

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

August 9, 2021

Robert Fierro, P.E.
Fierro & Company
6300 Montano Rd. NW
Albuquerque, NM 87120

**RE: Albuquerque Ranch Estates, Unit II
Grading and Drainage Plans
Engineer's Stamp Date: 07/08/21
Hydrology File: E22D002**

Dear Mr. Fierro:

Based upon the information provided in your submittal received 07/08/2021, the Grading and Drainage Plans are approved for action by the DRB for Platting.

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, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: _____ **Building Permit #:** _____ **Hydrology File #:** _____

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: _____

City Address: _____

Applicant: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Owner: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

TYPE OF SUBMITTAL: _____ PLAT (11# OF LOTS) _____ RESIDENCE _____ DRB SITE _____ ADMIN SITE

IS THIS A RESUBMITTAL?: _____ Yes _____ No

DEPARTMENT: _____ TRAFFIC/ TRANSPORTATION _____ HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

- _____ ENGINEER/ARCHITECT CERTIFICATION
- _____ PAD CERTIFICATION
- _____ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ DRAINAGE MASTER PLAN
- _____ DRAINAGE REPORT
- _____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
- _____ ELEVATION CERTIFICATE
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT (TCL)
- _____ TRAFFIC IMPACT STUDY (TIS)
- _____ OTHER (SPECIFY) _____
- _____ PRE-DESIGN MEETING?

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- _____ BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY
- _____ PRELIMINARY PLAT APPROVAL
- _____ SITE PLAN FOR SUB'D APPROVAL
- _____ SITE PLAN FOR BLDG. PERMIT APPROVAL
- _____ FINAL PLAT 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
- _____ FLOODPLAIN DEVELOPMENT PERMIT
- _____ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ **By:** _____

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



Introduction

The site is 4.6 acres and located within Albuquerque Ranch Estates near the intersection of Royal Oak Street and McKay Way NE. It is bound north by an apartment complex, East by Tramway Boulevard NE, South by McKay Way, and West by Royal Oak Street NE. An 11 lot subdivision is being proposed. Supporting infrastructure includes a new road, storm drain, and detention pond. The purpose of this Grading & Drainage Plan is to 1) provide hydrologic and hydraulic analysis of the existing and proposed condition, 2) satisfy the Stormwater Quality Volume requirement, and 3) seek approval to facilitate the approval of preliminary and final plan approvals.

Methodology

Hydrologic procedures presented in Chapter 6 of City of Albuquerque's the Development Process Manual, effective as of June 8, 2020 were followed.

Existing Condition

The site outlets it's runoff to Royal Oak Street and AMAFCA's property located south of Basin 102. The site does not receive offsite flows. The existing site was most recently used for a business. An existing driveway and parking lot is currently located with Basin 101. An approximately 4,000 sq.ft. building has been removed. A Grading & Drainage Plan for the existing site was approved in 1994 under file E22-D13. This plan, Basin 100 and Basin 101 as shown on this sheet are allowed to drain to Royal Oak Street NE. Royal Oak Street ends just north of Walkerway NE. This intersection is higher in elevation than the vacant area at the NW corner; therefore, runoff puddles before entering Royal Oak Street. Refer to the Existing Basin Map on this sheet for drainage pattern and runoff rates.

Proposed Condition

An 11 lot subdivision is proposed on the 4.6 acre site. Mellow Way is a new road which will loop and connect to Royal Oak Street NE and McKay Way NE. Drainage improvements include a valley gutter, concrete rundown, and a detention pond. Refer to the Proposed Basin Map. As in the existing condition, the site will discharge at the same two location: 1) Royal Oak Street and 2) AMAFCA's facility located south of Basin 203. Building pads vary from approximately 4,000 sq. ft. to 6,200 sq. ft. Refer to the "Lot Land Treatment Percentage Table" for the allowable land treatments of each lot.

Basin 200 drainage pattern and flow rates will not change from existing

Basin 201's drainage pattern remains the same as under the existing. The excess runoff from this Basin is not a concern since the pond in Basin 202 will store the site's excess runoff. Storing the Storm Water Quality Volume in this Basin is challenging due to the lot sizes and existing road frontages. A payment-in-lieu is being requested for the SWQV in this Basin.

Basin 202 will discharge to the proposed detention pond located at the NW corner of the site. The detention pond will retain the SWQV plus the site's excess runoff from the 100-year, 6-hour storm. The pond will outlet runoff through the spillway, which will then drain toward Royal Oak Street.

Basin 203 will discharge to AMAFAC's facility located south of Basin 203. Basin 203 will be required to store the Storm Water Quality Volume of 197 cu ft. Runoff discharging to AMAFAC's property is less under the proposed condition.

Conclusion

The proposed development will not increase the peak discharge or volumetric runoff into neither of the two discharge points (Royal Oak Street and AMAFCA's property). Refer to Analyzes Point #1 and #2. The City's drainage criteria has been met. This drainage report seeks COA Hydrology and AMAFCA's approval.

Lot Land Treatment Percentages					
Basin	Total Area (acres)	Land Treatment (%)			
		A	B	C	D
Lot 1	0.247	0.0	42.0	0.0	58.0
Lot 2	0.247	0.0	42.0	0.0	58.0
Lot 3	0.247	0.0	42.0	0.0	58.0
Lot 4	0.280	0.0	42.0	0.0	58.0
Lot 5	0.622	0.0	75.0	0.0	25.0
Lot 6	0.397	0.0	65.0	0.0	35.0
Lot 7	0.595	0.0	65.0	0.0	35.0
Lot 8	0.262	0.0	65.0	0.0	35.0
Lot 9	0.259	0.0	65.0	0.0	35.0
Lot 10	0.265	0.0	65.0	0.0	35.0
Lot 11	0.261	0.0	65.0	0.0	35.0
Tract B	0.187	0.0	0.0	100.0	0.0

LOT LAND TREATMENT PERCENTAGE TABLE

Weir Calculation Concrete Rundown

Equation 6.64 $Q = CLH^{3/2}$

Where;

C=2.7, L=4-ft, and H=1'

$Q = 2.7 * 4 * 1^{3/2} = 10.8$ CFS

Therefore, Concrete rundown will convey flow from Basin 202

WEIR CALCULATION

Stage-Storage Table						
Depth (ft)	Pond 1	Area (ac)	Volume (ac-ft)	Cum Volume (ac-ft)	Cum Volume (cu-ft)	
5979	962	0.022	0	0.000	0.0	SWQP Elev.
5980	1496	0.034	0.028	0.028	1226.2	
5981	2086	0.048	0.041	0.069	3013.1	
5982	2734	0.063	0.055	0.125	5417.5	
5983	3437	0.079	0.071	0.195	8496.0	Spillway Elev
5984	4197	0.096	0.088	0.283	12304.2	
5984.5	4598	0.106	0.050	0.334	14497.9	

STAGE-STORAGE TABLE

STORMWATER QUALITY VOLUME POND (BASIN 201):
TOTAL NEW LAND TREATMENT "D" AREA = 37,721 SQ.FT.
WATER QUALITY STORAGE REQUIRED (REDEVELOPMENT) = 35,449 SQ.FT. * (0.26)" * (1'/12")
= 768 CU.FT.

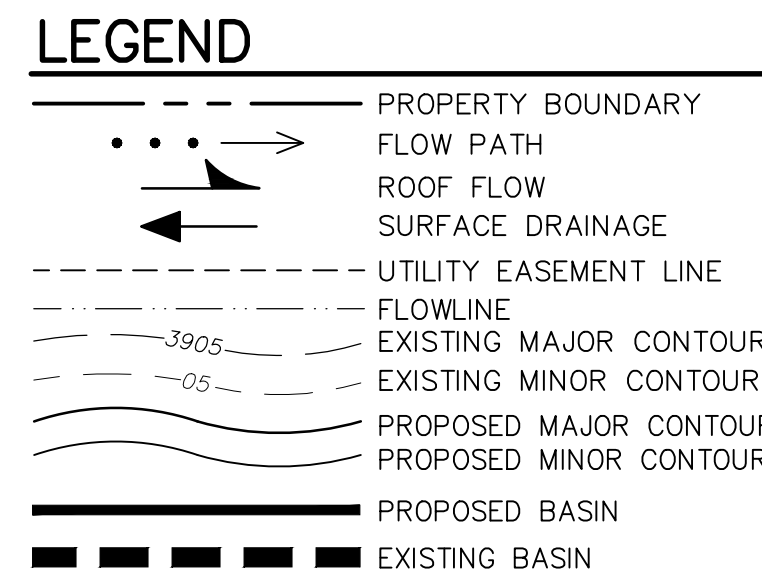
Wavier for Payment-in-lieu is requested for the SWQV from Basin 200.
 Payment-in-Lieu amount = 768 cu.ft. * \$6/cu.ft. = \$4,608.00

STORMWATER QUALITY VOLUME POND (BASIN 202):
 TOTAL NEW LAND TREATMENT "D" AREA = 57,757 SQ.FT.
 WATER QUALITY STORAGE REQUIRED (REDEVELOPMENT)=59,727 SQ.FT.*(0.26)*(1'/12")=1,294 CU.FT.=0.0297 ac.ft.
 Store stormwater quality volume of 1,294 cu.ft. stored in Detention Pond.
 SWQP ELEV. = 5960.82'

STORMWATER QUALITY VOLUME POND (BASIN 203):
TOTAL NEW LAND TREATMENT "D" AREA = 9,070 SQ.FT.
WATER QUALITY STORAGE REQUIRED (REDEVELOPMENT)=9,070 SQ.FT.*(0.26")*(1'/12")=197 CU.FT.

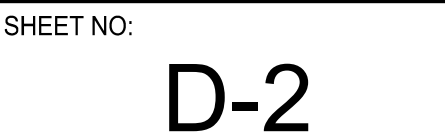
PROPOSED DETENTION POND REQUIRED VOLUME:
TOTAL REQUIRED VOL. = (Basin 200 Vol. + Basin 201 Vol. + Basin 202 Vol.) –
(Basin 100 Vol. + Basin 101 Vol.) + Basin 202 SWQP VOL.
= (0.087 ac.ft. + 0.192 ac.ft. + 0.394 ac.ft.) – (0.087 ac.ft.+0.364 ac.ft.) + 0.0297 ac.ft.
= 0.2517 ac.ft.
WATER SURFACE ELEVATION = 5984.25'

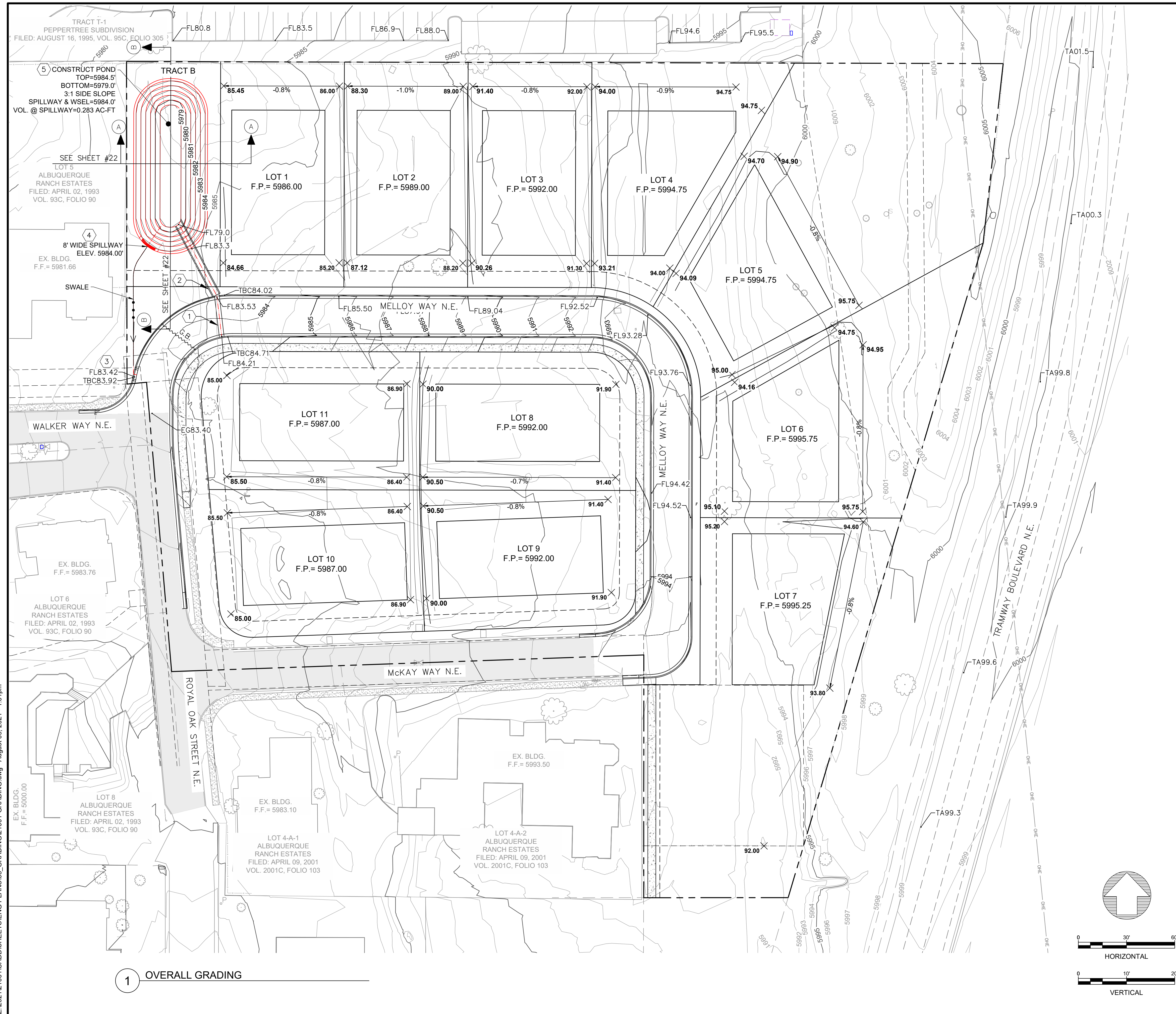
STORMWATER QUALITY VOL. CALCULATIONS

[illegible]

HYDROLOGIC CALCULATIONS – EXISTING CONDITION

HYDROLOGIC CALCULATIONS – PROPOSED CONDITION





CONSTRUCTION NOTES

- 1 CONSTRUCT VALLEY GUTTER.
- 2 CONSTRUCT CONCRETE RUNDOWN
PER DETAIL 5/11.
- 3 CONCRETE CURB OPENING
PER DETAIL 4/11.
- 4 CONSTRUCT SPILLWAY PER DETAIL 7/11.
- 5 STABILIZE DETENTION POND SIDE SLOPES WITH NATIVE GRASS
SEE WITH AGGREGATE MULCH OR EQUAL. (MUST SATISFY THE
"FINAL STABILIZATION CRITERIA (GP 2.2.14.6)."

LEGEND

-
- Legend for the plan view of the proposed road improvement project:
- PROPERTY BOUNDARY
 - FLOW PATH
 - FLOW DIRECTION
 - FENCE
 - EXISTING MAJOR CONTOUR
 - EXISTING MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - FG26.29 FINISHED GRADE
 - TA26.29 TOP ASPHALT
 - TW26.29 TOP WALL
 - ASPHALT PAVEMENT
 - CONCRETE
 - BREAKLINE
 - EXISTING ASPHALT ROAD
 - RETAINING WALL

**CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION**

OVERALL GRADING PLAN

DESIGN REVIEW COMMITTEE

CITY ENGINEER APPROVAL

ZONE MAP NO.

CITY PROJECT NO. 491680

SHEET NO.

Fierro & Company
ENGINEERING | SURVEYING
6300 Montano Rd. NW, Suite C
Albuquerque, NM
(505) 352-8930

CONSULTANTS

BENCH MARKS

THE STATION IS LOCATED 9.8 MILES NORTHEAST OF DOWNTOWN ALBUQUERQUE, AND IS LOCATED AT THE INTERSECTION OF TRAMWAY BOULEVARD AND ACADEMY ROAD NE IN THE SOUTHWEST QUADRANT. THE STATION MARK IS A CITY OF ALBUQUERQUE SURVEY CONTROL 3 1/4 INCH ALUMINUM DISC SET FLUSH WITH THE CONCRETE TRAFFIC LIGHT STATION BASE IN THE CONTINUOUS TURN LANE MEDIAN AND IS STAMPED "3-F723, 1995".



SEAL

[illegible]

DESIGNED BY:	RJF
DRAWN BY:	RJS
CHECKED BY:	RJF
DATE	5/2021

BUQUERQUE
MUNICIPAL DEVELOP
MENT DIVISION

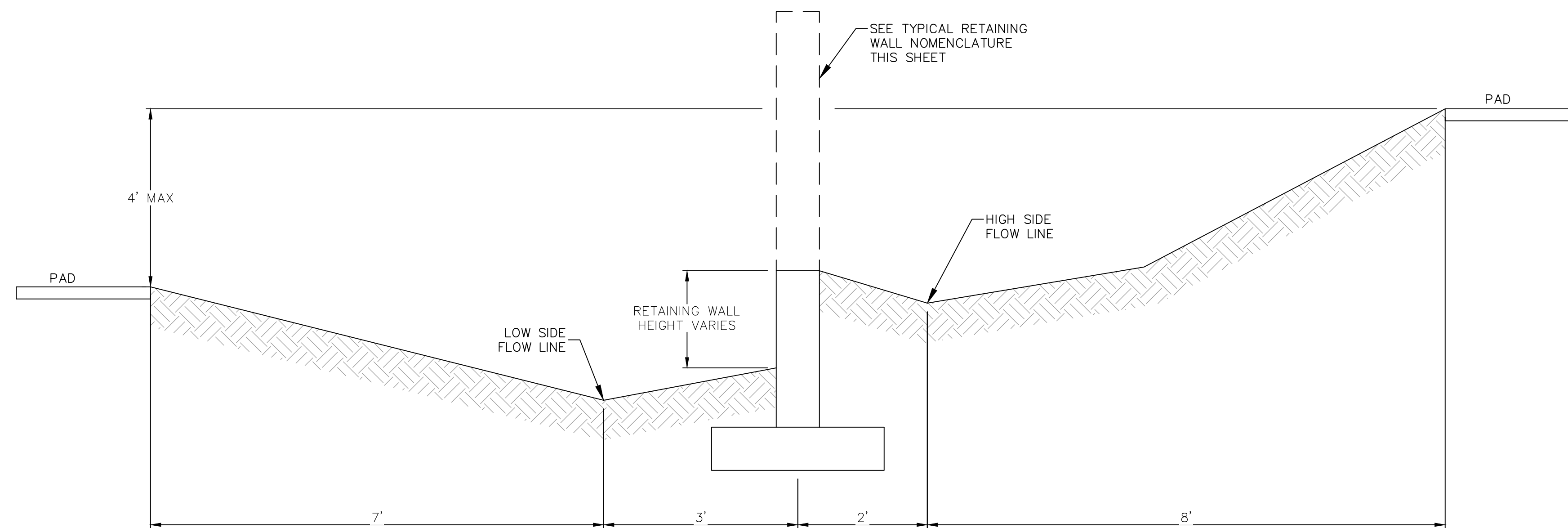
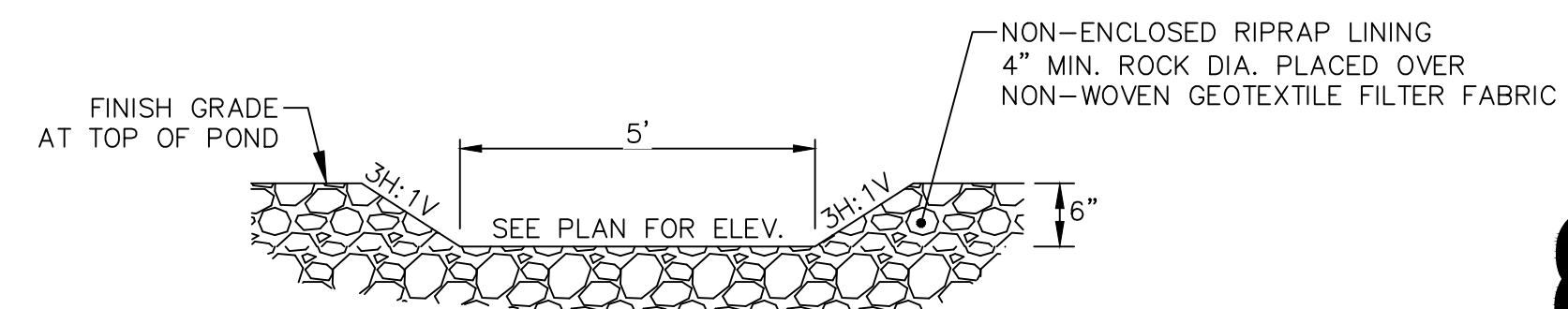
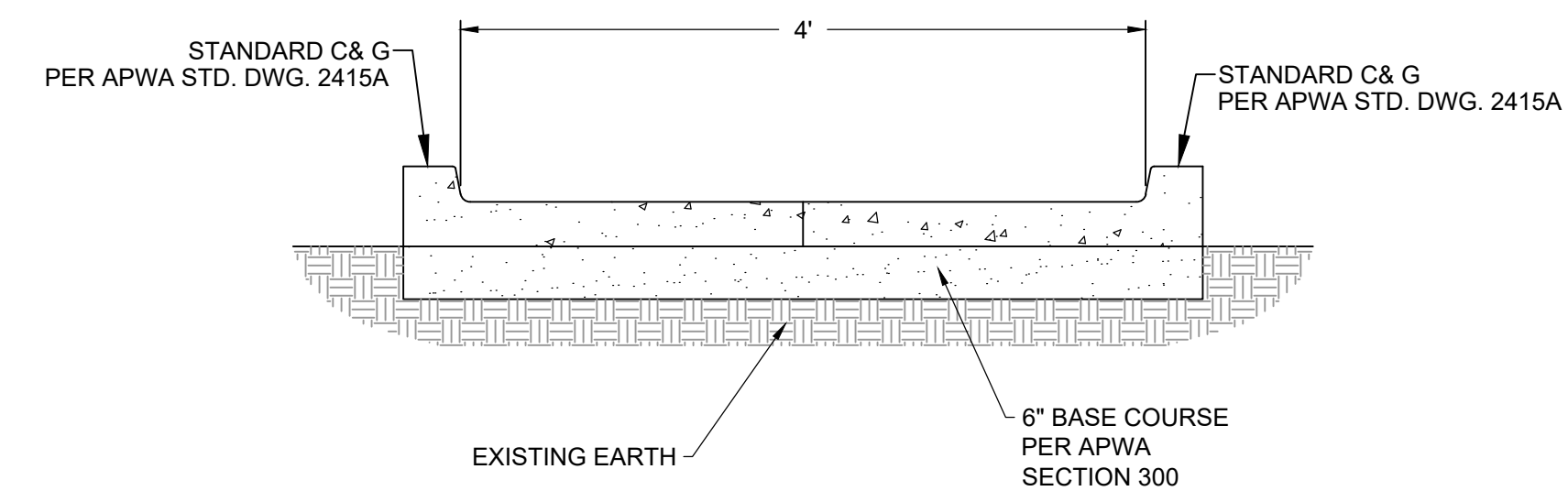
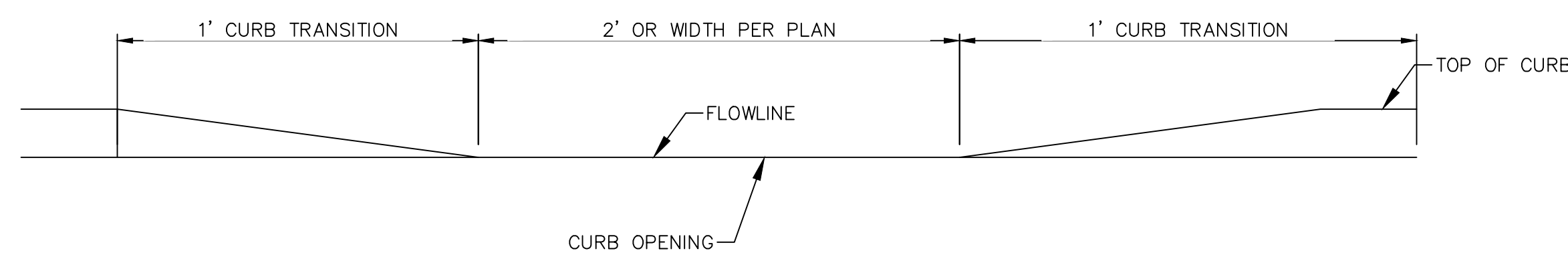
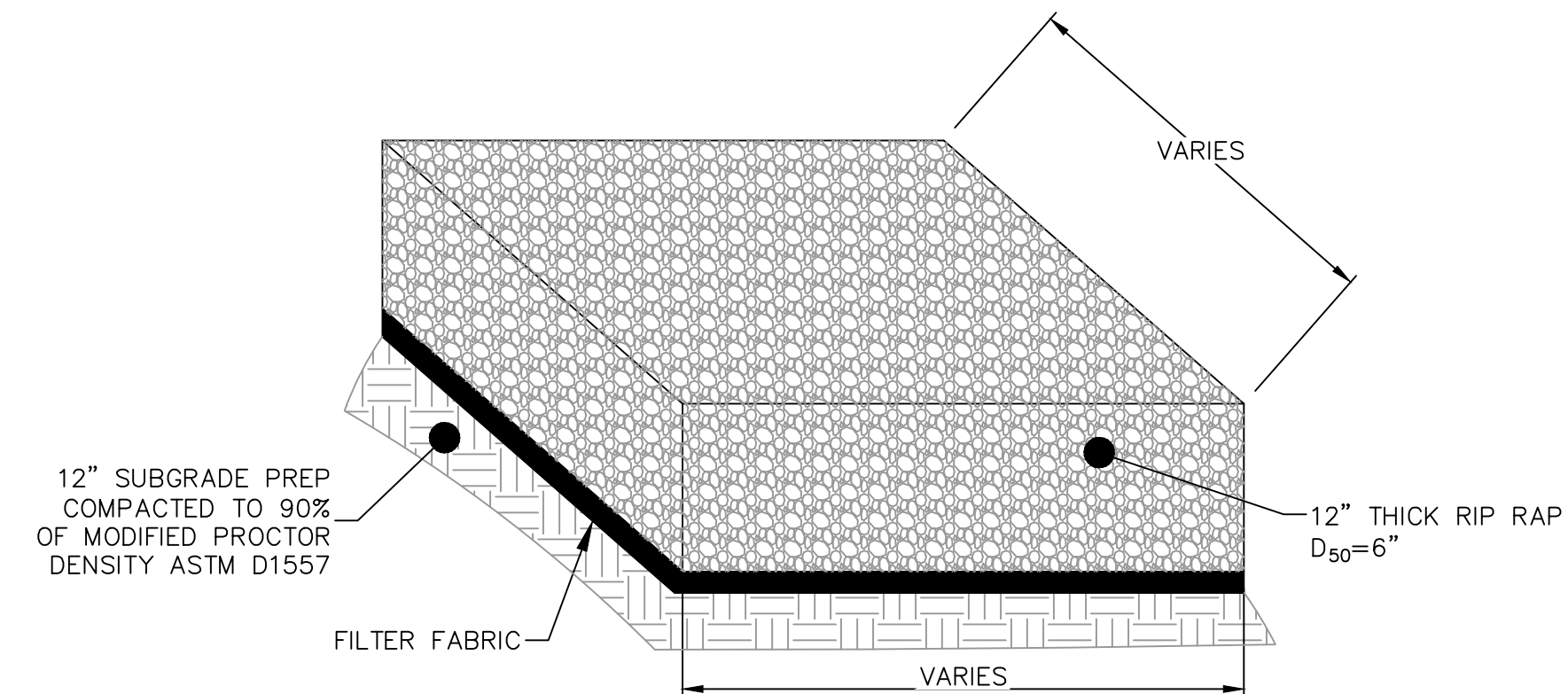
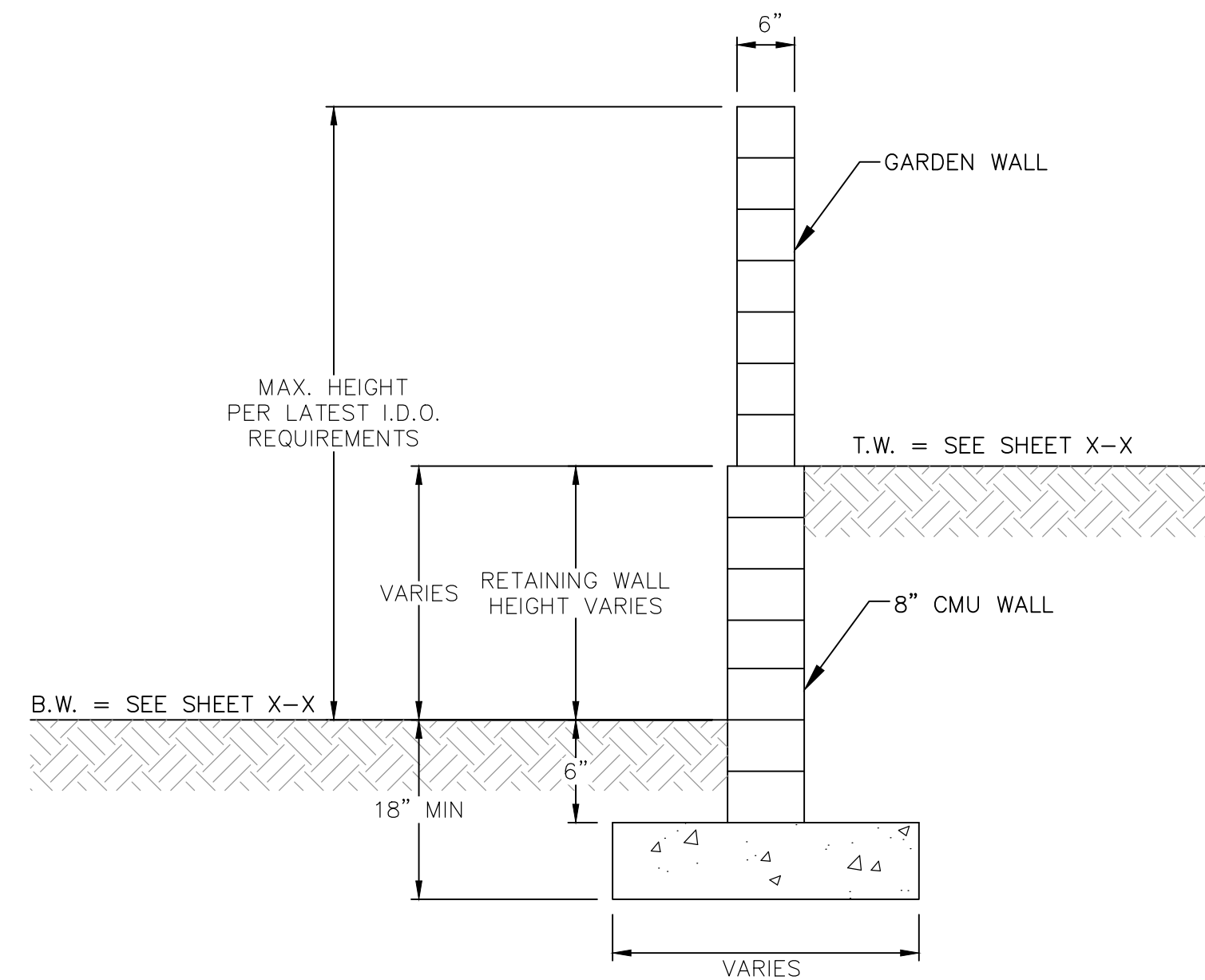
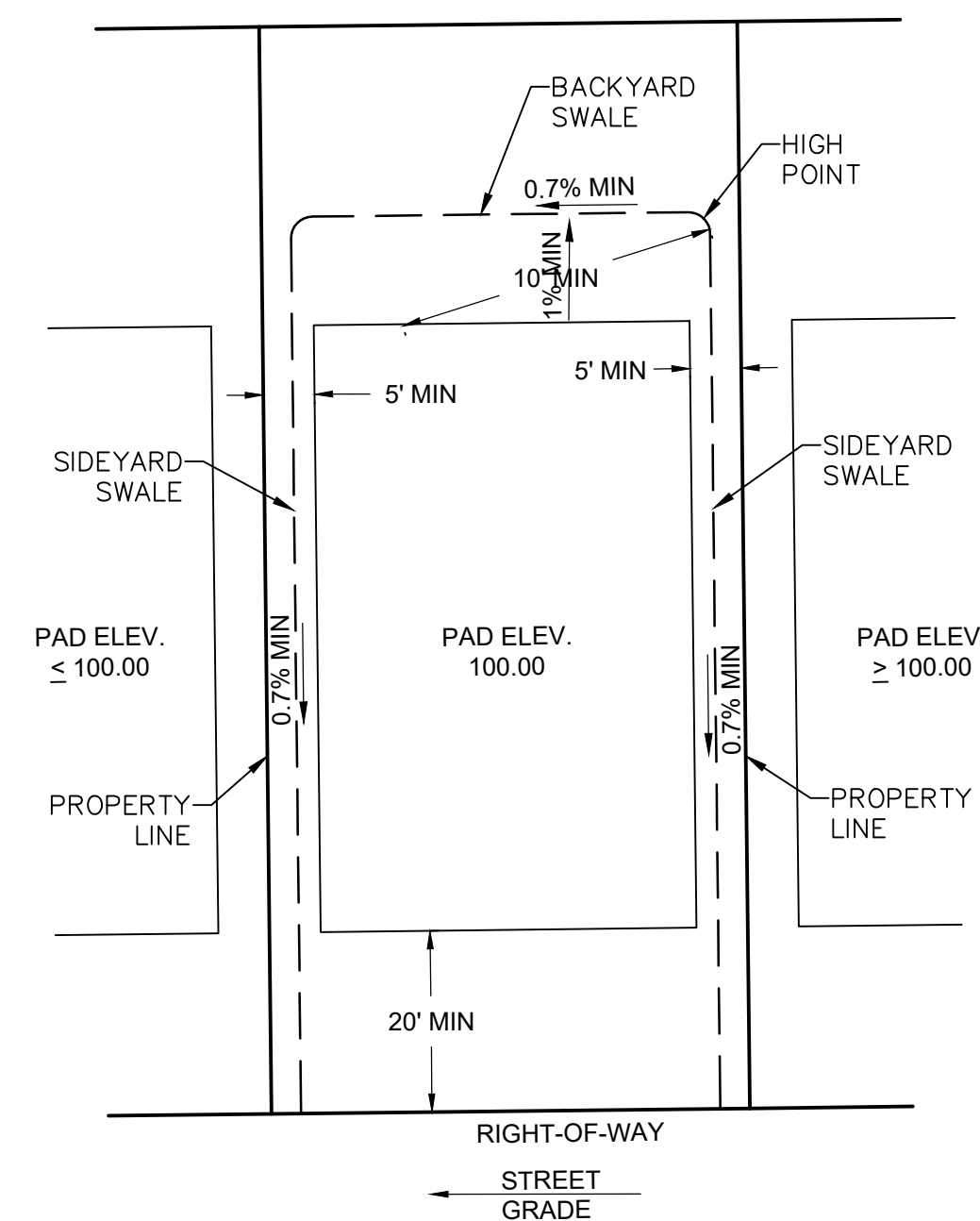
RANCH ESTATES

OVERALL GRADING PLAN

ZONE MAP NO.

CITY PROJECT NO. 491680

SHEET NO.



CONSULTANTS

FC

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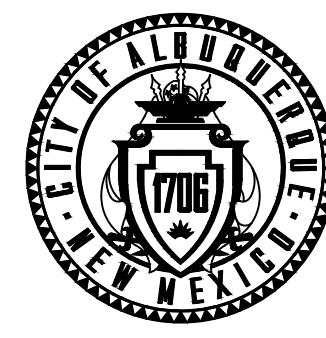
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City of Albuquerque
Planning Department
Development Review Services
HYDROLOGY SECTION

PRELIMINARY APPROVED

DATE: 08/09/21
BY: Renee C. Brissett
Hydro Trans # E22D002

THESE PLANS AND/OR REPORT ARE
CONCEPTUAL ONLY. MORE INFORMATION MAY
BE NEEDED IN THEM AND SUBMITTED TO
HYDROLOGY FOR BUILDING PERMIT APPROVAL.

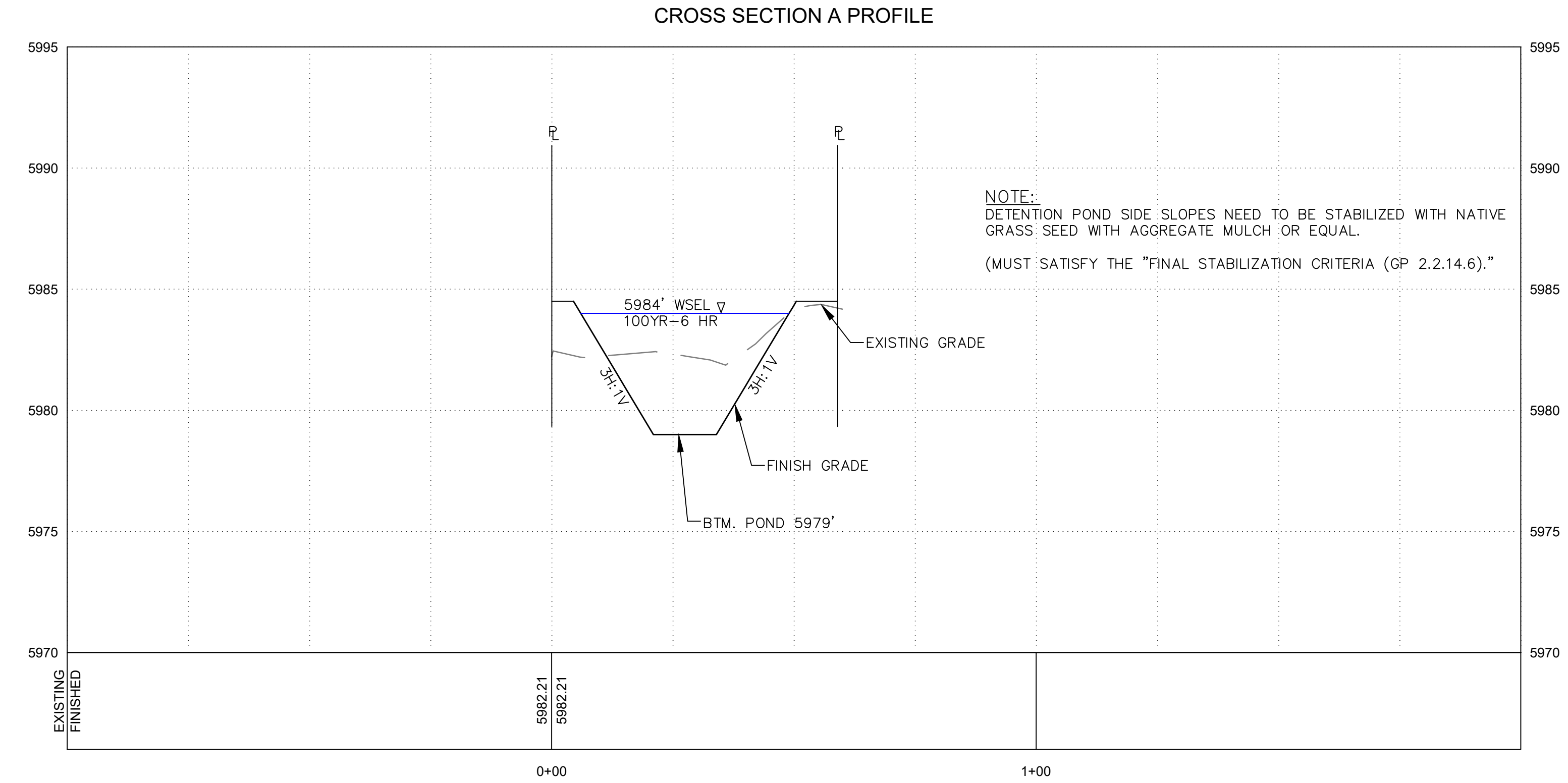


CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

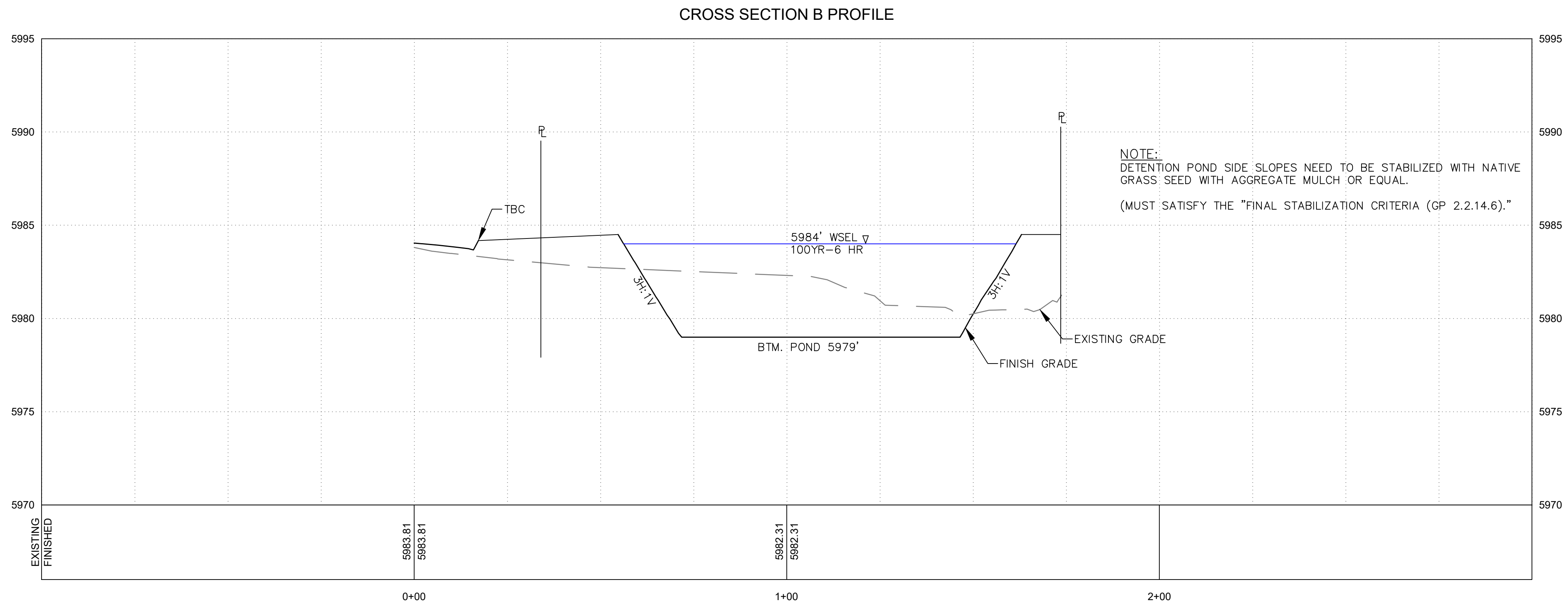
ALBUQUERQUE RANCH ESTATES

GRADING DETAILS AND NOTES

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	ZONE MAP NO. E-22-Z
		CITY PROJECT NO. 491680
		SHEET NO. 11



SECTION A-A



SECTION B-B

CONSULTANTS

[FC]

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SEAL

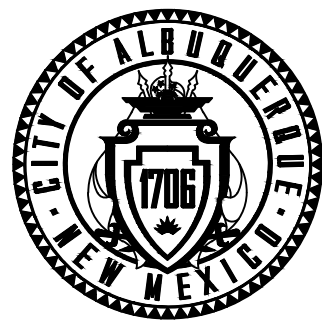
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DESIGNED BY: RJF

DRAWN BY: RJS

CHECKED BY: RJE

DATE	5/2021
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**CALL NM ONE-CALL
SYSTEM SEVEN (7) DAYS
PRIOR TO ANY EXCAVATION**

**CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION**

ALBUQUERQUE RANCH ESTATES

POND CROSS-SECTIONS

DESIGN REVIEW COMMITTEE

CITY ENGINEER APPROVAL

ZONE MAP NO.

E-22-Z

CITY PROJECT NO.

491680

22