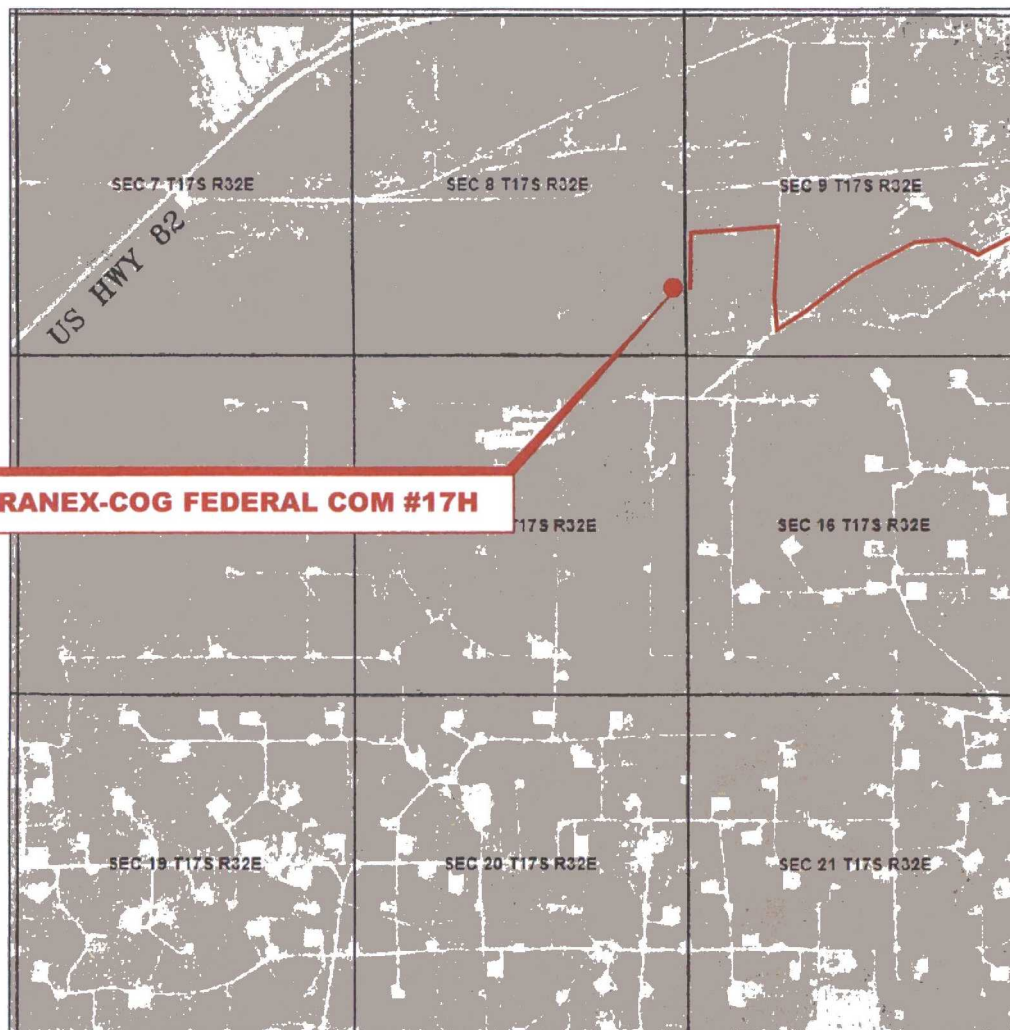


# VICINITY MAP

NOT TO SCALE

US HWY 82

L-126  
(MALJAMAR RD.)



SECTION 8, TWP. 17 SOUTH, RGE. 32 EAST,  
N. M. P. M., LEA CO., NEW MEXICO

OPERATOR: COG Operating, LLC  
LEASE: Branex-COG Federal Com  
WELL NO.: 17H

LOCATION: 990' FSL & 25' FEL  
ELEVATION: 4055'

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS1504168		
DWG. NO.: 1504168VM		

## RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: NTS
DATE: 4-29-2015
SURVEYED BY: GB/ER
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

# LOCATION VERIFICATION MAP



*SECTION 8, TWP. 17 SOUTH, RGE. 32 EAST,  
N. M. P. M., LEA CO., NEW MEXICO*

OPERATOR: COG Operating, LLC  
LEASE: Branex-COG Federal Com  
WELL NO.: 17H  
ELEVATION: 4055'

LOCATION: 990' FSL & 25' FEL  
CONTOUR INTERVAL:  
USGS TOPO. SOURCE MAP:  
Maljamar, NM (P. E. 1985)

Firm No.: TX 10193838 NM 4655451

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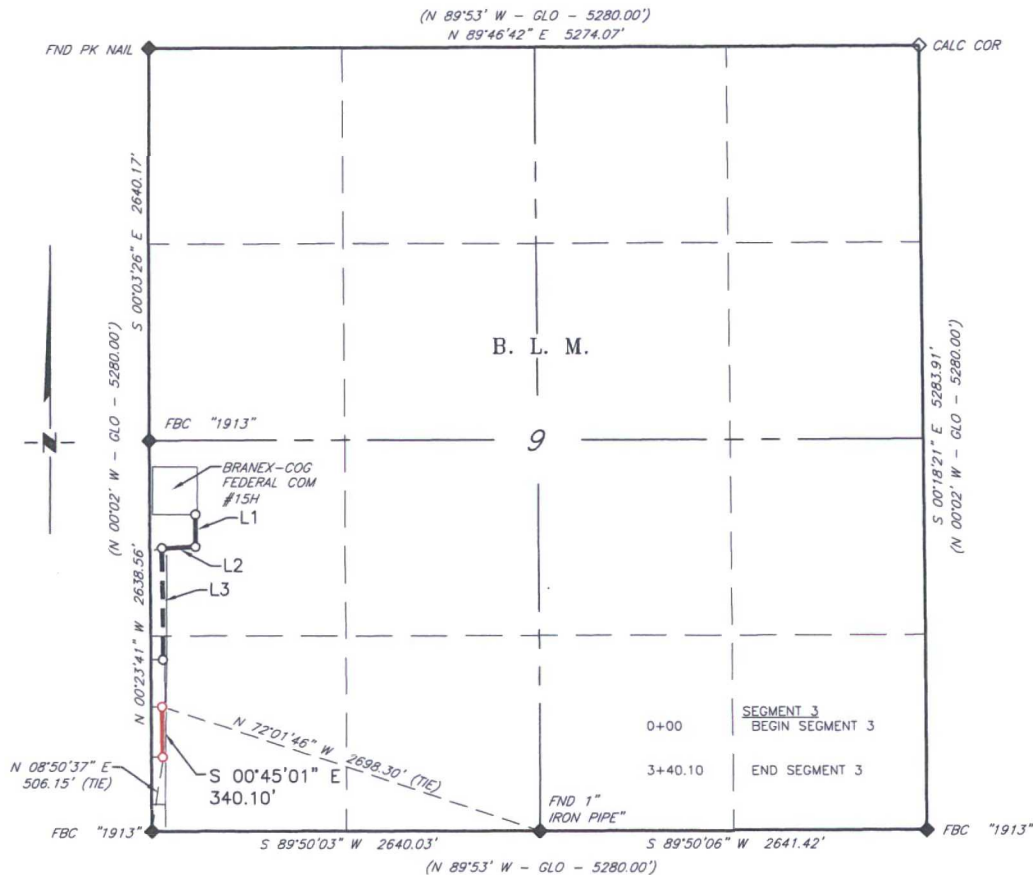
NO.	REVISION	DATE
JOB NO.:	LS1504168	
DWG. NO.:	1504168LVM	

## RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'  
DATE: 4-29-2015  
SURVEYED BY: GB/ER  
DRAWN BY: CMJ  
APPROVED BY: RMH  
SHEET : 1 OF 1

**COG OPERATING, LLC**  
**OVERALL FOR PROPOSED ACCESS ROADS FOR**  
**THE BRANEX-COG FEDERAL COM #15H, 17H, & 28H**  
**SECTION 9, T17S, R32E,**  
**N. M. P. M., LEA CO., NEW MEXICO**



**DESCRIPTION SEGMENT 3**

A strip of land 30 feet wide, being 340.10 feet or 20.612 rods in length, lying in Section 9, Township 17 South, Range 32 East, N. M. P. M., Lea County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. lands:

BEGINNING at Engr. Sta 0+00, a point in the Southwest quarter of Section 9, which bears N 72°01'46\" W, 2,698.30 feet from a 1\" iron pipe, found for the South quarter corner of Section 9;

Thence S 00°45'01\" E, 340.10 feet, the End of Survey, which bears N 08°50'37\" E, 506.15 feet from a brass cap, stamped \"1913\", found for the Southwest corner of Section 9;

Said strip of land contains 0.234 acres, more or less and is allocated by forties as follows:

SW 1/4 SW 1/4                      20.612 Rods                      0.234 Acres

SCALE: 1\" = 1000'  
0                      500'                      1000'

BEARINGS ARE GRID NAD 27  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

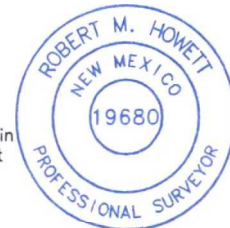
LEGEND

- ( ) RECORD DATA - GLO
- ◆ FOUND MONUMENT AS NOTED
- PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*

Robert M. Howett                      NM PS 19680



Firm No.: TX 10193838 NM 4655451

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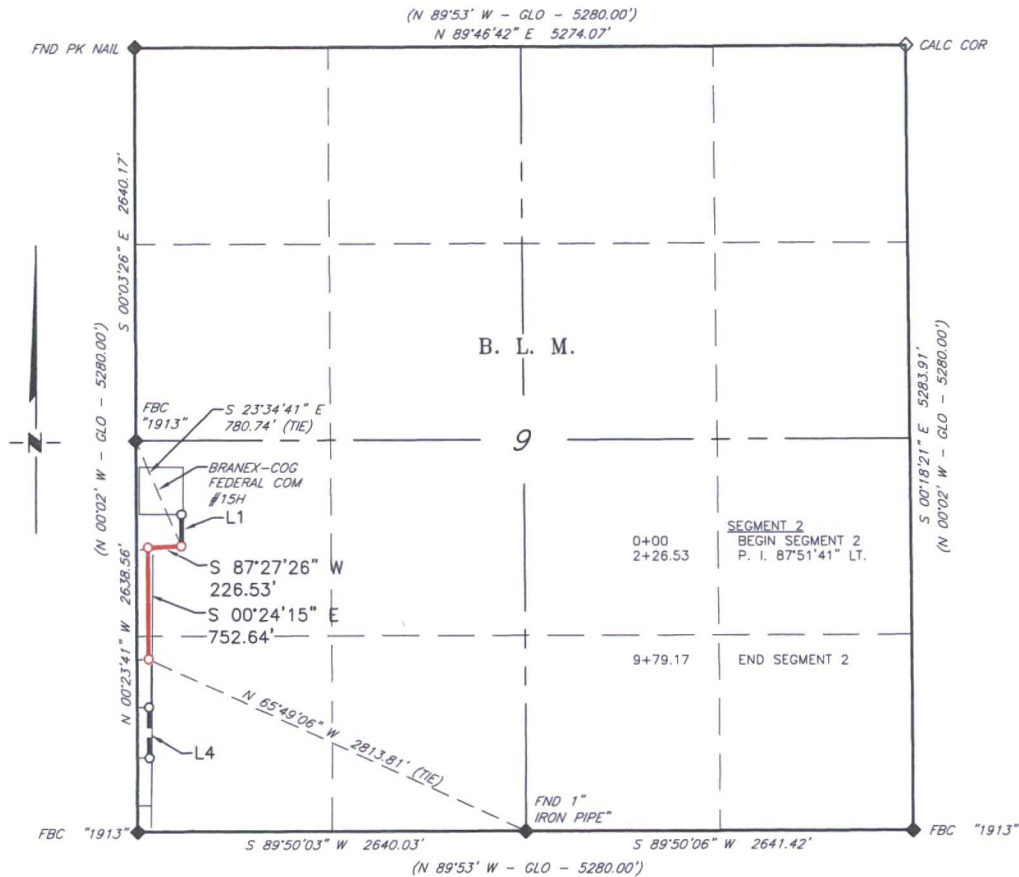
NO.	REVISION	DATE
JOB NO.:	LS1504167	
DWG. NO.:	1504167-4	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1\" = 1000'  
DATE: 4-29-2015  
SURVEYED BY: GB/ER  
DRAWN BY: CMJ  
APPROVED BY: RMH  
SHEET : 4 OF 4

**COG OPERATING, LLC**  
**PROPOSED ACCESS ROAD FOR**  
**THE BRANEX-COG FEDERAL COM #17H**  
**SECTION 9, T17S, R32E,**  
**N. M. P. M., LEA CO., NEW MEXICO**



DESCRIPTION SEGMENT 2

A strip of land 30 feet wide, being 979.17 feet or 59.344 rods in length, lying in Section 9, Township 17 South, Range 32 East, N. M. P. M., Lea County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. lands:

BEGINNING at Engr. Sta 0+00, a point in the Southwest quarter of Section 9, which bears S 23°34'41" E, 780.74 feet from a brass cap, stamped "1913", found for the West quarter corner of Section 9;

Thence S 87°27'26" W, 226.53 feet, to a P. I. of 87°51'41" left;

Thence S 00°24'15" E, 752.64 feet, to the End of Survey, a point which bears N 65°49'09" W, 2,813.81 feet from a 1" iron pipe, found for the South quarter corner of Section 9;

Said strip of land contains 0.674 acres, more or less and is allocated by forties as follows:

NW 1/4 SW 1/4	49.692 Rods	0.565 Acres
SW 1/4 SW 1/4	9.652 Rods	0.109 Acres

SCALE: 1" = 1000'  
 0 500' 1000'

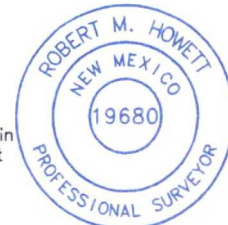
BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

LEGEND

( ) RECORD DATA - GLO  
 FOUND MONUMENT  
 AS NOTED  
 PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

*Robert M. Howett*  
 Robert M. Howett NM PS 19680



Firm No.: TX 10193838 NM 4655451

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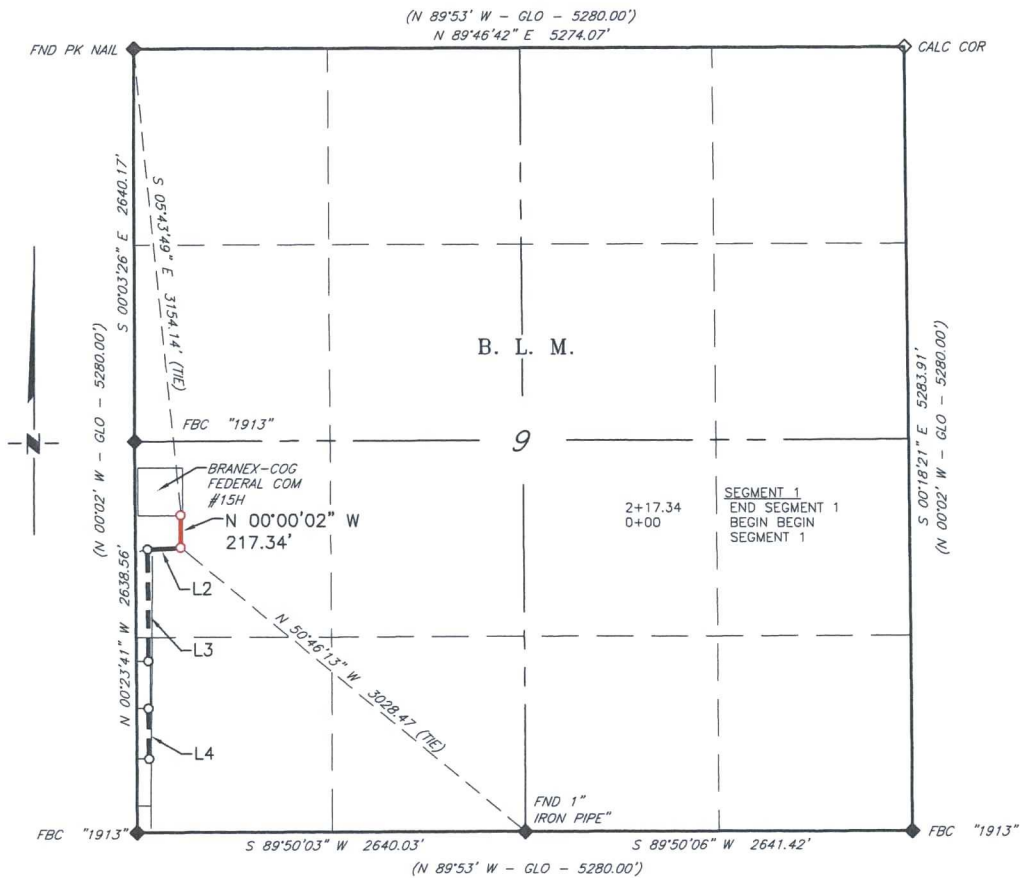
NO.	REVISION	DATE
JOB NO.:	LS1504167	
DWG. NO.:	1504167-3	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'  
 DATE: 4-29-2015  
 SURVEYED BY: GB/ER  
 DRAWN BY: CMJ  
 APPROVED BY: RMH  
 SHEET : 3 OF 4

**COG OPERATING, LLC**  
**PROPOSED ACCESS ROAD FOR**  
**THE BRANEX-COG FEDERAL COM #15H**  
**SECTION 9, T17S, R32E,**  
**N. M. P. M., LEA CO., NEW MEXICO**



**DESCRIPTION SEGMENT 1**

A strip of land 30 feet wide, being 217.34 feet or 13.172 rods in length, lying in Section 9, Township 17 South, Range 32 East, N. M. P. M., Lea County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across B. L. M. lands:

BEGINNING at Engr. Sta 0+00, a point in the Southwest quarter of Section 9, which bears N 50°46'13" W, 3,028.47 feet from a 1" iron pipe, found for the South quarter corner of Section 9;

Thence N 00°00'02" W, 217.34 feet, to the End of Survey, a point which bears S 05°43'49" E, 3,154.14 feet from a PK nail, found for the Northwest corner of Section 9;

Said strip of land contains 0.150 acres, more or less and is allocated by forties as follows:

NW 1/4 SW 1/4      13.172 Rods      0.150 Acres

SCALE: 1" = 1000'  
0      500'      1000'

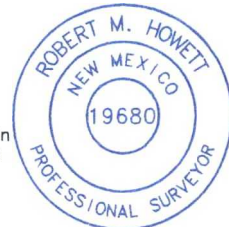
BEARINGS ARE GRID NAD 27  
NM EAST  
DISTANCES ARE HORIZ. GROUND.

**LEGEND**

- ( ) RECORD DATA - GLO
- ◆ FOUND MONUMENT AS NOTED
- PROPOSED ACCESS ROAD

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this plat from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett      NM PS 19680

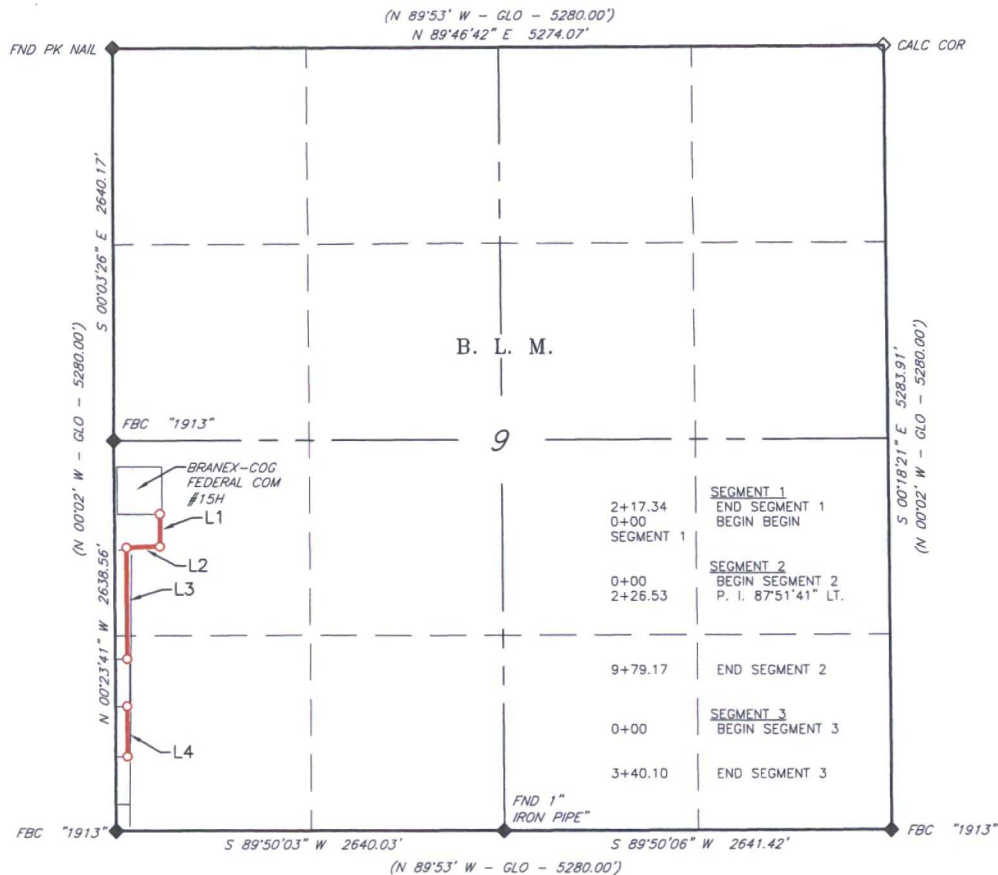


Firm No.: TX 10193838 NM 4655451

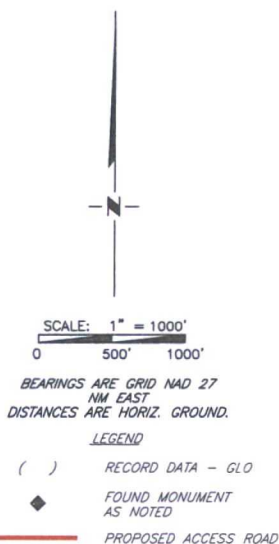
Copyright 2014 - All Rights Reserved

			 <div>308 W. BROADWAY ST., HOBBS, NM 88240      (575) 964-8200</div>	SCALE: 1" = 1000'
				DATE: 4-29-2015
				SURVEYED BY: GB/ER
				DRAWN BY: CMJ
NO.	REVISION	DATE		APPROVED BY: RMH
JOB NO.: LS1504167				SHEET : 2 OF 4
DWG. NO.: 1504167-2				

**COG OPERATING, LLC**  
**OVERALL FOR PROPOSED ACCESS ROADS FOR**  
**THE BRANEX-COG FEDERAL COM #15H, #17H, & #28H**  
**SECTION 9, T17S, R32E,**  
**N. M. P. M., LEA CO., NEW MEXICO**



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 00°00'02" W	217.34'
L2	S 87°27'26" W	226.53'
L3	S 00°24'15" E	752.64'
L4	S 00°45'01" E	340.10'



Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.:	LS1504167	
DWG. NO.:	1504167-1	

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 1000'
DATE: 4-29-2015
SURVEYED BY: GB/ER
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 4

## **NEW ACCESS ROAD PLAN**

### **1. Proposed Access Road:**

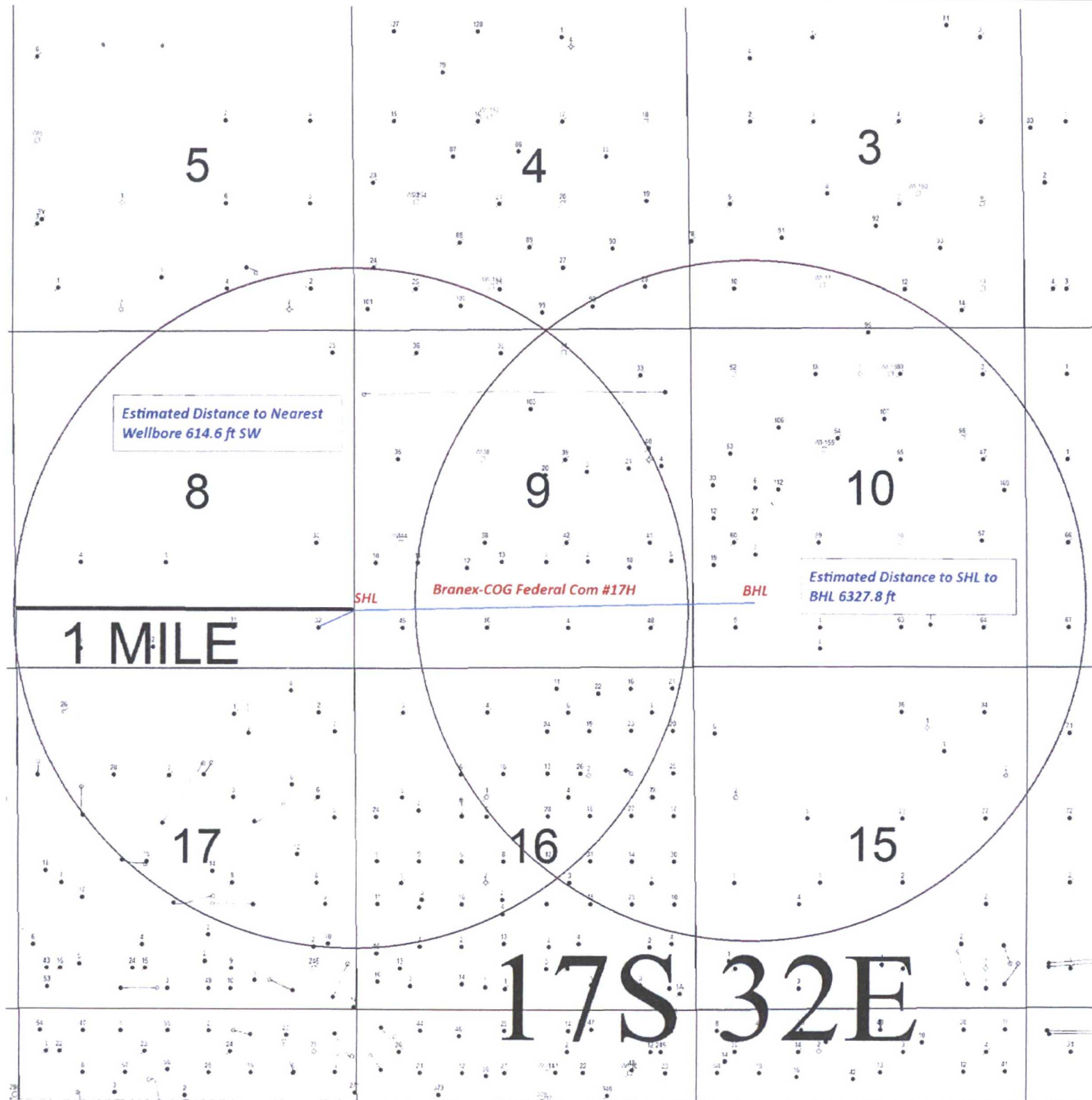
The Elevation Plat shows that 69.61' of new access road will be required for this location. If any road is required it will be constructed as follows:

- A. The maximum width of the running surface will be 20'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. Secondary candidate source will be NMSLO Caliche Pit located in S2 SW4 of Section 32, Township 16 South, Range 30 East.

### **2. Source of Construction Materials and Location "Turn-Over" Procedure:**

Obtaining caliche: The primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well sight. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cu. Yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- A. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
- B. An approximate 120' X 120' area is used within the proposed well site to remove caliche.
- C. Subsoil is removed and piled alongside the 120' by 120' area within the pad site.
- D. When caliche is found, material will be stock piled within the pad site to build the location and road.
- E. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
- F. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in attached plat.



SENM Shelf Area  
Branex-COG Federal Com 17H

SEC. 8, T17S - R32E SHL 990 FSL 25 FEL UNIT P  
SEC. 10, T17S - R32E SHL 989 FSL 989 FWL UNIT M

Author: ldm	Date: 18 May, 2015
Scale:	1m RA 1MileRadiusWell

# Water Well Map

Write a description for your map.

Legend

007

008

009

010

013

017

018

015

Loco Hills Water Disposal Co.

019

020

021

022

Loco Hills

Survey  
GoogleEarth



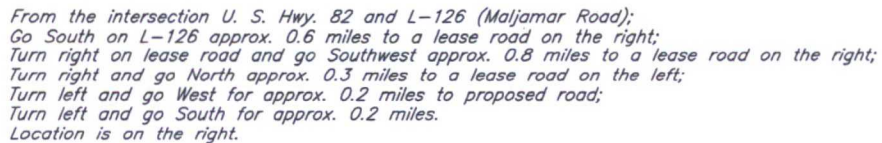
## **WELL SITE AND ROAD CONSTRUCTION**

### **1. Source of Construction Materials and Location “Turn-Over” Procedure:**

Obtaining caliche: The primary way of obtaining caliche to build locations and roads will be by “turning over” the location. This means, caliche will be obtained from the actual well sight. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cu. Yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- A. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.**
- B. An approximate 120' X 120' area is used within the proposed well site to remove caliche.**
- C. Subsoil is removed and piled alongside the 120' by 120' area within the pad site.**
- D. When caliche is found, material will be stock piled within the pad site to build the location and road.**
- E. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.**
- F. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in attached plat.**
  - In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit.

BRANEX-COG FEDERAL COM #17H  
(990' FSL & 25' FEL)  
SECTION 8, T17S, R32E  
N. M. P. M., LEA CO., NEW MEXICO



I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

SCALE: 1" = 100'

A horizontal scale bar with a black top line and a white bottom line. The top line has tick marks at 0, 50, and 100. The bottom line has tick marks at 0, 50, and 100. The text "SCALE: 1" = 100'" is written above the bar.

BEARINGS ARE  
NAD 83 GRID - NM EAST  
DISTANCES ARE  
GROUND.

Firm No.: TX 10193838 NM 4655451

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NO.	REVISION	DATE
JOB NO.: LS1504168		
DWG. NO.: 1504168PAD		

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 4-29-2015
SURVEYED BY: GB/ER
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

600'

600'

CL PROPOSED ROAD  
S 00°24'15" E 752.64'  
(SEE ROAD EASEMENT)

PROPOSED PAD

290'

60'

INTERIM RECLAMATION

170'

170'

120'

320'

150'

95'

OVERHEAD ELECTRIC

320'

50'

155'

30'

30'

105'

INTERIM RECLAMATION

SECTION 8  
SECTION 9

600'

CL PROPOSED ROAD  
S 00°45'01" E 340.10'  
(SEE ROAD EASEMENT)

BRANEX-COG FEDERAL COM #17H  
ELEV.: 4055'  
LAT: 32.84463040° N (NAD83)  
LONG: 103.78013521° W (NAD83)

SCALE: 1" = 100'



0 50 100

BEARINGS ARE  
NAD 83 GRID - NM EAST  
DISTANCES ARE  
GROUND.

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				SCALE: 1" = 100'
				DATE: 4-29-2015
				SURVEYED BY: GB/ER
NO.	REVISION	DATE		DRAWN BY: CMJ
JOB NO.: LS1504168				APPROVED BY: RMH
DWG. NO.: 1504168REC			308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200	SHEET : 1 OF 1