Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 13 2018
RECEIVED

Form C-103
Revised July 18, 2013

WELL API NO.	30-015-45268
5. Indicate Type of Lease	STATE ☐ FEE ☒
6. State Oil & Gas Lease No.	

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☒ Other	7. Lease Name or Unit Agreement Name: SPUD MUFFIN 31-30
	8. Well Number: 624H
2. Name of Operator: DEVON ENERGY PRODUCTION COMPANY, LP.	9. OGRID Number: 6137
3. Address of Operator: 333 WEST SHERIDAN AVENUE, OKC, OK 73102	10. Pool name or Wildcat: ~~Purple Sage Wolfcamp~~ (gas)

4. Well Location
Unit Letter P : 485 feet from the SOUTH line and 280 feet from the EAST line
Section 31 Township 23S Range 29E NMPM Eddy County New Mexico

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
2960.3'

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: SHL/VARIANCE ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Devon Energy Production Co., LP respectfully requests approval to make the following changes for the subject well:

SHL CHG

FROM 485 FSL / 280 FEL
TO 485 FSL / 250 FEL
(attached drill plan document reflects minor change in MD associated with SHL change)

VARIANCE

Variance to allow for the option to drill intermediate hole with 9.875" bit and run 8.625" P-110HSCY 32 PPF TLW

ATTACHEMENTS

Updated C-102, Drilling Plan, Directional Survey\Plot Plan, & 8.625 32.00 P110HSCY TLW.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Erin Workman TITLE Regulatory Compliance Analyst DATE 12/13/18

Type or print name Erin Workman E-mail address: Erin.workman@dvn.com PHONE: (405) 552- 7970

For State Use Only

APPROVED BY: Raymond K. Podany TITLE Devon - Internal Geologist DATE 12-24-18
Conditions of Approval (if any):

Devon Energy, Spud Muffin 31-30 624H

1. Geologic Formations

TVD of target	9901	Pilot hole depth	N/A
MD at TD:	19831	Deepest expected fresh water:	400'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Top Salt	500		
Base of Salt	2700		
Lamar	3106		
Bell Canyon	3157		
Brushy Canyon	5230		
Bone Spring Lime	6812		
1st BSPG Sand	7872		
2nd BSPG Sand	8716		
3rd BSPG Sand	9791		
Wolfcamp	10050		
Wolfcamp XY	10164		
Wolfcamp 100	10268		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
12.25"	0	2700'	10.75"	45.5	J-55	STC	1.125	1.25	1.6
9.875"	0	9482'	7.625"	29.7	P110	BTC	1.125	1.25	1.6
8.75"	9482'	10383'	7.625"	29.7	P110	Flushmax III	1.125	1.25	1.6
6.75"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the annular clearance guidelines pertaining to casing collars allowing the use of 10-3/4" casing in 12-1/4" hole.

A variance is requested to wave the centralizer requirement for the 7-5/8" flush casing in the 8-3/4" hole and the 5-1/2" SF/Flush casing in the 6-3/4" hole.

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
12.25"	0	2700'	10.75"	45.5	J-55	STC	1.125	1.25	1.6
9.875"	0	9200'	8.625"	32	P110EC	VAM FJL	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

A variance is requested to wave the centralizer requirement for the 8-5/8" flush casing in the 9-7/8" hole and the 5-1/2" SF/Flush casing in the 7-7/8" hole.

A variance is requested to wave the annular clearance guidelines pertaining to casing collars allowing the use of 10-3/4" casing in 12-1/4" hole.

8-5/8" Intermediate casing will be kept fluid filled.

Casing Program (Alternate Design II)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	400'	13.375"	48	J-55	STC	1.125	1.25	1.6
10.625"	0	9200'	8.625"	32	P110EC	BTC	1.125	1.25	1.6
7.875"	0	TD	5.5"	20	P110	Vam SG	1.125	1.25	1.6

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (Primary Design)

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int I	448	12.9	13.5	1.85	Lead: Class H/C + additives
	142	14.8	3.31	1.33	Tail: Class H/C + additives
Int II	812	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate II (Bradenhead)	730	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Lead: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	25%

Cementing Program (Alternate Design I)

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int I	448	12.9	13.5	1.85	Lead: Class H/C + additives
	142	14.8	3.31	1.33	Tail: Class H/C + additives
Int II	480	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate II (Bradenhead)	450	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Tail: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	% Excess
Surface	50%
Intermediate	30%
Production	25%

Cementing Program (Alternate Design II)

Casing	# Sks	Wt. lb/ gal	H_2O gal/sk	Yld ft3/ sack	Slurry Description
Surface	310	14.8	6.34	1.34	Tail: Class C Cement + 1% Calcium Chloride
Int	715	9	5.31	3.27	Lead: Tuned Light® Cement
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Intermediate (Bradenhead)	485	14.8	6.32	1.33	Class C Cement + 0.125 lbs/sack Poly-E-Flake
	386	13.2	5.31	1.6	Tail: Class H/C + additives
	108	14.5	3.31	1.6	Tail: Class H/C + additives
Production	702	14.8	6.32	1.33	Class H Cement + 0.125 lbs/sack Poly-E-Flake

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Intermediate	13-5/8"	5M	Annular	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other*		
Production	13-5/8"	5M	Annular (5M)	X	50% of rated working pressure
			Blind Ram	X	5M
			Pipe Ram		
			Double Ram	X	
			Other *		
			Annular		
			Blind Ram		

			Pipe Ram			
			Double Ram			
			Other *			

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y — Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi. • Wellhead will be installed by wellhead representatives. • If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. • Wellhead representative will install the test plug for the initial BOP test. • Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. • If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted.

- Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating.
- Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2.

After running surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 5M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 5,000 psi high pressure test. The 5,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2.
13-5/8" BOP/BOPE system will have been tested to 10M rating prior to drilling out intermediate casing.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 5,000 psi WP.

Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	400'	FW Gel	8.6-8.8	28-34	N/C
400'	2700'	Sat Brine /DBE	9.5-10.1	34-40	N/C - 6
2700'	9200'	Sat Brine/Cut Brine/DBE	9.0-9.8	32-36	N/C - 6
9200'	TD	OBM	10.0-11.5	45-65	N/C-6

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL fromTD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	6010 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

Is this a walking operation? Potentially

1. In the event the spudder rig is unable to drill the surface holes the drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections with either OBM or cut brine and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

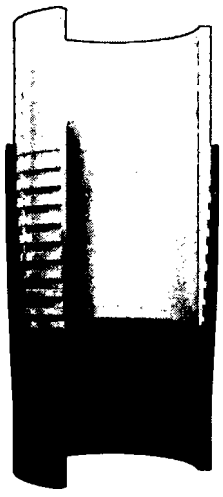
NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.

   a. Rig will utilize fresh water based mud to drill 14 ¾" surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the 10-3/4" surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
   a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments
_x_ Directional Plan
___ Other, describe



▪▪C- _OCK WEDGE

8.625" 32.00 LB/FT (.352" Wall)
BORUSAN MANNESMANNP110 HSCY

Pipe Body Data

Nominal OD:	8.625	in
Nominal Wall:	.352	in
Nominal Weight:	32.00	lb/ft
Plain End Weight:	31.13	lb/ft
Material Grade:	P110 HSCY	
Mill/Specification:	BORUSAN MANNESMANN	
Yield Strength:	125,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	7.921	in
API Drift Diameter:	7.796	in
Special Drift Diameter:	7.875	in
RBW:	87.5 %	
Body Yield:	1,144,000	lbf
Burst:	8,930	psi
Collapse:	4,230	psi

Connection Data

Standard OD:	9.000	in
Pin Bored ID:	7.921	in
Critical Section Area:	8.61433	in^2
Tensile Efficiency:	94.2 %	
Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	1,077,000	lbf
Compressive Limit:	1,144,000	lbf
Internal Pressure Rating:	8,930	psi
External Pressure Rating:	4,230	psi
Maximum Bend:	62.6	°/100

Operational Data

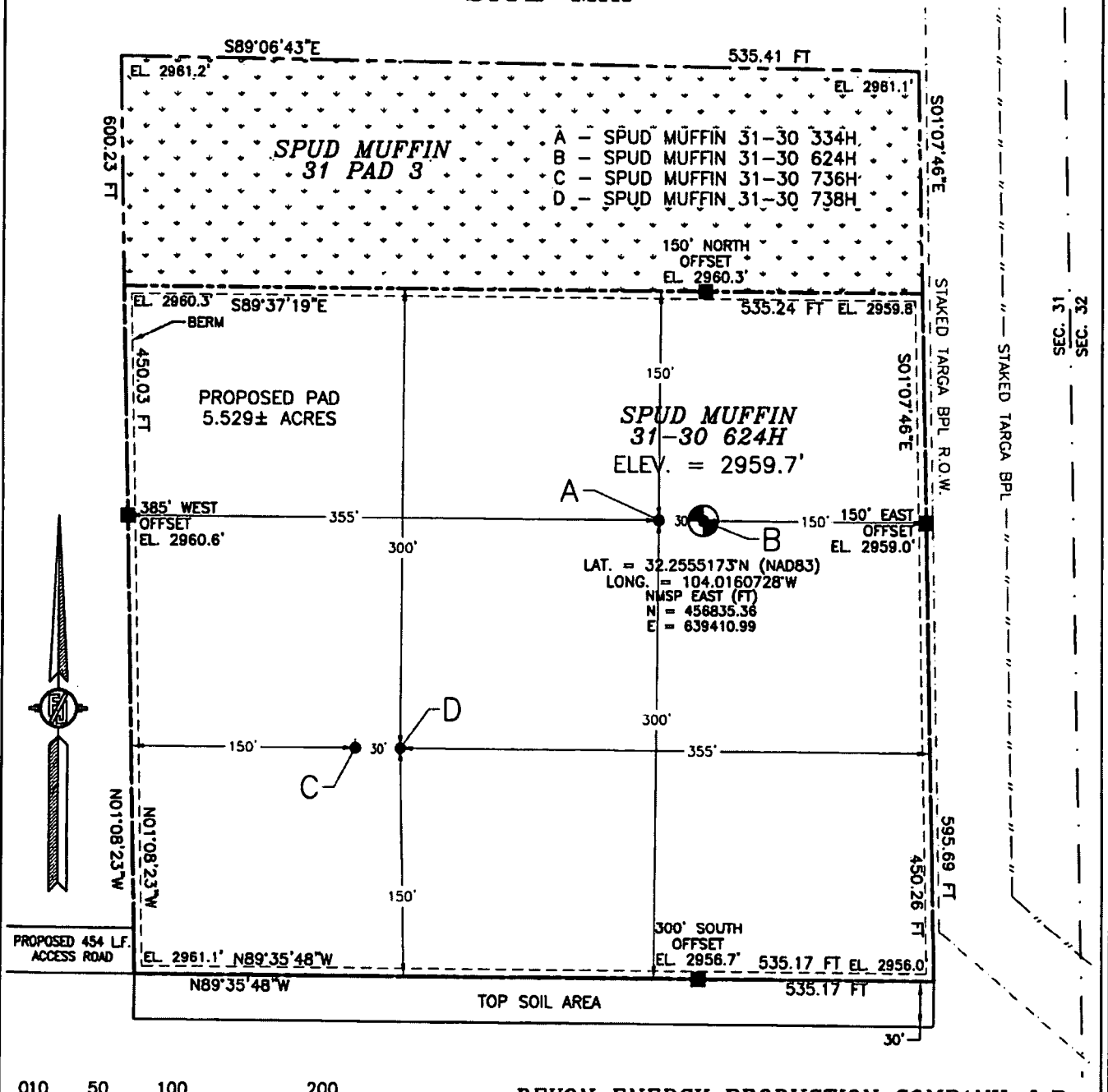
Minimum Makeup Torque:	29,900	ft*lbf
Optimum Makeup Torque:	37,375	ft*lbf
Maximum Makeup Torque:	80,900	ft*lbf
Minimum Yield:	89,900	ft*lbf
Makeup Loss:	5.97	in

Notes

Operational Torque is equivalent to the Maximum Make-Up Torque.

HUNTING

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



010 50 100 200
SCALE 1" = 100'

DIRECTIONS TO LOCATION

BEGINNING AT THE JUNCTION OF US 285 AND CR 720, GO EAST ON CR 720 0.8 OF A MILE TO HARROUN ROAD ON THE LEFT. GO NORTH-NORTHEAST ON HARROUN ROAD FOR 3.1 MILES TO A FORK IN THE ROAD. CONTINUE NORTH, LEFT ON SAID HARROUN ROAD 230' TO A LEASE ROAD TO THE LEFT, GO NORTH 0.5 OF A MILE. GO EAST 0.48 OF A MILE TO THE SOUTHWEST PAD OF HARROUN TRUST 31 4H & 5H, THEN FROM SOUTHEAST PAD GO EAST 454' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.

SPUD MUFFIN 31-30 624H

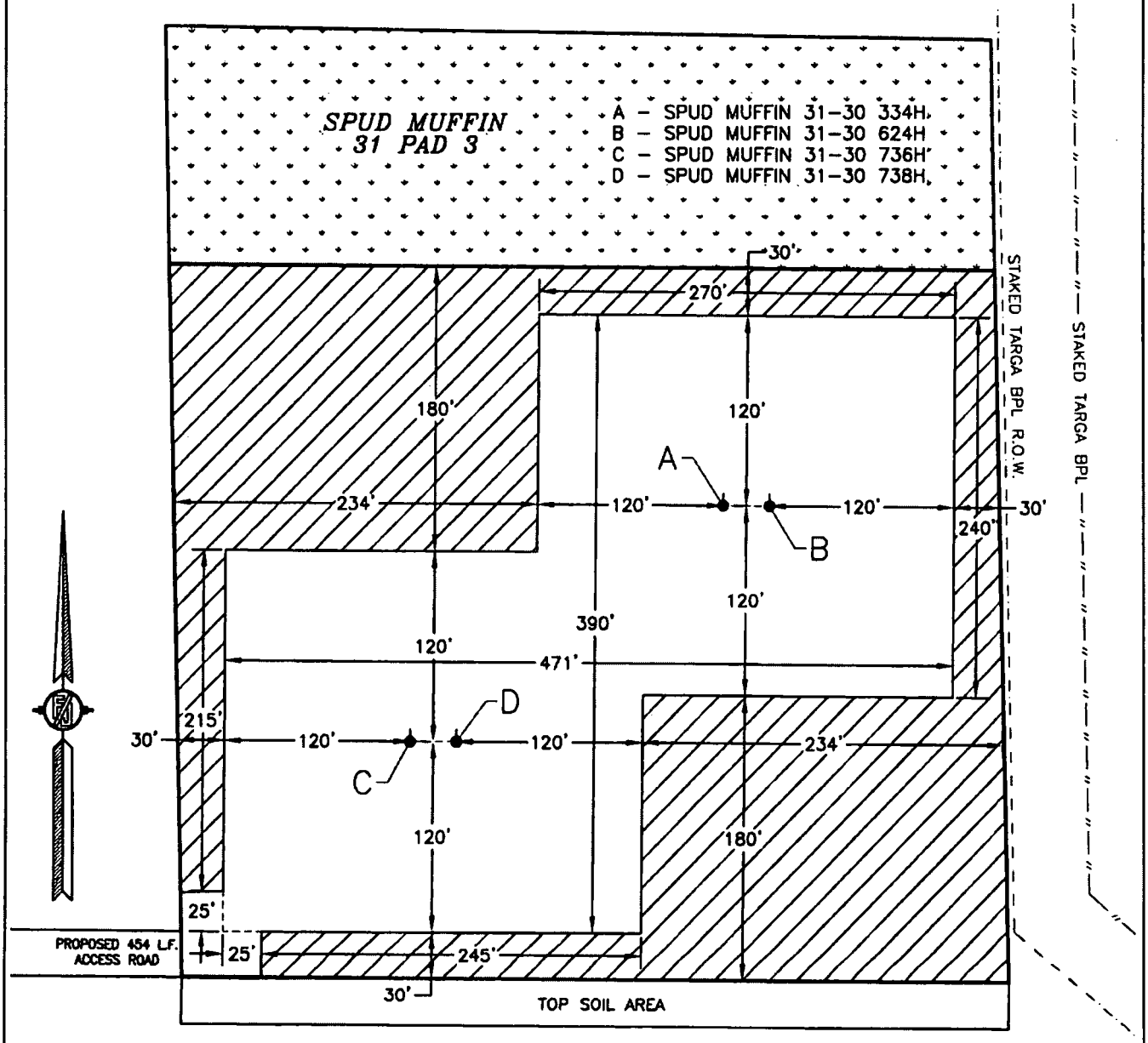
LOCATED 485 FT. FROM THE SOUTH LINE AND 250 FT. FROM THE EAST LINE OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



DENOTES INTERIM PAD RECLAMATION AREA

DENOTES GRADING SITE RECLAMATION AREA

010 50 100 200
SCALE 1" = 100'

2.645± ACRES INTERIM PAD RECLAMATION AREA
1.816± ACRES GRADING SITE RECLAMATION AREA
2.884± ACRES NON-RECLAIMED AREA
7.345± ACRES SPUD MUFFIN 31 PAD 3

DEVON ENERGY PRODUCTION COMPANY, L.P.
SPUD MUFFIN 31-30 624H
LOCATED 485 FT. FROM THE SOUTH LINE AND 250 FT. FROM THE EAST LINE OF SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

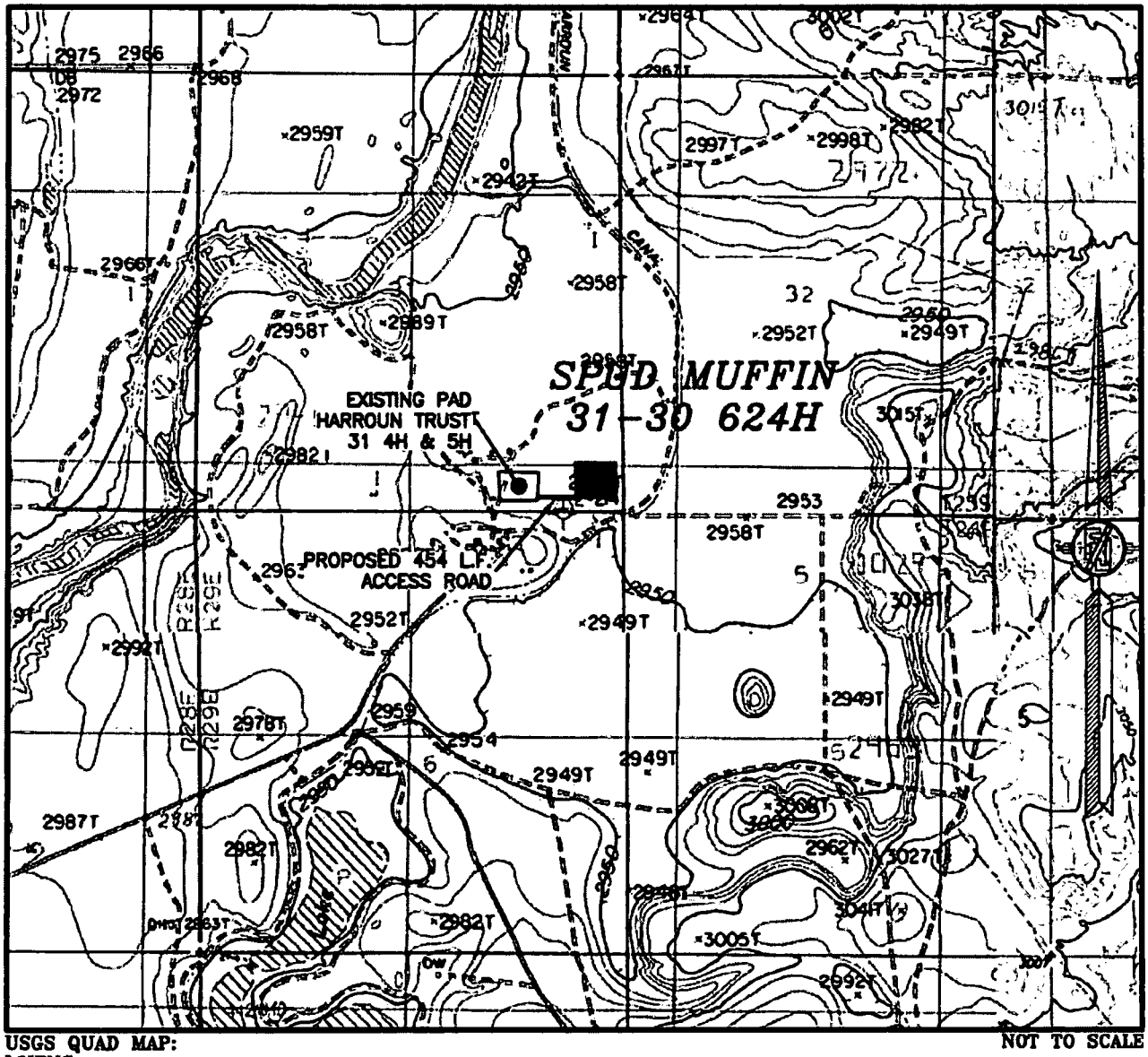
DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

LOCATION VERIFICATION MAP



USGS QUAD MAP:
LOVING

NOT TO SCALE

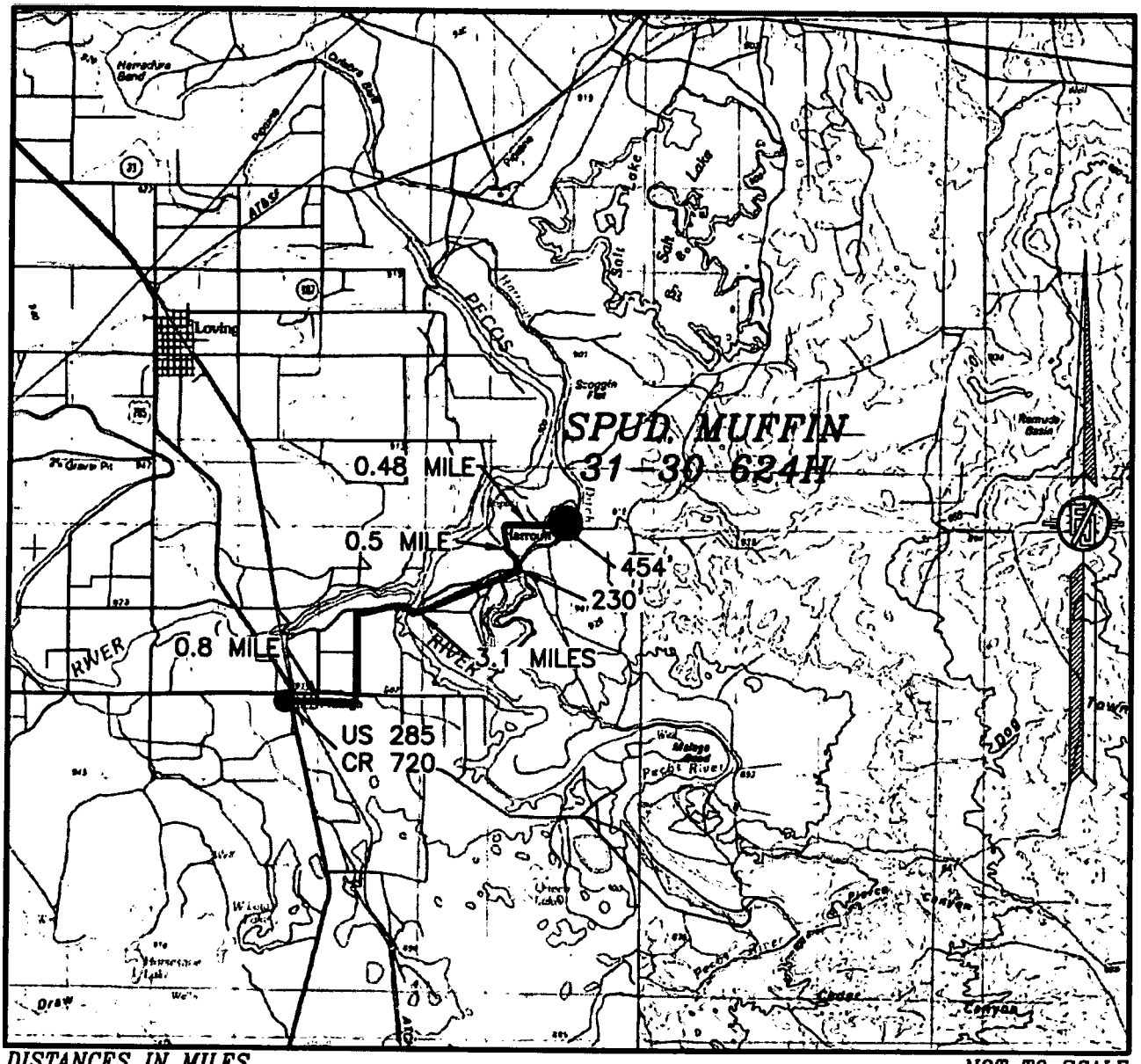
DEVON ENERGY PRODUCTION COMPANY, L.P.
SPUD MUFFIN 31-30 624H
LOCATED 485 FT. FROM THE SOUTH LINE
AND 250 FT. FROM THE EAST LINE OF
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES *NOT TO SCALE*

DIRECTIONS TO LOCATION
BEGINNING AT THE JUNCTION OF US 285 AND CR 720, GO EAST ON CR 720 0.8 OF A MILE TO HARROUN ROAD ON THE LEFT. GO NORTH-NORTHEAST ON HARROUN ROAD FOR 3.1 MILES TO A FORK IN THE ROAD. CONTINUE NORTH, LEFT ON SAID HARROUN ROAD 230' TO A LEASE ROAD TO THE LEFT, GO NORTH 0.5 OF A MILE. GO EAST 0.48 OF A MILE TO THE SOUTHWEST PAD OF HARROUN TRUST 31 4H & 5H, THEN FROM SOUTHEAST PAD GO EAST 454' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
SPUD MUFFIN 31-30 624H
LOCATED 485 FT. FROM THE SOUTH LINE
AND 250 FT. FROM THE EAST LINE OF
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

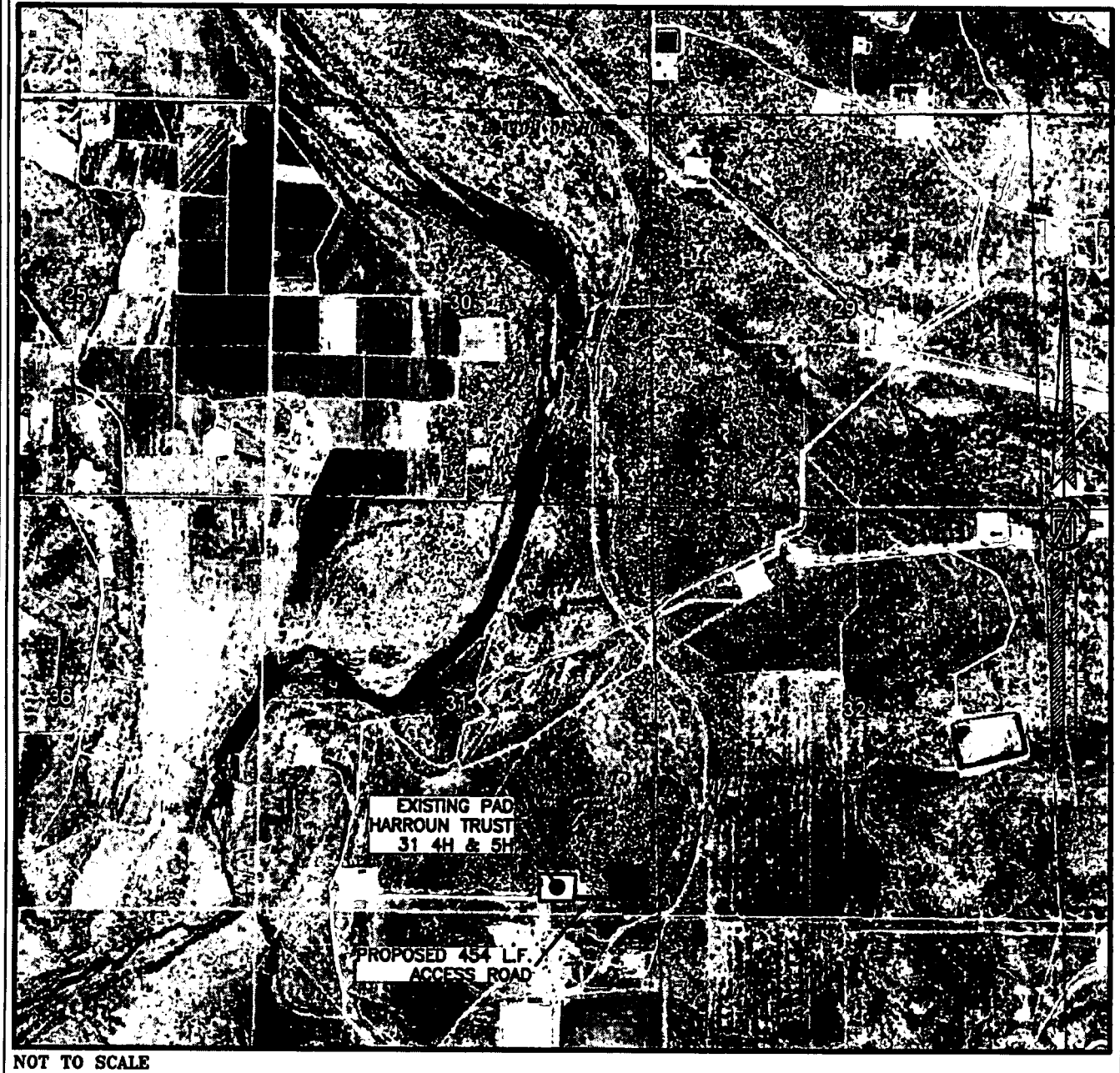
DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

SPUD MUFFIN 31-30 624H

LOCATED 485 FT. FROM THE SOUTH LINE
AND 250 FT. FROM THE EAST LINE OF
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

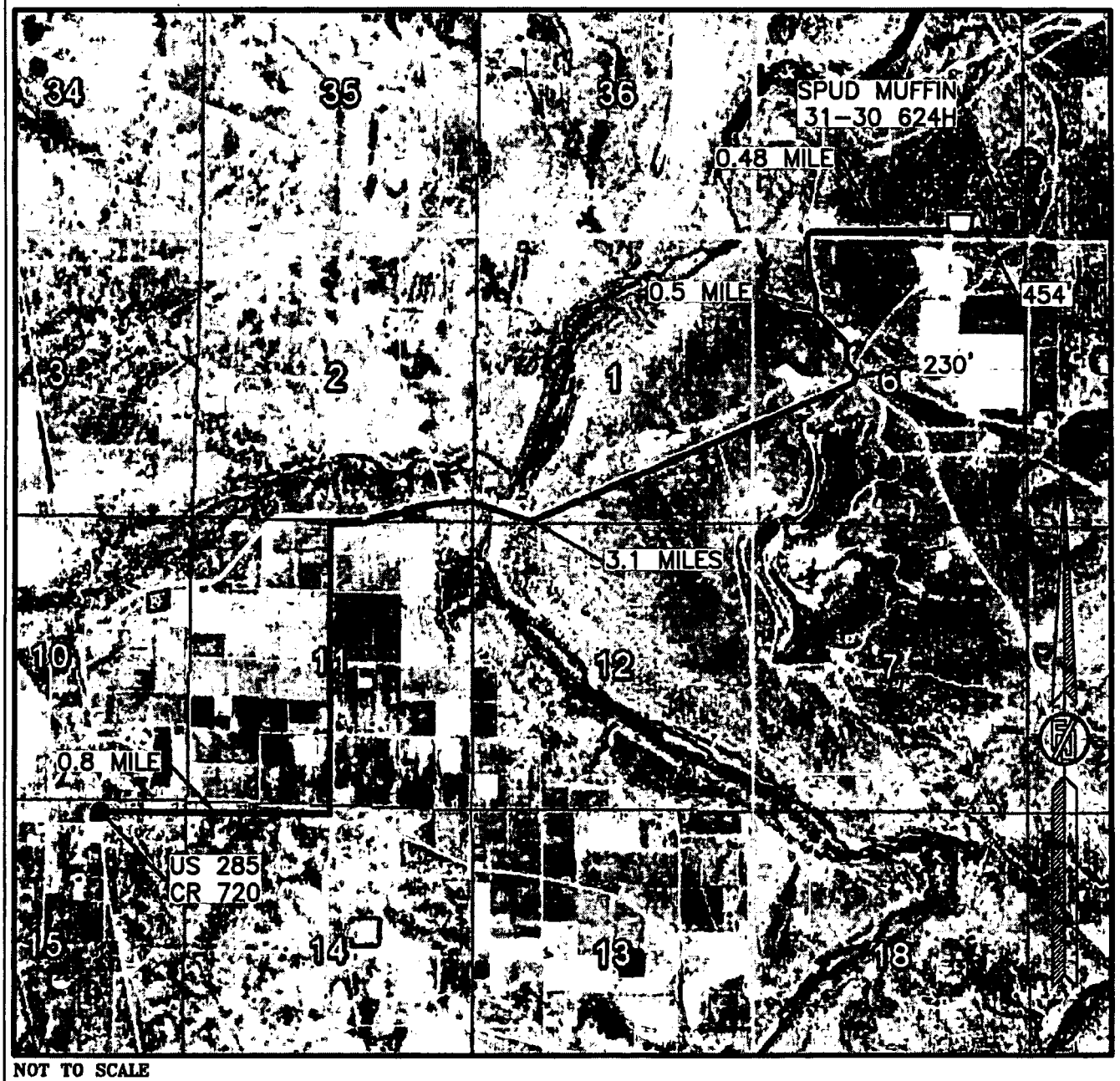
DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2017

DEVON ENERGY PRODUCTION COMPANY, L.P.

SPUD MUFFIN 31-30 624H

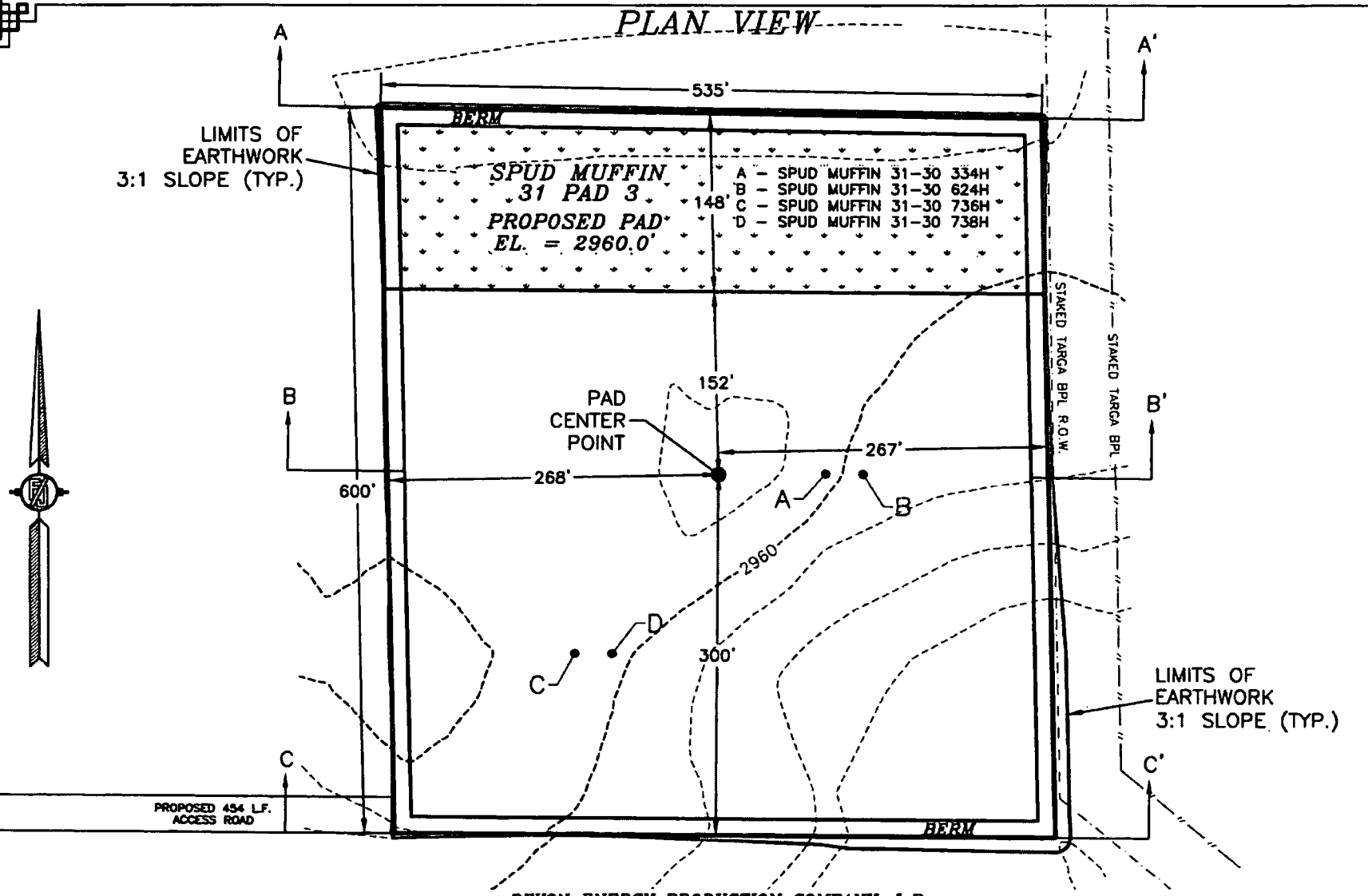
LOCATED 485 FT. FROM THE SOUTH LINE
AND 250 FT. FROM THE EAST LINE OF
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

DECEMBER 4, 2018

SURVEY NO. 5962D

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR SPUD MUFFIN 31-30 624H
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
3942 CU. YD	8253 CU. YD	4311 CU. YD (FILL)

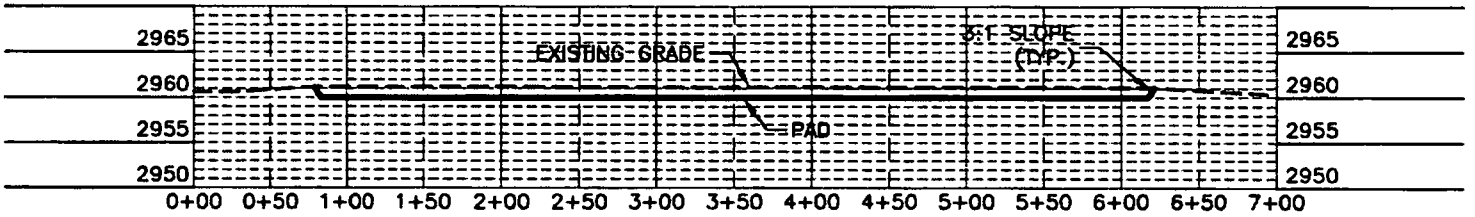
EARTHWORK QUANTITIES ARE ESTIMATED

DECEMBER 4, 2018

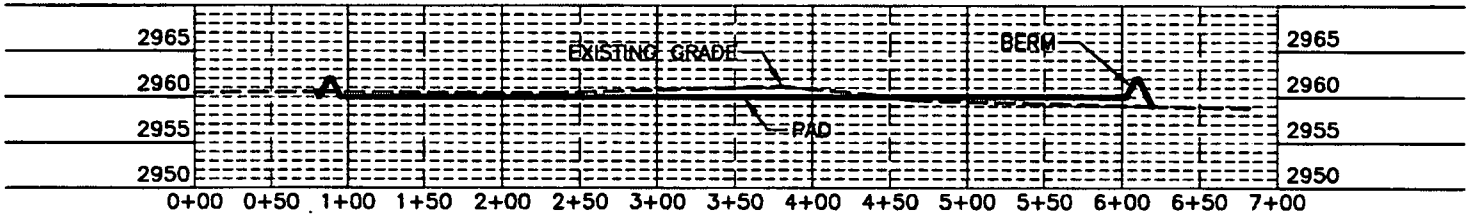
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

CROSS-SECTIONS

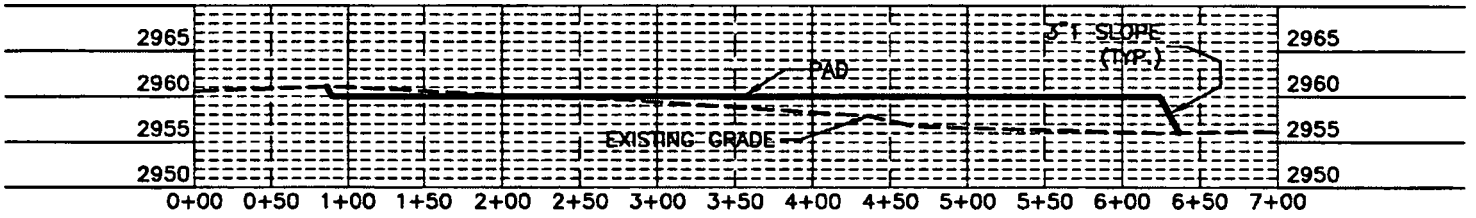
SECTION A-A'



SECTION B-B'



SECTION C-C'



012 60 120 240

SCALE 1" = 120' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR SPUD MUFFIN 31-30 624H
SECTION 31, TOWNSHIP 23 SOUTH,
RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
3942 CU. YD	8253 CU. YD	4311 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

DECEMBER 4, 2018

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

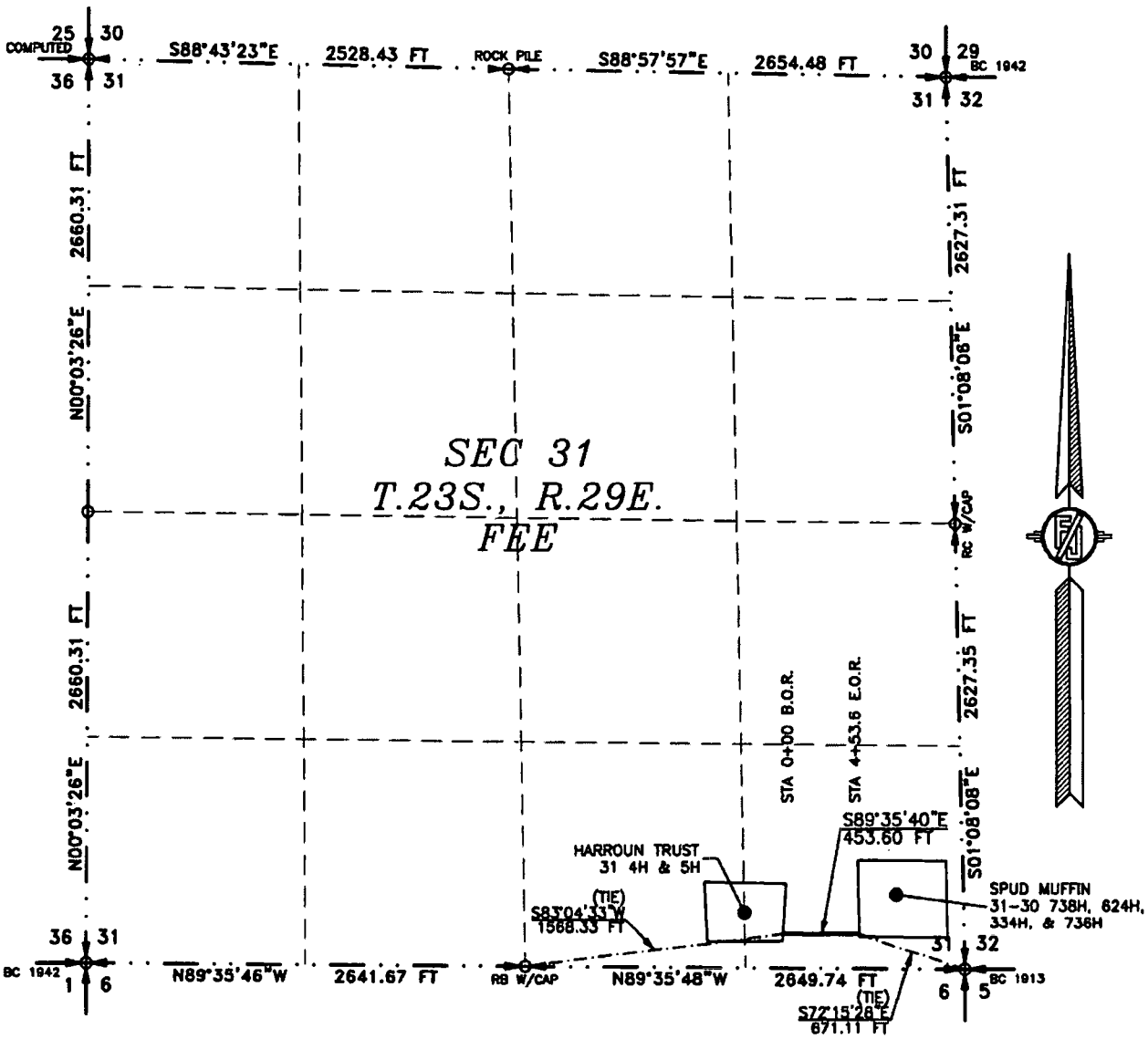
SHEET 2-2
SURVEY NO. 6962D

ACCESS ROAD PLAT

ACCESS ROAD FROM HARROUN TRUST 31 4H & 5H WELLPAD
TO SPUD MUFFIN 31-30 738H, 624H, 334H, & 736H

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 4, 2018



SEE NEXT SHEET (2-2) FOR DESCRIPTION

1000 0 1000
Scale: 1" = 1000'

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 5 DAY OF DECEMBER 2018

FILIMON F. JARAMILLO P.S. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SHEET: 1-2

SURVEY NO. 5962D

ACCESS ROAD PLAT

ACCESS ROAD FROM HARROUN TRUST 31 4H & 5H WELLPAD
TO SPUD MUFFIN 31-30 738H, 624H, 334H, & 736H

DEVON ENERGY PRODUCTION COMPANY, L.P.

CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
DECEMBER 4, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING FEE LAND IN SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SE/4 OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S83°04'33"W, A DISTANCE OF 1568.33 FEET;
THENCE S89°35'40"E A DISTANCE OF 453.60 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHEAST CORNER OF SAID SECTION 31, TOWNSHIP 23 SOUTH, RANGE 29 EAST, N.M.P.M. BEARS S72°15'28"E, A DISTANCE OF 671.11 FEET;

SAID STRIP OF LAND BEING 453.60 FEET OR 27.49 RODS IN LENGTH, CONTAINING 0.312 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SE/4	453.60 L.F.	27.49 RODS	0.312 ACRES

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 5 DAY OF DECEMBER 2018

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

FILIMON F. JARAMILLO PLS 12797