

# CITY OF ALBUQUERQUE

Planning Department  
Alan Varela, Interim Director



Mayor Timothy M. Keller

July 6, 2022

Thomas C. David, JR, P.E.  
Pan American Engineers, LLC  
1717 Jackson Street  
Alexandria, LA 71301

**RE: Murphy Express  
10601 Unser Blvd NW  
Grading and Drainage Plan  
Engineer's Stamp Date: 6/13/2022  
Hydrology File: A11D017A**

Dear Mr. David:

Based upon the information provided in your submittal received 7/5/22, the Grading and 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 attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter. Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

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

Please provide Drainage Covenant for the stormwater quality ponds per Article 6-15(C) of the DPM prior to Permanent Release of Occupancy. Please submit an electronic file of the Covenant and Exhibit for completeness to Marion G. Velasquez at [mgvelasquez@cabq.gov](mailto:mgvelasquez@cabq.gov). Once the electronic file is approved for completeness, please submit the original copies along with the \$ 25.00 recording fee check made payable to Bernalillo County to Marion on the 4th floor of Plaza de Sol. Please note that Hydrology will need a pdf copy of the recorded Drainage Covenant prior to Hydrology's approval of Permanent Release of Occupancy.

If you have any questions, please contact me at 924-3695 or [dggutierrez@cabq.gov](mailto:dggutierrez@cabq.gov).

Sincerely,

David G. Gutierrez, P.E.  
Senior Engineer, Hydrology  
Planning Department

Drainage Calculations  
For  
Murphy Express

Located at  
Lot 5 of Unser and McMahon Center Subdivision  
10601 Unser Boulevard Northwest  
Albuquerque, New Mexico



Prepared by  
Pan American Engineers, LLC  
May 28, 2022  
PAE Job No. 11605

# Drainage Calculations



PAN AMERICAN ENGINEERS, LLC

**Prepared By:** Wesley D. Miller, P.E.  
Pan American Engineers, LLC  
1717 Jackson Street  
Alexandria, LA 71301  
(318) 473-2100  
Wesley@paealex.com

**Date:** June 17, 2022

**Re:** Murphy Express  
10601 Unser Boulevard NW  
Albuquerque, New Mexico  
PAE Job No. 11605

## Introduction

The referenced development consist of the construction of a Murphy Express Fueling Station (2,824 s.f. building with eight fuel islands under canopy). These calculations will also account for and include the adjacent eastern access road to be constructed as part of the Murphy Express project.

The Murphy Express lot will be located on Lot 5 of Unser and McMahan Center Subdivision. The adjacent access road will be located partially on Lot 5 and partially on Lot 6 of the Unser and McMahan Center Subdivision.

The drainage of this site shall be in compliance with the approved “Master Drainage Plan for Paradise North SW Corner of Unser/McMahon” prepared by Tierra West, LLC dated August 3, 2020 (Master Drainage Plan).

Murphy Express  
10601 Unser Boulevard NW  
Albuquerque, New Mexico  
PAE Job No. 11605

### **Stormwater Runoff Calculations**

The Master Drainage Plan divides the subdivision into drainage basins P1-P17. The Master Drainage Plan outlines the allowable runoff for each basin. The Murphy Development is located within the following basins: P6, P7, P13, P14, and P15 (see enclosed Drainage Basin Exhibit and excerpts from the Master Drainage Plan).

The discharge from the Murphy Development was calculated using Chapter 6-1(A) of the City of Albuquerque Drainage Manual. The site is in Zone 1. Table 6.8 and equation 6.6 were used to calculate the discharge.

The calculated allowable and actual discharges for the Murphy Development can be seen on the enclosed Drainage Calculations Table. As shown in the table, the Murphy Development is within the allowable rate of discharge for each individual basin as well as overall discharge.

### **Stormwater Quality Volume**

Per City of Albuquerque plan review comments, stormwater quality volume (SWQV) shall be calculated as follows:  $0.42'' \times \text{impervious area}$ .

We are able to collect and provide SWQV for approximately 84% of the development. Due to site grades and layout, we are unable to capture the entire development.

The portion of the site that will be captured will require 1,064 c.f. of SWQV (see enclosed SWQV Map). The SWQV shown in the development plans provides 1,428.53 c.f. of storage.

The portion of the site that cannot be captured requires 175 c.f. of SWQV. It is requested that a payment-in-lieu be approved for this portion. Payment-in-lieu required for this portion is \$1,400 ( $175 \text{ c.f.} \times \$8/\text{c.f.}$ ).

Drainage Calculations Table  
May 28, 2022

Master Drainage Plan			Murphy Development					
Basin Designation	Basin Area	Allowable Discharge	Area of Murphy Development Within Master Drainage Plan Basins		Allowable Discharge (C x E)	Land Treatment "C"	Land Treatment "D"	Discharge ((2.87 x G) + (4.12 x H))
	Acres	CFS	Acres	Percent Area of Master Drainage Plan Basin (D / B)	CFS	Acres	Acres	CFS
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
P6	0.131	0.52	0.131	100%	0.52	0.055	0.076	0.47
P7	0.814	3.25	0.814	100%	3.25	0.122	0.692	3.20
P13	0.352	1.45	0.035	10%	0.14	0.000	0.035	0.14
P14	0.168	0.69	0.083	49%	0.34	0.000	0.083	0.34
P15	0.221	0.91	0.106	48%	0.44	0.018	0.088	0.41
Total	1.69	6.82	1.17		4.69			4.57









**SWQV MAP**  
*MURPHY EXPRESS*  
**10601 UNSER BOULEVARD NW**  
**ALBUQUERQUE NEW MEXICO**

200 PEACH STREET  
EL DORADO, AR 71730













**MURPHY OIL USA, INC.**

**MURPHY**  
**USA** 



THE AREA SHOWN WITHIN SWQV 1 WILL BE ROUTED THROUGH THE SWQV POND. WHEN THE POND IS OVERTOPPED THE SITE DISCHARGE WILL FLOW THROUGH THE CURB CUT TO ALLOW POND OVERFLOW DISCHARGE ONTO STREET WHICH IS INLINE WITH THE APPROVED MASTER DRAINAGE PLAN

DRAINAGE AREA				
DRAINAGE AREA	AREA (ACS.)	IMPERVIOUS AREA (ACS.)	SWQV REQUIRED (0.42" x IMP. AREA) (CF)	SWQV PROVIDED
SWQV 1	0.827	0.67	1,064	1428.53
SWQV 2	0.157	0.11	175	PAYMENT-IN-LIEU: \$1,400

- | EXISTING  |                        |   |                 |
|---|------------------------|---|-----------------|
|  | Storm Drain Manhole    |  | Hydrant         |
|  | Sanitary Sewer Manhole |  | Water Meter     |
|  | Sanitary Sewer Line    |  | Water Valve     |
|  | Storm Drain Line       |  | Concrete Symbol |
|  | Storm Drain Inlet      |  | Irrigation Box  |
|  | Underground Water Line |  | Set Monument    |

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GENERAL GRADING NOTES

- A. PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, WATER MAIN, OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSING AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS OR REQUIRED DEVIATIONS FROM THE PLAN. PRIOR TO THE STRUCTURE CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION, THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED TO MATCH SURFACE AND GROUND COVER ESTABLISHED. ANY RELOCATED TREES SHALL BE MAINTAINED TO THE SAME POINT OF ORIGIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT. SHALL BE STABILIZE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- C. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORD DRAWINGS AND NOT ON UTILITY COMPANIES' RECORDS. WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD, THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY LOCATOR PRIOR TO CONSTRUCTION. 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
- D. REFER TO GEOTECHNICAL REPORT FOR SPECIFIC SITE SOIL CONDITIONS AND CONSIDERATIONS.
- E. CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION TO PREVENT COLLAPSE OF EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
- F. ALL HDPE PIPE IN SANDY OR HIGHLY ERODIVE, OR EXPANSIVE SOILS SHALL BE N-12 WT IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS, 4"-48" PIPE SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S) REQUIREMENTS) AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATION FOR ADS N-12 WT IB PIPE FOUND IN THE ADS, INC. DRAINAGE HANDBOOK, LATEST EDITION.
- G. ALL OTHER HDPE PIPE SHALL BE N-12 ST IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS, 4"-48" SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S OR SP) REQUIREMENTS AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATIONS FOR ADS N-12 ST IB PIPE FOUND IN THE ADS, INC. DRAINAGE HANDBOOK, LATEST EDITION.
- H. IF USING HDPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATION SHALL MEET THE AASHTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.
- I. STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 (WATERTIGHT) UNLESS OTHERWISE INDICATED.
- J. CORRUGATED METAL PIPE, WHERE SPECIFICALLY SPECIFIED ON PLAN, SHALL BE TYPE II OF AASHTO M 36 GALVANIZED WITH TYPE 3 JOINTS.
- K. CONTRACTOR SHALL ESTABLISH GRADES OF FINISH PAVEMENT TO ENSURE PROPER (POSITIVE) DRAINAGE AND PREVENT PUDDING OF WATER, ESPECIALLY IN PEDESTRIAN WALKWAYS. UNPAVED AREAS OF SITE SHALL ALSO BE GRADED FOR POSITIVE DRAINAGE. CONSULT ENGINEER SHOULD THEIR BE CONFLICTS WITH CRITICAL GRADES SHOWN HEREON.
- L. CONTRACTOR SHALL VERIFY ACTUAL FINISH FLOOR ELEVATION AFTER BUILDING SET AND NOTIFY ENGINEER AND PM WITHIN 48 HOURS OF ANY DISCREPANCY.
- M. PIPE JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC (LAPPED 18").

## GRADING NOTES

18D MATCH EXISTING PAVEMENT ELEVATIONS

GRADING DETAILS

- |     |  |
|-----|--|
| 23E | COMBINATION INLET  |
| 24B | AREA INLET   |
| 27B | ACO DRAIN - SK300 PRE SLOPED CHANNEL WITH D.I. SLOTTED GRATE |
| 28A | STORM SEWER TRENCH & BEDDING                                 |
| 42F | ENVIROHOOD BY ADS  |



# MASTER DRAINAGE PLAN

For

## Paradise North SW Corner of Unser/McMahon

Prepared by:

Tierra West, LLC  
5571 Midway Park Place NE  
Albuquerque, New Mexico 87109

August 3, 2020

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.



08-04-20

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Ronald R. Bohannon  
PE # 7868

Job No. 2020015



## DPM Weighted E Method

Precipitation Zone 1

SW Corner Unser Blvd/McMahon Blvd

Tracts 20A-1A thru 20A-1I Paradise North (Formerly Tract 20A-1 Paradise North)

TWLLC VP Date 7/22/2020

### Existing Conditions

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	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)						
E1	852,497.83	19.571	0.03058	100%	19.571	0%	0.000	0%	0.000	0%	0.000	0.550	0.897	30.14	0.110	0.179	5.87
E2	44,474.92	1.021	0.00160	100%	1.021	0%	0.000	0%	0.000	0%	0.000	0.550	0.047	1.57	0.110	0.009	0.31
E3	6,826.56	0.157	0.00024	100%	0.157	0%	0.000	0%	0.000	0%	0.000	0.550	0.007	0.24	0.110	0.001	0.05
<b>Total</b>	<b>903,799.31</b>	<b>20.748</b>	<b>0.03242</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.000</b>		<b>0.951</b>	<b>31.95</b>		<b>0.190</b>	<b>6.22</b>

### Proposed Conditions

Basin Descriptions												100-Year, 6-Hr			10-Year, 6-Hr		
Basin ID	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)						
P1	389,121.54	8.933	0.01396	0%	0.000	0%	0.000	10%	0.893	90%	0.040	2.111	1.571	35.69	1.330	0.990	21.97
P2	46,633.06	1.071	0.00167	0%	0.000	0%	0.000	10%	0.107	90%	0.963	2.111	0.188	4.28	1.330	0.119	2.63
P3	26,588.77	0.610	0.00095	0%	0.000	0%	0.000	10%	0.061	90%	0.549	2.111	0.107	2.44	1.330	0.068	1.50
P4	34,092.59	0.783	0.00122	0%	0.000	0%	0.000	10%	0.078	90%	0.704	2.111	0.138	3.13	1.330	0.087	1.92
P5	60,232.39	1.383	0.00216	0%	0.000	0%	0.000	10%	0.138	90%	1.244	2.111	0.243	5.52	1.330	0.153	3.40
P6	5,706.02	0.131	0.00020	0%	0.000	0%	0.000	10%	0.013	90%	0.118	2.111	0.023	0.52	1.330	0.015	0.32
P7	35,443.02	0.814	0.00127	0%	0.000	0%	0.000	10%	0.081	90%	0.732	2.111	0.143	3.25	1.330	0.090	2.00
P8	28,224.99	0.648	0.00101	0%	0.000	0%	0.000	10%	0.065	90%	0.583	2.111	0.114	2.59	1.330	0.072	1.59
P9	75,044.37	1.723	0.00269	0%	0.000	0%	0.000	10%	0.172	90%	1.551	2.111	0.303	6.88	1.330	0.191	4.24
P10	29,615.39	0.680	0.00106	0%	0.000	0%	0.000	10%	0.068	90%	0.612	2.111	0.120	2.72	1.330	0.075	1.67
P11	36,890.30	0.847	0.00132	0%	0.000	0%	0.000	10%	0.085	90%	0.762	2.111	0.149	3.38	1.330	0.094	2.08
P12	9,404.71	0.216	0.00034	0%	0.000	0%	0.000	0%	0.000	100%	0.216	2.240	0.040	0.89	1.430	0.026	0.55
P13	15,328.54	0.352	0.00055	0%	0.000	0%	0.000	0%	0.000	100%	0.352	2.240	0.066	1.45	1.430	0.042	0.90
P14	7,315.89	0.168	0.00026	0%	0.000	0%	0.000	0%	0.000	100%	0.168	2.240	0.031	0.69	1.430	0.020	0.43
P15	9,646.85	0.221	0.00035	0%	0.000	0%	0.000	0%	0.000	100%	0.221	2.240	0.041	0.91	1.430	0.026	0.57
P16	9,520.30	0.219	0.00034	0%	0.000	0%	0.000	0%	0.000	100%	0.219	2.240	0.041	0.90	1.430	0.026	0.56
P17	11,897.56	0.273	0.00043	0%	0.000	0%	0.000	0%	0.000	100%	0.273	2.240	0.051	1.13	1.430	0.033	0.70
<b>Total</b>	<b>830,706.29</b>	<b>19.070</b>	<b>0.02980</b>		<b>0.000</b>		<b>0.000</b>		<b>1.762</b>		<b>17.308</b>		<b>3.370</b>	<b>76.37</b>		<b>2.126</b>	<b>47.05</b>

### Equations:

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

Volume = Weighted E \* Total Area

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

Excess Precipitation, E (in.)		
Zone 1	100-Year	10-Year
Ea	0.55	0.11
Eb	0.73	0.26
Ec	0.95	0.43
Ed	2.24	1.43

Peak Discharge (cfs/acre)		
Zone 1	100-Year	10-Year
Qa	1.54	0.3
Qb	2.16	0.81
Qc	2.87	1.46
Qd	4.12	2.57

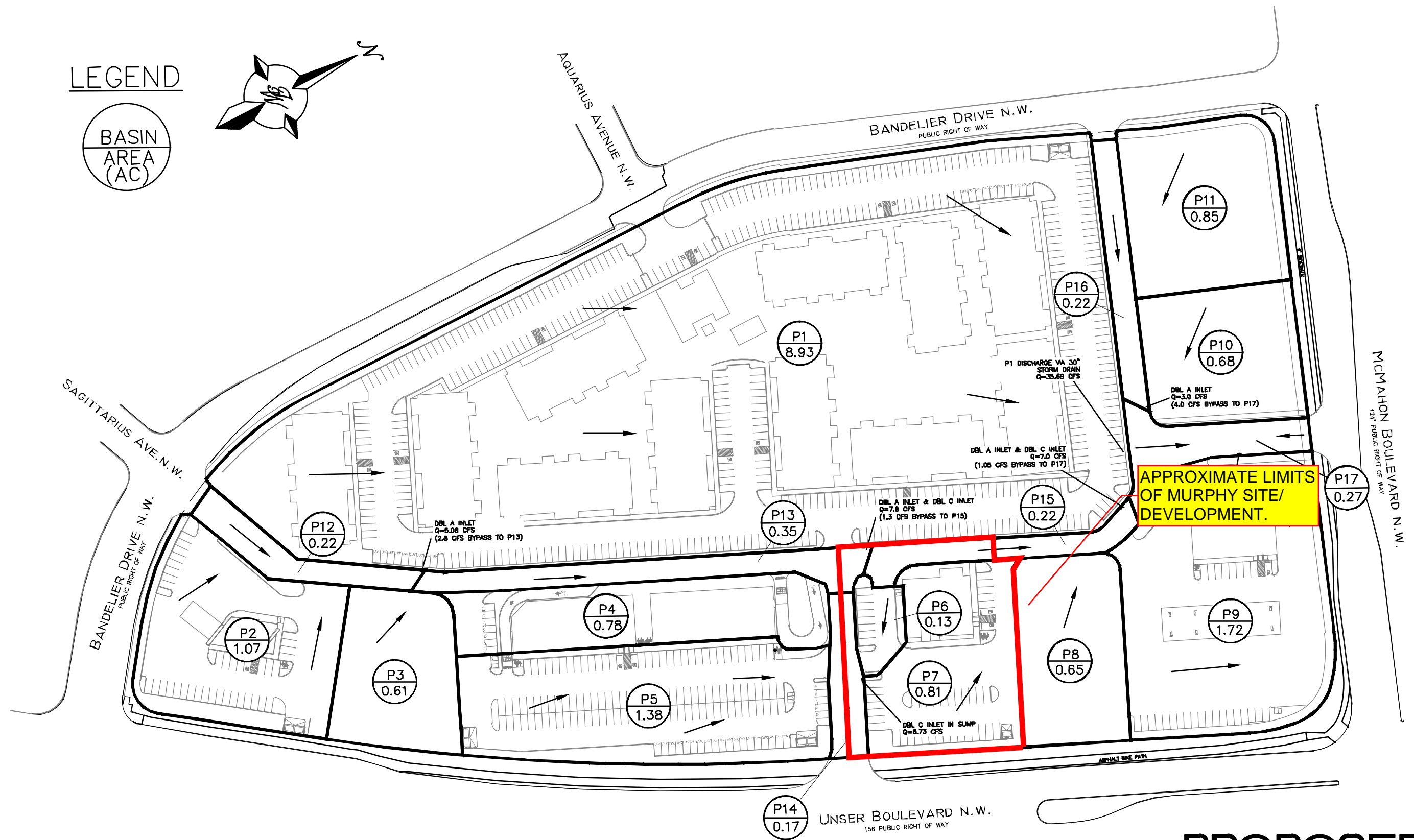
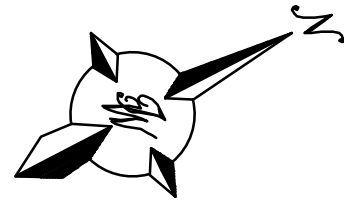
### Water Quality Volume (Onsite)

Total Impervious Area = 17.307 Acres = 753,892.92 SF

Retainage depth = 0.42" = 0.035' (COA DPM Article 6-12)

Retention Volume =  $0.035 \cdot 753,892.92 = 26,386.25$  CF = **0.606 Ac-Ft**

# LEGEND



## PROPOSED BASIN MAP



# HOLLY PARTNERS, LLC



June 17, 2022

City of Albuquerque Planning Department  
Plaza Del Sol Building  
600 2nd Street, NW  
Suite 201  
Albuquerque, New Mexico 87102

Attention: Mr. David G. Gutierrez, P.E.

Re: Murphy Express  
10601 Unser Boulevard NW  
Albuquerque, NM

Dear Mr. Gutierrez:

We are the owners/developers of the Unser and McMahon Center Subdivision. Murphy Oil USA, Inc. is developing Lot 5 into a Murphy Express Fueling Station. They are also constructing an access drive to the north of the site, which will be partially located on Lot 6. As the owners of Lots 5 and 6, we approve of this construction. Additionally, Section 5.1(D) of the Recorded Declaration of Easements, Covenants, and Restrictions for the Subdivision (ECR) (Doc # 2022036822, recorded on 04/14/2022) provides for a non-exclusive access easement across all lots of the Subdivision. Enclosed is the recorded ECR, and an exhibit partially depicting the above referenced access easement.

If you have any questions or require additional information, please feel free to Tushar Patel at (505) 362-1702 for assistance.

Yours very truly,

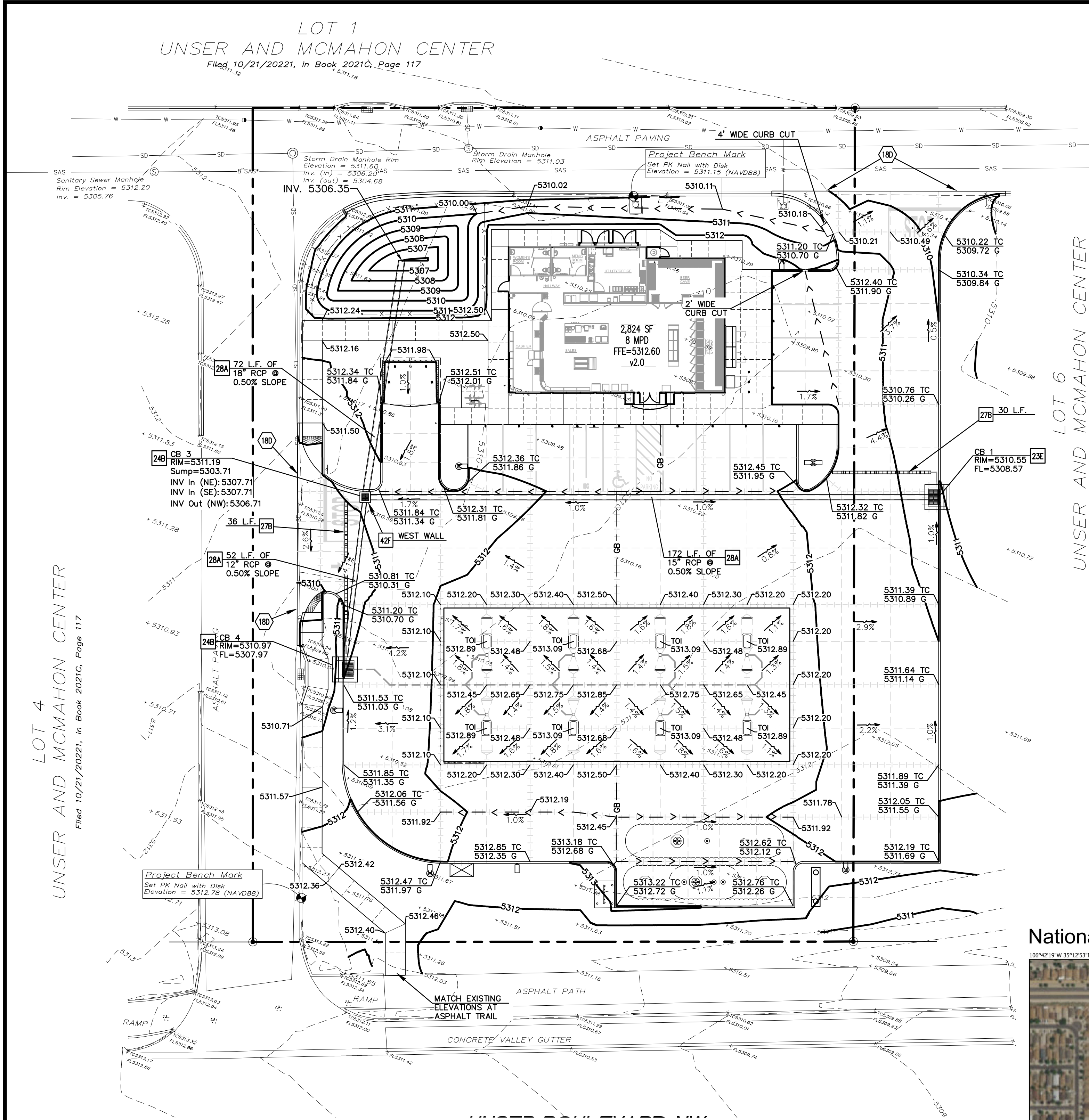
Holly Partners, LLC

Yogesh Patel, Member

A handwritten signature in blue ink, appearing to read 'Y Patel', is located below the typed name 'Yogesh Patel, Member'.

Enclosures





LOT 4  
UNSER AND MCMAHON CENTER  
Filed 10/21/20221, in Book 2021C, Page 117

The Murphy Express site is part of the Unser and McMahon Center Subdivision Master Drainage Plan (A11D017) by Tierra West, LLC dated September 03, 2020.

#### FLOOD ZONE:

THE SUBJECT PROPERTY (AS SHOWN HEREON) APPEARS TO LIE WITHIN "ZONE X" (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 35001C0104H, MAP REVISED AUGUST 16, 2012.

#### LEGAL DESCRIPTION:

TRACT BEING LOT 5 OF UNSER AND MCMAHON CENTER SUBDIVISION WITHIN THE TOWN OF ALAMEDA GRANT, PROJECTED SECTION 2, TOWNSHIP 11 NORTH, RANGE 2 EAST, N.M.P.M., CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

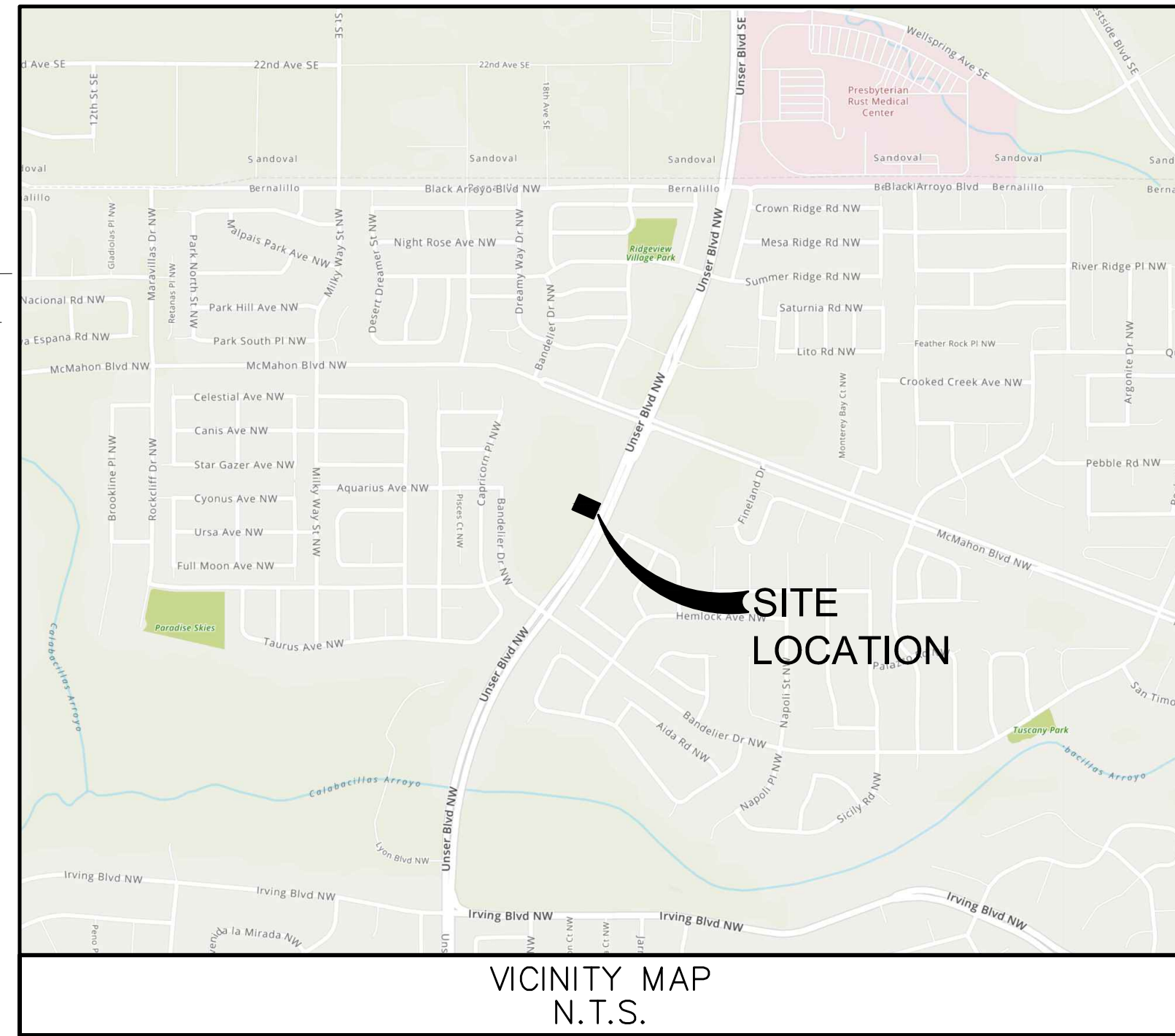
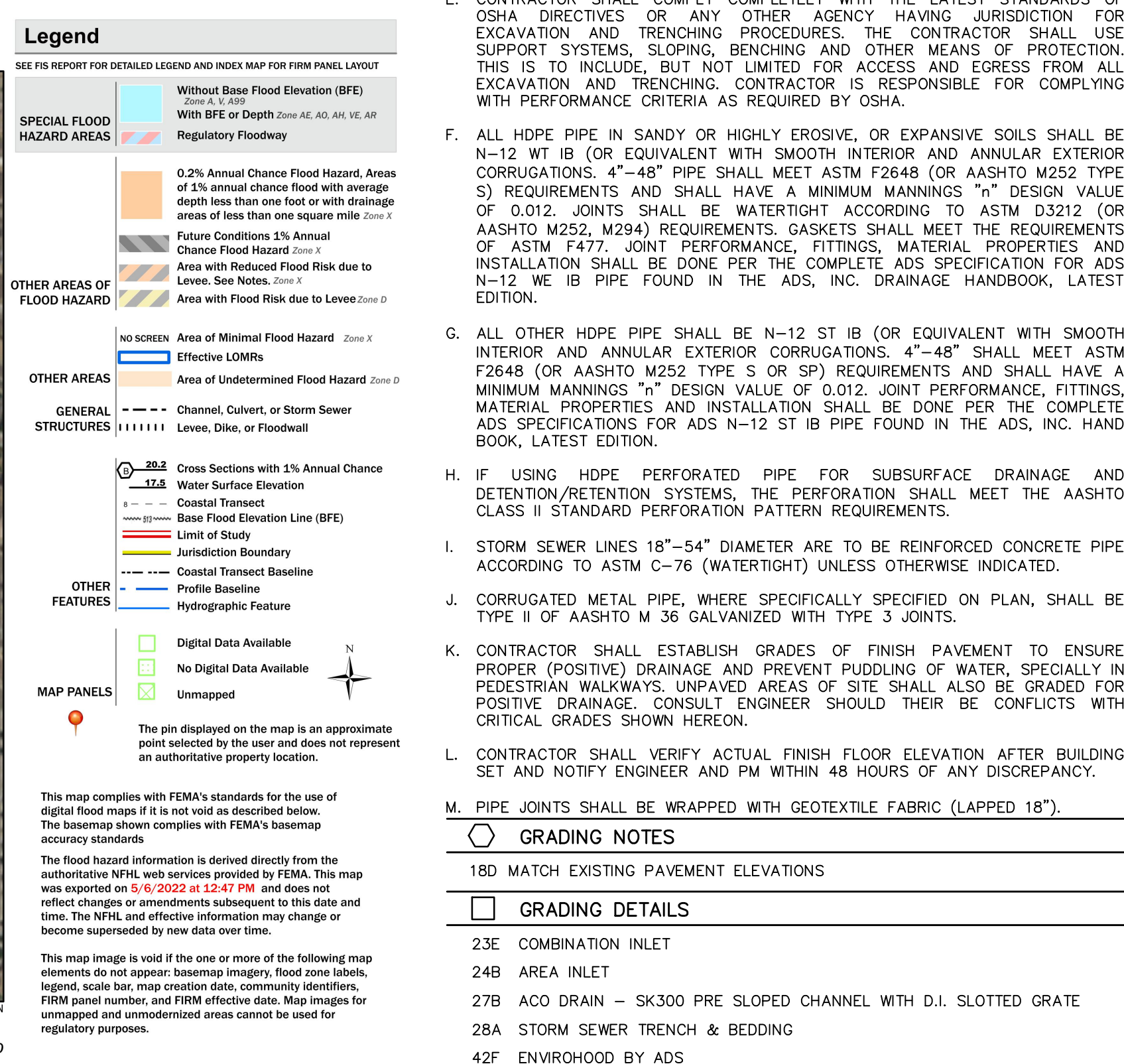
SEE SHEET C-4.2 FOR  
CANOPY DRAINAGE

ALL CASTINGS SHALL BE COATED  
WITH BLACK ASPHALTIC VARNISH.

BM  
SET PK NAIL WITH DISK  
ELEVATION= 5311.15

BM  
SET PK NAIL DISK  
ELEVATION= 5312.78

#### National Flood Hazard Layer FIRMette



EXISTING	
	Storm Drain Manhole
	Sanitary Sewer Manhole
	Sanitary Sewer Line
	Storm Drain Line
	Storm Drain Inlet
	Undergroud Water Line
	Hydrant
	Water Meter
	Water Valve
	Concrete Symbol
	Irrigation Box
	Set Monument

PROPOSED	
	PROPERTY BOUNDARY LINE
	GRADE BREAK
	EXISTING CONTOUR ELEVATION
	PROPOSED CONTOUR ELEVATION
	FLOW DIRECTION
	SPOT ELEVATIONS:
	XX.XX TC = TOP OF CURB
	XX.XX G = GUTTER
	XX.XX TOI = TOP OF ISLAND
	XX.XX = FINISHED GRADE
	DRAINAGE SLOPE AND DIRECTION
	PROPOSED STORM PIPE

#### GENERAL GRADING NOTES

- PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, WATER MAIN, OR ANY OTHER UTILITIES, THE CONTRACTOR SHALL EXCAVATE, VERIFY, AND CALCULATE ALL POINTS OF CONNECTION AND ALL UTILITY CROSSING AND INFORM THE OWNER AND THE ENGINEER OF ANY CONFLICTS OR REQUIRED DEVIATIONS FROM THE PLAN PRIOR TO CONSTRUCTION. NOTIFICATION SHALL BE MADE A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION, THE ENGINEER AND ITS CLIENTS SHALL BE HELD HARMLESS IN THE EVENT THAT THE CONTRACTOR FAILS TO MAKE SUCH NOTIFICATION.
- ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND GROUND COVER ESTABLISHED. ANY RELOCATED TREES SHALL BE MAINTAINED UNTIL SUCH POINT AS TREE IS RE-ESTABLISHED. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE PROJECT SHALL BE STABILIZE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
- REFER TO GEOTECHNICAL REPORT FOR SPECIFIC SITE SOIL CONDITIONS AND CONSIDERATIONS.
- CONTRACTOR SHALL COMPLY COMPLETELY WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY, HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
- ALL HDPE PIPE IN SANDY OR HIGHLY EROSION, OR EXPANSIVE SOILS SHALL BE N-12 WT IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. 4"-48" PIPE SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S) REQUIREMENTS AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINTS SHALL BE WATERTIGHT ACCORDING TO ASTM D3212 (OR AASHTO M252, M294) REQUIREMENTS. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATION FOR ADS N-12 WT IB PIPE FOUND IN THE ADS, INC. DRAINAGE HANDBOOK, LATEST EDITION.
- ALL OTHER HDPE PIPE SHALL BE N-12 ST IB (OR EQUIVALENT WITH SMOOTH INTERIOR AND ANNULAR EXTERIOR CORRUGATIONS. 4"-48" SHALL MEET ASTM F2648 (OR AASHTO M252 TYPE S OR SP) REQUIREMENTS AND SHALL HAVE A MINIMUM MANNINGS "n" DESIGN VALUE OF 0.012. JOINT PERFORMANCE, FITTINGS, MATERIAL PROPERTIES AND INSTALLATION SHALL BE DONE PER THE COMPLETE ADS SPECIFICATIONS FOR ADS N-12 ST IB PIPE FOUND IN THE ADS, INC. HAND BOOK, LATEST EDITION.
- IF USING HDPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATION SHALL MEET THE AASHTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.
- STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 (WATERTIGHT) UNLESS OTHERWISE INDICATED.
- CORRUGATED METAL PIPE, WHERE SPECIFICALLY SPECIFIED ON PLAN, SHALL BE TYPE II OF AASHTO M 36 GALVANIZED WITH TYPE 3 JOINTS.
- CONTRACTOR SHALL ESTABLISH GRADES OF FINISH PAVEMENT TO ENSURE PROPER (POSITIVE) DRAINAGE AND PREVENT PUDDING OF WATER, SPECIALLY IN PEDESTRIAN WALKWAYS. UNPAVED AREAS OF SITE SHALL ALSO BE GRADED FOR POSITIVE DRAINAGE. CONSULT ENGINEER SHOULD THEIR BE CONFLICTS WITH CRITICAL GRADES SHOWN HEREON.
- CONTRACTOR SHALL VERIFY ACTUAL FINISH FLOOR ELEVATION AFTER BUILDING SET AND NOTIFY ENGINEER AND PM WITHIN 48 HOURS OF ANY DISCREPANCY.
- PIPE JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC (LAPPED 18").

SHEET NO.

C-4



6/13/22  
Amos C. Blum Jr.

**GRADING PLAN**  
MURPHY EXPRESS  
10601 UNSER BOULEVARD NW  
ALBUQUERQUE  
NEW MEXICO

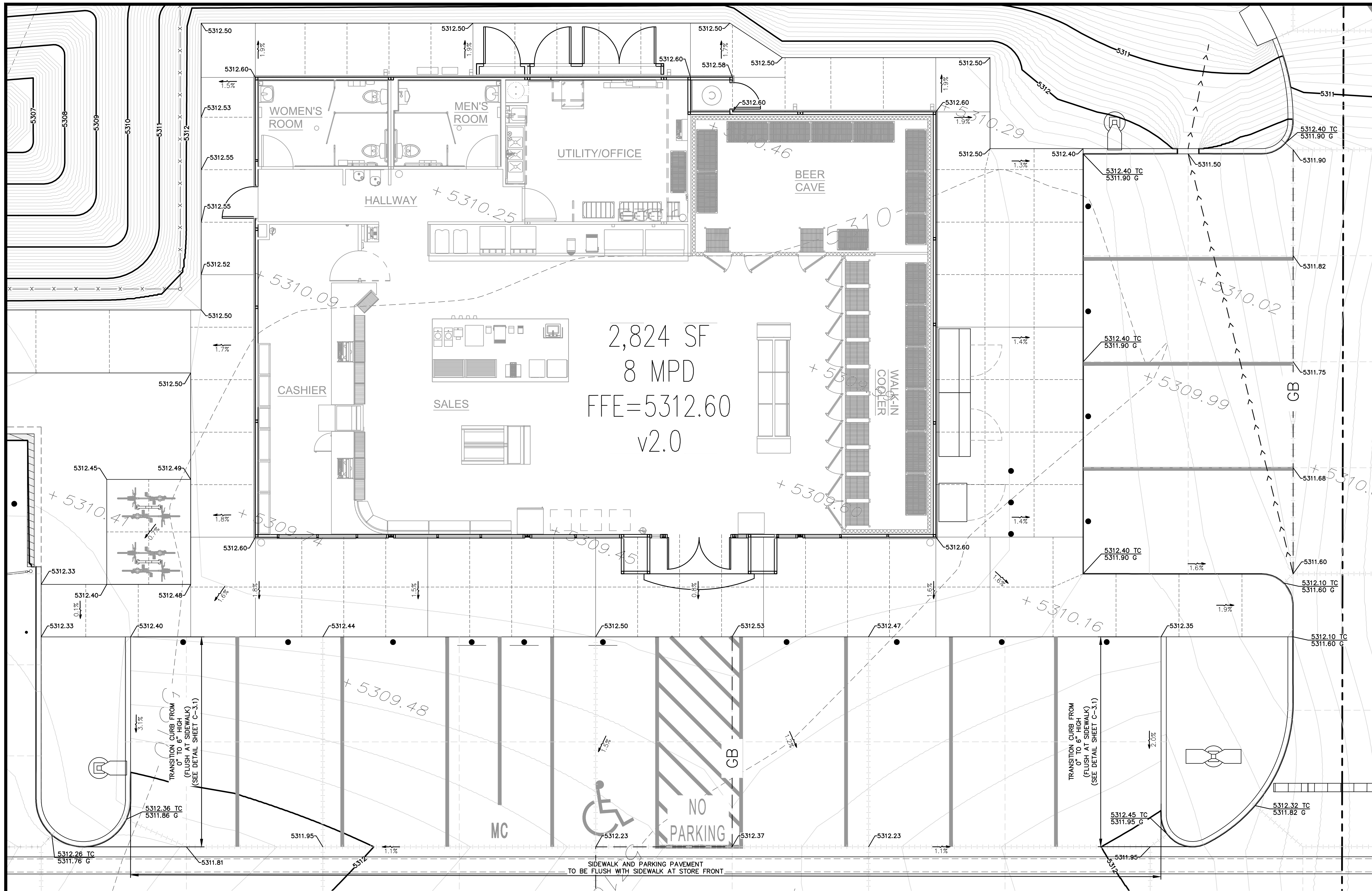
**PAN AMERICAN ENGINEERS, LLC**  
1717 JACKSON STREET  
ALEXANDRIA, LA. 71301  
(504) 478-2100  
CONTACT: WESLEY MILLER

MURPHY OIL USA, INC.

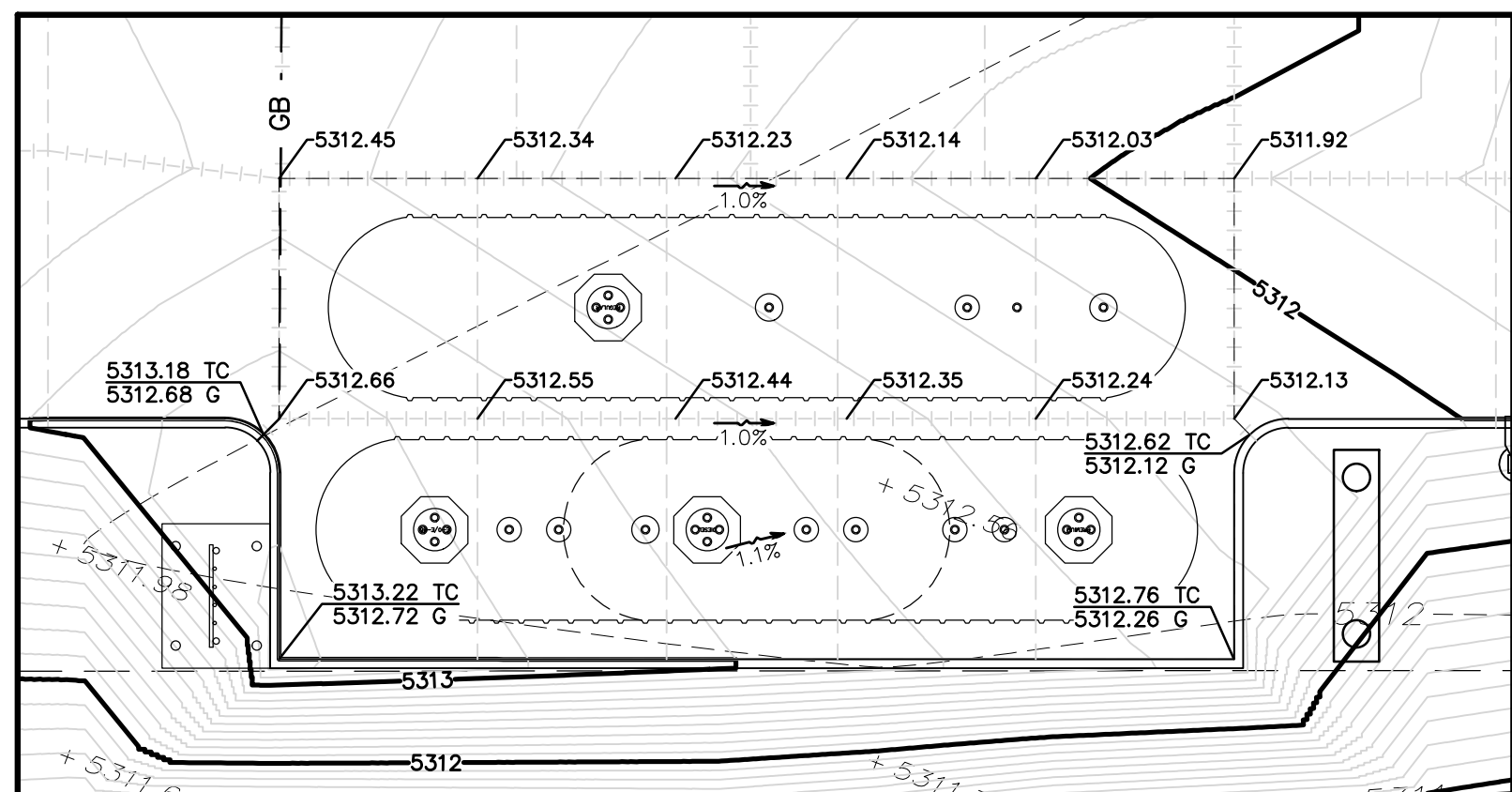
200 PEACH STREET  
EL DORADO, AR 71730

**MURPHY USA**

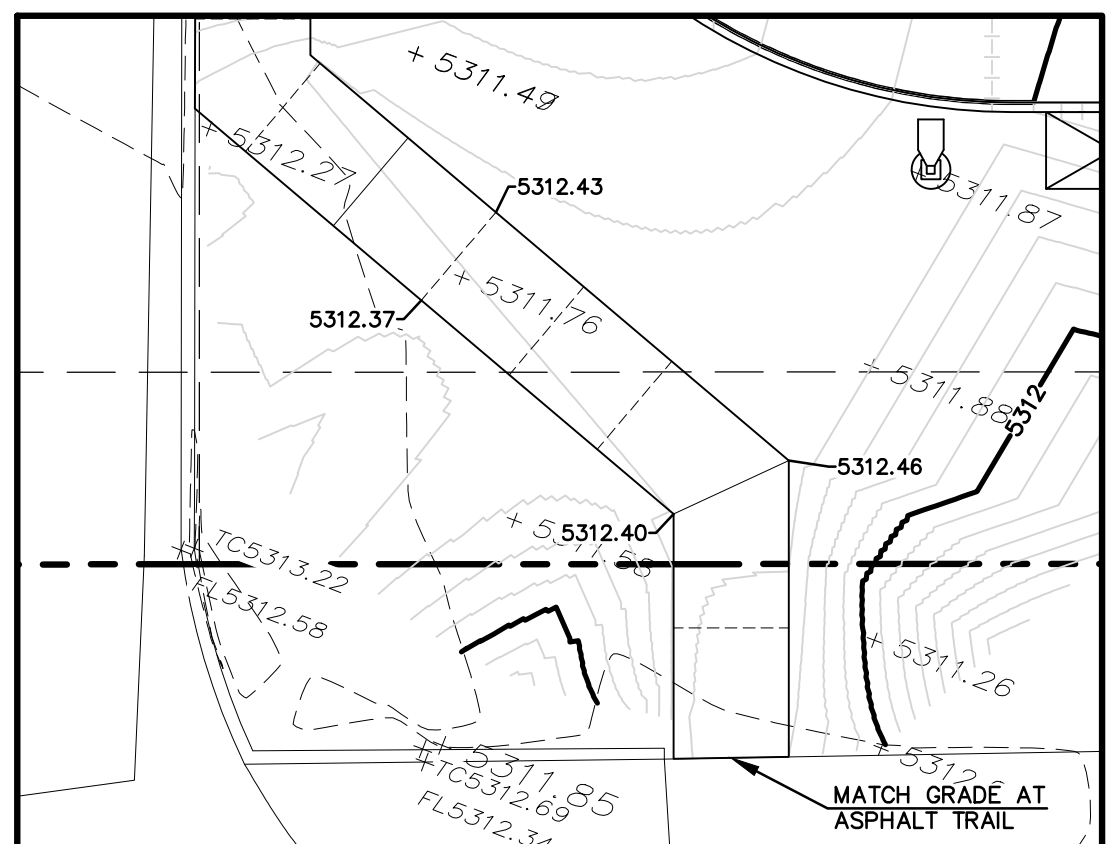




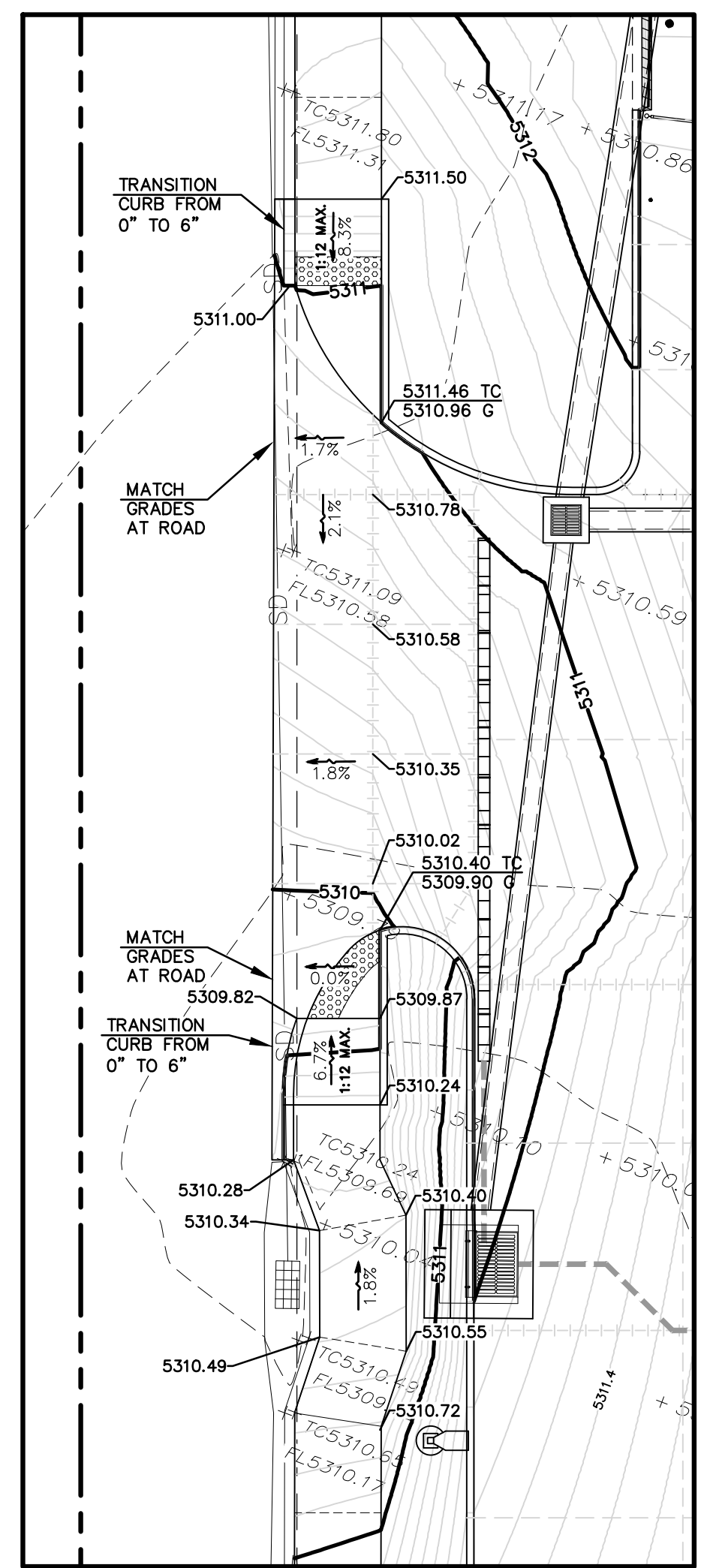
**BUILDING ELEVATIONS**  
SCALE: 1"=5'



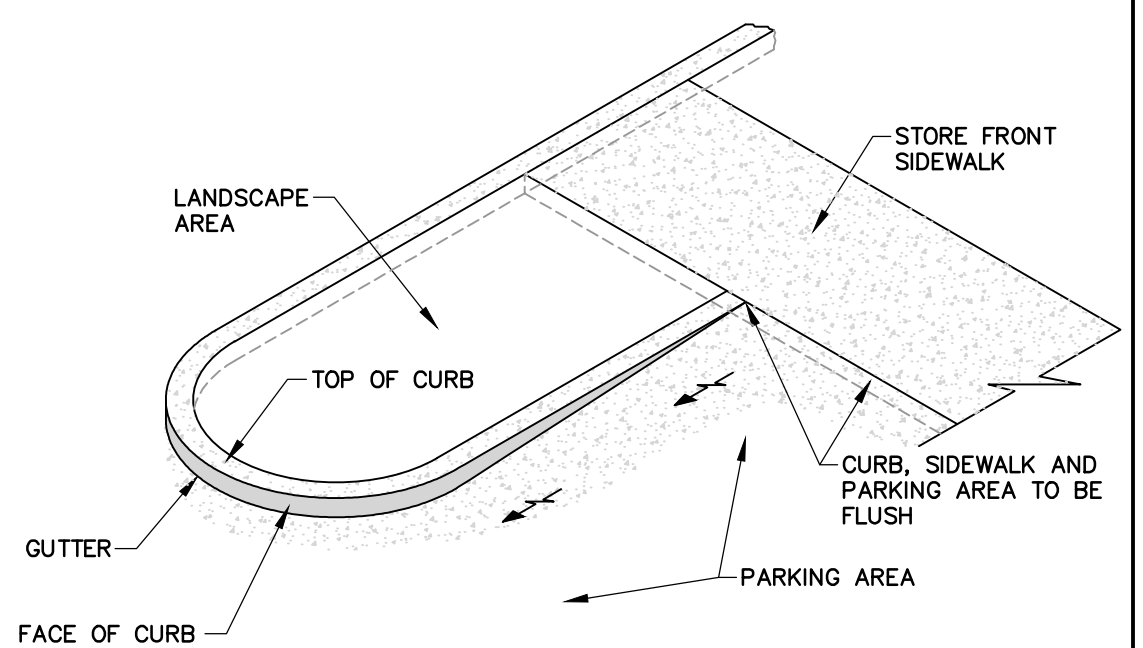
**TANK PAD ELEVATIONS**  
SCALE: 1"=10'



**SIDEWALK ELEVATIONS**  
SCALE: 1"=10'



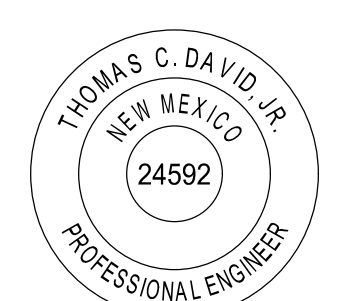
**SIDEWALK ELEVATIONS**  
SCALE: 1"=10'



**CURB ISLAND AT STORE FRONT**  
N.T.S.

SHEET NO.

C-4.1



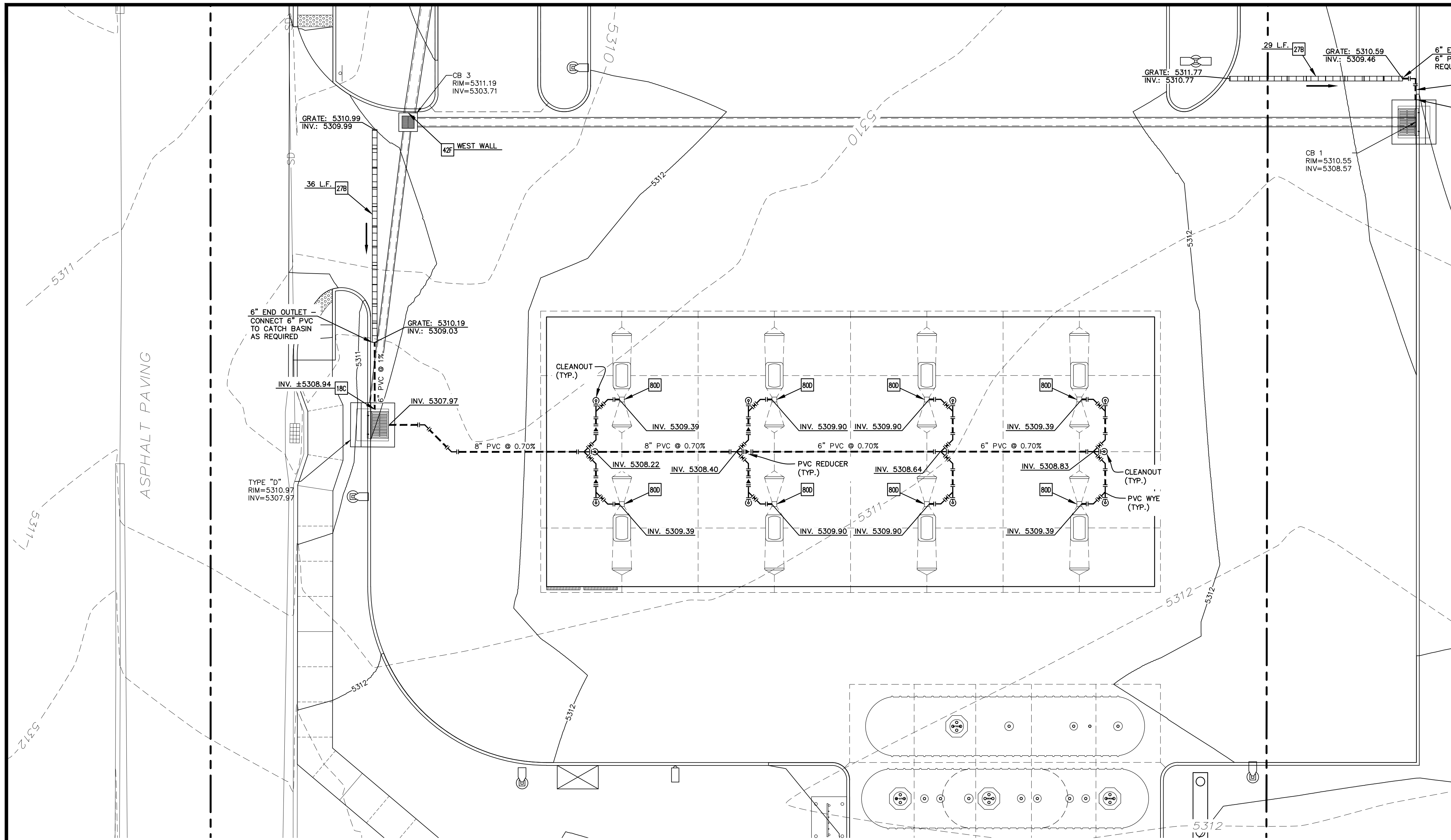
6/13/22  
Amos C. Blum, Jr.

**ENLARGED GRADING PLAN**  
MURPHY EXPRESS  
10601 UNSER BOULEVARD NW  
ALBUQUERQUE NEW MEXICO

**PAN AMERICAN ENGINEERS, LLC**  
1717 JACKSON STREET  
ALEXANDRIA, LA. 71301  
(318) 478-2100  
CONTACT: WEBLEY MILLER

**MURPHY OIL USA, INC.**  
200 PEACH STREET  
EL DORADO, AR 71730





EXISTING	
	Storm Drain Manhole
	Sanitary Sewer Manhole
	Sanitary Sewer Line
	Storm Drain Line
	Storm Drain Inlet
	Underground Water Line
	Hydrant
	Water Meter
	Water Valve
	Concrete Symbol
	Irrigation Box
	Set Monument

PROPOSED	
	BOUNDARY LINE
	PVC PIPE FITTINGS
	CANOPY PVC PIPE DRAINAGE
	CONTOUR ELEVATIONS
	CONSTRUCTION FENCE (SEE DETAIL SHEETS)
	PROPOSED STORM PIPE
	TRENCH DRAIN FLOW DIRECTION

#### GENERAL CANOPY DRAINAGE NOTES

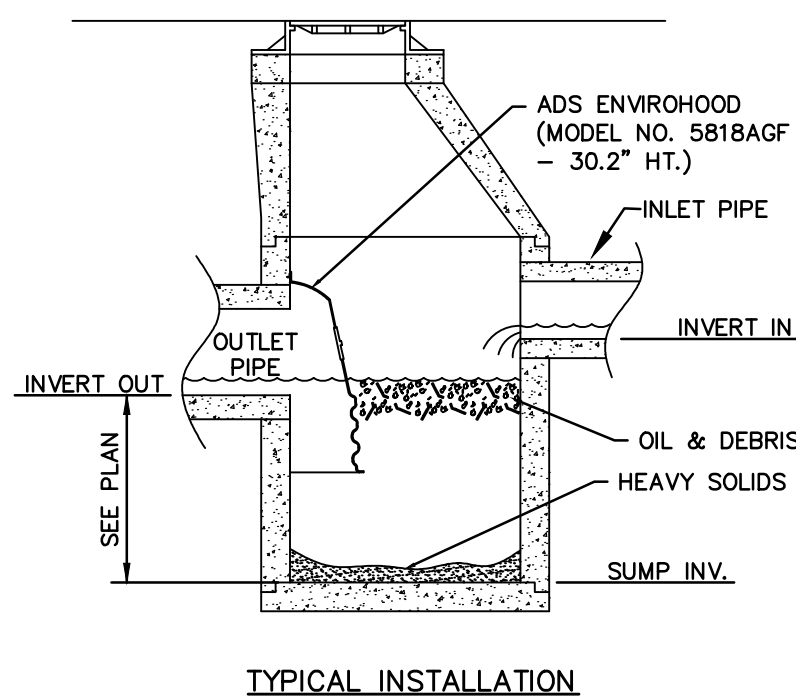
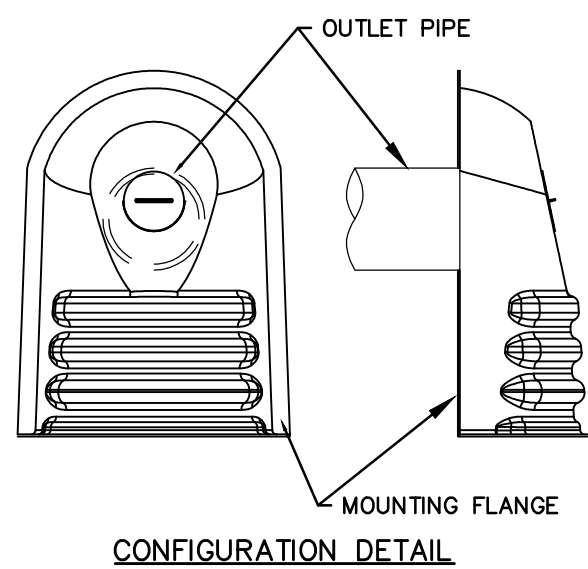
- DRAINAGE PIPING AND FITTINGS FOR CANOPY DRAINAGE SHALL BE SOLVENT WELD PVC SCH. 40 (MIN.)
- REFER TO CLEANOUT DETAIL FOR REQUIRED HEAVY DUTY COVER.
- DRAINAGE PIPING SHALL BE ROUTED BELOW PRODUCT PIPING (MIN. 6" VERTICAL SEPARATION). COORDINATE WITH TANK/PIPING PLANS.

#### CANOPY DRAINAGE DETAILS

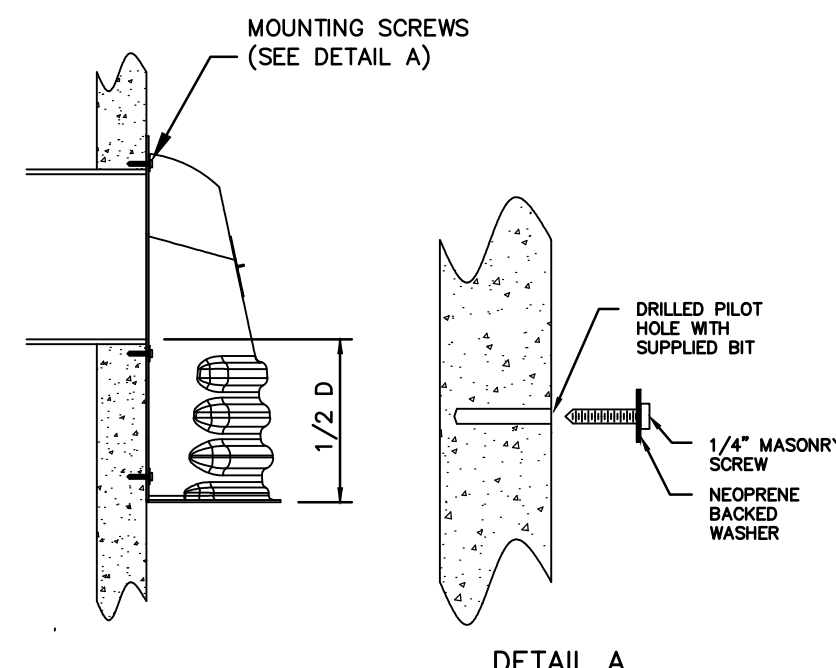
- 18C CONNECT TO EXISTING STORM DRAIN INLET - NEATLY CORE OPENING IN WALL OF CATCH BASIN AND SEAL ANNULAR SPACE WITH NON-SHRINK GROUT
- 27B ACO DRAIN - SK300 PRE SLOPED CHANNEL WITH D.I. SLOTTED GRATE
- 80D DOWNSPOUT COLLECTOR
- 42F ENVIROHOOD BY ADS

#### NOTES:

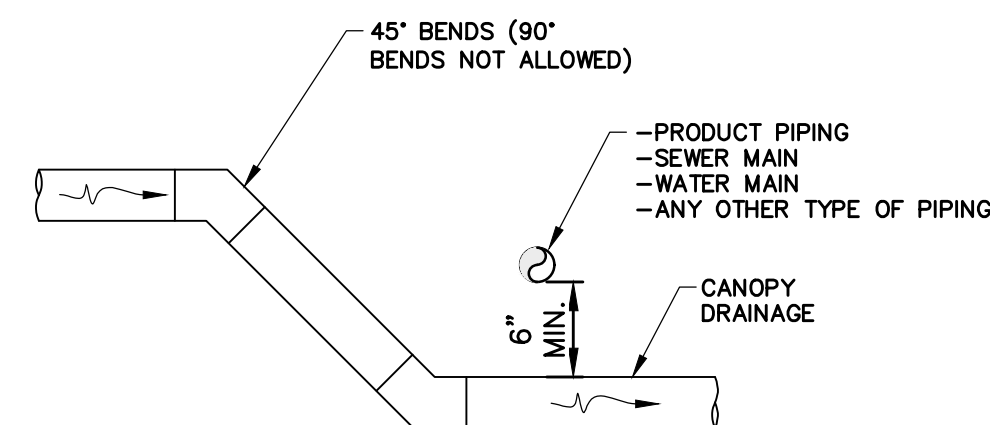
- ALL HOODS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:  
ADVANCED DRAINAGE SYSTEMS, INC.  
4640 TRUENAN BLVD.  
HILLIARD, OH 43026  
TOLL FREE: (800) 733-7473  
WEB: HTTP://WWW.ADS-PIPE.COM  
OR PRE-APPROVED EQUAL
- ALL HOODS SHALL BE CONSTRUCTED OF POLYETHYLENE.
- THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY THE OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (HOOD SIZE SHOULD ALWAYS BE LARGER THAN PIPE SIZE).
- THE BOTTOM OF THE HOOD SHALL EXTEND A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <12" I.D.
- THE SURFACE OF THE STRUCTURE WHERE THE HOOD MOUNTS SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
- THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL USING THE HARDWARE PROVIDED BY THE MANUFACTURER.
- INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT.  
INSTALLATION KIT SHALL INCLUDE:  
A. INSTALLATION INSTRUCTIONS  
B. REMOVABLE CLEAN OUT PLUG  
C. 1/4" BLUE COATED MASONRY SCREWS  
D. 1/4" NEOPRENE BONDED SEALING WASHERS  
E. MASONRY DRILL BIT FOR 1/4" SCREWS



ENVIROHOOD BY ADS  
N.T.S. 42F



INSTALLATION NOTE:  
POSITION HOOD SUCH THAT BOTTOM FLANGE IS A DISTANCE 1/2 OUTLET PIPE DIAMETER (MIN) BELOW THE PIPE INVERT. MINIMUM DISTANCE FOR PIPES < 12" I.D. IS 6".



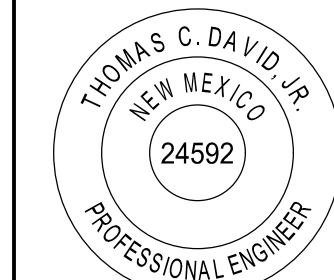
TYPICAL PIPING CROSSING  
N.T.S.

ALL CANOPY DRAINAGE TO BE A MIN. OF 6" BELOW ALL PRODUCT PIPING.

CONTRACTOR TO VERIFY ALL ELEVATIONS AND CONFLICTS PRIOR TO INSTALLING BUILDING AND CANOPY DRAINAGE.

SHEET NO.

C-4.2



6/13/22  
Amos C. Blum, Jr.

**CANOPY DRAINAGE PLAN**  
MURPHY EXPRESS  
10601 UNSER BOULEVARD NW  
ALBUQUERQUE NEW MEXICO

**PAN AMERICAN ENGINEERS, LLC**  
1717 JACKSON STREET  
ALEXANDRIA, LA. 71301  
(318) 478-2100  
CONTACT: WESLEY MILLER

**MURPHY OIL USA, INC.**  
200 PEACH STREET  
EL DORADO, AR 71730

