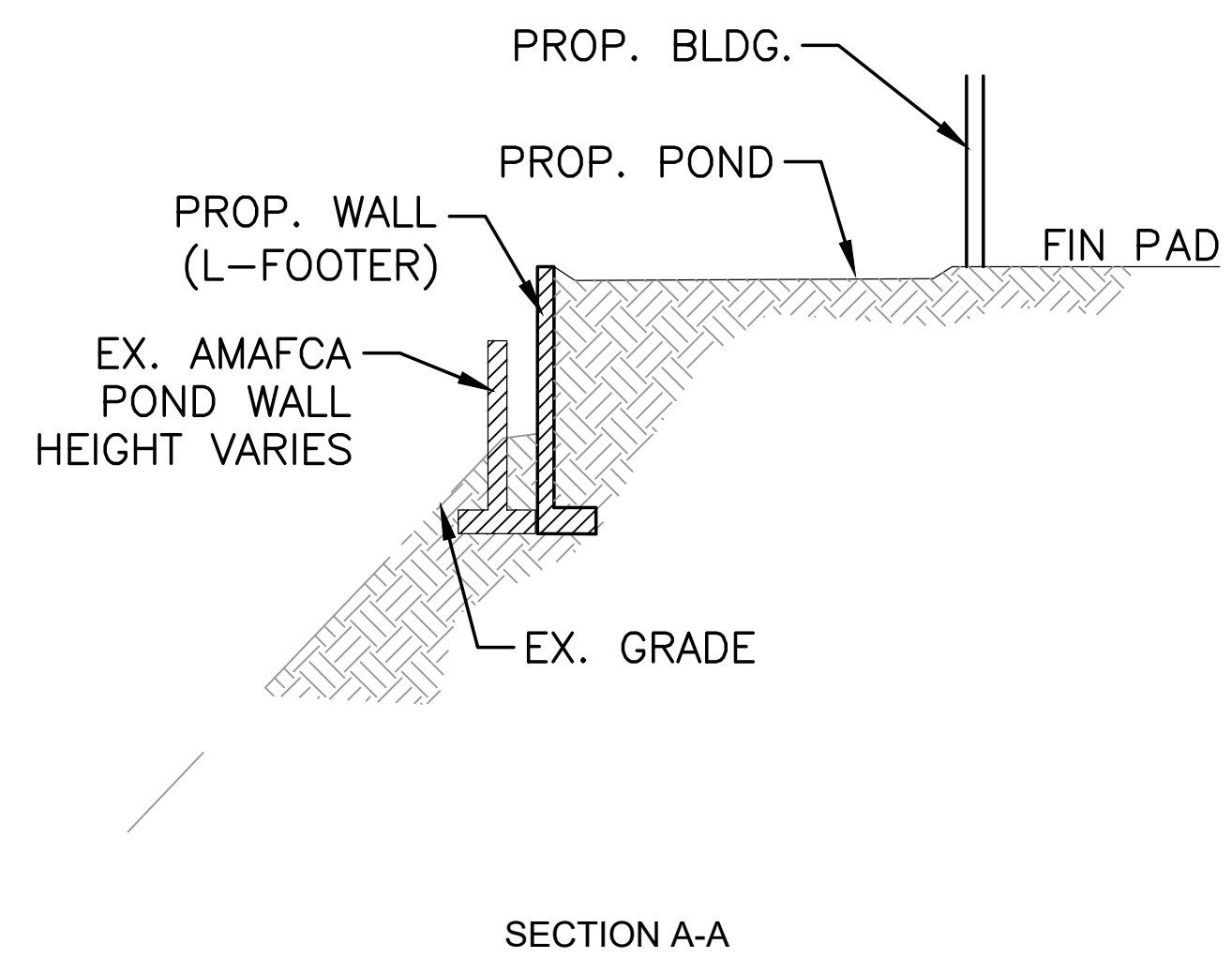
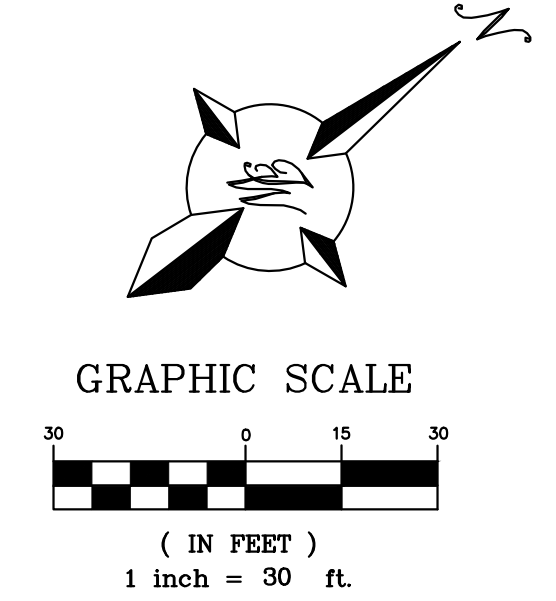
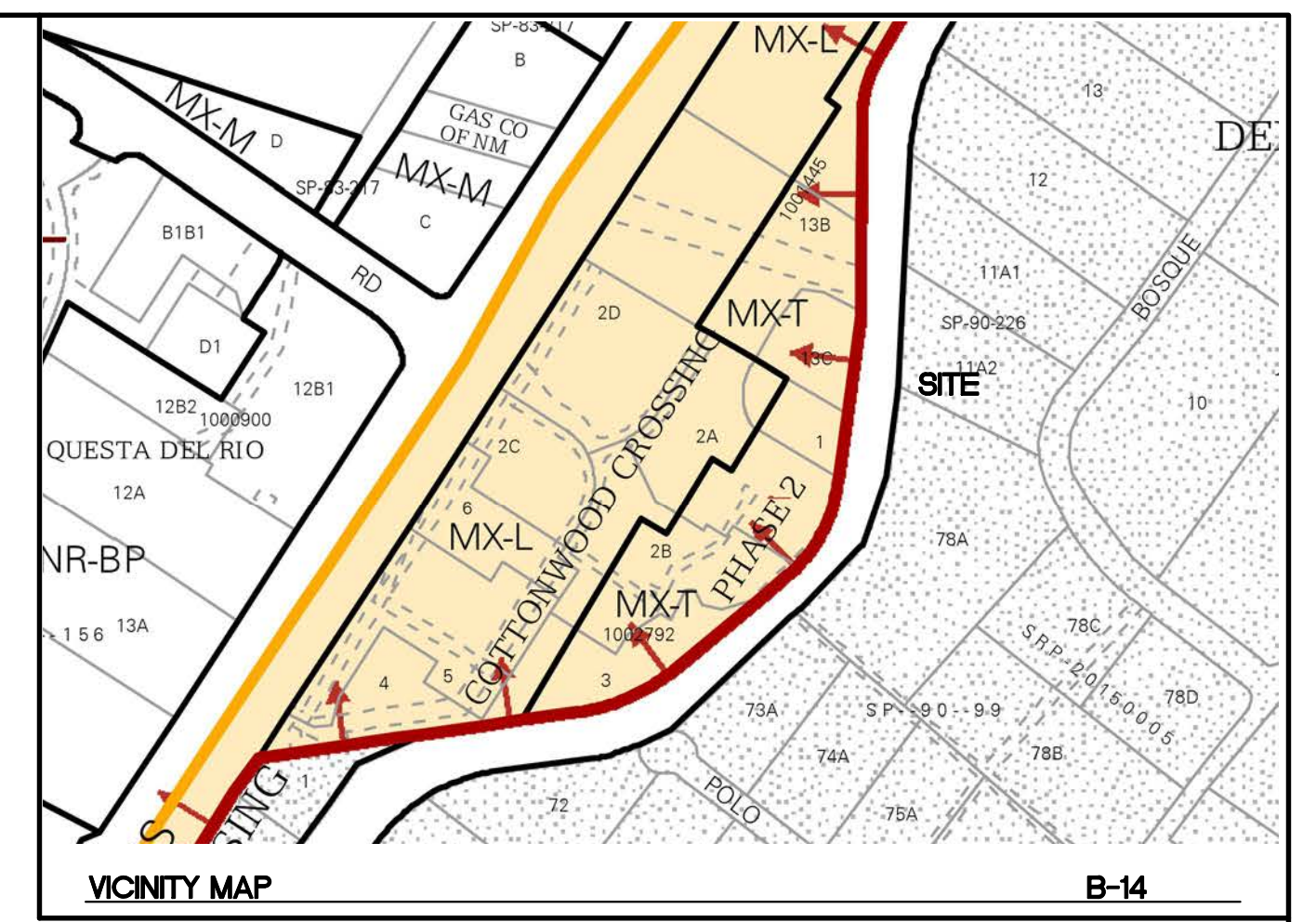
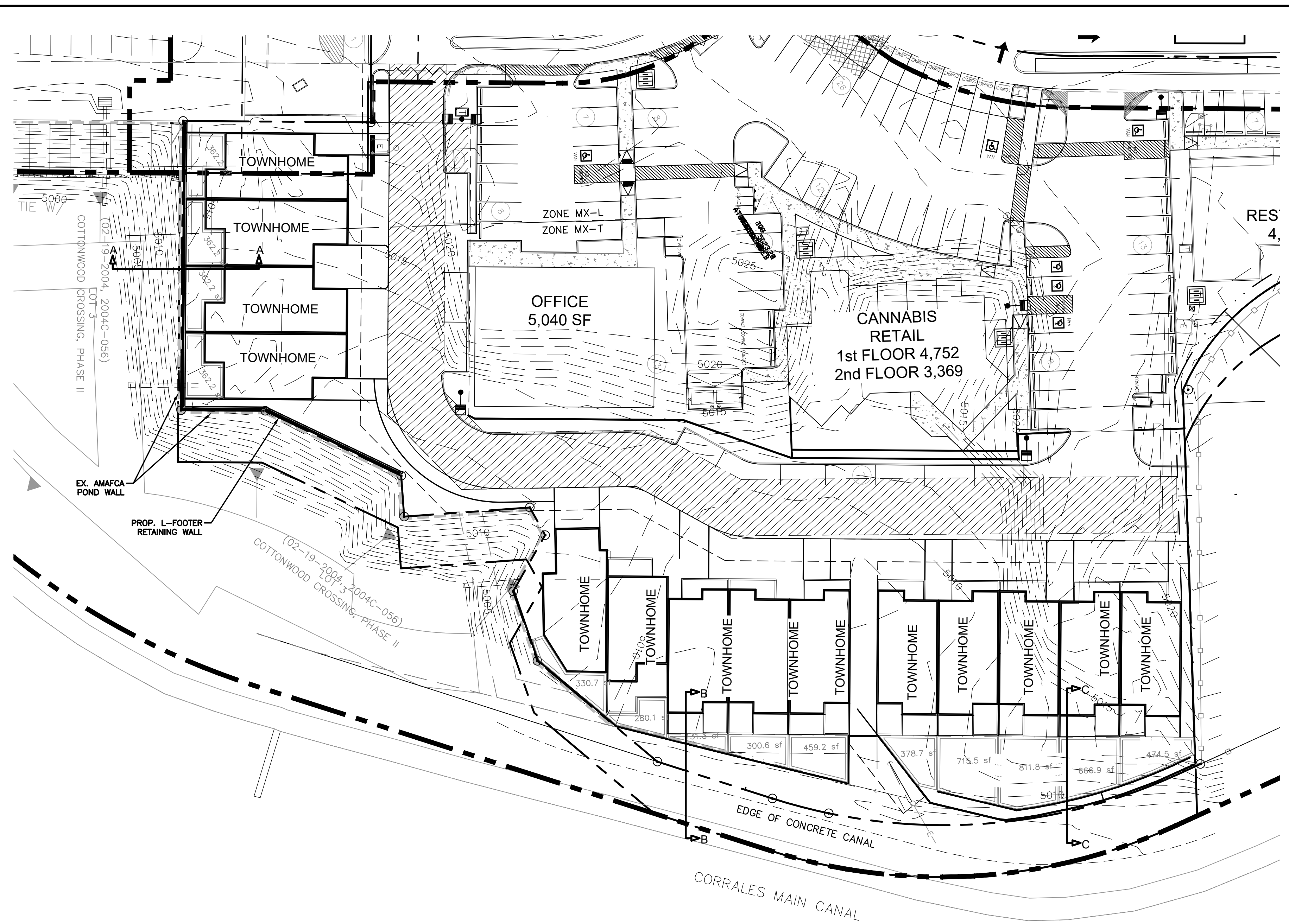
**CAUTION**  
 ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

DPM	
100yr	10day
Rainfall	3.9 in
	0.325 ft

Townhome	Backyard Ponding Requirements	
	Drainage Area (SF)	Total Volume (CF)
TH1	384.4	124.9
TH2	393.4	127.9
TH3	393.4	127.9
TH4	370.6	120.4
TH5	330.7	107.5
TH6	280.1	91.0
TH7	131.3	42.7
TH8	300.6	97.7
TH9	459.2	149.2
TH10	378.7	123.1
TH11	715.5	232.5
TH12	811.8	263.8
TH13	666.9	216.7
TH14	474.5	154.7
Totals	6,091.10	1,979.61

CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

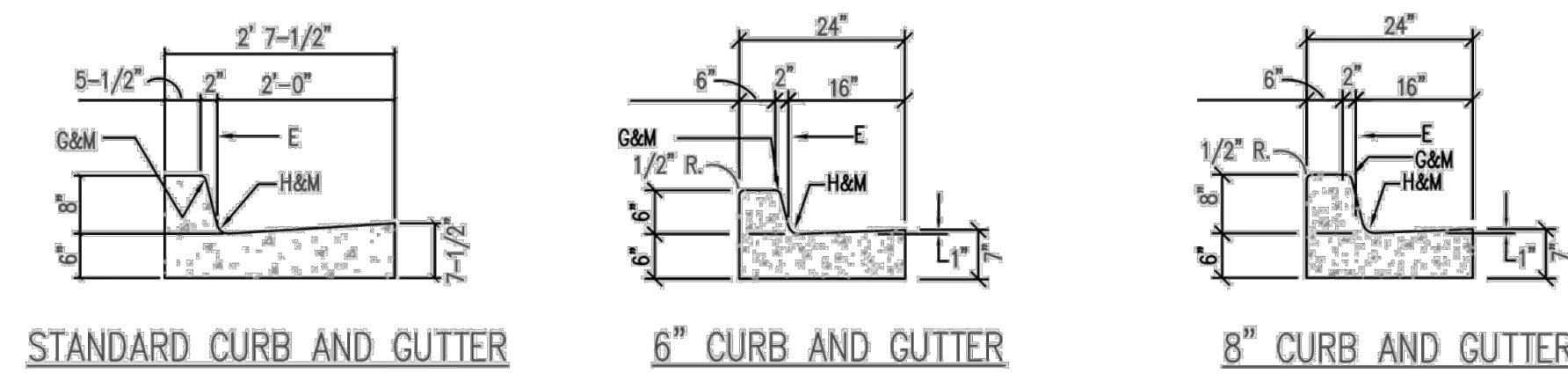
	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/os
	<b>CONCEPTUAL GRADING AND DRAINAGE PLAN</b>	DATE 04-08-24
	<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-GR
04-08-24 RONALD R. BOHANNAN P.E. #7868		SHEET # <b>5</b> JOB # 2023004



CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

<p>ENGINEER'S SEAL RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER 04-08-24 RONALD R. BOHANNAN P.E. #7868</p>	<p><b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM</p>	<p>DRAWN BY pm/as</p>
	<p><b>CROSS SECTIONS AT POND AND AT CHANNEL</b></p>	<p>DATE 04-08-24</p>
<p><b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com</p>		<p>SHEET # <b>EX-1</b></p>
		<p>JOB # 2023004</p>

Y:\2023\2023004 Retail @ 7 Bar\dwg\Construction\2023004\_Master basin.dwg, 6/25/2024 8:33:48 AM, DWG To PDF.pc3



STANDARD CURB AND GUTTER

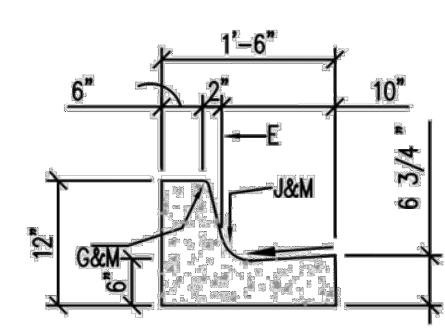
6" CURB AND GUTTER

8" CURB AND GUTTER

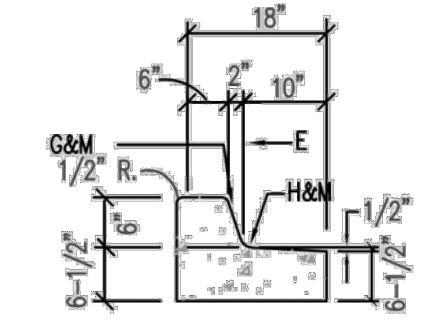


8" DEPRESSED CURB AND GUTTER

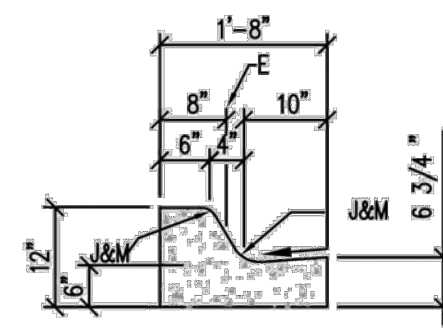
6" DEPRESSED CURB AND GUTTER



MEDIAN CURB AND GUTTER



DEPRESSED MEDIAN CURB AND GUTTER



MOUNTABLE MEDIAN CURB AND GUTTER

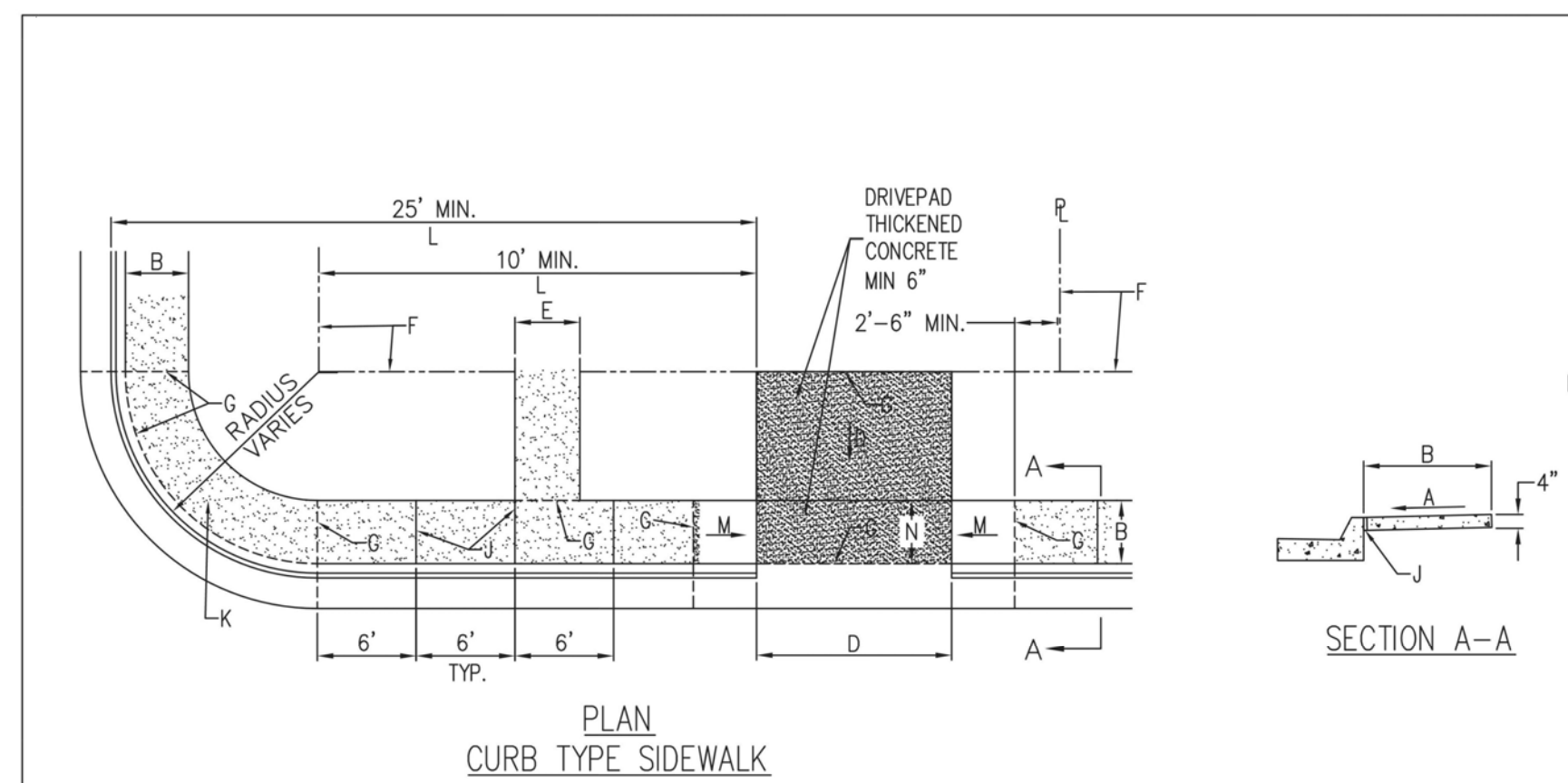
**GENERAL NOTES**

1. CURB, GUTTER AND CUT-OFF WALL WILL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE (PCC).
2. FOR STANDARD AND MEDIAN C & G ADJACENT TO ASPHALT CONCRETE (AC) PAVEMENT, PROVIDE CONTRACTION JOINTS AT 12' MAX. SPACING. CONTRACTION JOINTS SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT FINISHED FACES. 1/2" EXPANSION JOINTS TO BE INSTALLED AT CURB RETURNS AND AT A MAXIMUM SPACING OF 200' BETWEEN CURB RETURNS AND SEPARATELY CONSTRUCTED DRIVEWAYS.
3. FOR ALL OTHER C & G AND CUT-OFF WALL PROVIDE CONTRACTION JOINTS AT 10' MAX SPACING, 1/2" EXPANSION JOINTS AT CURB RETURNS & AT A MAXIMUM SPACING OF 100' BETWEEN CURB RETURNS & EACH SIDE OF SEPARATELY CONSTRUCTED DRIVEWAYS. CONTRACTION JOINTS SHALL BE EITHER SAWED OR TOOLED A MINIMUM OF 1" DEEP AT ALL FINISHED FACES. REINFORCEMENT SHALL NOT BE USED IN CUT-OFF WALLS.
4. FOR C & G CONSTRUCTED WITH PCC PAVEMENT, CONTRACTION JOINTS AND EXPANSION JOINTS SHALL BE THE SAME AS THE PAVEMENT JOINTS.
5. ALL EDGES SHALL BE EDGED WITH A 3/8" RADIUS EDGING TOOL.
6. REMOVE & REPLACE PAVEMENT 1' WIDE ADJACENT TO LIP OF GUTTER WHEN CONSTRUCTING C & G ADJACENT TO EXISTING AC PAVEMENT.
7. 1/4" ISOLATION JOINT SHALL BE PLACED BETWEEN SIDEWALK AND C & G WHEN CAST ADJACENT TO EACH OTHER.
8. ADA = AMERICANS WITH DISABILITY ACT.

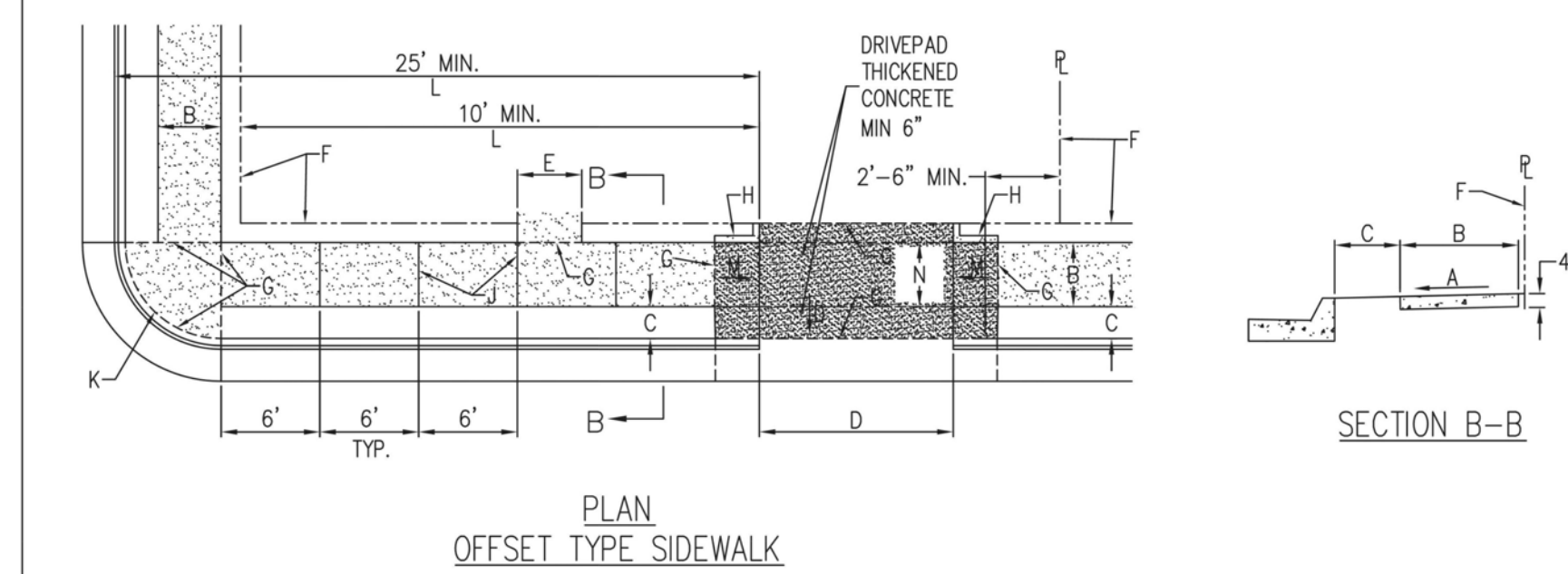
**CONSTRUCTION NOTES**

SEE COA DRAWING 2415B

REVISIONS	CITY OF ALBUQUERQUE
	PAVING CURB AND GUTTER AND CURB CUT DETAILS DWG. 2415A FEBRUARY 2021



PLAN CURB TYPE SIDEWALK



PLAN OFFSET TYPE SIDEWALK

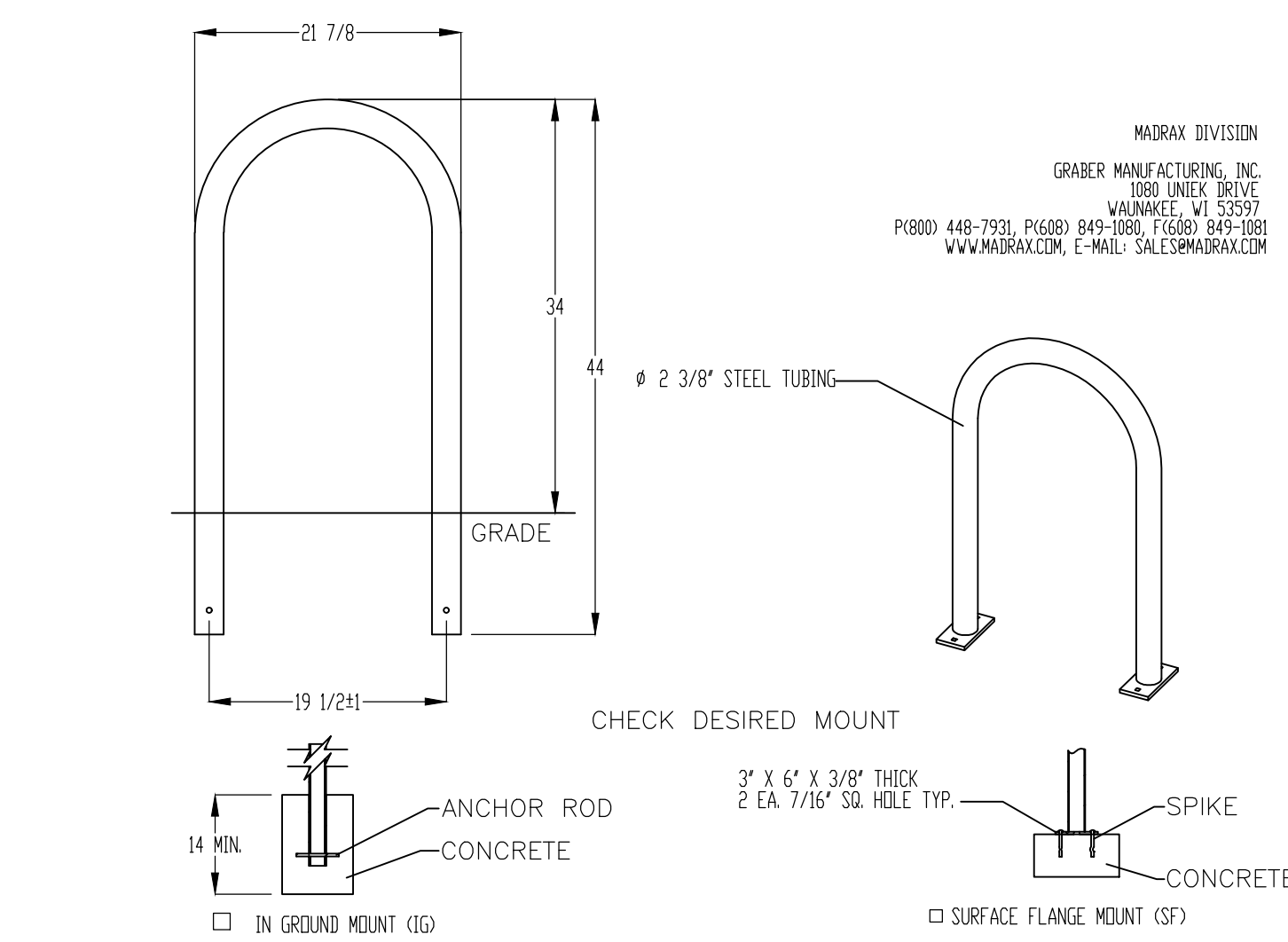
**CONSTRUCTION NOTES**

- A. SLOPE 2% MAX. 1.5% PREFERRED SLOPE.
- B. 5' MIN. SIDEWALK WIDTH. SIDEWALK WIDTH SHALL BE IN ACCORDANCE WITH CHAPTER 23 OF DEVELOPMENT PROCESS MANUAL.
- C. SETBACK TO BE DETERMINED BY AVAILABLE RIGHT-OF-WAY. SEE CHAPTER 7 OF DEVELOPMENT PROCESS MANUAL. ALSO SEE COA STD. DWG. 2414 FOR LANDSCAPE BUFFER.
- D. SEE DRIVEPAD DETAILS, DWG. 2425A AND 2425B.
- E. WALKWAY VARIABLE (4' MINIMUM).
- F. PROPERTY LINE.
- G. 1/2" EXPANSION JOINTS WHERE SIDEWALK OR DRIVEPAD ABUTS BUILDINGS, FENCES, WALLS OR OTHER IMMOVABLE OBJECTS.
- H. HEADER CURB OR INTEGRAL CURB AS REQUIRED TO MEET GRADE AT BACK OF SIDEWALK. SEE STD. DWG. 2415.
- J. CONTRACTION JOINTS.
- K. FOR CURB ACCESS RAMPS, SEE DWGS. 2440 THROUGH 2445.
- L. CHECK DIMENSION FROM BOTH PROPERTY LINE AND FLOW LINE. USE IN AREAS WHERE DRIVEPAD IS FARTHEST FROM INTERSECTION.
- M. RAMP AS REQUIRED TO MEET DRIVEPAD GRADE. 8.3% MAX. SLOPE, 7% PREFERRED SLOPE.
- N. ADA ACCESSIBLE PATHWAY. 2% MAX. CROSS-SLOPE. 1.5% PREFERRED CROSS-SLOPE.

**GENERAL NOTES**

1. DEVIATIONS FROM THESE STANDARDS SHALL BE SUBMITTED TO THE CITY ENGINEER AND/OR CITY TRAFFIC ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
2. SUBGRADE UNDER SIDEWALKS AND DRIVEPADS SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 301.
3. FOR SIDEWALKS LESS THAN 60" WIDE ON ACCESSIBLE ROUTE, PASSING SPACE AT LEAST 60" X 60" SHALL BE PROVIDED AT LEAST EVERY 200 FT.
4. GRATINGS LOCATED IN WALKING SURFACE SHALL HAVE SPACES NO GREATER THAN 1/2" WIDE IN DIRECTION OF TRAVEL. IF OPENINGS ARE ELONGATED, LONG DIMENSION SHALL BE PLACED PERPENDICULAR TO DIRECTION OF TRAVEL.
5. ALONG THE ACCESSIBLE ROUTE, CHANGES IN LEVEL BETWEEN 1/4" AND 1/2" SHALL BE BEVELED WITH A SLOPE NO GREATER THAN 2H:1V. CHANGES IN LEVEL GREATER THAN 1/2" REQUIRE A RAMP.
6. PROVIDE A MINIMUM SIDEWALK WIDTH OF 4' AROUND OBSTACLES FOR ADA ACCESS.
7. SEE COA STD DWG 2425A AND 2425B FOR DRIVEPAD DETAILS.

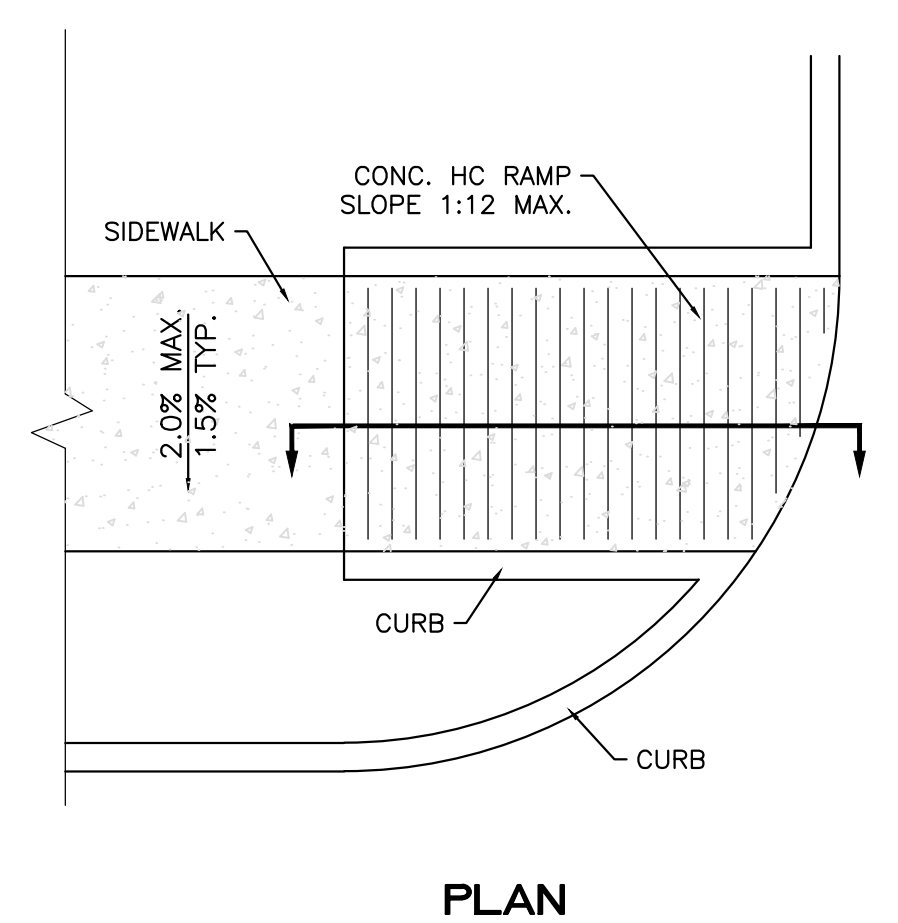
REVISIONS	CITY OF ALBUQUERQUE
	PAVING SIDEWALK DETAILS DWG. 2430 JUNE 2019



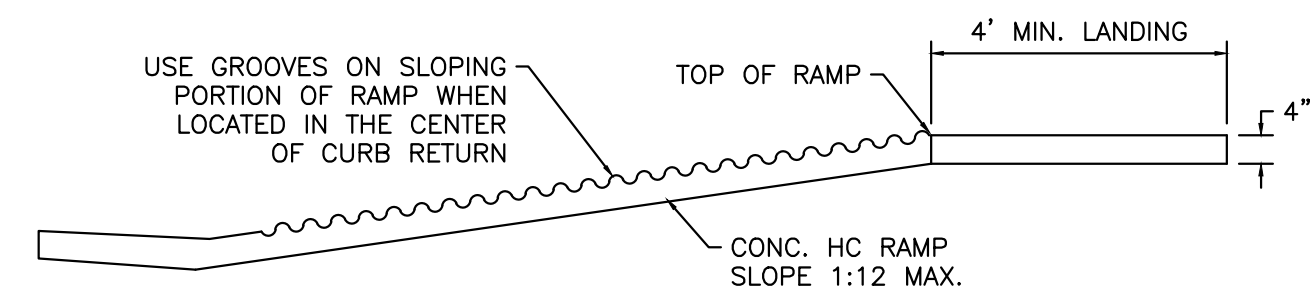
PRODUCT: U238-1G(SF)  
 DESCRIPTION: U BIKE RACK  
 DATE: 10-4-18  
 ENG: SMC  
 CONFIDENTIAL DRAWING AND INFORMATION IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF GRABER MANUFACTURING, INC. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.  
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NOTES:  
 1. INSTALL BIKE RACKS ACCORDING TO MANUFACTURER'S SPECIFICATIONS.  
 2. CONSULTANT TO SELECT COLOR OF FINISH. SEE MANUFACTURER'S SPECIFICATIONS.  
 3. SEE SITE PLAN FOR LOCATION OF CONDUIT OWNER.  
 4. BIKE RACK SHALL HAVE A 1-FOOT CLEAR ZONE ALL AROUND.  
 5. EACH BIKE RACK SPACE SHALL BE AT LEAST 6 FEET LONG AND 2 FEET WIDE.

**BIKE RACK DETAIL**  
SCALE: NONE



PLAN



SECTION A-A

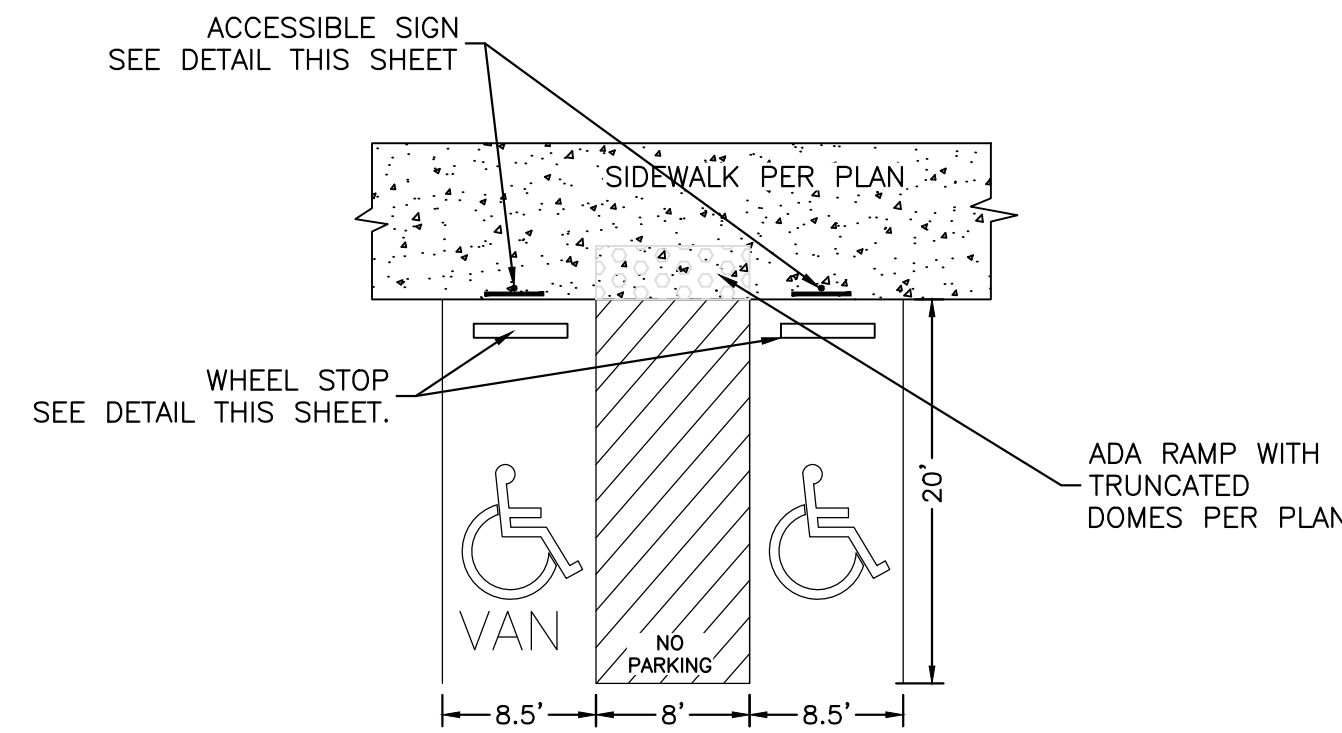
**UNIDIRECTIONAL HC RAMP**  
SCALE: NTS

**NOTES:**

1. THE SURFACE OF RAMP AND SIDES SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.
2. THE RAMP SHALL BE GROOVED IN A TRANSVERSE PATTERN WITH 1/4" GROOVES APPROXIMATELY 1-1/2" O.C. SEE SECTION A-A.
3. THE BOTTOM OF THE RAMP SHALL HAVE A 1/4" LIP OF 45°.
4. RAMP SIDE SLOPE VARIES UNIFORMLY FROM A MAXIMUM OF UP TO 10% AT CURB TO CONFORM WITH LONGITUDINAL SIDEWALK SLOPE ADJACENT TO TOP OF THE RAMP.
5. CONSTRUCT PER A.D.A. STANDARDS.

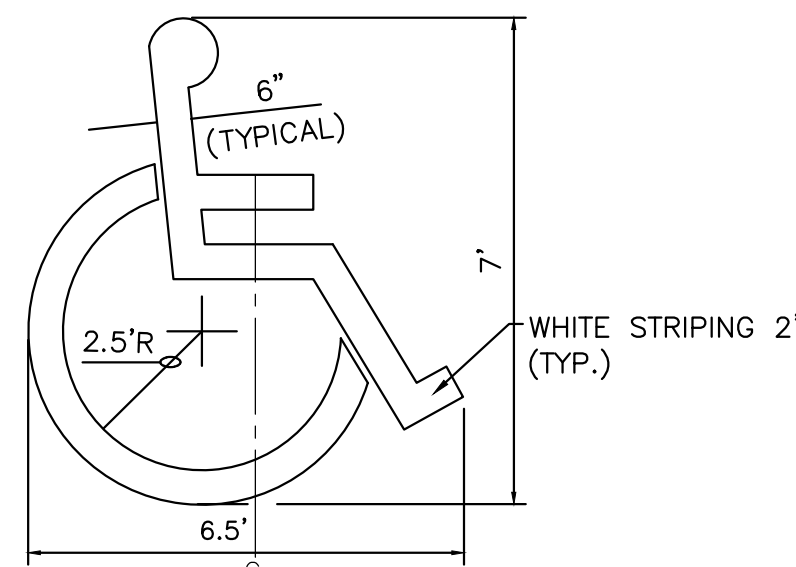
CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

	<b>ENGINEER'S SEAL</b> RONALD R. BOHANNAN NEW MEXICO 7868 04-08-24 RONALD R. BOHANNAN P.E. #7868	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM <b>DETAIL SHEET</b>	DRAWN BY pm/as DATE 04-08-24 DRAWING 2023004-DET
		<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	SHEET # <b>C5.0</b> JOB # 2023004

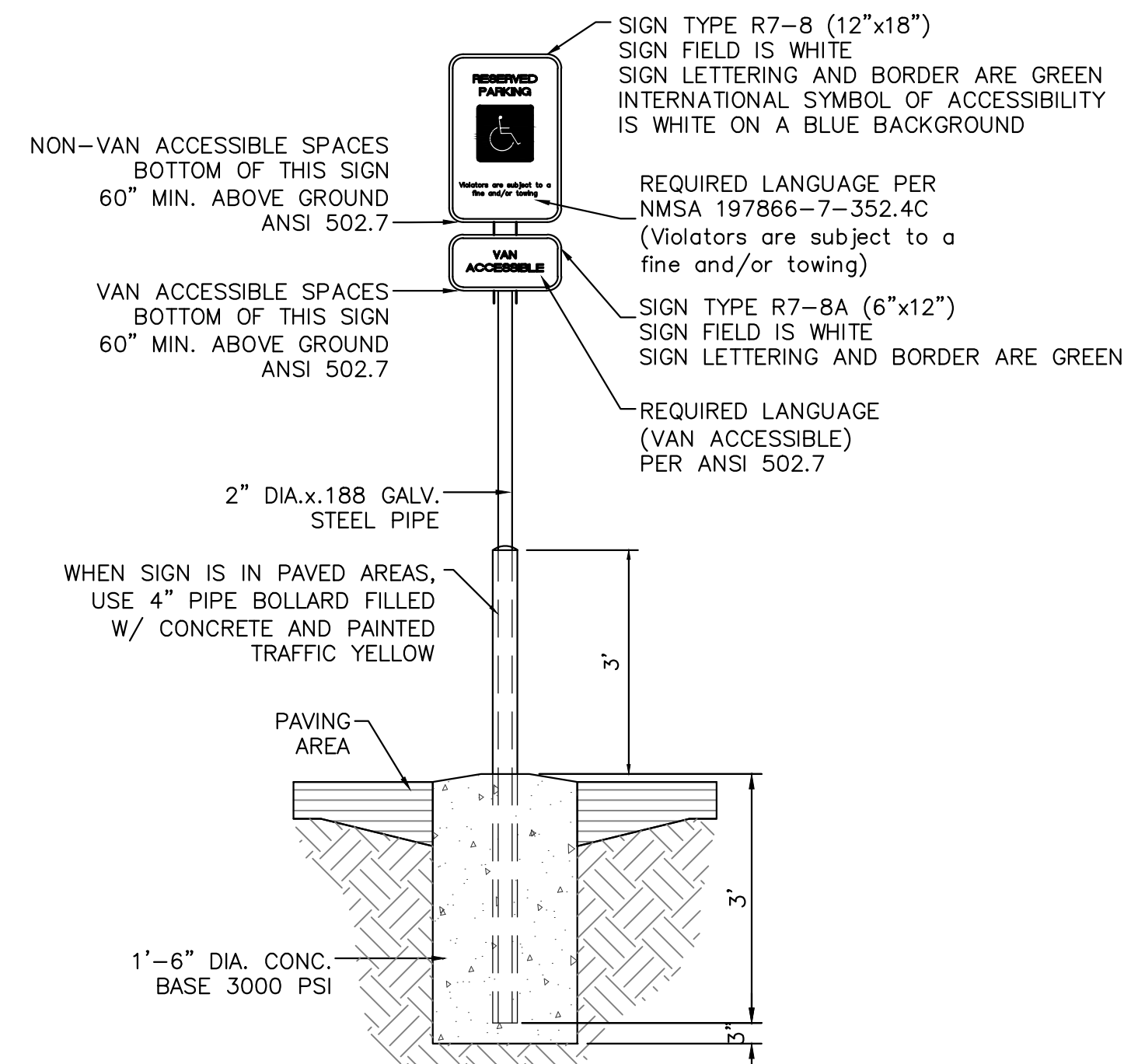


- NOTES:**
- 1) International Symbol of Accessibility shall be painted on the pavement at rear of space, white symbol on blue background.
  - 2) Parking space lines and diagonal striping to be painted blue.
  - 3) Access aisle shall have the words "NO PARKING" in capital letters, each of which shall be at least one foot high and at least two inches wide, placed at the rear of the parking space so as to be close to where an adjacent vehicle's rear tires would be placed.
  - 4) ADA parking areas - not to exceed a slope greater than 2% in any direction

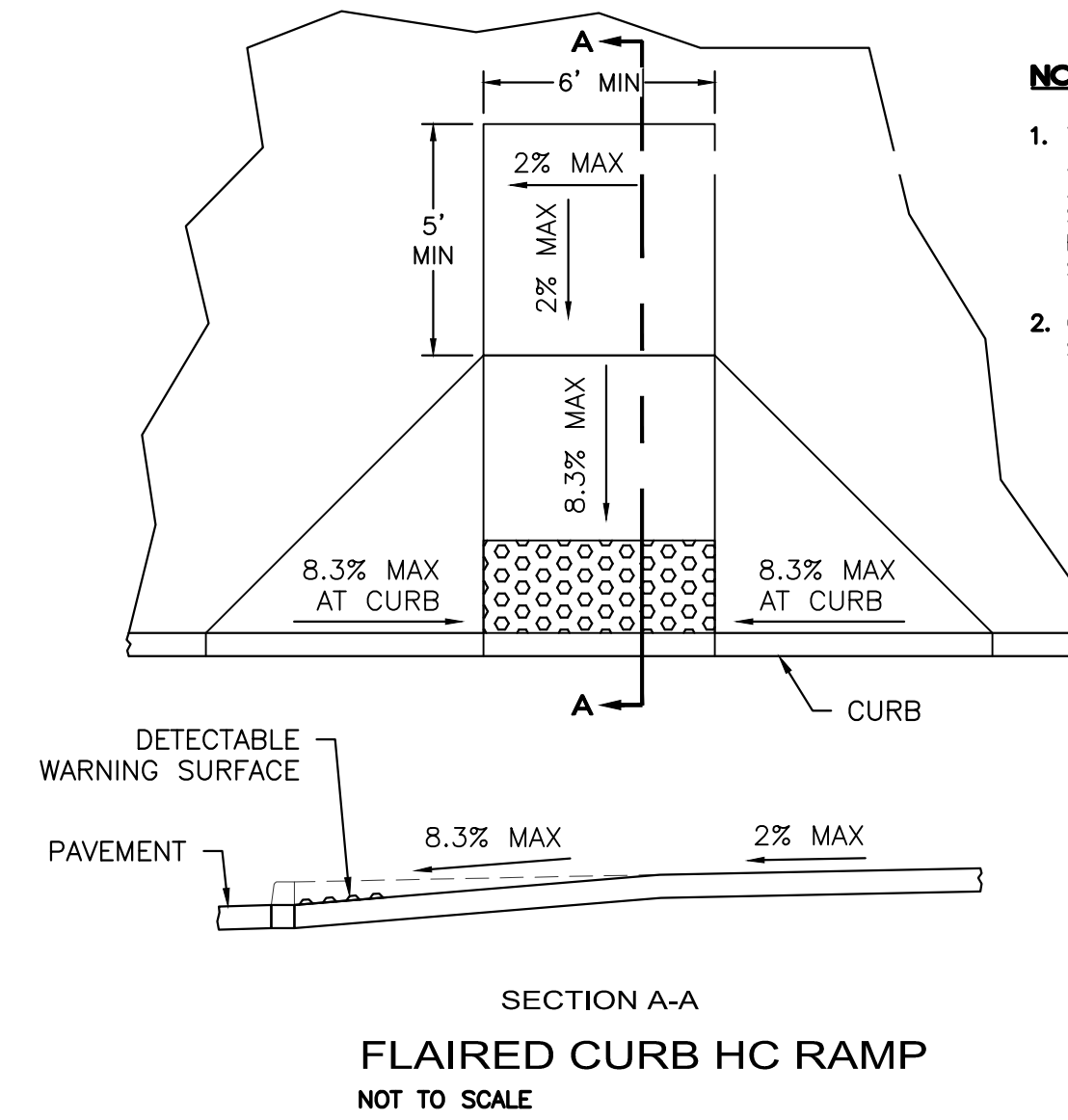
**(1) HC PARKING DETAIL**  
SCALE: NTS



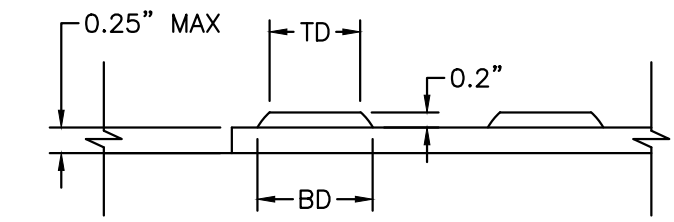
LOCATE AT EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING  
**ACCESSIBLE PARKING SYMBOL**  
NTS



**ACCESSIBLE PARKING SIGN**  
NTS

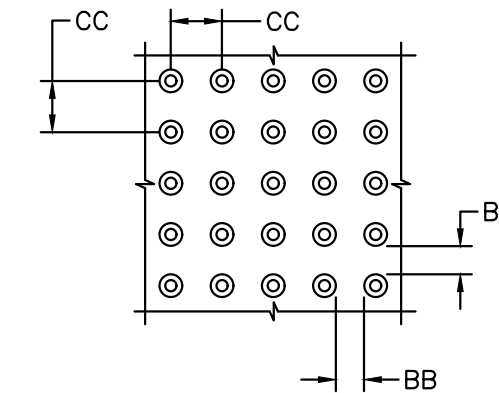


- NOTES:**
1. THE SURFACE OF RAMP AND SIDES SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE ROUGHER THAN THE SURROUNDING SIDEWALK.
  2. CONSTRUCT PER A.D.A. STANDARDS.



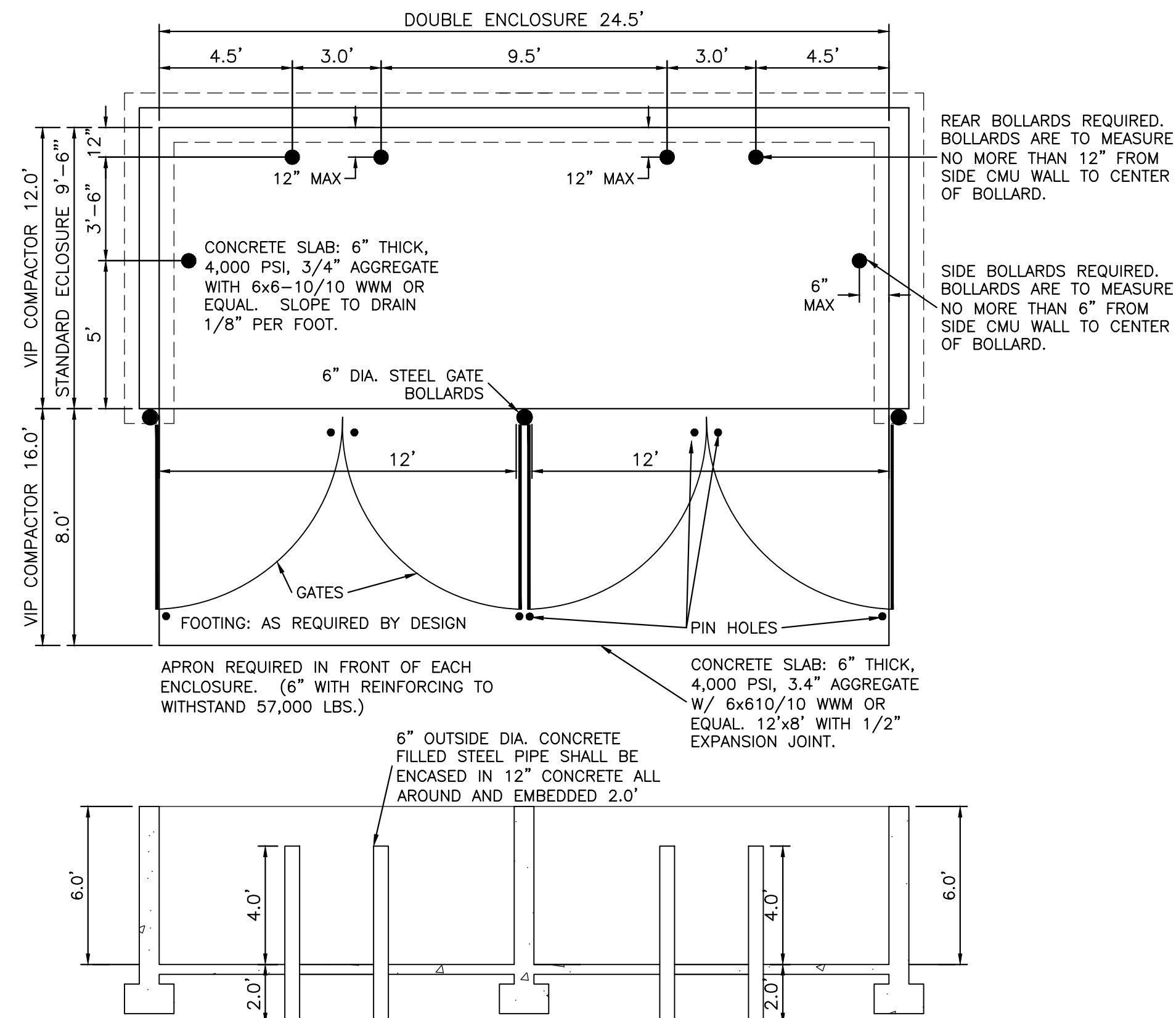
**DOME SECTION**

BD - BASE DIAMETER 0.9" MIN  
TD - TOP DIAMETER 50% OF BD MIN TO 65% OF BD MAX



**DOME SPACING**

CC - CENTER TO CENTER SPACING 2.35"  
BB - BASE TO BASE SPACING 1.48" MIN

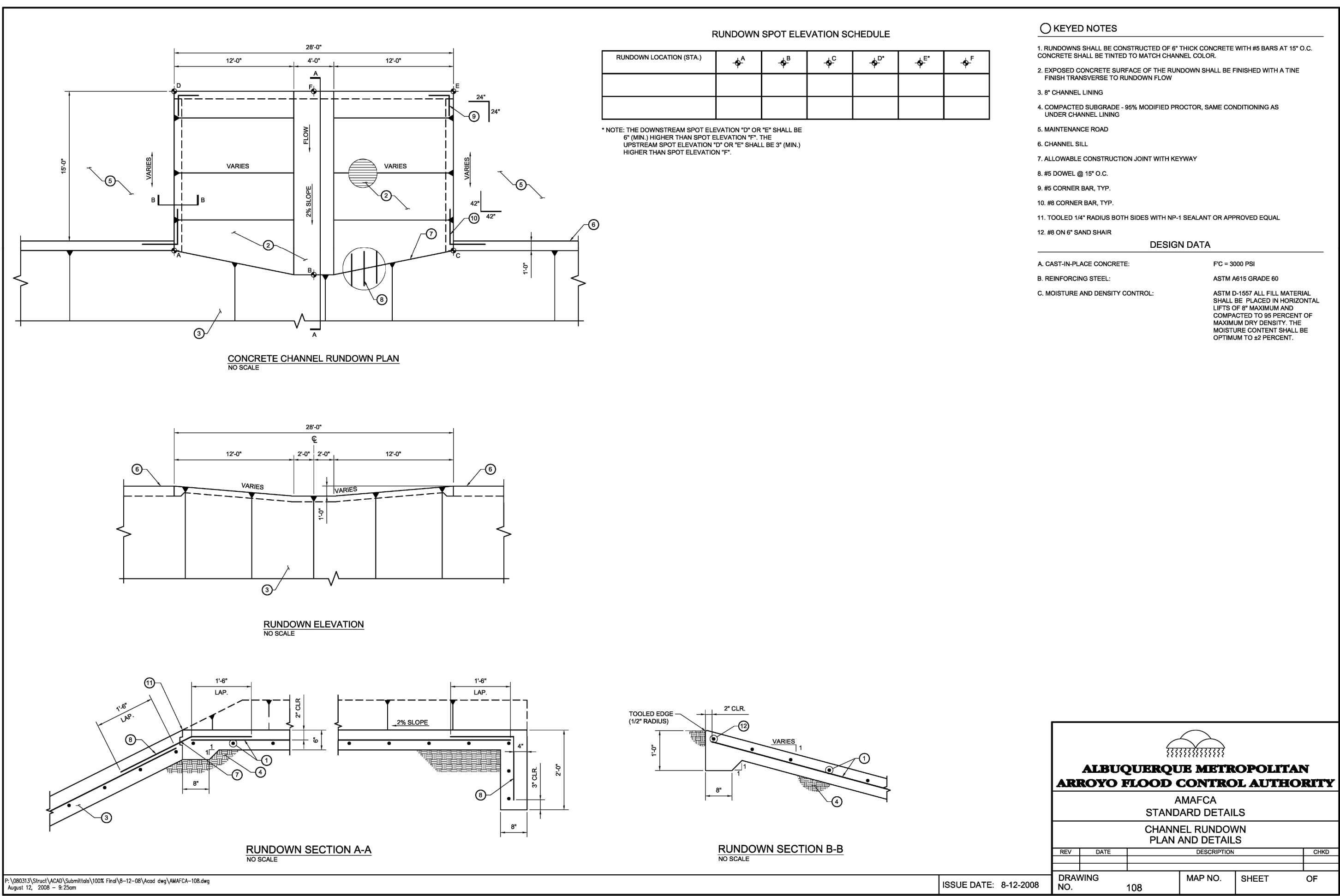
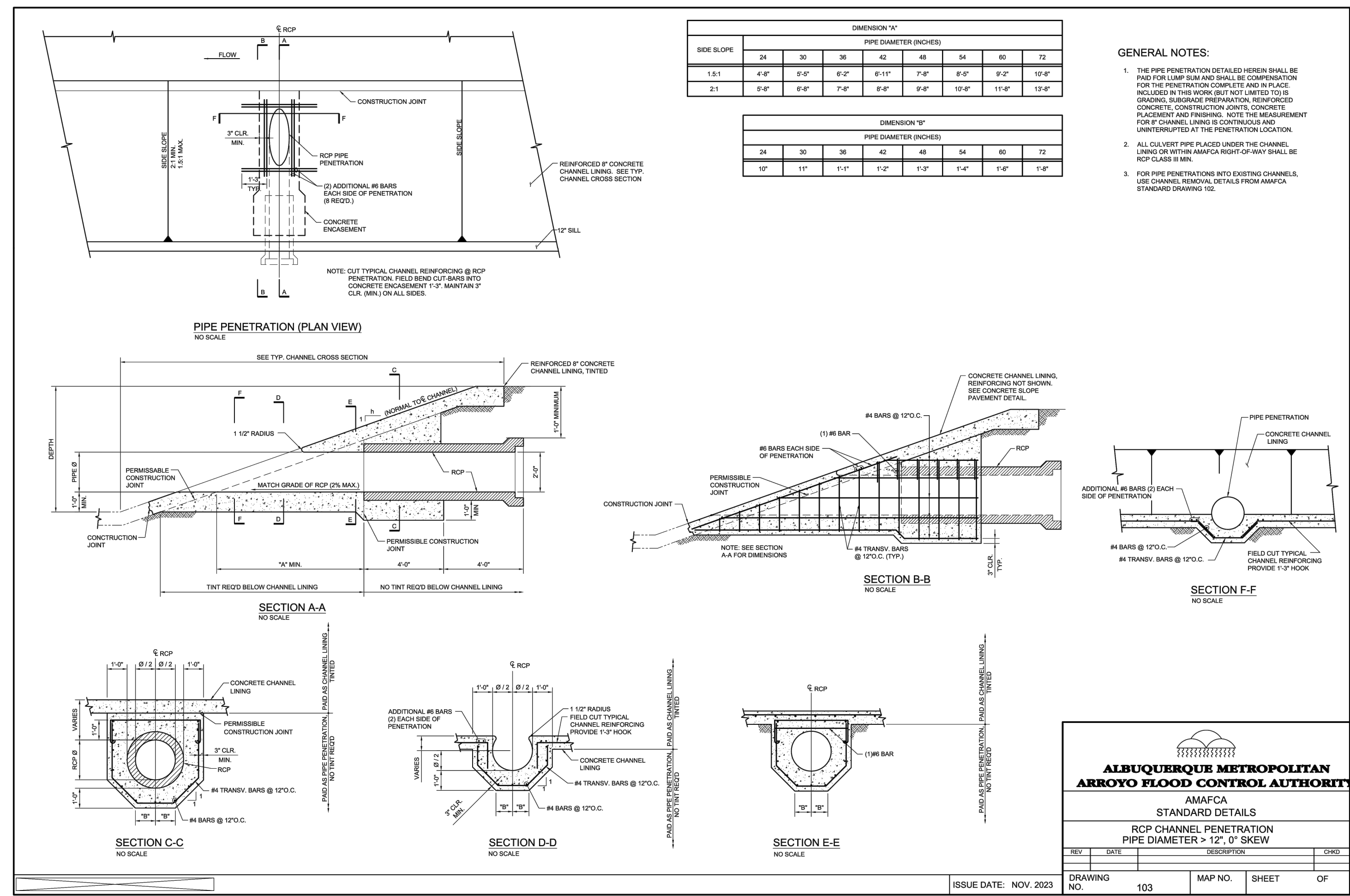


- NOTE:**
1. THESE ARE THE MINIMUM REQUIREMENTS FOR TRASH ENCLOSURES. DESIGNS MAY VARY TO FIT THE SELECTED ENCLOSURE.
  2. STANDARD CMU BLOCK TO MATCH BUILDINGS.

**DOUBLE DUMPSTER ENCLOSURE DETAIL**  
NTS

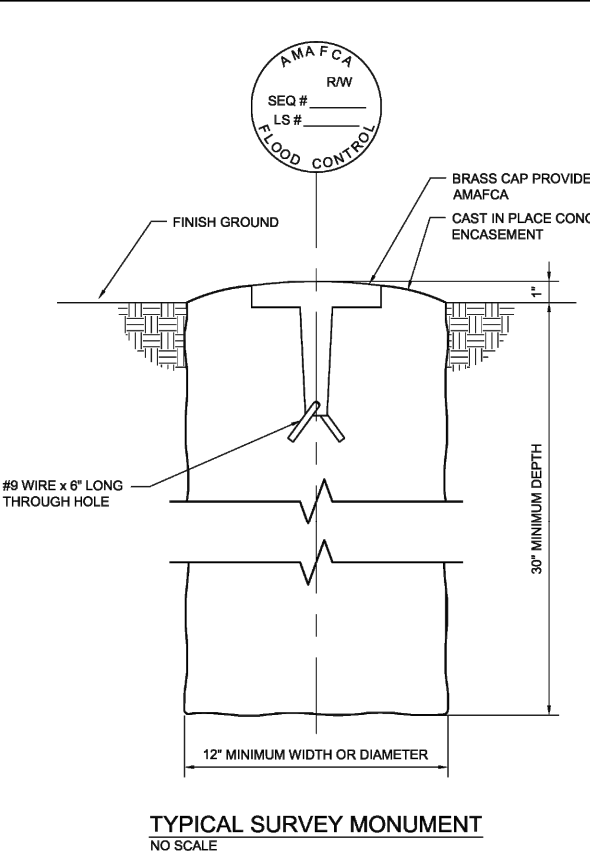
CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

	<b>ENGINEER'S SEAL</b> <b>RONALD R. BOHANNAN</b> NEW MEXICO 7868 PROFESSIONAL ENGINEER 04-08-24 RONALD R. BOHANNAN P.E. #7868	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM <b>DETAIL SHEET</b>	DRAWN BY pm/as DATE 04-08-24 DRAWING 2023004-DET
	<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	SHEET # <b>C5.1</b> JOB # 2023004	



**AMAFCA GENERAL NOTES:**

- AMAFCA FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK WITHIN THE AMAFCA ROW. TELEPHONE (505)888-2215.
- NO WORK SHALL BE PERFORMED IN THE AMAFCA ROW BETWEEN MAY 15 AND OCTOBER 15 WITHOUT WRITTEN PERMISSION FROM AMAFCA.
- ALL SUB-GRADE, BACKFILL, AND EMBANKMENT SHALL BE COMPACTED TO 95% (±2%) OF OPTIMUM MOISTURE PER ASTM D-1557 WITHIN THE AMAFCA ROW. TESTING REPORTS SHALL BE PROVIDED TO AMAFCA FIELD ENGINEER.
- AMAFCA FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO FINAL INSPECTION OF ANY FACILITIES WITHIN THE AMAFCA ROW.
- ALL DISTURBED GROUND AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SECTION 1012 NATIVE GRASS SEEDING, AS CURRENTLY UPDATED.
- ANY MONUMENTS DESTROYED OR DESTROYED SHALL BE REPLACED BY A NEW LICENSED SURVEYOR AT THE CONTRACTOR'S EXPENSE. AMAFCA SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY MONUMENT PLACEMENT.
- THE MAXIMUM WHEEL LOAD ALLOWED IN AMAFCA CHANNELS IS 10,000 POUNDS.
- NO TRACKED VEHICLES ARE ALLOWED IN AMAFCA CHANNELS REGARDLESS OF LOCATION WITHOUT WRITTEN PERMISSION FROM AMAFCA.
- CRANES OPERATING IN AMAFCA CHANNELS WITH OUTRIGGERS SHALL LIMIT THE OUTRIGGER FOOTPRINT LOAD AREA TO LESS THAN 10,000 POUNDS.



**ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY**

AMAFCA  
STANDARD DETAILS  
AMAFCA GENERAL NOTES AND MISCELLANEOUS DETAILS

REV	DATE	DESCRIPTION	CHKD

ISSUE DATE: 6-12-2008  
DRAWING NO. 101 MAP NO. SHEET OF

CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

<p>RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER</p> <p>04-08-24 RONALD R. BOHANNAN P.E. #7868</p>	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM  <b>DETAIL SHEET</b>	DRAWN BY pm/as  DATE 04-08-24  DRAWING 2023004-DET
	SHEET # <b>C5.2</b>  JOB # 2023004	<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com

**EASEMENT NOTES**

- (A) Existing Water Line Easement granted to New Mexico Utilities, Inc. by plat filed February 19, 2004 in Plat Book 2004C, page 56. Easement to be 10' wide unless otherwise indicated.
- (B) New 10' Underground Public Utility Easement July 1, 2004 in Plat Book 2004C, Page 201
- (C) 10' City of Albuquerque Sidewalk Easement filed July 1, 2004, in Book 2004C, Page 201.
- (D) 20' Sanitary Sewer Easement to New Mexico Utilities, Inc. filed September 21, 1981, Book Misc. 880, page 1, to remain.
- (E) 10' Easement to New Mexico Utilities, filed April 24, 1998, in Book BCR 9808, Page 8481.
- (F) Easement to PNM & US West, filed June 20, 1995, in Book BCR 95-14, page 6608.
- (G) 10' Public Overhead Utility Easement filed July 1, 2004, in Book 2004C, Page 201.

**KEYED NOTES**

- 1 SEE BUILDING PLANS (BY OTHERS) FOR FINISHED FLOOR ELEVATIONS INTERNAL TO THE BUILDING.
- 2 EXTEND CONCRETE RETAINING WALL 6" ABOVE TOP OF ASPHALT (SEE TOP OF WALL DETAIL ON DETAIL SHEET) AND OMIT CONCRETE CURB AND GUTTER ALONG LENGTH OF RETAINING WALL.
- 3 WRITTEN PERMISSION FROM ADJACENT PROPERTY OWNER REQUIRED TO GRADE ON THE ADJACENT PROPERTY. THIS PERMISSION IS NEITHER STATED NOR IMPLIED BY THESE PLANS.
- 4 SIDEWALK AND ROADWAY STRIPING IS SHOWN FOR INFORMATION ONLY. DESIGN AND CONSTRUCTION OF THESE ELEMENTS SHALL BE BY A PUBLIC WORK ORDER.
- 5 ZERO HEIGHT CURB IN FRONT OF THE BUILDING
- 6 INSTALL FALL PROTECTION. TYPE AND STYLE PER ARCHITECT'S DIRECTIONS.



**CIVIL LEGEND**

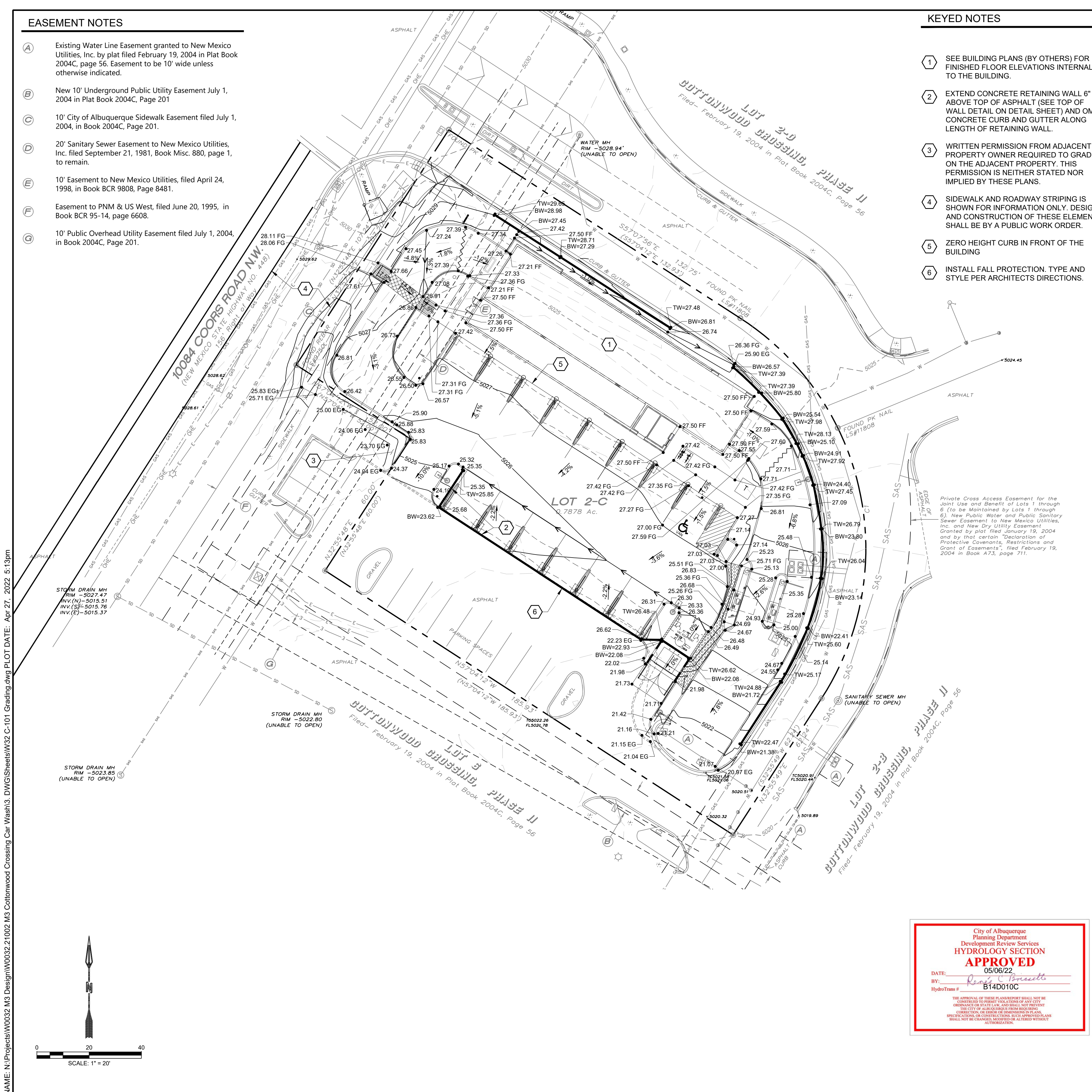
	7290	MAJOR CONTOUR
	7291	MINOR CONTOUR
	7290	EXITING MAJOR CONTOUR
	7291	EXISTING MINOR CONTOUR
	1.0%	SLOPE ARROW
		PROPERTY LINE
		CONCRETE RETAINING WALL
		CMU RETAINING WALL
		WATER BLOCK (HIGH POINT)
		FLOWLINE OF SWALE
		4'-6" BROKEN ALL FACE ROCK INSTALLED 6" DEEP

**SYMBOL LEGEND**

	20.00 FLOWLINE
	EG 20.00 EXISTING GROUND
	BW=20.00 BOTTOM WALL
	TW=20.00 TOP WALL
	FG 20.00 FINISHED GRADE
	FF 20.00 FINISHED FLOOR

**GRADING NOTES**

- CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL EXISTING DRY AND WET UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY ISSUES. UTILITY RELOCATION MAY BE REQUIRED.
- PROVIDE SMOOTH VERTICAL TRANSITION OF CONCRETE CURB AT ALL GRADE BREAKS ALONG CURBS.
- PROVIDE SMOOTH VERTICAL TRANSITION OF TOP OF CONCRETE RETAINING WALL AT ALL GRADE BREAKS ALONG TOP OF WALL.
- GRADES SHOWN ARE FINAL SURFACE GRADES AFTER COMPLETION OF SURFACE IMPROVEMENTS.
- GRADE AREAS AT SITE PERIMETER TO MATCH GRADES OF ADJACENT PARCELS.
- REMOVE EXCESS SOIL FROM SITE AND DISPOSE OF PROPERLY IN ACCORDANCE WITH APPLICABLE REGULATIONS.
- PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS. ALL DISTURBED AREAS TO BE RE-SEEDED PER LANDSCAPE PLAN PROVIDED BY OTHERS.
- PROVIDE TEMPORARY GRADING FEATURES SUCH AS BERMS, SWALES, SUMPS AND BASINS TO MANAGE INTERIM STORM WATER RUNOFF DURING CONSTRUCTION PROCESS. STORM WATER RUNOFF LEAVING THE SITE SHALL MEET ALL FEDERAL, STATE AND LOCAL QUALITY REQUIREMENTS. REFER TO GEOTECHNICAL EVALUATION REPORT 3220JJ138 BY ATC GROUP SERVICES ON FEBRUARY 22, 2021
- THE EXISTING SITE FEATURES WILL BE DEMOLISHED UNLESS OTHERWISE SPECIFIED ON THIS PLAN.
- PAVEMENT SECTION BY OWNERS DIRECTION.
- COMPOSITE SLOPE IN HANDICAP PARKING SPACES SHALL NOT EXCEED 2%.
- CROSS SLOPE ON ADA CROSSWALKS SHALL NOT EXCEED 2%. LONGITUDINAL SLOPE SHALL NOT EXCEED 5%.
- LONGITUDINAL SLOPE ON CURB RAMPS SHALL NOT EXCEED 8.33%. CROSS SLOPE SHALL NOT EXCEED 2%.
- COMPOSITE SLOPE ON RAMP LANDINGS SHALL NOT EXCEED 2%.
- FINISHED GRADE OF SOIL EDGES ALONG PAVEMENT TO BE 1/2" BELOW EDGE OF PAVEMENT.



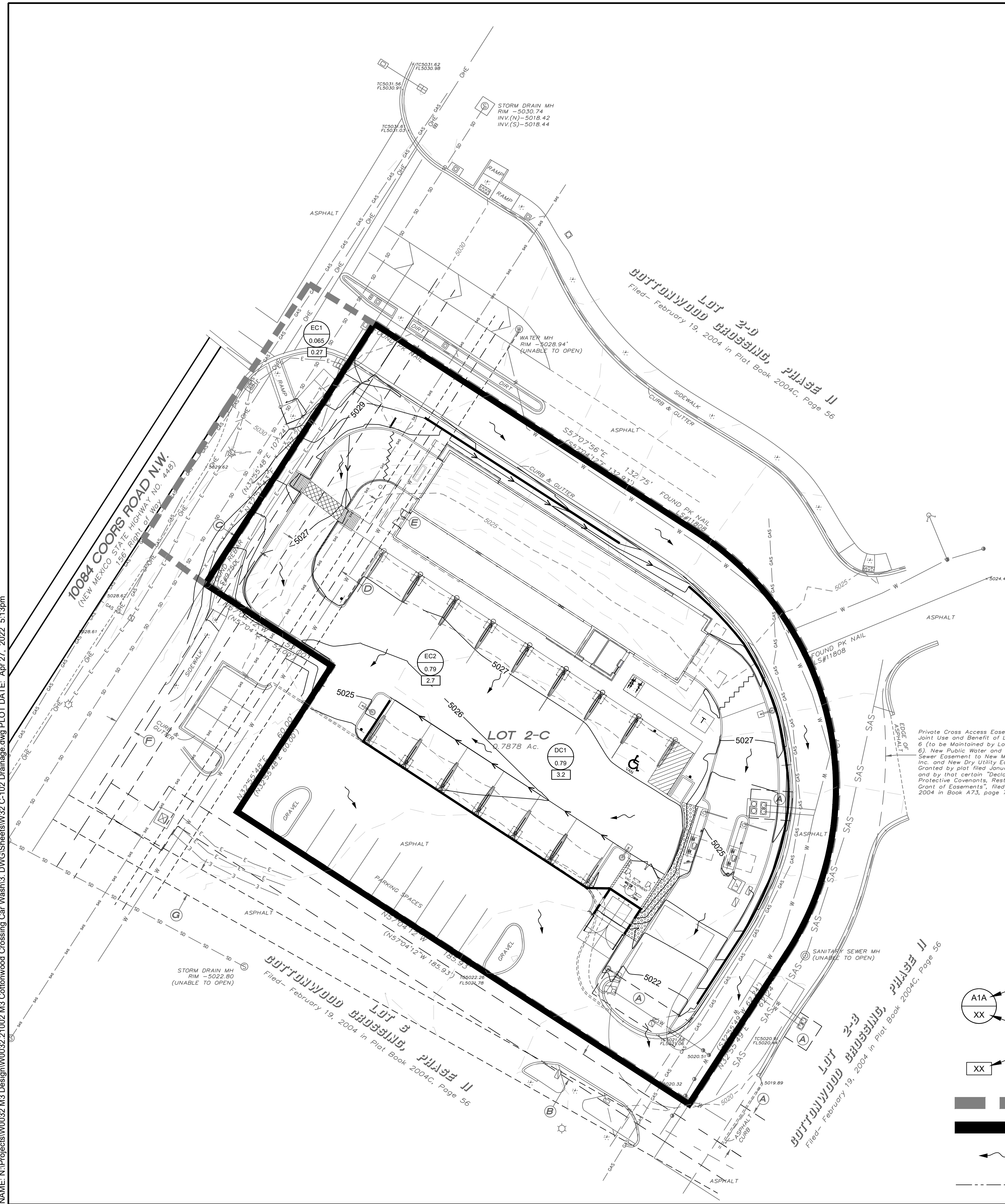
City of Albuquerque  
 Planning Department  
 Development Review Services  
**HYDROLOGY SECTION**  
**APPROVED**  
 DATE: 05/06/22  
 BY: *Randy C. Borselle*  
 HydroTeam # B14D010C

NAME: N:\Projects\W0032 M3 Design\W0032 21002 M3 Cottonwood Crossing Car Wash\3 DWG\Sheets\W32 C-101 Grading.dwg PLOT DATE: Apr 27, 2022 8:13pm

DESIGNED HF DRAWN JMS CHECKED HF DATE 4.27.2022	<b>RESPEC</b> COMMUNITY DESIGN SOLUTIONS 871 JEFFERSON STREET SUITE 101 ALBUQUERQUE, NM 87102 WWW.RESPEC.COM PHONE (505)253-9718	REVISION 1 2 3 4 5 6	STAMP  THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED.  PROJ. #: W0032.31002
PROJECT NAME: <b>COTTONWOOD CROSSING CAR WASH</b>		SHEET TITLE: <b>GRADING</b>	
SUBMITTED FOR: <b>BUILDING PERMIT</b>		SHEET NUMBER: <b>C-101</b>	



NAME: N:\Projects\W0032\_21\002\_M3 Design\W0032\_21\002\_M3 Cottonwood Crossing Car Wash.dwg PLOT DATE: Apr 27, 2022 5:13pm



**BACKGROUND**

10084 COORS BLVD NORTHWEST IS APPROXIMATELY 0.788 ACRES IN THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO. THIS LOCATION IS AT THE SOUTHEAST CORNER OF COORS BLVD AND SEVEN BAR LOOP ROAD NORTHWEST. THE INTENT FOR THIS PROPERTY IS TO BE USED AS A CAR WASH. THERE IS NO DESIGNATED 100-YR FLOOD ZONE SHOWN ON THE SITE.

**METHODOLOGY**

HYDROLOGY CALCULATIONS FOR THE SITE ARE PERFORMED IN ACCORDANCE WITH THE ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) SECTION 6-2 USING THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS TO CALCULATE PEAK FLOW RATES FOR THE 100-YEAR, 24-HOUR STORM TO ENSURE ALL FLOW PATHS ARE SUFFICIENT TO CARRY FLOWS. WATER QUALITY IS ACCOUNTED FOR THROUGH THE PAYMENT-IN-LIEU OPTION PER SECTION 6-2(C)(1) IN THE DPM. ALL HYDROLOGIC AND HYDRAULIC CALCULATIONS CAN BE FOUND ON THIS SHEET.

**EXISTING CONDITIONS**

THE EXISTING SITE IS PARTIALLY UNDEVELOPED WITH LOW VEGETATIVE COVER AND SEVERAL DISTURBED AREAS. THE SOUTH AREA OF THE SITE IS PAVED AND IN USE FOR PARKING. THE SITE, IN GENERAL, SLOPES FROM THE NORTH/NORTHWEST TO THE SOUTHEAST CORNER TOWARD AT APPROXIMATELY 1.5-3%. STORM WATER RUNOFF GENERATED IN THE EXISTING AREA FLOW GENERALLY TO THE SOUTHEAST, WITH EVENTUAL DISCHARGE INTO THE DRAINAGE POND INSTALLED IN THE "COTTONWOOD CROSSING PHASE II". THE SITE HAS BEEN DIVIDED INTO BASIN EC1 FOR ROW FLOWS AND EC2 FOR SITE FLOWS.

SUB-BASIN EC1 IS 0.788 ACRES AND SUB-BASIN EC2 IS 0.065 ACRES. THE EXISTING FLOW FOR EC2 IS 2.7 CFS. THE RUNOFF FREE DISCHARGES AT THE SOUTHEAST CORNER OF THE SITE TO THE POND LOCATED SOUTHEAST OF THE SITE VIA EXISTING SURFACE FLOWS.

**DEVELOPED CONDITIONS**

THE DRAINAGE INTENTION OF THE DEVELOPED CONDITIONS IS TO MATCH THE EXISTING DRAINAGE PATTERN WITH FREE DISCHARGE. USING THE COTTONWOOD CROSSING PHASE II DRAINAGE REPORT AS REFERENCE, THERE IS ALLOWED FREE DISCHARGE TO THE DOWNSTREAM POND. THE NEW CAR WASH WILL BE CONSTRUCTED, PRESERVING THE EXISTING PARKING LOT ON THE SITE. DEVELOPED FLOWS INCREASE FROM 2.7 TO 3.2 CFS.

SUB-BASIN DC1 IS 0.788 ACRES AND GENERATES 3.2 CFS WHICH IS CONVEYED TO THE SOUTHEAST CORNER OF THE SITE VIA SHEET FLOW. CALCULATIONS FOR THE DEVELOPED CONDITIONS ARE SHOWN BELOW.

**Hydrology Calculations**

The following calculations are based on Albuquerque's Development Process Manual, Section 6-2(A), using the 100-year, 24-hour design storm

**Runoff Rate:**

Treatment Type Areas

Subbasin	Area <sub>1</sub> (ac)	Area <sub>2</sub> (ac)	Area <sub>3</sub> (ac)	Area <sub>4</sub> (ac)	Total (ac)
EC1	0.00	0.00	0.00	0.07	0.07
EC2	0.00	0.00	0.47	0.32	0.79
DC1	0.00	0.00	0.07	0.72	0.79

Peak Discharge values based on Zone 1, Table 6.2.14

$Q_A = 1.54 \text{ cfs/ac}$     $Q_B = 2.16 \text{ cfs/ac}$     $Q_C = 2.87 \text{ cfs/ac}$     $Q_D = 4.12 \text{ cfs/ac}$

Peak Discharge calculation for a 100-yr, 24-hr storm event from equation 6.6

Subbasin	Discharge (cfs)
EC1	0.3
EC2	2.7
DC1	3.2

Subbasin	Volume (cu. ft.)
EC1	N/A
DC1	678

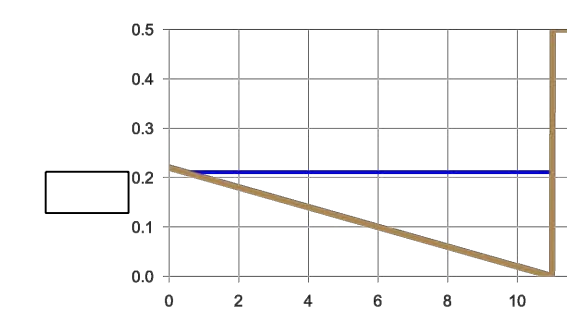
Manning Formula: FLOWS ALONG C&G

**Irregular Section**

Flow Slope	3.2 cfs
Input	0.02 ft/in
St	0.22
St	0.17
St	0.02
St	0.017
St	0
St	0.013
St	0.02
St	0.05
St	0.013

**Output**

WSElev	0.211 ft
Flow Area	1.11 sf
Velocity	2.88 fps
Velocity Head	0.123 ft
Top Width	10.5 ft
Froude Number	1.56
Critical WSElev	0.248 ft
Critical Slope	ft/ft



Updated: 9/21/2021  
Manufactured by 2018  
Copyright © 2000 Current Applications

**STORMWATER QUALITY CALCULATIONS**

IMPERVIOUS AREA = 0.72 ACRES X 0.42" DEPTH = 1098 CF

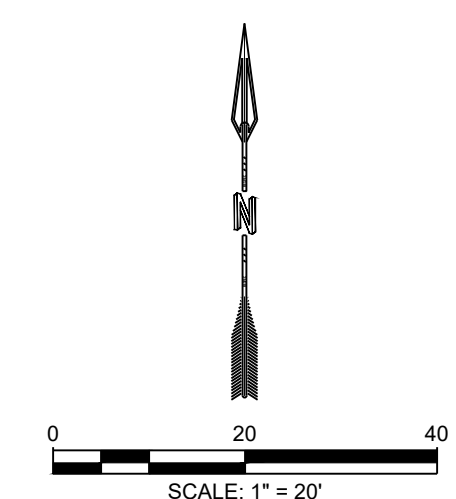
PAYMENT IN LIEU = \$8/CF X 1098 = \$8784

**EASEMENT NOTES**

- A Existing Water Line Easement granted to New Mexico Utilities, Inc. by plat filed February 19, 2004 in Plat Book 2004C, page 56. Easement to be 10' wide unless otherwise indicated.
- B New 10' Underground Public Utility Easement July 1, 2004 in Plat Book 2004C, Page 201
- C 10' City of Albuquerque Sidewalk Easement filed July 1, 2004, in Book 2004C, Page 201.
- D 20' Sanitary Sewer Easement to New Mexico Utilities, Inc. filed September 21, 1981, Book Misc. 880, page 1, to remain.
- E 10' Easement to New Mexico Utilities, filed April 24, 1998, in Book BCR 9808, Page 8481.
- F Easement to PNM & US West, filed June 20, 1995, in Book BCR 95-14, page 6608.
- G 10' Public Overhead Utility Easement filed July 1, 2004, in Book 2004C, Page 201.

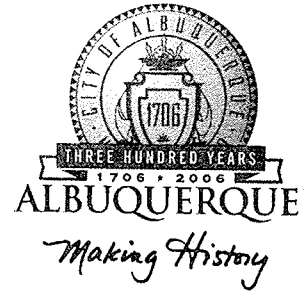
**LEGEND**

- A1A BASIN DESIGNATION
- XX BASIN AREA, ACRES
- XX 100 YEAR STORM, CFS
- EXISTING SUB-BASIN BOUNDARY
- PROPOSED SUB-BASIN BOUNDARY
- DIRECTION OF DRAINAGE FLOW
- PROPERTY LINE



DESIGNED HF	JMS	REVISION
DRAWN	JMS	
CHECKED	HF	
DATE	4.27.2022	
COMMUNITY DESIGN SOLUTIONS 6971 JEFFERSON STREET SUITE 101 ALBUQUERQUE, NM 87113 WWW.RESPEC.COM PHONE (505)253-9718		
STAMP THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED 04/27/2022		
PROJECT NAME: COTTONWOOD CROSSING CAR WASH		
SHEET TITLE: DRAINAGE		
SUBMITTED FOR: BUILDING PERMIT		
SHEET NUMBER: C-102		

# CITY OF ALBUQUERQUE



October 21, 2005

Mr. Ronald Bohannon, PE  
**TIERRA WEST, LLC**  
8509 Jefferson St. NE  
Albuquerque, NM 87113

**Re: POPEYE'S CHICKEN**  
**10074 Coors Blvd. NW**  
**Approval of Permanent Certificate of Occupancy (C.O.)**  
**Engineer's Stamp dated 06/21/2005 (B-14/D10)**  
**Certification dated 10/21/2005**

Dear Ron:

Based upon the information provided in your submittal received 10/21/2005, the above referenced certification is approved for release of Permanent Certificate of Occupancy by Hydrology.

P.O. Box 1293

Albuquerque

New Mexico 87103

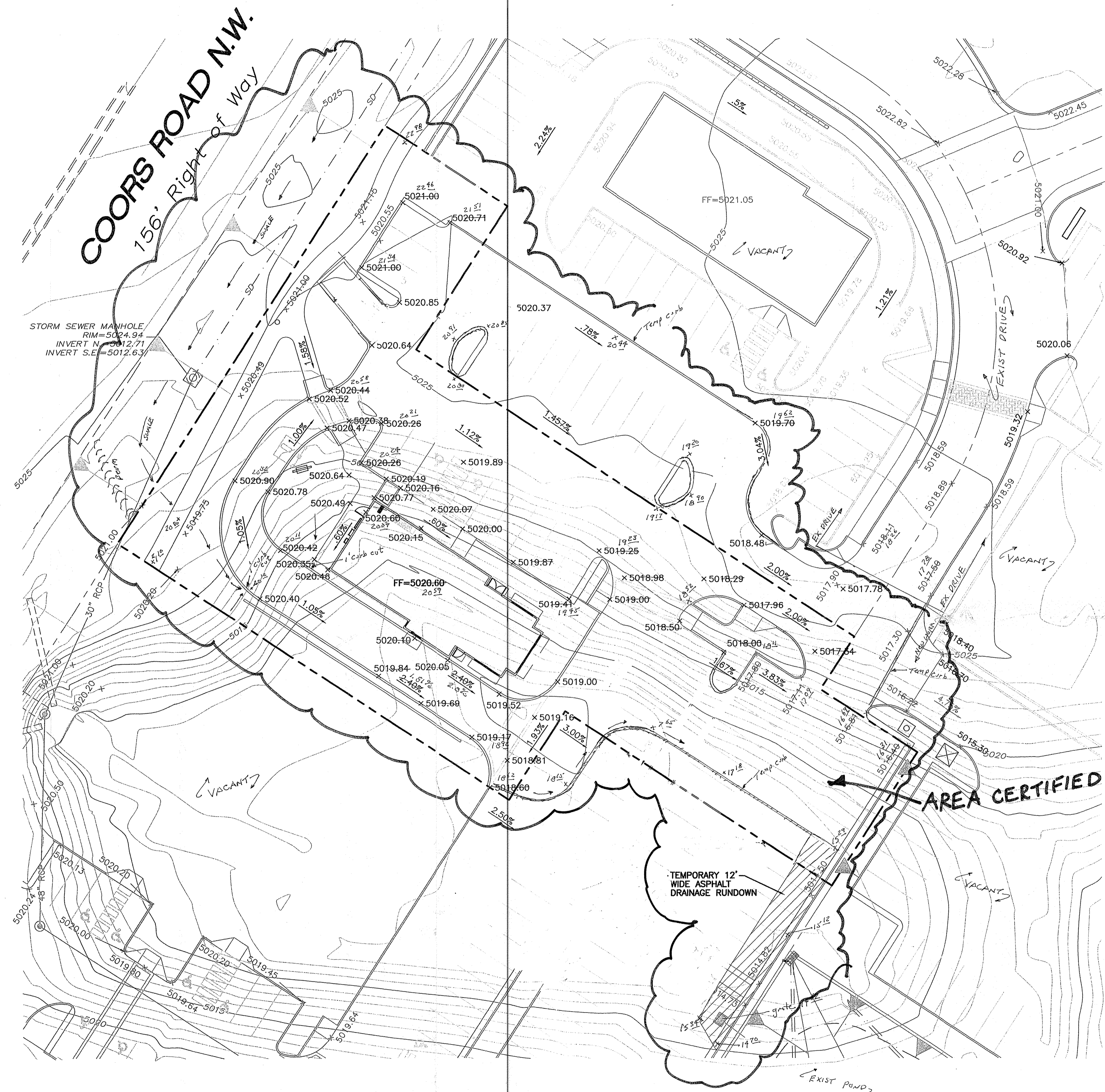
www.cabq.gov

If you have any questions, you can contact me at 924-3982.

Sincerely,

Arlene V. Portillo  
Plan Checker, Planning Dept. - Hydrology  
Development and Building Services

C: Phyllis Villanueva  
File

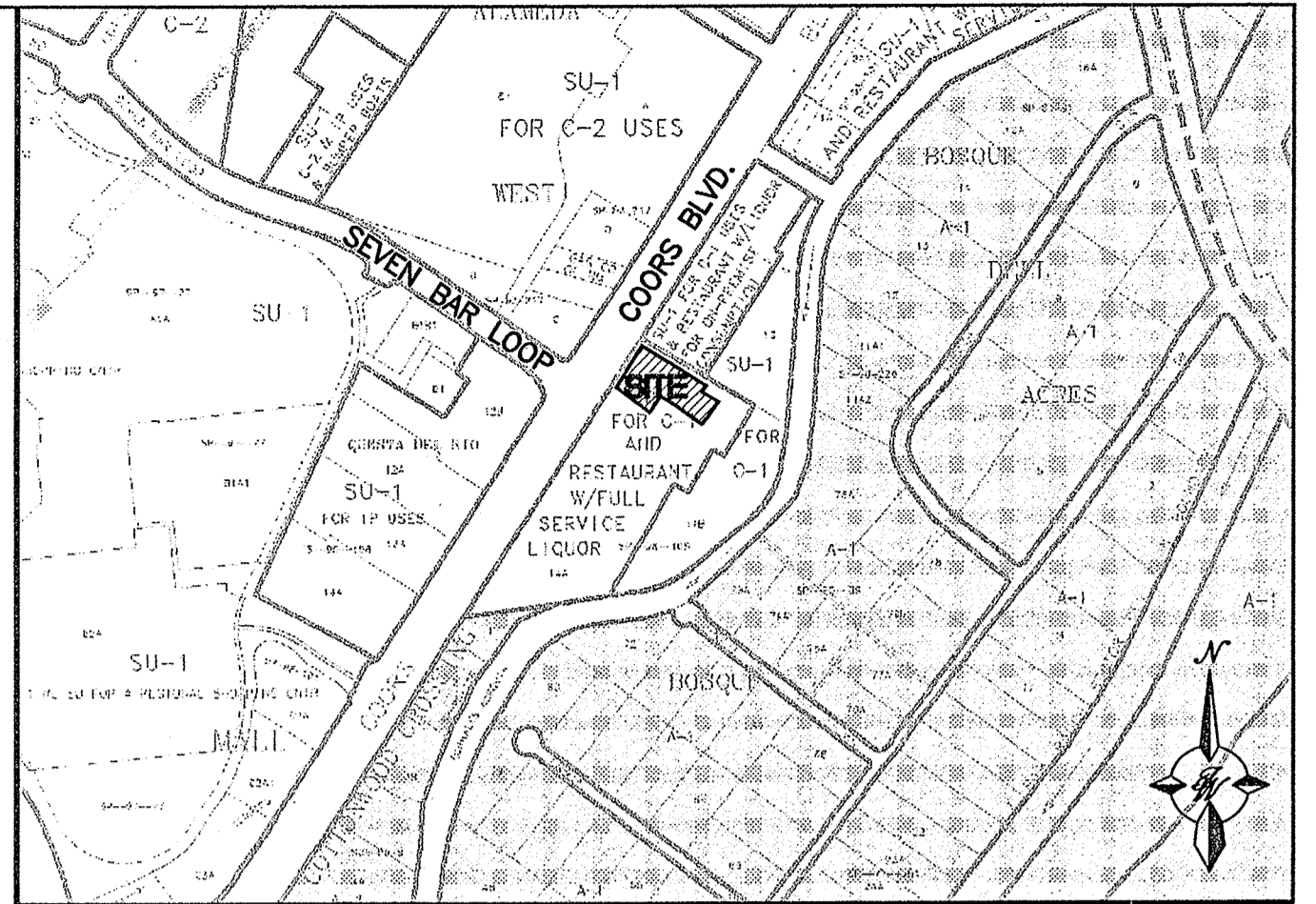


**EROSION CONTROL NOTES:**

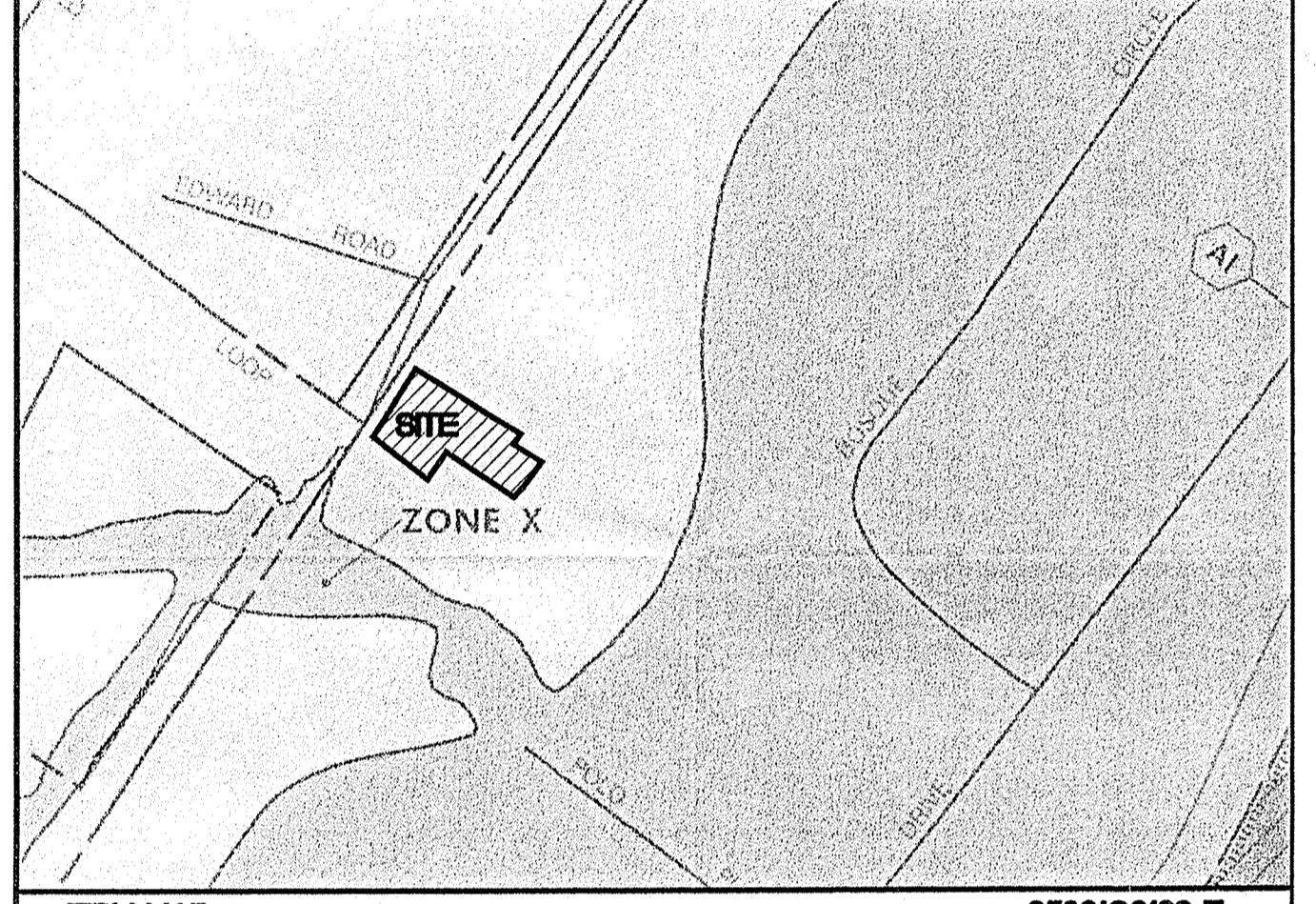
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES 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.

**CAUTION:**

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.



VICINITY MAP: B-14-Z



FRM MAP: 3500C100 E

**NOTES:**

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.

**LEGEND**

- EXISTING STORM SEWER MANHOLE
- EXISTING STORM SEWER INLET
- EXISTING STORM SEWER LINE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED 12" LANDSCAPE DRAIN
- PROPOSED DOUBLE "C" WATER QUALITY INLET
- 24" RCP
- PROPOSED STORM SEWER LINE
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- BOUNDARY LINE
- EXISTING SIDEWALK
- PROPOSED RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- FLOW ARROW
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION

DRAINAGE CERT WORK SURVEY WORK BY OTHERS  
12/28/01  
DRAINAGE CERTIFICATION

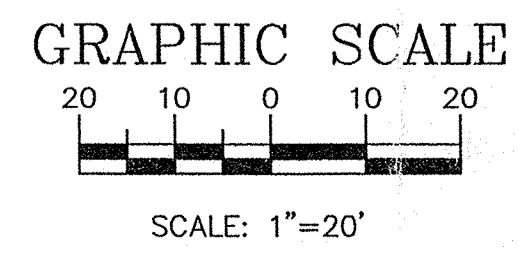
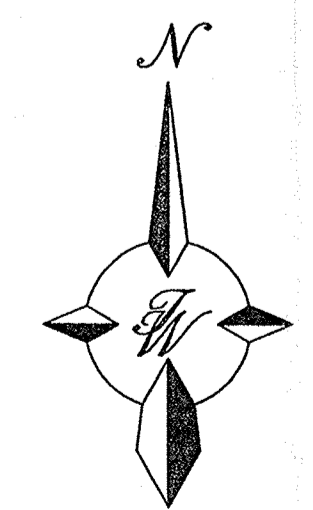
I, RONALD R. BOHANNAN, NMPE 7868, OF THE FIRM TIERRA WEST, LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 02/10/05. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY PRESSION HALL, NMPE 10042, OF THE FIRM HALL SURVEYS.

I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 10/21/05 AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR FINAL CERTIFICATION OF DRAINAGE FOR CERTIFICATE OF OCCUPANCY.

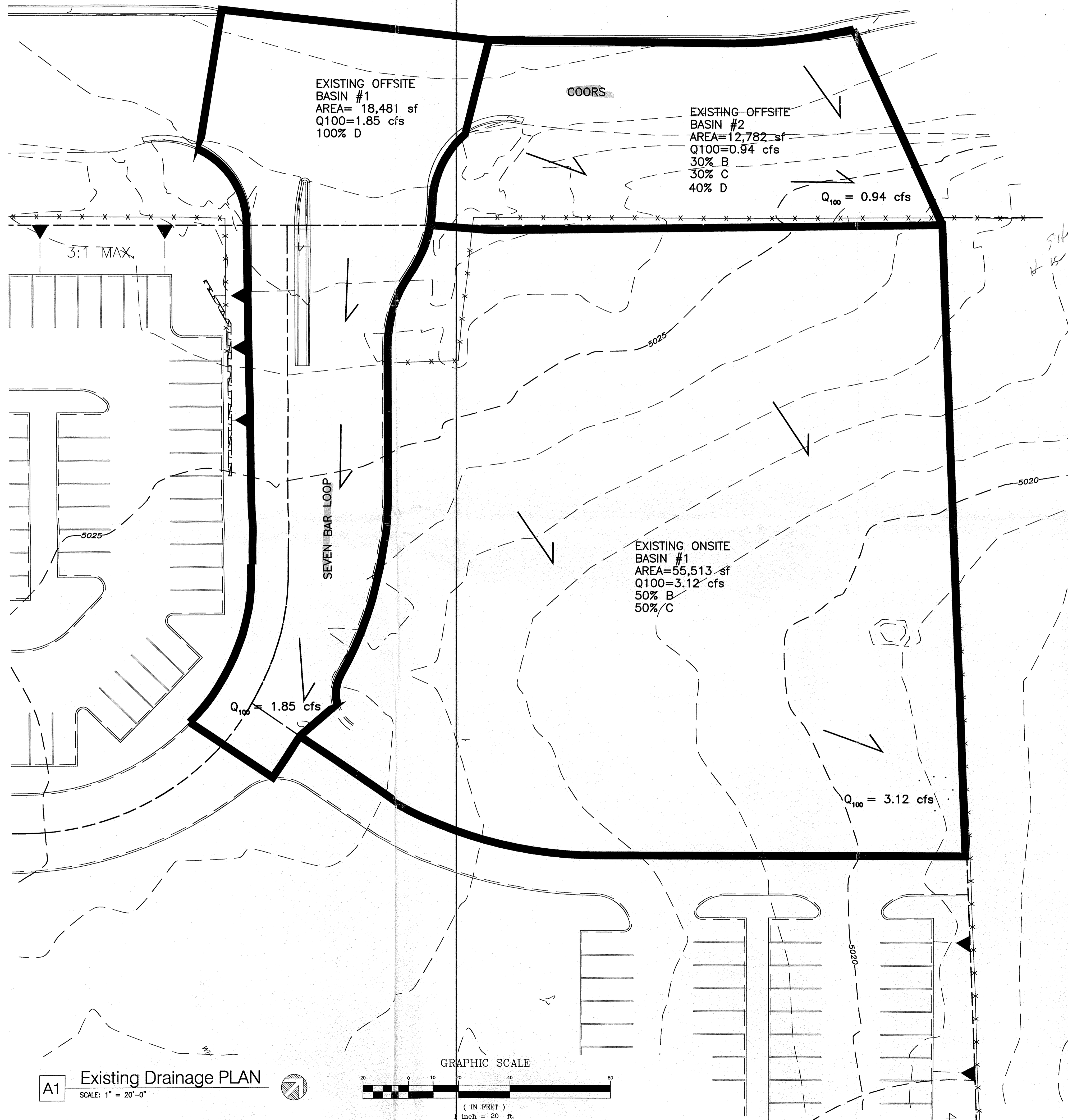
NOTE EXCEPTIONS HERE: NO EXCEPTIONS TAKEN

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THE RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

*[Signature]*  
NMPE DATE 10/21/05



NO.	DATE	REMARKS	BY
REVISIONS			
ENGINEER'S SEAL		DRAWN BY SV	
		DATE 05-17-05	
		2308GRB-4-28-05	
<b>POPEYE'S CHICKEN</b>  <b>GRADING AND DRAINAGE PLAN</b>		SHEET #	
		<b>C-1</b>	
VINCENT P. CARRICA P.E. #16212		TIERRA WEST, LLC 8509 JEFFERSON NE ALBUQUERQUE, NEW MEXICO 87113 (505)838-3100	
		JOB # 24103 OCT 21 2005 HYDROLOGY SECTION	



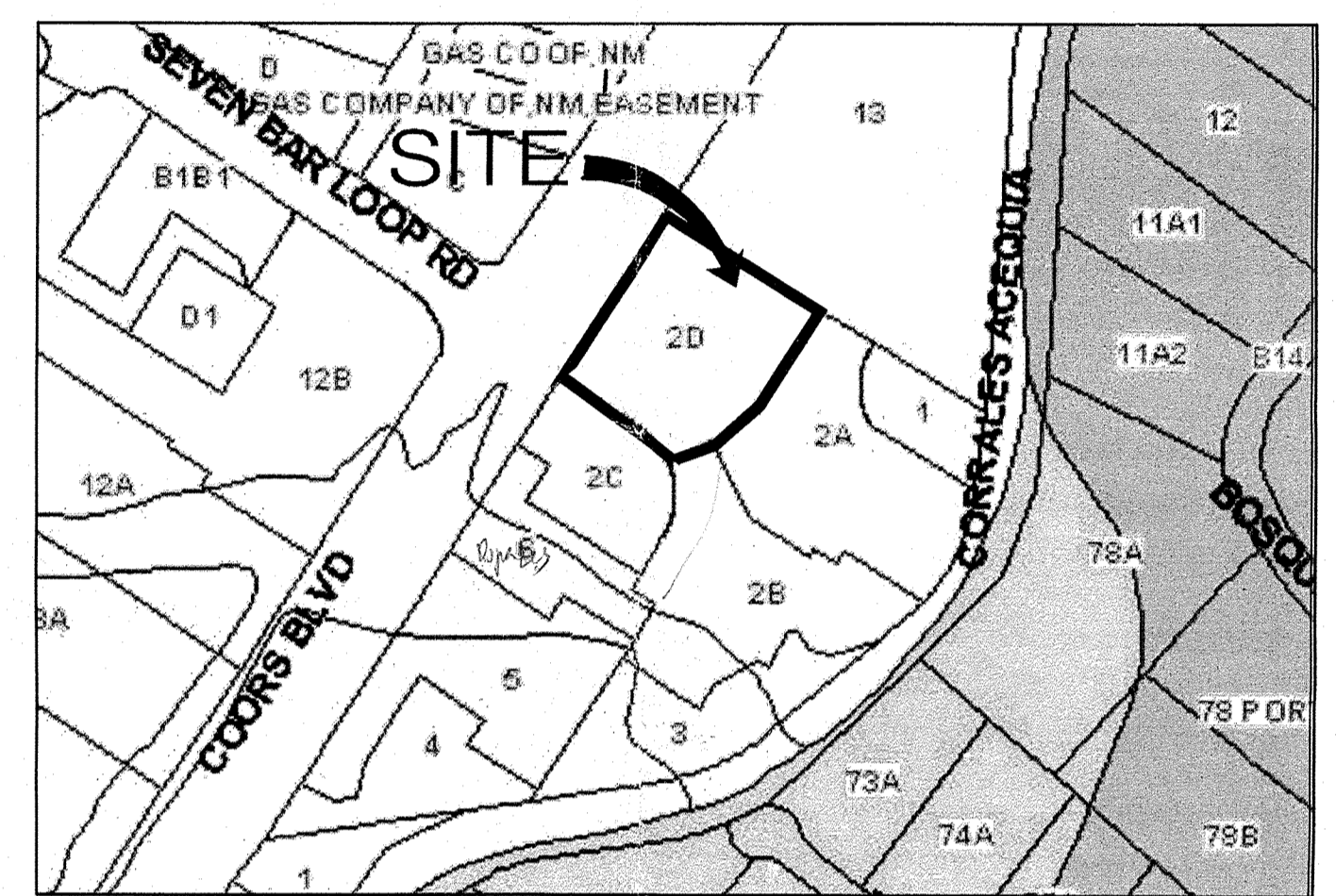
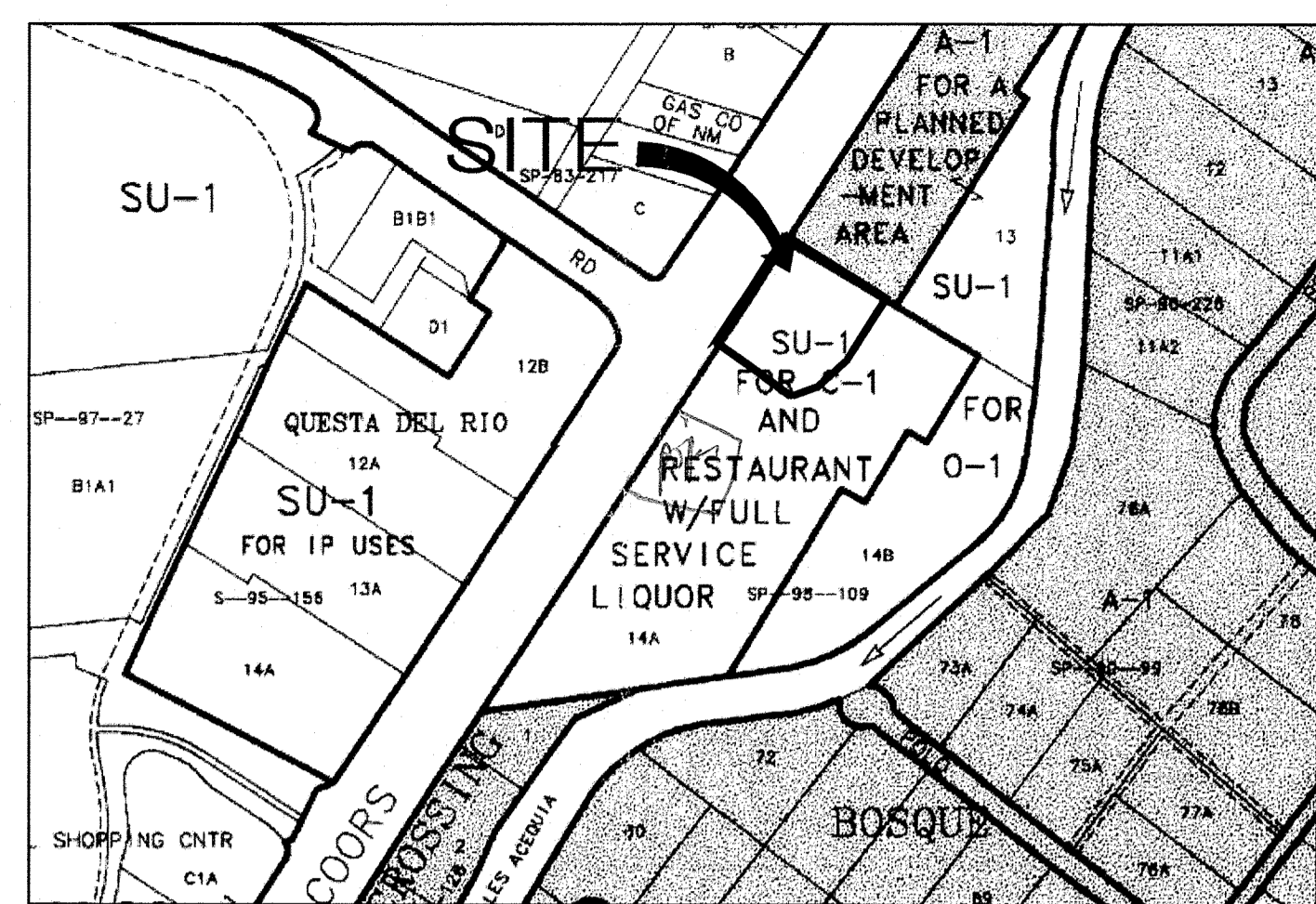
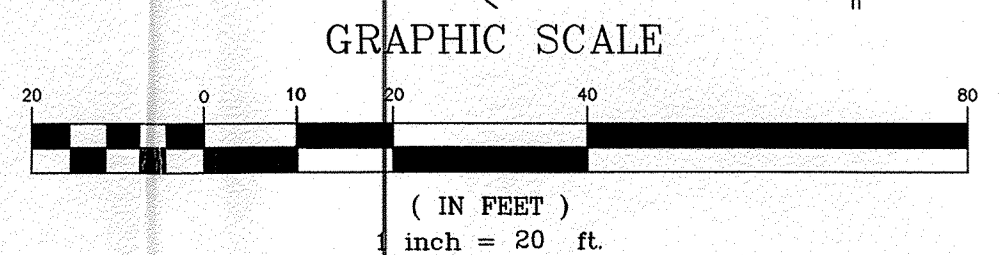
EXISTING OFFSITE  
BASIN #1  
AREA= 18,481 sf  
Q100=1.85 cfs  
100% D

EXISTING OFFSITE  
BASIN #2  
AREA=12,782 sf  
Q100=0.94 cfs  
30% B  
30% C  
40% D

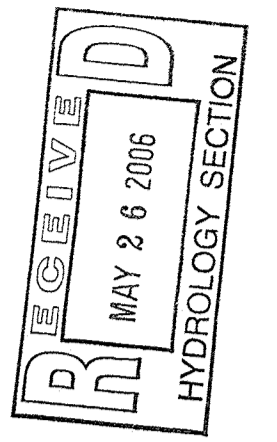
EXISTING ONSITE  
BASIN #1  
AREA=55,513 sf  
Q100=3.12 cfs  
50% B  
50% C

*Side looks like a top of papers*

A1 Existing Drainage PLAN  
SCALE: 1" = 20'-0"

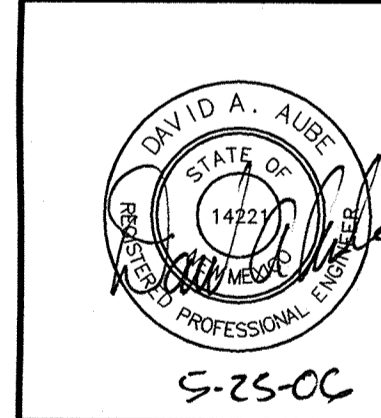


Drainage Summary				
Project: NMEFCU Cottonwood				
Project Number: 2309				
Date: 05/25/06				
By: Dave A				
Site Location				
Precipitation Zone: 1 Per Table A-1 COA DPM Section 22.2				
Existing summary				
Basin Name	Ex 1	Off Ex #1	Off Ex #2	
Area (sf)	55513	18481	12782	
Area (acres)	1.27	0.42	0.29	
%A Land treatment				
%B Land treatment	50		30	
%C Land treatment	50		30	
%D Land treatment		100	40	
Soil Treatment (acres)				
Area "A"	0.00	0.00	0.00	
Area "B"	0.64	0.00	0.09	
Area "C"	0.64	0.00	0.09	
Area "D"	0.00	0.42	0.12	
Excess Runoff (acre-feet)				
100yr. 6hr.	0.0881	0.0697	0.0314	
10yr. 6hr.	0.0350	0.0438	0.0170	
2yr. 6hr.	0.0069	0.0255	0.0080	
100yr. 24hr.	0.0881	0.0859	0.0359	
Peak Discharge (cfs)				
100 yr.	3.12	1.85	0.94	
10yr.	1.43	1.23	0.54	
2yr.	0.32	0.72	0.24	
Proposed summary				
Basin Name	Pro 1	Pro 2	Off Ex #1	Off Ex #2
Area (sf)	28229	27285	18481	12782
Area (acres)	0.65	0.63	0.42	0.29
%A Land treatment				
%B Land treatment	10	20		30
%C Land treatment	10			30
%D Land treatment	80	80	100	40
Soil Treatment (acres)				
Area "A"	0.00	0.00	0.00	0.00
Area "B"	0.06	0.13	0.00	0.09
Area "C"	0.06	0.00	0.00	0.09
Area "D"	0.52	0.50	0.42	0.12
Excess Runoff (acre-feet)				
100yr. 6hr.	0.0941	0.0893	0.0697	0.0314
10yr. 6hr.	0.0571	0.0541	0.0438	0.0170
2yr. 6hr.	0.0318	0.0302	0.0255	0.0080
100yr. 24hr.	0.1139	0.1085	0.0859	0.0359
Peak Discharge (cfs)				
100 yr.	2.58	2.44	1.85	0.94
10yr.	1.64	1.54	1.23	0.54
2yr.	0.91	0.85	0.72	0.24



REV	DATE	BY	REVISION

GEORGE RAINHART, ARCHITECT AND ASSOCIATES P.C.  
2325 SAN PEDRO NE., SUITE 2-B  
ALBUQUERQUE, NEW MEXICO 87110  
PHONE (505) 884-9110 FAX (505) 837-9877



PROJECT TITLE: NEW MEXICO EDUCATORS FEDERAL CREDIT UNION  
NEW MEXICO EDUCATORS FEDERAL CREDIT UNION  
Albuquerque, NM  
JOB NO.:  
PROJECT MANAGER:  
DRAWN BY:  
SHEET TITLE: EXISTING DRAINAGE PLAN

DATE: 05-17-06  
SCALE: 1"=20'  
SHEET: CD.1



## Derek Bohannon

---

**From:** Jared Romero <jromero@amafca.org>  
**Sent:** Thursday, August 29, 2024 6:35 PM  
**To:** Derek Bohannon  
**Cc:** Ron Bohannon; Nicole M. Friedt; Brissette, Renee C.  
**Subject:** RE: [#2023004] 7 Bar Retail - Revised Conceptual Drainage Report - AMAFCA No Adverse Comments

Good Evening Derek,

AMAFCA has no further adverse comments on the Conceptual Drainage Report and associated Conceptual Drainage Plan for the 7 Bar Retail Project dated August 2024. Below are items that must be addressed as this project moves into Building and Public Work Order approvals.

- AMAFCA will need to review and approve the final G&D and DRC Work Order Plans (for the infrastructure to be assumed by AMAFCA).
  - AMAFCA will require review of the structural design of the proposed retaining walls prior to building permit approval. There must also be a general note on the G&D stating as such. The design of the retaining wall must include an assumed 6ft CMU garden wall section on top of the retaining wall (above highest FG adjacent to the retaining wall).
  - Based on discussions with AMAFCA's Operations & Maintenance group, the existing pipe penetrations where the inlet is to be capped may require grout filling to minimize maintenance concerns and potential for pipe failure.
  - The pipe penetration is proposed to enter the pond at an elevation of 5007'. The 100-yr WSE from the as-builts of the pond is at an elevation of 5006.5' in **'29 vertical Datum**, putting the WSE in current datum at ~5009.2. If the pipe invert into the pond is below the 100-yr WSE, then it will have to be designed with backflow prevention and assume a higher tailwater condition than shown in the Drainage Report. A profile view showing the HGL & EGL of the pipe network is required. I recommend adjusting the alignment of the storm drain into the pond to be at a 90 degree angle (no skew) to make the connection a little simpler to construct.
- The G&D included in shows a new storm drain penetration into AMAFCA's regional drainage facility. This is subject to review and approval of AMAFCA's Board of Directors as AMAFCA is to assume maintenance of the pipe penetration into the facility via a Turnkey Agreement.
  - The project was introduced to the AMAFCA Board of Directors at the August 2024 meeting. There will be a subsequent presentation(s) to the Board at a future meeting for consideration of approval of the turnkey agreement. The final Turnkey agreement will need to utilize the final approved DRC plans with AMAFCA and the City's approval signature.

Please let me know if there are any questions.

Best,  
Jared

**Jared Romero, P.E., CFM**  
AMAFCA Drainage Engineer  
Phone: (505) 884-2215

**From:** Derek Bohannon <dbohannon@tierrawestllc.com>

**Sent:** Friday, August 16, 2024 9:00 AM

**To:** Jared Romero <jromero@amafca.org>

**Cc:** Ron Bohannon <rbr@tierrawestllc.com>; Nicole M. Friedt <nfriedt@amafca.org>; Brissette, Renee C. <rbrissette@cabq.gov>

**Subject:** RE: [#2023004] 7 Bar Retail - Drainage Report - AMAFCA Response

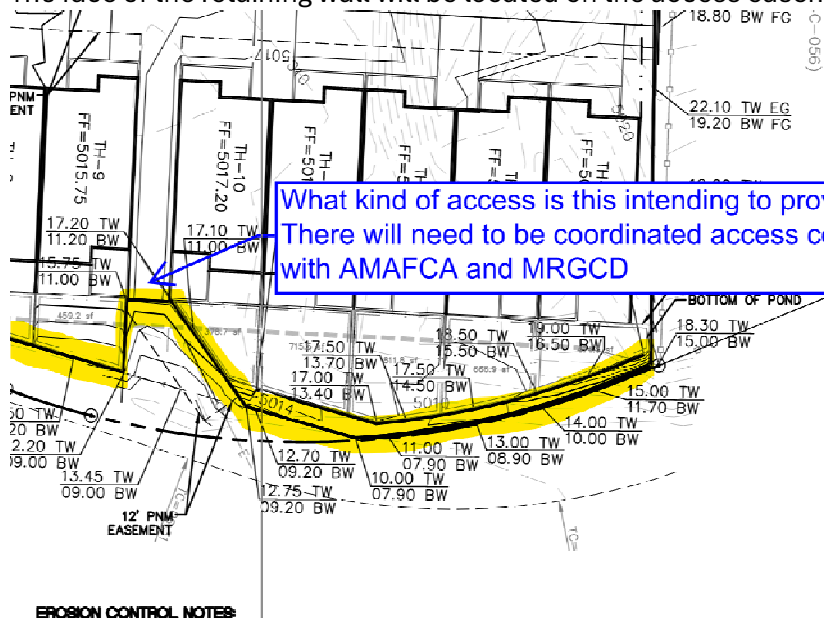
Good morning Jared,

Please see the attached revised drainage report and drawings. (The drawings are in the download link provided)  
Drawings - <https://we.tl/t-m4W5UGdNBh>  
Report and Appendices Items - <https://we.tl/t-x0FyrsPlwT>

At a minimum we are seeking a conceptual approval by AMAFCA such that the City of Albuquerque with your conceptual approval can too also provide conceptual approval so that we can start some of the mass grading activities. The need by the project to start moving dirt prior to final grading and drainage is due to the removal, relocation, and realignment of a 750kV line by PNM that needs to be completed prior to our pad and final grading activities.

### Changes|Notes

- We take no exception to the bulleted points below.
- Street Hydraulic and Pipe Calculations were added to the report.
- Basin reconfiguration and water blocks added along Seven Bar per COA review/comments.
- Narrative on backyard ponding added to address COA comments.
- Pond Volumetric Comparison from Original Report added.
- Pond invert set to 0.5' above emergency spillway elevation at pond.
- Note that no access is proposed at the location in your drawing notes. This area is for a PNM easement for the relocation of the previously mentioned 750kV line that comes off of the existing OH line at this location.
  - The existing PNM drop and pole are to remain as currently located on the site with guy wire.
  - The face of the retaining wall will be located on the access easement line



- **EROSION CONTROL NOTES:**
  - Single wall configurations along the pond have been called out as noted with L-footers to be wholly contained on the proposed developments property.

If you require any additional information please do not hesitate to contact me at anytime.

Thank you!

Derek R Bohannan.

---

**From:** Jared Romero <[jromero@amafca.org](mailto:jromero@amafca.org)>  
**Sent:** Tuesday, July 9, 2024 1:24 PM  
**To:** Derek Bohannan <[dbohannan@tierrawestllc.com](mailto:dbohannan@tierrawestllc.com)>  
**Cc:** Ron Bohannan <[rbr@tierrawestllc.com](mailto:rbr@tierrawestllc.com)>; Nicole M. Friedt <[nfriedt@amafca.org](mailto:nfriedt@amafca.org)>; Brissette, Renee C. <[rbrissette@cabq.gov](mailto:rbrissette@cabq.gov)>  
**Subject:** RE: [#2023004] 7 Bar Retail - Drainage Report - AMAFCA Response

Good Afternoon Derek,

Below is a link to download AMAFCA's comments on the compiled Drainage Report for the 7 Bar Retail Project. Like we have discussed in the past, conceptually, AMAFCA does not have any adverse comments to the overarching plan for the subdivision, but there is cleanup in the report and plans that is needed. Below are also questions/conditions that will need to be addressed as this project advances (we've already discussed most of these, so they should not be surprising).

 [7 Bar Retail - Drainage Report - AMAFCA Comments.pdf](#)

- It's a little unclear if Lot 2 is intended to be subdivided further. If so, AMAFCA will need to review the plat when prepared.
- AMAFCA will need to review the final G&D, DRC Work Order Plans (for the infrastructure to be assumed by AMAFCA), and the revised Drainage Report.
- The G&D included in shows a new storm drain penetration into AMAFCA's regional drainage facility. This is subject to review and approval of AMAFCA's Board of Directors as AMAFCA is to assume maintenance of the pipe penetration into the facility via a Turnkey Agreement.
  - The project will first have to be introduced to the AMAFCA Board of Directors at a regular meeting. Should the Board be in favor, there will be a subsequent presentation to the Board at a future meeting for consideration of approval of the turnkey agreement.
  - The project can be introduced with a preliminary G&D; however the final Turnkey agreement will need to utilize the final approved plans with AMAFCA and the City's approval signature.

Please let me know if you have any questions.

Best,  
Jared

**Jared Romero, P.E., CFM**  
AMAFCA Development Review Engineer  
Phone: (505) 884-2215

---

**From:** Derek Bohannan <[dbohannan@tierrawestllc.com](mailto:dbohannan@tierrawestllc.com)>  
**Sent:** Friday, June 28, 2024 10:59 AM  
**To:** Jared Romero <[jromero@amafca.org](mailto:jromero@amafca.org)>

**Cc:** Ron Bohannon <[rrb@tierrawestllc.com](mailto:rrb@tierrawestllc.com)>

**Subject:** RE: [#2023004] 7 Bar Retail - Drainage Report - Review request

I guess the link would help

<https://we.tl/t-FRM4eJIFPc>

Derek.

---

**From:** Derek Bohannon

**Sent:** Friday, June 28, 2024 10:47 AM

**To:** Jared Romero <[jromero@amafca.org](mailto:jromero@amafca.org)>

**Cc:** Ron Bohannon <[rrb@tierrawestllc.com](mailto:rrb@tierrawestllc.com)>

**Subject:** [#2023004] 7 Bar Retail - Drainage Report - Review request

Good afternoon Jared,

Can you begin to review the attached report for the 7 Bar Retail Mixed Use Development that we had previously discussed. This is the site located at 7 Bar and Coors Blvd. Renee at the City has stipulated that I need your approval prior to being able to re-submit to her department.

As discussed we are planning on creating an HOA to service and maintain all items/areas that are located within the access easement on the east side of the property adjacent to the canal. Also we are reviewing the turnkey agreement and will have one created for your review once we've been through this review and have everything to where you need it.

In the link below you will find the narrative and appendix items broken out individually, I've also created one PDF that has all items compiled into a single PDF. I'm not sure which of these is your preference for reviewing items so I thought I'd provide it to you both ways.

Please feel free to reach out to me anytime.

Derek R Bohannon.



# Appendix I.

## Flow Master Inputs and Results for Street Hydraulic Calculations and Pipe Hydraulics

### Street Hydraulics

The image displays three screenshots of a hydraulic calculation software interface, each showing a different condition. Each window has a title bar (e.g., 'Worksheet: Condition - 1') and a menu bar with 'Uniform Flow', 'Gradually Varied Flow', and 'Messages'. The 'Solve For' dropdown is set to 'Normal Depth' and the 'Friction Method' is 'Manning Formula'. Each window shows a table of input and output parameters.

Condition	Roughness Coefficient	Channel Slope	Elevation	Elevation Range	Discharge	Flow Area	Wetted Perimeter	Hydraulic Radius	Top Width	Normal Depth	Critical Depth	Critical Slope	Velocity	Velocity Head	Specific Energy	Froude Number	Flow Type
Condition - 1	0.017	0.025 ft/ft	0.28 ft	0.0 to 1.0 ft	11.34 cfs	3.0 ft²	21.4 ft	1.7 in	21.42 ft	3.4 in	4.2 in	0.008 ft/ft	3.75 ft/s	0.22 ft	0.50 ft	1.762	Supercritical
Condition - 2	0.017	0.025 ft/ft	0.11 ft	0.0 to 0.9 ft	1.12 cfs	0.6 ft²	10.3 ft	0.7 in	10.27 ft	1.3 in	1.5 in	0.011 ft/ft	1.99 ft/s	0.06 ft	0.17 ft	1.503	Supercritical
Condition - 3	0.017	0.040 ft/ft	0.09 ft	0.0 to 1.1 ft	0.77 cfs	0.4 ft²	8.0 ft	0.5 in	7.99 ft	1.1 in	1.3 in	0.011 ft/ft	2.18 ft/s	0.07 ft	0.16 ft	1.832	Supercritical

Each window also includes 'Edit Section' and 'Options' buttons, and a status bar indicating 'Calculation Successful.'

# Pipe Hydraulics

The image displays three screenshots of a pipe hydraulics software interface, each showing a different set of input and output parameters for a circular pipe. The software is set to 'Uniform Flow' and 'Gradually Varied Flow' with the 'Manning Formula' selected for friction.

**Worksheet: Circular Pipe - 1**

Solve For: Normal Depth | Friction Method: Manning Formula

Roughness Coefficient	0.017	
Channel Slope	0.024	ft/ft
Normal Depth	11.5	in
Diameter	24.0	in
Discharge	12.48	cfs

Flow Area	1.5	ft²
Wetted Perimeter	3.1	ft
Hydraulic Radius	5.8	in
Top Width	2.00	ft
Critical Depth	15.2	in
Percent Full	47.9	%
Critical Slope	0.010	ft/ft
Velocity	8.38	ft/s
Velocity Head	1.09	ft
Specific Energy	2.05	ft
Froude Number	1.712	
Maximum Discharge	28.83	cfs
Discharge Full	26.80	cfs
Slope Full	0.005	ft/ft
Flow Type	Supercritical	

Calculation Successful.

**Worksheet: Circular Pipe - 2**

Solve For: Normal Depth | Friction Method: Manning Formula

Roughness Coefficient	0.017	
Channel Slope	0.073	ft/ft
Normal Depth	2.3	in
Diameter	18.0	in
Discharge	0.77	cfs

Flow Area	0.1	ft²
Wetted Perimeter	1.1	ft
Hydraulic Radius	1.5	in
Top Width	1.00	ft
Critical Depth	3.9	in
Percent Full	12.9	%
Critical Slope	0.009	ft/ft
Velocity	5.78	ft/s
Velocity Head	0.52	ft
Specific Energy	0.71	ft
Froude Number	2.801	
Maximum Discharge	23.35	cfs
Discharge Full	21.70	cfs
Slope Full	0.000	ft/ft
Flow Type	Supercritical	

Calculation Successful.

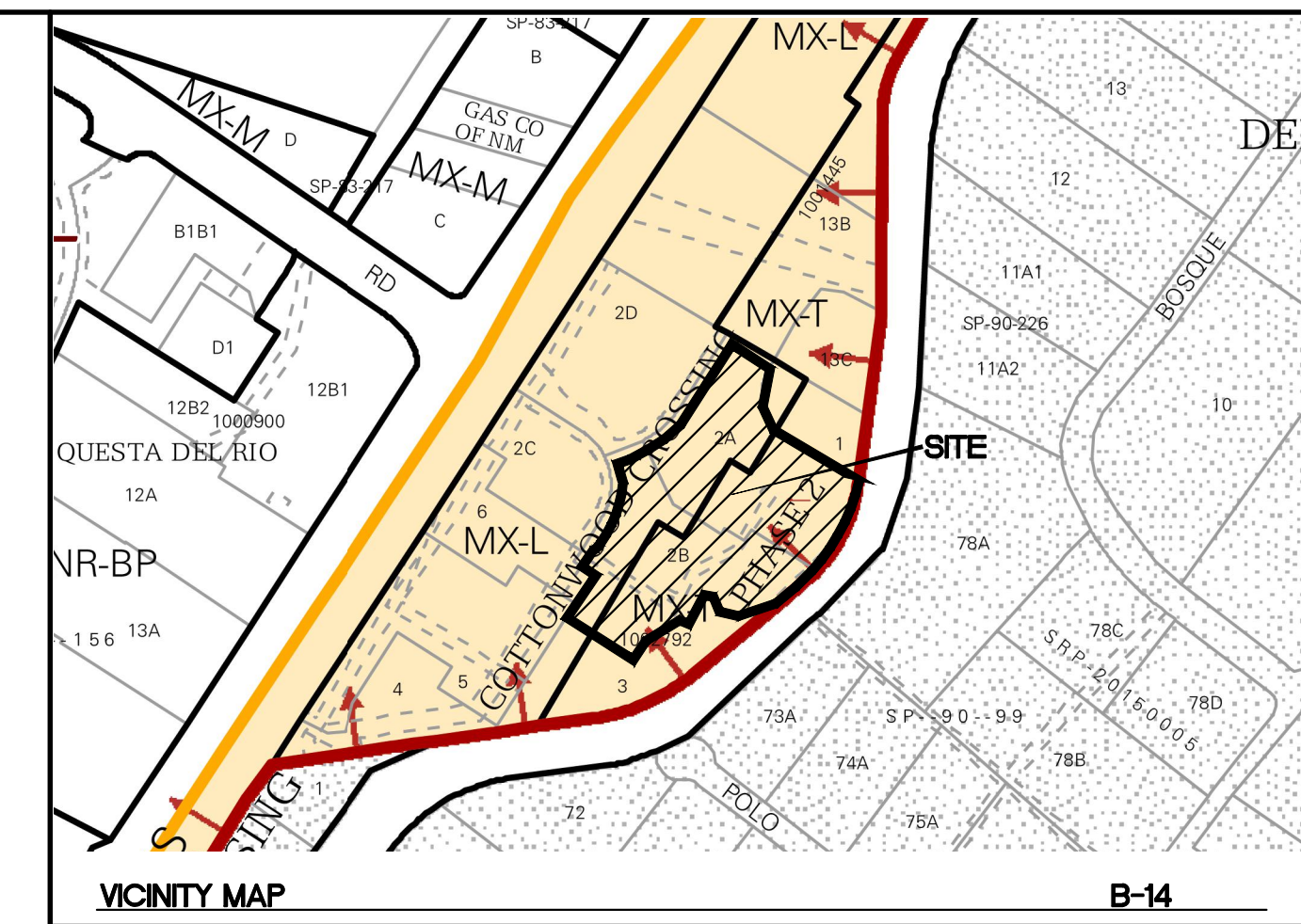
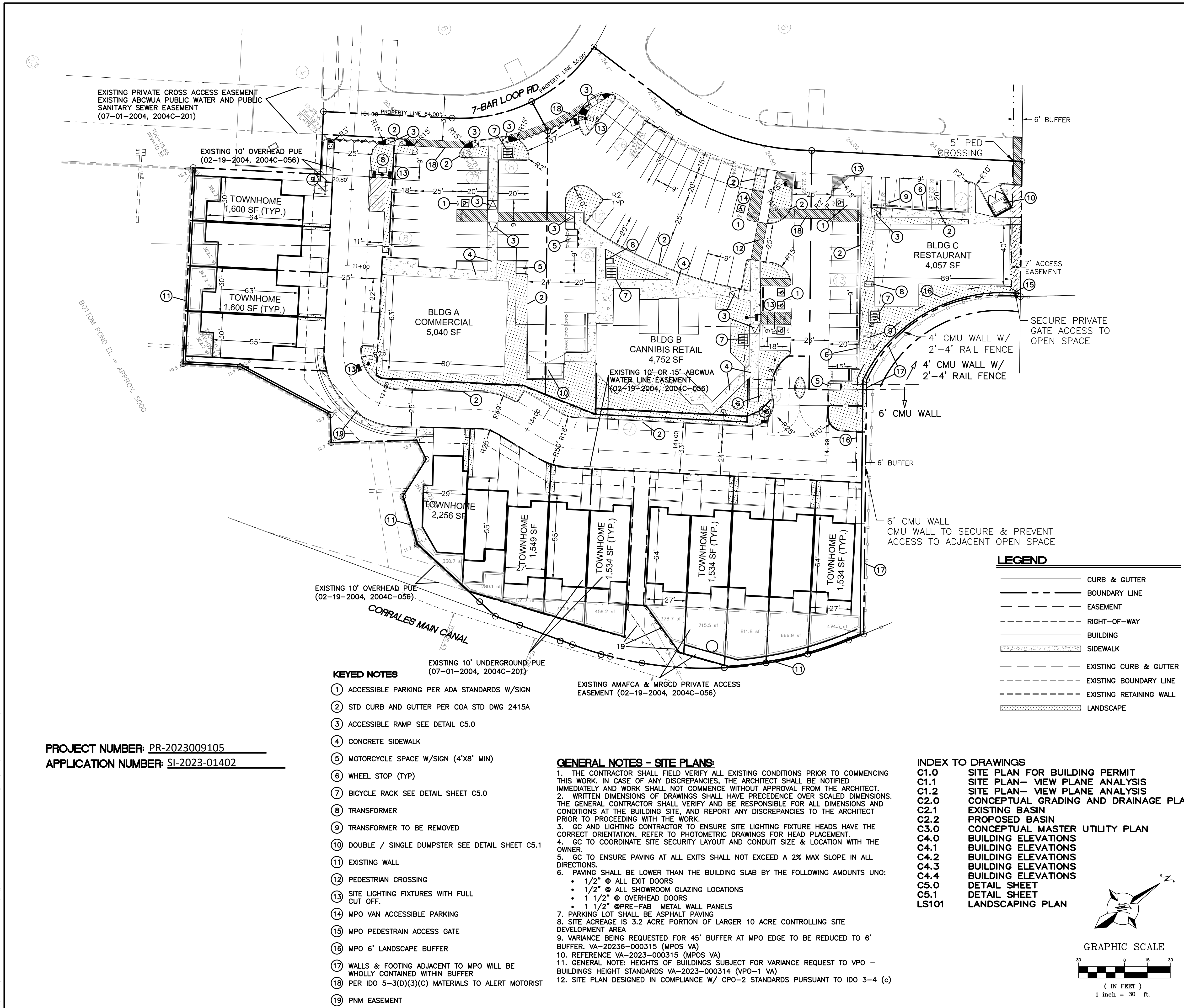
**Worksheet: Circular Pipe - 3**

Solve For: Normal Depth | Friction Method: Manning Formula

Roughness Coefficient	0.017	
Channel Slope	0.024	ft/ft
Normal Depth	11.9	in
Diameter	24.0	in
Discharge	13.23	cfs

Flow Area	1.6	ft²
Wetted Perimeter	3.1	ft
Hydraulic Radius	6.0	in
Top Width	2.00	ft
Critical Depth	15.7	in
Percent Full	49.6	%
Critical Slope	0.010	ft/ft
Velocity	8.50	ft/s
Velocity Head	1.12	ft
Specific Energy	2.12	ft
Froude Number	1.699	
Maximum Discharge	28.83	cfs
Discharge Full	26.80	cfs
Slope Full	0.006	ft/ft
Flow Type	Supercritical	

Calculation Successful.



**LEGAL DESCRIPTION**  
 LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5908 AC  
 LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSINGPHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSINGPHASE II) CONT 1.5483 AC  
 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

**SITE DATA**

LOT AREA	136744 SF (3.20 ACRES)
ZONING	MX-L & MX-T
<b>BUILDING A</b> PROPOSED USE	COMMERCIAL
BUILDING FOOTPRINT	5040 SF
<b>BUILDING B</b> PROPOSED USE	CANNIBIS RETAIL
BUILDING FOOTPRINT	4752 SF
<b>BUILDING C</b> PROPOSED USE	RESTAURANT
BUILDING FOOTPRINT	4057 SF
<b>DWELLING UNIT</b> PROPOSED USE	RESIDENTIAL
15 OF UNITS	1740± SF EACH
TOTAL AREA	23951 SF

**COMMERCIAL PARKING**

BUILDING A	18 SPACES (3.5 SPACES/1000 SF GFA)
PARKING REQUIRED	28 SPACES
PARKING PROVIDED	
ACCESSIBLE SPACES REQUIRED	1 SPACE
ACCESSIBLE SPACES PROVIDED	1 SPACE VAN ACCESSIBLE
MOTORCYCLE SPACES REQUIRED AND PROVIDED	1 SPACE
BICYCLE SPACES REQUIRED AND PROVIDED	2
<b>BUILDING B</b> TWO-STORY CANNIBIS RETAIL	
PARKING SPACES REQUIRED	33 SPACES (4 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	53 SPACES (10 SHARED W/BLDG C)
ACCESSIBLE SPACES REQUIRED	2 SPACES
ACCESSIBLE SPACES PROVIDED	3 SPACES (1 VAN ACCESSIBLE)
MOTORCYCLE SPACES REQUIRED	1 SPACE
MOTORCYCLE SPACES PROVIDED	3 SPACES
BICYCLE SPACES REQUIRED AND PROVIDED	5
<b>BUILDING C</b> PARKING SPACES REQUIRED	23 SPACES (5.6 SPACES/1,000 SF GFA)
PARKING SPACES PROVIDED	20 SPACES (10 SHARED W/BLDG B)
ACCESSIBLE SPACES REQUIRED AND PROVIDED	1 SPACE (1 VAN ACCESSIBLE)
MOTORCYCLE SPACES REQUIRED AND PROVIDED	1 SPACE
BICYCLE SPACES REQUIRED AND PROVIDED	3

**RESIDENTIAL PARKING**

TOWNHOMES	2 SPACE/PER UNIT
TOTAL PARKING REQUIRED	28 SPACES
GARAGE PARKING	28 SPACES
LANDSCAPE REQUIRED	14847 SF (15% NET AREA)
LANDSCAPE PROVIDED	19880 SF

THE REQUIRED 10% PARKING REDUCTION IS INCLUDED PURSUANT TO IDO 5-5(C)(5) FOR PROXIMITY TO TRANSIT.

THE REQUEST IS TO ADD THE RESTAURANT, CANNIBIS RETAIL, OFFICE, AND TOWNHOMES USES TO THE CONTROLLING SITE PLAN.

**KEYED NOTES**

- 1 ACCESSIBLE PARKING PER ADA STANDARDS W/SIGN
- 2 STD CURB AND GUTTER PER COA STD DWG 2415A
- 3 ACCESSIBLE RAMP SEE DETAIL C5.0
- 4 CONCRETE SIDEWALK
- 5 MOTORCYCLE SPACE W/SIGN (4'X8' MIN)
- 6 WHEEL STOP (TYP)
- 7 BICYCLE RACK SEE DETAIL SHEET C5.0
- 8 TRANSFORMER
- 9 TRANSFORMER TO BE REMOVED
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- 11 EXISTING WALL
- 12 PEDESTRIAN CROSSING
- 13 SITE LIGHTING FIXTURES WITH FULL CUT OFF.
- 14 MPO VAN ACCESSIBLE PARKING
- 15 MPO PEDESTRAIN ACCESS GATE
- 16 MPO 6' LANDSCAPE BUFFER
- 17 WALLS & FOOTING ADJACENT TO MPO WILL BE WHOLLY CONTAINED WITHIN BUFFER
- 18 PER IDO 5-3(D)(3)(C) MATERIALS TO ALERT MOTORIST
- 19 PNM EASEMENT

**GENERAL NOTES - SITE PLANS**

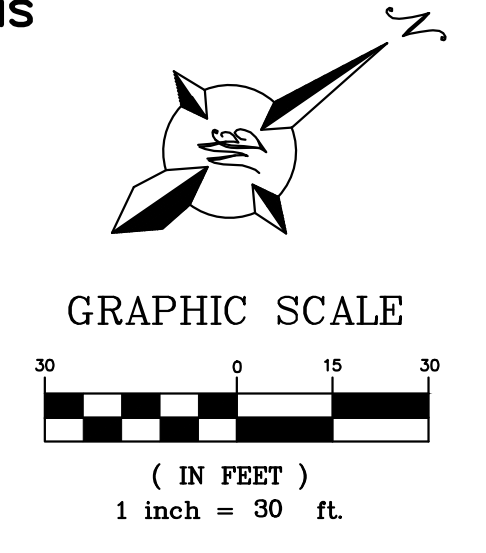
1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO COMMENCING THIS WORK. IN CASE OF ANY DISCREPANCIES, THE ARCHITECT SHALL BE NOTIFIED IMMEDIATELY AND WORK SHALL NOT COMMENCE WITHOUT APPROVAL FROM THE ARCHITECT.
2. WRITTEN DIMENSIONS OF DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE GENERAL CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS AT THE BUILDING SITE, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
3. GC AND LIGHTING CONTRACTOR TO ENSURE SITE LIGHTING FIXTURE HEADS HAVE THE CORRECT ORIENTATION. REFER TO PHOTOMETRIC DRAWINGS FOR HEAD PLACEMENT.
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7. PARKING LOT SHALL BE ASPHALT PAVING
8. SITE ACREAGE IS 3.2 ACRE PORTION OF LARGER 10 ACRE CONTROLLING SITE DEVELOPMENT AREA
9. VARIANCE BEING REQUESTED FOR 45' BUFFER AT MPO EDGE TO BE REDUCED TO 6' BUFFER. VA-20236-000315 (MPOS VA)
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11. GENERAL NOTE: HEIGHTS OF BUILDINGS SUBJECT FOR VARIANCE REQUEST TO VPO - BUILDINGS HEIGHT STANDARDS VA-2023-000314 (VPO-1 VA)
12. SITE PLAN DESIGNED IN COMPLIANCE W/ CPO-2 STANDARDS PURSUANT TO IDO 3-4 (c)

**LEGEND**

- CURB & GUTTER
- BOUNDARY LINE
- EASEMENT
- RIGHT-OF-WAY
- BUILDING
- SIDEWALK
- EXISTING CURB & GUTTER
- EXISTING BOUNDARY LINE
- EXISTING RETAINING WALL
- LANDSCAPE

**INDEX TO DRAWINGS**

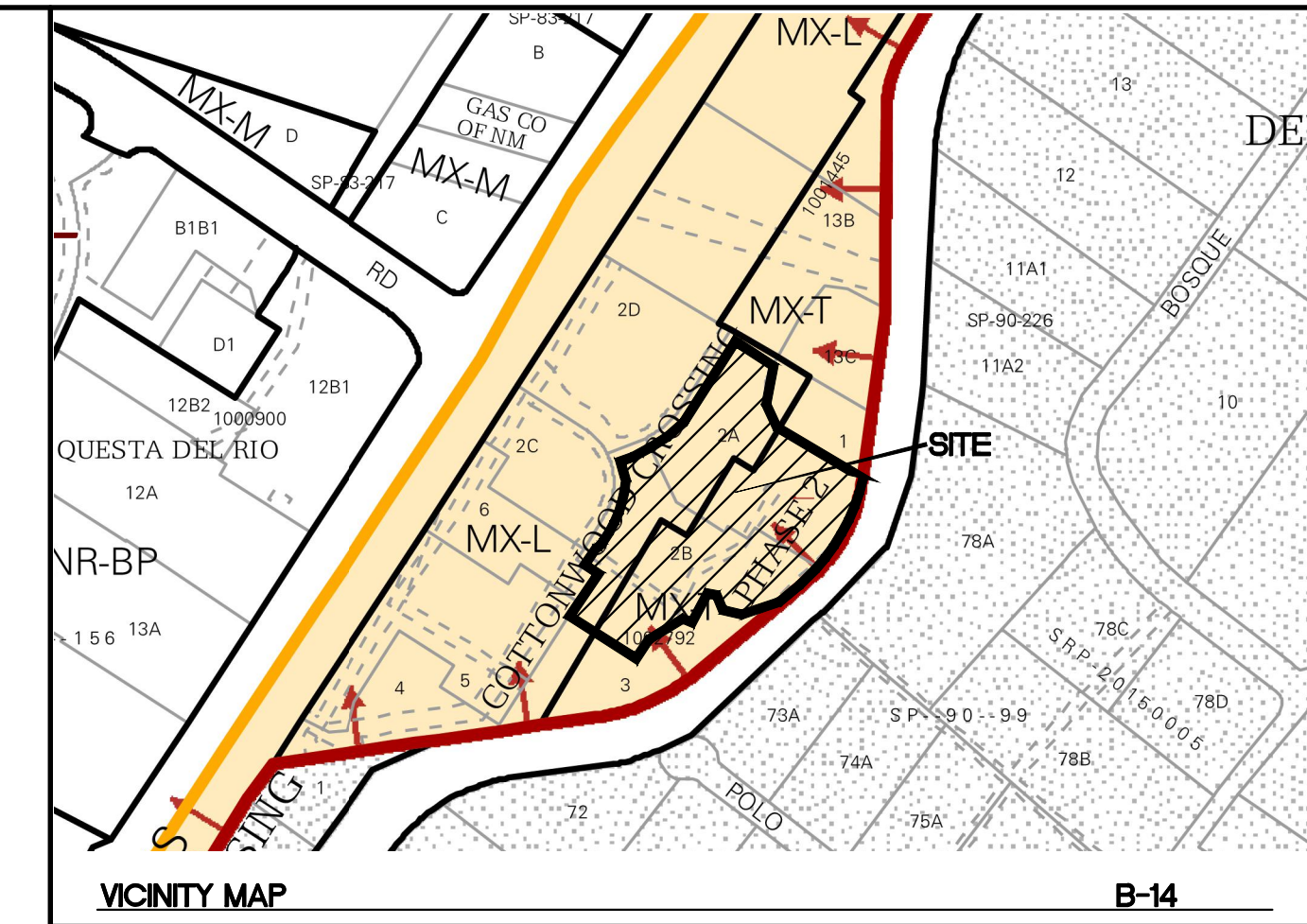
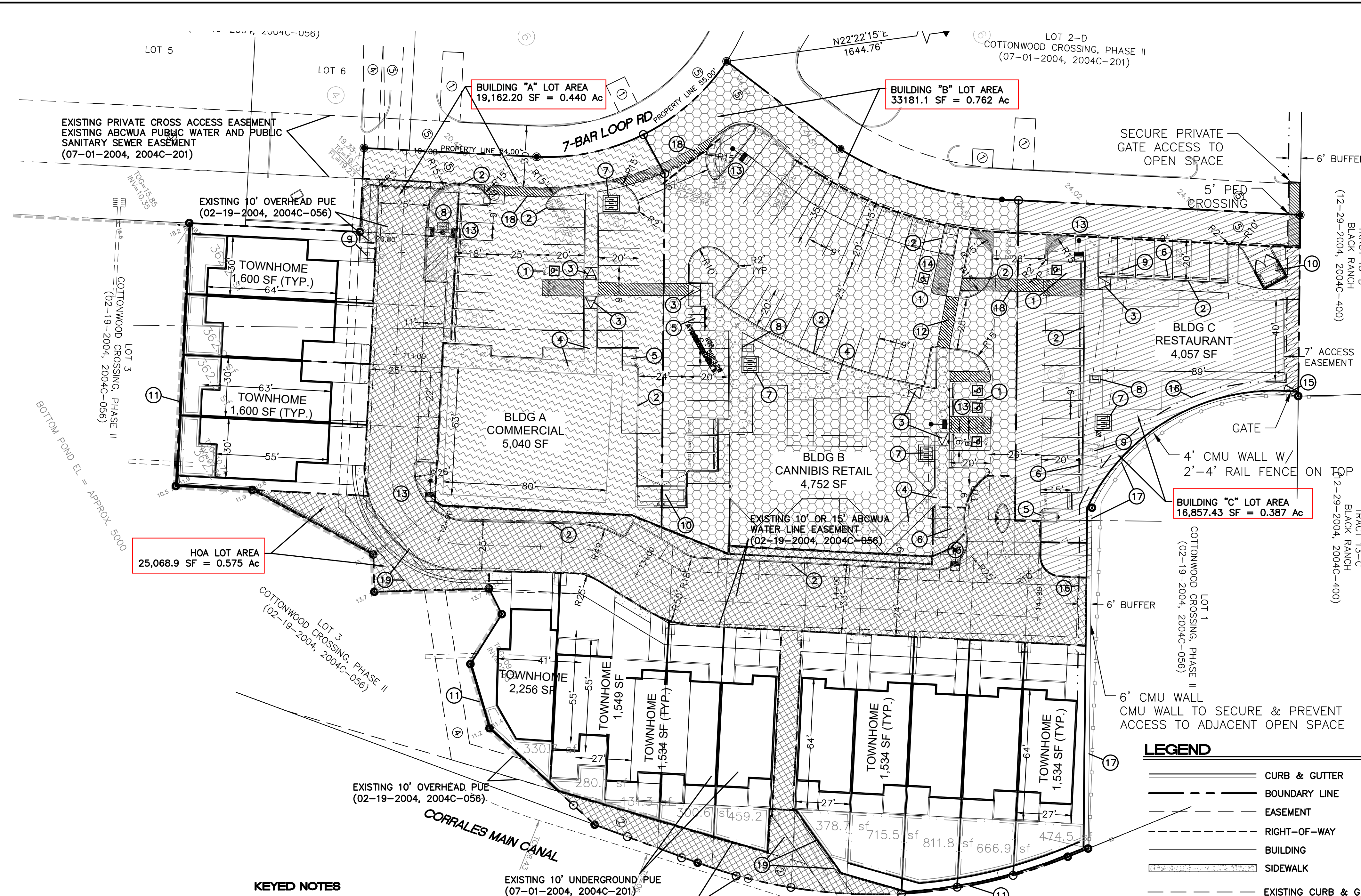
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- C1.1 SITE PLAN- VIEW PLANE ANALYSIS
- C1.2 SITE PLAN- VIEW PLANE ANALYSIS
- C2.0 CONCEPTUAL GRADING AND DRAINAGE PLAN
- C2.1 EXISTING BASIN
- C2.2 PROPOSED BASIN
- C3.0 CONCEPTUAL MASTER UTILITY PLAN
- C4.0 BUILDING ELEVATIONS
- C4.1 BUILDING ELEVATIONS
- C4.2 BUILDING ELEVATIONS
- C4.3 BUILDING ELEVATIONS
- C4.4 BUILDING ELEVATIONS
- C5.0 DETAIL SHEET
- C5.1 DETAIL SHEET
- LS101 LANDSCAPING PLAN



**PROJECT NUMBER:** PR-2023009105  
**APPLICATION NUMBER:** SI-2023-01402

CONCEPTUAL ONLY, NOT FOR CONSTRUCTION

	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/os
	<b>SITE PLAN - EPC</b> (NOT BUILDING PERMIT SET)	DATE 09-25-24
	<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-SP
RONALD R. BOHANNAN P.E. #7868		SHEET # <b>4</b> JOB # 2023004



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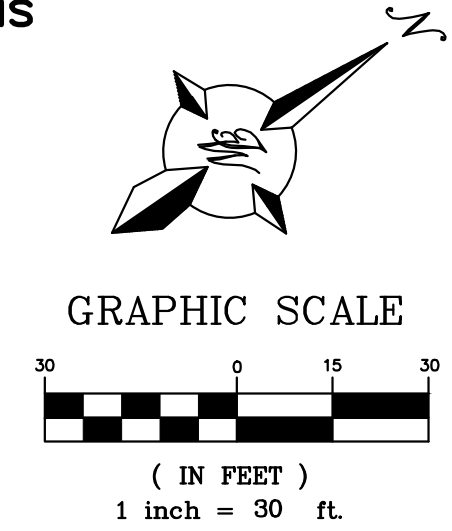
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	BOUNDARY LINE
	EASEMENT
	RIGHT-OF-WAY
	BUILDING
	SIDEWALK
	EXISTING CURB & GUTTER
	EXISTING BOUNDARY LINE
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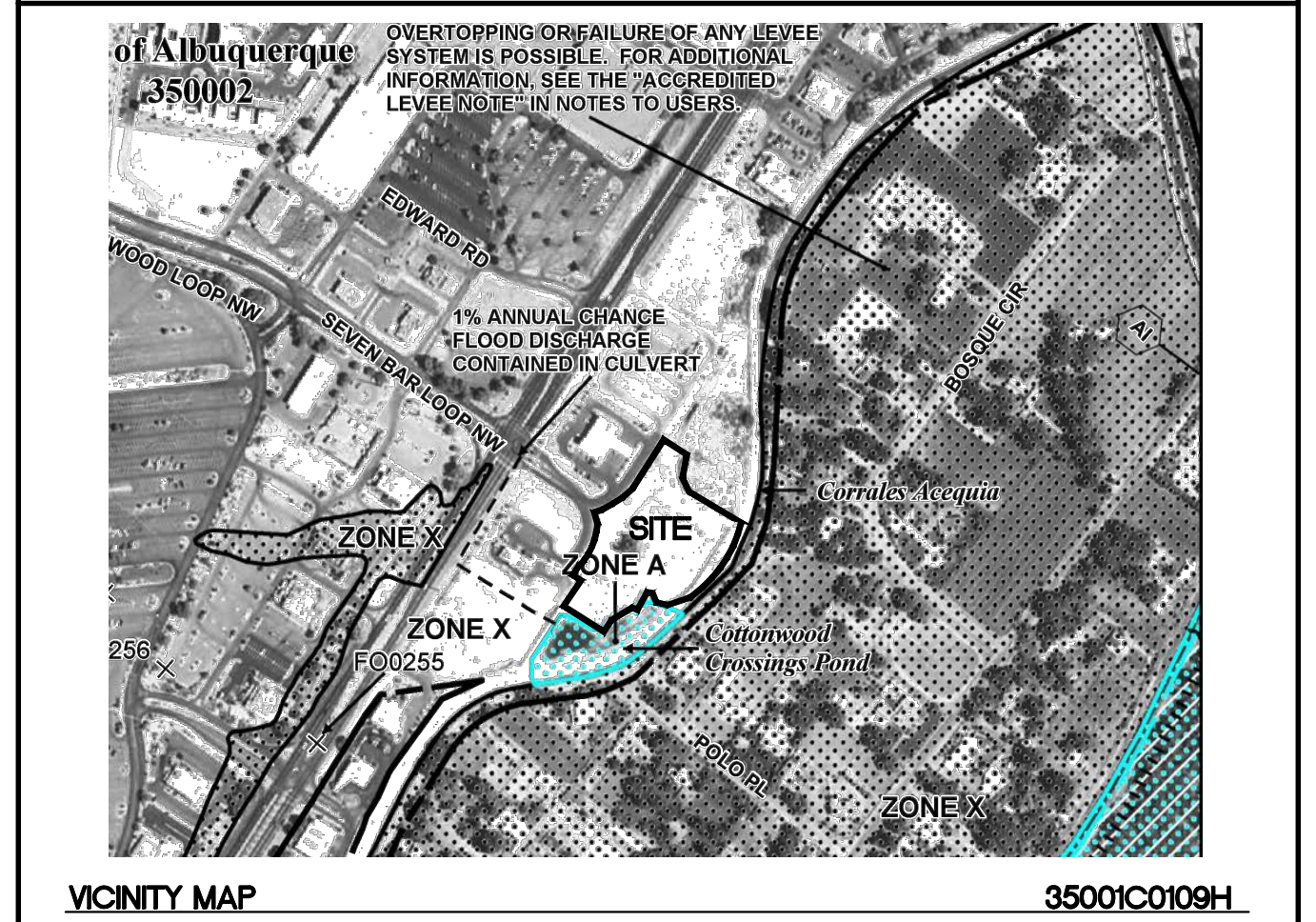
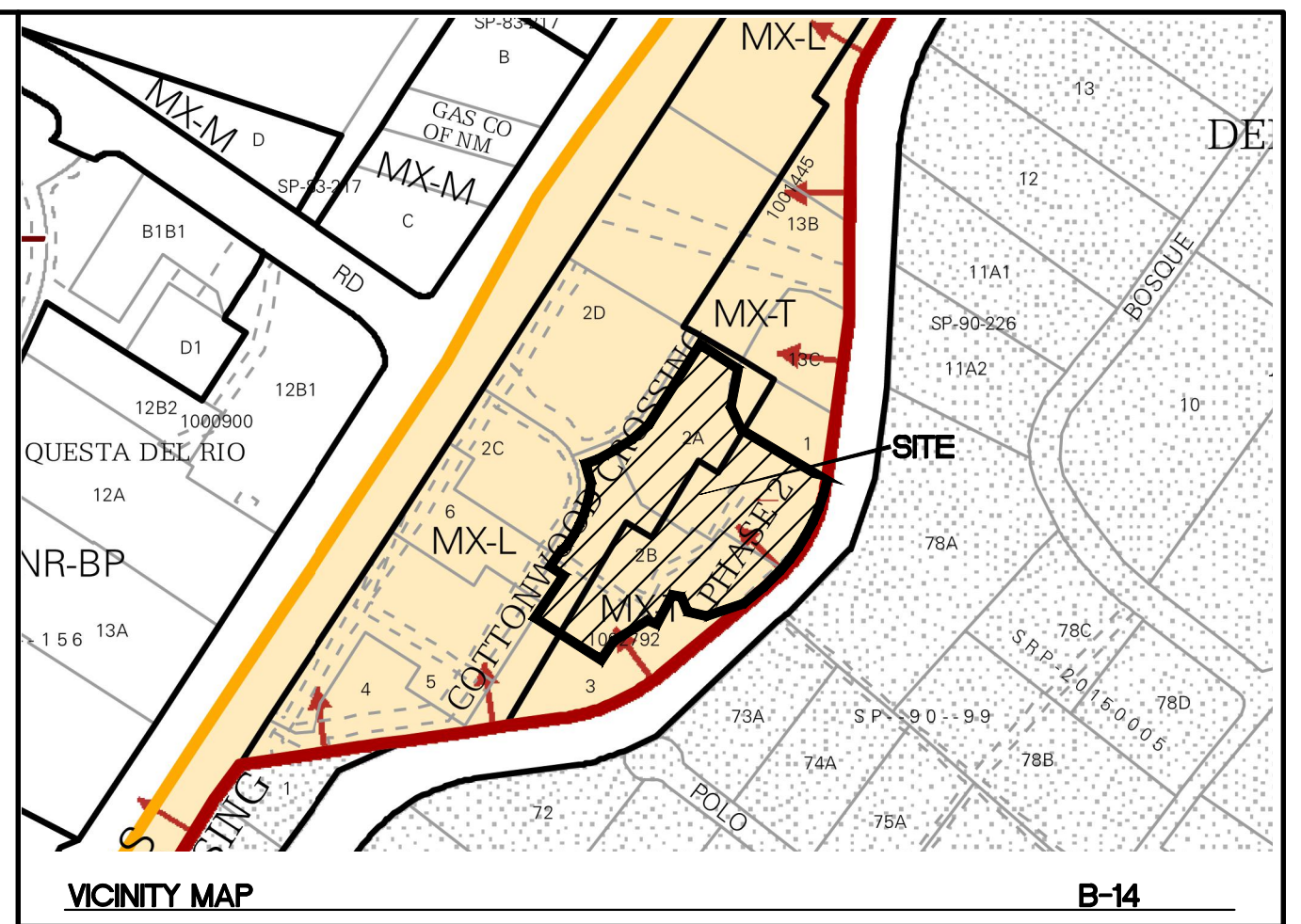
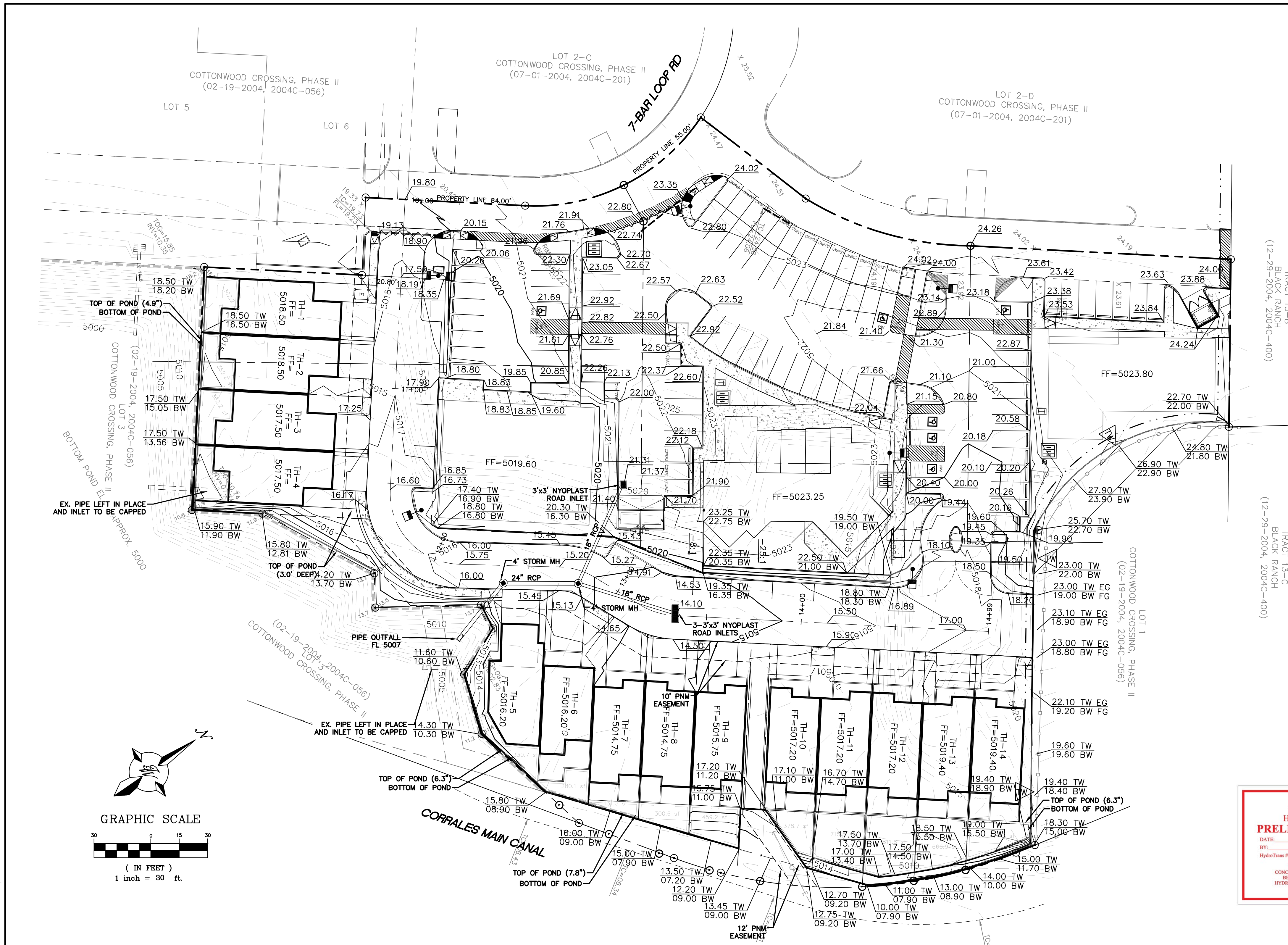


PROJECT NUMBER: PR-2023009105  
 APPLICATION NUMBER: SI-2023-01402

CONCEPTUAL ONLY, NOT FOR CONSTRUCTION

	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/os
	<b>SITE PLAN - EPC</b> (NOT BUILDING PERMIT SET)	DATE 07-29-24
	5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-SP
RONALD R. BOHANNAN P.E. #7868		SHEET # <b>4</b>
		JOB # 2023004

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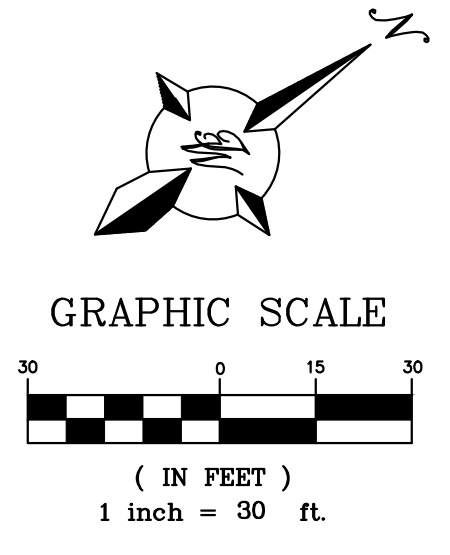


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 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

Townhome	Backyard Ponding Requirements	
	Drainage Area (SF)	Total Volume (CF)
TH1	384.4	124.9
TH2	393.4	127.9
TH3	393.4	127.9
TH4	370.6	120.4
TH5	330.7	107.5
TH6	280.1	91.0
TH7	131.3	42.7
TH8	300.6	97.7
TH9	459.2	149.2
TH10	378.7	123.1
TH11	715.5	232.5
TH12	811.8	263.8
TH13	666.9	216.7
TH14	474.5	154.7
<b>Totals</b>	<b>6,091.10</b>	<b>1,979.61</b>

Stormwater Quality Volume					
Acres	SF	Rainfall (in)	Rainfall (ft)	SWQV (CF)	SWQV (Acre-Ft)
1.76	76,779.22	0.42	0.035	2,687.3	0.06

City of Albuquerque  
 Planning Department  
 Development Review Services  
**HYDROLOGY SECTION**  
**PRELIMINARY APPROVED**  
 DATE: 09/25/24  
 BY: [Signature]



- LEGEND**
- CURB & GUTTER
  - BOUNDARY LINE
  - - - EASEMENT
  - CENTERLINE
  - - - RIGHT-OF-WAY
  - BUILDING
  - SIDEWALK
  - EXISTING CURB & GUTTER
  - EXISTING BOUNDARY LINE
  - EXISTING RETAINING WALL

- NOTICE TO CONTRACTORS**
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
  - 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.
  - TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
  - 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.
  - BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
  - MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
  - WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.
  - ALL FILL MATERIAL UTILIZED WITHIN THE TOWN HOME DETENTION POND AREA(S) MUST BE SUITABLE FOR DRAINAGE AND PERCOLATION. THE FILL SHALL CONSIST OF CLEAN, WELL-GRADED GRANULAR MATERIAL, FREE FROM CLAY, SILT, ORGANICS, OR OTHER DELECTERIOUS SUBSTANCES THAT MAY IMPEDIE DRAINAGE. NO CLAY OR EXPANSIVE MATERIALS ARE TO BE USED IN THE FILL TO ENSURE PROPER INFILTRATION AND PREVENT STANDING WATER.

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

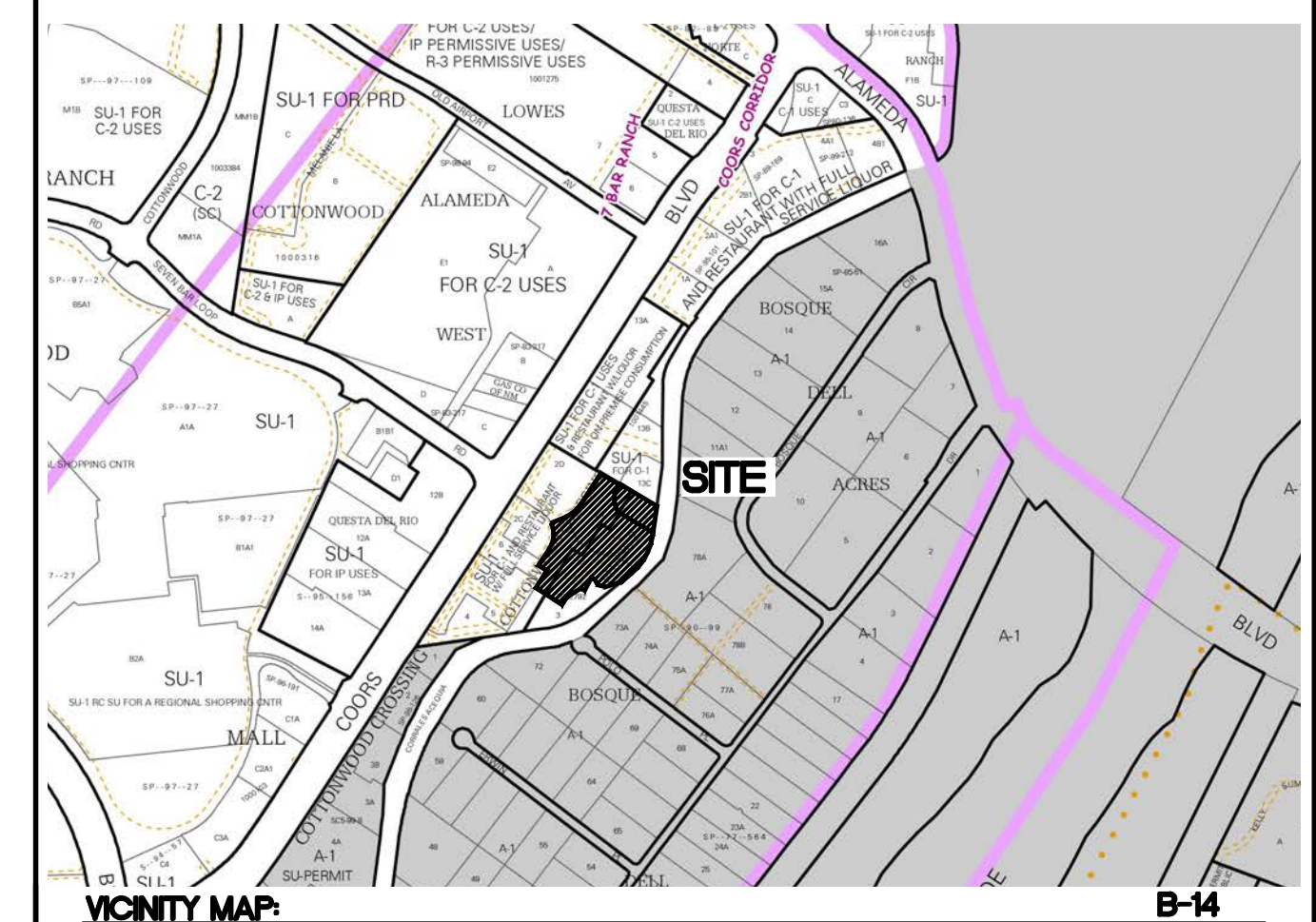
- GENERAL NOTES**
- A DRAINAGE EASEMENT WILL BE GRANTED ON TRACT X (HOA) FOR THE BENEFIT OF TRACTS X THROUGH X (TOWNHOMES 1-14), TRACT X (BUILDING B), AND TRACT X (NUSENDA BANK). THE HOA WILL BE RESPONSIBLE FOR MAINTENANCE. THE EASEMENT WILL BE FORMALIZED THROUGH PLATTING ACTION PRIOR TO CONSTRUCTION, AT WHICH TIME LEGAL TRACT NAMES WILL BE ADDED TO THE CONSTRUCTION DRAWINGS.
  - TOP OF WALL (TOW) ELEVATIONS ARE INTENDED TO SHOW THE TOP OF RETAINING WALL ELEVATIONS WITH GARDEN WALLS INTENDED TO BE PLACED ON RETAINING WALLS AS REQUIRED FOR SCREENING, PRIVACY, ETC. ALL WALL HEIGHTS TO BE IN ACCORDANCE WITH CITY OF ALBUQUERQUE IDO WALL HEIGHT PROVISIONS.
  - THE INDIVIDUAL RETENTION PONDS LOCATED IN THE BACKYARDS OF THE TOWNHOMES ARE ESSENTIAL FOR THE PROPER DRAINAGE FUNCTION AND HYDROLOGY OF THE SITE. THESE PONDS ARE NOT TO BE ALTERED OR FILLED IN BY ANY OWNERS, LESSEE, RENTER, OR OCCUPANT AFTER DEVELOPMENT. ANY MODIFICATIONS MAY RESULT IN IMPROPER DRAINAGE AND POTENTIAL FLOODING ISSUES.

**CAUTION**  
 ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.

ENGINEER'S SEAL  
 RONALD R. BOHANNAN  
 NEW MEXICO  
 7868  
 PROFESSIONAL ENGINEER  
 09-25-24  
 RONALD R. BOHANNAN  
 P.E. #7868

RETAIL AT 7 BAR  
 ALBUQUERQUE, NM  
**CONCEPTUAL GRADING  
 AND DRAINAGE PLAN**  
 TIERRA WEST, LLC  
 5571 MIDWAY PARK PL NE,  
 ALBUQUERQUE, NEW MEXICO 87109  
 (505) 858-3100  
 www.tierrowestllc.com

DRAWN BY  
 pm/os  
 DATE  
 09-25-24  
 DRAWING  
 2023004-GR  
 SHEET #  
**5**  
 JOB #  
 2023004



**VICINITY MAP:** B-14

**LEGAL DESCRIPTION:**  
 LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5908 AC  
 LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5483 AC  
 3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN

**LEGEND**

- CURB & GUTTER
- - - BOUNDARY LINE
- - - PROPOSED EASEMENT
- - - EXISTING EASEMENT
- ▭ BUILDING
- ▬ SIDEWALK
- EXISTING CURB & GUTTER
- SAS — PROPOSED SANITARY SEWER LINE
- W — W — PROPOSED WATERLINE
- SAS — EXISTING SANITARY SEWER LINE
- W — W — EXISTING WATERLINE
- PROPOSED HYDRANT
- ⊕ PROPOSED GATE VALVE
- ⊕ EXISTING HYDRANT
- ⊕ EXISTING GATE VALVE
- ⊙ LIGHT POLE
- ⊙ NEW WATER METER

**KEYED NOTES**

- 1 EXISTING UNOBTSTRUCTED PUBLIC FIRE HYDRANT
- 2 EXISTING 8" GATE VALVE (TYP.)
- 3 PROPOSED FIRE HYDRANT AND 6" GATE VALVE PER COA DWG 2315
- 4 PROPOSED PRIVATE FIRE HYDRANT AND 6" GATE VALVE PER COA DWG 2315 PAINTED ORANGE
- 5 FDC (TYP.)
- 6 PIV
- 7 8"x6" REDUCER
- 8 1" MULTI-USE DOMESTIC AND FIRE SERVICE LINE, PER ABCWUA STD DWG 2394 (TYP.)
- 9 DOUBLE 1" WATER METER PER COA DWG 2367 (TYP.)
- 10 SINGLE 1" WATER METER PER COA DWG 2367
- 11 EXISTING WATER METER
- 12 TIE INTO EXISTING 8" WATERLINE
- 13 EXISTING 4' DIA SANITARY SEWER MANHOLE TO REMAIN
- 14 PROPOSED SANITARY SEWER MANHOLE PER COA DWG 2107 AND 2110 (TYP.)
- 15 4" SANITARY SEWER SERVICE LINE (TYP.)
- 16 TIE INTO EXISTING 8" SANITARY SEWER LINE
- 17 EXISTING 10' OR 15' ABCWUA WATER LINE EASEMENT (02-19-2004, 2004C-056) TO BE VACATED
- 18 EXISTING 10' OR 15' ABCWUA WATER LINE EASEMENT (02-19-2004, 2004C-056) TO BE REMAIN
- 19 EXISTING 10' UNDERGROUND PUBLIC UTILITY EASEMENT (PUE) (07-01-2004, 2004C-201) TO BE VACATED
- 20 EXISTING 10' OVERHEAD PUBLIC UTILITY EASEMENT (PUE) (02-19-2004, 2004C-056) TO BE VACATED
- 21 EXISTING 10' OVERHEAD PUBLIC UTILITY EASEMENT (PUE) (02-19-2004, 2004C-056) TO BE REMAIN
- 22 EXISTING AMAFCA & MRGCD PRIVATE ACCESS EASEMENT (02-19-2004, 2004C-056) TO REMAIN
- 23 EXISTING PRIVATE CROSS ACCESS EASEMENT EXISTING ABCWUA PUBLIC WATER AND PUBLIC SANITARY SEWER EASEMENT (07-01-2004, 2004C-201) TO REMAIN
- 24 8" TEE, 8" GATE VALVE
- 25 REMOVE AND DISPOSE EXIST CAP, CONEC TO EXIST 8" WL
- 26 LIGHT POLE (TYP.)
- 27 REMOVE AND REPLACE EXISTING ASPHALT PAVING PER ABCWUA STD DWG #2405B

**GENERAL UTILITY NOTES:**

1. ALL WATER AND SEWER UTILITY WORK TO BE DONE IN ACCORDANCE WITH COA STANDARDS AND SPECIFICATIONS LATEST EDITION.
2. 4' MINIMUM BURY REQUIRED FOR ALL UTILITIES UNLESS OTHERWISE NOTED.
3. REFERENCE PLUMBING PLANS FOR WATER LINE RISER LOCATIONS. BACKFLOW PREVENTOR LOCATED INSIDE BUILDING
4. CLEAN OUTS ARE TO BE BUILT PER UNIFORM PLUMBING CODE STANDARDS AT LOCATIONS INDICATED AND AT MID RUN IF LONGER THAN 100'
5. ALL PLUMBING PIPE MATERIAL TO BE USED PER UPC.
6. FIRE LINE AND DOMESTIC WATERLINE MUST HAVE BACKFLOW PREVENTORS PER UPC. TO BE PROVIDED IN THE BUILDING
7. ALL EX. SD INLETS AND MH'S SHALL HAVE CONCRETE COLLARS POURED AND BE ADJUSTED TO FINISHED GRADE.
8. ALL EXCAVATION, TRENCHING AND SHORING ACTIVITIES MUST BE CARRIED-OUT IN ACCORDANCE WITH OSHA 29 CFR 1926.650 SUBPART F.
9. ALL UTILITY DISTANCES SHOWN ARE FOR REFERENCE ONLY.
10. PNM HAS NUMEROUS ELECTRIC FACILITIES AT THIS SITE CURRENTLY SERVING EXISTING CUSTOMERS. THE APPLICANT SHALL COORDINATE WITH PNM REGARDING THESE EXISTING FACILITIES. ANY RELOCATION, CHANGES OR REALIGNMENT OF EXISTING ELECTRIC UTILITIES WILL BE THE DEVELOPER EXPENSE. IN SOME CASES, RELOCATION OR CHANGES TO EXISTING FACILITIES MAY NOT BE FEASIBLE DUE TO PHYSICAL, USE OR SAFETY CLEARANCE CONSTRAINTS.
11. PNM WILL REVIEW ALL TECHNICAL NEEDS, ISSUES AND SAFETY CLEARANCES FOR ITS ELECTRIC POWER SYSTEMS. ANY EXISTING AND PROPOSED PUBLIC UTILITY EASEMENTS SHALL BE INDICATED ON THE SITE PLAN UTILITY SHEET PRIOR TO DRB REVIEW. PNM'S STANDARD FOR PUBLIC UTILITY EASEMENTS IS 10 FEET IN WIDTH TO ENSURE ADEQUATE, SAFE CLEARANCES.
12. SCREENING SHALL BE DESIGNED TO ALLOW FOR ACCESS TO UTILITY FACILITIES. IT IS NECESSARY TO PROVIDE ADEQUATE CLEARANCE OF TEN FEET SURROUNDING ALL GROUND-MOUNTED UTILITIES FOR SAFE OPERATION, MAINTENANCE AND REPAIR PURPOSES.

**INSPECTION NOTE**

CONTRACTOR SHALL CONSULT THE LOCAL BUILDING DEPARTMENT OFFICIALS FOR ANY PLAN REVIEW, PERMITTING REQUIREMENTS OR BUILDING CODE INSPECTIONS THAT MAY BE REQUIRED TO ENFORCE LOCAL, STATE OR NATIONAL BUILDING CODES PRIOR TO CONSTRUCTING IMPROVEMENTS

CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

**GENERAL NOTE:**

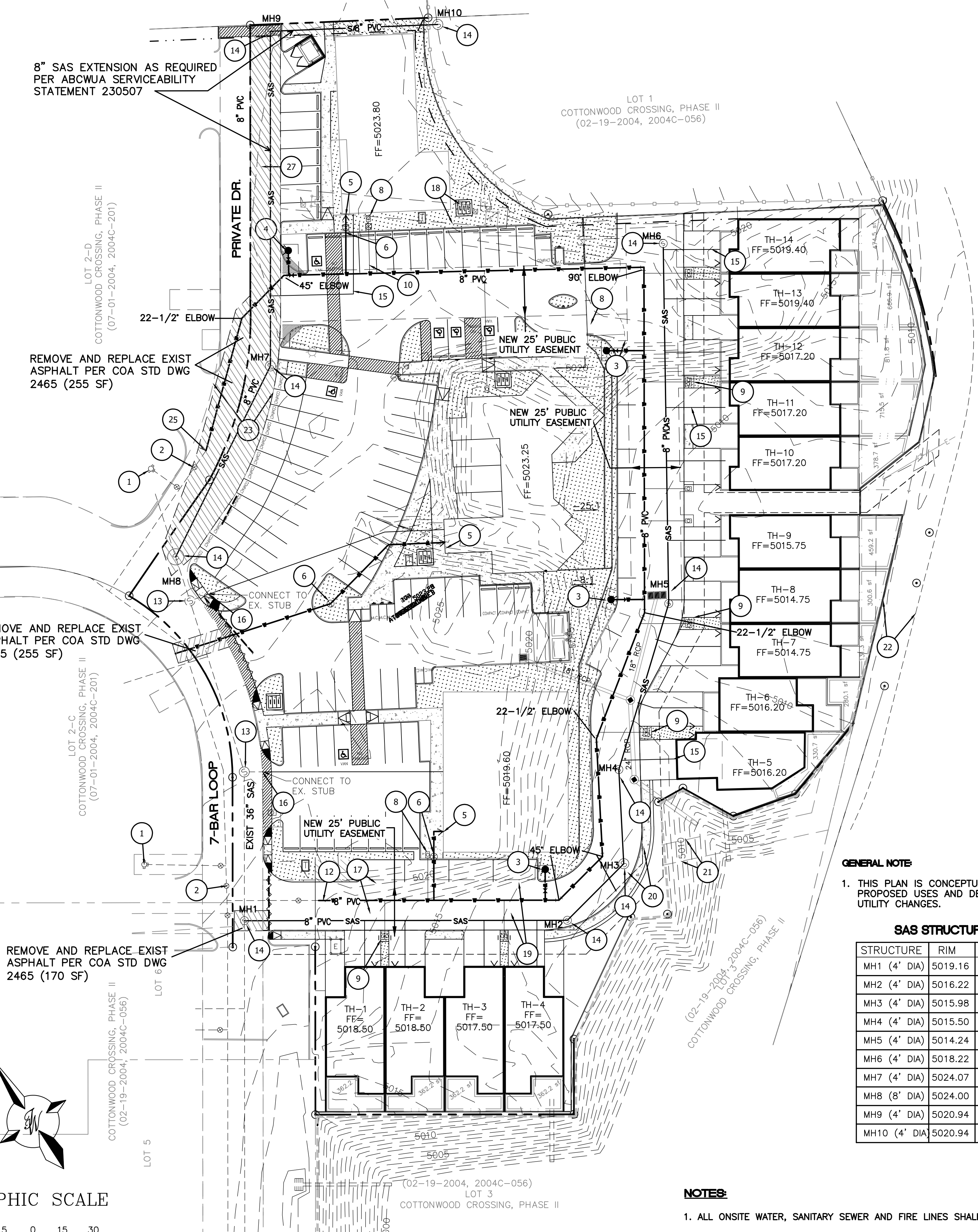
1. THIS PLAN IS CONCEPTUAL ONLY TO SHOW PROPOSED USES AND DEPICT CONCEPTUAL UTILITY CHANGES.

**SAS STRUCTURE TABLE**

STRUCTURE	RIM	INV(IN)	INV(OUT)
MH1 (4' DIA)	5019.16	5006.60	5006.50
MH2 (4' DIA)	5016.22	5007.88	5007.78
MH3 (4' DIA)	5015.98	5008.30	5008.20
MH4 (4' DIA)	5015.50	5008.75	5008.65
MH5 (4' DIA)	5014.24	5009.45	5009.35
MH6 (4' DIA)	5018.22	---	5012.00
MH7 (4' DIA)	5024.07	5009.10	5009.00
MH8 (8' DIA)	5024.00	5007.78	5007.68
MH9 (4' DIA)	5020.94	5014.10	5014.00
MH10 (4' DIA)	5020.94	---	5014.94

**NOTES:**

1. ALL ONSITE WATER, SANITARY SEWER AND FIRE LINES SHALL BE DEEMED PRIVATE.
2. THE PRIVATE FIRE HYDRANTS, INDICATED IN THE UTILITY PLAN, SHALL BE PAINTED SAFETY ORANGE.
3. BUILDING MOUNTED SITE LIGHTING FIXTURES TO COMPLY WITH NEW MEXICO NIGHT SKY ORDINANCE.

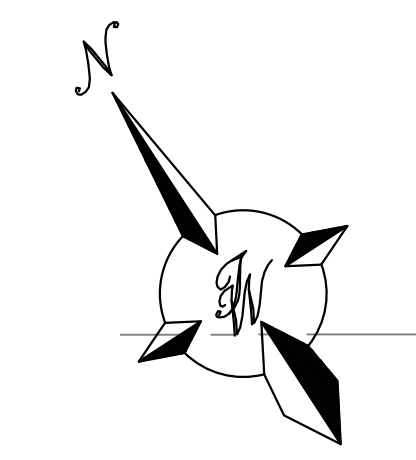


8" SAS EXTENSION AS REQUIRED PER ABCWUA SERVICEABILITY STATEMENT 230507

REMOVE AND REPLACE EXIST ASPHALT PER COA STD DWG 2465 (255 SF)

REMOVE AND REPLACE EXIST ASPHALT PER COA STD DWG 2465 (255 SF)

REMOVE AND REPLACE EXIST ASPHALT PER COA STD DWG 2465 (170 SF)



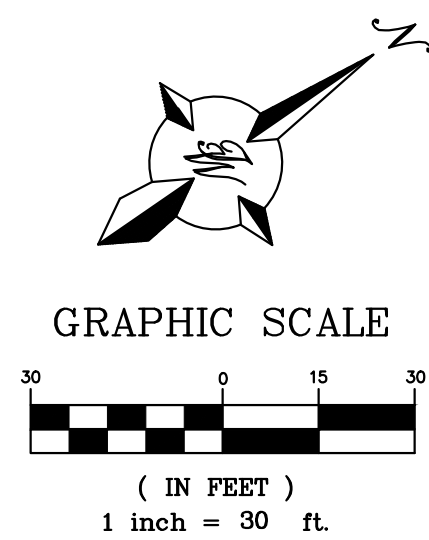
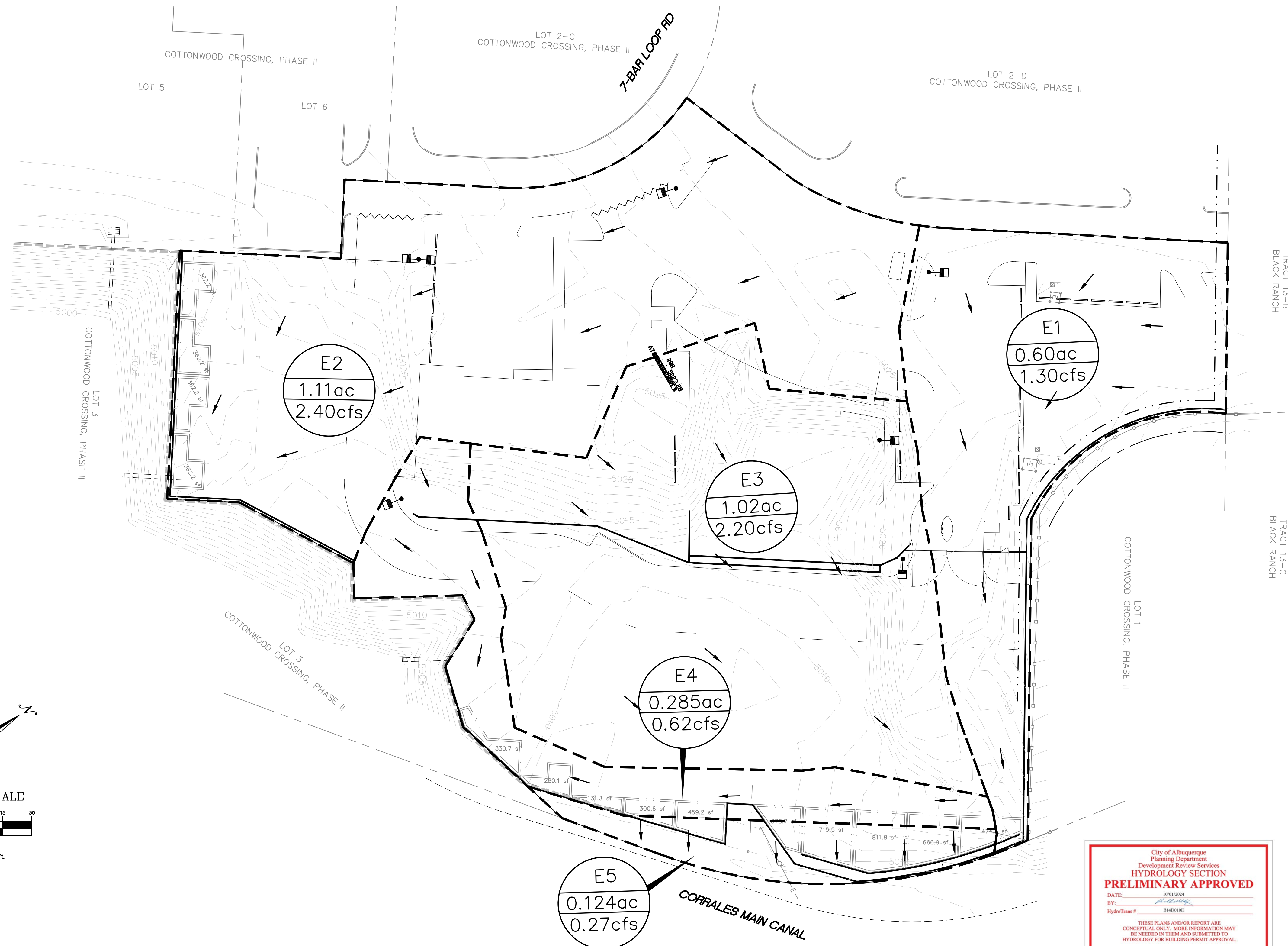
GRAPHIC SCALE



	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/as
	<b>CONCEPTUAL</b> <b>MASTER UTILITY PLAN</b>	DATE 09-25-24
		DRAWING 2023004-MU
SHEET # <b>11</b>		JOB # 2023004

**CAUTION**

ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



City of Albuquerque  
 Planning Department  
 Development Review Services  
**HYDROLOGY SECTION**  
**PRELIMINARY APPROVED**  
 DATE: 08/01/2024  
 BY: [Signature]  
 HydroTime # 8140000  
 THESE PLANS AND/OR REPORT ARE  
 CONCEPTUAL ONLY. MORE INFORMATION MAY  
 BE NEEDED IN THEM AND SUBMITTED TO  
 HYDROLOGY FOR BUILDING PERMIT APPROVAL.

CONCEPTUAL ONLY. NOT  
 FOR CONSTRUCTION

ENGINEER'S SEAL  RONALD R. BOHANNAN P.E. #7868	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/as
	<b>EXISTING BASIN</b>	DATE 09-25-24
	 <b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE, ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-GR
		SHEET # <b>7</b>
		JOB # 2023004



**AMAFCA GENERAL CONSTRUCTION NOTES REQUIREMENTS**

AMAFCA'S PROJECT MANAGER SHALL BE NOTIFIED BY EMAIL AT LICENSING@AMAFCA.ORG OR BY PHONE AT (505) 884-2215 AT LEAST TEN (10) DAYS PRIOR TO START OF ANY WORK IN AMAFCA ROW/EASEMENT.

AMAFCA'S PROJECT MANAGER SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY CONCRETE INSTALLATION TO ALLOW FOR INSPECTION OF THE REBAR AND SUBSURFACE PREPARATION.

AMAFCA'S PROJECT MANAGER SHALL BE NOTIFIED BY EMAIL AT LICENSING@AMAFCA.ORG OR BY PHONE AT (505) 884-2215 AT LEAST TEN (10) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION OF THE WORK WITHIN THE AMAFCA RIGHT-OF-WAY OR EASEMENT.

NO WORK WILL BE PERFORMED IN THE AMAFCA ROW/EASEMENT BETWEEN MAY 15 AND OCTOBER 15 WITHOUT PRIOR WRITTEN AUTHORIZATION FROM AMAFCA.

ALL SUBGRADE, BACKFILL AND EMBANKMENT SHALL BE COMPACTED TO 95% (±2% OF OPTIMUM MOISTURE PER ASTM D-1557) WITHIN THE AMAFCA ROW/EASEMENT. TESTING REPORTS SHALL BE PROVIDED TO AMAFCA AT THE FINAL INSPECTION.

CERTIFIED AS-BUILT PLANS SHALL BE SUBMITTED TO AMAFCA FOR ANY CONSTRUCTION WITHIN THE AMAFCA ROW/EASEMENT BEFORE FINAL WRITTEN ACCEPTANCE OR ACKNOWLEDGEMENT OF THE PROJECT.

ALL DISTURBED GROUND AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SECTION 1012 NATIVE GRASS SEEDING, AS CURRENTLY UPDATED.

ANY EXISTING SURVEY CONTROL MONUMENTS THAT ARE DISTURBED OR DAMAGED AS A RESULT OF THE CONSTRUCTION OR MAINTENANCE ACTIVITIES, SHALL BE REPLACED BY A LICENSED SURVEYOR IN NEW MEXICO AT THE CONTRACTOR'S EXPENSE. AMAFCA SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY MONUMENT PLACEMENT.

THE CONTRACTOR SHALL MAINTAIN OR REPAIR ALL AMAFCA INFRASTRUCTURE INCLUDING BUT NOT LIMITED TO FENCING, GATES, SIGNAGE, AND ALL OTHER FACILITIES. ALL REPAIRS WILL BE PERFORMED TO RETURN FACILITIES TO ORIGINAL OR AMAFCA-APPROVED CONDITION.

DUST SUPPRESSION SHALL BE MAINTAINED SEVEN (7) DAYS A WEEK DURING CONSTRUCTION ACTIVITY. DURING PERIODS OF CONSTRUCTION INACTIVITY, THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN DUST CONTROL MEASURES.

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TRACK-OUT REDUCTION MEASURES AND CLEAN UP ANY TRACK-OUT OF MATERIAL. THE CONTRACTOR SHALL CLEAN UP ANY SOIL DEPOSITS OR SPILLS ON ALL PAVED ROADS ALONG HAUL ROUTES.

THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC AND PEDESTRIAN CONTROL.

AT THE END OF EACH WORKDAY AND DURING TIMES OF CONSTRUCTION INACTIVITY, THE CONTRACTOR SHALL ENSURE ALL ACCESS GATES TO THE FACILITY ARE CLOSED AND LOCKED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRASH AND DEBRIS REMOVAL IN THE AREA OF THE CONSTRUCTION ACTIVITY. ALL GRAFFITI WILL BE REMOVED OR APPROPRIATELY COVERED UP WITHIN ONE DAY (24 HOURS).

ANY FINES IMPOSED AGAINST AMAFCA DUE TO THE CONTRACTOR'S ACTIVITIES THAT VIOLATE THE CONDITIONS OF ANY REQUIRED DUST OR STORMWATER QUALITY PERMIT SHALL BE REIMBURSED BY THE CONTRACTOR.

ANY FINES LEVIED AGAINST THE CONTRACTOR DUE TO ITS ACTIVITIES THAT VIOLATE ANY LOCAL STATUTES OR REQUIREMENTS SHALL BE PAID BY THE CONTRACTOR.

IF AMAFCA IS FINED AS BEING THE LANDOWNER OF THE PROPERTY, DUE TO THE CONTRACTOR'S ACTIVITIES, THE CONTRACTOR SHALL REIMBURSE AMAFCA FOR ALL COSTS ASSOCIATED WITH PAYMENT OF THE FINE BY AMAFCA.

AT THE SUBSTANTIAL COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL RESTORE TO CONDITIONS AS BEFORE CONSTRUCTION OR IMPROVE TO AMAFCA'S REQUIREMENT THE MAINTENANCE ACCESS ROADS IMPACTED BY THE PROJECT INCLUDING ALL NECESSARY GRADING AND TOP DRESSING OF THE ROAD BASE OR GRAVEL MATERIAL AT THE DIRECTION OF AUTHORIZED AMAFCA PERSONNEL. ANY CONCRETE, ASPHALT OR OTHER DEBRIS FOUND WITHIN THE CONSTRUCTION AREA WILL BE TRANSPORTED OFF SITE AND APPROPRIATELY DISPOSED OF BY THE CONTRACTOR AT NO COST TO AMAFCA.

**OPTIONAL DEPENDING ON FACILITY:**

A TEMPORARY CONSTRUCTION AND ACCESS LICENSE IS REQUIRED TO BE EXECUTED PRIOR TO WORK COMMENCING IN AMAFCA ROW/EASEMENT

THE MAXIMUM WHEEL LOAD ALLOWED IN THE AMAFCA CHANNEL SHALL BE TWELVE THOUSAND (12,000) POUNDS.

NO TRACKED VEHICLES WILL BE ALLOWED IN AMAFCA HARD-LINED OR CONCRETE CHANNEL WITHOUT WRITTEN PERMISSION FROM AMAFCA.

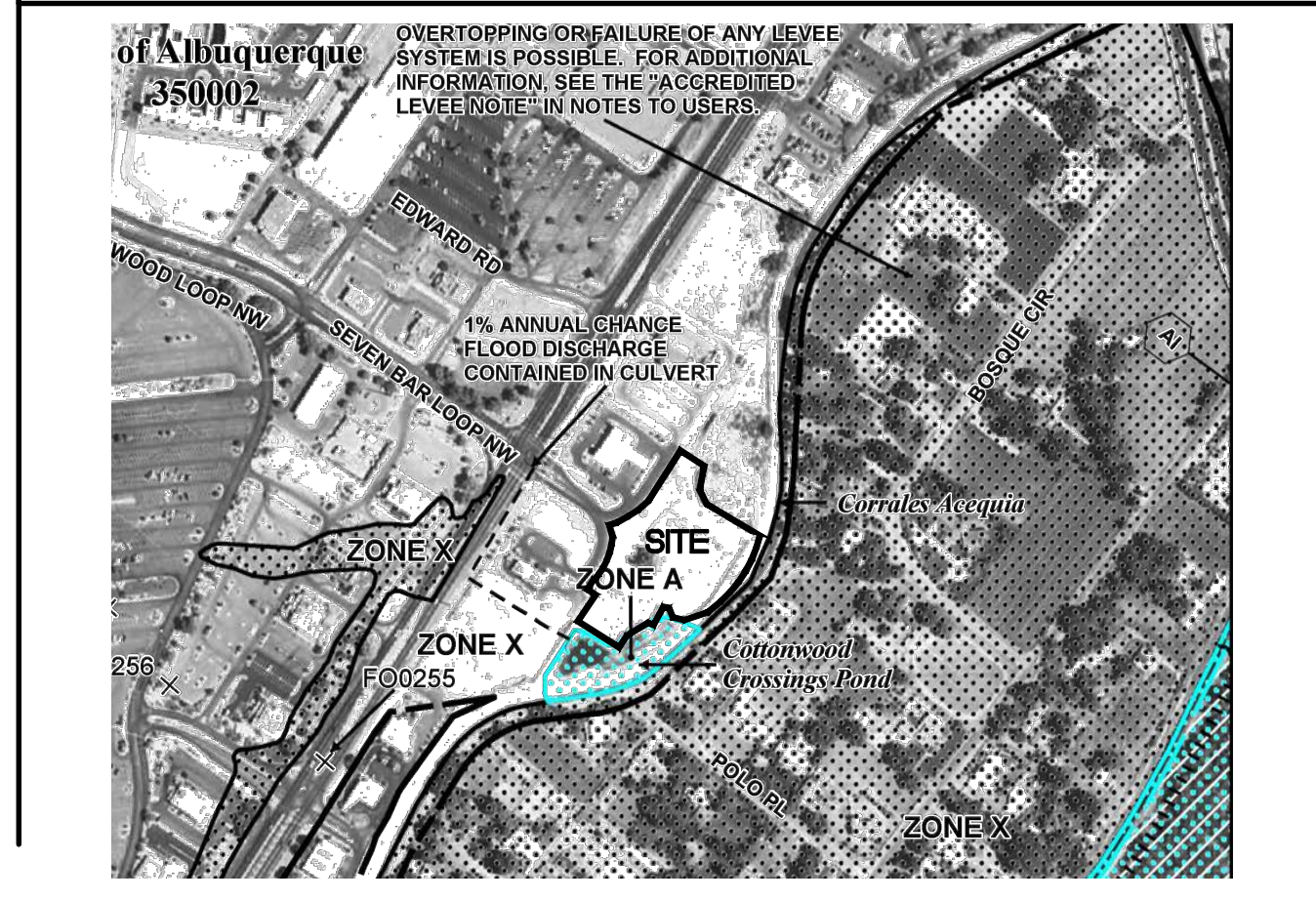
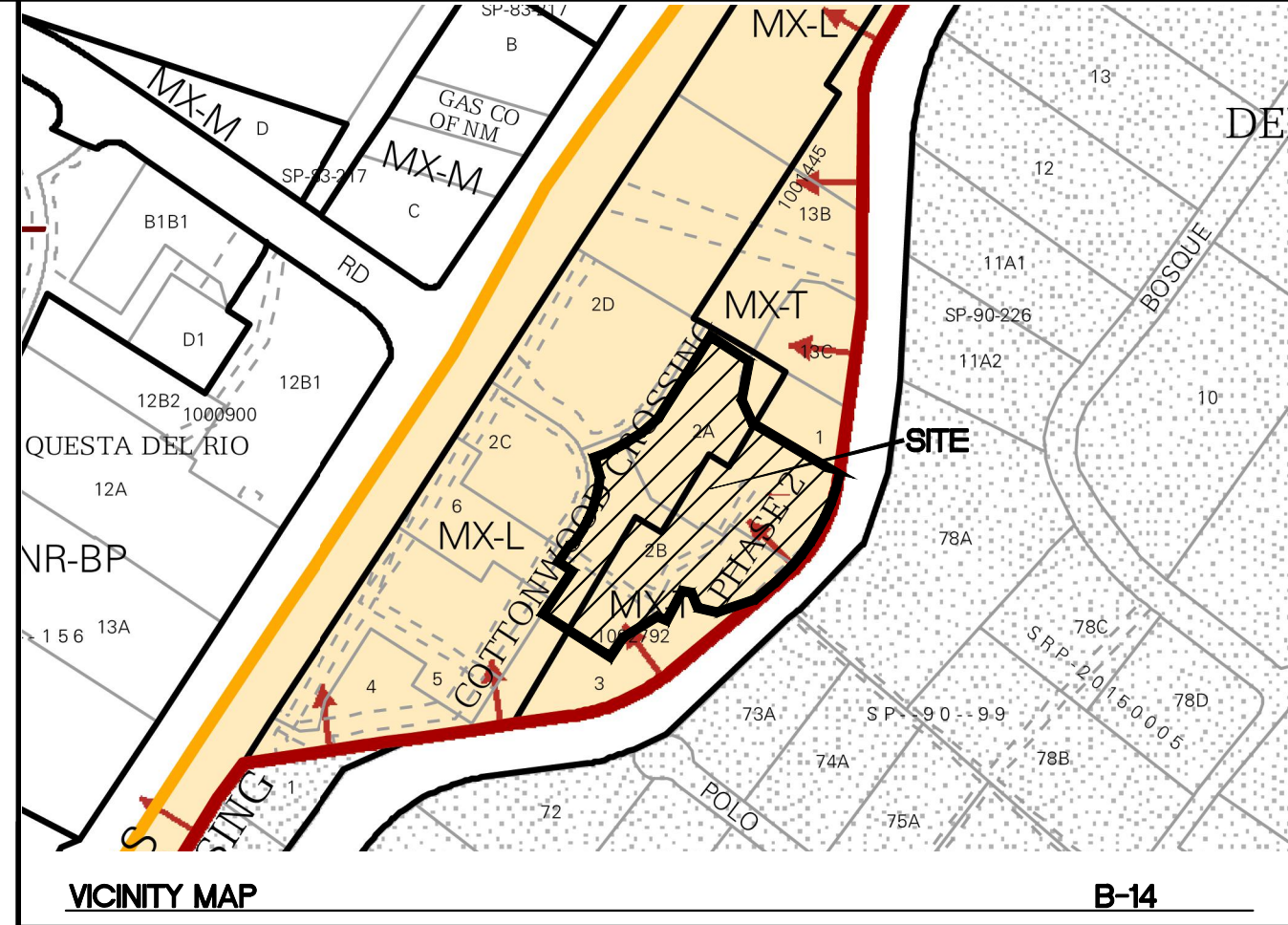
GRANES OPERATING WITH OUTRIGGERS IN THE CHANNEL SHALL LIMIT THE OUTRIGGER FOOTPRINT LOAD AREA TO LESS THAN TWELVE THOUSAND (12,000) POUNDS.

Stormwater Quality Volume					
Acres	SF	Rainfall (in)	Rainfall (ft)	SWQV (CF)	SWQV (Acre-Ft)
1.76	76,779.22	0.42	0.035	2,687.3	0.06

Proposed Conditions - Updated Major Site Plan - Contributing																	
Basin ID	Descriptor	Area (sf)	Area (acres)	Basin Descriptions				100-Year Excess Precipitation			10-Year Excess Precipitation						
				Area (sq miles)	Treatment A %	Treatment B %	Treatment C %	Treatment D %	Weighted E (in)	Volume (ac-ft)	Flow (cfs)	Weighted E (in)	Volume (ac-ft)	Flow (cfs)			
BASIN #1	Undeveloped	101,659.50	2.334	0.00365	0%	0.00	15%	0.35	0%	85%	1.98	2.01	0.39	8.93	1.25	0.24	5.38
BASIN #2	Popeyes	25,915.70	0.595	0.00093	0%	0.00	15%	0.09	0%	85%	0.51	2.01	0.10	2.28	1.25	0.06	1.37
BASIN #3	Take 5	34,146.13	0.784	0.00122	0%	0.00	15%	0.12	0%	85%	0.67	2.01	0.13	3.00	1.25	0.08	1.81
BASIN #4	Nusenda	60,271.00	1.384	0.00216	0%	0.00	15%	0.21	0%	85%	1.18	2.01	0.23	5.29	1.25	0.14	3.19
BASIN #5	7 Bar - B, C, TH 8-14	68,859.35	1.581	0.00247	0%	0.00	15%	0.24	0%	85%	1.34	2.01	0.27	6.05	1.25	0.17	3.65
BASIN #6	7 Bar - Upper Inlet	8,742.27	0.201	0.00031	0%	0.00	15%	0.03	0%	85%	0.17	2.01	0.03	0.77	1.25	0.02	0.46
BASIN #7	Building A, TH 1-7	12,726.87	0.292	0.00046	0%	0.00	15%	0.04	0%	85%	0.25	2.01	0.05	1.12	1.25	0.03	0.67
BASIN #9	AMAFCA Pond	33,203.30	0.762	0.00119	0%	0.00	100%	0.00	0%	100%	0.76	2.24	0.14	3.14	1.43	0.09	1.96
<b>Total</b>		<b>345,524.12</b>	<b>7.932</b>	<b>0.01239</b>	<b>0.00</b>	<b>0.00</b>	<b>1.08</b>	<b>0.00</b>	<b>0.00</b>	<b>6.86</b>	<b>V<sub>360</sub> = 1.35</b>	<b>30.57</b>	<b>0.84</b>	<b>18.49</b>			

Non-contributing Basins (Sheet flow to Corrales Main Canal or Retained On-Site)																	
Basin ID	Descriptor	Area (sf)	Area (acres)	Basin Descriptions				100-Year Excess Precipitation			10-Year Excess Precipitation						
				Area (sq miles)	Treatment A %	Treatment B %	Treatment C %	Treatment D %	Weighted E (in)	Volume (ac-ft)	Flow (cfs)	Weighted E (in)	Volume (ac-ft)	Flow (cfs)			
OFF-SITE BASIN #5	Coors Blvd	14,353.10	0.330	0.00051	0%	0.00	0%	0.00	0%	100%	0.33	2.24	0.06	1.36	1.43	0.04	0.85
BASIN #8	NR-PO-B	18,807.10	0.432	0.00067	0%	0.00	100%	0.43	0%	0.00	0.00	0.73	0.03	0.93	0.26	0.01	0.35
Access Easement Basins	Access Easement Basins	3,940.00	0.090	0.00014	0%	0.00	0%	0.00	100%	0.09	0.00	0.95	0.01	0.26	0.43	0.00	0.13
Basin #11	TH Backyards	11,121.00	0.255	0.00040	0%	0.00	100%	0.26	0%	0.00	0.00	0.73	0.02	0.55	0.26	0.01	0.21
<b>Total</b>		<b>48,221.20</b>	<b>1.107</b>	<b>0.00173</b>	<b>0.00</b>	<b>0.00</b>	<b>0.69</b>	<b>0.00</b>	<b>0.00</b>	<b>0.33</b>	<b>V<sub>360</sub> = 0.11</b>	<b>3.10</b>	<b>0.06</b>	<b>1.54</b>			

Existing Contributing Off-Site Basins																	
Basin ID	Descriptor	Area (sf)	Area (acres)	Basin Descriptions				100-Year Excess Precipitation			10-Year Excess Precipitation						
				Area (sq miles)	Treatment A %	Treatment B %	Treatment C %	Treatment D %	Weighted E (in)	Volume (ac-ft)	Flow (cfs)	Weighted E (in)	Volume (ac-ft)	Flow (cfs)			
OFF-SITE BASIN #1	Coors Blvd	33,734.50	0.774	0.00121	0%	0.00	0%	0.00	0%	100%	0.77	2.24	0.14	3.19	1.43	0.09	1.99
OFF-SITE BASIN #2	Coors Blvd	15,064.40	0.346	0.00054	0%	0.00	0%	0.00	0%	100%	0.35	2.24	0.06	1.42	1.43	0.04	0.89
OFF-SITE BASIN #3	Coors Blvd	11,158.80	0.256	0.00040	0%	0.00	0%	0.00	0%	100%	0.26	2.24	0.05	1.06	1.43	0.03	0.66
OFF-SITE BASIN #4	Coors Blvd	7,793.50	0.179	0.00028	0%	0.00	0%	0.00	0%	100%	0.18	2.24	0.03	0.74	1.43	0.02	0.46
<b>Total</b>		<b>67,751.20</b>	<b>1.555</b>	<b>0.00243</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1.56</b>	<b>V<sub>360</sub> = 0.29</b>	<b>6.41</b>	<b>0.19</b>	<b>4.00</b>			

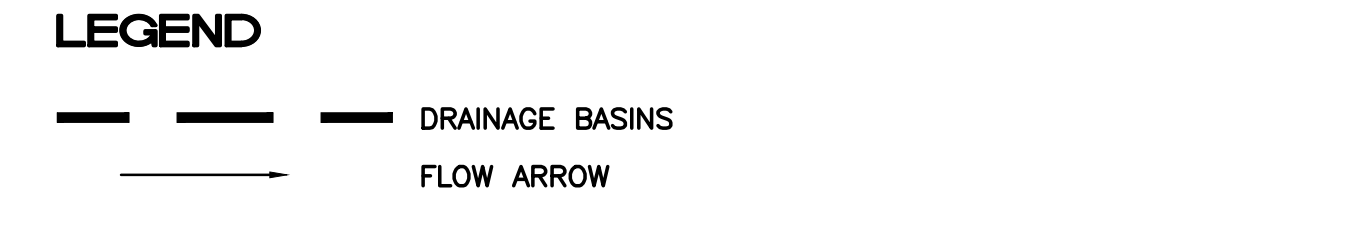
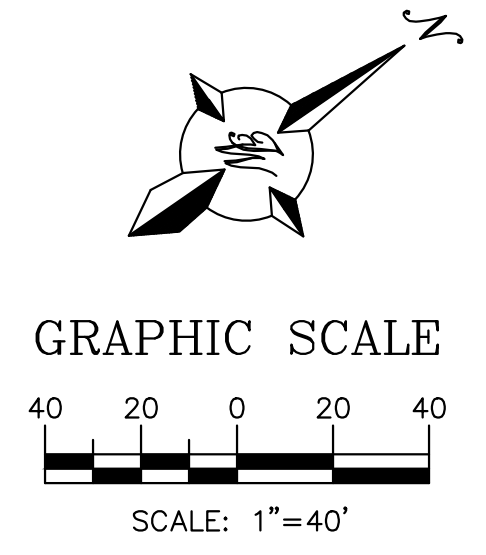


**LEGAL DESCRIPTION**

LT 2-A LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5908 AC

LT 2-B LOTS 2-A, 2-B, 2-C AND 2-D COTTONWOOD CROSSING PHASE II (BEING A REPLAT OF TRACT 2 COTTONWOOD CROSSING PHASE II) CONT 1.5483 AC

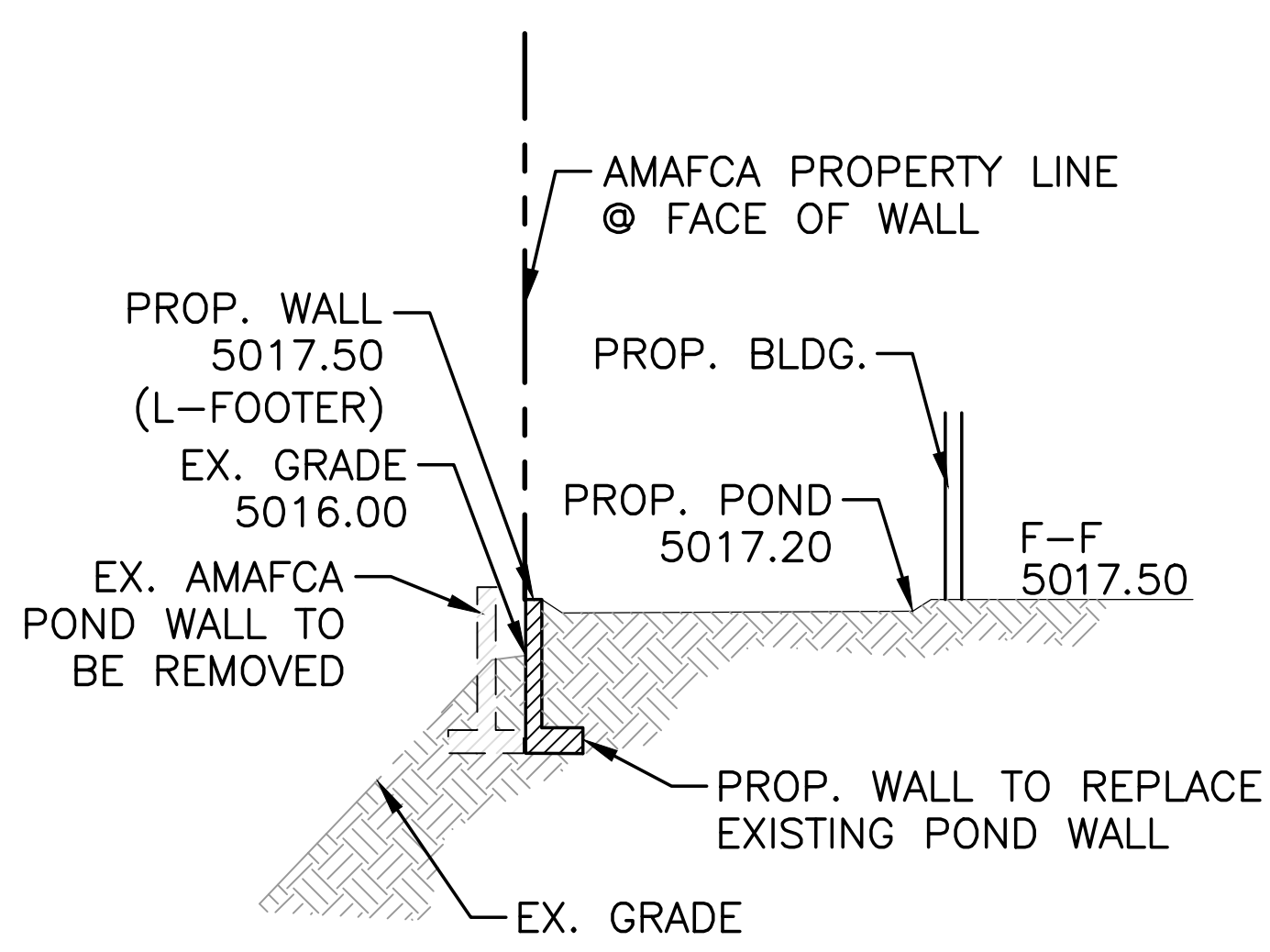
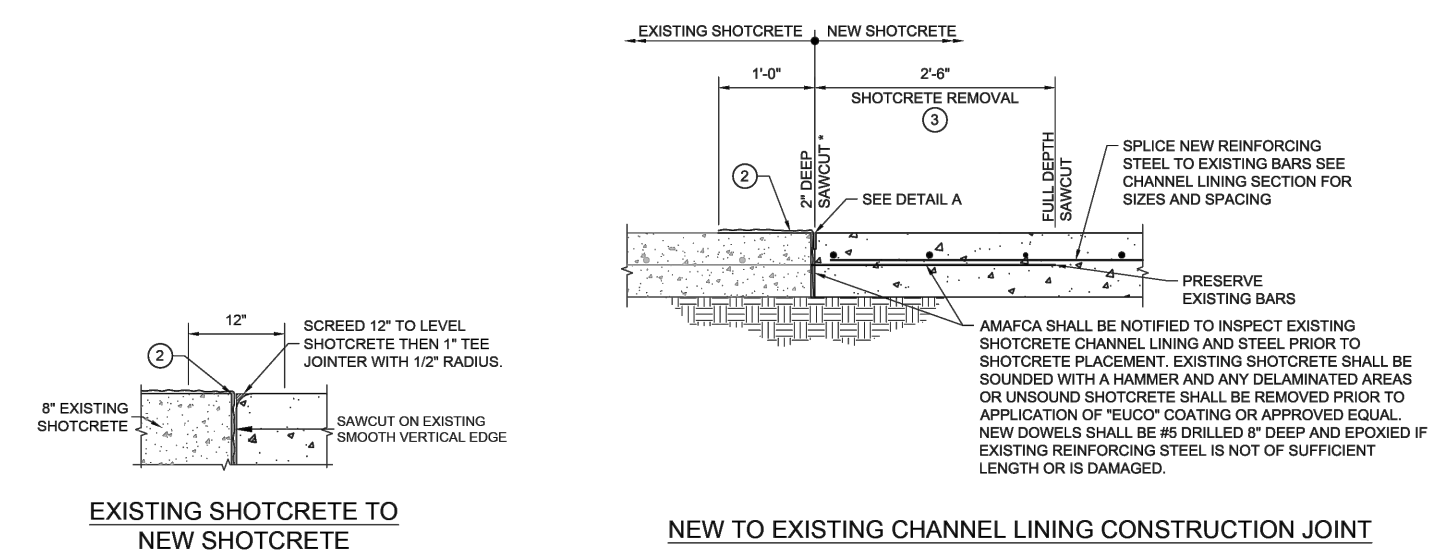
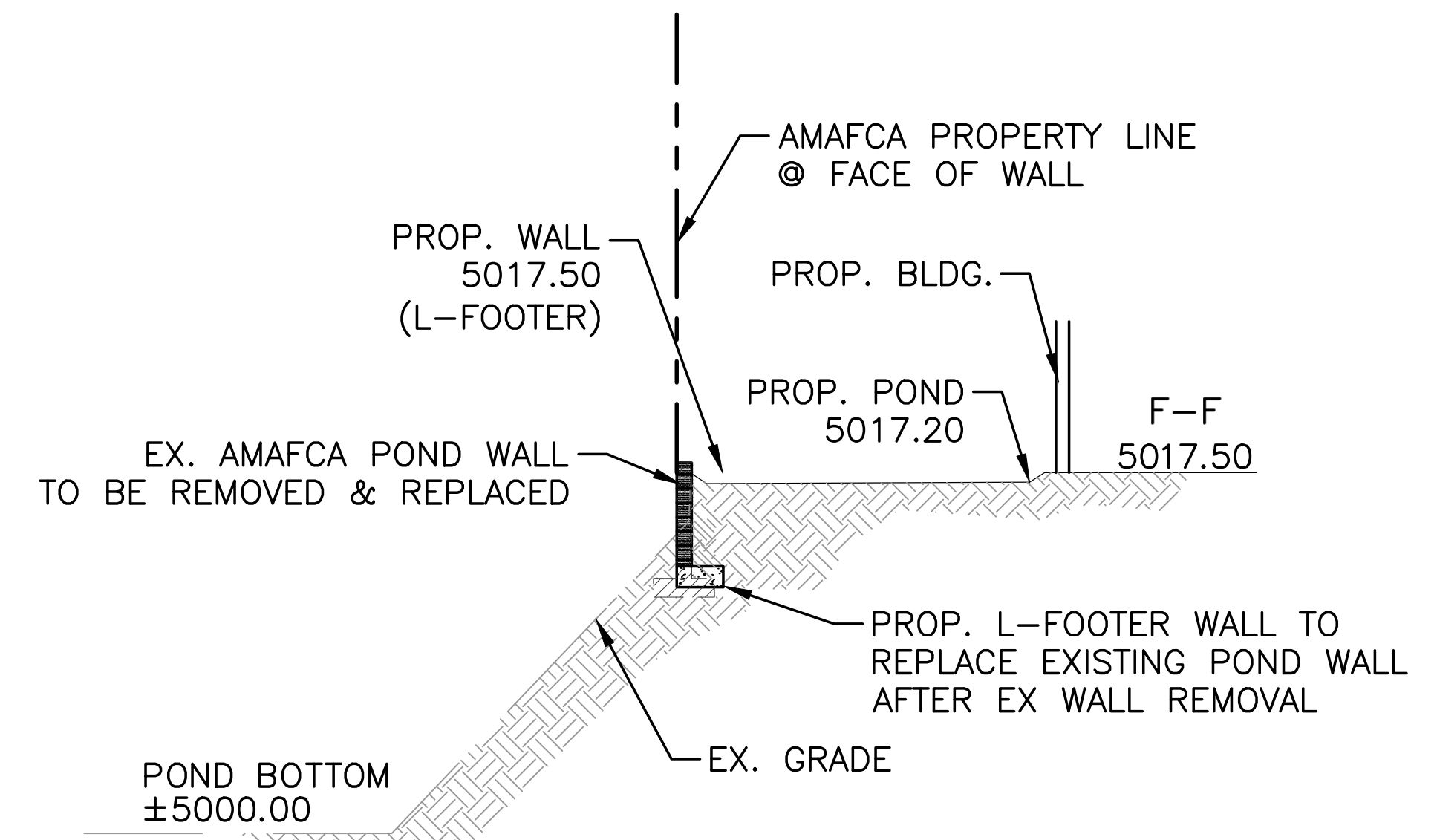
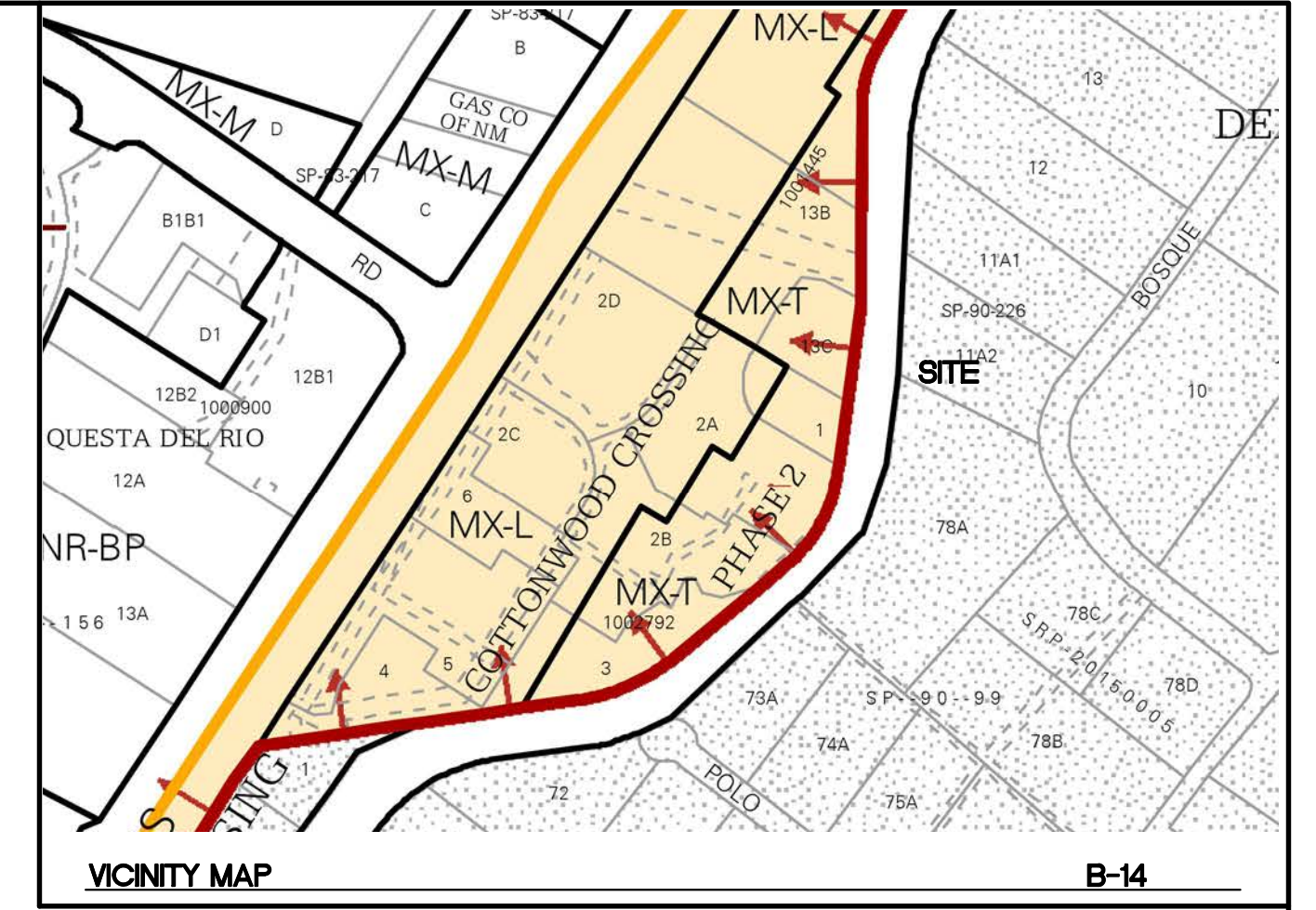
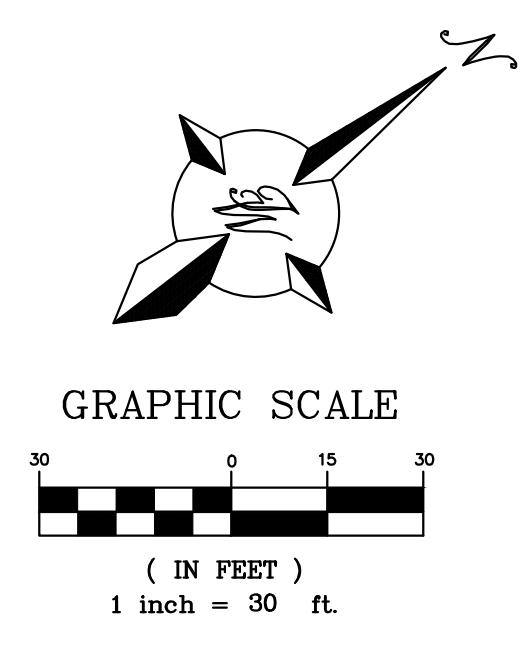
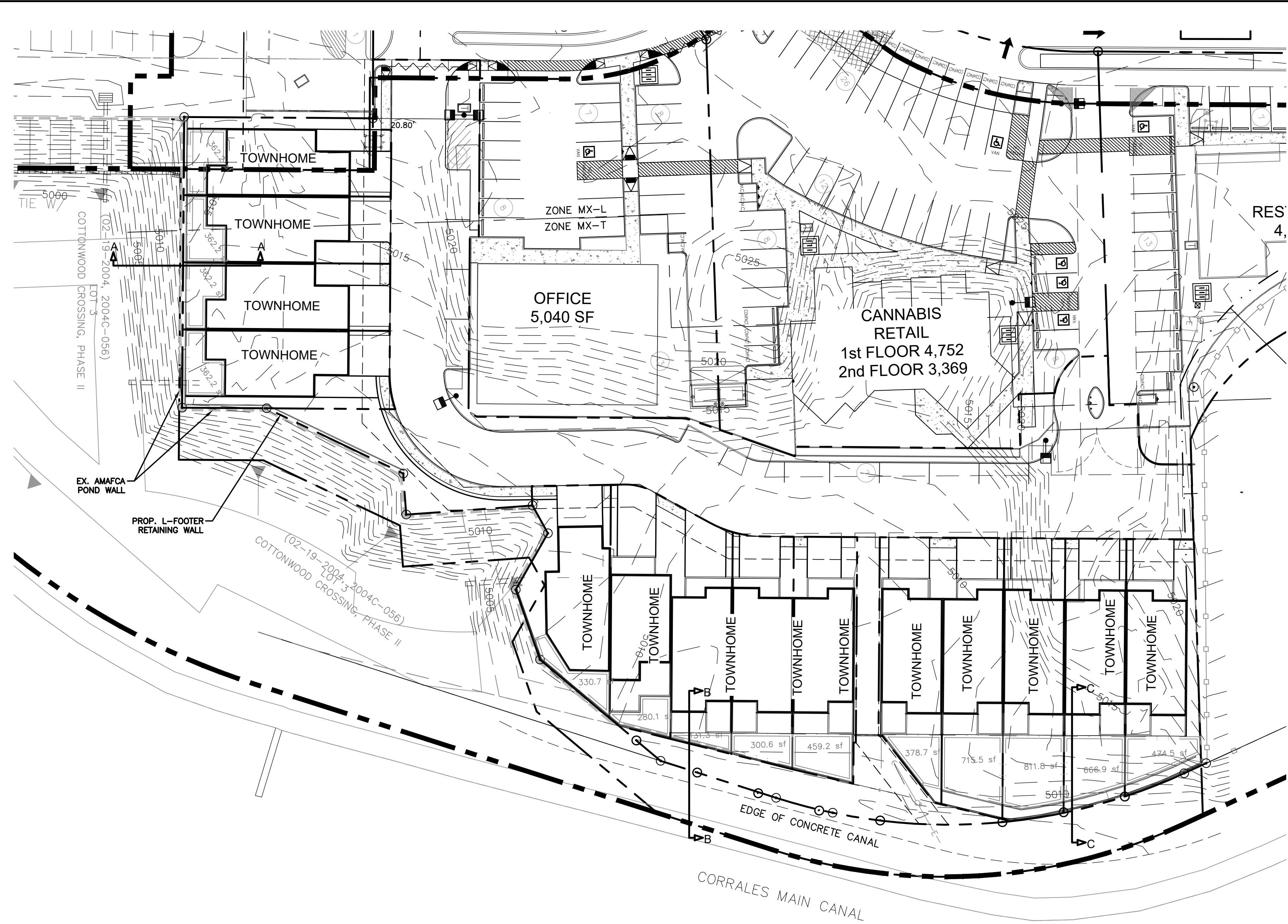
3.20 ACRES OF THE CONTROLLING SITE DEVELOPMENT PLAN



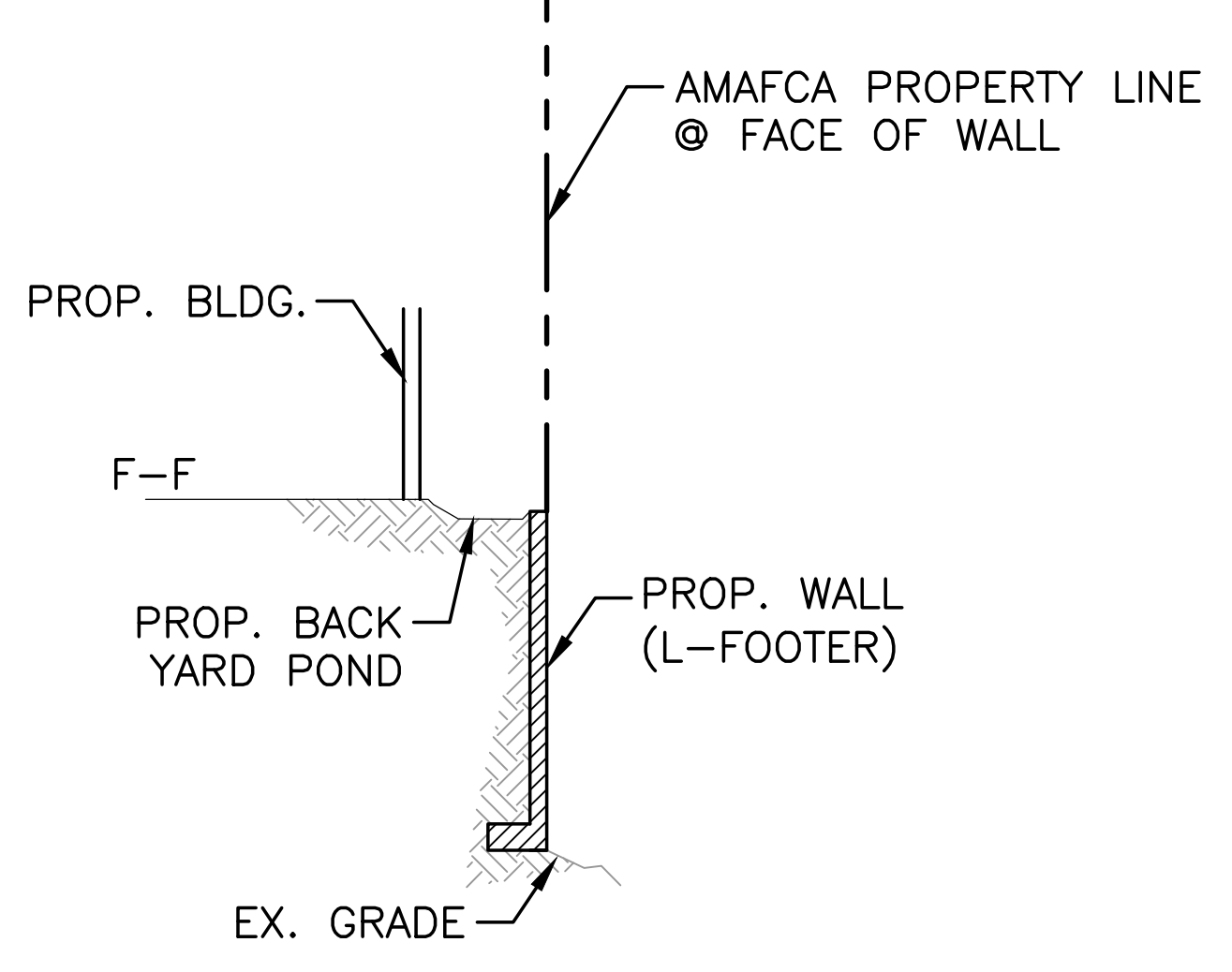
CONCEPTUAL ONLY, NOT FOR CONSTRUCTION

	<b>ENGINEER'S SEAL</b> RETAIL AT 7 BAR ALBUQUERQUE, NM	DRAWN BY pm/os
	<b>PROPOSED BASIN</b>	DATE 09-25-24
	5571 MIDWAY PARK PL NE, ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING 2023004-GR
09-25-24 RONALD R. BOHANNAN P.E. #7868	SHEET # <b>8</b>	JOB # 2023004

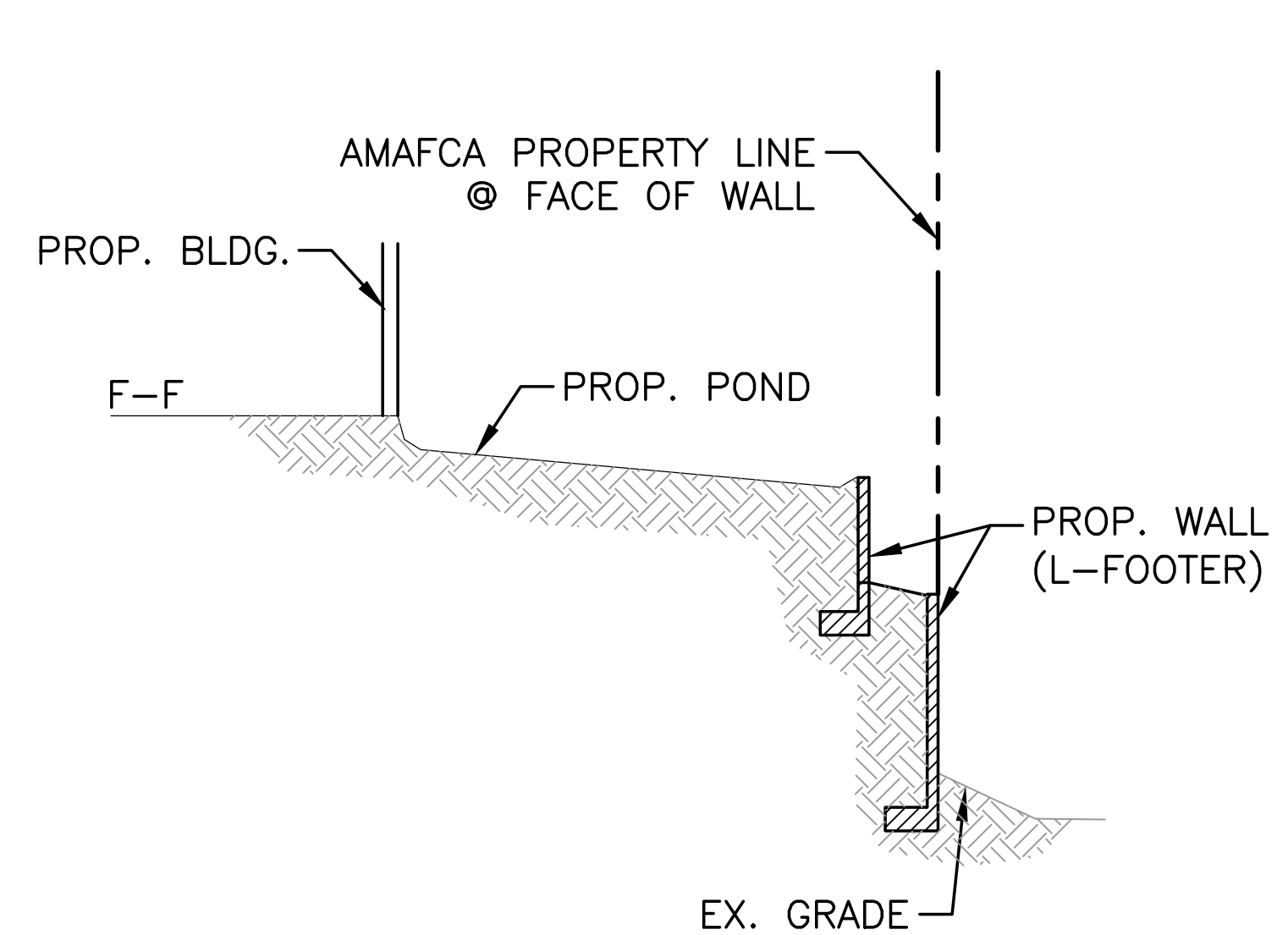




SECTION A-A



SECTION B-B



SECTION C-C

CONCEPTUAL ONLY. NOT FOR CONSTRUCTION

	<b>RETAIL AT 7 BAR</b> ALBUQUERQUE, NM	DRAWN BY pm/as
	<b>CROSS SECTIONS AT POND AND AT CHANNEL</b>	DATE 09-25-24
09-25-24 RONALD R. BOHANNAN P.E. #7868	<b>TIERRA WEST, LLC</b> 5571 MIDWAY PARK PL NE ALBUQUERQUE, NEW MEXICO 87109 (505) 858-3100 www.tierrowestllc.com	DRAWING
		SHEET # <b>EX-1</b>
		JOB # 2023004

Y:\2023\2023004 Retail @ 7 Bar\dwg\Construction\2023004\_Pond Sections.dwg, Sep. 25, 2024 11:06am