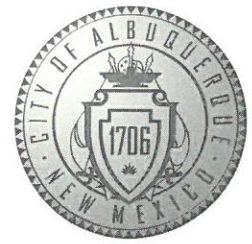


CITY OF ALBUQUERQUE



October 24, 2017

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

**RE: Penske Truck Leasing Addition
1400 Candelaria NE
Grading and Drainage Plan
Engineer's Stamp Date 10/20/17 (File: H15D052)**

Dear Mr. Means:

Based on the information provided in your submittal received on 10/20/17, this plan is re-approved for Building Permit.

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

PO Box 1293

Sincerely,

Albuquerque

NM 87103

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

www.cabq.gov

File Path: P:\MVA\2017\0371\384\ [Plot Date: 08-15-2017]
File Name: 20170371_TOPO.DWG [Plot Time: 11:44 am]

HIGH MESA Consulting Group
Engineers, Surveyors & Surveyors Utility Consultants

6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesag.com

PARTIAL TOPOGRAPHIC AND UTILITY SURVEY
PENSKE

PROJECT BENCHMARK

AGRS 3" BRASS DISC STAMPED "CANDELARIA 1979", SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND, NEAR THE NORTHEAST QUADRANT OF THE INTERSECTION OF CANDELARIA BLVD AND UNIVERSITY AVE NE.
NORTHING 1,497,091.458 (GRID) 1,497,091.46 (GROUND)
EASTING 1,528,901.06 (GRID) 1,528,901.06 (GROUND)
ELEVATION = 5090.846 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #1

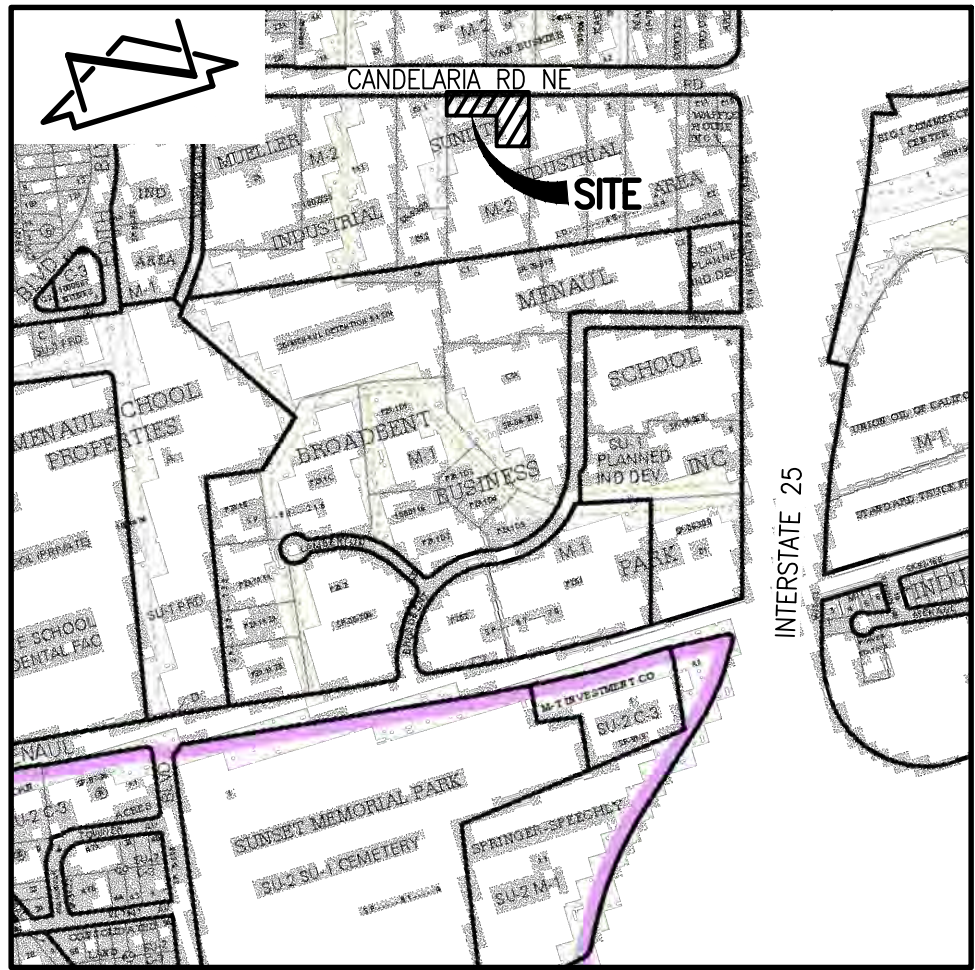
A MAG NAIL IN ASHALT NEAR THE WESTERN MOST DRIVE ENTRANCE TO THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,470.95 (GROUND)
EASTING 1,526,806.99 (GROUND)
ELEVATION = 5023.78 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #2

A MAG NAIL IN ASHALT NEAR THE EASTERN MOST DRIVE ENTRANCE TO THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,402.05 (GROUND)
EASTING 1,527,019.81 (GROUND)
ELEVATION = 5031.27 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #3

A MAG NAIL IN ASHALT NEAR THE SOUTHERN PORTION OF THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,248.90 (GROUND)
EASTING 1,526,952.87 (GROUND)
ELEVATION = 5031.33 FEET (NAVD 1988)



VICINITY MAP
SCALE: 1" = 750'

H-15

LEGEND

ASPH	ASPHALT PAVING
ASV	ANTI-SIPHON VALVE
BOH	BUILDING OVERHANG
C&G	CONCRETE CURB AND GUTTER
CC	CONCRETE CURB
CDP	CONCRETE DRIVE PAD
CLD	CENTERLINE DOOR
CLF/BW	CHAIN LINK FENCE WITH BARBED WIRE
CO	SEWER CLEANOUT
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
DCO	DOUBLE SANITARY SEWER CLEANOUT
E/PM	ELECTRIC LINE BY PAINT MARK
EC	ELECTRIC CONDUIT
EDC	ELECTRIC DISCONNECT
EJB	ELECTRIC JUNCTION BOX
EO	ELECTRIC OUTLET
FL	FLOWLINE
G/PM	GAS LINE BY PAINT MARK
GP	METAL GUARD POST
GRV	GRAVEL
HCS	HANDICAPPED PARKING SPACE SIGN
ICB	IRRIGATION CONTROL BOX
IVB	IRRIGATION VALVE BOX
OHC(1)	OVERHEAD COMMUNICATIONS LINE (# OF LINES)
OHE(1)	OVERHEAD ELECTRIC LINE (# OF LINES)
PS	PAINTED PARKING STALL STRIPE
RR	RIVER ROCK
SAS/PM	SANITARY SEWER LINE BY PAINT MARK
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TG	TOP OF GRADE
VG	VALLEY GUTTER
W/PM	WATER LINE BY PAINT MARK
WCR	WHEEL CHAIR RAMP
WLP	WOOD LIGHT POLE
WMB	WATER METER BOX
WS	WHEEL STOP
WVB	WATER VALVE BOX
1.0"	TREE TRUNK DIAMETER
	CONIFEROUS TREE
	DECIDUOUS TREE
	SHRUB

NOTES

- A TOPOGRAPHIC AND UTILITY SURVEY WAS PERFORMED IN AUGUST, 2017. THIS IS NOT A BOUNDARY SURVEY.
- ALL DISTANCES ARE GROUND DISTANCES.
- SITE LOCATED WITHIN SECTION 9, TOWNSHIP 10 NORTH, RANGE 3 EAST, N.M.P.M.
- UTILITY INFORMATION SHOWN HEREON IS BASED UPON ONSITE SURFACE EVIDENCE AND ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY DISTRIBUTION MAPS, AVAILABLE RECORD DRAWINGS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2017.037.1 SITE UTILITY DIAGRAM DATED 08-02-2017). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #17JU280383). UTILITY LINES SHOWN ON THIS DRAWING ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE SURVEYOR HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- THIS TOPOGRAPHIC AND UTILITY SURVEY HAS BEEN PREPARED BASED UPON NAVD 88 DATUM. PREVIOUS SURVEYS AND ABCWUA/CITY OF ALBUQUERQUE RECORD DRAWINGS OF THIS AREA HAVE BEEN CONDUCTED BASED UPON NGVD 29 DATUM. SPECIAL CARE SHOULD BE EXERCISED WHEN COMPARING ELEVATIONS FROM THIS SURVEY TO CURRENT AND PREVIOUS SURVEYS, PLANS AND AS-BUILT DOCUMENTS.

CONTROL SURVEY NOTE

A CONTROL SURVEY WAS CONDUCTED AT THE SITE ON AUGUST 13, 2017. CONTROL WAS PROJECTED ONTO THE SUBJECT SITE UTILIZING RTK GPS OBSERVATIONS COMBINED WITH GEOID 12B(CONUS) TO ESTABLISH HORIZONTAL AND VERTICAL POSITIONS BASED UPON NAD83/NAVD 88 DATUM. THE RTK OBSERVATIONS WERE USED TO ESTABLISH THE TEMPORARY BENCHMARKS AT THE PROJECT SITE. THE POINTS OBSERVED HAVE BEEN QUALITY CONTROLLED FOR RELATIVE ACCURACY. AN AGRS CONTROL STATION IN THE VICINITY OF THE PROJECT WAS OBSERVED IN ORDER TO PROVIDE REFERENCE TIES TO THE SITE. THE CONTROL STATION USED TO PROJECT FROM GRID TO GROUND FOR THIS PROJECT IS AGRS CONTROL STATION "CANDELARIA 1979".

SURVEYORS CERTIFICATION

I, CHARLES G. CALA, JR., NEW MEXICO PROFESSIONAL SURVEYOR NO. 11184, DO HEREBY CERTIFY; THAT THIS TOPOGRAPHIC AND UTILITY SURVEY AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WERE PERFORMED BY ME OR UNDER MY DIRECT SUPERVISION; THAT THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO, AND THAT IT IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Charles G. Cala, Jr.
CHARLES G. CALA, JR., NMPS 11184



8/15/2017
DATE

SURVEYED BY	NO.	DATE	BY	REVISIONS	JOB NO.
E.J.S.					2017.037.1
E.J.S.					DATE 09-2017
C.G.C.					SHEET 2 OF 6

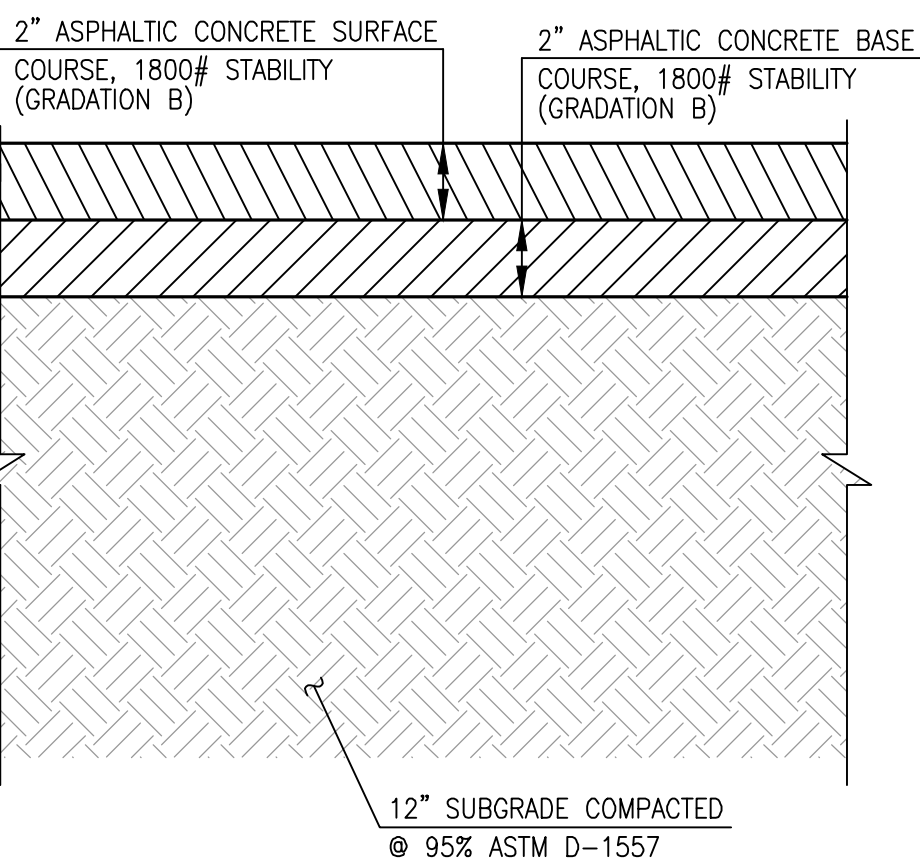
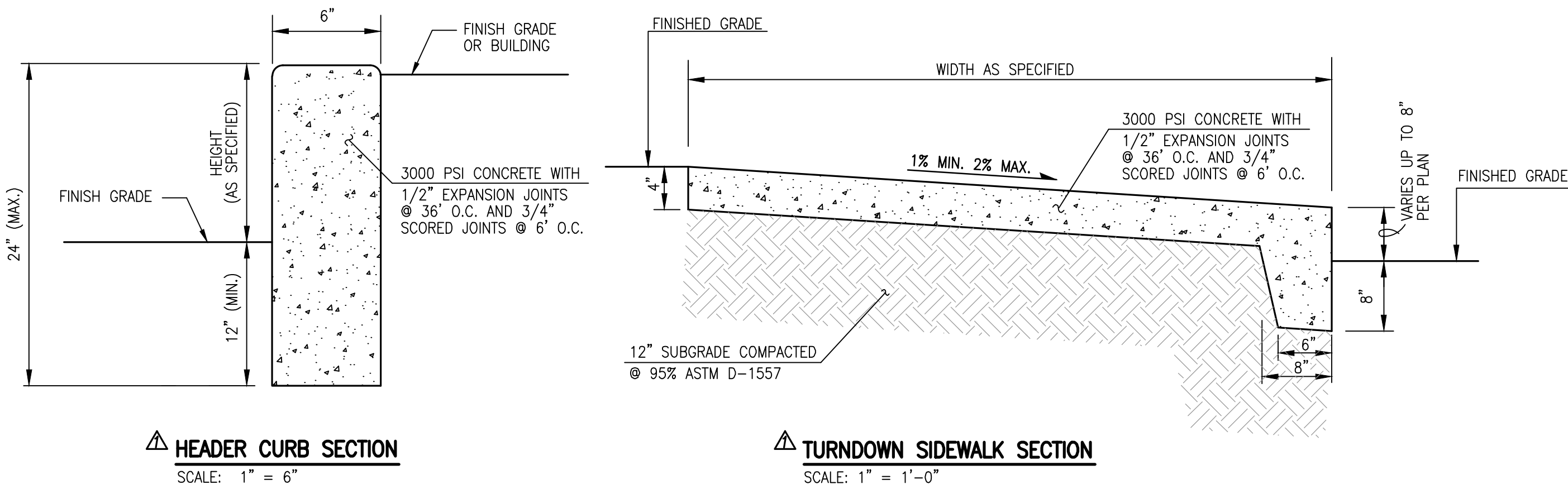
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File Name: 170372_SH3-R1.DWG Plot Time: 09:07 am

LEGEND	
1.0' Ø	TREE TRUNK DIAMETER
	CONIFEROUS TREE
	DECIDUOUS TREE
	SHRUB
	PROPOSED CONCRETE
	PROPOSED ASPHALT PAVING
	PROPOSED GRAVEL AREA

SURVEY NOTE:
THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE PARTIAL TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 08/15/2017 (2017.037.1).

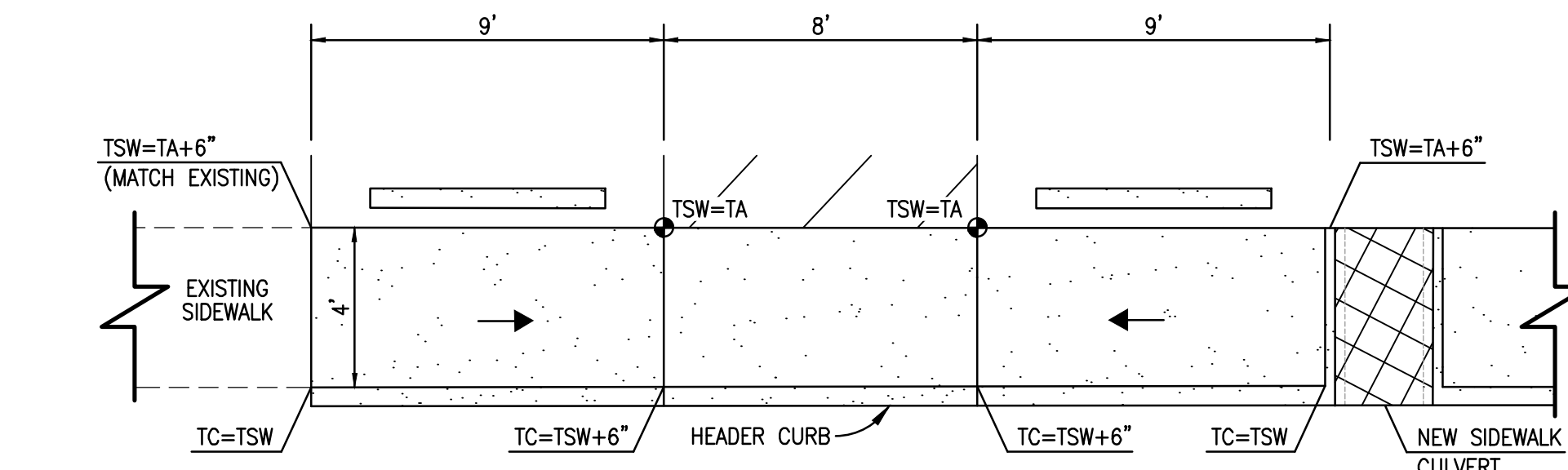
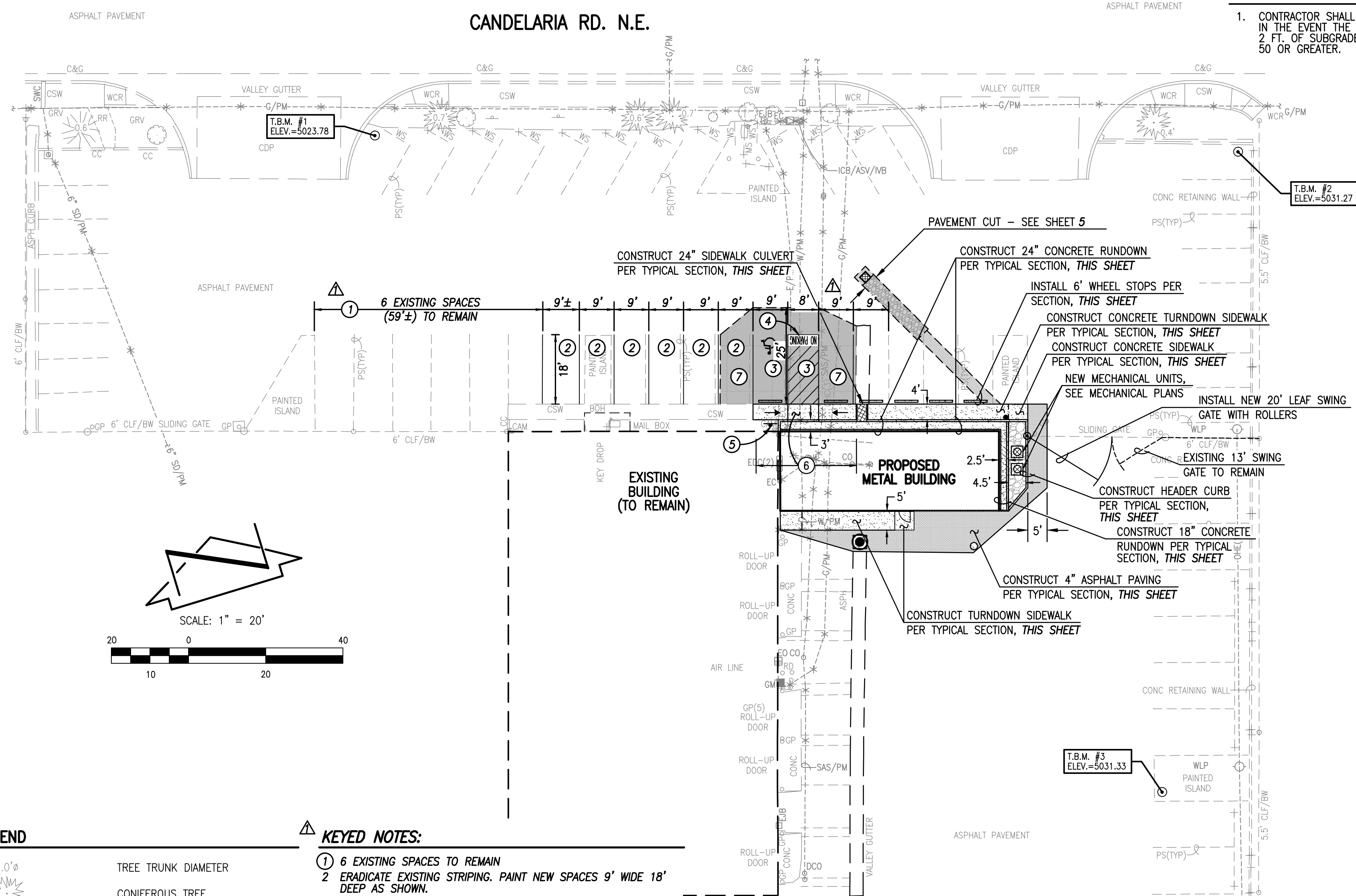
- KEYED NOTES:**
- 6 EXISTING SPACES TO REMAIN
 - ERADICATE EXISTING STRIPING. PAINT NEW SPACES 9' WIDE 18' DEEP AS SHOWN.
 - ERADICATE EXISTING STRIPING. NEW ACCESSIBLE PARKING SPACE 9' WIDE x 18' LONG WITH BLUE STRIPING AND SYMBOL 8' WIDE x 18' LONG CROSS HATCHED AISLE.
 - WORDS "NO PARKING" IN WHITE PAINT
 - NEW ACCESSIBLE PARKING SIGN WITH "VAN ACCESSIBLE" PLACARD AND LANGUAGE INDICATING VIOLATIONS ARE SUBJECT TO A FINE AND/OR TOWING
 - REMOVE EXISTING SIDEWALK AND ASPHALT PAVEMENT. CONSTRUCT ACCESS RAMP PER TYPICAL SECTION THIS SHEET.
 - NEATLY SAWCUT. REMOVE, DISPOSE AND REPLACE ASPHALT PAVEMENT PER TYPICAL SECTION, THIS SHEET.

NOTE:
REFER TO DEMO PLAN FOR REMOVAL OF EXISTING METAL BUILDING AND RELATED APPURTENANCES NOT SHOWN HEREON FOR CLARITY.

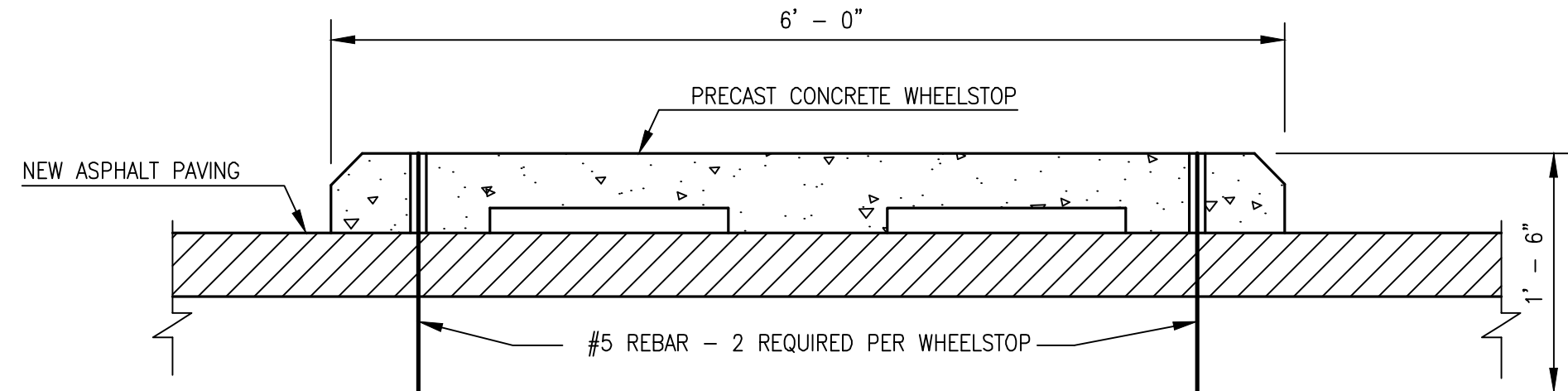


TYPICAL 4" ASPHALT PAVING SECTION
SCALE: 1" = 5" (VEHICULAR TRAFFIC AREAS)

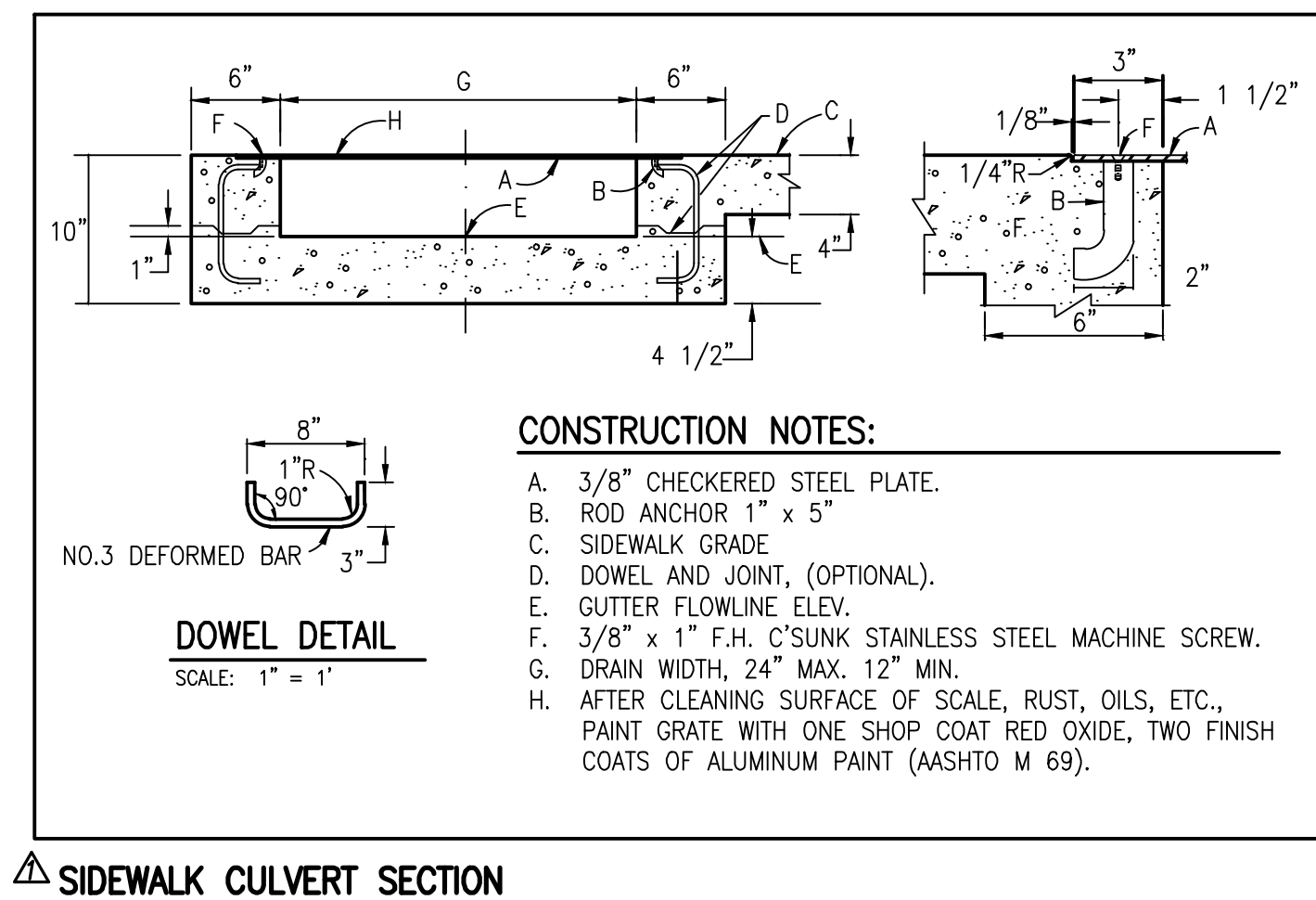
- PAVING SECTION NOTES:**
- CONTRACTOR SHALL TEST SUBGRADE R-VALUE PRIOR TO CONSTRUCTION. IN THE EVENT THE R-VALUE IS LESS THAN 50, CONTRACTOR SHALL REMOVE 2 FT. OF SUBGRADE MATERIAL AND IMPORT SUITABLE MATERIAL WITH R-VALUE 50 OR GREATER.



TYPICAL ACCESS RAMP DETAIL
SCALE: 1" = 4'-0"



WHEELSTOP SECTION
SCALE: 1" = 1'-0"



SIDEWALK CULVERT SECTION
SCALE: 1" = 2"

- CONSTRUCTION NOTES:**
- 3/8" CHECKERED STEEL PLATE.
 - ROD ANCHOR 1" x 5"
 - SIDEWALK GRADE.
 - DOWEL AND JOINT, (OPTIONAL).
 - GUTTER FLOWLINE ELEV.
 - 3/8" x 1" F.H. C'SUNK STAINLESS STEEL MACHINE SCREW.
 - DRAIN WIDTH, 24" MAX. 12" MIN.
 - AFTER CLEANING SURFACE OF SCALE, RUST, OILS, ETC., PAINT GRATE WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS OF ALUMINUM PAINT (AASHTO M 69).

PROJECT BENCHMARK

AORS 3" BRASS DISC STAMPED "CANDELARIA 1979", SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND, NEAR THE NORTHEAST QUADRANT OF THE INTERSECTION OF CANDELARIA BLVD AND UNIVERSITY AVE. NE.

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EASTING 1,528,901.06 (GRID) 1,528,901.06 (GROUND)
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TEMPORARY BENCHMARK (T.B.M.) #2

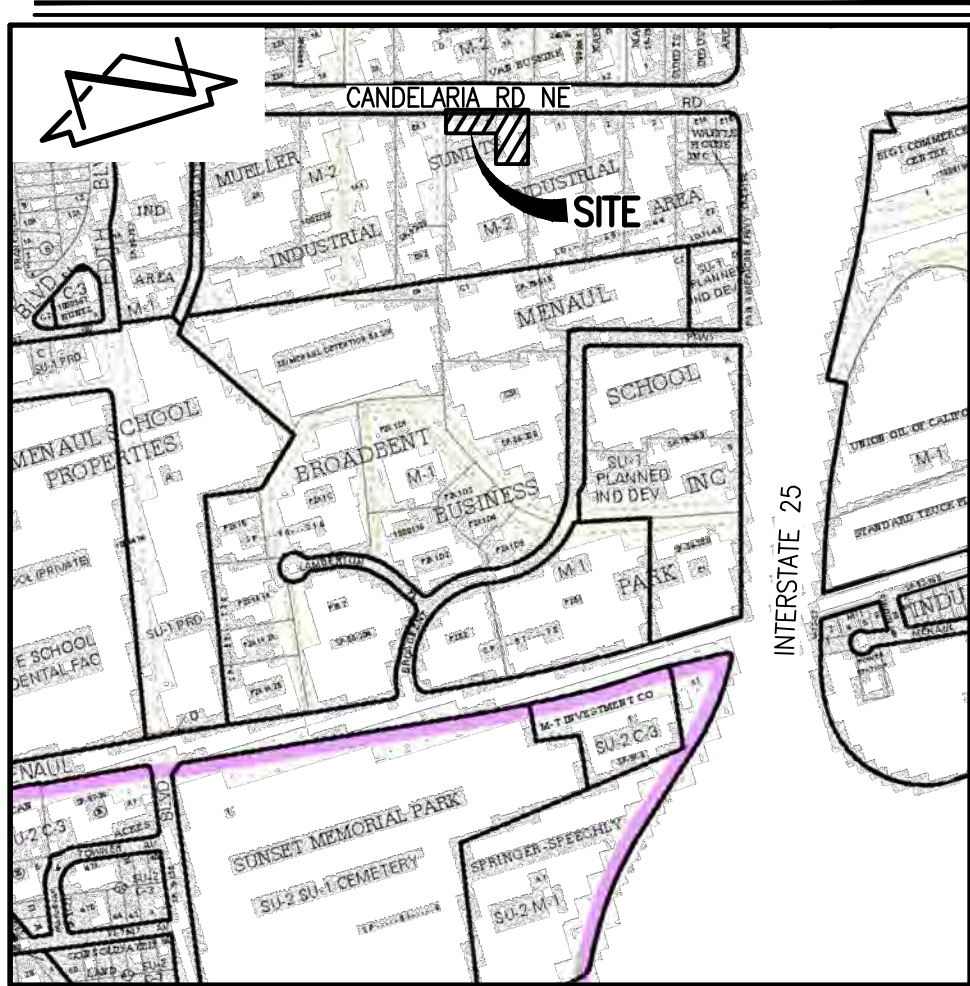
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EASTING 1,526,952.87 (GROUND)
ELEVATION = 5031.33 FEET (NAVD 1988)



VICINITY MAP
SCALE: 1" = 750'

CONSTRUCTION NOTES:

- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR APPROVED FOR HEREON, BE CONDUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS-PUBLIC WORKS CONSTRUCTION-1986-UPDATE NO. 9.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
- UTILITY INFORMATION SHOWN HEREON IS BASED UPON ON-SITE SURFACE EVIDENCE AND ALBUQUERQUE BERNILLO COUNTY WATER UTILITY AUTHORITY DISTRIBUTION MAPS, AVAILABLE RECORD DRAWINGS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2017.037.1 SITE UTILITY DIAGRAM DATED 08-02-2017). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #17J280383). UTILITY LINES SHOWN ON THIS DRAWING ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE SURVEYOR HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
- THE GRADES INDICATED ON THIS PLAN ARE FINISHED GRADES UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING SUBGRADE AT ELEVATIONS THAT SHALL ACCOMMODATE PROPOSED IMPROVEMENTS AS INDICATED ON THE PLANS INCLUDING, BUT NOT LIMITED TO, SURFACE DRAINAGE STRUCTURES, PAVING AND LANDSCAPING SURFACING.

J. GRAEME MEANS
NEW MEXICO
REGISTERED PROFESSIONAL
13676

10-20-2017
2017.037.2
10-09-2017

DATE: 10/9/2017
ISSUED FOR: SITE REVIEW

SHEET NO: 3

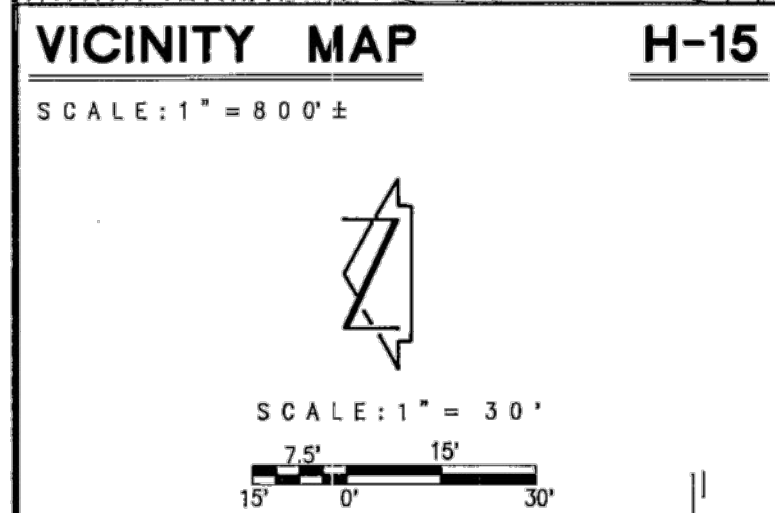
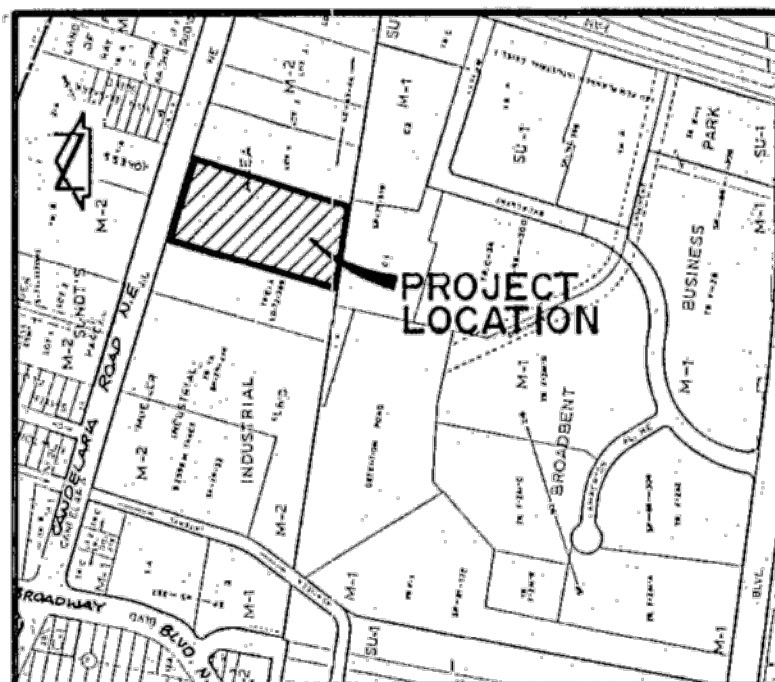


AN ADDITION TO
PENSKE TRUCK LEASING
1400 CANDELARIA ROAD NE
ALBUQUERQUE, NEW MEXICO

HIGH MESA Consulting Group
Albuquerque, New Mexico

6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

DRAWN BY:	DATE:	REVISIONS	DATE:	ISSUED FOR:
J.Y.R.	10/17	ADDRESS CITY ADA COMMENTS	10/9/2017	SITE REVIEW
CHECKED BY:				
G.M.				
PROJECT NO:				
2017.21				



PROJECT BENCHMARK

A SQUARE, CHISELED ON TOP OF CONCRETE CURB AT THE ENE CORNER LOCATED AT THE INTERSECTION OF CANDELARIA ROAD N.E. AND HIGH STREET N.E. IN THE NORTHEAST QUADRANT OF THE INTERSECTION.
ELEVATION = 4995.328 FEET (M.S.L.D.)

T.B.M.

FINISHED FLOOR ELEVATION OF EXISTING BUILDING AS SHOWN ON THE DRAWING BELOW.
ELEVATION = 5026.79

LEGAL DESCRIPTION

UNPLATTED

LEGEND

TW TOP OF WALL
BW BOTTOM OF WALL
FL FLOW LINE
TAC TOP OF ASPHALT CURB
THC TOP OF HEADER CURB
TOD TOP OF CONCRETE
TA TOP OF ASPHALT
+ 27.36 EXISTING SPOT ELEVATION
- 31- EXISTING CONTOUR
- 31- PROPOSED CONTOUR

AS-BUILT LEGEND
17.00V AS-BUILT = AS DESIGNED
22.50 AS-BUILT ELEVATION
17.99-01 AS-BUILT ELEVATION

DRAINAGE PLAN
The following items concerning the Penske Truck Leasing Drainage Plan are contained hereon:
1. Vicinity Map
2. Grading Plan
3. Calculations
4. Sections & Details

As shown by the Vicinity Map, the site is located on the south side of Candelaria Road N.E. between Broadway Boulevard N.E. and the I-25 West Frontage Road. At present, the site is developed as a truck leasing facility. The front portion (Basin A-1) of the property is fully developed with paving, building area and limited landscaping. The rear portion (Basin A-2) is used for vehicle storage. The area is developed with compacted gravel and two mobile homes used as office facilities.

As shown by Panel 23 of 50 of the National Flood Insurance Program Flood Insurance Rate Maps for the City of Albuquerque, New Mexico, dated October 14, 1983, this site does not lie within a designated flood hazard zone. The site currently drains in a northerly direction toward Candelaria Road N.E. From this point, runoff drains west to a designated flood hazard zone which is situated at the intersection of Candelaria Road and the Railroad. It is because of this that the controlled discharge of runoff from Basin A-2 is required for the development of that portion of the site. Basin A-1 represents an existing condition for which no additional treatment of the runoff is required.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, 4) Drainage Basin boundaries indicated by the south edge of the existing asphalt paving and 5) continuity between existing and proposed grades. As shown by this plan, the proposed development consists of the grading and paving of Basin A-2. A single "D" storm inlet will be located within the new paving to provide detention ponding. An 8" extruded asphalt curb will be constructed along the west edge of the paving to further control runoff and eliminate the potential discharge of runoff from the site onto the adjacent property which lies to the west. The maximum pond depth will be 18" measured from the top-of-grate to the maximum water surface level of 22.5. The ponded runoff will discharge via a 6" drain line which will discharge into the back of a 12" sidewalk culvert which will be constructed within the south curb line of Candelaria Road N.E.

The Calculations which appear hereon analyze the existing and developed conditions for the 100-year, 6-hour rainfall event. The Procedure for 40-acre and Smaller Basins as set forth in the Revision of Section 22.2, Hydrology of the Development Process Manual, Volume 2, Design Criteria, dated August, 1991, has been used to compute both the peak discharge and volume of runoff generated by this site. As shown by these calculations, the proposed improvements will increase the volume of runoff generated by Basin A-2. Due to the controlled discharge of runoff, the peak rate of discharge from Basin A-2 to Candelaria Road N.E. will be significantly decreased. No changes in runoff characteristics for Basin A-1 are anticipated. The pond volume has been calculated using the Average End Area Method, while the capacity of the 6" drain line has been calculated by the Orifice Equation for Entrance Conditions and the Manning Equation for Pipe Flow Conditions.

DRAINAGE CERTIFICATION
As indicated by the as-built information shown hereon, the paving in Basin A-2 has been graded and drained in substantial compliance with the approved Grading and Drainage Plan dated 08-06-93. The as-built information shown hereon has been obtained by me or under my direct supervision, verified by visual inspection on 08-10-97, and is true and correct to the best of my knowledge and belief.

Jeffrey G. Mortensen
08-12-97
Date
Professional Engineer
New Mexico
8547

CALCULATIONS		
Site Characteristics		
1. Precipitation Zone	2.	
2. $P_{6,100} = P_{360} =$	2.35"	
3. Total Area (A_T)	4.54 ac.	
4. Existing Land Treatment		
A. Basin A (A01 + A-2)		
Treatment	Area (sf/ac)	%
B	1,550/0.04	01
C	98,200/2.26	50
D	97,650/2.24	49

5. Developed Land Treatment		
A. Basin A-1		
Treatment	Area (sf/ac)	%
B	1,550/0.04	1.6
D	94,700/2.18	98.4
B. Basin A-2		
Treatment	Area (sf/ac)	%
C	1,400/0.03	1.4
D	99,750/2.29	98.6

Existing Condition - (Basin A)

1. Volume
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.78)(0.04) + (1.13)(2.26) + (2.12)(2.24) / 4.54 = 1.62"$
 $V_{100} = (E_W / 12) A_T$
 $V_{100} = (1.62 / 12) 4.54 = 0.6129 \text{ ac.ft.}; 26,700 \text{ cf}$

2. Peak Discharge
 $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
 $Q_P = Q_{100} = (2.28)(0.04) + (3.14)(2.26) + (4.70)(2.24) = 17.7 \text{ cfs}$

Developed Condition

A. Basin A-1

1. Volume
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (0.78)(0.04) + 2.12(2.18) / 4.54 = 1.03"$
 $V_{100} = (E_W / 12) A_T$
 $V_{100} = (1.03 / 12) 4.54 = 0.3897 \text{ ac.ft.}; 17,000 \text{ cf}$

2. Peak Discharge
 $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
 $Q_P = Q_{100} = (2.28)(0.04) + (4.70)(2.18) = 10.3 \text{ cfs}$

B. Basin A-2

1. Volume
 $E_W = (E_A A_A + E_B A_B + E_C A_C + E_D A_D) / A_T$
 $E_W = (1.13)(0.03) + 2.12(2.29) / 4.54 = 1.08"$
 $V_{100} = (E_W / 12) A_T$
 $V_{100} = (1.08 / 12) 4.54 = 0.4086 \text{ ac.ft.}; 17,800 \text{ cf}$

2. Peak Discharge
 $Q_P = Q_{PA} A_A + Q_{PB} A_B + Q_{PC} A_C + Q_{PD} A_D$
 $Q_P = Q_{100} = (3.14)(0.03) + (4.70)(2.29) = 10.9 \text{ cfs}$

Comparison

1. $\Delta V_{100} = (17,000 + 17,800) - 26,700 = 8,100 \text{ cf (increase)}$
2. $\Delta Q_{100} = 17.7 - (10.3 + 0.4) = 7.0 \text{ cfs (decrease)}$

Pond Volume

Elev.	A (sf)	Vol (cf)	% Vol (cf)
21	0	4,515	4,515
22	9,030	14,148	18,663
22.5	20,928		

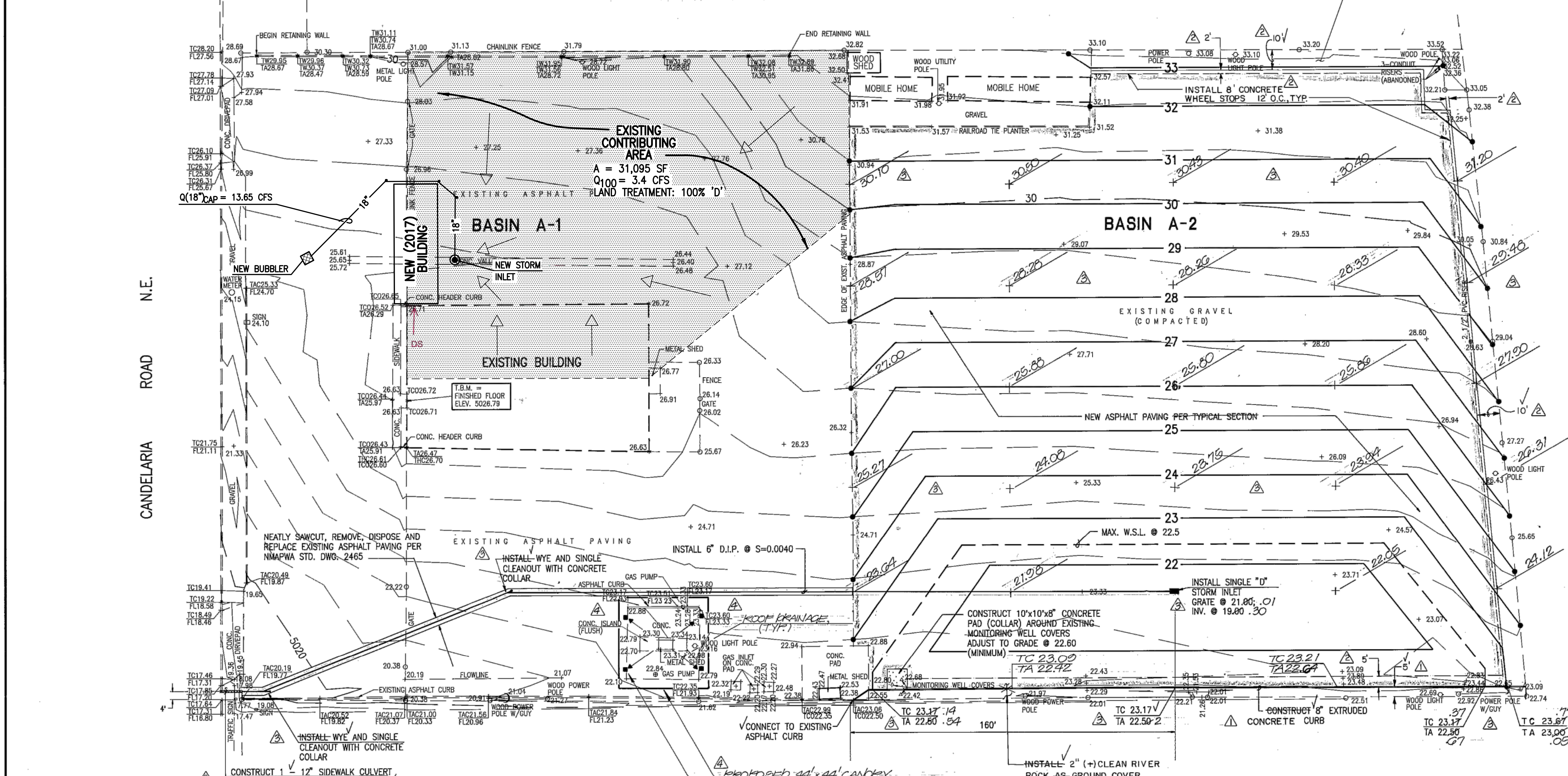
Volume at Max. W.S.L. = 18,663 cf > $V_{100} = 17,800 \text{ cf}$

Pond Discharge

1. Pipe flow (Manning Equation)
Using Feild's Hydraulics Calculator for Gravity Flow in Pipes
Let:
 $n = 0.013$
 $d = 6"$
 $s = 0.0040$
 $q = 0.36 \text{ cfs}$
 $V_{100} = 49,444 \text{ sec}$
 $t = V_{100} / q = 824 \text{ min} = 13.7 \text{ hr} < 24 \text{ hr}$

2. Inlet Control (Orifice Equation)
 $Q = C_A (2gh)^{1/2}$
Let:
 $C = 0.6$
 $A = 7/4 (8")^2 = 0.35 \text{ sf}$
 $g = 32.2 \text{ ft/sec}^2$
 $h = 22.5 - 19 - 0.25 = 3.25 \text{ ft}$
 $Q = 3.4 \text{ cfs} > q$
 $t = V_{100} / Q = 34,800 \text{ cf} / 3.4 \text{ cfs} = 10,235 \text{ sec} = 171 \text{ min}.$
 $= 2.8 \text{ hr.} < 24 \text{ hrs.}$

Pipe Flow Capacity Governs Discharge



APPROVALS	NAME	DATE
A.C.E./DESIGN		
INSPECTOR		
A.C.E./FIELD		

JMA
JEFF MORTENSEN & ASSOCIATES, INC.
6000 S MIDWAY PARK BLVD N.E.
ALBUQUERQUE, NEW MEXICO 87109
ENGINEERS & SURVEYORS (505) 345-4250

GRADING AND DRAINAGE PLAN PENSKE TRUCK LEASING

DRAINAGE PLAN UPDATE
This Plan is updated to reflect as-constructed conditions for Basin A-2 and to add a gas pump canopy in Basin A-1. The as-constructed improvements are part of the Drainage Certification above. The canopy will be constructed above existing paving and hence will not create any additional runoff. It will drain via internal roof drains which discharge at ground level; the roof runoff will not be directed onto adjacent property, but onto the existing paving. The drainage pattern of the site will not be altered by the construction of the canopy.

08-06-13
08-12-97
Professional Engineer
New Mexico
8547

FOR INFORMATION ONLY

DESIGNED BY				REVISIONS		JOB NO.	
J.G.M./G.R.B.				1	08/93 JGM ADD "CONCRETE" CURB & DIMENSION	930515	
S.G.H.				2	10/93 JGM REDUCE PAVING LIMITS; ADD WHEELSTOPS	DATE 07-1993	
J.G.M.				3	01/97 JGM AS BUILT & CERTIFY	SHEET 4 OF	
J.G.M.				4	01/97 JGM ADD CANOPY		

PROJECT BENCHMARK

AGRS 3" BRASS DISC STAMPED "CANDELARIA 1979", SET IN TOP OF A CONCRETE POST FLUSH WITH GROUND, NEAR THE NORTHEAST QUADRANT OF THE INTERSECTION OF CANDELARIA BLVD AND UNIVERSITY AVE. NE.
NORTHING 1,497,091.458 (GRID) 1,497,091.46 (GROUND)
EASTING 1,528,901.06 (GRID) 1,528,901.06 (GROUND)
ELEVATION = 5090.846 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #1

A MAG NAIL IN ASHALT NEAR THE WESTERN MOST DRIVE ENTRANCE TO THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,470.95 (GROUND)
EASTING 1,526,806.99 (GROUND)
ELEVATION = 5023.78 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #2

A MAG NAIL IN ASHALT NEAR THE EASTERN MOST DRIVE ENTRANCE TO THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,402.05 (GROUND)
EASTING 1,527,019.81 (GROUND)
ELEVATION = 5031.27 FEET (NAVD 1988)

TEMPORARY BENCHMARK (T.B.M.) #3

A MAG NAIL IN ASHALT NEAR THE SOUTHERN PORTION OF THE SITE, AS SHOWN ON THIS SHEET.
NORTHING 1,497,248.90 (GROUND)
EASTING 1,526,952.87 (GROUND)
ELEVATION = 5031.33 FEET (NAVD 1988)

CONSTRUCTION NOTES:

- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR APPROVED FOR HERON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS-PUBLIC WORKS CONSTRUCTION-1986-UPDATE NO. 9.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 811, FOR DESIGNATION (LINE-SPOTTING) OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INTERPRETATIONS IT MAKES WITHOUT FIRST CONTACTING THE ENGINEER AS REQUIRED ABOVE.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
- UTILITY INFORMATION SHOWN HEREON IS BASED UPON ONSITE SURFACE EVIDENCE AND ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY DISTRIBUTION MAPS, AVAILABLE RECORD DRAWINGS AND UTILITY LINE-SPOTS PROVIDED BY HIGH MESA CONSULTING GROUP (2017.037.1 SITE UTILITY DIAGRAM DATED 08-02-2017). IN ADDITION, UTILITY LINE-SPOTS WERE REQUESTED VIA THE NEW MEXICO ONE CALL SERVICE (TICKET #17J0280383). UTILITY LINES SHOWN ON THIS DRAWING ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE SURVEYOR HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE PROPERTY OWNER, DEVELOPER, OR CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- THE DESIGN OF PLANTERS AND LANDSCAPED AREAS IS NOT PART OF THIS PLAN. ALL PLANTERS AND LANDSCAPED AREAS ADJACENT TO THE BUILDING(S) SHALL BE PROVIDED WITH POSITIVE DRAINAGE TO AVOID ANY PONDING ADJACENT TO THE STRUCTURE. FOR CONSTRUCTION DETAILS, REFER TO LANDSCAPING PLAN.
- THE GRADES INDICATED ON THIS PLAN ARE FINISHED GRADES UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LEAVING SUBGRADE AT ELEVATIONS THAT SHALL ACCOMMODATE PROPOSED IMPROVEMENTS AS INDICATED ON THE PLANS INCLUDING, BUT NOT LIMITED TO, SURFACE DRAINAGE STRUCTURES, PAVING AND LANDSCAPING SURFACING.

LEGEND

ASPH	ASPHALT PAVING
ASV	ANTI-SIPHON VALVE
BOH	BUILDING OVERHANG
C&G	CONCRETE CURB AND GUTTER
CC	CONCRETE CURB
CDP	CONCRETE DRIVE PAD
CLD	CENTERLINE DOOR
CLF/BW	CHAIN LINK FENCE WITH BARBED WIRE
CO	SEWER CLEANOUT
CONC	CONCRETE
CSW	CONCRETE SIDEWALK
DCO	DOUBLE SANITARY SEWER CLEANOUT
E/PM	ELECTRIC LINE BY PAINT MARK
EC	ELECTRIC CONDUIT
EDC	ELECTRIC DISCONNECT
EJB	ELECTRIC JUNCTION BOX
EO	ELECTRIC OUTLET
FL	FLOWLINE
G/PM	GAS LINE BY PAINT MARK
GP	METAL GUARD POST
GRV	GRAVEL
HCS	HANDICAPPED PARKING SPACE SIGN
ICB	IRRIGATION CONTROL BOX
IVB	IRRIGATION VALVE BOX
OHC(1)	OVERHEAD COMMUNICATIONS LINE (# OF LINES)
OHE(1)	OVERHEAD ELECTRIC LINE (# OF LINES)
PS	PAINTED PARKING STALL STRIPE
RR	RIVER ROCK
SAS/PM	SANITARY SEWER LINE BY PAINT MARK
TA	TOP OF ASPHALT
TC	TOP OF CURB
TCO	TOP OF CONCRETE
TG	TOP OF GRATE
VG	VALLEY GUTTER
W/PM	WATER LINE BY PAINT MARK
WCR	WHEEL CHAIR RAMP
WLP	WOOD LIGHT POLE
WMB	WATER METER BOX
WS	WHEEL STOP
WVB	WATER VALVE BOX

1.0' 0"
CONIFEROUS TREE

DECIDUOUS TREE

SHRUB

INVERT
TA
TC
TG

+ 27.31
+ 27.25
+ 50.30

EXISTING SPOT ELEVATION
PROPOSED SPOT ELEVATION

EXISTING FLOWLINE
PROPOSED FLOWLINE

EXISTING CONTOUR
PROPOSED CONTOUR

EXISTING DIRECTION OF FLOW
PROPOSED DIRECTION OF FLOW

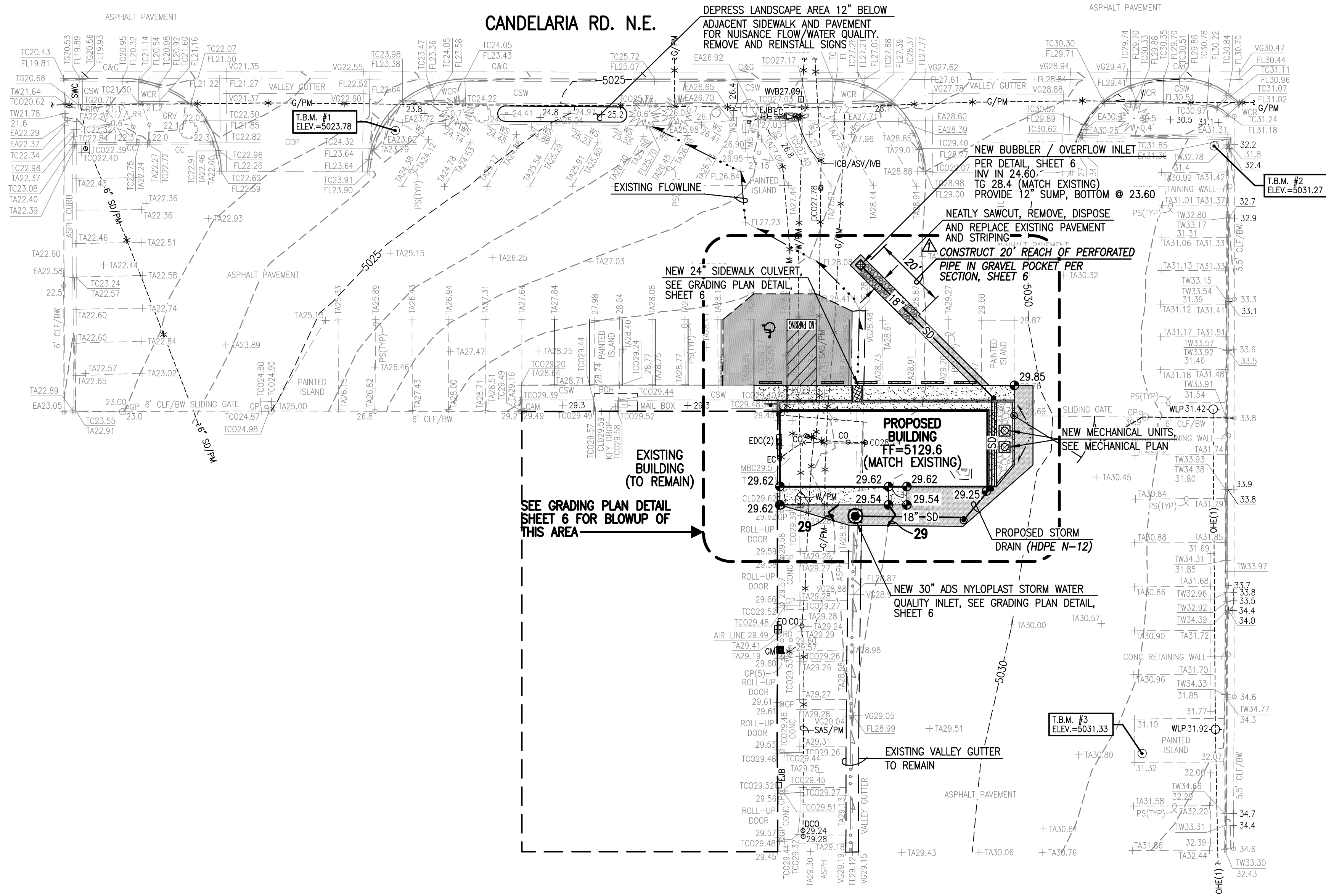
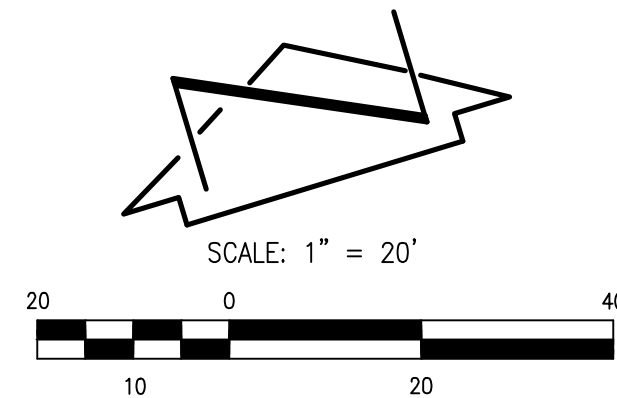
RIGHT OF WAY LINE
PUBLIC EASEMENT LINE

HIGH POINT / DIVIDE

PROPOSED CONCRETE

PROPOSED ASPHALT PAVING

PROPOSED GRAVEL AREA



GRADING SITE PLAN

SCALE: 1"=20'

SURVEY NOTE:

THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE PARTIAL TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 08/15/2017 (2017.037.1).

PENSKE
Truck Leasing

AN ADDITION TO
PENSKE TRUCK LEASING
1400 CANDELARIA ROAD NE
ALBUQUERQUE, NEW MEXICO

HIGH MESA Consulting Group
Engineers, Surveyors & Environmental Utility Consultants

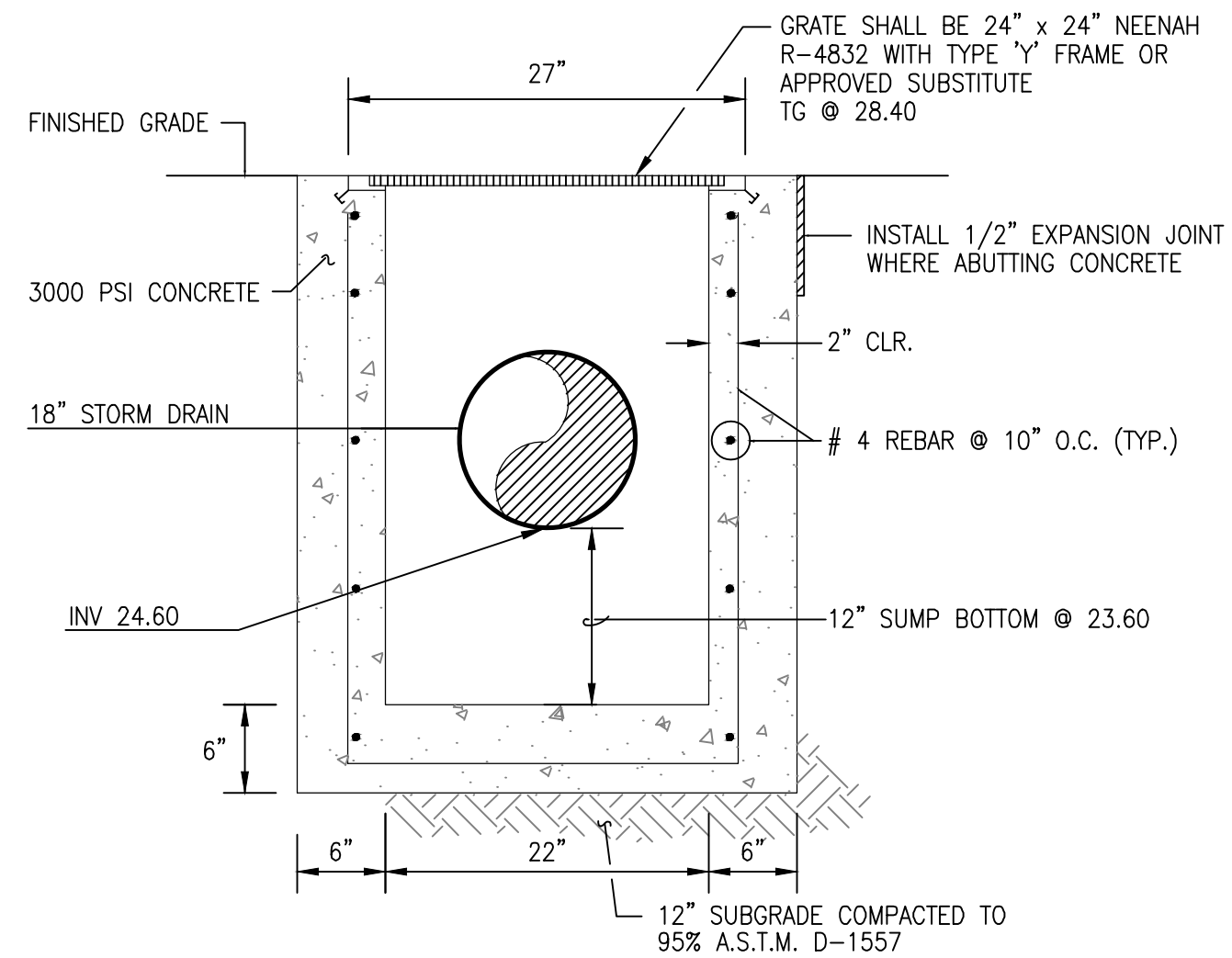
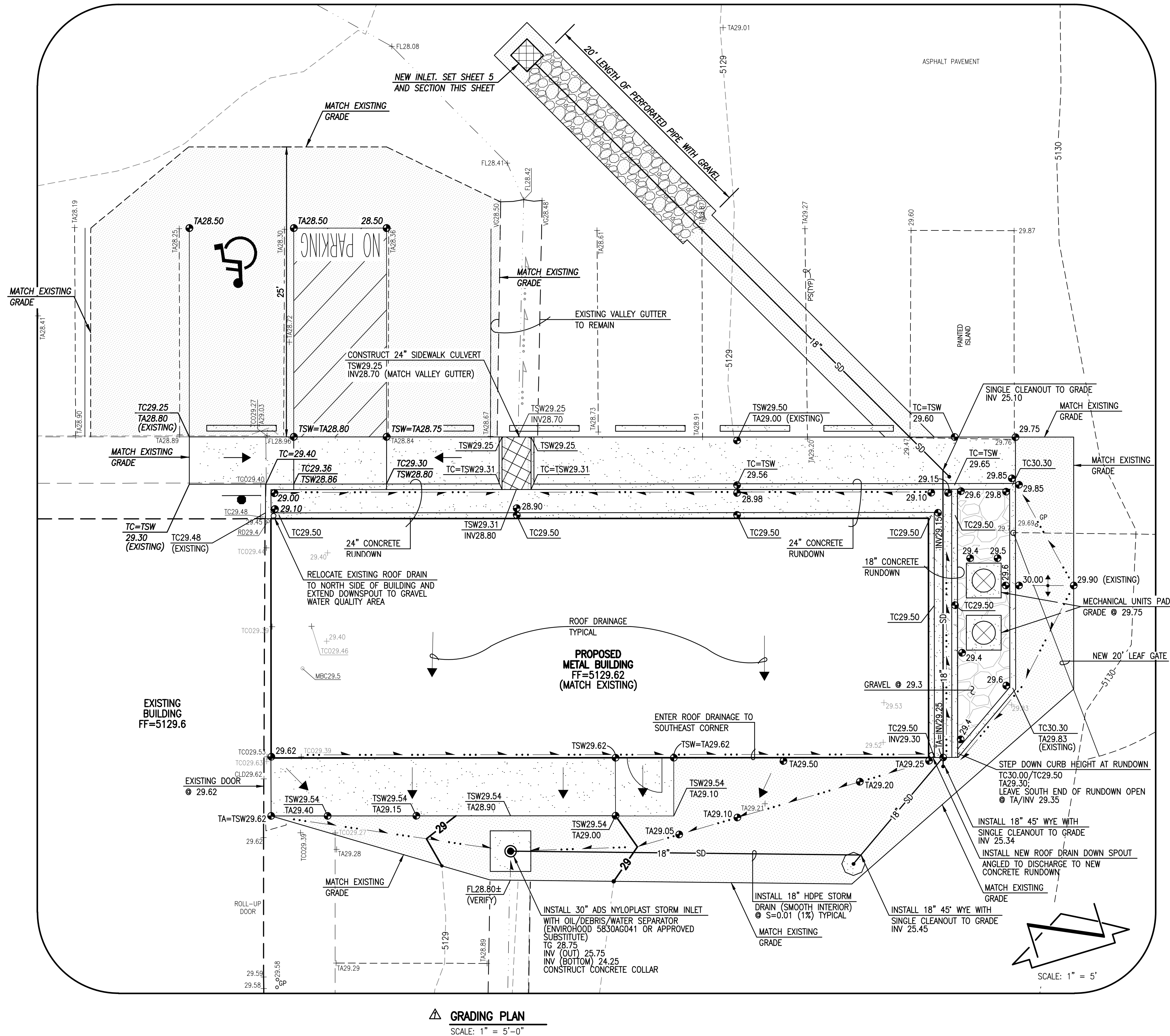
6010-B Midway Park Blvd. NE • Albuquerque, New Mexico 87109
Phone: 505.345.4250 • Fax: 505.345.4254 • www.highmesacg.com

DRAWN BY:	DATE	REVISIONS	DATE:	ISSUED FOR:
J.Y.R.	10/17	ADDRESS CITY ADA COMMENTS	10/9/2017	SITE REVIEW
CHECKED BY:			SHEET NO:	
G.M.				
PROJECT NO:				
2017.21				

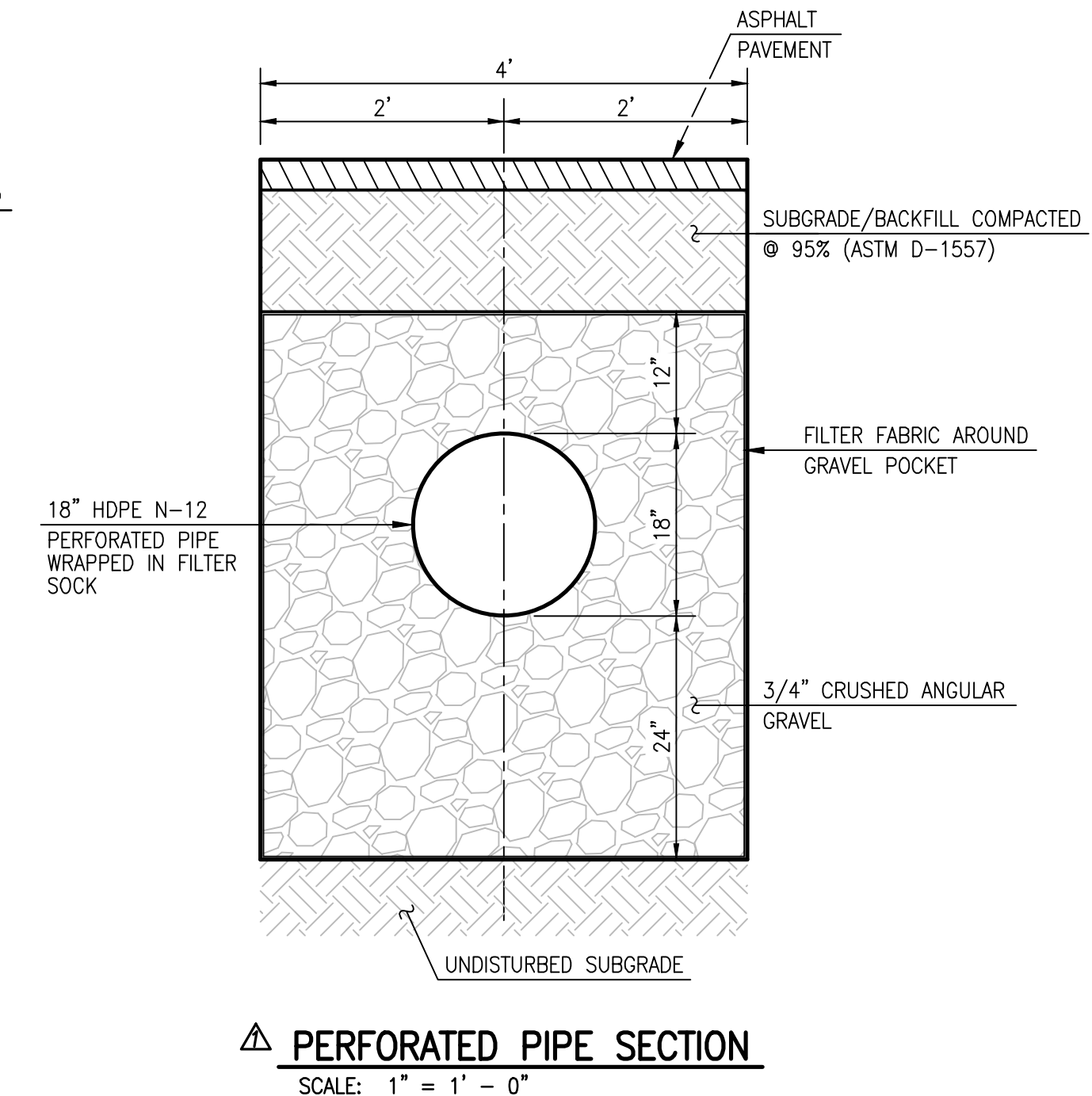


10-20-2017
2017.037.2
10-09-2017

5



TYPICAL 24"x24" STORM INLET SECTION
SCALE: 1" = 1' - 0"



PERFORATED PIPE SECTION
SCALE: 1" = 1' - 0"

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HIGH MESA Consulting Group
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DRAWN BY:	DATE:	REVISIONS:	DATE:	ISSUED FOR:
J.Y.R.	10/17	ADDRESS CITY ADA COMMENTS	10/9/2017	SITE REVIEW
CHECKED BY:				
G.M.				
PROJECT NO:				
2017.21				
PAVING AND DRAINAGE SECTIONS AND DETAILS			SHEET NO:	6