CITY OF ALBUQUERQUE

Planning Department Alan Varela, Director



Mayor Timothy M. Keller

October 15, 2024

J. Graeme Means, P.E. High Mesa Consulting Group 6010 B Midway Park Blvd NE Albuquerque, NM 87109

RE: Sunset Memorial Park – Pueblo Esperanza Ph.2 924 Menaul Blvd. NE Grading & Drainage Plan Engineer's Stamp Date: 09/24/2024 Hydrology File: H15D016B

Dear Mr. Means:

Based upon the information provided in the submittal received 10/04/2024, the Grading & Drainage Plan is approved for Building Permit and Grading Permit. Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

Please perform a review of all Top of Curb and Flow Line elevations along all new concrete curb alignments for consistency of curb design configuration and construction.

Albuquerque

PO Box 1293

PRIOR TO CERTIFICATE OF OCCUPANCY:

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

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, <u>jhughes@cabq.gov</u>, 505-924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 505-924-3995 or richardmartinez@cabq.gov.

Sincerely,

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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 #
City Address, UPC, OR Parcel:	
Applicant/Agent:	Contact:
	Phone:
Email:	
Applicant/Owner:	Contact:
Address:	Phone:
Email:	
(Please note that a DFT SITE is one that need	ds 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: TRANSPORTA	TION HYDROLOGY/DRAINAGE
Check all that apply under Both the Type	of Submittal and the Type of Approval Sought:
TYPE OF SUBMITTAL:	TYPE OF APPROVAL SOUGHT:
ENGINEER/ARCHITECT CERTIFICA	TION BUILDING PERMIT APPROVAL
PAD CERTIFICATION	CERTIFICATE OF OCCUPANCY
CONCEPTUAL G&D PLAN	CONCEPTUAL TCL DFT APPROVAL
GRADING & DRAINAGE PLAN	PRELIMINARY PLAT APPROVAL
DRAINAGE REPORT	FINAL PLAT APPROVAL
DRAINAGE MASTER PLAN	SITE PLAN FOR BLDG PERMIT DFT
CLOMR/LOMR	APPROVAL
TRAFFIC CIRCULATION LAYOUT (7	SIA/RELEASE OF FINANCIAL GUARANTEE
ADMINISTRATIVE	FOUNDATION PERMIT APPROVAL
TRAFFIC CIRCULATION LAYOUT F APPROVAL	OR DFT GRADING PERMIT APPROVAL
TRAFFIC IMPACT STUDY (TIS)	SO-19 APPROVAL
STREET LIGHT LAYOUT	PAVING PERMIT APPROVAL
OTHER (SPECIFY)	GRADING PAD CERTIFICATION
omer(billen i)	WORK ORDER APPROVAL
	CLOMR/LOMR
	OTHER (SPECIFY)

DATE SUBMITTED: ____

DRAINAGE PLAN

I. INTRODUCTION AND EXECUTIVE SUMMARY

THE SITE IS LOCATED AT THE SOUTHEAST CORNER OF THE INTERSECTION OF MENAUL BLVD NE AND EDITH BLVD NE. AT PRESENT, THE SITE IS DEVELOPED AS A CEMETERY PARK AND RELATED USE. THE PROPOSED IMPROVEMENTS TO THIS EXISTING SITE WILL INCLUDE CONSTRUCTION OF TWO NEW SMALL MAUSOLEUM UNITS TO THE EXISTING 'PUEBLO ESPERANZA' AREA ONSITE, ALONG WITH ASSOCIATED PAVED PEDESTRIAN AND VEHICLE PARKING IMPROVEMENTS

THE PROPOSED DRAINAGE CONCEPT WILL BE THE CONTINUED FREE DISCHARGE OF RUNOFF VIA A COMBINATION OF EXISTING SHEET AND SHALLOW CONCENTRATED FLOW FROM THE PROJECT SITE ONTO THE SURROUNDING EXISTING INTERNAL CEMETARY PAVED ROADS AND LAWN AREAS, CONSISTENT WITH THE APPROVED 2020 MASTER DRAINAGE PLAN.

THIS SUBMITTAL IS MADE FOR BUILDING PERMIT APPROVAL II. PROJECT DESCRIPTION

THE EXISTING LEGAL DESCRIPTION OF THE SITE IS TRACT 1, SUNSET MEMORIAL PARK. AS SHOWN BY PANEL 332 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAME FLOOD INSURANCE RATE MAPS PUBLICED BY FEMA FOR BERNALILLO OUNTY, NEW MEXICO, SEPTEMBER 26, 2008, THE SITE IS NOT ENCUMBERED BY, NOR DOES IT DIRECTLY DISCHARGE TO ANY MAPPED FLOOD HAZARD ZONES.

III. BACKGROUND DOCUMENTS & RESEARCH

THE FOLLOWING BACKGROUND DOCUMENTS WERE REVIEWED IN THE PREPARATION OF THIS SUBMITTAL: 1. MASTER DRAINAGE PLAN FOR SUNSET MEMORIAL PARK (H-15/D16) DATED 03-09-2020 PREPARED BY HIGH MESA CONSULTING GROUP. THE 2020 MASTER DRAINAGE PLAN (MDP) WAS PREPARED FOR MASTER SITE DEVELOPMENT PLAN APPROVAL OF THE SUNSET MEMORIAL PARK. THE 2020 PLAN WAS AN UPDATE TO A 2014 MDP AND ESTABLISHED THE CURRENT AS WELL AS FUTURE DEVELOPMENT DRAINAGE PATTERNS FOR THE SITE AND CONFIRMED THAT FREE DISCHARGE OF RUNOFF FROM THE SITE IS ALLOWABLE TO EDITH BLVD NE.

2. A TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 09-26-2023. THIS REFERENCED DOCUMENT PROVIDES A DIGITAL ORTHOPHOTO, CONTOUR AND UTILITY INFORMATION FOR THE PROJECT SITE AND IS THE BASIS FOR THE EXISTING CONDITIONS OF THE SITE TO BE DEVELOPED.

IV. EXISTING CONDITIONS

THE EXISTING PUEBLO ESPERANZA SITE IS DEVELOPED AS A CEMETERY PARK WITH RELATED USES. AT PRESENT, THE PROJECT SITE CONSISTS OF ONE (1) SMALL CRYPT BULIDING, COVERED PEDESTRIAN SEATING AREAS, AND RELATED PAVED PEDESTRIAN IMPROVEMENTS, ALONG WITH SURROUND GRASS TURF AREAS. THE EXISTING PAVED AREAS CONSISTS OF A COMBINATION OF IMPERVIOUS SIDEWALK AND PERVIOUS COBBLES, PAVERS AND GRAVEL LANDSCAPING. THE PROJECT SITE IS LOCATED IMMEDIATELY NORTH OF AN EXISTING PRIVATE PAVED LOOP ROAD. THE SITE HAS A GRADUAL SLOPE (1-3%) THAT DRAINS FROM NORTHEAST TO SOUTHWEST ACROSS THE PROJECT SITE ONTO THE ADJACENT TURF GRASS AND TO THE PRIVATE LOOP ROAD. RUNOFF FROM THE EXISTING TURF GRASS UPSTREAM OF THE PROJECT AREA GENERALLY SHEET FLOWS ONTO AND ACROSS THE PROJECT SITE. THE RUNOFF IS CONTAINED AND MANAGED ONSITE AS APPROVED IN THE 2020 MDP FOR SUNSET MEMORIAL PARK.

AS NOTED IN THE 2020 MDP, THE OVERALL SITE CONSISTS OF MULTIPLE AREAS OF DISCONNECTED IMPERVIOUSNESS WITH MULTIPLE EXISTING DEPRESSIONS IN THE TURF AREAS THAT COLLECT AND TREAT RUNOFF PRIOR TO DISCHARGE. THESE AREAS LOCATED THROUGHOUT THE OVERALL SITE WILL EFFECTIVELY TREAT THE FIRST FLUSH RUNOFF FROM THE NEW DEVELOPMENT ONSITE AS THESE AREAS STORE AND INFILTRATE THE PROJECT SITE RUNOFF. THERE ARE NO OFFSITE FLOWS AFFECTING THIS PROJECT AREA.

V. DEVELOPED CONDITIONS

THE PROPOSED PUEBLO ESPERANZA DEVELOPMENT OF THE PROJECT SITE CONSISTS OF TWO SMALL MAUSOLEUM BUILDINGS, ASSOCIATED PERVIOUS COBBLE PAVERS FOR PEDESTRIAN ACCESS, AND THREE NEW PAVED PARALLEL PARKING SPACES (ONE ACCESSIBLE) ALONG THE NORTH SIDE OF THE PRIVATE LOOP ROAD. THESE IMPROVEMENTS ARE CONSISTENT WITH THE PUEBLO ESPERANZA EXPANSION REFERENCED IN THE 2020 SUNSET MEMORIAL MDP PHASED DEVELOPED CONDITIONS.

THE NEW PAVED AREAS IMPROVEMENTS WILL DRAIN NORTHEAST TO SOUTHWEST AROUND THE NEW MAUSOLEUM BUILDINGS AND CONTINUE TO DRAIN TO THE DOWNSTREAM TURF GRASS AND LOOP ROAD. A FLOWLINE WILL BE GRADED INTO THE TURF AREA IMMEDIATELY EAST OF THE PROPOSED IMPROVEMENTS TO DIVERT UPSTREAM RUNOFF SOUTH TO THE PAVED ACCESS ROAD, MITIGATING RUNOFF ONTO THE NEW PUEBLO ESPERANZA IMPROVEMENTS. THIS RUNOFF WILL CONTINUE TO BE MANAGED ONSITE. THESE IMPROVEMENTS ARE CONSISTENT WITH THE OVERALL 2020 MASTER DEVELOPMENT PLAN FOR THE SITE AND MAINTAIN THE APPROVED SITE DRAINAGE PATTERN FOR THE OVERALL SITE.

VI. CALCULATIONS

CALCULATIONS ANALYZING THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100 YEAR, 6-HOUR RAINFALL EVENT HAVE BEEN PREPARED FOR THE DEVELOPED CONDITION. THE DPM PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN DPM 6-2(A) HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. THE CALCULATIONS DEMONSTRATE THAT THERE WILL BE A 610 CF INCREASE IN RUNOFF GENERATED FROM THE PROJECT AREA, ALONG WITH A PEAK DISCHARGE INCREASE OF 0.2 CFS. THIS NEGLIGIBLE INCREASE WAS INCLUDED AS PART OF THE 2020 MDP PHASED IMPROVEMENTS, AND IS NOT ANTICIPATED TO NEGATIVELY IMPACT THE OVERALL DRAINAGE OF THE SITE.

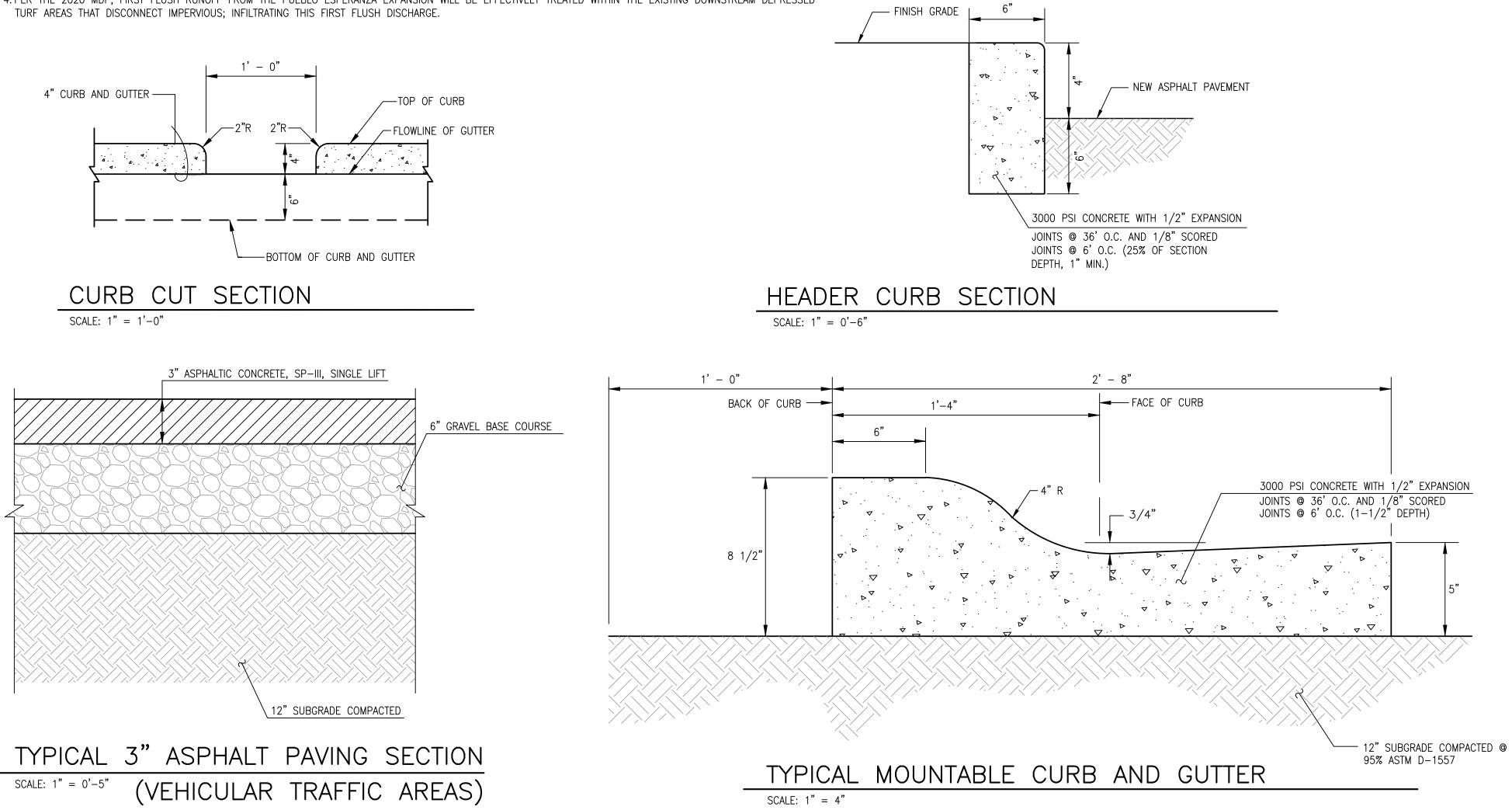
VII. CONCLUSIONS

1. THIS PLAN IS SUBMITTED TO SUPPORT BUILDING PERMIT APPROVAL FOR THE PUEBLO ESPERANZA EXPANSION

2. THIS PROJECT WILL RESULT IN A NEGLIGIBLE INCREASE IN STORMWATER VOLUME AND PEAK DISCHARGE GENERATED BY THE PROJECT AREA.

3. THIS PROJECT GRADING AND DRAINAGE CONFORMS TO THE PREVIOUSLY APPROVED AND ESTABLISHED 2020 MASTER DRAINAGE PLAN FOR SUNSET MEMORIAL PARK.

4. PER THE 2020 MDP, FIRST FLUSH RUNOFF FROM THE PUEBLO ESPERANZA EXPANSION WILL BE EFFECTIVELY TREATED WITHIN THE EXISTING DOWNSTREAM DEPRESSED



CALCULATIONS

. SITE CHARACTERISTICS

PRECIPITATION ZONE = 2.29 $P_{100, 6 HR} = P_{360} =$ IN

13,452|SF TOTAL PROJECT AREA $(A_T) =$

0.31 AC D LAND TREATMENTS

EXISTING LAND TREATMENT			PROPOSED LAND TREATMENT				
BASIN 1	13,452 SF		BASIN 1	13,452 SF 0.31 AC			
BASIN I	0.31 AC		BASIN I				
LAND TREATMENT	AREA (SF/AC)	%	LAND TREATMENT	AREA (SF/A	AC)	%	
А		_	A			-	
	9,406 SF	700/		4,618	SF	34%	
В	0.22 AC	— 70%	В	0.11	AC		
С			С			_	
D	4,047 SF	30%	D	8,834	SF	- 66%	
	0.09 AC	50%		0.20	AC		

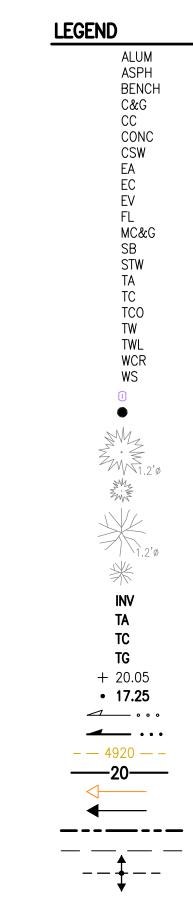
(INCREASE)

0.2 CFS

II. HYDROLOGY

Α.	. EXISTING CONDITION 100 YEAR STORM						
	1.	BASIN 1					
		a. VOLUME 100-YR, 6-HR					
		$WT_{E} = (E_{A} \cdot A_{A} + E_{B} \cdot A_{B} + E_{C} \cdot A_{C} + E_{D} \cdot A_{D})/A_{T}$					
		$\Rightarrow (0.62 \cdot 0.00) + (0.80 \cdot 0.22) + (1.03 \cdot 0.00) + (2.33 \cdot 0.09)/0.31 = 1.26 \text{ IN}$					
		$V_{100,6 \text{ HR}} = (E_W/12) \cdot A_T \Rightarrow (1.26/12) \cdot 0.31 = 0.0324 \text{ AC-FT} = 1,410 \text{ CF}$					
		b. PEAK DISCHARGE 100-YR					
		$Q_{100} = Q_A \cdot A_A + Q_B \cdot A_B + Q_C \cdot A_C + Q_D \cdot A_D$ $\Rightarrow (1.71 \cdot 0.00) + (2.36 \cdot 0.22) + (3.05 \cdot 0.00) + (4.34 \cdot 0.09) = 0.9 \text{ CFS}$					
		= (1.71 + 0.00) + (2.30 + 0.22) + (3.00 + 0.00) + (4.34 + 0.03) = 0.9 CFS					
P	DD	OPOSED CONDITION 100 YEAR STORM					
Ь.	1	BASIN 1					
		a. VOLUME 100-YR, 6-HR					
		$WT_{F} = (E_{A} \cdot A_{A} + E_{B} \cdot A_{B} + E_{C} \cdot A_{C} + E_{D} \cdot A_{D})/A_{T}$					
		$\Rightarrow (0.62 \cdot 0.00) + (0.80 \cdot 0.11) + (1.03 \cdot 0.00) + (2.33 \cdot 0.20)/0.31 = 1.80 \text{ IN}$					
		$V_{100.6 \text{ HR}} = (E_W/12) \cdot A_T \Rightarrow (1.80/12) \cdot 0.31 = 0.0463 \text{ AC-FT} = 2,020 \text{ CF}$					
		- 100,0 HR (- W -) / 1					
		c. PEAK DISCHARGE 100-YR					
		$\overline{Q_{100}} = Q_A \cdot A_A + Q_B \cdot A_B + Q_C \cdot A_C + Q_D \cdot A_D$					
		$\Rightarrow (1.71 \cdot 0.00) + (2.36 \cdot 0.11) + (3.05 \cdot 0.00) + (4.34 \cdot 0.20) = 1.1 \text{ CFS}$					
C.	<u>co</u>	MPARISON 100 YEAR STORM					
	1.	BASIN 1					
		a. VOLUME 100-YR, 6-HR					
		$\Delta V_{100, 6 \text{ HR}} = 2020 - 1410 = 610 \text{ CF}$ (INCREASE)					
		b. PEAK DISCHARGE 100-YR					

 $\Delta Q_{100} = 1.1 - 0.9 =$



APWA UTILITY COLOR CODE UTILITY LINE TYPES SUE QUALITY LEVEL B (QLB)-SOURCE: DESIGATION/PAINT

RED - ELECTRIC POWER LINES, CABLE AND LIGHTING CABLES

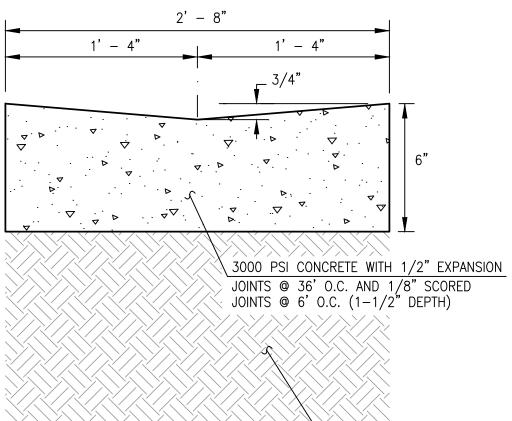
YELLOW - GAS, OIL, STEAM, PETROLEUM GASEOUS MATERIALS

ORANGE - COMMUNICATION, ALARM OR SIG LINES, CABLES OR CONDUIT

ORANGE - COMMUNICATION, FIBER OPTIC BLUE - POTABLE WATER

GREEN -SANITARY SEWER AND DRAIN LINE GREEN -STORM SEWER AND DRAIN LINES

RED – TRAFFIC SIGNALS

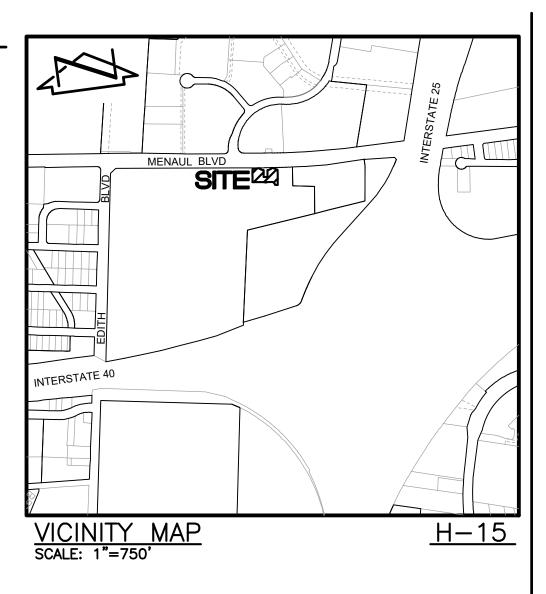


TYPICAL VALLEY GUTTER SECTION SCALE: NTS

ASPHALT STONE BENCH CURB AND GUTTER CONCRETE CURB CONCRETE CONCRETE SIDEWALK EDGE OF ASPHALT EDGE OF CONCRETE ELECTRIC VAULT FLOW LINE MOUNTABLE CURB AND GUTTER STONE BORDER STUCCO WALL TOP OF ASPHALT TOP OF CURB TOP OF CONCRETE TOP OF WALL TREE WELL WHEELCHAIR RAMP WHEEL STOP IRR VALVE BOX HEADSTONE CONIFEROUS TREE AND DIAMETER SMALL CONIFEROUS TREE DECIDUOUS TREE AND DIAMETER SMALL DECIDUOUS TREE INVERT TOP OF ASPHALT PAVEMENT TOP OF CURB TOP OF GRATE EXISTING SPOT ELEVATION PROPOSED SPOT ELEVATION EXISTING FLOWLINE PROPOSED FLOWLINE EXISTING CONTOUR PROPOSED CONTOUR EXISTING DIRECTION OF FLOW PROPOSED DIRECTION OF FLOW RIGHT OF WAY LINE PUBLIC EASEMENT LINE HIGH POINT / DIVIDE

ALUMINUM CAP PLOT MARKER

JATION/PAINT	
ES, CONDUIT	— E QLB— — — E QLB— — — –
OR	- G QLBG QLB
IGNAL	- C QLBC QLB
LINES	- FO QLBFO QLB
	- w qlbw qlb
ES	-SAS QLBSAS QLB
	- SD QLBSD QLB
	- TS QLB TS QLB



cpra

cemetery planning

resource alliance

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09-24-2024

J.Y.R./J.D.S.

09.24.2024

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littleton, colorado 80125

cpra studio, llc

303.683.5917

PROJECT BENCHMARK - DESTROYED

AN A.G.R.S. 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 11-H15" EPOXIED ON TOP OF CONCRETE CURB RETURN, AT THE ENE QUADRANT OF THE INTERSECTION OF MENAUL BOULEVARD AND BROADBENT PARKWAY N.E. ELEVATION = 5015.50 FEET (NAVD 1988)

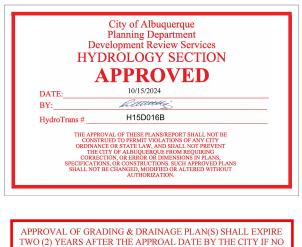
TEMPORARY BENCHMARK #207 (T.B.M.)

A MAG NAIL SET IN ASPHALT ON THE SOUTH SIDE OF ELM DRIVE, SHOWN ON SHEET C103 MODIFIED GROUND COORDINATES: NORTHING = 1,494,775.81 FEET

EASTING = $1,525,342.84$ FEET
ELEVATION = 5003.84 FEET (NAVD 1988)
TEMPORARY BENCHMARK #213 (T.B.M.)
A 60d NAIL SET IN GRASS ON THE EAST OF THE COBBLE PATHWAY, SHOWN ON
SHEET C101
MODIFIED GROUND COORDINATES:
NORTHING = 1,494,920.06 FEET
EASTING = 1,525,357.04 FEET
ELEVATION = 5004.89 FEET (NAVD 1988)
TEMPORARY BENCHMARK #217 (T.B.M.)
A MAG NAIL SET IN ASPHALT ON THE NORTH SIDE OF CANNA DRIVE, SHOWN ON

SHEET C101. MODIFIED GROUND COORDINATES: NORTHING = 1,495,064.57 FEET = 1,525,357.58 FEET EASTING ELEVATION = 5006.48 FEET (NAVD 1988) TENDODARY RENCHMARK #218 (T R M)

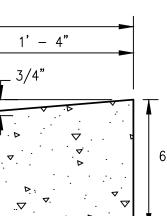
IEMPUKARI I	DEINCHMARK	_ ₩ ∠10	<u> </u>	.D.M.	·)			
A MAG NAIL SET I	IN ASPHALT ON	THE SC)UTH 🗄	SIDE C)F THE	LOOP	ROAD,	SHOWN
ON SHEET C102								
MODIFIED GROUND	COORDINATES:							
NORTHING =	1,495,123.39 F	EET						
EASTING =	1,526,131.42 F	EET						
ELEVATION =	5018.68 FEET	(NAVD [^]	1988)					



G PERMIT HAS BEEN PULLED ON THE DEVELOPMEN

HIGH

P:505.345.4250



12" SUBGRADE COMPACTED @ 95% ASTM D-1557

NOTE:

THIS IS NOT A BOUNDARY SURVEY OR A RIGHT-OF-WAY SURVEY. APPARENT PROPERTY CORNERS, RIGHT-OF-WAY LINES, OR PROPERTY LINES AS SHOWN ARE DERIVED FROM RECORD SURVEY PLATS, RIGHT-OF-WAY MAPS, OR DEEDS REFERENCED HEREON AND ARE NOT GUARANTEED OR TO BE RELIED ON FOR THE ESTABLISHMENT OF PROPERTY LINES. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON A BOUNDARY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 09/26/2023 (2023.033.2). THE TOPOGRAPHIC INFORMATION

DEPICTED HEREON IS BASED UPON THE TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 09/26/2023 (2023.033.2).

MESA a Bowman company

highmesacg.com | bowman.com

6010-B Midway Park Blvd. NE, Albuquerque, NM 87109

2023.033.3



SECTIONS &

DETAILS SHEET NUMBER:

SHEET TITLE: DRAINAGE PLAN & CALCULATIONS;

DRAWN BY:

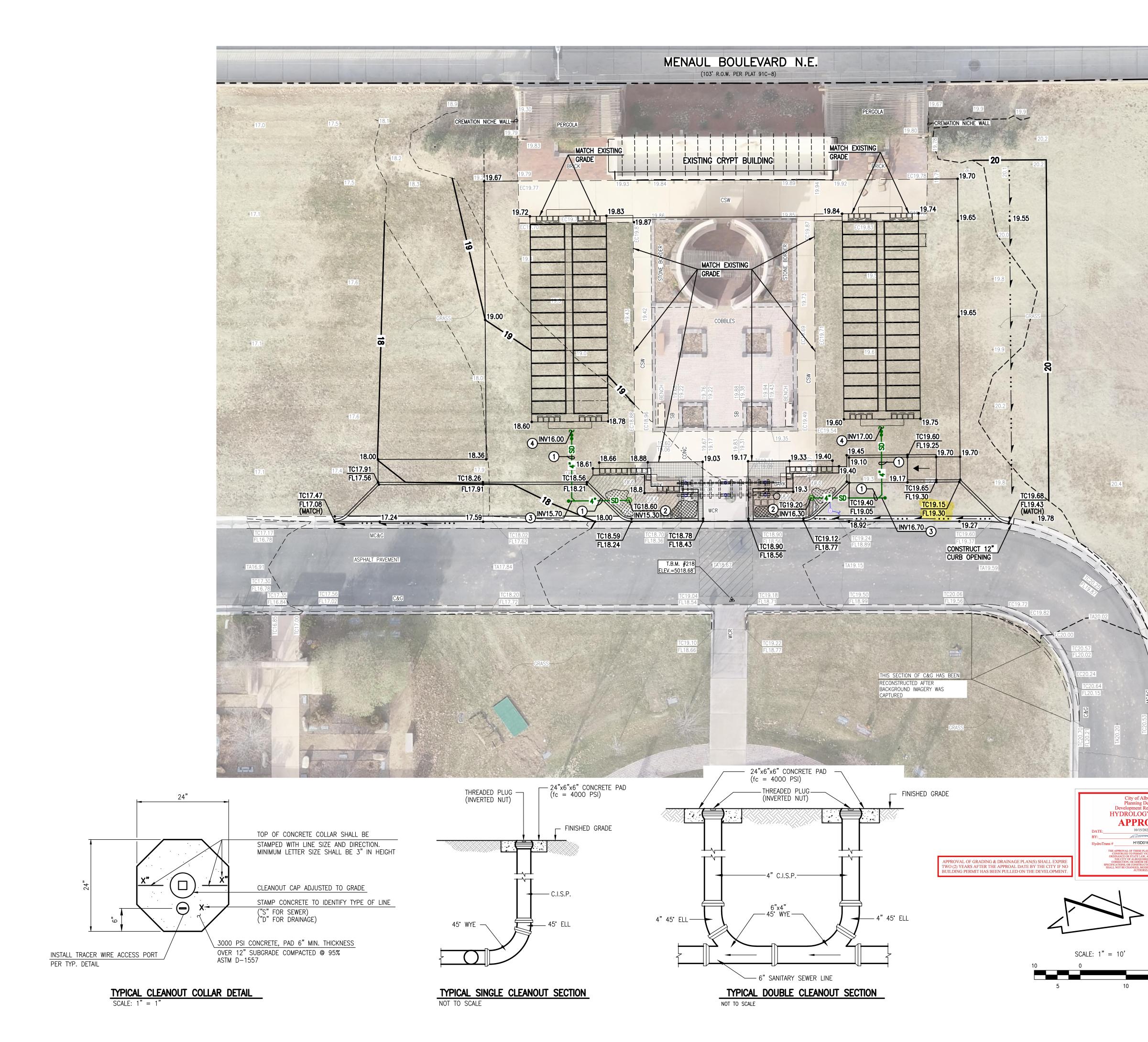
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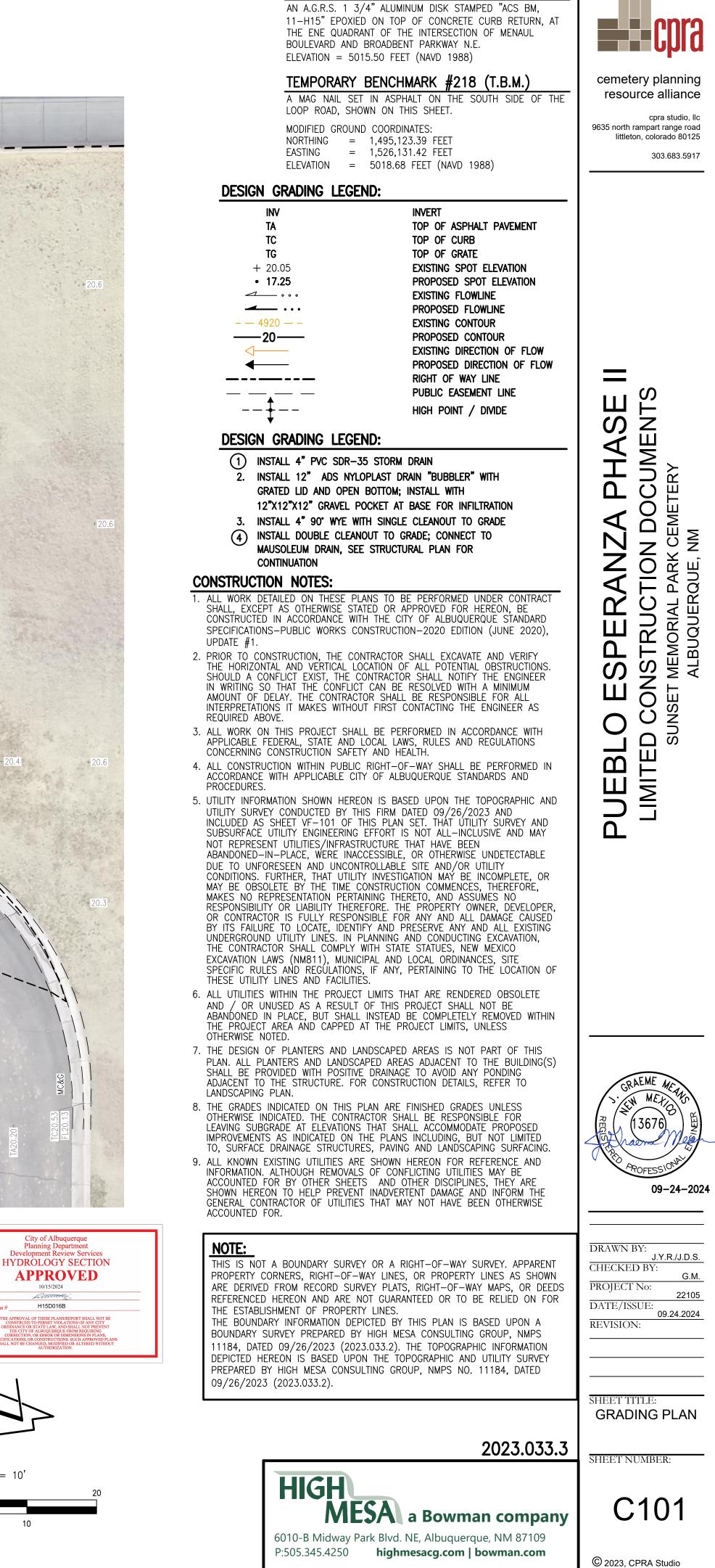
PROJECT No:

DATE/ISSUE:

REVISION:

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PROJECT BENCHMARK – DESTROYED