

CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director



Mayor Timothy M. Keller

April 11, 2019

John Nourzad, P.E.
GreenbergFarrow
3 Executive Drive, Suite 150
Somerset, NJ 08873

**RE: Murphy Express – Cottonwood
 3751 Hwy 528 NW
 Permanent C.O. - Accepted
 Engineer's Certification Dated 03/25/19
 Engineer's Stamp Date: 05/09/18
 Hydrology File: A14D003A**

PO Box 1293

Dear Mr. Nourzad:

Albuquerque

Based on the Certification information received on 04/10/2019, this certification is approved in support of Permanent Release of Occupancy by Hydrology.

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

NM 87103

Sincerely,

www.cabq.gov

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



City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: Murphy Express-Cottonwood **Building Permit #:** BP-2018-10077 **Hydrology File #:** A14D003A
DRB#: 18DRB-70055 **EPC#:** **Work Order#:**
Legal Description: TRACT C-2 OF SEVEN BAR RANCH, PLAT BOOK C24, FOLIO 136
City Address: 3751 Highway 528 NW, Albuquerque, NM 87114

Applicant: GreenbergFarrow (Engineer) **Contact:** Charles Beadles
Address: 1430 W. Peachtree St. NW, Ste. 200, Atlanta, GA 30309
Phone#: 770-712-8093 **Fax#:** **E-mail:** cbeadles@greenbergfarrow.com

Other Contact: **Contact:**
Address:
Phone#: **Fax#:** **E-mail:**

TYPE OF DEVELOPMENT: PLAT (# of lots) RESIDENCE X DRB SITE ADMIN SITE

IS THIS A RESUBMITTAL? Yes X No

DEPARTMENT X TRANSPORTATION X HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

- ☒ ENGINEER/ARCHITECT CERTIFICATION
☐ PAD CERTIFICATION
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ DRAINAGE REPORT
☐ DRAINAGE MASTER PLAN
☐ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
☐ ELEVATION CERTIFICATE
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ STREET LIGHT LAYOUT
☐ 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:



1430 West Peachtree Street, NW
Suite 200
Atlanta, GA 30309
404.601.4000
www.greenbergfarrow.com
We Are Global

March 21, 2019

To Renee Brissette
City of Albuquerque
Planning Department

Project Murphy Oil - Albuquerque NM
Project # 20160897.0
Re Response to TCO Letter dated 5/8/2019

Dear Ms. Brissette:

The following is our response to your TCO Letter dated 5/8/2019:

- 1) *Please provide the required submittal fee of \$300 for the application for Temporary Release of Occupancy by Hydrology.*

Response – The site contractor will coordinate the submittal of this payment.

- 2) *Please follow the DPM's checklist for non-subdivisions. Also, please add the attached certification to the Grading & Drainage Plan. See section below.*

1. *Completed Information Sheet - see Information Sheet.*

Response – The DTIS Sheet is enclosed.

2. *Provide as-built finished floor and/or pad.*

Response – The as-built finished floor is 5062.0 per as-built survey.

3. *Provide as-built spot elevations on the property line and/or limits of phase development (points of significant grade changes) to demonstrate compliance with the approved drainage report or drainage plan.*

Response – As-built spot elevations are provided on as-built survey.

4. *Provide copies of construction approval from the appropriate government agencies for construction within their right-of-ways and/or easements.*

Response – N/A

5. *Outline the as-built drainage basin(s) (including roof areas) supported with sufficient spot elevations and roof drain locations.*

Response – See enclosed As-built Drainage Basin Map. It is our professional opinion that the drainage basin area sufficiently meets the requirements of the approved design plans.

6. *Provide as-built elevations and dimensions for the following structures:*

a. *Pond(s) (include as-built volume calculations)*

Response – See enclosed As-built Drainage Basin Map for Detention Pond Chart

b. *Pipe inlet(s) and outlet(s) (include as-built capacity calculations)*

Response –

Combination Inlets (3) – Designed and installed per Neenah R-3260-A frame and grates.

Design Capacity (@ 3" depth) = 1.75 cfs

As-built Capacity (@ 3" depth) = 1.75 cfs

Grate Inlet (1) – Designed and installed per City of Albuquerque Detail 2220

Design Capacity (@ 3" depth) = 4.00 cfs

As-built Capacity (@ 3" depth) = 4.00 cfs

c. *Rundown(s) (including the required inlet dimensions)*

Response – N/A

d. *Spillway(s) (including the required outlet dimensions)*

Response – N/A

e. *Channel(s)*

Response – N/A

f. *Flowlines*

Response – N/A

g. *Erosion control and stormwater pollution prevention structure(s)*

Response – N/A

h. *Temporary drainage, erosion control and stormwater pollution prevention facilities required for phased development*

Response – N/A

i. *Retaining and/or garden wall(s)*

Response – N/A

j. *Other features critical to the drainage scheme.*

Response – none

7. *Professional Certification*

a. *Engineer's stamp dated and signed accompanied with a statement indicating substantial compliance with the approved drainage report and/or deficiencies with recommended corrections.*

Response – See enclosed Hydrology Certification Letter

- b. *The surveying associated with the certification must be performed by a professional engineer and/or surveyor in accordance with the "New Mexico Engineering and Surveying Practice Act" as amended and any standards adopted by the State Board of Registration.*

Response – See enclosed As-Built Survey.

Sincerely,

Charles J. Beadles, P.E.

Elevation	Incremental Depth	Contour Area	Average Area	Incremental Volume	Cumulative Volume
(ft)	(ft)	(sf)	(sf)	(cf)	(cf)
5052.1		116			0
5053	0.90	429	272.50	245.25	245.25
5054	1.00	604	516.50	516.50	761.75
5055	1.00	871	1024.50	1024.50	1499.25
5056	1.00	1178	1351.00	1351.00	2523.75
5057	1.00	1524	1751.50	1751.50	3874.75
5058	1.00	1979	2200.00	2200.00	5626.25
5059	0.91	2421	2591.50	2358.26	7826.25
5059.91		2762			10184.51

Required Volume (per design plans): 7567 cf

As-built Elevation of Required Volume: 5058.88

Top of Pond Elevation: 5059.91

Provided Freeboard: 1.03 ft

TOPOGRAPHIC AND BOUNDARY SURVEY OF
TRACT C-2
SEVEN - BAR RANCH
CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO
MARCH, 2019
REVISED MARCH 20, 2019

CURVE TABLE					
CURVE	LENGTH	RADIUS	TANGENT	CHORD	CHORD BEARING
C1	192.31'	1054.93'	96.42'	192.05'	N81°36'42"W
C2	42.22'	25.00'	28.14'	37.39'	N38°27'13"W
C3	110.99'	733.94'	55.60'	110.89'	N14°15'34"E
C4	11.24'	15.00'	5.90'	10.98'	N82°29'13"E

LEGEND

- Storm Drain Manhole
- Sanitary Sewer Manhole
- SAS
- Sanitary Sewer Line
- SD
- Storm Drain Line
- Storm Drain Inlet
- Power Pole w/underground feed
- High Voltage Tower
- Guy Wire
- Overhead Wires
- Underground Electric line
- Underground Communications Line
- Underground Gas Line
- Underground Water Line
- Sanitary Sewer Clean-out
- Water Meter
- Water Valve
- Hydrant
- Chain Link Fence
- Electric Transformer
- Utility Panel
- Storm Drain Inlet
- Traffic Box
- Telephone Pedestal
- Overhead Traffic Light Pole
- Traffic Light Post
- Utility Box
- Light Pole
- Ballard
- Concrete Symbol
- Gas Meter
- Wall
- Monitoring Well
- Handicap Parking Sign
- Handicap Parking Space
- Hot Box
- Utility Vault
- Mail Box
- Bike Rack
- R.T.D.M. Raised Truncated Dome Mat
- Control Point

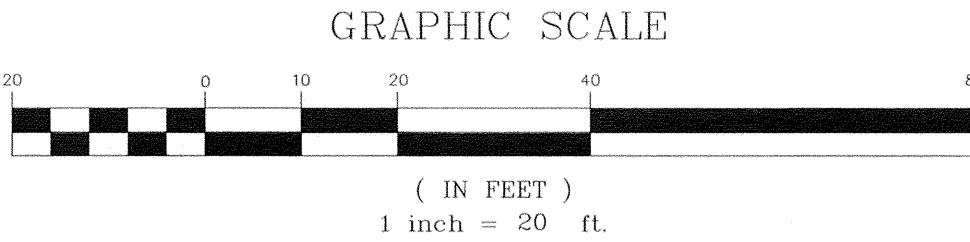
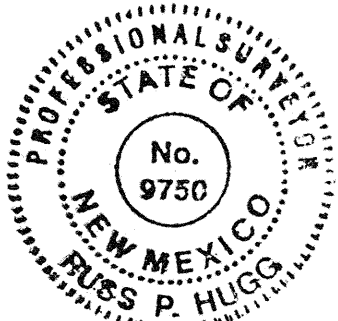
INVERT DATA

- Storm Drain Inlet
Top of Grate = 5059.88'
Inv. = 5056.1' (E)
- Storm Drain Inlet
Top of Grate = 5060.72'
Inv. = 5054.9' (W)
Inv. = 5054.7' (S)
- Storm Drain Inlet
Top of Grate = 5060.72'
Inverts inaccessible
Sump = 5051.6'±
- Storm Drain MH
Rim = 5059.49'
Inv. = 5054.1' (W)
Inv. = 5054.1' (N)
- Storm Drain Inlet
Top of Grate = 5060.13'
Inv. = 5055.0' (E)
Inv. = 5052.8'
- Flow Line 6"± Dia.
Inlet = 5052.1'
- Concrete Drainage Structure
Top of Grate = 5058.82'
Throat Inv. = 5057.84'
Inv. = 5051.7'

KEYED EASEMENTS

- 10' Underground Easement granted by document filed April 3, 1985 in Misc. Book 216A, Page 656.
- 10' Public Utility Easement granted by document filed March 12, 1985 in Misc. Book 209A, Page 88

AS-BUILT DRAINAGE
BASIN TO DETENTION
POND = 0.92 ACRES

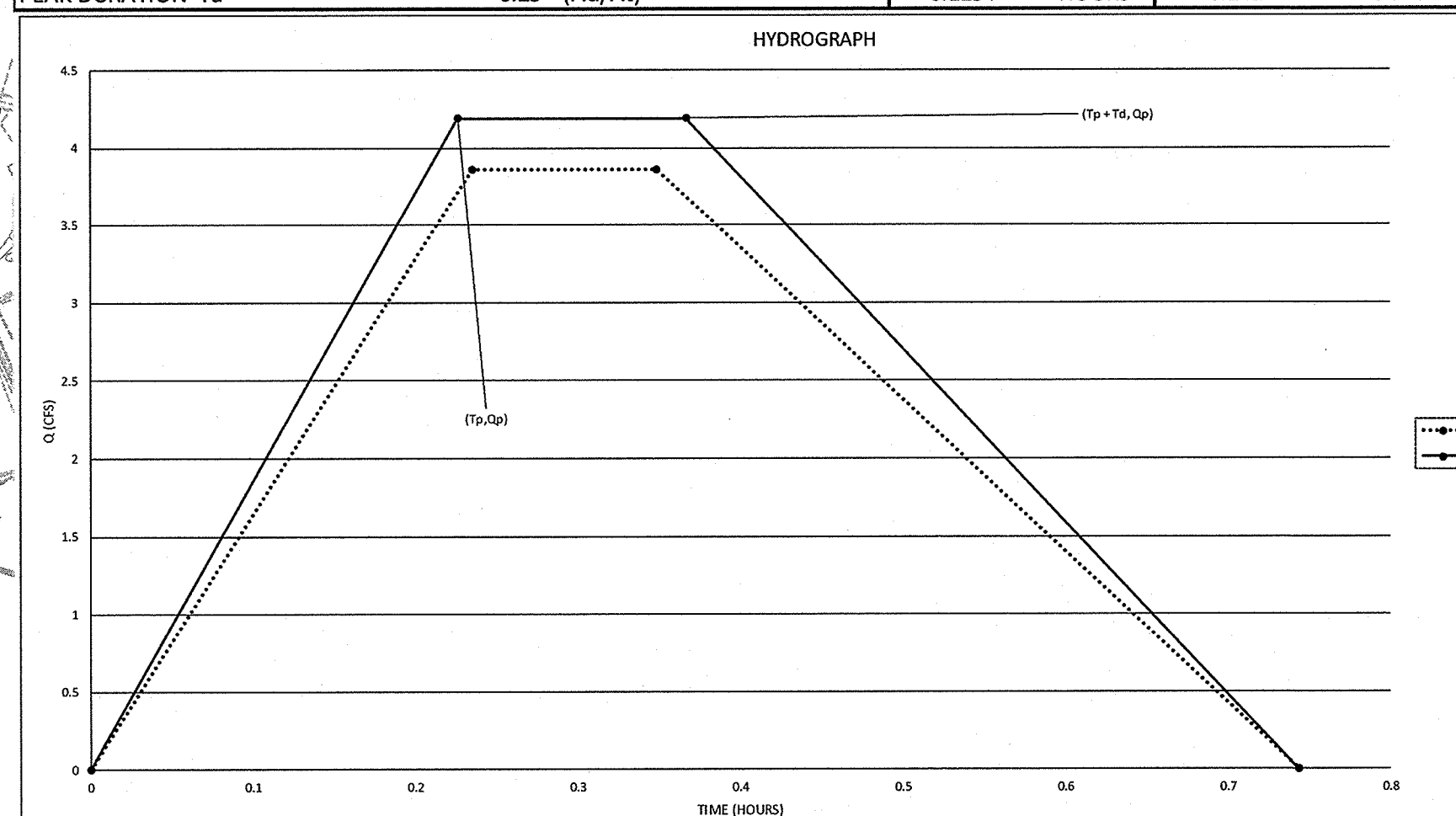
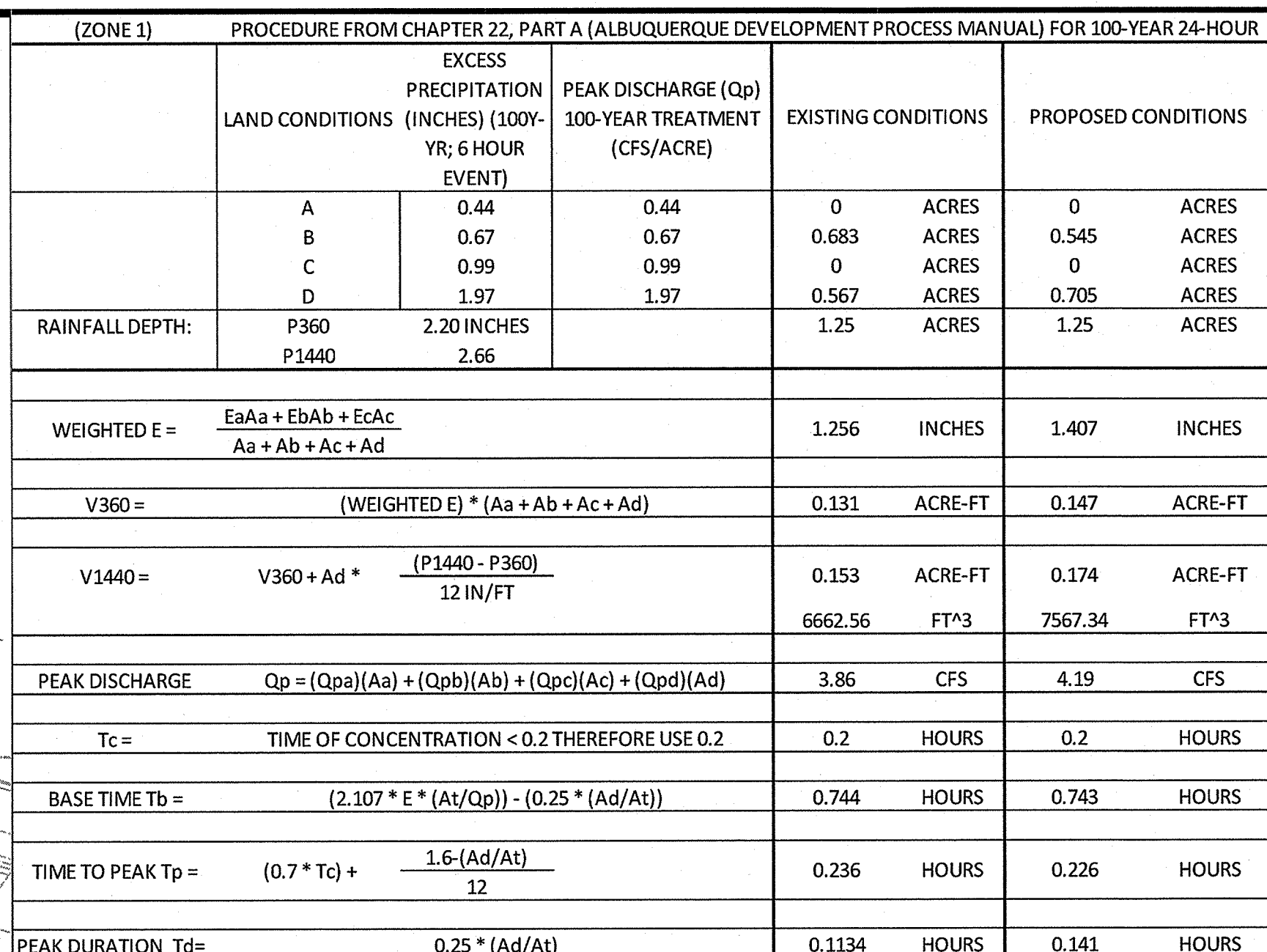


SHEET 2 OF 2

SURV-TEK
Consulting Surveyors

984 Valley View Drive, N.W. Albuquerque, New Mexico 87114 Phone: 505-897-3366 Fax: 505-897-3377

190094_RE-TOPO_031919.dwg



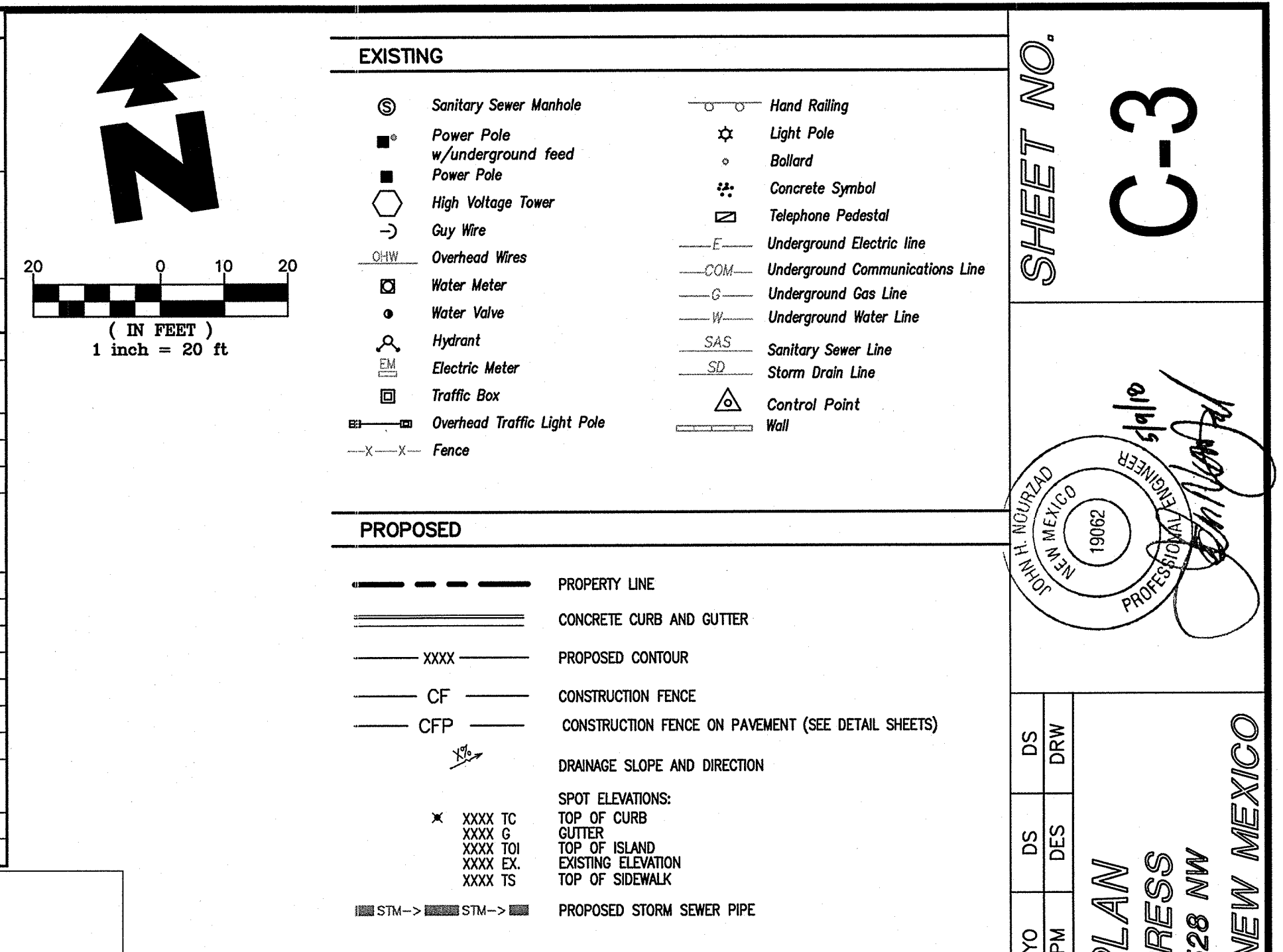
POND STORAGE					ORIFICE DISCHARGE (SAD 223 ALLOWS 2.31 CF)	
Elevation	Incremental Depth	Contour Area	Average Area	Incremental Volume	Cumulative Volume	ALLOWABLE = 2.31 * At
(ft)	(ft)	(sf)	(sf)	(cf)	(cf)	ORIFICE RADIUS R
5053		459			0	ORIFICE AREA A = $9(Pi)r^2 / (144 \text{ in}^2 / \text{FT}^2)$
	1		559.5	559.5		GRAVITY G
5054		660			559.5	DEPTH OF WATER H = 5059 - 5053 - (R/12)
	1		782	782		COEFFICIENT OF DISCHARGE C*
5055		904			1341.5	DISCHARGE Q = $C^*A^*SQRT(2GH)$
	1		1062.5	1062.5		*COEFFICIENT OF DISCHARGE - FUNDAMENTALS OF HYDRAULIC ENGR
5056		1221			2404	
	1		1414.5	1414.5		
5057		1608			3818.5	
	1		1808	1808		
5058		2008			5626.5	
	1		2226.5	2226.5		
5059		2445			7853	
	1		2686.5	2686.5		
5060		2928			10539.5	

GIVES 5058.89 FT. THEREFORE SET EMERGENCY OVERFLOW ELEVATION
AT 5059 AND TOP OF DAM AT 5060 FOR 1 FT OF FREEBOARD**


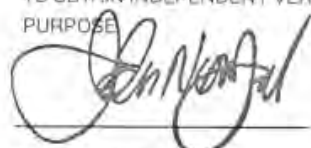
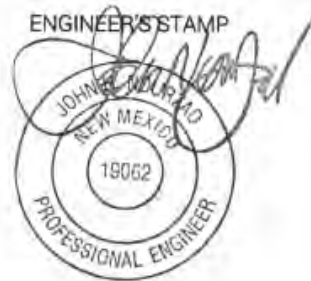

**PRIOR TO ANY WORK WITHIN
HIGHWAY 528 RIGHT-OF-WAY,
A NEW MEXICO DEPARTMENT OF
TRANSPORTATION (NMDOT) PERMIT
WILL BE REQUIRED**

****PRIOR TO ANY WORK WITHIN
COTTONWOOD RIGHT-OF-WAY,
A CITY OF ALBUQUERQUE PERMIT
WILL BE REQUIRED****

AS-BUILT GRADING PLAN



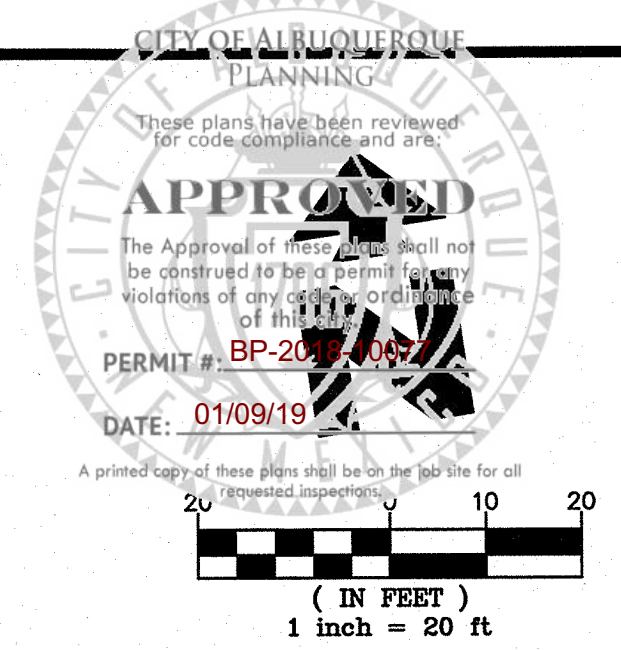
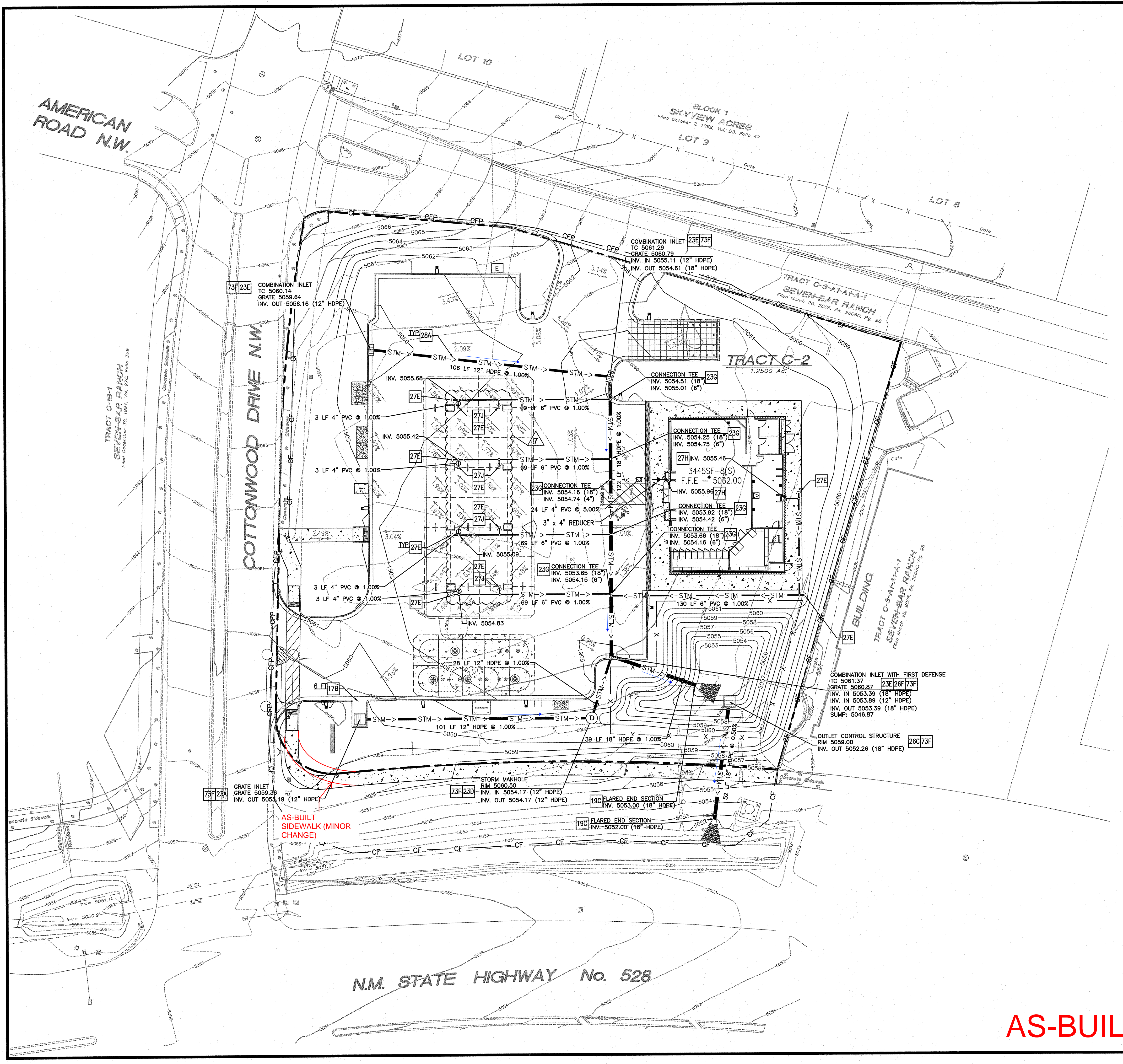
GENERAL GRADING NOTES		05-09-18		IN	
		DATE		PRN	
				GRADING P	
				MURPHY EXP	
				3751 HIGHWAY 5	
				ALBUQUERQUE	
				REV-6	
				GreenbergFarrow	
				1430 W. PEACHTREE ST. SUITE 200 ATLANTA, GA 30309 PHONE: (404) 601 4000 FAX: (404) 601 5970 DWG NAME: 1403020875.DWG JOB NO.: 20080875	
				EXISTING CONDITIONS - PROPOSED CONDITIONS	
				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 CROSSINGS 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.	
				B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND FOUR INCHES OF TOPSOIL APPLIED, IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEED/SODDED, FERTILIZED, MULCHED, AND MAINTAINED UNTIL HADY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. 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 CORRECTED 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 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.	
				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 TRENCH PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS IS TO INCLUDE, BUT NOT LIMITED TO ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.	
				F. ALL HOPE SHALL BE N-12 WT IB (OR EQUIVALENT) WITH SMOOTH INTERIOR AND ANNUAL EXTERIOR CORROSIONS, 4" PIPE SHALL MEET ASTM F2648 (OR ASHTO M252 TYPE 3) REQUIREMENTS, AND SHALL HAVE A MINIMUM MANHOLE "1" DESIGN VALUE OF 0.012. JOINTS SHALL BE WATERTIGHT ACCORDING TO ASTM D3312 (OR ASHTO M252, M294) REQUIREMENTS. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477, JOINT PERFORMANCE, FITTINGS, WAFFLE 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. IF USING HOPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATIONS SHALL MEET THE ASHTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.	
				H. ALL STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 TYPE II UNLESS OTHERWISE INDICATED.	

		<small>1430 West Peachtree Street, 10th Suite 200 Atlanta, GA 30309 404.601.4000 www.greenbergfarrow.com © We Are GFA</small>	
March 21, 2019			
To: Rense Brissette City of Albuquerque		Project: Murphy Oil - Albuquerque NM Project #: 20150897.0 Re: Hydrology Certification	
HYDROLOGY CERTIFICATION			
<p>I, <u>John Nowrad</u>, NABPE 19062, OF THE FIRM <u>GreenbergFarrow</u>, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED <u>12/15/18</u>. THE RECORD INFORMATION SHOWN ON THE ENCLOSED AS-BUILT SURVEY HAS BEEN OBTAINED BY <u>Russ Hupp</u>, NMPS 9750, OF THE FIRM <u>Surveytek</u>. I FURTHER CERTIFY THAT I HAVE REVIEWED AS-BUILT SURVEY AND SITE PICTURES OF THE PROJECT SITE ON <u>3/8/19</u> AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR CERTIFICATE OF OCCUPANCY.</p> <p>THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.</p>			
 Signature of Engineer			
MAR 25 2019			
Date:			
		March 6, 2019 Page 1 	

MURPHY OIL USA, INC.

200 PEACH STREET
EL DORADO, AR 71730

MURPHY
USA



EXISTING	
	Sanitary Sewer Manhole
	Power Pole w/underground feed
	Power Pole
	High Voltage Tower
	Guy Wire
	Overhead Wires
	Water Meter
	Water Valve
	Hydrant
	Electric Meter
	Traffic Box
	Overhead Traffic Light Pole
	Fence
	Hand Railing
	Light Pole
	Bollard
	Concrete Symbol
	Telephone Pedestal
	Underground Electric Line
	Underground Communications Line
	Underground Gas Line
	Underground Water Line
	Sanitary Sewer Line
	Storm Drain Line
	Control Point
	Wall
PROPOSED	
	PROPERTY LINE
	PROPOSED INTEGRAL CURB
	PROPOSED CONTOUR
	CONSTRUCTION FENCE
	CONSTRUCTION FENCE ON PAVEMENT (SEE DETAIL SHEETS)
	DRAINAGE SLOPE AND DIRECTION
	PROPOSED STORM SEWER PIPE

- 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 CROSSINGS 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.
- B. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND FOUR INCHES OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREA SHALL THEN BE SEED/SODDED, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. 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 CORRECTED 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 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.
- 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. THIS IS TO INCLUDE, BUT NOT LIMITED TO ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH PERFORMANCE CRITERIA AS REQUIRED BY OSHA.
- F. ALL HDPE SHALL BE N-12 WT IB (OR EQUIVALENT) WITH SMOOTH INTERIOR AND ANNUAL EXTERIOR CORRUGATIONS. 4"-60" PIPE SHALL MEET ASTM F2648 (OR ASHOTO M252 TYPE S) REQUIREMENTS, AND SHALL HAVE A MINIMUM MANNINGS "N" DESIGN VALUE OF 0.012. JOINTS SHALL BE WATER-TIGHT ACCORDING TO ASTM D3212 (OR ASHOTO 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.
- G. IF USING HDPE PERFORATED PIPE FOR SUBSURFACE DRAINAGE AND DETENTION/RETENTION SYSTEMS, THE PERFORATIONS SHALL MEET THE ASHOTO CLASS II STANDARD PERFORATION PATTERN REQUIREMENTS.
- H. ALL STORM SEWER LINES 18"-54" DIAMETER ARE TO BE REINFORCED CONCRETE PIPE ACCORDING TO ASTM C-76 TYPE II UNLESS OTHERWISE INDICATED.

STORM DETAILS - SEE DETAIL SHEETS	
17B	CONCRETE FLUME (SEE SIZE THIS SHEET)
19C	FLARED END SECTION
23A	GRATE INLET
23B	STORM DRAIN MANHOLE
23C	COMBINATION INLET
23G	TEE CONNECTION (INSERT TEE OR EQUIVALENT WATER TIGHT CONNECTION)
26C	DETENTION BASIN OUTFALL STRUCTURE
28F	FIRST DEFENSE STRUCTURE BY HYDRO INTERNATIONAL
27E	STORM DRAIN CLEAN-OUT
27H	ROOF DRAIN DOWNSPOUT CONNECTION
27J	CANOPY DRAIN DOWNSPOUT CONNECTION
28A	STORM SEWER TRENCH AND BEDDING
73F	WATERSTOP STRUCTURE CONNECTION FOR HDPE PIPE

SHEET NO.
C-3.1

NOV 19 2018

TRACT C-1B-1
SEVEN-BAR RANCH
Filed December 30, 1997, Vol. 87C, Page 389

TRACT C-2
SEVEN-BAR RANCH
Filed March 26, 2006, Bl. 2006C, Pg. 98

TRACT C-3A-A1-A-1
SEVEN-BAR RANCH
Filed March 26, 2006, Bl. 2006C, Pg. 98

TRACT C-3A-A1-A-1
SEVEN-BAR RANCH
Filed March 26, 2006, Bl. 2006C, Pg. 98

AMERICAN ROAD N.W.

COTTONWOOD DRIVE N.W.

N.M. STATE HIGHWAY No. 528

GreenbergFarrow

1430 W. PEACHTREEBLVD., SUITE 200
ATLANTA, GA 30340
PHONE: (404) 601 4000
FAX: (404) 601 9700
DWC NAME: ALBUQUERQUE, NM
JOB NO.: 20160897.0

MURPHY OIL USA, INC.

200 PEACH STREET
EL DORADO, AR 71730

MURPHY USA

AS-BUILT STORM SEWER PLAN