15-825

NM OIL CONSERVATION
OCD Artesia ARTESIA DISTRICT

NOV 19 2015

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
HOBBS OCD
JAN 13 2016
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM 121490 SHL, NMNM 02965-A B HL
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. Barlow 27 Fed Com 701H (315667)
2. Name of Operator EOG Resources, Inc. (7377)	9. API Well No. 30-025- 43017
3a. Address P. O. Box 2267 Midland, Texas 79702	3b. Phone No. *(include area code)* 432-686-3684
	10. Field and Pool, or Exploratory (98097) WC-025 G-09 S263327G; Upper Wolfcamp
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface 2200' FSL & 220' FEL, NESE (I), Sec 27, T26S, R33E UNORTHODOX LOCATION At proposed prod. zone 230' FSL & 330' FEL, SENE (H), Sec 34, T26S, R33E	11. Sec., T. R. M. or Blk. and Survey or Area Sec 27, T26S, R33E
14. Distance in miles and direction from nearest town or post office* Approximately 35 +/- miles SW from Jal, NM	12. County or Parish Lea / 13. State NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 220', 330' PP	16. No. of acres in lease 2839.32	17. Spacing Unit dedicated to this well 156.52
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. Stacked with 501H	19. Proposed Depth 17,137' MD, 12,475' TVD	20. BLM/BIA Bond No. on file NM 2308
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3313' GL	22. Approximate date work will start* 01/01/2016	23. Estimated duration 25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature Renee Jarratt Title Regulatory Analyst	Name *(Printed/Typed)* Renee' Jarratt	Date 06/25/2015
Approved by *(Signature)* acting for Ed Fernandez for Steve Caffey Title FIELD MANAGER	Name *(Printed/Typed)* Office CARLSBAD FIELD OFFICE	NOV 13 2015

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

KZ
01/14/16

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

JAN 14 2016

EOG RESOURCES, INC.
BARLOW 27 FED COM NO. 701H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	835'
Top of Salt	1,190'
Base of Salt / Top Anhydrite	4,845'
Base Anhydrite	5,080'
Lamar	5,080'
Bell Canyon	5,106'
Cherry Canyon	6,135'
Brushy Canyon	7,860'
Bone Spring Lime	9,310'
1st Bone Spring Sand	10,225'
2nd Bone Spring Lime	10,460'
2nd Bone Spring Sand	10,820'
3rd Bone Spring Carb	11,120'
3rd Bone Spring Sand	11,830'
Wolfcamp	12,260'
TD	12,475'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,135'	Oil
Brushy Canyon	7,860'	Oil
1st Bone Spring Sand	10,225'	Oil
2nd Bone Spring Lime	10,460'	Oil
2nd Bone Spring Sand	10,820'	Oil
3rd Bone Spring Carb	11,120'	Oil
3rd Bone Spring Sand	11,830'	Oil
Wolfcamp	12,260'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 860' and circulating cement back to surface.

4. CASING PROGRAM - NEW

See COA

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0 ~~860~~'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4,000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
12.25"	4,000' – 5,100'	9.625"	40#	HCK55	LTC	1.125	1.25	1.60
8.75"	0'-17,137'	5.5"	17#	HCP-110	BTC	1.125	1.25	1.60

.000
OK
Per Robert Salaz

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/ft	Mix Water Gal/sk	Slurry Description
13-3/8" ~~860'~~	400	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	300	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
9-5/8" 5,100'	1000	12.7	2.22	12.38	Lead: Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ surface)
	200	14.8	1.32	6.33	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
5-1/2" 17,137'	775	9.0	2.79	10.12	Lead: LiteCRETE + 0.10% D-065 + 0.20% D-046 + 0.40% D-167 + 0.20% D-198 + 0.04% D-208 + 2.0% D-174 (TOC @ 4,600')
	2100	14.4	1.28	5.69	Tail: Class H + 47.01 pps D-909 + 37.01 pps + 5.0% D-020 + 0.30% D-013 + 0.20% D-046 + 0.10% D-065 + 0.50% D-167 + 2.0% D-174

000

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

See COA

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

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.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – ~~860~~'	Fresh - Gel	8.6-8.8	28-34	N/c
~~860~~' – 5,100'	Oil Base	8.7-9.4	58-68	N/c - 6
5,100' – 11,919'	Oil Base	8.7-9.4	58-68	N/c - 6
11,919' – 17,137' Lateral	Oil Base	10.0-10.5	58-68	N/c - 6

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

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

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H_2S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

See COA

Open-hole logs are not planned for this well.

GR–CCL Will be run in cased hole during completions phase of operations.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

See COA

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 5401 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

See COA

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

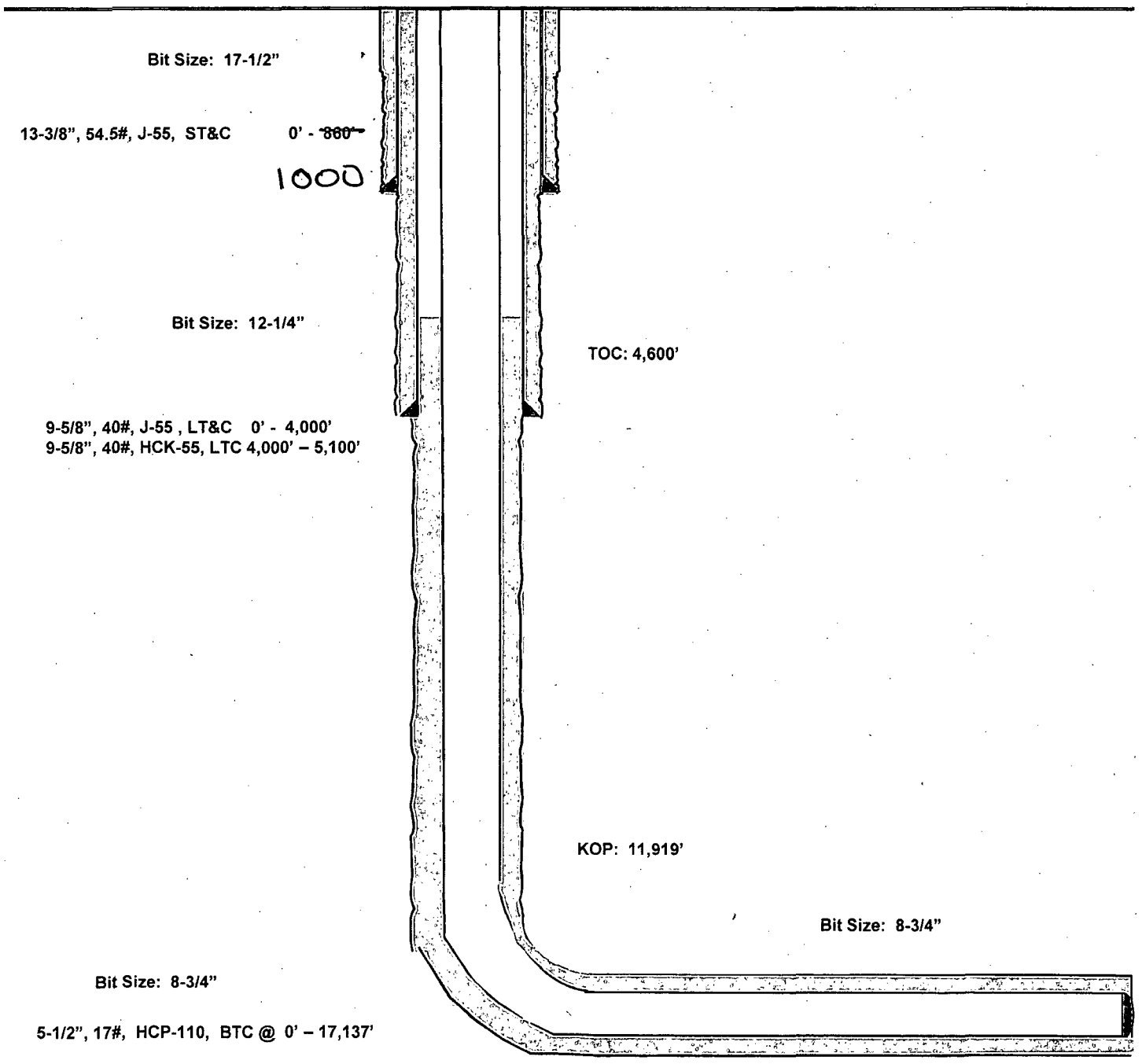
Barlow 27 Fed Com #701H

Lea County, New Mexico
Proposed Wellbore

2200' FSL
220' FEL
Section 27
T-26-S, R-33-E

API: 30-025-

KB: 3,343'
GL: 3,313'



Lateral: 17,137' MD, 12,475' TVD
Upper Most Perf:
2310' FSL & 330' FEL Sec. 27
Lower Most Perf:
330' FSL & 330' FEL Sec. 34
BH Location: 230' FSL & 330' FEL
Section 34
T-26-S, R-33-E

eog resources

Lea County, NM (NAD 27 NME)

Barlow 27 Fed Com #701H

Plan #1

PROJECT DETAILS: Lea County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Azimuths to Grid North
True North: -0.41°
Magnetic North: 6.73°

Magnetic Field
Strength: 48020.4snT
Dip Angle: 59.90°
Date: 6/18/2015
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.73°
To convert a Magnetic Direction to a True Direction, Add 7.15° East
To convert a True Direction to a Grid Direction, Subtract 0.41°

WELL DETAILS: #701H

Ground Level: 3313.0
KB = 25 @ 3338.0usft

Northing	Easting	Latitude	Longitude
369370.00	742215.00	32° 0' 47.177 N	103° 33' 6.771 W

SECTION DETAILS

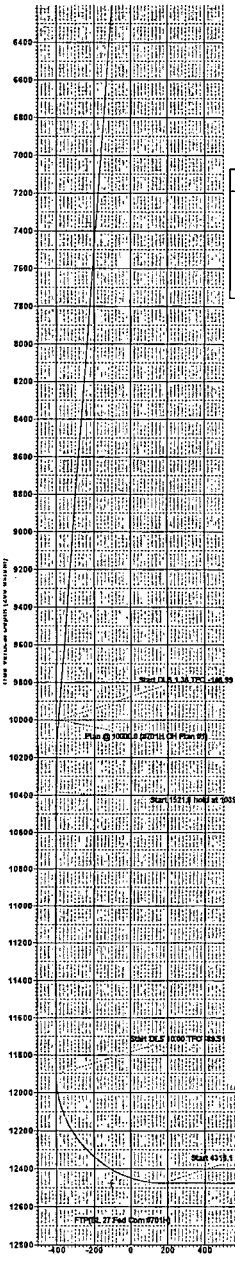
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	4500.0	0.00	0.00	4500.0	0.0	0.0	0.00	0.00	0.0		
3	5221.5	4.33	0.00	5220.8	27.2	0.0	0.60	0.00	-27.2		
4	10014.4	4.33	0.00	10000.0	389.0	0.0	0.00	0.00	-388.9	Plan @ 10000.0 (#701H OH Plan #1)	
5	10398.0	2.84	269.09	10383.1	403.3	-9.5	1.36	-146.99	-403.1		
6	11919.7	2.84	269.09	11903.0	402.1	-84.8	0.00	0.00	-400.6		
7	12819.5	90.00	179.58	12475.0	-171.0	-108.9	10.00	-89.51	172.9		
8	17137.6	90.00	179.58	12475.0	-4489.0	-77.0	0.00	0.00	4489.7	PBHL(BL 27 Fed Com #701H)	

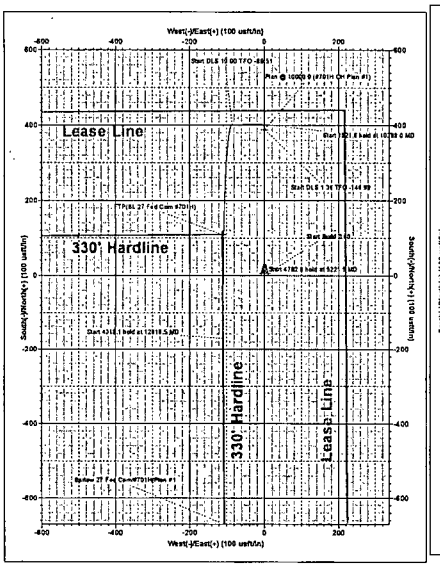
CASING DETAILS

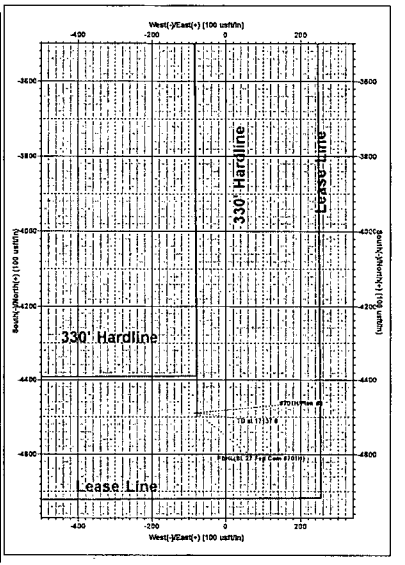
No casing data is available

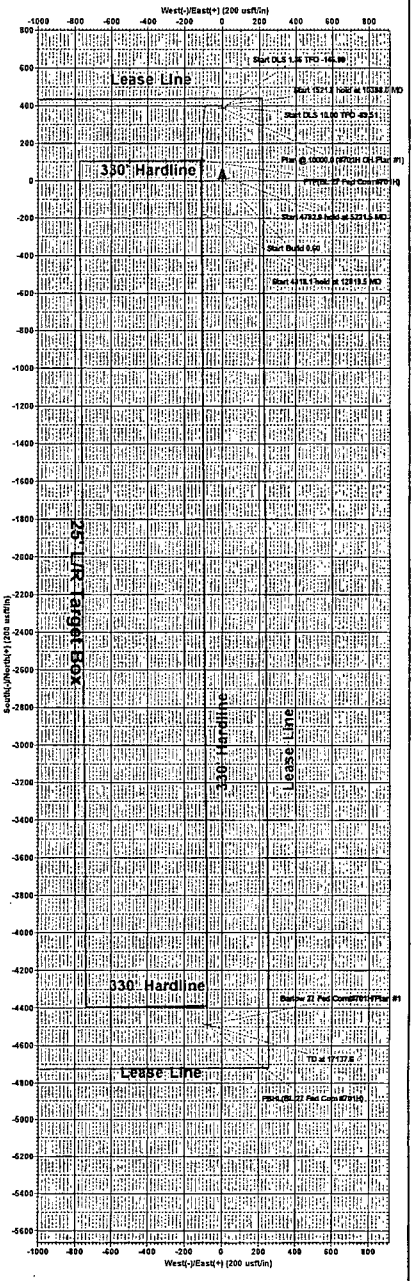
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

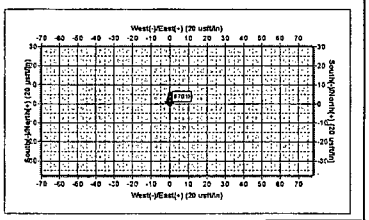
Name	TVD	+N/-S	+E/-W	Northing	Easting
Plan @ 10000.0 (#701H OH Plan #1)	10000.0	389.0	0.0	369759.00	742215.00
PBHL(BL 27 Fed Com #701H)	12475.0	-4489.0	-77.0	364881.00	742138.00
FTP(BL 27 Fed Com #701H)	12475.0	109.0	-111.0	369479.00	742104.00

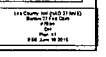












Vertical Section at 180.58° (200 usft/in)