

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

November 21, 2019

Robert Fierro, P.E.
Fierro & Co., LLC.
6300 Montano NW, Suite C
Albuquerque, NM 87120

RE: **Albuquerque Sportsplex**
2811 Karsten Ct SE
Grading and Drainage Plan Stamp Date: 11/14/19
Hydrology File: M14D012I

Dear Mr. Fierro:

Based on submittal received on 11/15/19 this project is approved for Building Permit

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

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.

Prior to Certificate of Occupancy (For Information):

1. Engineer's Certification, per the DPM Chapter 22.7: *Engineer's Certification Checklist For Non-Subdivision* is required.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana M. Peterson
Senior Engineer, Planning Dept.
Development Review Services



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 3/2018)

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

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

Legal Description: _____

City Address: _____

Applicant: _____ **Contact:** _____

Address: _____

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

Other Contact: _____ **Contact:** _____

Address: _____

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

Check all that Apply:

IS THIS A RESUBMITTAL?: ____ Yes ____ No

DEPARTMENT:

____ HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION

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

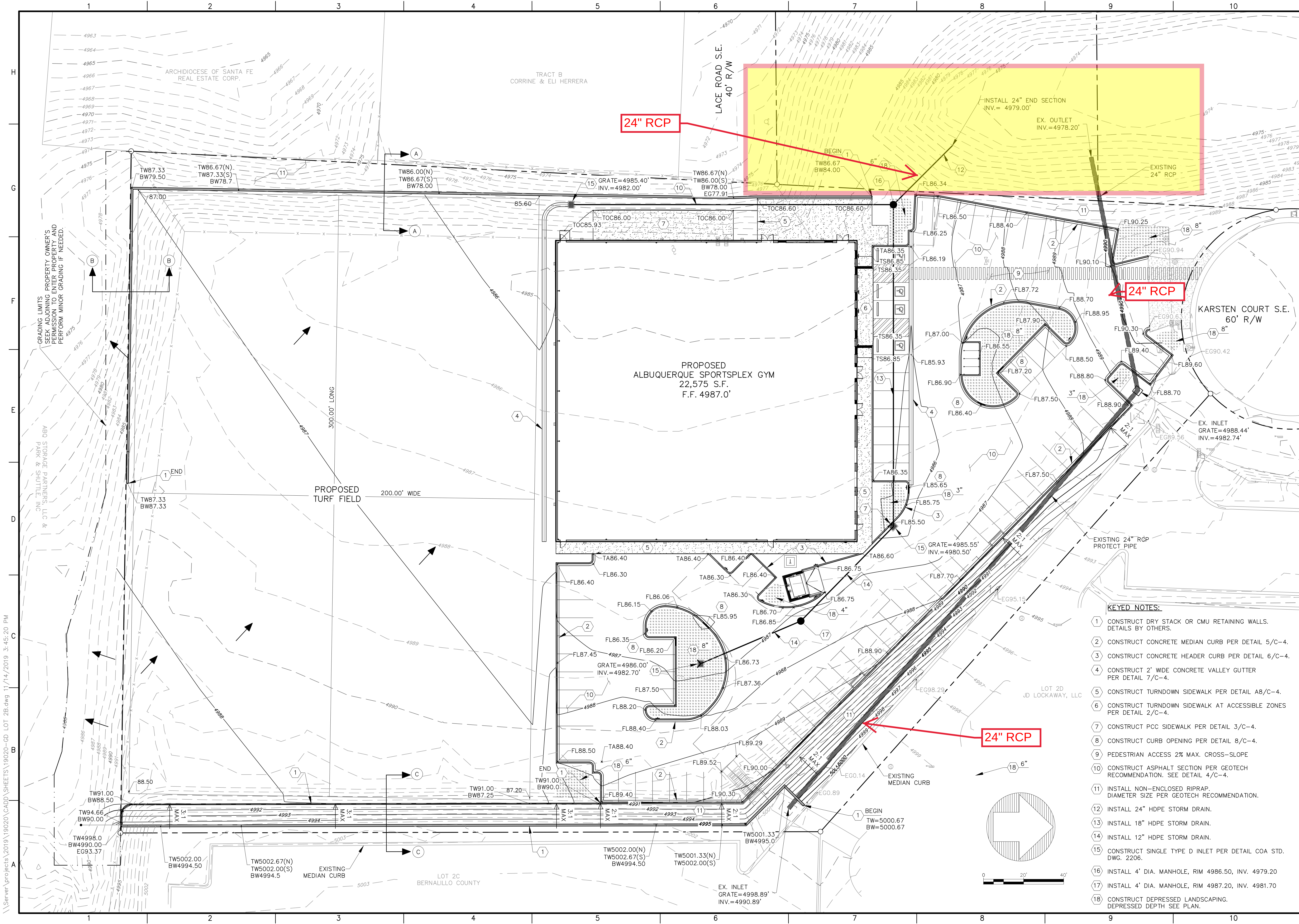
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: _____ **By:** _____

COA STAFF:

ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____





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ALBUQUERQUE, NEW MEXICO 87120
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ROBERT J. FIERRO
NEW MEXICO
20585
11-14-2019
PROFESSIONAL ENGINEER

ENGINEER'S SEAL

ALBUQUERQUE SPORTSPLEX
AT BROADWAY INDUSTRIAL CENTER
SUBDIVISION, UNIT 2
ALBUQUERQUE, NEW MEXICO

PROJECT NAME

NO.	REV.	DATE	DESCRIPTION	BY

PROJECT NO: 19020

DESIGNED BY: RJF

DRAWN BY: RJS

CHECKED BY: RJF

DATE: NOVEMBER 2019

SHEET TITLE

GRADING
PLAN

SHEET NO:
C-1

- KEYED NOTES:**
- 1. CONSTRUCT DRY STACK OR CMU RETAINING WALLS. DETAILS BY OTHERS.
 - 2. CONSTRUCT CONCRETE MEDIAN CURB PER DETAIL 5/C-4.
 - 3. CONSTRUCT CONCRETE HEADER CURB PER DETAIL 6/C-4.
 - 4. CONSTRUCT 2' WIDE CONCRETE VALLEY GUTTER PER DETAIL 7/C-4.
 - 5. CONSTRUCT TURNDOWN SIDEWALK PER DETAIL A8/C-4.
 - 6. CONSTRUCT TURNDOWN SIDEWALK AT ACCESSIBLE ZONES PER DETAIL 2/C-4.
 - 7. CONSTRUCT PCC SIDEWALK PER DETAIL 3/C-4.
 - 8. CONSTRUCT CURB OPENING PER DETAIL 8/C-4.
 - 9. PEDESTRIAN ACCESS 2% MAX. CROSS-SLOPE
 - 10. CONSTRUCT ASPHALT SECTION PER GEOTECH RECOMMENDATION. SEE DETAIL 4/C-4.
 - 11. INSTALL NON-ENCLOSED RIPRAP. DIAMETER SIZE PER GEOTECH RECOMMENDATION.
 - 12. INSTALL 24" HDPE STORM DRAIN.
 - 13. INSTALL 18" HDPE STORM DRAIN.
 - 14. INSTALL 12" HDPE STORM DRAIN.
 - 15. CONSTRUCT SINGLE TYPE D INLET PER DETAIL COA STD. DWG. 2206.
 - 16. INSTALL 4" DIA. MANHOLE, RIM 4986.50, INV. 4979.20
 - 17. INSTALL 4" DIA. MANHOLE, RIM 4987.20, INV. 4981.70
 - 18. CONSTRUCT DEPRESSED LANDSCAPING. DEPRESSED DEPTH SEE PLAN.

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Sub-Basin 101 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	1219 ac
Area of Treatment C	=	23162 ac
Area of Treatment D	=	0 ac
Total Area	=	24381 ac
Volumetric Flow		
Weighted E	=	1.113 inches
Volume (6hr)	=	0.052 acre-ft
Volume (24hr)	=	0.052 acre-ft
Volume (4days)	=	0.052 acre-ft
Volume (10days)	=	0.052 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	1.733 cfs

Sub-Basin 102 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	11019 ac
Area of Treatment C	=	11019 ac
Area of Treatment D	=	198348 ac
Total Area	=	220387 ac
Volumetric Flow		
Weighted E	=	2.004 inches
Volume (6hr)	=	0.845 acre-ft
Volume (24hr)	=	0.996 acre-ft
Volume (4days)	=	1.205 acre-ft
Volume (10days)	=	1.452 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	22.772 cfs

Sub-Basin 103 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	7481 ac
Area of Treatment C	=	7481 ac
Area of Treatment D	=	134654 ac
Total Area	=	149615 ac
Volumetric Flow		
Weighted E	=	2.004 inches
Volume (6hr)	=	0.573 acre-ft
Volume (24hr)	=	0.676 acre-ft
Volume (4days)	=	0.818 acre-ft
Volume (10days)	=	0.986 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	15.460 cfs

Sub-Basin 104 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	0 ac
Area of Treatment C	=	134245 ac
Area of Treatment D	=	0 ac
Total Area	=	134245 ac
Volumetric Flow		
Weighted E	=	1.130 inches
Volume (6hr)	=	0.290 acre-ft
Volume (24hr)	=	0.290 acre-ft
Volume (4days)	=	0.290 acre-ft
Volume (10days)	=	0.290 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	9.677 cfs

Sub-Basin 105 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	0 ac
Area of Treatment C	=	14981 ac
Area of Treatment D	=	0 ac
Total Area	=	14981 ac
Volumetric Flow		
Weighted E	=	1.130 inches
Volume (6hr)	=	0.032 acre-ft
Volume (24hr)	=	0.032 acre-ft
Volume (4days)	=	0.032 acre-ft
Volume (10days)	=	0.032 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	1.080 cfs

Sub-Basin 106 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	0 ac
Area of Treatment C	=	33549 ac
Area of Treatment D	=	0 ac
Total Area	=	33549 ac
Volumetric Flow		
Weighted E	=	1.130 inches
Volume (6hr)	=	0.073 acre-ft
Volume (24hr)	=	0.073 acre-ft
Volume (4days)	=	0.073 acre-ft
Volume (10days)	=	0.073 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	2.418 cfs

Sub-Basin 107 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	0 ac
Area of Treatment C	=	17598 ac
Area of Treatment D	=	0 ac
Total Area	=	17598 ac
Volumetric Flow		
Weighted E	=	1.130 inches
Volume (6hr)	=	0.038 acre-ft
Volume (24hr)	=	0.038 acre-ft
Volume (4days)	=	0.038 acre-ft
Volume (10days)	=	0.038 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	1.269 cfs

Sub-Basin 108 - Existing		
Area of Treatment A	=	0 ft ²
Area of Treatment B	=	3628 ac
Area of Treatment C	=	5442 ac
Area of Treatment D	=	27212 ac
Total Area	=	36282 ac
Volumetric Flow		
Weighted E	=	1.838 inches
Volume (6hr)	=	0.128 acre-ft
Volume (24hr)	=	0.148 acre-ft
Volume (4days)	=	0.177 acre-ft
Volume (10days)	=	0.211 acre-ft
Peak Rate of Discharge		
Q ₁₀₀	=	3.518 cfs



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INTERSTATE 25

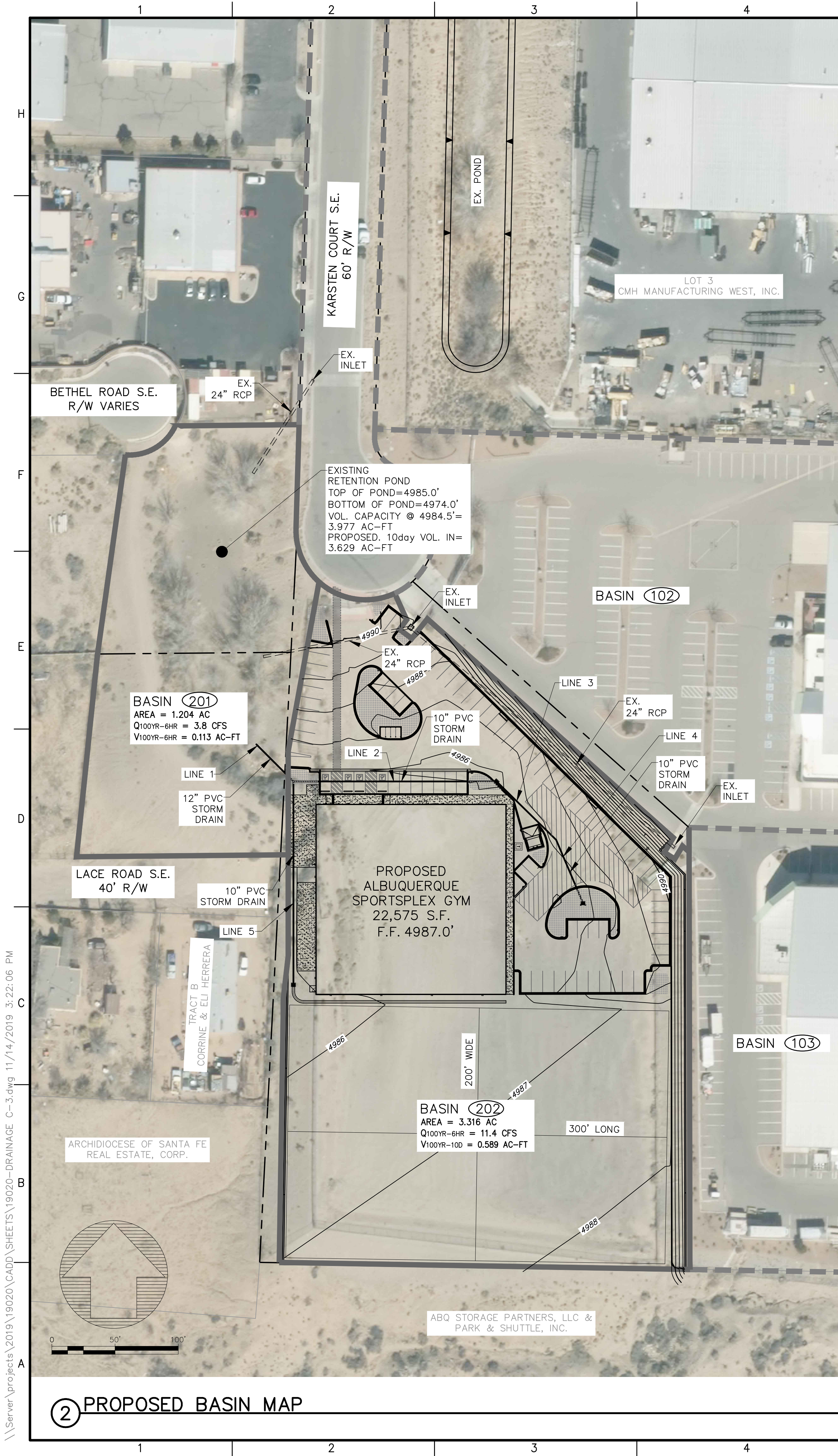
PROJECT NAME	PROJECT NO.	DESIGNED BY	DRAWN BY	CHECKED BY	DATE	REV.	DESCRIPTION	BY
	19020	R/JF	RJS	R/JF	NOVEMBER 2019			

SHEET TITLE

EXISTING
BASIN MAP

SHEET NO.

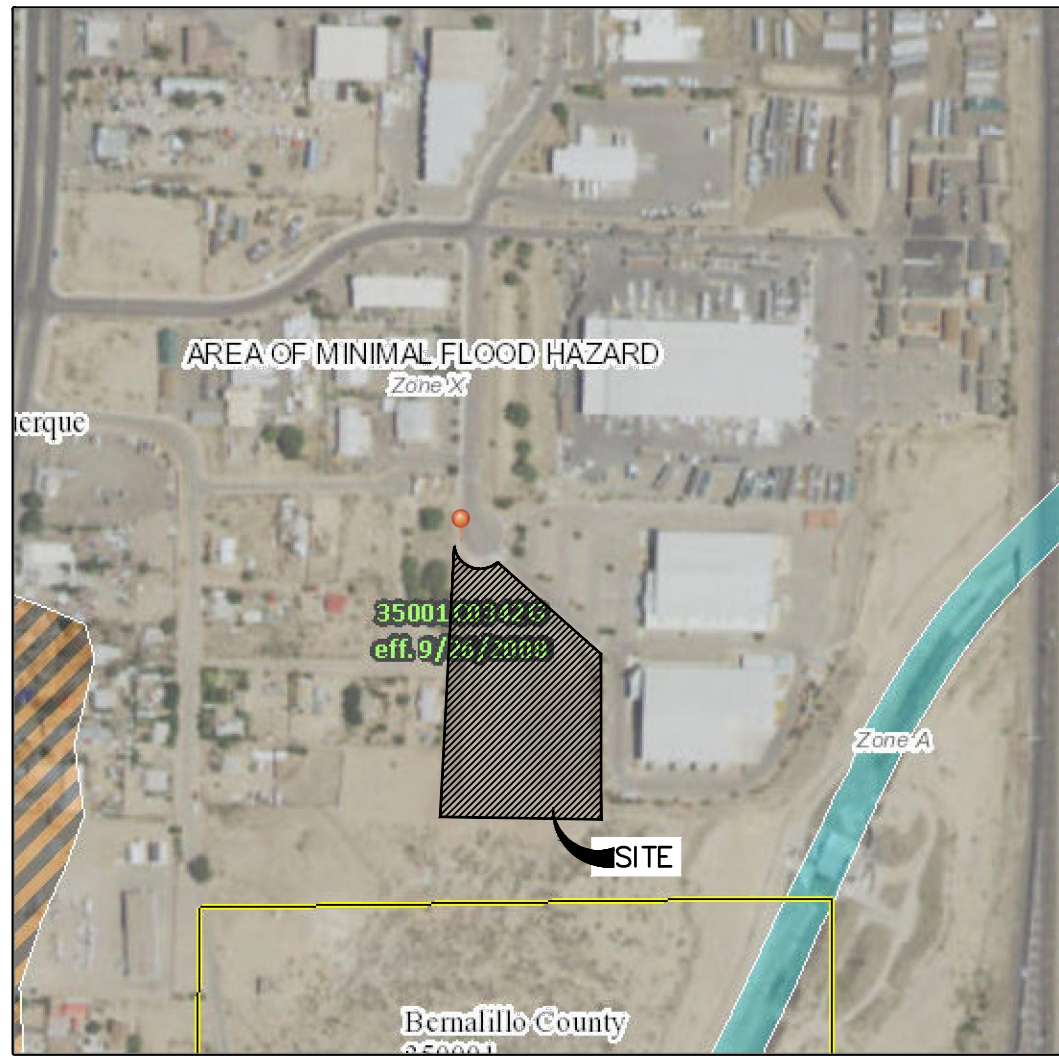
C-2



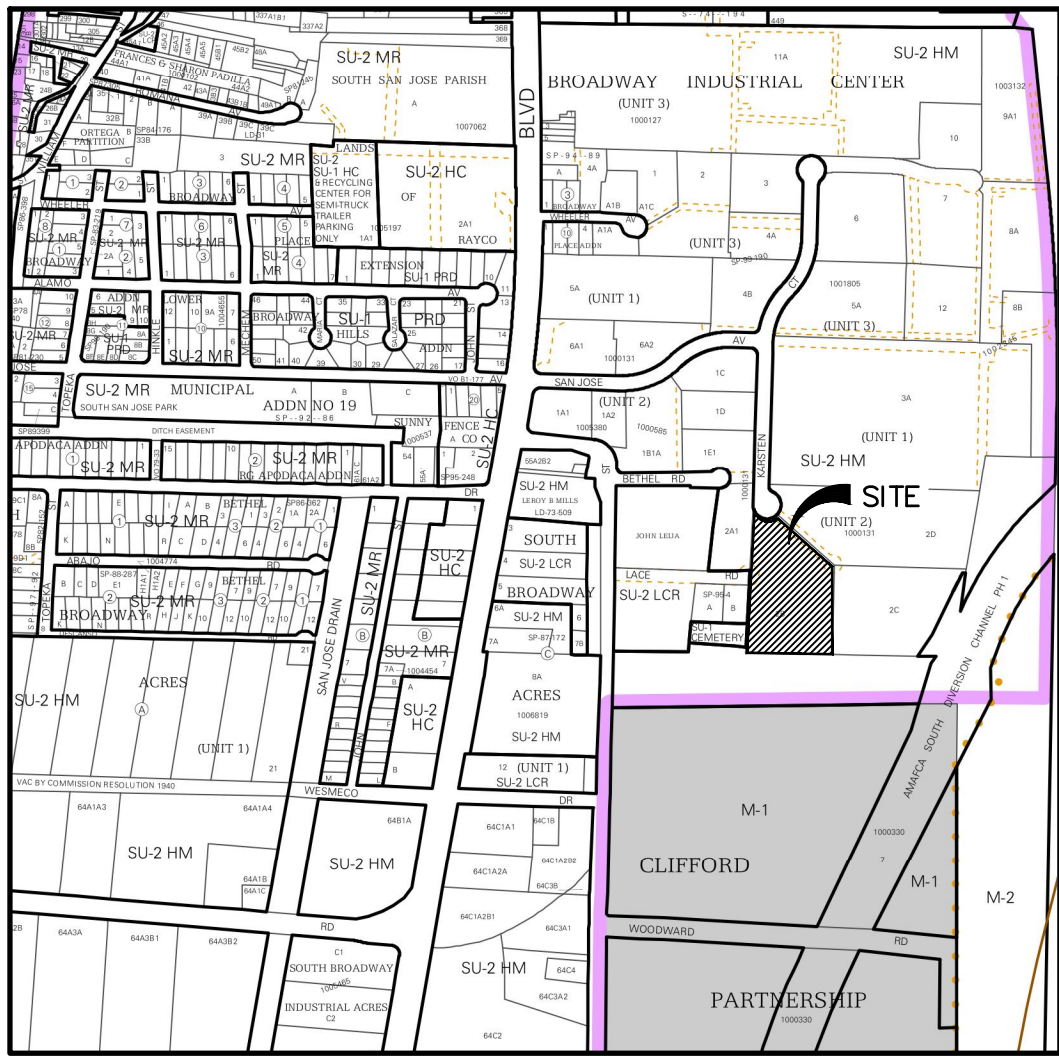
FIRST FLUSH STORAGE:

DEPRESSED LANDSCAPING

TOTAL NEW LAND TREATMENT "D" AREA = 62,800 SQ.FT.
WATER QUALITY STORAGE REQUIRED=62,800 SQ.FT.*(0.34")*(1'/12")=1,780 CU.FT.
WATER QUALITY STORAGE PROVIDED VIA DEPRESSED LANDSCAPING=1,800 CU.FT.



FLOOD INSURANCE RATE MAP
MAP NO. 35001C0342G
EFFECTIVE DATE: 09/26/2008

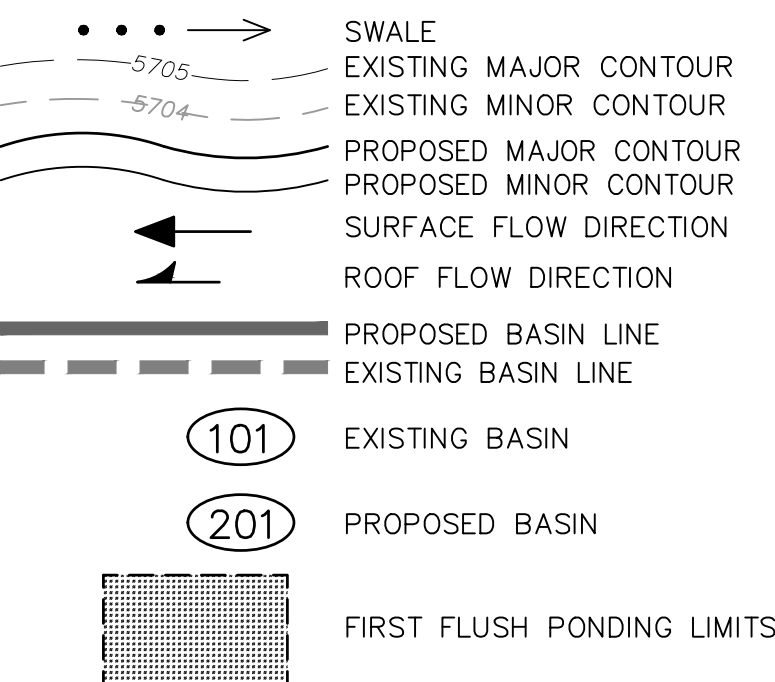


Storm Sewer Summary Report

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1	14 (STRM NEW- (1))	16.10	24	Cir	39,598	4979.01	4979.21	0.507	4980.46	4980.83	0.54	4981.37	End	None
2	15 (STRM NEW- (1))	9.19	18	Cir	156,625	4979.31	4980.51	0.766	4980.48	4981.79	0.51	4982.30	End	None
3	16 (STRM NEW- (1))	4.68	12	Cir	63,642	4980.61	4981.71	1.729	4981.51	4982.61	n/a	4982.61	End	None
4	17 (STRM NEW- (1))	4.61	12	Cir	53,770	4981.81	4982.71	1.675	4982.70	4983.60	n/a	4983.60	End	None
5	18 (STRM NEW- (1))	4.68	12	Cir	156,500	4979.31	4982.01	1.725	4980.21	4982.91	n/a	4982.91	End	None

HYDRAULIC CALC.- PIPE CAPACITIES

LEGEND



Introduction

The site is located at 2811 Karsten CT SE, Albuquerque, NM 87544. The proposed improvements include an 22,600 sq.ft. building, parking lot, and 300'x200' turf field. The existing site slopes East to West at 2% and drains to a retention pond via a rundown. The retention pond accepts runoff from basins 100, 101, 102, 103, 104, 106, and 108 as shown on sheet C-2. Under the proposed condition the site is allowed free discharge and will drain to the retention pond via a 24-inch diameter pipe. The purpose of this Grading & Drainage Plan is to 1) provide hydrologic and hydraulic analysis of the existing and proposed condition, 2) satisfy the first flush requirement, and 3) seek building approval.

Methodology

Hydrologic procedures presented in the Hydrology Section of the DMP, Section 22.2, revised April 7, 1993 were followed.

Existing Condition

The existing site is located within the Broadway Industrial Center Master Plan that allows this site to drain to a regional detention pond sized for the 100-year, 10-day storm. The site is vacant, but has been graded to drain to the detention pond and outlets via a rundown. The Master Plan was prepared by Mark Goodwin & Associates and is dated 9-24-1997. A 24" storm drain is located on the site as shown in Sheet 2. This storm drain system conveys offsite runoff. It also outlets to the regional pond. A steep slope along the West and South is the only portion of the site that does not drain to the detention pond. Runoff from the steep slopes drain to the adjoining lots.

Proposed Condition

Improvements includes a 22,600 sq.ft. building, parking lot, and a 200'x300' turf field. The turf field allows runoff to infiltrate and is categorized as Land Treatment B. The 24" RCP pipe will not be modified, and it will continue to accept offsite runoff. The proposed storm drain system will collect the on-site's runoff and discharge it to the detention pond. The pipes have been designed to convey runoff from the 100-year, 6-hour storm. Free discharge is allowed from the site with a 90% impervious area as stated in the Broadway Industrial Center. However, the proposed site is 45% impervious. The existing capacity of the retention pond is 3,977 ac-ft. There is enough capacity to handle the site's proposed runoff as the total 100-year, 10-day runoff entering the pond is now 3,629 ac-ft. The first flush volume will be retained via several water quality ponds at the depressed landscaping at shown on Sheet C-1. See first flush volume calculations on this sheets. Hydrologic and hydraulic analysis are included on Sheet C-2 and this sheet. The total disturbed area is approximately 3.5 acres.

Conclusion

The City's and the Broadway Industrial Center Master Plan have been satisfied under this grading & drainage plan. The contractor shall use these civil sheets for construction, and will need a drainage certification in order to obtain a Close-out. This drainage report seeks approval for building permit.

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AT BROADWAY INDUSTRIAL CENTER
SUBDIVISION, UNIT 2
ALBUQUERQUE, NEW MEXICO

PROJECT NAME

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	19020
DESIGNED BY:	RJF
DRAWN BY:	RJS
CHECKED BY:	RJF
DATE:	NOVEMBER 2019
SHEET TITLE	PROPOSED BASIN MAP

SHEET NO:

C-3

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8 TYPICAL CURB OPENING
SCALE: NTS

7 2-FT WIDE GUTTER
SCALE: NTS

6 HEADER CURB DETAIL
SCALE: NTS

5 CURB AND GUTTER
SCALE: NTS

- CURB GENERAL NOTES**
1. ANY DEVIATIONS FROM THESE STANDARDS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR PRIOR APPROVAL.
 2. ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BY A LICENSED CONTRACTOR AND REQUIRES PERMIT AND APPROVAL BY THE DEPT OF PUBLIC WORKS.
 3. SUBGRADE SHALL BE COMPACTED TO 95% ASTM D 1557, MIN.
 4. CURB SHALL BE PORTLAND CEMENT CONCRETE. PORTLAND CEMENT CONCRETE SHALL BE 3000 PSI @ 28 DAYS w/CLASS F FLY ASH AND 7% +/- 2% AIR ENTRAINMENT. (MAX 20% FLY ASH BY WEIGHT).
 5. FOR CONCRETE CURB CONSTRUCT TRANSVERSE JOINTS AS FOLLOWS:
 - TOOLED CONTRACTION JOINTS AT 5' INTERVALS.
 - 1/2" PRE-MOLDED BITUMINOUS EXPANSION JOINTS AT 15' INTERVALS.
 - SEALED EXPANSION JOINTS AT 90' INTERVALS.
 6. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.

- ### CURB AND GUTTER GENERAL NOTES
1. ANY DEVIATIONS FROM THESE STANDARDS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR PRIOR APPROVAL
 2. ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL BE CONSTRUCTED BY A LICENSED CONTRACTOR AND REQUIRES PERMIT AND APPROVAL BY THE DEPT OF PUBLIC WORKS.
 3. SUBGRADE SHALL BE COMPACTED TO 95% ASTM D 1557, MIN.
 4. CURB AND GUTTER SHALL BE PORTLAND CEMENT CONCRETE. PORTLAND CEMENT CONCRETE SHALL BE 3000 PSI @ 28 DAYS w/CLASS F FLY ASH AND 7% +/- 2% AIR ENTRAINMENT. (MAX 20% FLY ASH BY WEIGHT).
 5. FOR CONCRETE CURB AND GUTTER CONSTRUCT TRANSVERSE JOINTS AS FOLLOWS:
 - TOOLED CONSTRUCTION JOINTS AT 5' INTERVALS.
 - 1/2" PRE-MOLDED BITUMINOUS EXPANSION JOINTS AT 15' INTERVALS.
 - SEALED EXPANSION JOINTS AT 90' INTERVALS.
 6. DIMENSIONS AT ROUNDED CORNERS MEASURED TO INTERSECTION OF STRAIGHT LINES.

4 TYPICAL ASPHALT PAVEMENT SECTION
SCALE: NTS

- ## CONSTRUCTION NOTES
1. PRIOR TO CONSTRUCTION, CONTRACTOR TO OBTAIN PAVEMENT DESIGN FROM A MATERIAL LAB WITH A LICENSED PROFESSIONAL ENGINEER. USE PAVEMENT SECTION RECOMMENDED UNDER PAVEMENT DESIGN FROM MATERIAL LAB. THIS DETAIL IS PROVIDED AS A BASES FOR COST ESTIMATING PURPOSES.

3 TYPICAL 4" PCC SIDEWALK
SCALE: NTS

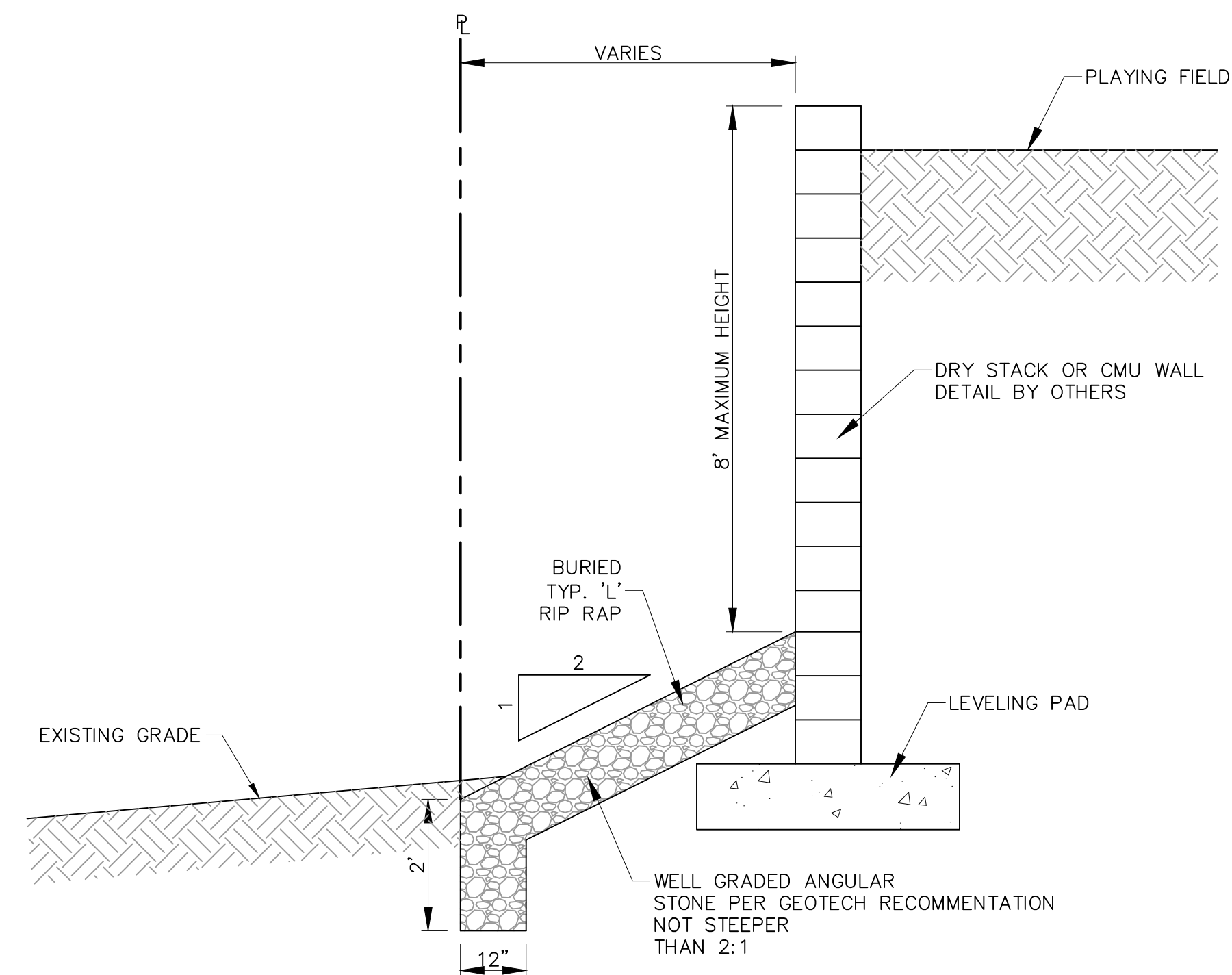
- ## CONSTRUCTION NOTES
1. WHEN ABUTTING TO VERTICAL WALLS, BENCHES, BUILDINGS, OR CURBS, INSTALL 1/2" BITUMINOUS EXPANSION JOINT. RECESS 1/4" VERTICALLY. INSTALL SIKA-FLEX POLYMER SEALANT OR APPROVED EQUAL.
 2. INSTALL CONTRACTION JOINTS @ 6'-0" OC.
 3. LIGHT BROOM FINISH CONCRETE SURFACE REQUIRED.

2 TURN DOWN SIDEWALK AT ACCESSIBLE ZONES
SCALE: 1" = 1'

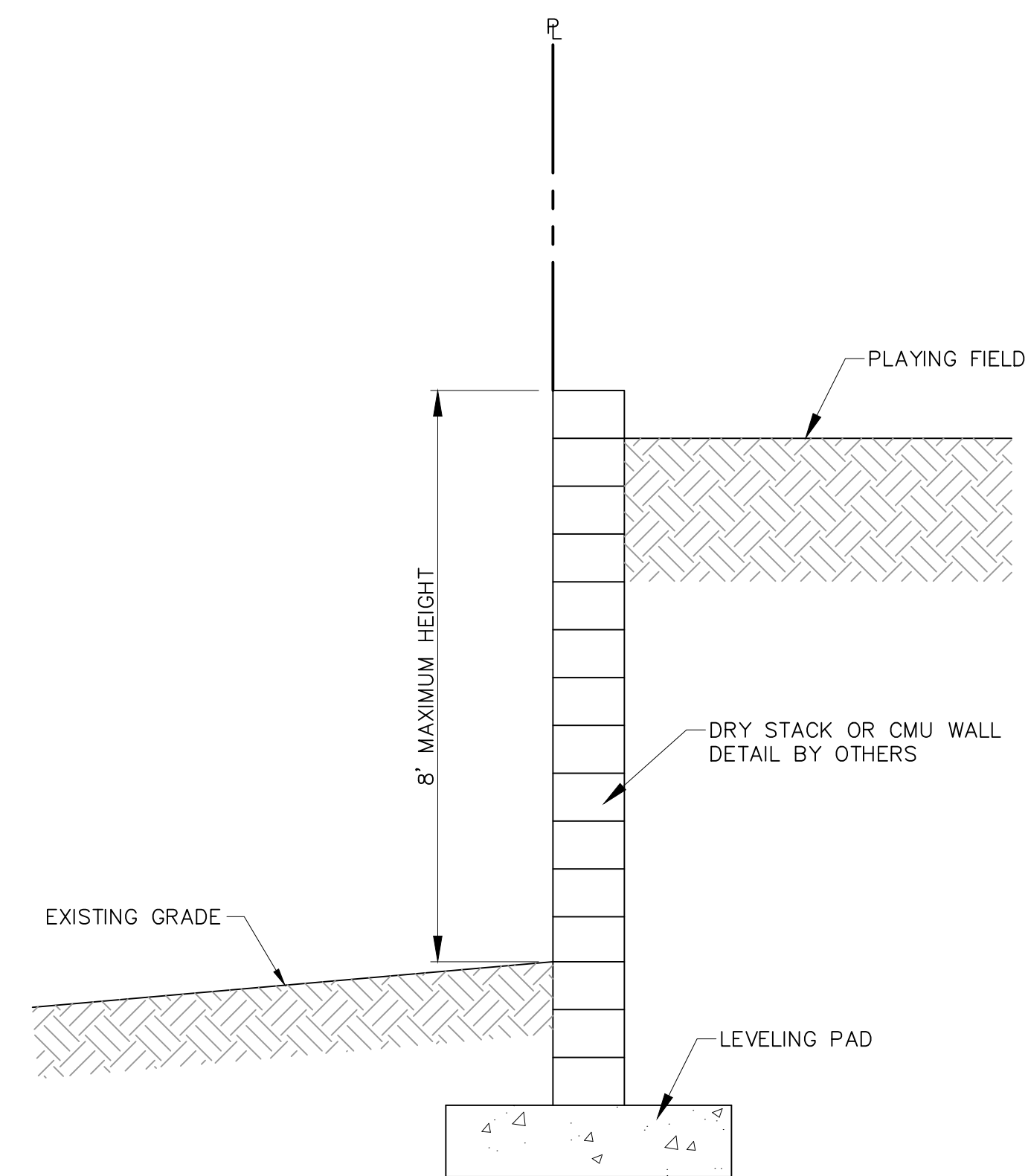
1. CONTROL JOINTS SHALL BE PLACED @ 5' O.C.
2. EXPANSION JOINTS SHALL BE PLACED @ 20' O.C.
3. 4000 PSI CONCRETE W/ BRUSH FINISH.

1 TURN DOWN SIDEWALK
SCALE: 1" = 1'

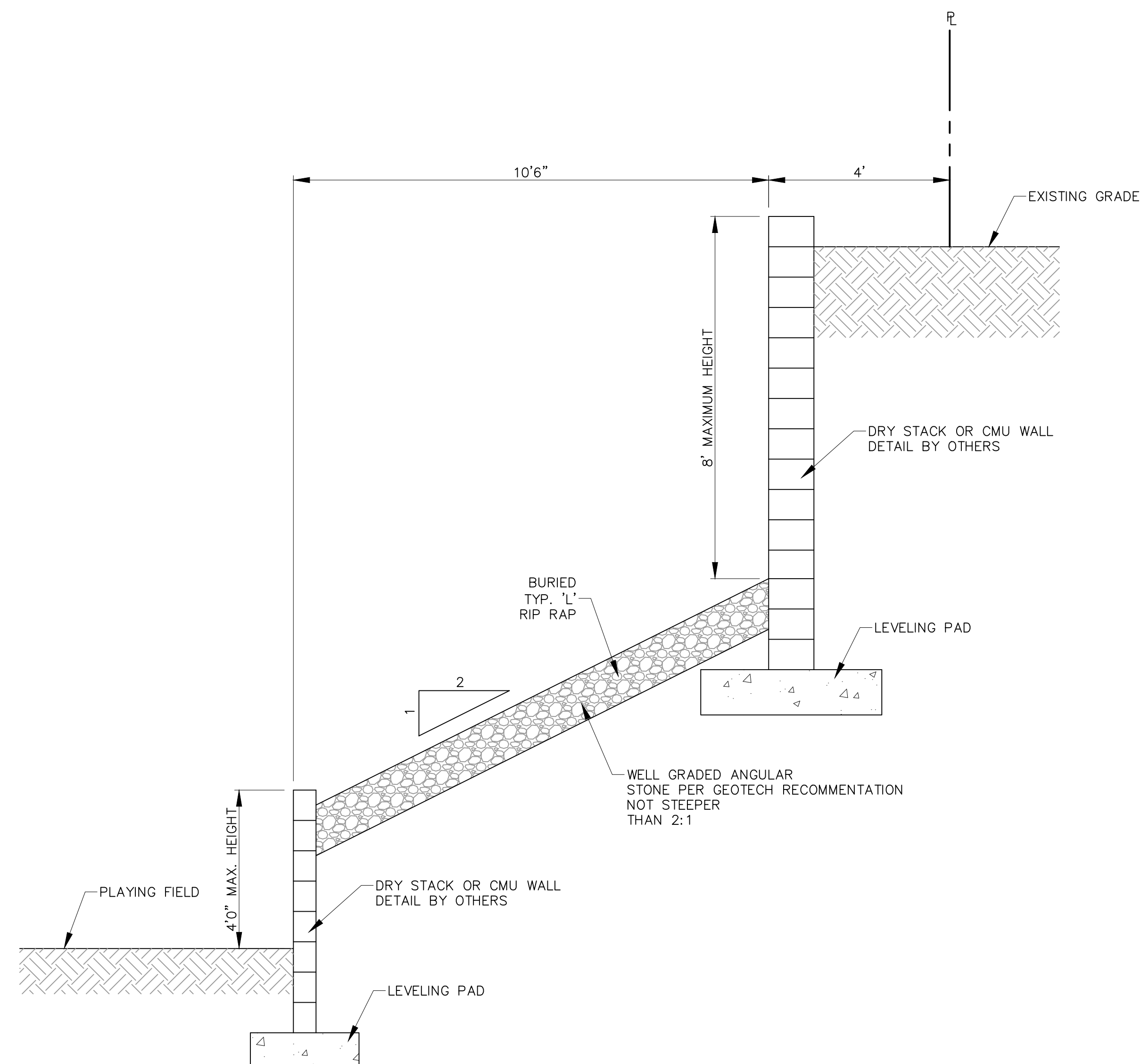
1. CONTROL JOINTS SHALL BE PLACED @ 5' O.C.
2. EXPANSION JOINTS SHALL BE PLACED @ 20' O.C.
3. 4000 PSI CONCRETE W/ BRUSH FINISH.



1 SECTION A-A
SCALE: NTS



2 SECTION B-B
SCALE: NTS



3 SECTION C-C
SCALE: NTS



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AT BROADWAY INDUSTRIAL CENTER
SUBDIVISION, UNIT 2
ALBUQUERQUE, NEW MEXICO

[illegible]

PROJECT NO:	19020
DESIGNED BY:	RJF
DRAWN BY:	RJS
CHECKED BY:	RJF
DATE:	NOVEMBER 2019

SHEET TITLE

DETAILS

SHEET NO: **C-5**