Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

HOBBS OCD
OCT 03 2019
RECEIVED

5. Lease Serial No.
NMNM119762

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other
1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
NANDINA ~~FED COM~~ 25 36 31 FED COM 126H 322647

2. Name of Operator
AMEREDEV OPERATING LLC (372224)

9. API Well No.
30-025-46426

3a. Address
5707 Southwest Parkway, Building 1, Suite 275 Austin TX

3b. Phone No. *(include area code)*
(737)300-4700

10. Field and Pool, or Exploratory (33813)
~~WC-025 G-09 S263619G~~ / WOLFCAMP

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface LOT O / 200 FSL / 1625 FEL / LAT 32.0801272 / LONG -103.3009212
At proposed prod. zone LOT B / 200 FNL / 1672 FEL / LAT 32.108065 / LONG -103.30108

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 31 / T25S / R36E / NMP

14. Distance in miles and direction from nearest town or post office*
6.6 miles

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) | 16. No of acres in lease | 17. Spacing Unit dedicated to this well |
|---|---|---|
| 200 feet | 120 | 320 |
| **18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.** | **19. Proposed Depth** | **20. BLM/BIA Bond No. in file** |
| 3855 feet | 12290 feet / 22303 feet | FED: NMB001478 |
| **21. Elevations (Show whether DF, KDB, RT, GL, etc.)** | **22. Approximate date work will start*** | **23. Estimated duration** |
| 3013 feet | 09/01/2018 | 90 days |

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

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 requested by the BLM.

| 25. Signature | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Christie Hanna / Ph: (737)300-4723 | 02/23/2018 |

Title
Senior Engineering Technician

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| (Electronic Submission) | Cody Layton / Ph: (575)234-5959 | 09/30/2019 |
| **Title** | **Office** | |
| Assistant Field Manager Lands & Minerals | CARLSBAD | |

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.

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.

GCP Rec 10/03/19

APPROVED WITH CONDITIONS

10/11/19

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 09/30/2019

## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.



(Continued on page 3)

## Additional Operator Remarks

### Location of Well

1. SHL: LOT O / 200 FSL / 1625 FEL / TWSP: 25S / RANGE: 36E / SECTION: 31 / LAT: 32.0801272 / LONG: -103.3009212 ( TVD: 0 feet, MD: 0 feet )
   PPP: NWSE / 1320 FSL / 1664 FEL / TWSP: 25S / RANGE: 36E / SECTION: 31 / LAT: 32.0832081 / LONG: -103.301052 ( TVD: 12290 feet, MD: 13260 feet )
   BHL: LOT B / 200 FNL / 1672 FEL / TWSP: 25S / RANGE: 36E / SECTION: 30 / LAT: 32.108065 / LONG: -103.30108 ( TVD: 12290 feet, MD: 22303 feet )

## BLM Point of Contact

Name: Ciji Methola
Title: GIS Support - Adjudicator
Phone: 5752345924
Email: cmethola@blm.gov



**Approval Date: 09/30/2019**

## Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

AFMSS

U.S. Department of the Interior
Bureau of Land Management

*Application for Permit to Drill*

## APD Package Report

Date Printed: 09/30/2019 03:00 PM

| | |
|---|---|
| APD ID: 10400027676 | Well Status: AAPD |
| APD Received Date: 02/23/2018 03:50 PM | Well Name: NANDINA FED COM 25 36 3 |
| Operator: AMEREDEV OPERATING LLC | Well Number: 126H |

APD Package Report Contents

- Form 3160-3

- Operator Certification Report

- Application Report
- Application Attachments
  -- Well Plat: 5 file(s)

- Drilling Plan Report
- Drilling Plan Attachments
  -- Blowout Prevention Choke Diagram Attachment: 1 file(s)
  -- Blowout Prevention BOP Diagram Attachment: 3 file(s)
  -- Casing Design Assumptions and Worksheet(s): 12 file(s)
  -- Hydrogen sulfide drilling operations plan: 1 file(s)
  -- Proposed horizontal/directional/multi-lateral plan submission: 2 file(s)
  -- Other Variances: 2 file(s)

- SUPO Report
- SUPO Attachments
  -- Existing Road Map: 2 file(s)
  -- New Road Map: 2 file(s)
  -- Attach Well map: 1 file(s)
  -- Production Facilities map: 6 file(s)
  -- Water source and transportation map: 2 file(s)
  -- Construction Materials source location attachment: 2 file(s)
  -- Well Site Layout Diagram: 1 file(s)
  -- Recontouring attachment: 1 file(s)
  -- Other SUPO Attachment: 1 file(s)

- PWD Report
- PWD Attachments
  -- None

- Bond Report
- Bond Attachments
  -- None

# PECOS DISTRICT
# DRILLING CONDITIONS OF APPROVAL

| | |
|---|---|
| **OPERATOR'S NAME:** | Ameredev Operating LLC |
| **LEASE NO.:** | NMNM137469 |
| **WELL NAME & NO.:** | Nandina Fed Com 25 36 31 126H |
| **SURFACE HOLE FOOTAGE:** | 200'/S & 1625'/E |
| **BOTTOM HOLE FOOTAGE** | 200'/N & 1672'/E |
| **LOCATION:** | Section 31, T.25 S., R.36 E., NMPM |
| **COUNTY:** | Lea County, New Mexico |

COA

| | | | |
|---|---|---|---|
| H2S | ○ Yes | ◉ No | |
| Potash | ◉ None | ○ Secretary | ○ R-111-P |
| Cave/Karst Potential | ◉ Low | ○ Medium | ○ High |
| Variance | ○ None | ◉ Flex Hose | ○ Other |
| Wellhead | ○ Conventional | ◉ Multibowl | ○ Both |
| Other | ☐ 4 String Area | ☑ Capitan Reef | ☐ WIPP |

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **1160** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

d. If cement falls back, remedial cementing will be done prior to drilling out that string.

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

2. The minimum required fill of cement behind the **9-5/8** inch **1st intermediate** casing is:

    - Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the **7-5/8** inch **2nd intermediate** casing is:

    - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 21% - additional cement might be required.**

**In the case of lost circulation, operator has proposed to pump down 9 5/8" X 7 5/8" annulus. Operator must run a CBL from TD of the 7 5/8" casing to surface. Submit results to the BLM.**

**Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 200' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug. Note plug tops on subsequent drilling report.**

4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

    - Cement should tie-back at least **50** feet on top of Capitan Reef Top. Operator shall provide method of verification. **Excess calculates to 23% - additional cement might be required.**

## C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2.

**Option 1:**

Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi.

**Option 2:**

**Operator has proposed 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 10,000 (10M) psi.**

a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
c. Manufacturer representative shall install the test plug for the initial BOP test.
d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

**Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)**

## D. SPECIAL REQUIREMENT(S)

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees

of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

# GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall

be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

    c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

    d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

    e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

    g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**Waste Minimization Plan (WMP)**

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

**NMK252018**

# PECOS DISTRICT
# SURFACE USE
# CONDITIONS OF APPROVAL

***Pad 1:***

**Nandina Fed Com 25 36 31 104H:**
**Surface Hole Location: 230' FSL & 2328' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: 50' FNL & 2318' FWL, Section 30, T. 25 S., R. 36 E.**

**Nandina Fed Com 25 36 31 114H:**
**Surface Hole Location: 230' FSL & 2348' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: 50' FNL & 2318' FWL, Section 30, T. 25 S., R. 36 E.**

**Nandina Fed Com 25 36 31 124H:**
**Surface Hole Location: 230' FSL & 2368' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: 50' FNL & 2318' FWL, Section 30, T. 25 S., R. 36 E.**

**Goldenbell Fed Com 26 36 06 104H:**
**Surface Hole Location: 230' FSL & 2268' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 114H:**
**Surface Hole Location: 230' FSL & 2288' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 124H:**
**Surface Hole Location: 230' FSL & 2308' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

***Pad 2:***

**Nandina Fed Com 25 36 31 106H:**
**Surface Hole Location: 230' FSL & 390' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Nandina Fed Com 25 36 31 116H:**
**Surface Hole Location: 230' FSL & 410' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Nandina Fed Com 25 36 31 126H:**
**Surface Hole Location: 230' FSL & 430' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: 200' FNL & 380' FWL, Section 30, T. 25 S., R. 36 E.**

**Goldenbell Fed Com 26 36 06 106H:**
**Surface Hole Location: 230' FSL & 370' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 116H:**
**Surface Hole Location: 230' FSL & 350' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 126H:**
**Surface Hole Location: 230' FSL & 370' FWL, Section 31, T. 25 S., R. 36 E.**



**Approval Date: 09/30/2019**

**Bottom Hole Location: To Be Determined**

***Pad 3:***

**Goldenbell Fed Com 26 36 06 122H:**
**Surface Hole Location: 200' FNL & 1040' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 112H:**
**Surface Hole Location: 200' FNL & 1020' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 102H:**
**Surface Hole Location: 200' FNL & 1000' FWL, Section 6, T. 26 S., R. 36 E.**
**Bottom Hole Location: 50' FSL & 1026' FWL, Section 7, T. 26 S., R. 36 E.**

**Goldenbell Fed Com 26 36 06 091H:**
**Surface Hole Location: 200' FNL & 980' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 081H:**
**Surface Hole Location: 200' FNL & 970' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 071H:**
**Surface Hole Location: 200' FNL & 950' FWL, Section 31, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

***Pad 4:***

**Nandina Fed Com 25 36 31 077H:**
**Surface Hole Location: 230' FSL & 690' FEL, Section 6, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Nandina Fed Com 25 36 31 097H:**
**Surface Hole Location: 230' FSL & 670' FEL, Section 6, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined.**

**Nandina Fed Com 25 36 31 087H:**
**Surface Hole Location: 230' FNL & 650' FEL, Section 6, T. 26 S., R. 36 E.**
**Bottom Hole Location: 50' FNL & 660' FEL, Section 30, T. 25 S., R. 36 E.**

**Goldenbell Fed Com 26 36 06 097H:**
**Surface Hole Location: 230' FSL & 630' FEL, Section 6, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 087H:**
**Surface Hole Location: 230' FSL & 610' FEL, Section 6, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined**

**Goldenbell Fed Com 26 36 06 077H:**
**Surface Hole Location: 230' FSL & 590' FWL, Section 6, T. 25 S., R. 36 E.**
**Bottom Hole Location: To Be Determined.**

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

**Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken**: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching**: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

## Hydrology:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline

crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Temporary Fresh Water Frac Line: once the temporary use exceeds the timeline of 180 days and/or with a 90 day extension status; further analysis will be required if the applicant pursues to turn the temporary ROW into a permanent ROW.

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

## C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## F. EXCLOSURE FENCING (CELLARS & PITS)

**Exclosure Fencing**
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

## G. ON LEASE ACCESS ROADS

**Road Width**
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**
Ditching shall be required on both sides of the road.

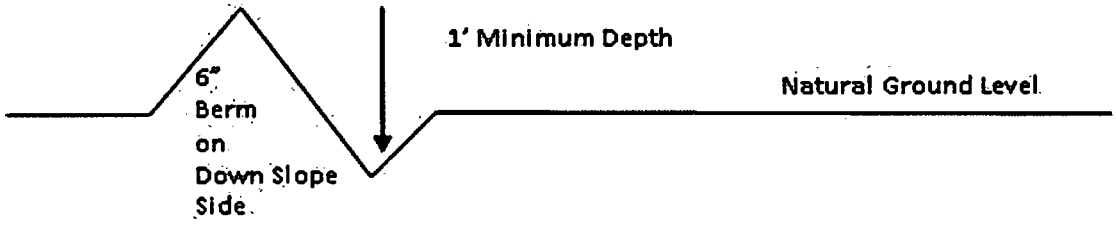
**Turnouts**
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**




All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

**Cattle guards**

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

**Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

**Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps** 1. Salvage topsoil 2. Construct road 3. Redistribute topsoil 4. Revegetate slopes

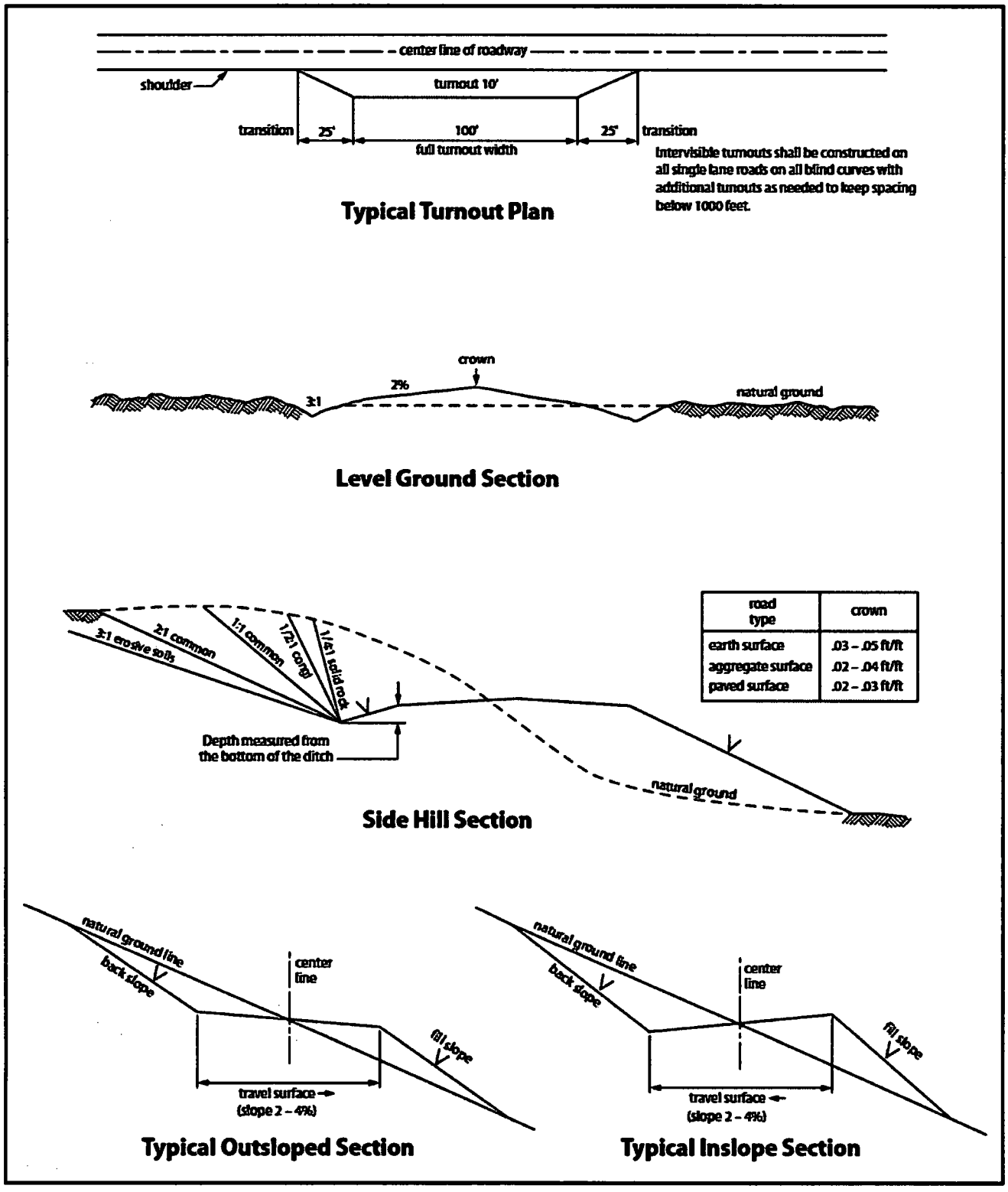



**Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.**

# VII. PRODUCTION (POST DRILLING)

## A. WELL STRUCTURES & FACILITIES

**Placement of Production Facilities**
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

**Exclosure Netting (Open-top Tanks)**
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

**Chemical and Fuel Secondary Containment and Exclosure Screening**
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

**Open-Vent Exhaust Stack Exclosures**
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

**Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Painting Requirement**
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure

of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **30** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

| | |
|---|---|
| ( ) seed mixture 1 | ( ) seed mixture 3 |
| ( ) seed mixture 2 | ( ) seed mixture 4 |
| ( X ) seed mixture 2/LPC | ( ) Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.

**b.** For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

## VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

| Species | lb/acre |
|---|---|
| Plains Bristlegrass | 5lbs/A |
| Sand Bluestem | 5lbs/A |
| Little Bluestem | 3lbs/A |
| Big Bluestem | 6lbs/A |
| Plains Coreopsis | 2lbs/A |
| Sand Dropseed | 1lbs/A |

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Operator Certification Data Report

09/30/2019

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Christie Hanna **Signed on:** 10/26/2018

**Title:** Senior Engineering Technician

**Street Address:** 5707 Southwest Parkway, Building 1, Suite 275

**City:** Austin **State:** TX **Zip:** 78735

**Phone:** (737)300-4723

**Email address:** channa@ameredev.com

## Field Representative

**Representative Name:**

**Street Address:**

**City:** **State:** **Zip:**

**Phone:**

**Email address:**

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Application Data Report

09/30/2019

**APD ID:** 10400027676 **Submission Date:** 02/23/2018

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Well Type:** OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

## Section 1 - General

**APD ID:** 10400027676 **Tie to previous NOS?** Y **Submission Date:** 02/23/2018

**BLM Office:** CARLSBAD **User:** Christie Hanna **Title:** Senior Engineering Technician

**Federal/Indian APD:** FED **Is the first lease penetrated for production Federal or Indian?** FED

[redacted]

**Surface access agreement in place?** **Allotted?** **Reservation:**

**Agreement in place?** NO **Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** NO

**Permitting Agent?** YES **APD Operator:** AMEREDEV OPERATING LLC

**Operator letter of designation:**

## Operator Info

**Operator Organization Name:** AMEREDEV OPERATING LLC

**Operator Address:** 5707 Southwest Parkway, Building 1, Suite 275 **Zip:** 78735

**Operator PO Box:**

**Operator City:** Austin **State:** TX

**Operator Phone:** (737)300-4700

**Operator Internet Address:**

## Section 2 - Well Information

**Well in Master Development Plan?** NO **Master Development Plan name:**

**Well in Master SUPO?** NO **Master SUPO name:**

**Well in Master Drilling Plan?** NO **Master Drilling Plan name:**

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H **Well API Number:**

**Field/Pool or Exploratory?** Field and Pool **Field Name:** WC-025 G-09 S263619C **Pool Name:** WOLFCAMP

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER NATURAL GAS CO2 OIL

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,NATURAL GAS,CO2,OIL

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** NO **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL **Multiple Well Pad Name:** NANDINA **Number:** 126H

**Well Class:** HORIZONTAL **Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** 6.6 Miles **Distance to nearest well:** 3855 FT **Distance to lease line:** 200 FT

**Reservoir well spacing assigned acres Measurement:** 320 Acres

**Well plat:** NANDINA_FED_COM_25_36_31_126H___BLM_LEASES_20180814135215.pdf

NANDINA_FED_COM_25_36_31_126H___C_102_SIG_20180814135220.pdf

NANDINA_FED_COM_25_36_31_126H___VICINITY_MAP_20180814135226.pdf

NANDINA_FED_COM_25_36_31_126H___EXHIBIT_2A___2B_20180814135807.pdf

NANDINA_FED_COM_25_36_31_126H___GAS_CAPTURE_PLAN_20180814140215.pdf

**Well work start Date:** 09/01/2018 **Duration:** 90 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:** 19642 **Reference Datum:**

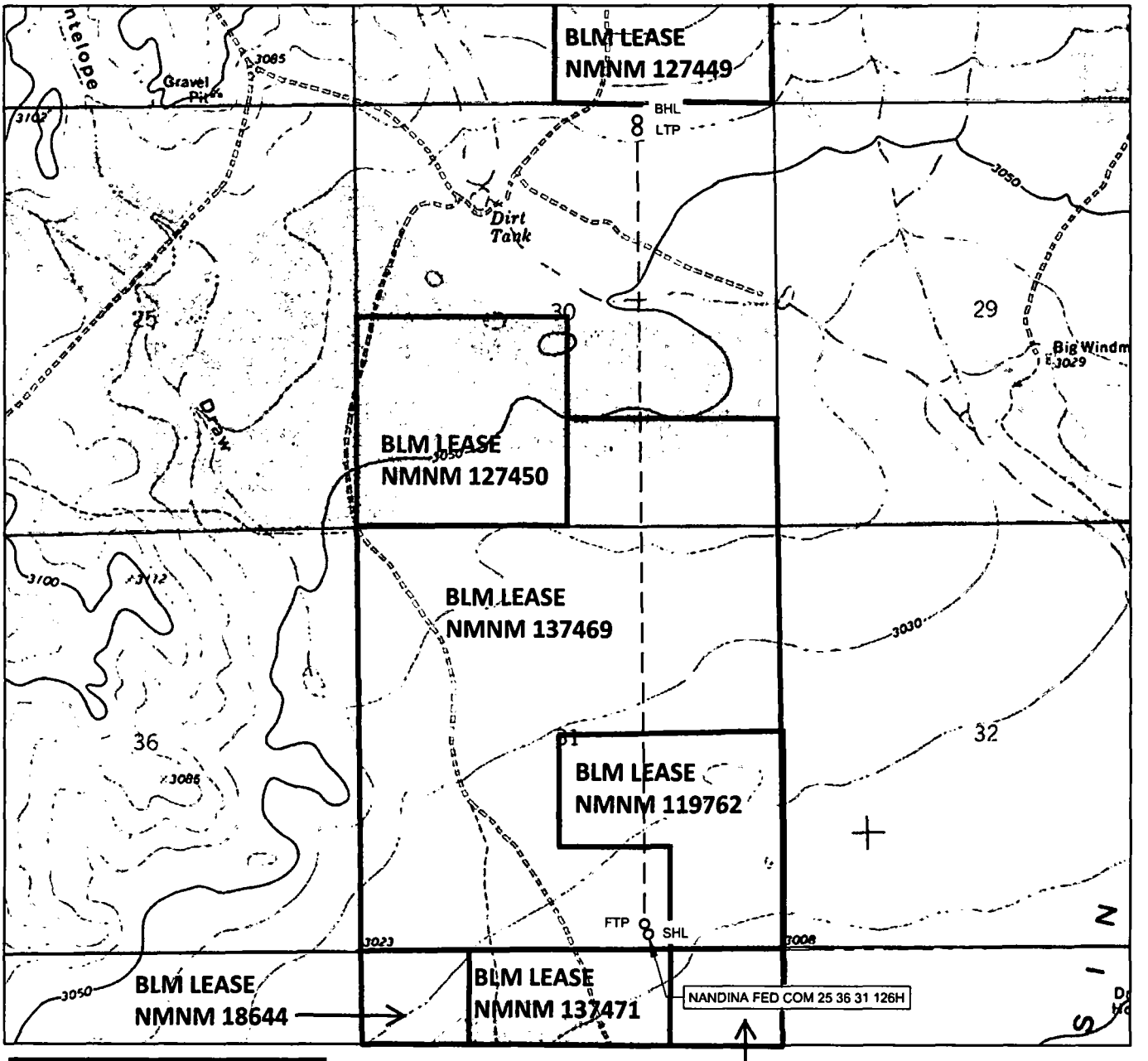
| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL Leg #1 | 200 | FSL | 1625 | FEL | 25S | 36E | 31 | Lot O | 32.0801272 | -103.3009212 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 137469 | 3013 | 0 | 0 |

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| KOP Leg #1 | 110 | FSL | 1586 | FEL | 25S | 36E | 31 | Aliquot SWSE | 32.0798799 | -103.3007945 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 137469 | -8704 | 11718 | 11717 |
| PPP Leg #1 | 1320 | FSL | 1664 | FEL | 25S | 36E | 31 | Aliquot NWSE | 32.0832081 | -103.301052 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 119762 | -9277 | 13260 | 12290 |
| EXIT Leg #1 | 200 | FNL | 1672 | FEL | 25S | 36E | 30 | Lot B | 32.108065 | -103.30108 | LEA | NEW MEXICO | NEW MEXICO | F | FEE | -9277 | 22303 | 12290 |
| BHL Leg #1 | 200 | FNL | 1672 | FEL | 25S | 36E | 30 | Lot B | 32.108065 | -103.30108 | LEA | NEW MEXICO | NEW MEXICO | F | FEE | -9277 | 22303 | 12290 |

# LOCATION & ELEVATION VERIFICATION MAP




**AMEREDEV**

AMEREDEV OPERATING, LLC

LEASE NAME & WELL NO.: NANDINA FED COM 25 36 31 126H

SECTION 31 TWP 25-S RGE 36-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3013'
DESCRIPTION 200' FSL & 1625' FEL

LATITUDE N 32.0801272 LONGITUDE W 103.3009212

N

SCALE: 1" = 2000'

0' 1000' 2000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1853 OR (800) 767-1653 • FAX (432) 682-1743
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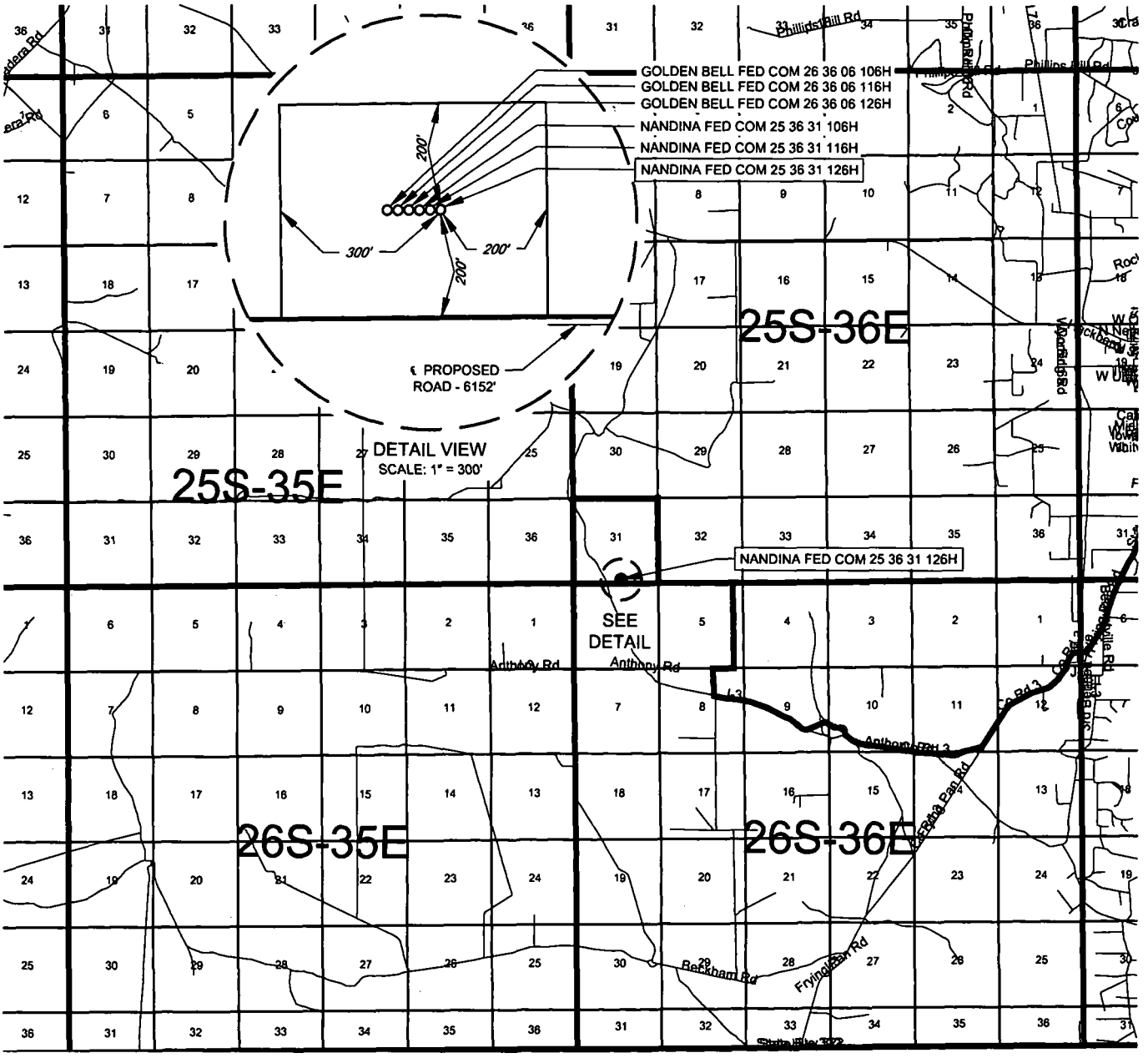
EXHIBIT 2

# VICINITY MAP




**AMEREDEV**

AMEREDEV OPERATING, LLC

LEASE NAME & WELL NO.: NANDINA FED COM 25 36 31 126H

SECTION 31 TWP 25-S RGE 36-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 200' FSL & 1625' FEL

DISTANCE & DIRECTION

FROM INT. OF 3RD ST./NM-205/FRYING PAN RD. & NM-128, HEAD SOUTH ON 3RD ST./NM-205/FRYING PAN RD. ±5.6 MILES, THENCE WEST (RIGHT) ON ANTHONY RD. ±3.4 MILES, THENCE NORTH (RIGHT) TO CONTINUE ON ANTHONY RD. ±0.3 MILES, THENCE EAST (RIGHT) ON PIPELINE RD. ±0.3 MILES, THENCE NORTH (LEFT) ON A LEASE RD. ±1.0 MILES, THENCE WEST (LEFT) ON A LEASE RD. ±6152 FEET TO A POINT ±320 FEET SOUTHEAST OF THE LOCATION.

-N-

SCALE: 1" = 10000'

0' 5000' 10000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

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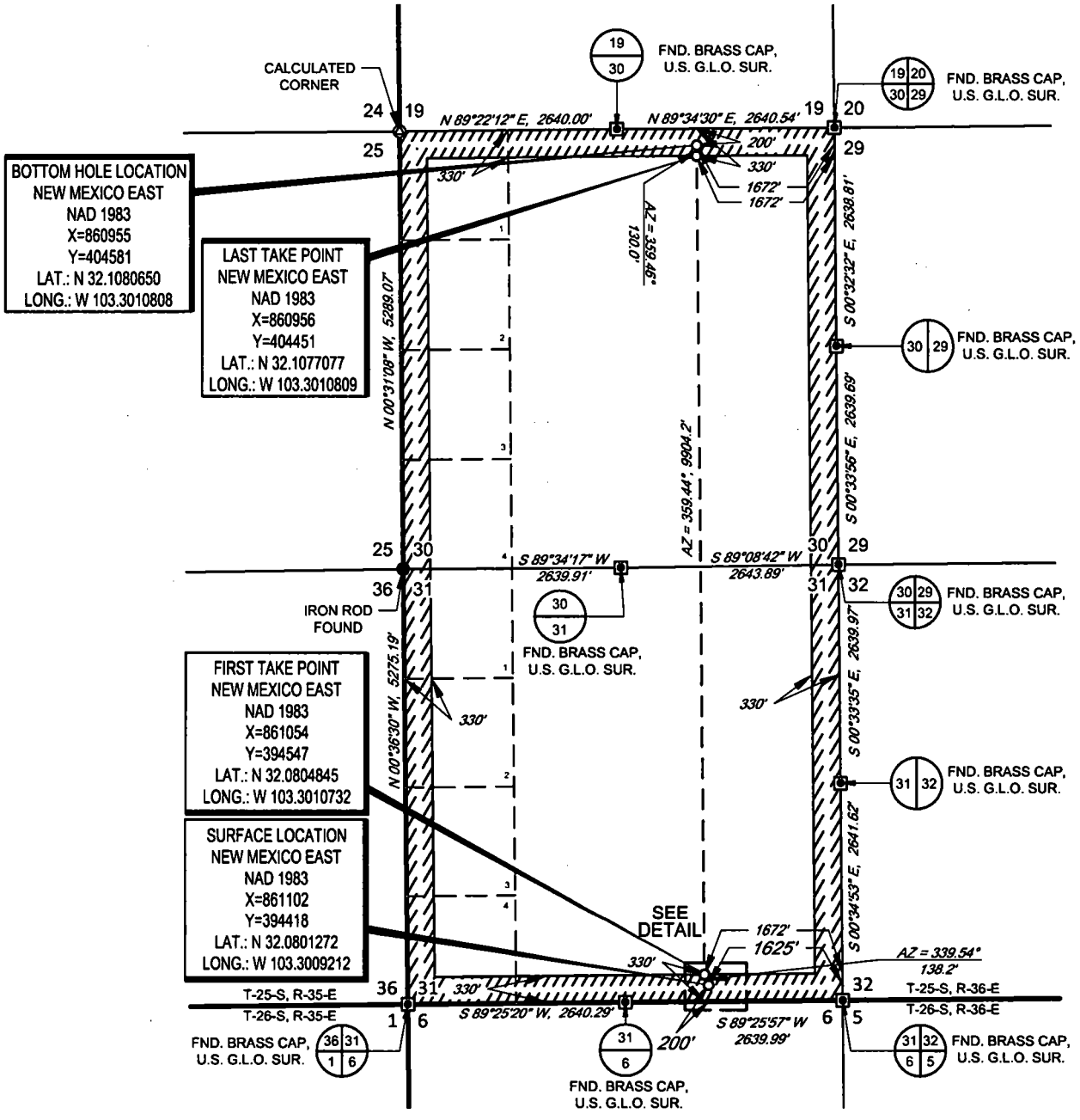
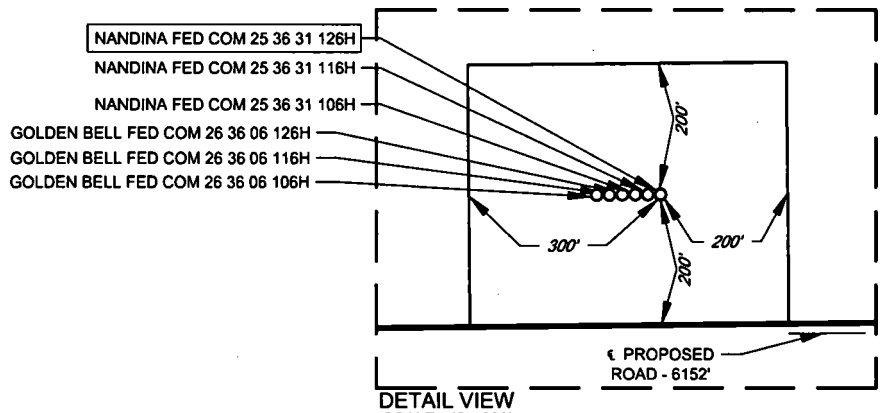
# AMEREDEV

AMEREDEV OPERATING, LLC

## EXHIBIT 2A

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO




DETAIL VIEW
SCALE: 1" = 300'

SCALE: 1" = 2000'
0' 1000' 2000'

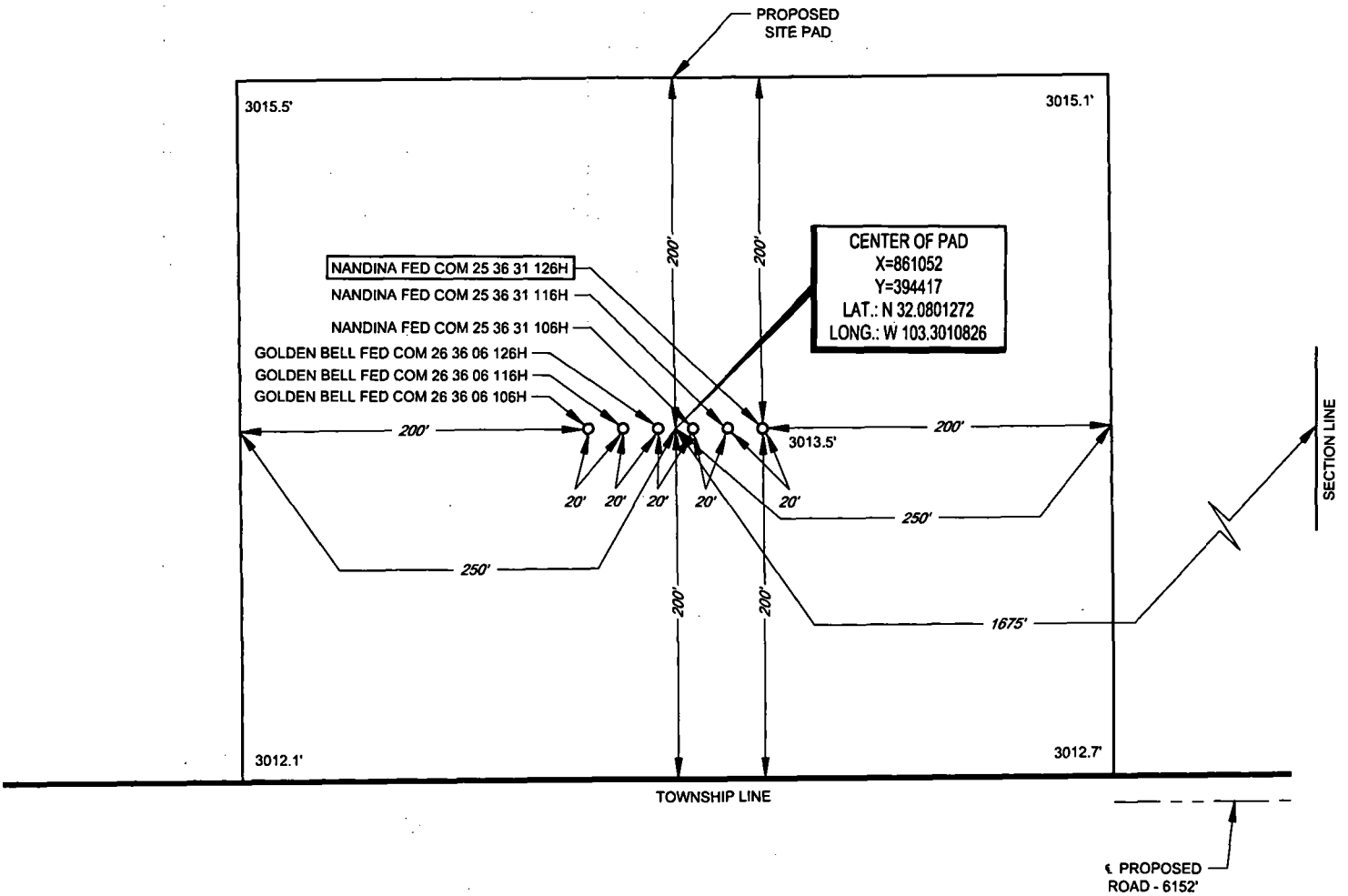
LEASE NAME & WELL NO.: NANDINA FED COM 25 36 31 126H

# EXHIBIT 2B

**AMEREDEV**

## AMEREDEV OPERATING, LLC

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO
DETAIL VIEW
SCALE: 1" = 100'




LEASE NAME & WELL NO.: NANDINA FED COM 25 36 31 126H
126H LATITUDE N 32.0801272 126H LONGITUDE W 103.3009212

CENTER OF PAD IS 200' FSL & 1675' FEL

N

SCALE: 1" = 100'
0' 50' 100'

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET

THIS PROPOSED PAD SITE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY AMEREDEV OPERATING LLC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.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ORIGINAL DOCUMENT SIZE: 8.5" X 11"

S:\SURVEY\AMEREDEV_OPERATING_LLC\NANDINA_FED_COM\FINAL_PRODUCTS\LO_NANDINA_FED_COM_25_36_31_126H.DWG 8/6/2018 2:59:39 PM ccaston

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Drilling Plan Data Report

09/30/2019

**APD ID:** 10400027676 **Submission Date:** 02/23/2018

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Well Type:** OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 1 | RUSTLER ANHYDRITE | 3013 | 1035 | 1035 | ANHYDRITE | NONE | N |
| 2 | SALADO | 1501 | 1512 | 1512 | SALT | NONE | N |
| 3 | TANSILL | -382 | 3395 | 3395 | LIMESTONE | NONE | N |
| 4 | CAPITAN REEF | -793 | 3806 | 3806 | LIMESTONE | USEABLE WATER | N |
| 5 | LAMAR | -2027 | 5040 | 5040 | LIMESTONE | NONE | N |
| 6 | BELL CANYON | -2134 | 5147 | 5147 | SANDSTONE | NATURAL GAS,OIL | N |
| 7 | BRUSHY CANYON | -4209 | 7222 | 7222 | SANDSTONE | NATURAL GAS,OIL | N |
| 8 | BONE SPRING LIME | -5316 | 8329 | 8329 | LIMESTONE | NONE | N |
| 9 | BONE SPRING 1ST | -6656 | 9669 | 9669 | SANDSTONE | NATURAL GAS,OIL | N |
| 10 | BONE SPRING 2ND | -7210 | 10223 | 10223 | SANDSTONE | NATURAL GAS,OIL | N |
| 11 | BONE SPRING 3RD | -7744 | 10757 | 10757 | LIMESTONE | NATURAL GAS,OIL | N |
| 12 | BONE SPRING 3RD | -8345 | 11358 | 11358 | SANDSTONE | NATURAL GAS,OIL | N |
| 13 | WOLFCAMP | -8621 | 11634 | 11634 | SHALE | NATURAL GAS,OIL | N |
| 14 | WOLFCAMP | -8927 | 11940 | 11940 | SHALE | NATURAL GAS,OIL | Y |

## Section 2 - Blowout Prevention

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Pressure Rating (PSI):** 10M **Rating Depth:** 15000

**Equipment:** 10M BOPE SYSTEM WILL BE USED AFTER THE SURFACE CASING IS SET. A KELLY COCK WILL BE KEPT IN THE DRILL STRING AT ALL TIMES. A FULL OPENING DRILL PIPE STABBING VALVE WITH PROPER DRILL PIPE CONNECTIONS WILL BE ON THE RIG FLOOR AT ALL TIMES.
**Requesting Variance?** YES

**Variance request:** Co-Flex Choke Line

**Testing Procedure:** See attachment

**Choke Diagram Attachment:**

10M_Choke_Manifold_20180815142738.pdf

**BOP Diagram Attachment:**

5M_BOP_System_20181026130824.pdf

Pressure_Control_Plan_Pad_Well_MB4_Preset_BLM__002__20181026130824.pdf

4_String_MB_Ameredev_Wellhead_Drawing_net_REV_20181026130835.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 1160 | 0 | 1160 | 3013 | | 1160 | J-55 | 54.5 | OTHER - BTC | 1.88 | 0.9 | DRY | 14.38 | DRY | 13.5 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 5090 | 0 | 5087 | 3013 | | 5090 | HCL-80 | 40 | OTHER - BTC | 1.39 | 0.9 | DRY | 5.12 | DRY | 4.5 |
| 3 | INTERMEDIATE | 8.75 | 7.625 | NEW | API | N | 0 | 11720 | 0 | 11717 | 3013 | | 11720 | HCP-110 | 29.7 | OTHER - FJM | 1.05 | 1.19 | DRY | 1.85 | DRY | 2.7 |
| 4 | PRODUCTION | 6.75 | 5.5 | NEW | API | N | 0 | 22299 | 0 | 12290 | 3013 | | 22299 | P-110 | 20 | OTHER - CYHP TMK-UP SF TORQ | 1.68 | 1.8 | DRY | 2.66 | DRY | 2.96 |

**Casing Attachments**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Casing Attachments**

**Casing ID:** 1 **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

NANDINA_FED_COM_25_36_31_126H___CASING_DESIGN_ASSUMPTIONS_20180814150753.pdf

13.375_54.50_J55_SEAH_20181026131557.pdf

NANDINA_FED_COM_25_36_31_126H___WELLBORE_SCHEMATIC_20181026131608.pdf

**Casing ID:** 2 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

NANDINA_FED_COM_25_36_31_126H___CASING_DESIGN_ASSUMPTIONS_20180814151047.pdf

NANDINA_FED_COM_25_36_31_126H___WELLBORE_SCHEMATIC_20181026131956.pdf

9625_40_SeAH80HC_4100_Collapse_20181026132007.pdf

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Casing Attachments**

**Casing ID:** 3 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

NANDINA_FED_COM_25_36_31_126H___CASING_DESIGN_ASSUMPTIONS_20180814151258.pdf

7.625_29.70_P110HC_LIBERTY_FJM_20181026132021.pdf

NANDINA_FED_COM_25_36_31_126H___WELLBORE_SCHEMATIC_20181026132029.pdf

**Casing ID:** 4 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

NANDINA_FED_COM_25_36_31_126H___CASING_DESIGN_ASSUMPTIONS_20180814151530.pdf

NANDINA_FED_COM_25_36_31_126H___WELLBORE_SCHEMATIC_20181026132105.pdf

TMK_UP_SF_TORQ____5.500in_x_20.00__P_110_CYHP_20181026132114.pdf

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Lead | | 0 | 776 | 710 | 1.89 | 12.9 | 1343.32 | 100 | Class C | Bentonite, Retarder, Kolseal, Defoamer, Celloflake |

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SURFACE | Tail | | 776 | 1160 | 200 | 1.33 | 14.8 | 266.4 | 100 | Class C | None |
| INTERMEDIATE | Lead | | 0 | 3598 | 1025 | 1.88 | 12.9 | 1924.95 | 50 | Class C | Bentonite, Salt, Kolseal, Defoamer, Celloflake |
| INTERMEDIATE | Tail | | 3598 | 5090 | 350 | 1.33 | 14.8 | 466.9 | 50 | Class C | None |
| INTERMEDIATE | Lead | | 3756 | 10488 | 307 | 2.85 | 11 | 873.42 | 25 | Class H | Bentonite, Retarder, Kolseal, Defoamer, Celloflake, Anti-settling Expansion Additive |
| INTERMEDIATE | Tail | | 10488 | 11720 | 100 | 1.24 | 14.5 | 123.7 | 25 | Class H | Bentonite, Retarder, Dispersant, Fluid Loss |
| PRODUCTION | Lead | | 11220 | 22299 | 945 | 1.22 | 14.5 | 1155.74 | 25 | Class H | Retarder, Kolseal, Defoamer, Celloflake, Expansion Additive |

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** All necessary supplies (e. g., bentonite, cedar bark) for fluid control will be on site.

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

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1160 | WATER-BASED MUD | 8.6 | 10 | | | | | | | |
| 1160 | 5087 | SALT SATURATED | 10 | 11.5 | | | | | | | |
| 5087 | 11717 | OTHER : CUT BRINE | 8.9 | 10.5 | | | | | | | |
| 11717 | 12290 | OIL-BASED MUD | 11.5 | 12.5 | | | | | | | |

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

A directional survey, measurement while drilling and a mudlog/geologic lithology log will all be run from surface to TD.

**List of open and cased hole logs run in the well:**

DS,MWD,MUDLOG

**Coring operation description for the well:**

No coring will be done on this well.

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 5000 **Anticipated Surface Pressure:** 2296.19

**Anticipated Bottom Hole Temperature(F):** 160

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

H2S_Plan_20180814155548.pdf

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Nandina_Fed_Com_25_36_31_126H_Plan_1_20180814155607.pdf

Pressure_Control_Plan_Pad_Well_MB4_Preset_BLM__002__20181026132716.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

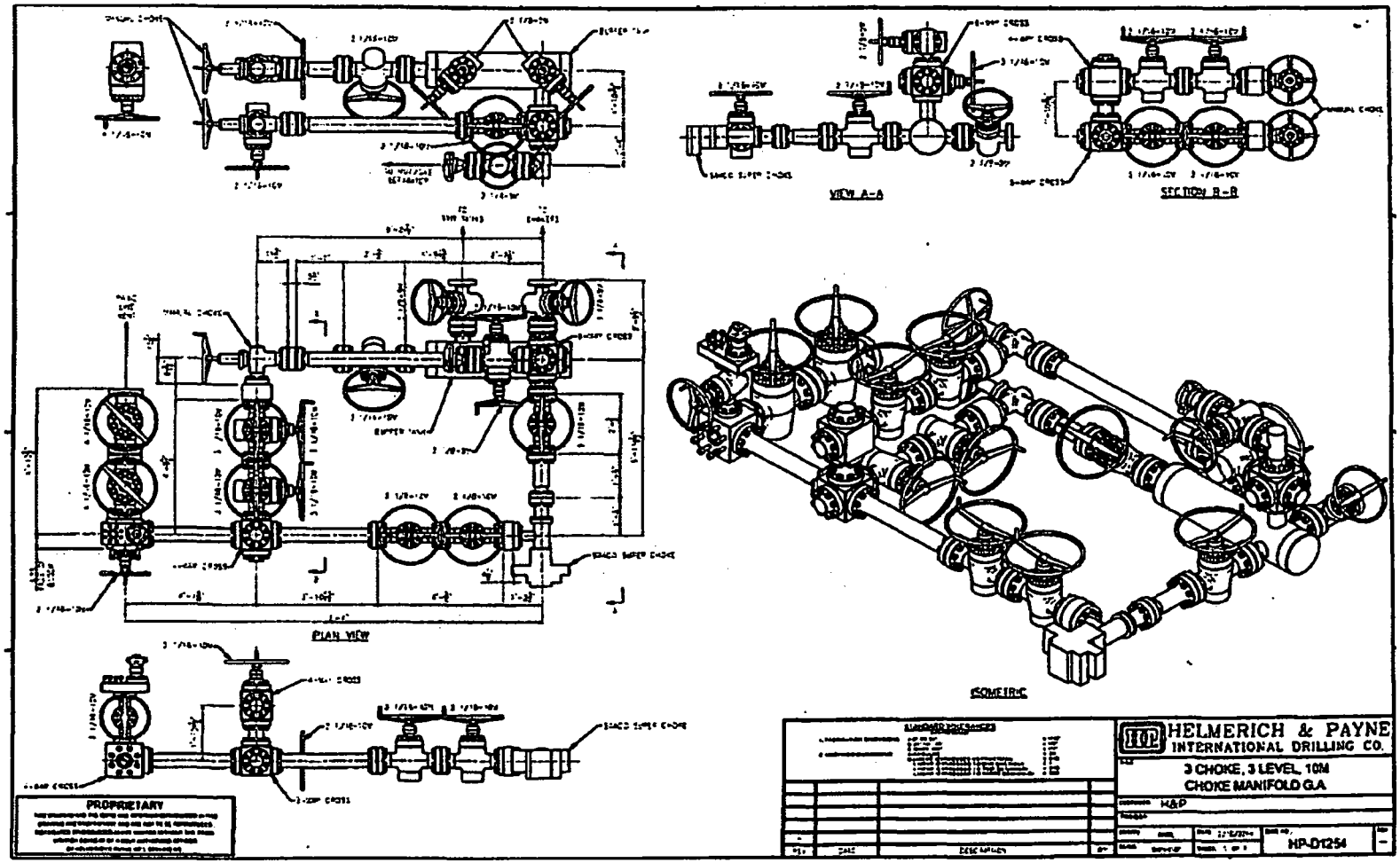
**Other Variance attachment:**

R616___CoC_for_hoses_12_18_17_20180814155759.pdf

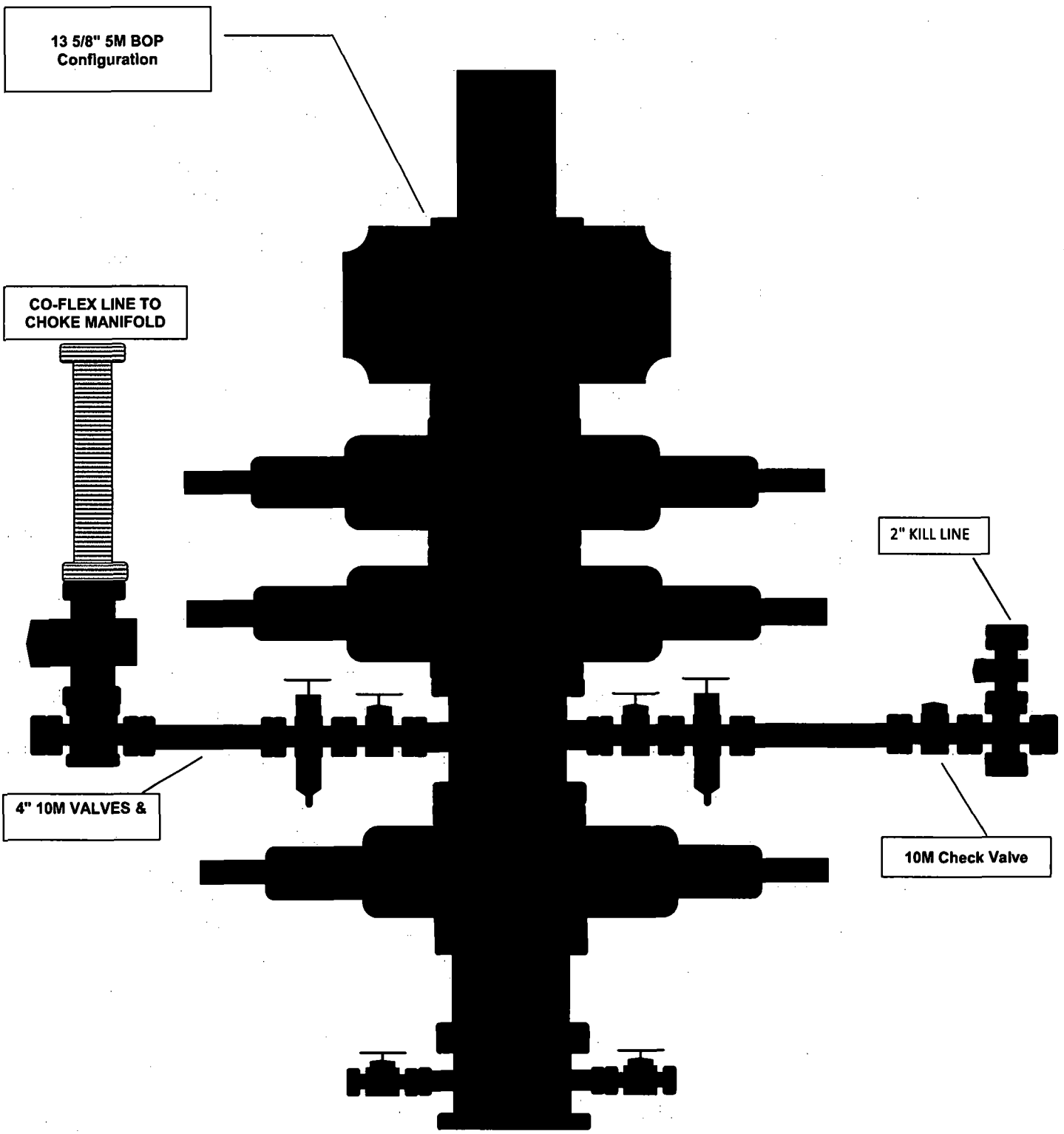
Requested_Exceptions___4_String_Revised_09182018_20181026132757.pdf

# 10M Choke Manifold

**10M Choke Manifold**




AMEREDEV


13 5/8" 5M BOP
Configuration
CO-FLEX LINE TO
CHOKE MANIFOLD
2" KILL LINE
4" 10M VALVES &
10M Check Valve

AMEREDEV

# Pressure Control Plan

**Pressure Control Equipment**

- Ameredev will utilize a drilling rig not capable of drilling to TD to preset Surface Casing.

- Following setting of 13-3/8" Surface Casing Ameredev will install 13-5/8 MB4 Multi Bowl Casing Head by welding on a 13-5/8 SOW x 13-5/8" 5M in combination with 13-5/8 5M x 13-5/8 10M B-Sec to Land Intm #1 and a 13-5/8 10M x 13-5/8 10M shouldered to land C-Sec to Land Intm #2 (Installation procedure witnessed and verified by a manufacturer's representative).

- Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Ameredev will install Dry Hole Cap and install Pressure gauges to monitor. Ameredev will Suspend Operations to Mob to Adjacent Wells and Drill Surface

- Ameredev will Mobilize Rig capable of drilling to TD.(Rig Capable of Drilling to TD will not Mobilize until all wells on Drilling Pad have reached TD and Tubing Head installed and Tested) Ameredev will install a 5M System Blowout Preventer (BOPE) with a 5M Annular Preventer and related equipment (BOPE). Full testing will be performed utilizing a full isolation test plug and limited to 5,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Setting of 9-5/8" Intermediate #1 will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Full testing will be performed utilizing a full isolation test plug and limited to 5,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

AMEREDEV

# Pressure Control Plan

- Before drilling >20ft of new formation under the 9-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.

- Setting of 7-5/8" Intermediate #2 will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Full testing will be performed utilizing a full isolation test plug and limited to 10,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 100% of approved working pressure (5,000psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Before drilling >20ft of new formation under the 7-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.

- Following setting of 5-1/2" Production Casing and adequate WOC time Ameredev will break 5M System Blowout Preventer (BOP) from 10M DOL-2 Casing Head, install annulus casing slips and test same (Installation procedure witnessed and verified by a manufacturer's representative) and install 11" 10M x 5-1/8" 15M Tubing Head (Installation procedure witnessed and verified by a manufacturer's representative). Ameredev will test head to 70% casing design and install Dry Hole cap with needle valve and pressure gauge to monitor well awaiting completion.

- Slow pump speeds will be taken daily by each crew and recorded on Daily Drilling Report after mudding up.

- A choke manifold and accumulator with floor and remote operating stations will be functional and in place after installation of BOPE, as well as full functioning mud gas separator.

- Weekly BOPE pit level drills will be conducted by each crew and recorded on Daily Drilling Report.

- BOP will be fully operated when out of hole and will be documented on the daily drilling log.

- All B.O.P.s and associated equipment will be tested in accordance with Onshore Order #2

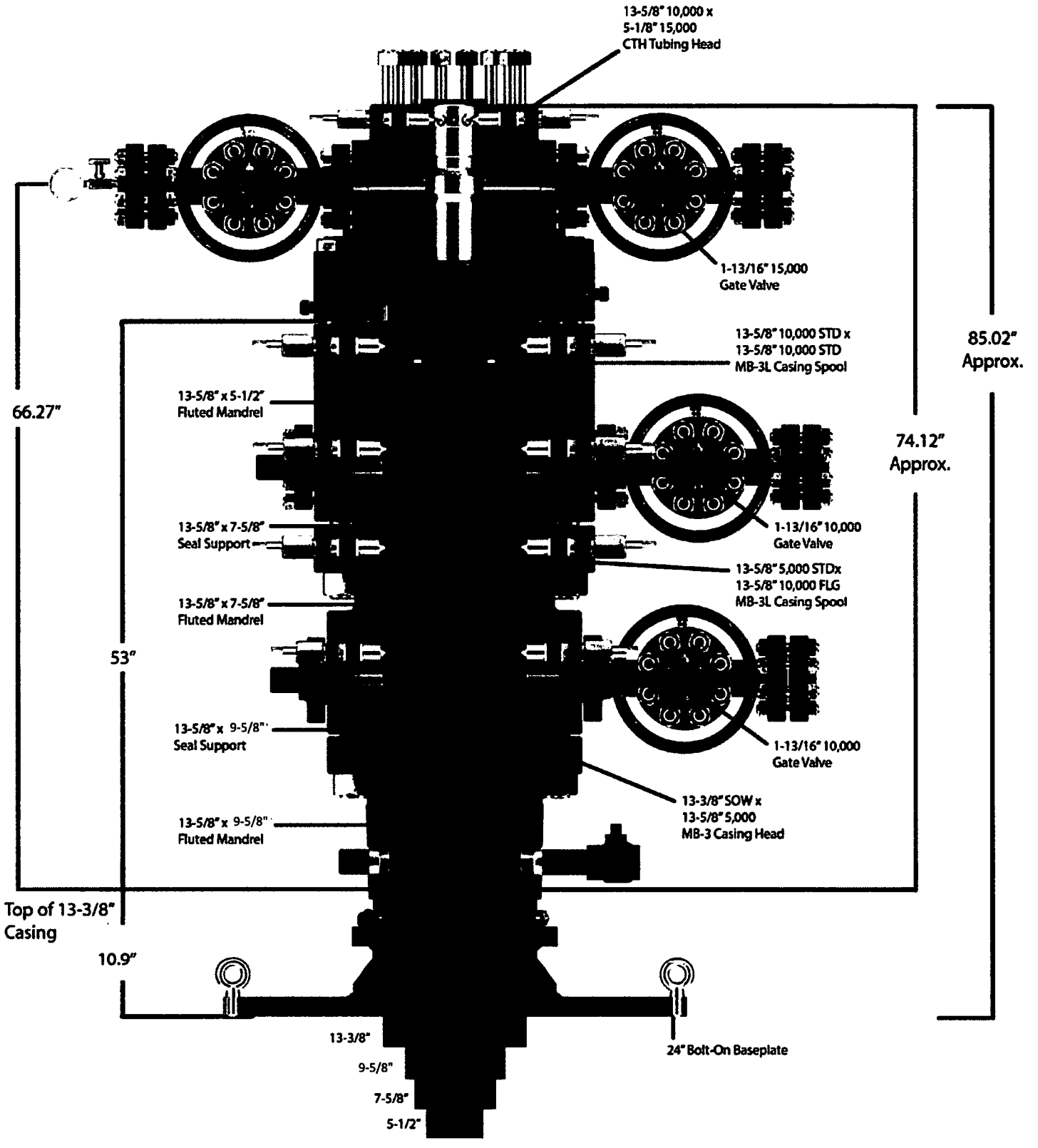
- All B.O.P. testing will be done by an independent service company.

AMEREDEV

# Pressure Control Plan

- The B.O.P. will be tested within 21 days of the original test if drilling takes more time than planned.

- Ameredev requests a variance to connect the B.O.P. choke outlet to the choke manifold using a co-flex hose with a 10,000 psi working pressure that has been tested to 15,000psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps. (certifications will be sent to Carlsbad BLM Office prior to install)




# Quotation

# Downing Wellhead Equipment

Oklahoma City, Oklahoma - USA

Reference Data:

16925 AMEREDEV

**Proprietary and Confidential**



TITLE:

AMEREDEV

| | | | | | |
|---|---|---|---|---|---|
| DRAWN | | | SIZE | DWG. NO. | REV. |
| CHECKED | | | A | | |
| APPROVED | | | Scale: | Weight: | Sheet: |

# *Casing Design and Safety Factor Check*

| *Casing Specifications* | | | | | | |
|---|---|---|---|---|---|---|
| **Segment** | **Hole ID** | **Depth** | **OD** | **Weight** | **Grade** | **Coupling** |
| Surface | 17.5 | 1,160' | 13.375 | 54.5 | J-55 | BTC |
| Int #1 | 12.25 | 5,090' | 9.625 | 40 | HCL-80 | BTC |
| Int #2 | 8.75 | 11,720' | 7.625 | 29.7 | HCP-110 | FJM |
| Prod Segment A | 6.75 | 11,720' | 5.5 | 20 | CYHP-110 | TMK UPSF |
| Prod Segment B | 6.75 | 22,299' | 5.5 | 20 | CYHP-110 | TMK UPSF |

| ***Check Surface Casing*** | | | | |
|---|---|---|---|---|
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 14.38 | 853 | 909 | 1,130 | 2,730 |
| *Safety Factors* | | | | |
| 1.56 | 13.50 | 14.38 | 1.88 | 0.90 |
| ***Check Int #1 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 10.625 | 916 | 1042 | 4230 | 5750 |
| *Safety Factors* | | | | |
| 0.81 | 4.50 | 5.12 | 1.39 | 0.90 |
| ***Check Int #2 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 7.625 | 940 | 558 | 6700 | 9460 |
| *Safety Factors* | | | | |
| 0.56 | 2.70 | 1.85 | 1.05 | 1.19 |
| ***Check Prod Casing, Segment A*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 2.96 | 2.66 | 1.68 | 1.80 |
| ***Check Prod Casing, Segment B*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 63.86 | 57.46 | 1.60 | 1.80 |

SěAH

# 13-3/8" 54.50# .380 J-55

## Dimensions (Nominal)

| | | |
|---|---|---|
| **Outside Diameter** | 13.375 | **in.** |
| **Wall** | 0.380 | **in.** |
| **Inside Diameter** | 12.615 | **in.** |
| **Drift** | 12.459 | **in.** |
| **Weight, T&C** | 54.500 | **lbs/ft** |
| **Weight, PE** | 52.790 | **lbs/ft** |

## Performance Ratings, Minimum

| | | |
|---|---|---|
| **Collapse, PE** | **1130** | **psi** |
| **Internal Yields Pressure** | | |
| **PE** | **2730** | **psi** |
| **STC** | **2730** | **PSI** |
| **BTC** | **2730** | **psi** |
| **Yield Strength, Pipe Body** | **853** | **1000 lbs** |
| **Joint Strength, STC** | **514** | **1000 lbs** |
| **Joint Strength, BTC** | **909** | **1000 lbs** |

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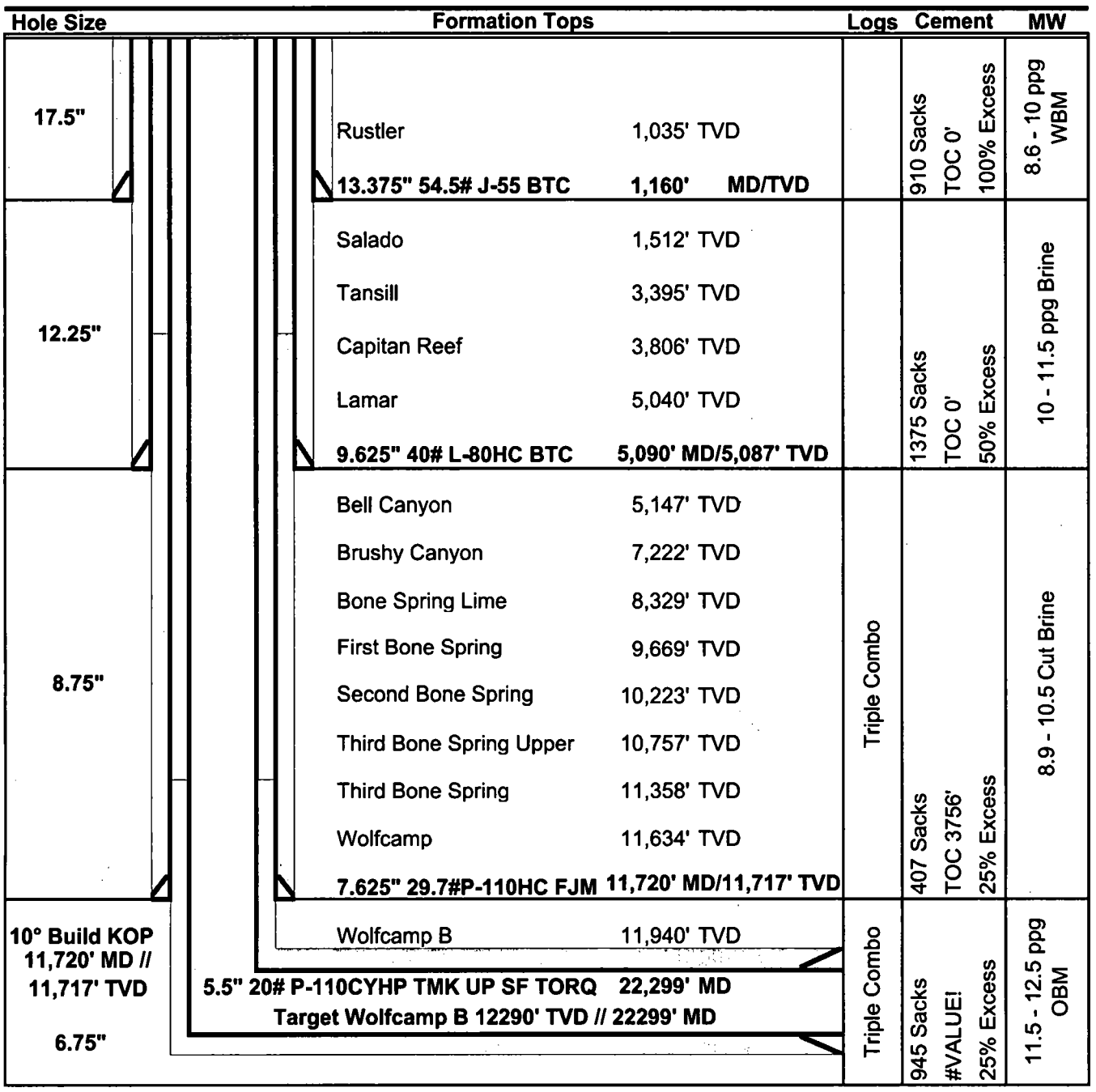
# Wellbore Schematic

**Well:** Nandina Fed Com 25 36 31 126H
**SHL:** Sec. 31 25S-36E 200' FSL & 1625' FEL
**BHL:** Sec. 30 25S-36E 200' FNL & 1672' FEL
Lea, NM
**Wellhead:** A - 13-5/8" 5M x 13-5/8" SOW
B - 13-5/8" 5M x 13-5/8" 10M
C - 13-5/8" 10M x 13-5/8" 10M
Tubing Spool - 5-1/8" 15M x 13-3/8" 10M
**Tree:** 2-9/16" 10M
**Tubing:** 2-7/8" L-80 6.5# 8rd EUE

**Co. Well ID:** xxxxx
**AFE No.:** xxxx-xxx
**API No.:** xxxxxxxxxx
**GL:** 3,013'
**Field:** Delaware_WCB
**Objective:** Wolfcamp B
**TVD:** 12,290'
**MD:** 22,299'
**Rig:** TBD
**E-Mail:** Wellsite2@ameredev.com



# *Casing Design and Safety Factor Check*

| *Casing Specifications* | | | | | | |
|---|---|---|---|---|---|---|
| **Segment** | **Hole ID** | **Depth** | **OD** | **Weight** | **Grade** | **Coupling** |
| Surface | 17.5 | 1,160' | 13.375 | 54.5 | J-55 | BTC |
| Int #1 | 12.25 | 5,090' | 9.625 | 40 | HCL-80 | BTC |
| Int #2 | 8.75 | 11,720' | 7.625 | 29.7 | HCP-110 | FJM |
| Prod Segment A | 6.75 | 11,720' | 5.5 | 20 | CYHP-110 | TMK UPSF |
| Prod Segment B | 6.75 | 22,299' | 5.5 | 20 | CYHP-110 | TMK UPSF |

| ***Check Surface Casing*** | | | | |
|---|---|---|---|---|
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 14.38 | 853 | 909 | 1,130 | 2,730 |
| *Safety Factors* | | | | |
| 1.56 | 13.50 | 14.38 | 1.88 | 0.90 |
| ***Check Int #1 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 10.625 | 916 | 1042 | 4230 | 5750 |
| *Safety Factors* | | | | |
| 0.81 | 4.50 | 5.12 | 1.39 | 0.90 |
| ***Check Int #2 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 7.625 | 940 | 558 | 6700 | 9460 |
| *Safety Factors* | | | | |
| 0.56 | 2.70 | 1.85 | 1.05 | 1.19 |
| ***Check Prod Casing, Segment A*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 2.96 | 2.66 | 1.68 | 1.80 |
| ***Check Prod Casing, Segment B*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 63.86 | 57.46 | 1.60 | 1.80 |

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# Wellbore Schematic

| | | | |
|---|---|---|---|
| **Well:** | Nandina Fed Com 25 36 31 126H | **Co. Well ID:** | xxxxx |
| **SHL:** | Sec. 31 25S-36E 200' FSL & 1625' FEL | **AFE No.:** | xxxx-xxx |
| **BHL:** | Sec. 30 25S-36E 200' FNL & 1672' FEL | **API No.:** | xxxxxxxxxx |
| | Lea, NM | **GL:** | 3,013' |
| **Wellhead:** | A - 13-5/8" 5M x 13-5/8" SOW | **Field:** | Delaware_WCB |
| | B - 13-5/8" 5M x 13-5/8" 10M | **Objective:** | Wolfcamp B |
| | C - 13-5/8" 10M x 13-5/8" 10M | **TVD:** | 12,290' |
| | Tubing Spool - 5-1/8" 15M x 13-3/8" 10M | **MD:** | 22,299' |
| **Tree:** | 2-9/16" 10M | **Rig:** | TBD |
| **Tubing:** | 2-7/8" L-80 6.5# 8rd EUE | **E-Mail:** | Wellsite2@ameredev.com |

| Hole Size | Formation Tops | | Logs | Cement | MW |
|---|---|---|---|---|---|
| 17.5" | Rustler | 1,035' TVD | | 910 Sacks TOC 0' 100% Excess | 8.6 - 10 ppg WBM |
| | **13.375" 54.5# J-55 BTC** | **1,160' MD/TVD** | | | |
| 12.25" | Salado | 1,512' TVD | | 1375 Sacks TOC 0' 50% Excess | 10 - 11.5 ppg Brine |
| | Tansill | 3,395' TVD | | | |
| | Capitan Reef | 3,806' TVD | | | |
| | Lamar | 5,040' TVD | | | |
| | **9.625" 40# L-80HC BTC** | **5,090' MD/5,087' TVD** | | | |
| 8.75" | Bell Canyon | 5,147' TVD | Triple Combo | 407 Sacks TOC 3756' 25% Excess | 8.9 - 10.5 Cut Brine |
| | Brushy Canyon | 7,222' TVD | | | |
| | Bone Spring Lime | 8,329' TVD | | | |
| | First Bone Spring | 9,669' TVD | | | |
| | Second Bone Spring | 10,223' TVD | | | |
| | Third Bone Spring Upper | 10,757' TVD | | | |
| | Third Bone Spring | 11,358' TVD | | | |
| | Wolfcamp | 11,634' TVD | | | |
| | **7.625" 29.7#P-110HC FJM** | **11,720' MD/11,717' TVD** | | | |
| **10° Build KOP 11,720' MD // 11,717' TVD** | Wolfcamp B | 11,940' TVD | Triple Combo | 945 Sacks #VALUE! 25% Excess | 11.5 - 12.5 ppg OBM |
| **6.75"** | **5.5" 20# P-110CYHP TMK UP SF TORQ** | **22,299' MD** | | | |
| | **Target Wolfcamp B 12290' TVD // 22299' MD** | | | | |

# SĕAH

## 9.625" 40# .395" SEAH-80 HIGH COLLAPSE

(SEAH-80 IS A NON HEAT TREATED PRODUCT)

## Dimensions (Nominal)

| | | |
|---|---|---|
| **Outside Diameter** | **9.625** | **in.** |
| **Wall** | **0.395** | **in.** |
| **Inside Diameter** | **8.835** | **in.** |
| **Drift** | **8.750** | **in.** |
| **Weight, T&C** | **40.000** | **lbs./ft.** |
| **Weight, PE** | **38.970** | **lbs./ft.** |

## Performance Properties

| | | |
|---|---|---|
| **Collapse** | **4100** | **psi** |
| **Internal Yield Pressure at Minimum Yield** | | |
| **PE** | **5750** | **psi** |
| **LTC** | **5750** | **psi** |
| **BTC** | **5750** | **psi** |
| **Yield Strength, Pipe Body** | **916** | **1000 lbs.** |
| **Joint Strength** | | |
| **LTC** | **717** | **1000 lbs.** |
| **BTC** | **915** | **1000 lbs.** |

# *Casing Design and Safety Factor Check*

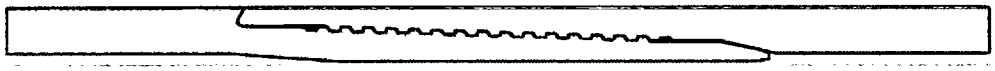
| *Casing Specifications* | | | | | | |
|---|---|---|---|---|---|---|
| **Segment** | **Hole ID** | **Depth** | **OD** | **Weight** | **Grade** | **Coupling** |
| Surface | 17.5 | 1,160' | 13.375 | 54.5 | J-55 | BTC |
| Int #1 | 12.25 | 5,090' | 9.625 | 40 | HCL-80 | BTC |
| Int #2 | 8.75 | 11,720' | 7.625 | 29.7 | HCP-110 | FJM |
| Prod Segment A | 6.75 | 11,720' | 5.5 | 20 | CYHP-110 | TMK UPSF |
| Prod Segment B | 6.75 | 22,299' | 5.5 | 20 | CYHP-110 | TMK UPSF |

| ***Check Surface Casing*** | | | | |
|---|---|---|---|---|
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 14.38 | 853 | 909 | 1,130 | 2,730 |
| *Safety Factors* | | | | |
| 1.56 | 13.50 | 14.38 | 1.88 | 0.90 |
| ***Check Int #1 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 10.625 | 916 | 1042 | 4230 | 5750 |
| *Safety Factors* | | | | |
| 0.81 | 4.50 | 5.12 | 1.39 | 0.90 |
| ***Check Int #2 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 7.625 | 940 | 558 | 6700 | 9460 |
| *Safety Factors* | | | | |
| 0.56 | 2.70 | 1.85 | 1.05 | 1.19 |
| ***Check Prod Casing, Segment A*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 2.96 | 2.66 | 1.68 | 1.80 |
| ***Check Prod Casing, Segment B*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 63.86 | 57.46 | 1.60 | 1.80 |

# U. S. Steel Tubular Products

6/6/2017 6:18:53 PM

## 7.625" 29.70lbs/ft (0.375" Wall) P110 HC USS-LIBERTY FJM®



| MECHANICAL PROPERTIES | Pipe | USS-LIBERTY FJM® | |
|---|---|---|---|
| Minimum Yield Strength | 110,000 | -- | psi |
| Maximum Yield Strength | 140,000 | -- | psi |
| Minimum Tensile Strength | 125,000 | -- | psi |
| **DIMENSIONS** | **Pipe** | **USS-LIBERTY FJM®** | |
| Outside Diameter | 7.625 | 7.625 | in. |
| Wall Thickness | 0.375 | -- | in. |
| Inside Diameter | 6.875 | 6.789 | in. |
| Standard Drift | 6.750 | 6.750 | in. |
| Alternate Drift | -- | -- | in. |
| Nominal Linear Weight, T&C | 29.70 | -- | lbs/ft |
| Plain End Weight | 29.06 | -- | lbs/ft |
| **SECTION AREA** | **Pipe** | **USS-LIBERTY FJM®** | |
| Critical Area | 8.541 | 5.074 | sq. in. |
| Joint Efficiency | -- | 59.4 | % |
| **PERFORMANCE** | **Pipe** | **USS-LIBERTY FJM®** | |
| Minimum Collapse Pressure | 6,700 | 6,700 | psi |
| Minimum Internal Yield Pressure | 9,460 | 9,460 | psi |
| Minimum Pipe Body Yield Strength | 940,000 | -- | lbs |
| Joint Strength | -- | 558,000 | lbs |
| Compression Rating | -- | 558,000 | lbs |
| Reference Length | -- | 12,810 | ft |
| Maximum Uniaxial Bend Rating | -- | 39.3 | deg/100 ft |
| | | | |
| Make-Up Loss | -- | 3.92 | in. |
| Minimum Make-Up Torque | -- | 10,800 | ft-lbs |
| Maximum Make-Up Torque | -- | 15,250 | ft-lbs |

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Compressive & Tensile Connection Efficiencies are calculated by dividing the connection critical area by the pipe body area.
3. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
4. USS-LIBERTY FJM™ connections are optimized for each combination of OD and wall thickness and cannot be interchanged.
5. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
6. Reference length is calculated by joint strength divided by nominal plain end weight with 1.5 safety factor.
7. Connection external pressure leak resistance has been verified to 100% API pipe body collapse pressure following the guidelines of API 5C5 Cal III.



U. S. Steel Tubular Products
10343 Sam Houston Park Dr., #120
Houston, TX 77064

1-877-893-9461
connections@uss.com
www.usstubular.com

AMEREDEV

# Wellbore Schematic

**Well:** Nandina Fed Com 25 36 31 126H
**SHL:** Sec. 31 25S-36E 200' FSL & 1625' FEL
**BHL:** Sec. 30 25S-36E 200' FNL & 1672' FEL
Lea, NM
**Wellhead:** A - 13-5/8" 5M x 13-5/8" SOW
B - 13-5/8" 5M x 13-5/8" 10M
C - 13-5/8" 10M x 13-5/8" 10M
Tubing Spool - 5-1/8" 15M x 13-3/8" 10M
**Tree:** 2-9/16" 10M
**Tubing:** 2-7/8" L-80 6.5# 8rd EUE

**Co. Well ID:** xxxxx
**AFE No.:** xxxx-xxx
**API No.:** xxxxxxxxxx
**GL:** 3,013'
**Field:** Delaware_WCB
**Objective:** Wolfcamp B
**TVD:** 12,290'
**MD:** 22,299'
**Rig:** TBD
**E-Mail:** Wellsite2@ameredev.com

| Hole Size | Formation Tops | | Logs | Cement | MW |
|---|---|---|---|---|---|
| 17.5" | Rustler | 1,035' TVD | | 910 Sacks TOC 0' 100% Excess | 8.6 - 10 ppg WBM |
| | **13.375" 54.5# J-55 BTC** | **1,160' MD/TVD** | | | |
| 12.25" | Salado | 1,512' TVD | | 1375 Sacks TOC 0' 50% Excess | 10 - 11.5 ppg Brine |
| | Tansill | 3,395' TVD | | | |
| | Capitan Reef | 3,806' TVD | | | |
| | Lamar | 5,040' TVD | | | |
| | **9.625" 40# L-80HC BTC** | **5,090' MD/5,087' TVD** | | | |
| 8.75" | Bell Canyon | 5,147' TVD | Triple Combo | 407 Sacks TOC 3756' 25% Excess | 8.9 - 10.5 Cut Brine |
| | Brushy Canyon | 7,222' TVD | | | |
| | Bone Spring Lime | 8,329' TVD | | | |
| | First Bone Spring | 9,669' TVD | | | |
| | Second Bone Spring | 10,223' TVD | | | |
| | Third Bone Spring Upper | 10,757' TVD | | | |
| | Third Bone Spring | 11,358' TVD | | | |
| | Wolfcamp | 11,634' TVD | | | |
| | **7.625" 29.7#P-110HC FJM** | **11,720' MD/11,717' TVD** | | | |
| **10° Build KOP 11,720' MD // 11,717' TVD** | Wolfcamp B | 11,940' TVD | Triple Combo | 945 Sacks #VALUE! 25% Excess | 11.5 - 12.5 ppg OBM |
| | **5.5" 20# P-110CYHP TMK UP SF TORQ** | **22,299' MD** | | | |
| **6.75"** | **Target Wolfcamp B 12290' TVD // 22299' MD** | | | | |

# *Casing Design and Safety Factor Check*

| *Casing Specifications* | | | | | | |
|---|---|---|---|---|---|---|
| **Segment** | **Hole ID** | **Depth** | **OD** | **Weight** | **Grade** | **Coupling** |
| Surface | 17.5 | 1,160' | 13.375 | 54.5 | J-55 | BTC |
| Int #1 | 12.25 | 5,090' | 9.625 | 40 | HCL-80 | BTC |
| Int #2 | 8.75 | 11,720' | 7.625 | 29.7 | HCP-110 | FJM |
| Prod Segment A | 6.75 | 11,720' | 5.5 | 20 | CYHP-110 | TMK UPSF |
| Prod Segment B | 6.75 | 22,299' | 5.5 | 20 | CYHP-110 | TMK UPSF |

| ***Check Surface Casing*** | | | | |
|---|---|---|---|---|
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 14.38 | 853 | 909 | 1,130 | 2,730 |
| *Safety Factors* | | | | |
| 1.56 | 13.50 | 14.38 | 1.88 | 0.90 |
| ***Check Int #1 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 10.625 | 916 | 1042 | 4230 | 5750 |
| *Safety Factors* | | | | |
| 0.81 | 4.50 | 5.12 | 1.39 | 0.90 |
| ***Check Int #2 Casing*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 7.625 | 940 | 558 | 6700 | 9460 |
| *Safety Factors* | | | | |
| 0.56 | 2.70 | 1.85 | 1.05 | 1.19 |
| ***Check Prod Casing, Segment A*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 2.96 | 2.66 | 1.68 | 1.80 |
| ***Check Prod Casing, Segment B*** | | | | |
| OD Cplg | Body | Joint | Collapse | Burst |
| *inches* | *1000 lbs* | *1000 lbs* | *psi* | *psi* |
| 5.777 | 728 | 655 | 12780 | 14360 |
| *Safety Factors* | | | | |
| 0.49 | 63.86 | 57.46 | 1.60 | 1.80 |

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# Wellbore Schematic

| | | | |
|---|---|---|---|
| **Well:** | Nandina Fed Com 25 36 31 126H | **Co. Well ID:** | xxxxx |
| **SHL:** | Sec. 31 25S-36E 200' FSL & 1625' FEL | **AFE No.:** | xxxx-xxx |
| **BHL:** | Sec. 30 25S-36E 200' FNL & 1672' FEL | **API No.:** | xxxxxxxxxx |
| | Lea, NM | **GL:** | 3,013' |
| **Wellhead:** | A - 13-5/8" 5M x 13-5/8" SOW | **Field:** | Delaware_WCB |
| | B - 13-5/8" 5M x 13-5/8" 10M | **Objective:** | Wolfcamp B |
| | C - 13-5/8" 10M x 13-5/8" 10M | **TVD:** | 12,290' |
| | Tubing Spool - 5-1/8" 15M x 13-3/8" 10M | **MD:** | 22,299' |
| **Tree:** | 2-9/16" 10M | **Rig:** | TBD |
| **Tubing:** | 2-7/8" L-80 6.5# 8rd EUE | **E-Mail:** | Wellsite2@ameredev.com |

| Hole Size | Formation Tops | | Logs | Cement | MW |
|---|---|---|---|---|---|
| 17.5" | Rustler | 1,035' TVD | | 910 Sacks<br>TOC 0'<br>100% Excess | 8.6 - 10 ppg<br>WBM |
| | **13.375" 54.5# J-55 BTC** | **1,160' MD/TVD** | | | |
| 12.25" | Salado | 1,512' TVD | | 1375 Sacks<br>TOC 0'<br>50% Excess | 10 - 11.5 ppg Brine |
| | Tansill | 3,395' TVD | | | |
| | Capitan Reef | 3,806' TVD | | | |
| | Lamar | 5,040' TVD | | | |
| | **9.625" 40# L-80HC BTC** | **5,090' MD/5,087' TVD** | | | |
| 8.75" | Bell Canyon | 5,147' TVD | Triple Combo | 407 Sacks<br>TOC 3756'<br>25% Excess | 8.9 - 10.5 Cut Brine |
| | Brushy Canyon | 7,222' TVD | | | |
| | Bone Spring Lime | 8,329' TVD | | | |
| | First Bone Spring | 9,669' TVD | | | |
| | Second Bone Spring | 10,223' TVD | | | |
| | Third Bone Spring Upper | 10,757' TVD | | | |
| | Third Bone Spring | 11,358' TVD | | | |
| | Wolfcamp | 11,634' TVD | | | |
| | **7.625" 29.7#P-110HC FJM** | **11,720' MD/11,717' TVD** | | | |
| **10° Build KOP 11,720' MD // 11,717' TVD** | Wolfcamp B | 11,940' TVD | Triple Combo | 945 Sacks<br>#VALUE!<br>25% Excess | 11.5 - 12.5 ppg<br>OBM |
| | **5.5" 20# P-110CYHP TMK UP SF TORQ** | **22,299' MD** | | | |
| | **Target Wolfcamp B 12290' TVD // 22299' MD** | | | | |
| **6.75"** | | | | | |

# PERFORMANCE DATA

**TMK UP SF TORQ™** **5.500 in** **20.00 lbs/ft** **P-110 CYHP**
**Technical Data Sheet**

## Tubular Parameters

| | | | | | |
|---|---|---|---|---|---|
| Size | 5.500 | in | Minimum Yield | 125,000 | psi |
| Nominal Weight | 20.00 | lbs/ft | Minimum Tensile | 135,000 | psi |
| Grade | P-110 CYHP | | Yield Load | 728,000 | lbs |
| PE Weight | 19.81 | lbs/ft | Tensile Load | 786,000 | lbs |
| Wall Thickness | 0.361 | in | Min. Internal Yield Pressure | 14,360 | psi |
| Nominal ID | 4.778 | in | Collapse Pressure | 12,780 | psi |
| Drift Diameter | 4.653 | in | | | |
| Nom. Pipe Body Area | 5.828 | in² | | | |

## Connection Parameters

| | | |
|---|---|---|
| Connection OD | 5.777 | in |
| Connection ID | 4.734 | in |
| Make-Up Loss | 5.823 | in |
| Critical Section Area | 5.875 | in² |
| Tension Efficiency | 90.0 | % |
| Compression Efficiency | 90.0 | % |
| Yield Load In Tension | 655,000 | lbs |
| Min. Internal Yield Pressure | 14,360 | psi |
| Collapse Pressure | 12,780 | psi |
| Uniaxial Bending | 93.8 | °/ 100 ft |

## Make-Up Torques

| | | |
|---|---|---|
| Min. Make-Up Torque | 15,700 | ft-lbs |
| Opt. Make-Up Torque | 19,600 | ft-lbs |
| Max. Make-Up Torque | 21,600 | ft-lbs |
| Operating Torque | 29,000 | ft-lbs |
| Yield Torque | 37,000 | ft-lbs |

**Printed on: January-10-2018**



IPSCO

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# $H_2S$ Drilling Operation Plan

1. **All Company and Contract personnel admitted on location must be trained by a qualified $H_2S$ safety instructor to the following:**
    a. Characteristics of $H_2S$
    b. Physical effects and hazards
    c. Principal and operation of $H_2s$ detectors, warning system and briefing areas
    d. Evacuation procedure, routes and first aid
    e. Proper use of safety equipment and life support systems
    f. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

2. **Briefing Area:**
    a. Two perpendicular areas will be designated by signs and readily accessible.
    b. Upon location entry there will be a designated area to establish all safety compliance criteria (1.) has been met.

3. **$H_2S$ Detection and Alarm Systems:**
    a. $H_2S$ sensors/detectors shall be located on the drilling rig floor, in the base of the sub structure/cellar area, and on the mud pits in the shale shaker area. Additional $H_2S$ detectors may be placed as deemed necessary. All detectors will be set to initiate visual alarm at 10 ppm and visual with audible at 14 ppm and all equipment will be calibrated every 30 days or as needed.
    b. An audio alarm will be installed on the derrick floor and in the top doghouse.

4. **Protective Equipment for Essential Personnel:**
    a. **Breathing Apparatus:**
        i. Rescue Packs (SCBA) - 1 Unit shall be placed at each briefing area.
        ii. Two (SCBA) Units will be stored in safety trailer on location.
        iii. Work/Escape packs - 1 Unit will be available on rig floor in doghouse for emergency evacuation for driller.
    b. **Auxiliary Rescue Equipment:**
        i. Stretcher
        ii. 2 - OSHA full body harnesses
        iii. 100 ft. 5/8" OSHA approved rope
        iv. 1 - 20# class ABC fire extinguisher

5. **Windsock and/or Wind Streamers:**
    a. Windsock at mud pit area should be high enough to be visible.
    b. Windsock on the rig floor should be high enough to be visible.

6. **Communication:**
    a. While working under mask scripting boards will be used for communication where applicable.
    b. Hand signals will be used when script boards are not applicable.

c. Two way radios will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at Drilling Foreman's Office.

7. **Drill Stem Testing:** - No Planned DST at this time.

8. **Mud program:**
   a. If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

9. **Metallurgy:**

   a. All drill strings, casing, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for $H_2S$ service.
   b. Drilling Contractor supervisor will be required to be familiar with the effect $H_2S$ has on tubular goods and other mechanical equipment provided through contractor.

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# $H_2S$ Contingency Plan

## Emergency Procedures

In the event of a release of $H_2S$, the first responder(s) must:

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with $H_2S$ monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response.
- Take precautions to avoid personal injury during this operation.
- Contact Operator and/or local officials the aid in operation. See list of phone numbers attached.
- Have received training in the:
    - Detection of $H_2S$ and
    - Measures for protection against the gas,
    - Equipment used for protection and emergency response.

## Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide ($SO_2$). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

## Characteristics of $H_2S$ and $SO_2$

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | $H_2S$ | 1.189 Air=1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | $SO_2$ | 2.21 Air=1 | 2 ppm | N/A | 1000 ppm |

## Contacting Authorities

Ameredev Operating LLC personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including direction to site. The following call list of essential and potential responders has been prepared for use during a release. Ameredev Operating LLC's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER)

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# $H_2S$ Contingency Plan

| Ameredev Operating LLC – Emergency Phone 737-300-4799 | | | |
|---|---|---|---|
| Key Personnel: | | | |
| Name | Title | Office | Mobile |
| Floyd Hammond | Chief Operating officer | 737-300-4724 | 512-783-6810 |
| Zachary Boyd | Operations Superintendent | 737-300-4725 | 432-385-6996 |
| Blake Estrada | Construction Foreman | | 432-385-5831 |

| **Artesia** | |
|---|---|
| Ambulance | 911 |
| State Police | 575-746-2703 |
| City Police | 575-746-2703 |
| Sheriff's Office | 575-746-9888 |
| Fire Department | 575-746-2701 |
| Local Emergency Planning Committee | 575-746-2122 |
| New Mexico Oil Conservation Division | 575-748-1283 |
| **Carlsbad** | |
| Ambulance | 911 |
| State Police | 575-885-3137 |
| City Police | 575-885-2111 |
| Sheriff's Office | 575-887-7551 |
| Fire Department | 575-887-3798 |
| Local Emergency Planning Committee | 575-887-6544 |
| US Bureau of Land Management | 575-887-6544 |
| **Santa Fe** | |
| New Mexico Emergency Response Commission (Santa Fe) | 505-476-9600 |
| New Mexico Emergency Response Commission (Santa Fe) 24 Hrs | 505-827-9126 |
| New Mexico State Emergency Operations Center | 505-476-9635 |
| **National** | |
| National Emergency Response Center (Washington, D.C.) | 800-424-8802 |
| **Medical** | |
| Flight for Life - 4000 24th St.; Lubbock, TX | 806-743-9911 |
| Aerocare - R3, Box 49F; Lubbock, TX | 806-747-8923 |
| Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM | 505-842-4433 |
| .'SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM | 505-842-4949 |

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# Ameredev Operating, LLC

**Lea County, NM (NAD83 NME)**
**(Nandina Fed) Sec-31_T-25-S_R-36-E**
**Nandina Fed Com 25-36-31#126H**

**OWB**

**Plan: Plan #1**

# Standard Planning Report

**10 August, 2018**

INTREPID

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

| **Project** | Lea County, NM (NAD83 NME) | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

| **Site** | (Nandina Fed) Sec-31_T-25-S_R-36-E | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 394,412.00 usft | **Latitude:** | 32° 4' 48.458 N |
| **From:** | Map | **Easting:** | 860,517.00 usft | **Longitude:** | 103° 18' 10.115 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.55 ° |

| **Well** | Nandina Fed Com 25-36-31 #126H | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 6.0 usft | **Northing:** | 394,418.00 usft | **Latitude:** | 32° 4' 48.462 N |
| | **+E/-W** | 585.0 usft | **Easting:** | 861,102.00 usft | **Longitude:** | 103° 18' 3.315 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,013.0 usft |

| **Wellbore** | OWB | | | | |
|---|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2015 | 08/07/18 | 6.69 | 59.96 | 47,766.59401665 |

| **Design** | Plan #1 | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PROTOTYPE | **Tie On Depth:** | 0.0 |
| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** | |
| | 0.0 | 0.0 | 0.0 | 359.17 | |

**Plan Survey Tool Program** **Date** 08/10/18

| | Depth From (usft) | Depth To (usft) | Survey (Wellbore) | Tool Name | Remarks |
|---|---|---|---|---|---|
| 1 | 0.0 | 22,299.7 | Plan #1 (OWB) | MWD | |
| | | | | MWD - Standard | |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,650.2 | 3.00 | 130.50 | 1,650.2 | -2.6 | 3.0 | 2.00 | 2.00 | 0.00 | 130.50 | |
| 3,767.8 | 3.00 | 130.50 | 3,764.8 | -74.6 | 87.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,918.0 | 0.00 | 0.00 | 3,915.0 | -77.2 | 90.4 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 11,720.0 | 0.00 | 0.00 | 11,717.0 | -77.2 | 90.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 12,620.0 | 90.00 | 349.70 | 12,290.0 | 486.5 | -12.0 | 10.00 | 10.00 | 0.00 | 349.70 | |
| 13,107.3 | 90.00 | 359.44 | 12,290.0 | 971.0 | -58.1 | 2.00 | 0.00 | 2.00 | 90.00 | |
| 22,169.7 | 90.00 | 359.44 | 12,290.0 | 10,033.0 | -146.0 | 0.00 | 0.00 | 0.00 | 0.00 | LTP (Nandina Fed ( |
| 22,299.7 | 90.00 | 359.44 | 12,290.0 | 10,163.0 | -147.3 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL (Nandina Fe( |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 600.0 | 0.00 | 0.00 | 600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 700.0 | 0.00 | 0.00 | 700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 800.0 | 0.00 | 0.00 | 800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 900.0 | 0.00 | 0.00 | 900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,035.0 | 0.00 | 0.00 | 1,035.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **Rustler** | | | | | | | | | |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,160.0 | 0.00 | 0.00 | 1,160.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **13.375"** | | | | | | | | | |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| **BUILD - 2.00** | | | | | | | | | |
| 1,512.0 | 0.24 | 130.50 | 1,512.0 | 0.0 | 0.0 | 0.0 | 2.00 | 2.00 | 0.00 |
| **Salado** | | | | | | | | | |
| 1,600.0 | 2.00 | 130.50 | 1,600.0 | -1.1 | 1.3 | -1.2 | 2.00 | 2.00 | 0.00 |
| 1,650.2 | 3.00 | 130.50 | 1,650.2 | -2.6 | 3.0 | -2.6 | 2.00 | 2.00 | 0.00 |
| **HOLD - 2117.6 at 1650.2 MD** | | | | | | | | | |
| 1,700.0 | 3.00 | 130.50 | 1,699.9 | -4.3 | 5.0 | -4.3 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 3.00 | 130.50 | 1,799.7 | -7.7 | 9.0 | -7.8 | 0.00 | 0.00 | 0.00 |
| 1,900.0 | 3.00 | 130.50 | 1,899.6 | -11.1 | 13.0 | -11.2 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 3.00 | 130.50 | 1,999.5 | -14.5 | 16.9 | -14.7 | 0.00 | 0.00 | 0.00 |
| 2,100.0 | 3.00 | 130.50 | 2,099.3 | -17.9 | 20.9 | -18.2 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 3.00 | 130.50 | 2,199.2 | -21.3 | 24.9 | -21.6 | 0.00 | 0.00 | 0.00 |
| 2,300.0 | 3.00 | 130.50 | 2,299.0 | -24.7 | 28.9 | -25.1 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 3.00 | 130.50 | 2,398.9 | -28.1 | 32.9 | -28.6 | 0.00 | 0.00 | 0.00 |
| 2,500.0 | 3.00 | 130.50 | 2,498.8 | -31.5 | 36.9 | -32.0 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 3.00 | 130.50 | 2,598.6 | -34.9 | 40.9 | -35.5 | 0.00 | 0.00 | 0.00 |
| 2,700.0 | 3.00 | 130.50 | 2,698.5 | -38.3 | 44.8 | -38.9 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 3.00 | 130.50 | 2,798.4 | -41.7 | 48.8 | -42.4 | 0.00 | 0.00 | 0.00 |
| 2,900.0 | 3.00 | 130.50 | 2,898.2 | -45.1 | 52.8 | -45.9 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 3.00 | 130.50 | 2,998.1 | -48.5 | 56.8 | -49.3 | 0.00 | 0.00 | 0.00 |
| 3,100.0 | 3.00 | 130.50 | 3,097.9 | -51.9 | 60.8 | -52.8 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 3.00 | 130.50 | 3,197.8 | -55.3 | 64.8 | -56.2 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 3.00 | 130.50 | 3,297.7 | -58.7 | 68.8 | -59.7 | 0.00 | 0.00 | 0.00 |
| 3,397.5 | 3.00 | 130.50 | 3,395.0 | -62.0 | 72.6 | -63.1 | 0.00 | 0.00 | 0.00 |
| **Tansill** | | | | | | | | | |
| 3,400.0 | 3.00 | 130.50 | 3,397.5 | -62.1 | 72.7 | -63.2 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 3.00 | 130.50 | 3,497.4 | -65.5 | 76.7 | -66.6 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 3.00 | 130.50 | 3,597.3 | -68.9 | 80.7 | -70.1 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 3.00 | 130.50 | 3,697.1 | -72.3 | 84.7 | -73.6 | 0.00 | 0.00 | 0.00 |
| 3,767.8 | 3.00 | 130.50 | 3,764.8 | -74.6 | 87.4 | -75.9 | 0.00 | 0.00 | 0.00 |
| **DROP -2.00** | | | | | | | | | |
| 3,800.0 | 2.36 | 130.50 | 3,797.0 | -75.6 | 88.6 | -76.9 | 2.00 | -2.00 | 0.00 |
| 3,809.0 | 2.18 | 130.50 | 3,806.0 | -75.9 | 88.8 | -77.1 | 2.00 | -2.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| **Capitan** | | | | | | | | | |
| 3,900.0 | 0.36 | 130.50 | 3,897.0 | -77.2 | 90.4 | -78.5 | 2.00 | -2.00 | 0.00 |
| 3,918.0 | 0.00 | 0.00 | 3,915.0 | -77.2 | 90.4 | -78.5 | 2.00 | -2.00 | 0.00 |
| **HOLD - 7802.0 at 3918.0 MD** | | | | | | | | | |
| 4,000.0 | 0.00 | 0.00 | 3,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 0.00 | 0.00 | 4,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 0.00 | 0.00 | 4,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 0.00 | 0.00 | 4,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 0.00 | 0.00 | 4,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 0.00 | 0.00 | 4,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 0.00 | 0.00 | 4,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,700.0 | 0.00 | 0.00 | 4,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 0.00 | 0.00 | 4,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 0.00 | 0.00 | 4,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 0.00 | 0.00 | 4,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,043.0 | 0.00 | 0.00 | 5,040.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Lamar** | | | | | | | | | |
| 5,093.0 | 0.00 | 0.00 | 5,090.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **9.625"** | | | | | | | | | |
| 5,100.0 | 0.00 | 0.00 | 5,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,150.0 | 0.00 | 0.00 | 5,147.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Bell Canyon** | | | | | | | | | |
| 5,200.0 | 0.00 | 0.00 | 5,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,300.0 | 0.00 | 0.00 | 5,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 0.00 | 0.00 | 5,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 0.00 | 0.00 | 5,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 0.00 | 0.00 | 5,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 0.00 | 0.00 | 5,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 0.00 | 0.00 | 5,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 0.00 | 0.00 | 5,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 0.00 | 0.00 | 5,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 0.00 | 0.00 | 6,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 6,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 0.00 | 0.00 | 6,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 6,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 0.00 | 0.00 | 6,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 0.00 | 0.00 | 6,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 0.00 | 0.00 | 6,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 6,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 0.00 | 0.00 | 7,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 7,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,225.0 | 0.00 | 0.00 | 7,222.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Brushy Canyon** | | | | | | | | | |
| 7,300.0 | 0.00 | 0.00 | 7,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 7,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 0.00 | 0.00 | 7,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 0.00 | 0.00 | 7,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 0.00 | 0.00 | 7,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 0.00 | 0.00 | 7,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 0.00 | 0.00 | 7,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 0.00 | 0.00 | 7,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 8,100.0 | 0.00 | 0.00 | 8,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 0.00 | 0.00 | 8,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 0.00 | 0.00 | 8,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,332.0 | 0.00 | 0.00 | 8,329.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Bone Spring Lime** | | | | | | | | | |
| 8,400.0 | 0.00 | 0.00 | 8,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 0.00 | 0.00 | 8,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 0.00 | 0.00 | 8,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 0.00 | 0.00 | 8,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 0.00 | 0.00 | 8,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 0.00 | 0.00 | 8,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 0.00 | 0.00 | 8,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 0.00 | 0.00 | 9,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 0.00 | 0.00 | 9,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 0.00 | 0.00 | 9,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 0.00 | 0.00 | 9,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 0.00 | 0.00 | 9,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 0.00 | 0.00 | 9,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,672.0 | 0.00 | 0.00 | 9,669.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **First Bone Spring** | | | | | | | | | |
| 9,700.0 | 0.00 | 0.00 | 9,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 0.00 | 0.00 | 9,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 0.00 | 0.00 | 9,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 0.00 | 0.00 | 9,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 0.00 | 0.00 | 10,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 0.00 | 0.00 | 10,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,226.0 | 0.00 | 0.00 | 10,223.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Second Bone Spring** | | | | | | | | | |
| 10,300.0 | 0.00 | 0.00 | 10,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 0.00 | 0.00 | 10,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 0.00 | 0.00 | 10,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 0.00 | 0.00 | 10,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 0.00 | 0.00 | 10,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,760.0 | 0.00 | 0.00 | 10,757.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Third Bone Spring Upper** | | | | | | | | | |
| 10,800.0 | 0.00 | 0.00 | 10,797.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 0.00 | 0.00 | 10,897.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 0.00 | 0.00 | 10,997.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 0.00 | 0.00 | 11,097.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 0.00 | 0.00 | 11,197.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 0.00 | 0.00 | 11,297.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,361.0 | 0.00 | 0.00 | 11,358.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Third Bone Spring** | | | | | | | | | |
| 11,400.0 | 0.00 | 0.00 | 11,397.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 0.00 | 0.00 | 11,497.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 0.00 | 0.00 | 11,597.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,637.0 | 0.00 | 0.00 | 11,634.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **Wolfcamp** | | | | | | | | | |
| 11,700.0 | 0.00 | 0.00 | 11,697.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| 11,720.0 | 0.00 | 0.00 | 11,717.0 | -77.2 | 90.4 | -78.5 | 0.00 | 0.00 | 0.00 |
| **KOP - Build 10.00 - 7.625"** | | | | | | | | | |
| 11,750.0 | 3.00 | 349.70 | 11,746.9 | -76.4 | 90.3 | -77.7 | 10.00 | 10.00 | 0.00 |
| 11,800.0 | 8.00 | 349.70 | 11,796.7 | -71.7 | 89.4 | -73.0 | 10.00 | 10.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 11,850.0 | 13.00 | 349.70 | 11,845.8 | -62.8 | 87.8 | -64.0 | 10.00 | 10.00 | 0.00 |
| 11,900.0 | 18.00 | 349.70 | 11,894.0 | -49.6 | 85.4 | -50.9 | 10.00 | 10.00 | 0.00 |
| 11,949.1 | 22.91 | 349.70 | 11,940.0 | -32.8 | 82.3 | -33.9 | 10.00 | 10.00 | 0.00 |
| **Wolfcamp B** | | | | | | | | | |
| 11,950.0 | 23.00 | 349.70 | 11,940.8 | -32.4 | 82.3 | -33.6 | 10.00 | 10.00 | 0.00 |
| 12,000.0 | 28.00 | 349.70 | 11,985.9 | -11.2 | 78.4 | -12.4 | 10.00 | 10.00 | 0.00 |
| 12,050.0 | 33.00 | 349.70 | 12,029.0 | 13.7 | 73.9 | 12.6 | 10.00 | 10.00 | 0.00 |
| 12,100.0 | 38.00 | 349.70 | 12,069.7 | 42.3 | 68.7 | 41.3 | 10.00 | 10.00 | 0.00 |
| 12,150.0 | 43.00 | 349.70 | 12,107.7 | 74.2 | 62.9 | 73.3 | 10.00 | 10.00 | 0.00 |
| 12,200.0 | 48.00 | 349.70 | 12,142.8 | 109.3 | 56.5 | 108.5 | 10.00 | 10.00 | 0.00 |
| 12,250.0 | 53.00 | 349.70 | 12,174.6 | 147.2 | 49.6 | 146.5 | 10.00 | 10.00 | 0.00 |
| 12,300.0 | 58.00 | 349.70 | 12,202.9 | 187.8 | 42.2 | 187.1 | 10.00 | 10.00 | 0.00 |
| 12,306.6 | 58.66 | 349.70 | 12,206.4 | 193.3 | 41.2 | 192.7 | 10.00 | 10.00 | 0.00 |
| **FTP (Nandina Fed Com 25-36-31 #126H)** | | | | | | | | | |
| 12,350.0 | 63.00 | 349.70 | 12,227.5 | 230.6 | 34.5 | 230.0 | 10.00 | 10.00 | 0.00 |
| 12,400.0 | 68.00 | 349.70 | 12,248.2 | 275.3 | 26.3 | 274.9 | 10.00 | 10.00 | 0.00 |
| 12,450.0 | 73.00 | 349.70 | 12,264.9 | 321.7 | 17.9 | 321.4 | 10.00 | 10.00 | 0.00 |
| 12,500.0 | 78.00 | 349.70 | 12,277.4 | 369.3 | 9.3 | 369.1 | 10.00 | 10.00 | 0.00 |
| 12,550.0 | 83.00 | 349.70 | 12,285.7 | 417.8 | 0.4 | 417.7 | 10.00 | 10.00 | 0.00 |
| 12,600.0 | 88.00 | 349.70 | 12,289.6 | 466.8 | -8.5 | 466.9 | 10.00 | 10.00 | 0.00 |
| 12,620.0 | 90.00 | 349.70 | 12,290.0 | 486.5 | -12.0 | 486.6 | 10.00 | 10.00 | 0.00 |
| **EOC/TURN - DLS 2.00 TFO 90.00 - 5.5"** | | | | | | | | | |
| 12,700.0 | 90.00 | 351.30 | 12,290.0 | 565.4 | -25.2 | 565.7 | 2.00 | 0.00 | 2.00 |
| 12,800.0 | 90.00 | 353.30 | 12,290.0 | 664.5 | -38.6 | 665.0 | 2.00 | 0.00 | 2.00 |
| 12,900.0 | 90.00 | 355.30 | 12,290.0 | 764.0 | -48.6 | 764.6 | 2.00 | 0.00 | 2.00 |
| 13,000.0 | 90.00 | 357.30 | 12,290.0 | 863.8 | -55.0 | 864.5 | 2.00 | 0.00 | 2.00 |
| 13,107.3 | 90.00 | 359.44 | 12,290.0 | 971.0 | -58.1 | 971.7 | 2.00 | 0.00 | 2.00 |
| **HOLD - 9062.5 at 13107.3 MD** | | | | | | | | | |
| 13,200.0 | 90.00 | 359.44 | 12,290.0 | 1,063.7 | -59.0 | 1,064.4 | 0.00 | 0.00 | 0.00 |
| 13,255.4 | 90.00 | 359.44 | 12,290.0 | 1,119.1 | -59.5 | 1,119.8 | 0.00 | 0.00 | 0.00 |
| **Sec 31 1320' FSL -9244' FNL, 1672' FEL** | | | | | | | | | |
| 13,300.0 | 90.00 | 359.44 | 12,290.0 | 1,163.7 | -59.9 | 1,164.4 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 90.00 | 359.44 | 12,290.0 | 1,263.7 | -60.9 | 1,264.4 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 359.44 | 12,290.0 | 1,363.7 | -61.9 | 1,364.4 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.00 | 359.44 | 12,290.0 | 1,463.7 | -62.9 | 1,464.4 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 90.00 | 359.44 | 12,290.0 | 1,563.7 | -63.8 | 1,564.4 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 90.00 | 359.44 | 12,290.0 | 1,663.7 | -64.8 | 1,664.4 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 90.00 | 359.44 | 12,290.0 | 1,763.7 | -65.8 | 1,764.4 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 90.00 | 359.44 | 12,290.0 | 1,863.7 | -66.7 | 1,864.4 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 90.00 | 359.44 | 12,290.0 | 1,963.7 | -67.7 | 1,964.4 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 90.00 | 359.44 | 12,290.0 | 2,063.7 | -68.7 | 2,064.4 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 90.00 | 359.44 | 12,290.0 | 2,163.7 | -69.6 | 2,164.4 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 90.00 | 359.44 | 12,290.0 | 2,263.6 | -70.6 | 2,264.4 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 90.00 | 359.44 | 12,290.0 | 2,363.6 | -71.6 | 2,364.4 | 0.00 | 0.00 | 0.00 |
| 14,575.4 | 90.00 | 359.44 | 12,290.0 | 2,439.0 | -72.3 | 2,439.8 | 0.00 | 0.00 | 0.00 |
| **Sec 31 2640' FSL - 7924' FNL, 1672' FEL** | | | | | | | | | |
| 14,600.0 | 90.00 | 359.44 | 12,290.0 | 2,463.6 | -72.6 | 2,464.4 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 90.00 | 359.44 | 12,290.0 | 2,563.6 | -73.5 | 2,564.4 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 90.00 | 359.44 | 12,290.0 | 2,663.6 | -74.5 | 2,664.4 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 90.00 | 359.44 | 12,290.0 | 2,763.6 | -75.5 | 2,764.4 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 90.00 | 359.44 | 12,290.0 | 2,863.6 | -76.4 | 2,864.4 | 0.00 | 0.00 | 0.00 |
| 15,100.0 | 90.00 | 359.44 | 12,290.0 | 2,963.6 | -77.4 | 2,964.4 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 90.00 | 359.44 | 12,290.0 | 3,063.6 | -78.4 | 3,064.4 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 15,300.0 | 90.00 | 359.44 | 12,290.0 | 3,163.6 | -79.4 | 3,164.4 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 90.00 | 359.44 | 12,290.0 | 3,263.6 | -80.3 | 3,264.4 | 0.00 | 0.00 | 0.00 |
| 15,500.0 | 90.00 | 359.44 | 12,290.0 | 3,363.6 | -81.3 | 3,364.4 | 0.00 | 0.00 | 0.00 |
| 15,600.0 | 90.00 | 359.44 | 12,290.0 | 3,463.6 | -82.3 | 3,464.4 | 0.00 | 0.00 | 0.00 |
| 15,700.0 | 90.00 | 359.44 | 12,290.0 | 3,563.6 | -83.2 | 3,564.4 | 0.00 | 0.00 | 0.00 |
| 15,800.0 | 90.00 | 359.44 | 12,290.0 | 3,663.6 | -84.2 | 3,664.4 | 0.00 | 0.00 | 0.00 |
| 15,900.0 | 90.00 | 359.44 | 12,290.0 | 3,763.6 | -85.2 | 3,764.4 | 0.00 | 0.00 | 0.00 |
| 16,000.0 | 90.00 | 359.44 | 12,290.0 | 3,863.6 | -86.1 | 3,864.4 | 0.00 | 0.00 | 0.00 |
| 16,100.0 | 90.00 | 359.44 | 12,290.0 | 3,963.6 | -87.1 | 3,964.4 | 0.00 | 0.00 | 0.00 |
| 16,200.0 | 90.00 | 359.44 | 12,290.0 | 4,063.6 | -88.1 | 4,064.4 | 0.00 | 0.00 | 0.00 |
| 16,300.0 | 90.00 | 359.44 | 12,290.0 | 4,163.6 | -89.1 | 4,164.4 | 0.00 | 0.00 | 0.00 |
| 16,400.0 | 90.00 | 359.44 | 12,290.0 | 4,263.6 | -90.0 | 4,264.4 | 0.00 | 0.00 | 0.00 |
| 16,500.0 | 90.00 | 359.44 | 12,290.0 | 4,363.5 | -91.0 | 4,364.4 | 0.00 | 0.00 | 0.00 |
| 16,600.0 | 90.00 | 359.44 | 12,290.0 | 4,463.5 | -92.0 | 4,464.4 | 0.00 | 0.00 | 0.00 |
| 16,700.0 | 90.00 | 359.44 | 12,290.0 | 4,563.5 | -92.9 | 4,564.4 | 0.00 | 0.00 | 0.00 |
| 16,800.0 | 90.00 | 359.44 | 12,290.0 | 4,663.5 | -93.9 | 4,664.4 | 0.00 | 0.00 | 0.00 |
| 16,900.0 | 90.00 | 359.44 | 12,290.0 | 4,763.5 | -94.9 | 4,764.4 | 0.00 | 0.00 | 0.00 |
| 17,000.0 | 90.00 | 359.44 | 12,290.0 | 4,863.5 | -95.8 | 4,864.4 | 0.00 | 0.00 | 0.00 |
| 17,100.0 | 90.00 | 359.44 | 12,290.0 | 4,963.5 | -96.8 | 4,964.4 | 0.00 | 0.00 | 0.00 |
| 17,200.0 | 90.00 | 359.44 | 12,290.0 | 5,063.5 | -97.8 | 5,064.4 | 0.00 | 0.00 | 0.00 |
| 17,214.8 | 90.00 | 359.44 | 12,290.0 | 5,078.3 | -97.9 | 5,079.2 | 0.00 | 0.00 | 0.00 |
| **Sec 31 & 30 Cross -5284' FNL, 1672' FEL** | | | | | | | | | |
| 17,300.0 | 90.00 | 359.44 | 12,290.0 | 5,163.5 | -98.8 | 5,164.4 | 0.00 | 0.00 | 0.00 |
| 17,400.0 | 90.00 | 359.44 | 12,290.0 | 5,263.5 | -99.7 | 5,264.4 | 0.00 | 0.00 | 0.00 |
| 17,500.0 | 90.00 | 359.44 | 12,290.0 | 5,363.5 | -100.7 | 5,364.4 | 0.00 | 0.00 | 0.00 |
| 17,600.0 | 90.00 | 359.44 | 12,290.0 | 5,463.5 | -101.7 | 5,464.4 | 0.00 | 0.00 | 0.00 |
| 17,700.0 | 90.00 | 359.44 | 12,290.0 | 5,563.5 | -102.6 | 5,564.4 | 0.00 | 0.00 | 0.00 |
| 17,800.0 | 90.00 | 359.44 | 12,290.0 | 5,663.5 | -103.6 | 5,664.4 | 0.00 | 0.00 | 0.00 |
| 17,900.0 | 90.00 | 359.44 | 12,290.0 | 5,763.5 | -104.6 | 5,764.4 | 0.00 | 0.00 | 0.00 |
| 18,000.0 | 90.00 | 359.44 | 12,290.0 | 5,863.5 | -105.5 | 5,864.4 | 0.00 | 0.00 | 0.00 |
| 18,100.0 | 90.00 | 359.44 | 12,290.0 | 5,963.5 | -106.5 | 5,964.4 | 0.00 | 0.00 | 0.00 |
| 18,200.0 | 90.00 | 359.44 | 12,290.0 | 6,063.5 | -107.5 | 6,064.4 | 0.00 | 0.00 | 0.00 |
| 18,300.0 | 90.00 | 359.44 | 12,290.0 | 6,163.5 | -108.5 | 6,164.4 | 0.00 | 0.00 | 0.00 |
| 18,400.0 | 90.00 | 359.44 | 12,290.0 | 6,263.5 | -109.4 | 6,264.4 | 0.00 | 0.00 | 0.00 |
| 18,500.0 | 90.00 | 359.44 | 12,290.0 | 6,363.5 | -110.4 | 6,364.4 | 0.00 | 0.00 | 0.00 |
| 18,534.8 | 90.00 | 359.44 | 12,290.0 | 6,398.3 | -110.7 | 6,399.2 | 0.00 | 0.00 | 0.00 |
| **Sec 30 1320' FSL -3964' FNL, 1672' FEL** | | | | | | | | | |
| 18,600.0 | 90.00 | 359.44 | 12,290.0 | 6,463.4 | -111.4 | 6,464.4 | 0.00 | 0.00 | 0.00 |
| 18,700.0 | 90.00 | 359.44 | 12,290.0 | 6,563.4 | -112.3 | 6,564.4 | 0.00 | 0.00 | 0.00 |
| 18,800.0 | 90.00 | 359.44 | 12,290.0 | 6,663.4 | -113.3 | 6,664.4 | 0.00 | 0.00 | 0.00 |
| 18,900.0 | 90.00 | 359.44 | 12,290.0 | 6,763.4 | -114.3 | 6,764.4 | 0.00 | 0.00 | 0.00 |
| 19,000.0 | 90.00 | 359.44 | 12,290.0 | 6,863.4 | -115.2 | 6,864.4 | 0.00 | 0.00 | 0.00 |
| 19,100.0 | 90.00 | 359.44 | 12,290.0 | 6,963.4 | -116.2 | 6,964.4 | 0.00 | 0.00 | 0.00 |
| 19,200.0 | 90.00 | 359.44 | 12,290.0 | 7,063.4 | -117.2 | 7,064.4 | 0.00 | 0.00 | 0.00 |
| 19,300.0 | 90.00 | 359.44 | 12,290.0 | 7,163.4 | -118.2 | 7,164.4 | 0.00 | 0.00 | 0.00 |
| 19,400.0 | 90.00 | 359.44 | 12,290.0 | 7,263.4 | -119.1 | 7,264.4 | 0.00 | 0.00 | 0.00 |
| 19,500.0 | 90.00 | 359.44 | 12,290.0 | 7,363.4 | -120.1 | 7,364.4 | 0.00 | 0.00 | 0.00 |
| 19,600.0 | 90.00 | 359.44 | 12,290.0 | 7,463.4 | -121.1 | 7,464.4 | 0.00 | 0.00 | 0.00 |
| 19,700.0 | 90.00 | 359.44 | 12,290.0 | 7,563.4 | -122.0 | 7,564.4 | 0.00 | 0.00 | 0.00 |
| 19,800.0 | 90.00 | 359.44 | 12,290.0 | 7,663.4 | -123.0 | 7,664.4 | 0.00 | 0.00 | 0.00 |
| 19,900.0 | 90.00 | 359.44 | 12,290.0 | 7,763.4 | -124.0 | 7,764.4 | 0.00 | 0.00 | 0.00 |
| 20,000.0 | 90.00 | 359.44 | 12,290.0 | 7,863.4 | -124.9 | 7,864.4 | 0.00 | 0.00 | 0.00 |
| 20,100.0 | 90.00 | 359.44 | 12,290.0 | 7,963.4 | -125.9 | 7,964.4 | 0.00 | 0.00 | 0.00 |
| 20,200.0 | 90.00 | 359.44 | 12,290.0 | 8,063.4 | -126.9 | 8,064.4 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 20,300.0 | 90.00 | 359.44 | 12,290.0 | 8,163.4 | -127.9 | 8,164.4 | 0.00 | 0.00 | 0.00 |
| 20,400.0 | 90.00 | 359.44 | 12,290.0 | 8,263.4 | -128.8 | 8,264.4 | 0.00 | 0.00 | 0.00 |
| 20,500.0 | 90.00 | 359.44 | 12,290.0 | 8,363.4 | -129.8 | 8,364.4 | 0.00 | 0.00 | 0.00 |
| 20,600.0 | 90.00 | 359.44 | 12,290.0 | 8,463.4 | -130.8 | 8,464.4 | 0.00 | 0.00 | 0.00 |
| 20,700.0 | 90.00 | 359.44 | 12,290.0 | 8,563.3 | -131.7 | 8,564.4 | 0.00 | 0.00 | 0.00 |
| 20,800.0 | 90.00 | 359.44 | 12,290.0 | 8,663.3 | -132.7 | 8,664.4 | 0.00 | 0.00 | 0.00 |
| 20,900.0 | 90.00 | 359.44 | 12,290.0 | 8,763.3 | -133.7 | 8,764.4 | 0.00 | 0.00 | 0.00 |
| 21,000.0 | 90.00 | 359.44 | 12,290.0 | 8,863.3 | -134.7 | 8,864.4 | 0.00 | 0.00 | 0.00 |
| 21,100.0 | 90.00 | 359.44 | 12,290.0 | 8,963.3 | -135.6 | 8,964.4 | 0.00 | 0.00 | 0.00 |
| 21,200.0 | 90.00 | 359.44 | 12,290.0 | 9,063.3 | -136.6 | 9,064.4 | 0.00 | 0.00 | 0.00 |
| 21,300.0 | 90.00 | 359.44 | 12,290.0 | 9,163.3 | -137.6 | 9,164.4 | 0.00 | 0.00 | 0.00 |
| 21,400.0 | 90.00 | 359.44 | 12,290.0 | 9,263.3 | -138.5 | 9,264.4 | 0.00 | 0.00 | 0.00 |
| 21,500.0 | 90.00 | 359.44 | 12,290.0 | 9,363.3 | -139.5 | 9,364.3 | 0.00 | 0.00 | 0.00 |
| 21,600.0 | 90.00 | 359.44 | 12,290.0 | 9,463.3 | -140.5 | 9,464.3 | 0.00 | 0.00 | 0.00 |
| 21,700.0 | 90.00 | 359.44 | 12,290.0 | 9,563.3 | -141.4 | 9,564.3 | 0.00 | 0.00 | 0.00 |
| 21,800.0 | 90.00 | 359.44 | 12,290.0 | 9,663.3 | -142.4 | 9,664.3 | 0.00 | 0.00 | 0.00 |
| 21,900.0 | 90.00 | 359.44 | 12,290.0 | 9,763.3 | -143.4 | 9,764.3 | 0.00 | 0.00 | 0.00 |
| 22,000.0 | 90.00 | 359.44 | 12,290.0 | 9,863.3 | -144.4 | 9,864.3 | 0.00 | 0.00 | 0.00 |
| 22,100.0 | 90.00 | 359.44 | 12,290.0 | 9,963.3 | -145.3 | 9,964.3 | 0.00 | 0.00 | 0.00 |
| 22,169.7 | 90.00 | 359.44 | 12,290.0 | 10,033.0 | -146.0 | 10,034.1 | 0.00 | 0.00 | 0.00 |
| **LTP - 130.0 hold at 22169.7 MD - LTP (Nandina Fed Com 25-36-31 #126H)** | | | | | | | | | |
| 22,200.0 | 90.00 | 359.44 | 12,290.0 | 10,063.3 | -146.3 | 10,064.3 | 0.00 | 0.00 | 0.00 |
| 22,299.7 | 90.00 | 359.44 | 12,290.0 | 10,163.0 | -147.3 | 10,164.1 | 0.00 | 0.00 | 0.00 |
| **PBHL at 22299.7 - 200' FNL, 1672' FEL - PBHL (Nandina Fed Com 25-36-31 #126H)** | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| LTP (Nandina Fed Co<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 12,290.0 | 10,033.0 | -146.0 | 404,451.00 | 860,956.00 | 32° 6' 27.749 N | 103° 18' 3.896 W |
| FTP (Nandina Fed Cc<br>- plan misses target center by 138.2usft at 12306.6usft MD (12206.4 TVD, 193.3 N, 41.2 E)<br>- Point | 0.00 | 0.00 | 12,290.0 | 129.0 | -48.0 | 394,547.00 | 861,054.00 | 32° 4' 49.743 N | 103° 18' 3.859 W |
| PBHL (Nandina Fed C<br>- plan misses target center by 0.3usft at 22299.7usft MD (12290.0 TVD, 10163.0 N, -147.3 E)<br>- Point | 0.00 | 0.00 | 12,290.0 | 10,163.0 | -147.0 | 404,581.00 | 860,955.00 | 32° 6' 29.035 N | 103° 18' 3.893 W |

**Casing Points**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (") | Hole Diameter (") |
|---|---|---|---|---|
| 1,160.0 | 1,160.0 | 13.375" | 13-3/8 | 17-1/2 |
| 5,093.0 | 5,090.0 | 9.625" | 9-5/8 | 12-1/4 |
| 11,720.0 | 11,717.0 | 7.625" | 7-5/8 | 8-3/4 |
| 12,620.0 | 12,290.0 | 5.5" | 5-1/2 | 6-3/4 |

| | | | |
|---|---|---|---|
| **Database:** | EDM5000 | **Local Co-ordinate Reference:** | Well Nandina Fed Com 25-36-31 #126H |
| **Company:** | Ameredev Operating, LLC | **TVD Reference:** | KB @ 3040.0usft (Rig) |
| **Project:** | Lea County, NM (NAD83 NME) | **MD Reference:** | KB @ 3040.0usft (Rig) |
| **Site:** | (Nandina Fed) Sec-31_T-25-S_R-36-E | **North Reference:** | Grid |
| **Well:** | Nandina Fed Com 25-36-31 #126H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OWB | | |
| **Design:** | Plan #1 | | |

**Formations**

| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 1,035.0 | 1,035.0 | Rustler | | | |
| 1,512.0 | 1,512.0 | Salado | | | |
| 3,397.5 | 3,395.0 | Tansill | | | |
| 3,809.0 | 3,806.0 | Capitan | | | |
| 5,043.0 | 5,040.0 | Lamar | | | |
| 5,150.0 | 5,147.0 | Bell Canyon | | | |
| 7,225.0 | 7,222.0 | Brushy Canyon | | | |
| 8,332.0 | 8,329.0 | Bone Spring Lime | | | |
| 9,672.0 | 9,669.0 | First Bone Spring | | | |
| 10,226.0 | 10,223.0 | Second Bone Spring | | | |
| 10,760.0 | 10,757.0 | Third Bone Spring Upper | | | |
| 11,361.0 | 11,358.0 | Third Bone Spring | | | |
| 11,637.0 | 11,634.0 | Wolfcamp | | | |
| 11,949.1 | 11,940.0 | Wolfcamp B | | | |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 1,500.0 | 1,500.0 | 0.0 | 0.0 | BUILD - 2.00 |
| 1,650.2 | 1,650.2 | -2.6 | 3.0 | HOLD - 2117.6 at 1650.2 MD |
| 3,767.8 | 3,764.8 | -74.6 | 87.4 | DROP -2.00 |
| 3,918.0 | 3,915.0 | -77.2 | 90.4 | HOLD - 7802.0 at 3918.0 MD |
| 11,720.0 | 11,717.0 | -77.2 | 90.4 | KOP - Build 10.00 |
| 12,620.0 | 12,290.0 | 486.5 | -12.0 | EOC/TURN - DLS 2.00 TFO 90.00 |
| 13,107.3 | 12,290.0 | 971.0 | -58.1 | HOLD - 9062.5 at 13107.3 MD |
| 13,255.4 | 12,290.0 | 1,119.1 | -59.5 | Sec 31 1320' FSL -9244' FNL, 1672' FEL |
| 14,575.4 | 12,290.0 | 2,439.0 | -72.3 | Sec 31 2640' FSL - 7924' FNL, 1672' FEL |
| 17,214.8 | 12,290.0 | 5,078.3 | -97.9 | Sec 31 & 30 Cross -5284' FNL, 1672' FEL |
| 18,534.8 | 12,290.0 | 6,398.3 | -110.7 | Sec 30 1320' FSL -3964' FNL, 1672' FEL |
| 22,169.7 | 12,290.0 | 10,033.0 | -146.0 | LTP - 130.0 hold at 22169.7 MD |
| 22,299.7 | 12,290.0 | 10,163.0 | -147.3 | PBHL at 22299.7 - 200' FNL, 1672' FEL |

AMEREDEV

# Pressure Control Plan

**Pressure Control Equipment**

- Ameredev will utilize a drilling rig not capable of drilling to TD to preset Surface Casing.

- Following setting of 13-3/8" Surface Casing Ameredev will install 13-5/8 MB4 Multi Bowl Casing Head by welding on a 13-5/8 SOW x 13-5/8" 5M in combination with 13-5/8 5M x 13-5/8 10M B-Sec to Land Intm #1 and a 13-5/8 10M x 13-5/8 10M shouldered to land C-Sec to Land Intm #2 (Installation procedure witnessed and verified by a manufacturer's representative).

- Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Ameredev will install Dry Hole Cap and install Pressure gauges to monitor. Ameredev will Suspend Operations to Mob to Adjacent Wells and Drill Surface

- Ameredev will Mobilize Rig capable of drilling to TD.(Rig Capable of Drilling to TD will not Mobilize until all wells on Drilling Pad have reached TD and Tubing Head installed and Tested) Ameredev will install a 5M System Blowout Preventer (BOPE) with a 5M Annular Preventer and related equipment (BOPE). Full testing will be performed utilizing a full isolation test plug and limited to 5,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Setting of 9-5/8" Intermediate #1 will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Full testing will be performed utilizing a full isolation test plug and limited to 5,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 50% of approved working pressure (2,500psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

AMEREDEV

# Pressure Control Plan

- Before drilling >20ft of new formation under the 9-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.

- Setting of 7-5/8" Intermediate #2 will be done by landing a wellhead hanger in the 13-5/8" 5M Bowl, Cementing and setting Well Head Packing seals and testing same. (Installation procedure witnessed and verified by a manufacturer's representative) Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Full testing will be performed utilizing a full isolation test plug and limited to 10,000psi MOP of MB4 Multi Bowl Casing Head. Pressure will be held for 10 min or until provisions of test are met on all valves and rams. The 5M Annular Preventer will be tested to 100% of approved working pressure (5,000psi). Casing will be tested to 1500psi or .22 psi/ft whichever is greater for 30 minutes with <10% leak off, but will not exceed 70% of the burst rating per Onshore Order No. 2.

- Before drilling >20ft of new formation under the 7-5/8" Casing Shoe a pressure integrity test of the Casing Shoe will be performed to minimum of the MWE anticipated to control formation pressure to the next casing depth.

- Following setting of 5-1/2" Production Casing and adequate WOC time Ameredev will break 5M System Blowout Preventer (BOP) from 10M DOL-2 Casing Head, install annulus casing slips and test same (Installation procedure witnessed and verified by a manufacturer's representative) and install 11" 10M x 5-1/8" 15M Tubing Head (Installation procedure witnessed and verified by a manufacturer's representative). Ameredev will test head to 70% casing design and install Dry Hole cap with needle valve and pressure gauge to monitor well awaiting completion.

- Slow pump speeds will be taken daily by each crew and recorded on Daily Drilling Report after mudding up.

- A choke manifold and accumulator with floor and remote operating stations will be functional and in place after installation of BOPE, as well as full functioning mud gas separator.

- Weekly BOPE pit level drills will be conducted by each crew and recorded on Daily Drilling Report.

- BOP will be fully operated when out of hole and will be documented on the daily drilling log.

- All B.O.P.s and associated equipment will be tested in accordance with Onshore Order #2

- All B.O.P. testing will be done by an independent service company.

AMEREDEV

# Pressure Control Plan

- The B.O.P. will be tested within 21 days of the original test if drilling takes more time than planned.

- Ameredev requests a variance to connect the B.O.P. choke outlet to the choke manifold using a co-flex hose with a 10,000 psi working pressure that has been tested to 15,000psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps. (certifications will be sent to Carlsbad BLM Office prior to install)

AMEREDEV

American Resource Development LLC

# Requested Exceptions

- Variance is requested to connect the BOP choke outlet to the choke manifold using a co-flex line (instead of using a 4" OD steel line) with a 10,000 psi working pressure that has been tested to 15,000 psi and is built to API Spec 16C. Once the flex line is installed it will be tied down with safety clamps.

- Variance is requested to allow Option of rig not capable of reaching TD presetting Surface

- Variance is requested to wave any centralizer requirements on the 5-1/2 Casing. Ameredev will utilize cement expansion additives in the cement slurry to maximize cement bond and zonal isolation.

- Variance is requested to wave any centralizer requirements on the 7-5/8 Casing. Ameredev will utilize cement expansion additives in the cement slurry to maximize cement bond and zonal isolation.

- Variance is requested to allow Temporary Postponement of Operations on well to Skid to adjacent well.

- Variance is requested to Allow use of Multi Bowl Well Head System

- Variance is requested to Allow adjustment of Casing Design Safety Factor on conditions that Ameredev keeps minimum of 1/3 casing capacity filled with OMW drilling fluids

- Variance is requested to Drill Surface Casing to Base Salt with >100K Chlorides on the conditions that 50% Returns will be maintained

**APD ID:** 10400027676 **Submission Date:** 02/23/2018

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Well Type:** OIL WELL **Well Work Type:** Drill

[redacted]

Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

NANDINA_FED_COM_25_36_31_126H___WELL_PAD_ACCESS_20180815134346.pdf
NAN_GB__6N_Road_Plats_20180815134403.pdf

**Existing Road Purpose:** ACCESS **Row(s) Exist?** NO

### ROW ID(s)

**ID:**

**Do the existing roads need to be improved?** NO

**Existing Road Improvement Description:**

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

NAN_GB__6N_Road_Plats_20180815134501.pdf
NANDINA_FED_COM_25_36_31_126H___WELL_PAD_ACCESS_20180815134513.pdf

**New road type:** RESOURCE

**Length:** 8139 Feet **Width (ft.):** 30

**Max slope (%):** 2 **Max grade (%):** 2

**Army Corp of Engineers (ACOE) permit required?** NO

**ACOE Permit Number(s):**

**New road travel width:** 20

**New road access erosion control:** Crowned and ditched

**New road access plan or profile prepared?** NO

**New road access plan attachment:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Turnout?** N

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Grader

**Access other construction information:** NM One Call (811) will be notified before construction start.

**Access miscellaneous information:**

**Number of access turnouts:** 5 **Access turnout map:**

## Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** Crowned and ditched

**Road Drainage Control Structures (DCS) description:** None

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

NANDINA_FED_COM_25_36_31_126H___1_MI_RADIUS_WELLS_20180815134724.pdf

## Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** A multiple well pad will be located on section 31, and will measure 400'x500'. The top 6" of soil and brush will be stockpiled North of the well pad. A 4" Poly Flowline will be run approximately 255' from the Nandina Fed Com 25 36 31 126H to the Nandina CTB that will be north of the well pad. A 12" poly water line will be run from the Nandina CTB to a planned line that will be installed taking our produced water in the area to an SWD that is operated by OWL. The new line will be approximately 6,589'. A power line will be run parallel to the water line and will connect into a power line that we will be installing for a well in the area. The power line will be approximately 6,590'. The Nandina CTB will be 500'x525' and will include a separator, Heat Exchanger, VRU, VRT, meter run and a tank battery. The new production

plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**Production Facilities map:**

BO_NAN_GB_7N_PAD_SITE_S_20180815134845.pdf
EP_NORTH_ELECTRIC_SEC_31_REV3_S_20180815134849.pdf
EP_NORTH_WATER_SEC_31_REV3_S_20180815134851.pdf
Nandina_CTB_Plat_20180815134856.pdf
NAN_GB__6N_Road_Plats_20180815134854.pdf
NANDINA_FED_COM_25_36_31_126H___WELL___FACILITIES_MAP_20180815135141.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** GW WELL

**Water source use type:** SURFACE CASING
INTERMEDIATE/PRODUCTION CASING
STIMULATION
DUST CONTROL

**Source latitude:** **Source longitude:**

**Source datum:**

**Water source permit type:** PRIVATE CONTRACT

**Water source transport method:** PIPELINE
TRUCKING

**Source land ownership:** PRIVATE

**Source transportation land ownership:** FEDERAL

**Water source volume (barrels):** 20000 **Source volume (acre-feet):** 2.577862

**Source volume (gal):** 840000

---

**Water source and transportation map:**

NANDINA_FED_COM_25_36_31_126H___WATER_MAP_20180815135504.pdf
NANDINA_FED_COM_25_36_31_126H___WATER_WELLS_LIST_20180815135510.pdf

**Water source comments:** Water will be trucked or surface piped from existing water wells on private land. See attached list of available wells.
**New water well?** NO

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Well latitude:** **Well Longitude:** **Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):** **Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):** **Well casing type:**

**Well casing outside diameter (in.):** **Well casing inside diameter (in.):**

**New water well casing?** **Used casing source:**

**Drilling method:** **Drill material:**

**Grout material:** **Grout depth:**

**Casing length (ft.):** **Casing top depth (ft.):**

**Well Production type:** **Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Using any construction materials:** YES

**Construction Materials description:** NM One Call (811) will be notified before construction start. Top 6" of soil and brush will be stockpiled north of the pad. V-door will face east. Closed loop drilling system will be used. Caliche will be hauled from existing caliche pits on private and state land.

**Construction Materials source location attachment:**

NANDINA_FED_COM_25_36_31_126H___CALICHE_MAP_20180815135643.pdf

Pages_from_NANDINA_FED_COM_25_36_31_126H___WELL_SITE_DIAGRAM_20180815140403.pdf

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Cuttings, mud, salts, and other chemicals

**Amount of waste:** 2000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

**Disposal type description:**

**Disposal location description:** R360's state approved (NM-01-0006) disposal site at Halfway, NM

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)** **Reserve pit width (ft.)**

**Reserve pit depth (ft.)** **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** YES

**Description of cuttings location** Steel tanks on pad

**Cuttings area length (ft.)** **Cuttings area width (ft.)**

**Cuttings area depth (ft.)** **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

NANDINA_FED_COM_25_36_31_126H___WELL_SITE_DIAGRAM_20181026133637.pdf

**Comments:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance **Multiple Well Pad Name:** NANDINA

**Multiple Well Pad Number:** 126H

**Recontouring attachment:**

NANDINA_FED_COM_25_36_31_126H___WELL_SITE_DIAGRAM_20181026134008.pdf

**Drainage/Erosion control construction:** Crowned and ditched

**Drainage/Erosion control reclamation:** Harrowed on the contour

**Well pad proposed disturbance (acres):** 4.59
**Road proposed disturbance (acres):** 5.61
**Powerline proposed disturbance (acres):** 4.53
**Pipeline proposed disturbance (acres):** 4.53
**Other proposed disturbance (acres):** 6.03
**Total proposed disturbance:** 25.29

**Well pad interim reclamation (acres):** 0.79
**Road interim reclamation (acres):** 0
**Powerline interim reclamation (acres):** 0
**Pipeline interim reclamation (acres):** 0
**Other interim reclamation (acres):** 0
**Total interim reclamation:** 0.79

**Well pad long term disturbance (acres):** 3.8
**Road long term disturbance (acres):** 5.61
**Powerline long term disturbance (acres):** 4.53
**Pipeline long term disturbance (acres):** 4.53
**Other long term disturbance (acres):** 6.03
**Total long term disturbance:** 24.5

**Disturbance Comments:**

**Reconstruction method:** Interim reclamation will be completed within 6 months of completing the well. Interim reclamation will consist of shrinking the pad 17% (.79 acre) by removing caliche and reclaiming 40' wide swaths on the north and east sides of the pad. This will leave 3.8 acres for producing three wells, with tractor-trailer turn around. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with the surface owner's requirements.
**Topsoil redistribution:** Enough stockpiled topsoil will be retained to cover the remainder of the pad when the well is plugged. New road will be similarly reclaimed within 6 months of plugging. Noxious weeds will be controlled.
**Soil treatment:** None

**Existing Vegetation at the well pad:**

**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:**

**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:**

**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:**

**Existing Vegetation Community at other disturbances attachment:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

### Seed Summary

**Total pounds/Acre:**

| Seed Type | Pounds/Acre |
|---|---|

**Seed reclamation attachment:**

## Operator Contact/Responsible Official Contact Info

**First Name:**

**Last Name:**

**Phone:**

**Email:**

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** To BLM standards

**Weed treatment plan attachment:**

**Monitoring plan description:** To BLM standards

**Monitoring plan attachment:**

**Success standards:** To BLM satisfaction

**Pit closure description:** No pit

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Disturbance type:** OTHER

**Describe:** Power Line

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Disturbance type:** PIPELINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:** **USFS Ranger District:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

## Section 12 - Other Information

**Right of Way needed?** YES **Use APD as ROW?** YES

**ROW Type(s):** 281001 ROW - ROADS,285003 ROW – POWER TRANS,288103 ROW – Salt Water Disposal Pipeline/Facility,289001 ROW- O&G Well Pad

## ROW Applications

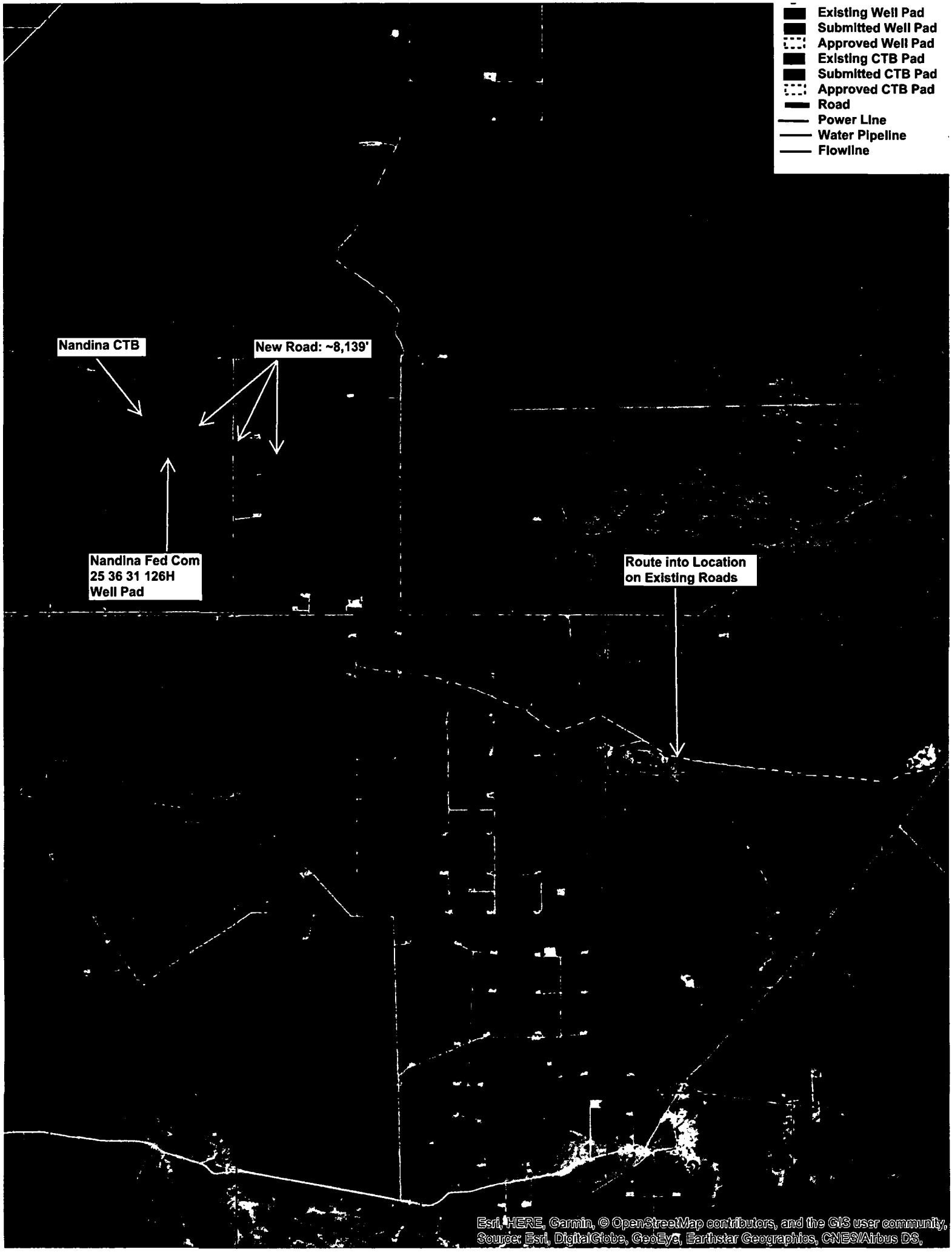
**SUPO Additional Information:**

**Use a previously conducted onsite?** YES

**Previous Onsite information:** On-site inspection was held with Jeff Robertson (BLM) on 5/23/18. Ameredev made a donation with the MOU fund in lieu of an archaeology report.

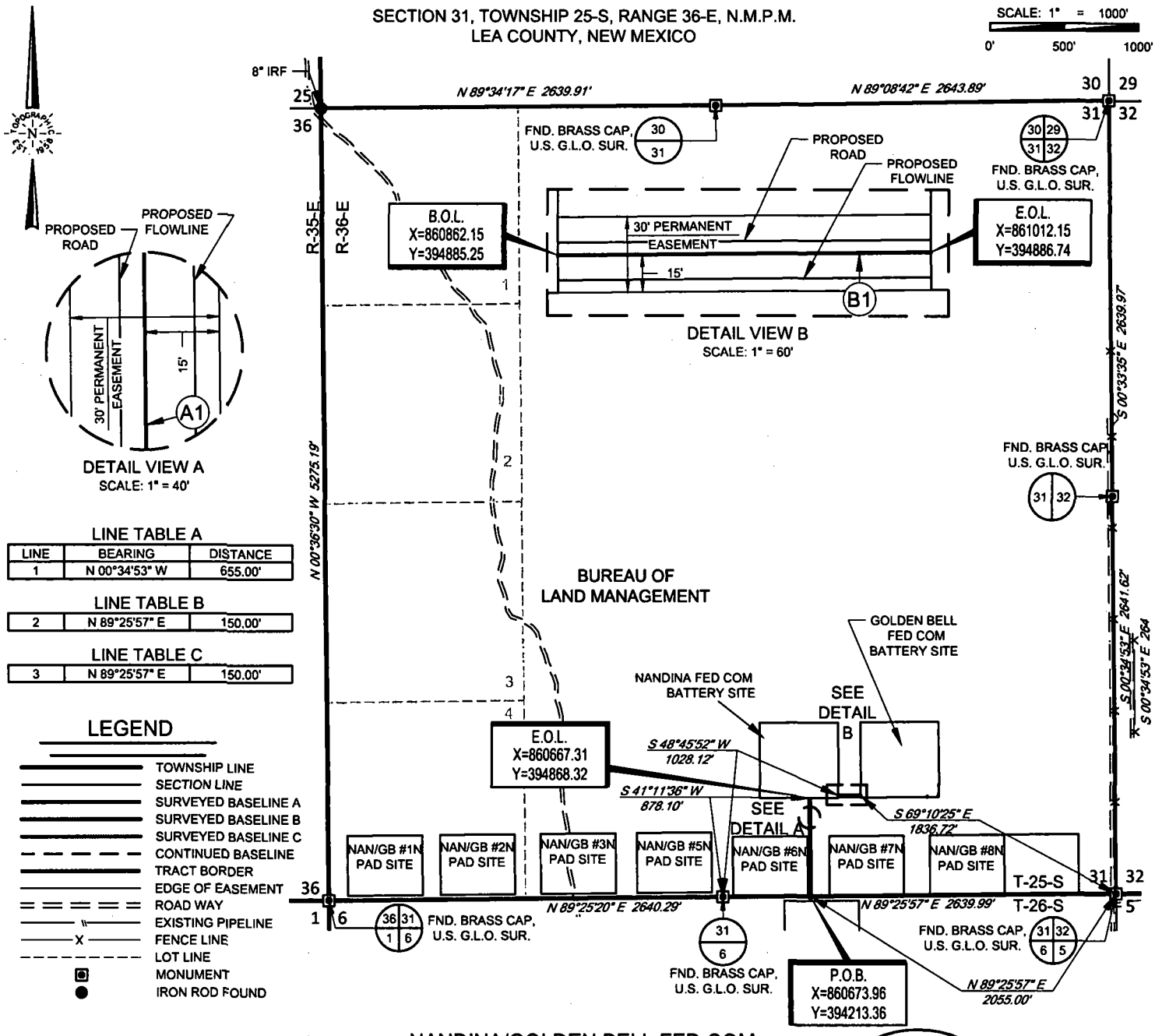
## Other SUPO Attachment

NANDINA_FED_COM_25_36_31_126H___SURFACE_USE_PLAN_20180815141302.pdf


Existing Well Pad
Submitted Well Pad
Approved Well Pad
Existing CTB Pad
Submitted CTB Pad
Approved CTB Pad
Road
Power Line
Water Pipeline
Flowline
Nandina CTB
New Road: ~8,139'
Nandina Fed Com
25 36 31 126H
Well Pad
Route into Location
on Existing Roads
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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







DETAIL VIEW A
SCALE: 1" = 40'

LINE TABLE A

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°34'53" W | 655.00' |

LINE TABLE B

| | | |
|---|---|---|
| 2 | N 89°25'57" E | 150.00' |

LINE TABLE C

| | | |
|---|---|---|
| 3 | N 89°25'57" E | 150.00' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- SURVEYED BASELINE C
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- LOT LINE
- MONUMENT
- IRON ROD FOUND

# NANDINA/GOLDEN BELL FED COM ROAD EASEMENT

Being proposed road easements being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 955.00 feet or 57.88 rods, containing 0.66 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 24, 2018


AMEREDEV
AMEREDEV OPERATING, LLC

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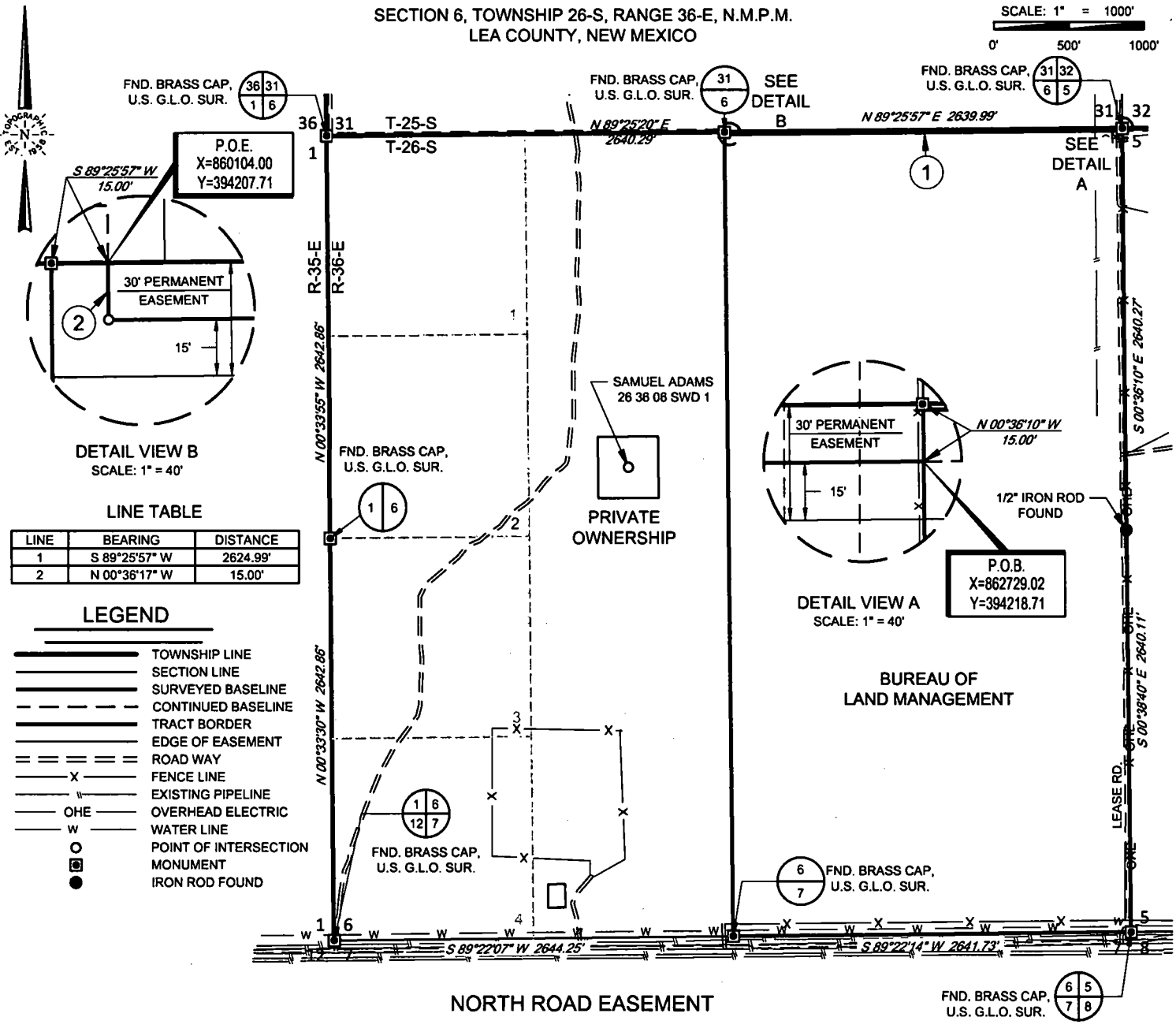
WWW.TOPOGRAPHIC.COM


| NANDINA/GOLDEN BELL FED COM ROAD EASEMENT | REVISION: INT | DATE |
|---|---|---|
| DATE: 05/24/2018 | | |
| FILE: EP_NAN_GB_FED_COM_RD_SEC_31 | | |
| DRAWN BY: IMU | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L. = BEGINNING OF LINE
5. P.O.E. = POINT OF EXIT

SECTION 6, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




DETAIL VIEW B
SCALE: 1" = 40'

DETAIL VIEW A
SCALE: 1" = 40'

## LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°25'57" W | 2624.99' |
| 2 | N 00°36'17" W | 15.00' |

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- FENCE LINE
- EXISTING PIPELINE
- OVERHEAD ELECTRIC
- WATER LINE
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

# NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 2639.99 feet or 160.00 rods, containing 1.82 acres more or less.

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
APRIL 30, 2018

AMEREDEV
AMEREDEV OPERATING, LLC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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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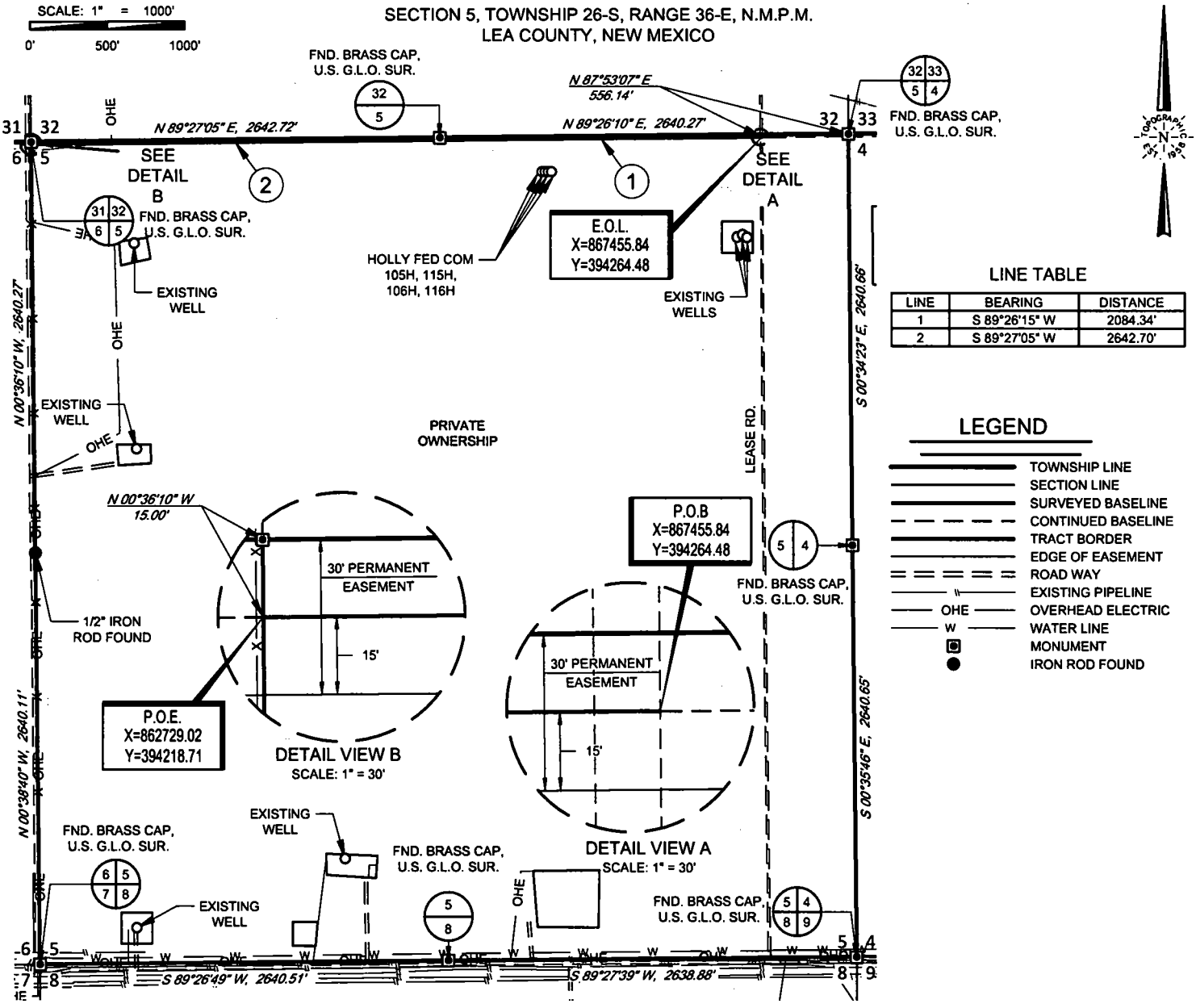
| NORTH ROAD EASEMENT | REVISION: | |
|---|---|---|
| | MML | 04/30/18 |
| DATE: 02/05/18 | | |
| FILE: EP_NORTH_ROAD_EASEMENT_SEC_6_REV1 | | |
| DRAWN BY: A.M.D. | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING
5. P.O.E. = POINT OF EXIT

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_NORTH_ROAD_EASEMENT_SEC_6_REV1.DWG 5/3/2018 8:21:52 AM ccaston




## LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°26'15" W | 2084.34' |
| 2 | S 89°27'05" W | 2642.70' |

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- W — WATER LINE
- MONUMENT
- IRON ROD FOUND

# NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 4727.04 feet or 286.49 rods, containing 3.26 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd, P.S. No. 19642
NOVEMBER 03, 2017

AMEREDEV

TOPOGRAPHIC
LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

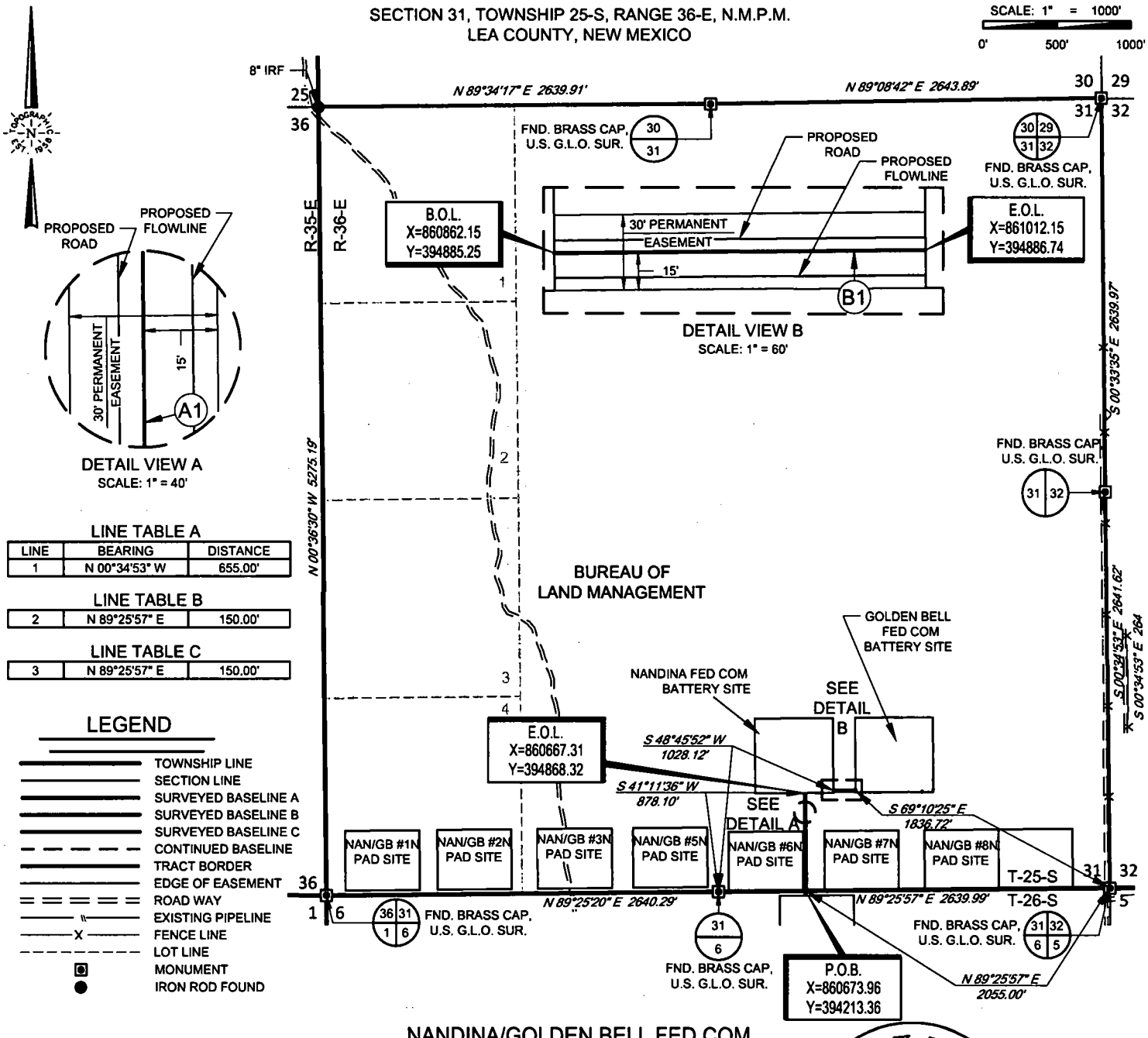
| NORTH ROAD EASEMENT | REVISION: | |
|---|---|---|
| | AMD | 02/05/2018 |
| | | |
| DATE: 11/03/17 | | |
| FILE: EP_ROAD_EASEMENT_SEC_5_REV1 | | |
| DRAWN BY: MML | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING
5. E.O.L. = END OF LINE

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_ROAD_EASEMENT_SEC_5_REV1.DWG 2/8/2018 1:00:43 PM bgregory

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




LINE TABLE A

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°34'53" W | 655.00' |

LINE TABLE B

| | | |
|---|---|---|
| 2 | N 89°25'57" E | 150.00' |

LINE TABLE C

| | | |
|---|---|---|
| 3 | N 89°25'57" E | 150.00' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- SURVEYED BASELINE C
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- LOT LINE
- MONUMENT
- IRON ROD FOUND

## NANDINA/GOLDEN BELL FED COM ROAD EASEMENT

Being proposed road easements being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 955.00 feet or 57.88 rods, containing 0.66 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 24, 2018

AMEREDEV
AMEREDEV OPERATING, LLC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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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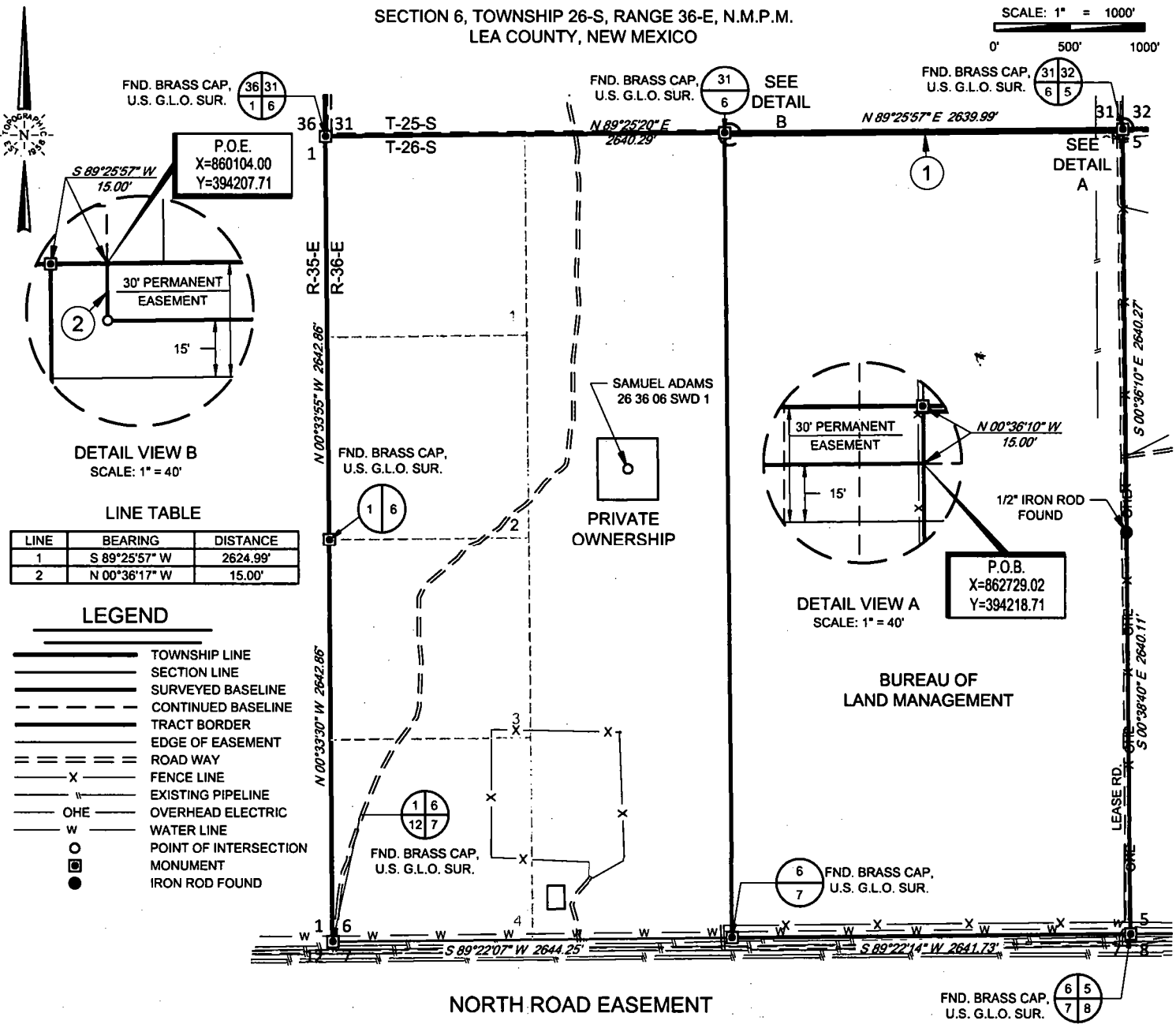
| NANDINA/GOLDEN BELL FED COM ROAD EASEMENT | REVISION: INT | DATE |
|---|---|---|
| | | |
| DATE: 05/24/2018 | | |
| FILE: EP_NAN_GB_FED_COM_RD_SEC_31 | | |
| DRAWN BY: IMU | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L. = BEGINNING OF LINE
5. P.O.E. = POINT OF EXIT

S:\SURVEY\AMEREDEV_OPERATING_LLC\NANDINA_FED_COM\FINAL_PRODUCTS\EP_NAN_GB_FED_COM_RD_SEC_31.DWG 5/29/2018 9:59:57 AM ccaston

SECTION 6, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




DETAIL VIEW B
SCALE: 1" = 40'

DETAIL VIEW A
SCALE: 1" = 40'

LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°25'57" W | 2624.99' |
| 2 | N 00°36'17" W | 15.00' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- FENCE LINE
- EXISTING PIPELINE
- OVERHEAD ELECTRIC
- WATER LINE
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

# NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 2639.99 feet or 160.00 rods, containing 1.82 acres more or less.

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
APRIL 30, 2018


AMEREDEV
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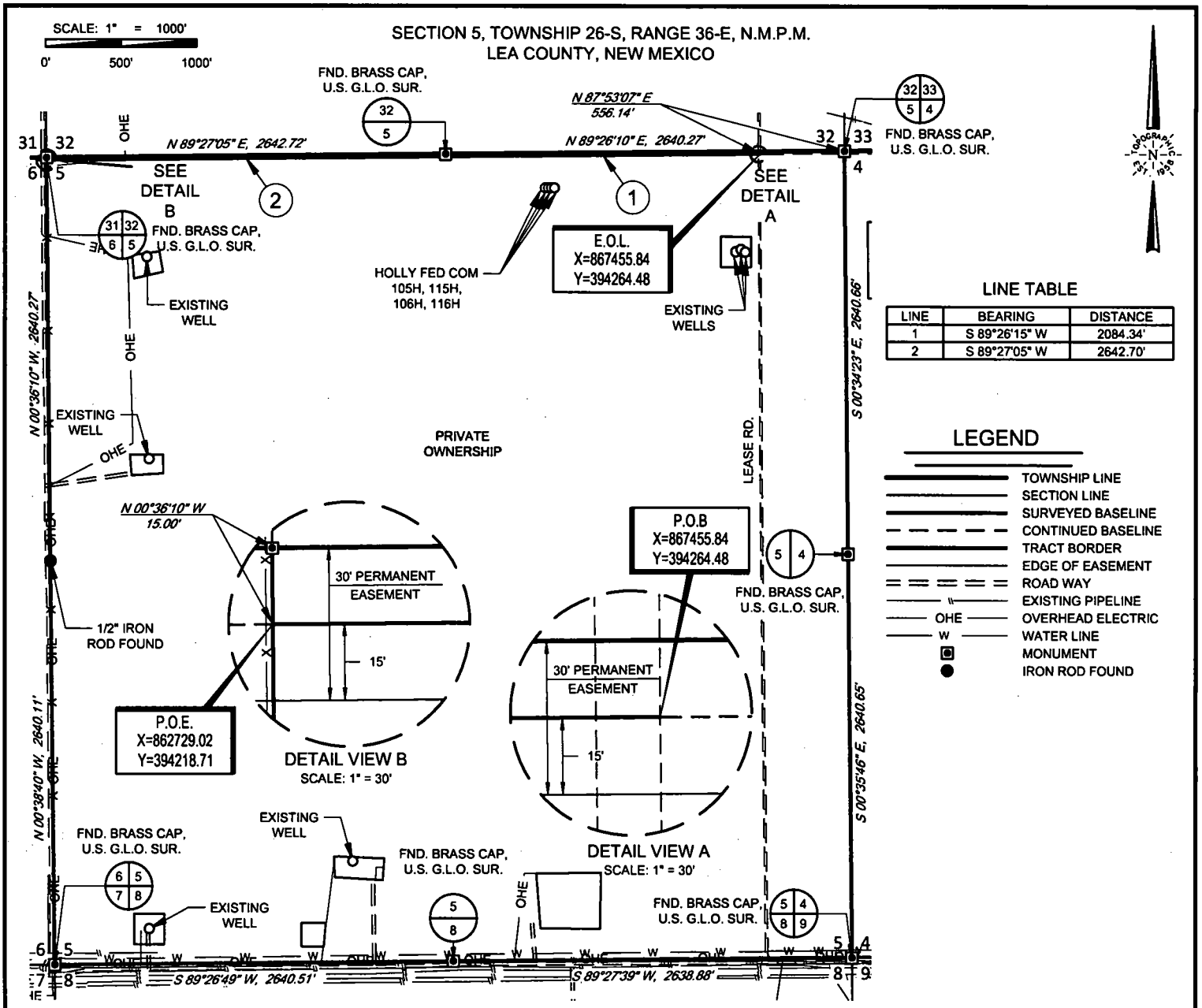
| NORTH ROAD EASEMENT | REVISION: | |
|---|---|---|
| | MML | 04/30/18 |
| DATE: 02/05/18 | | |
| FILE: EP_NORTH_ROAD_EASEMENT_SEC_6_REV1 | | |
| DRAWN BY: A.M.D. | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING
5. P.O.E. = POINT OF EXIT

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_NORTH_ROAD_EASEMENT_SEC_6_REV1.DWG 5/3/2018 8:21:52 AM ccaston




LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°26'15" W | 2084.34' |
| 2 | S 89°27'05" W | 2642.70' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- W — WATER LINE
- MONUMENT
- IRON ROD FOUND

# NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 4727.04 feet or 286.49 rods, containing 3.26 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
NOVEMBER 03, 2017

AMEREDEV

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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM

| NORTH ROAD EASEMENT | REVISION: AMD | 02/05/2018 |
|---|---|---|
| DATE: 11/03/17 | | |
| FILE: EP_ROAD_EASEMENT_SEC_5_REV1 | | |
| DRAWN BY: MML | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
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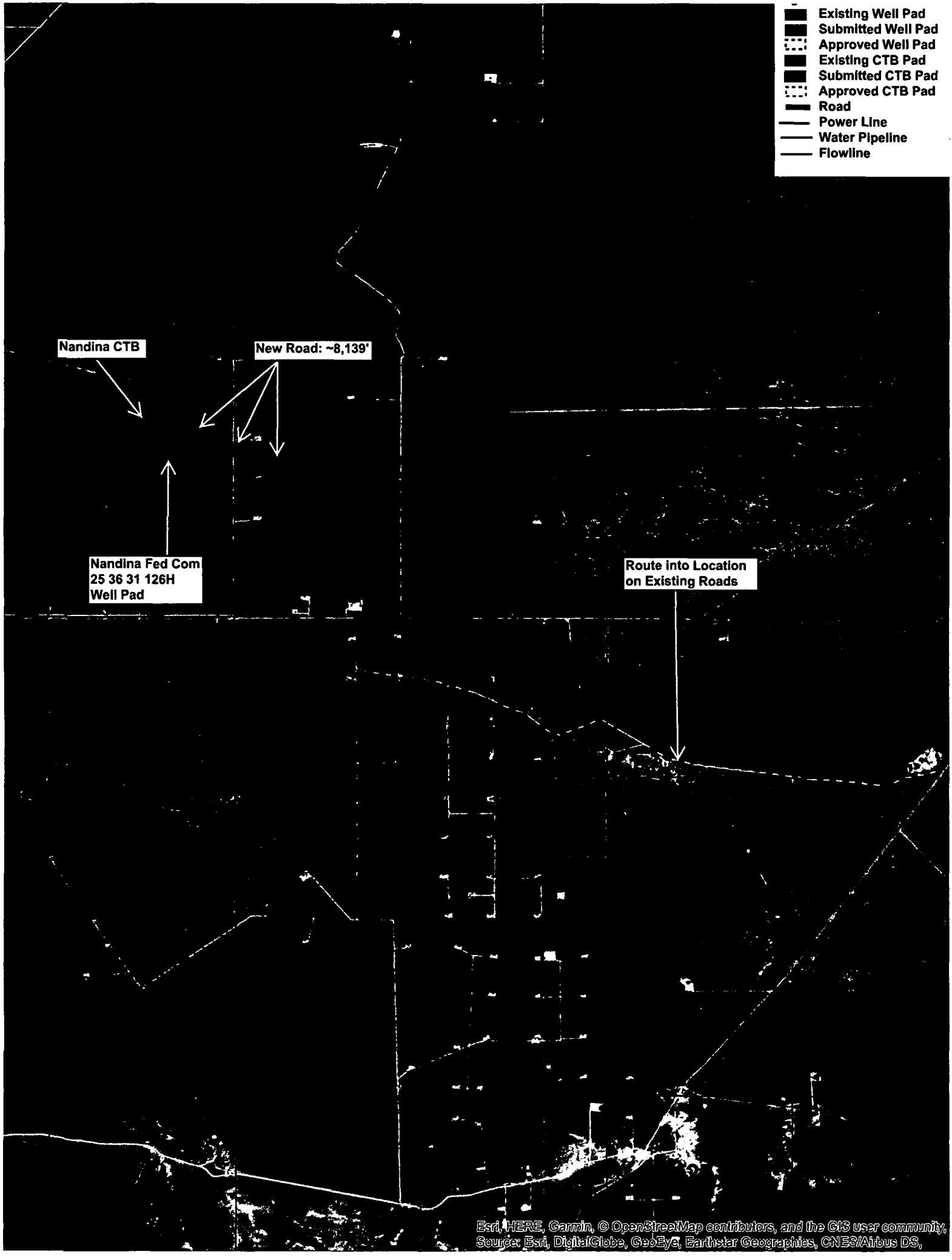
4. P.O.B. = POINT OF BEGINNING
5. E.O.L. = END OF LINE

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_ROAD_EASEMENT_SEC_5_REV1.DWG 2/8/2018 1:00:43 PM bgregory


Existing Well Pad
Submitted Well Pad
Approved Well Pad
Existing CTB Pad
Submitted CTB Pad
Approved CTB Pad
Road
Power Line
Water Pipeline
Flowline
Nandina CTB
New Road: ~8,139'
Nandina Fed Com
25 36 31 126H
Well Pad
Route into Location
on Existing Roads
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

*Exhibit 2 – One Mile Radius Existing Wells* depicts all known wells within a one mile radius of the Nandina Fed Com 25 36 31 126H. See *Exhibit 2a – One Mile Radius Wells List* for a list of wells depicted.

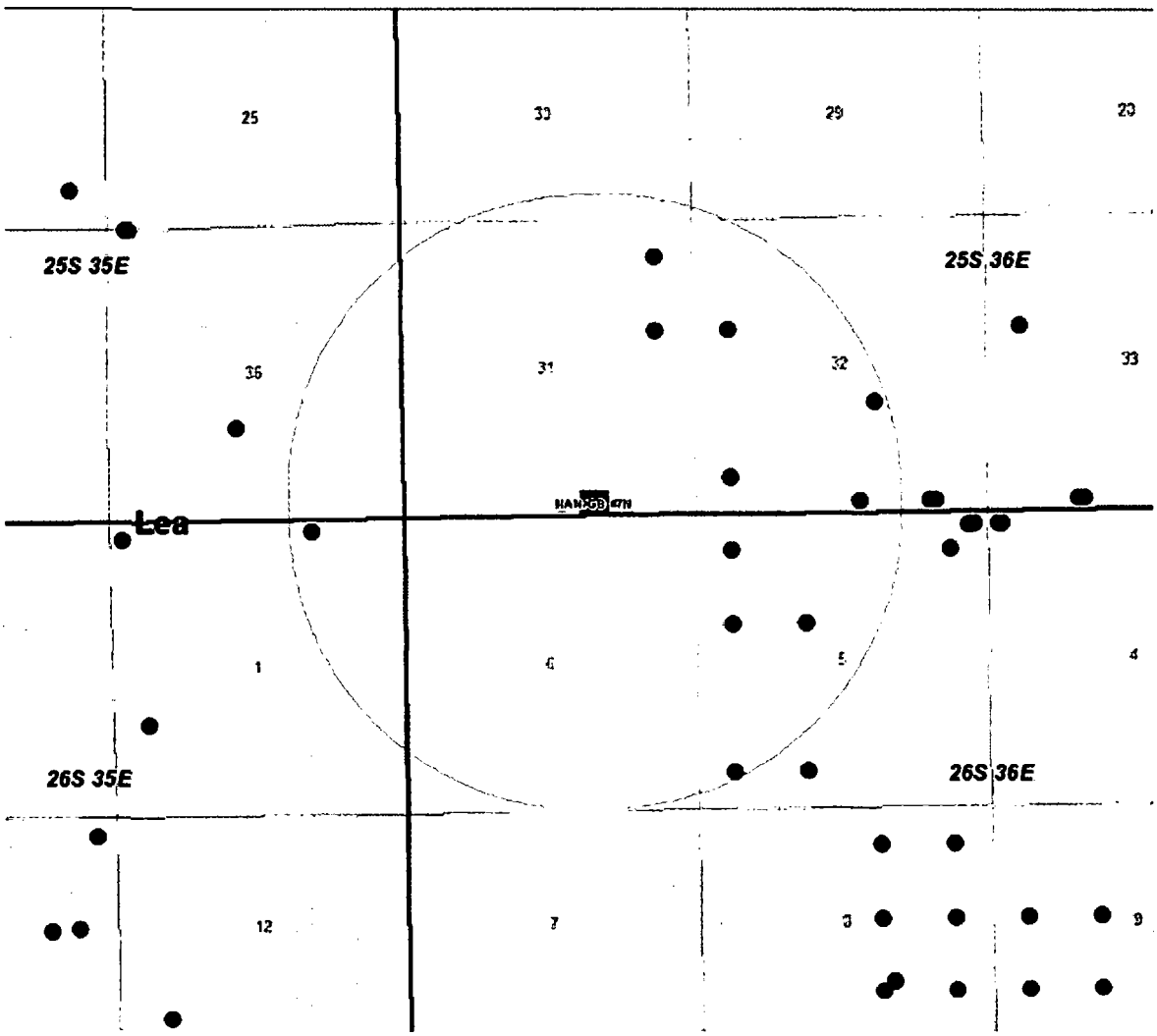
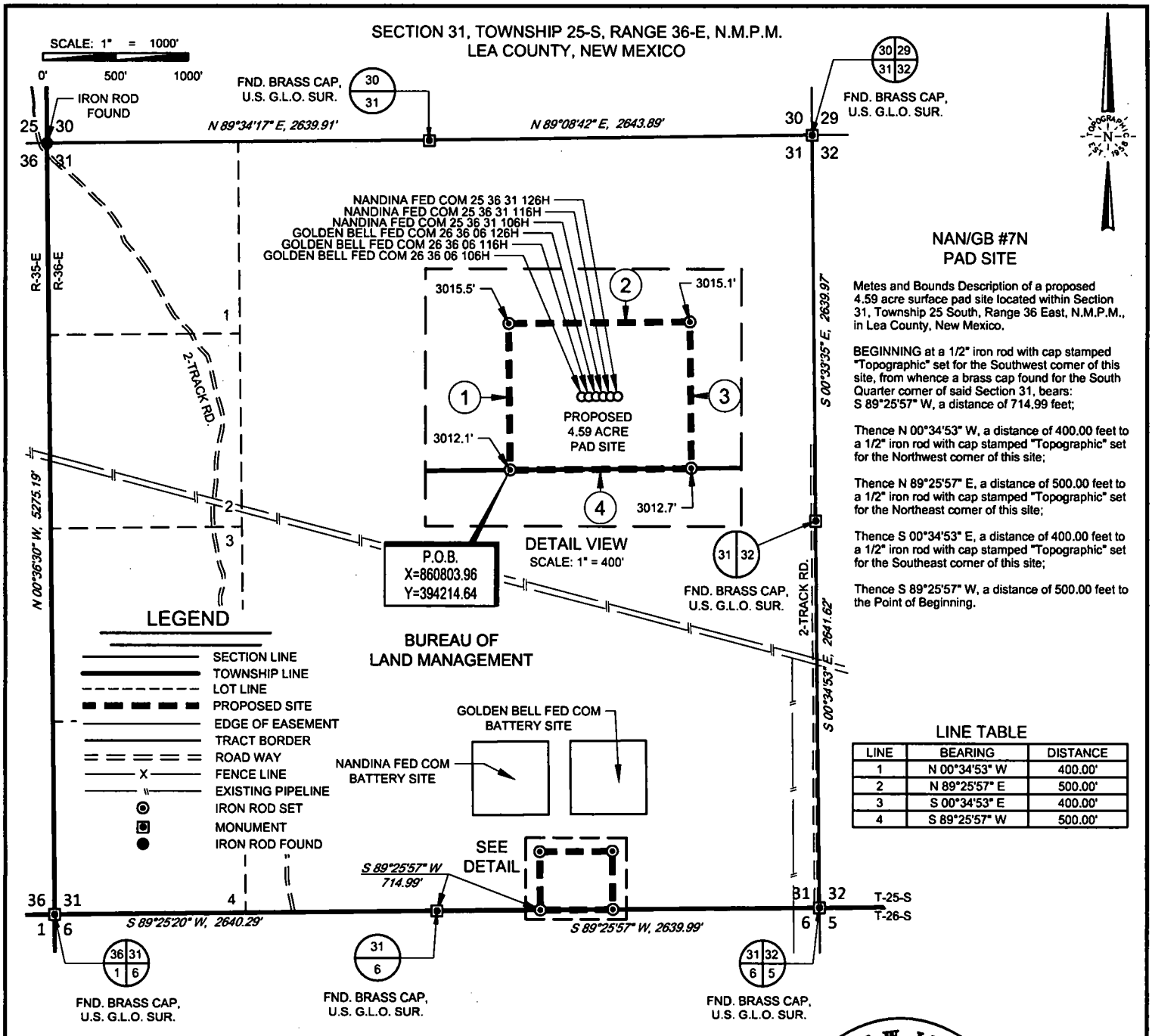



***Exhibit 2 – One Mile Radius Existing Wells***

| API | WELL NAME | STATUS | TD |
|---|---|---|---|
| 30025098400000 | SAND HILLS UNIT - 9 | DHSO | 3386 |
| 30025261530000 | SPOTTED TAIL FED - 2 | ABDNLOC | 0 |
| 30025260100000 | SPOTTED TAIL FED - 1 | OIL | 3336 |
| 30025260090000 | STANDING BEAR - 1 | PLUGOIL | 3280 |
| 30025260170000 | SITTING BULL - 1 | OIL | 3379 |
| 30025260270000 | SITTING BULL - 1 | OIL | 3368 |
| 30025268920000 | SITTING BULL - 2 | DRY | 3746 |
| 30025259400000 | BUSSELL FEDERAL - 1 | ABDNLOC | 0 |
| 30025268760000 | STANDING BEAR FED - 2 | PLUGOIL | 3311 |
| 30025444700000 | REDBUD 25-36-32 STA - 105H | START | 0 |
| 30025444710000 | REDBUD 25-36-32 STA - 115H | PILOT | 13503 |
| 30025444710100 | REDBUD 25-36-32 STA - 115H | START | 0 |
| 30025445050000 | USHANKA FEDERAL COM - 023H | PILOT | 12500 |
| 30025445050100 | USHANKA FEDERAL COM - 023H | AT-TD | 19355 |

***Exhibit 2a – One Mile Radius Existing Wells List***




## NAN/GB #7N PAD SITE

Metes and Bounds Description of a proposed 4.59 acre surface pad site located within Section 31, Township 25 South, Range 36 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site, from whence a brass cap found for the South Quarter corner of said Section 31, bears: S 89°25'57" W, a distance of 714.99 feet;

Thence N 00°34'53" W, a distance of 400.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northwest corner of this site;

Thence N 89°25'57" E, a distance of 500.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northeast corner of this site;

Thence S 00°34'53" E, a distance of 400.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southeast corner of this site;

Thence S 89°25'57" W, a distance of 500.00 feet to the Point of Beginning.

### LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°34'53" W | 400.00' |
| 2 | N 89°25'57" E | 500.00' |
| 3 | S 00°34'53" E | 400.00' |
| 4 | S 89°25'57" W | 500.00' |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AMEREDEV OPERATING, LLC

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TEXAS FIRM REGISTRATION NO. 10042504
WWW.TOPOGRAPHIC.COM


STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd

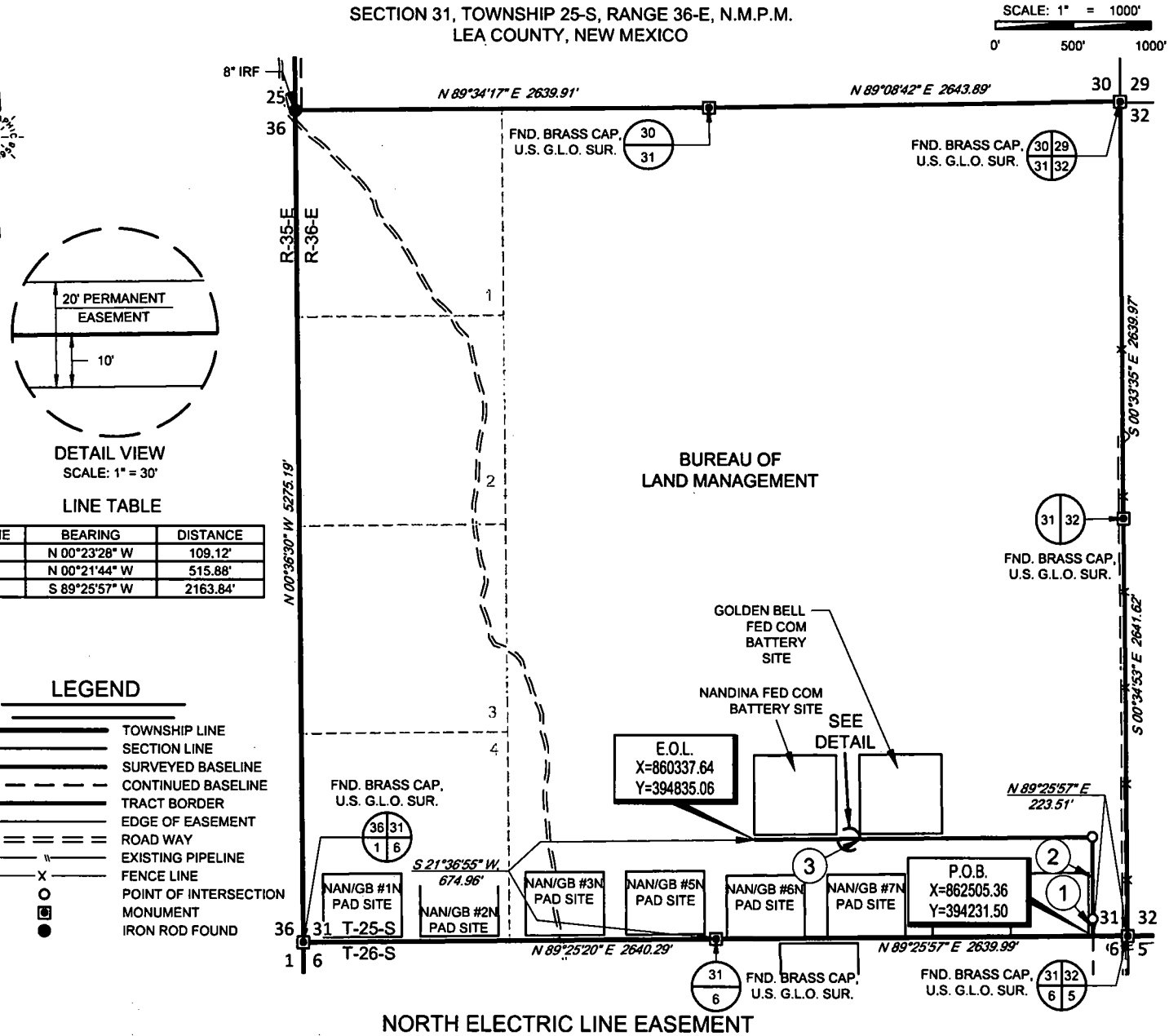
Stan W. Lloyd, P.S. No. 19642
AUGUST 2, 2018

| NAN/GB #7N PAD SITE | REVISION: | |
|---|---|---|
| | | |
| DATE: 08/02/18 | | |
| FILE: BO_NAN_GB_7N_PAD_SITE | | |
| DRAWN BY: IMU | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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







DETAIL VIEW
SCALE: 1" = 30'

LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°23'28" W | 109.12' |
| 2 | N 00°21'44" W | 515.88' |
| 3 | S 89°25'57" W | 2163.84' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

# NORTH ELECTRIC LINE EASEMENT

Being a proposed electric line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 2788.84 feet or 169.02 rods, containing 1.28 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd, P.S. No. 19642
AUGUST 9, 2018


AMEREDEV
AMEREDEV OPERATING, LLC

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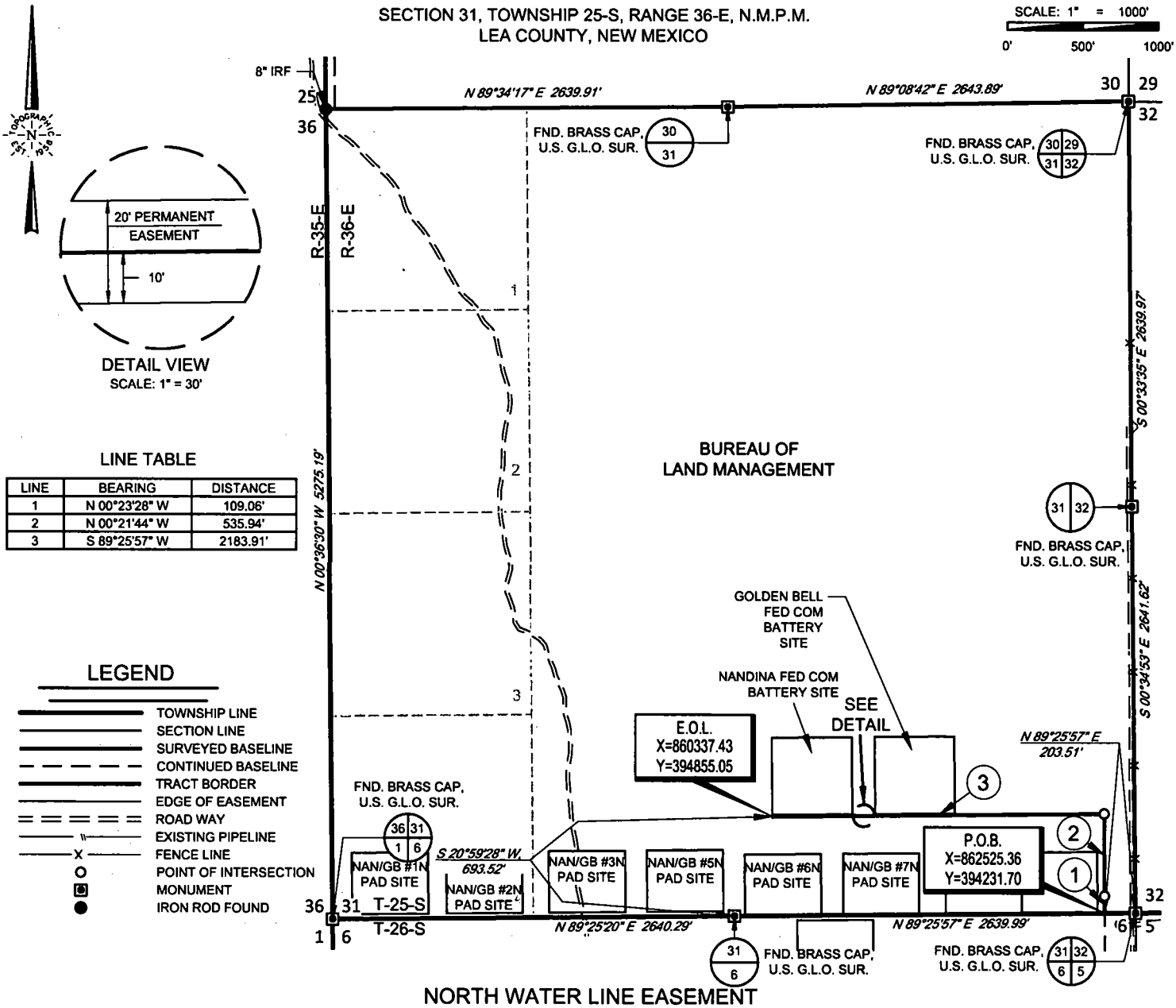
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM


| NORTH ELECTRIC LINE EASEMENT | REVISION: | |
|---|---|---|
| | MML | 04/30/18 |
| | ACC | 07/11/18 |
| DATE: 02/05/18 | AMD | 08/09/18 |
| FILE: EP_NORTH_ELECTRIC_SEC_31_REV3 | | |
| DRAWN BY: A.M.D. | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING
5. E.O.L. = END OF LINE

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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







DETAIL VIEW
SCALE: 1" = 30'

LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°23'28" W | 109.06' |
| 2 | N 00°21'44" W | 535.94' |
| 3 | S 89°25'57" W | 2183.91' |

LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

# NORTH WATER LINE EASEMENT

Being a proposed water line easement being 20 feet in width, 10 feet left and right of the above platted centerline total line footage containing 2828.91 feet or 171.45 rods, containing 1.30 acres more or less.

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd, P.S. No. 19642
AUGUST 9, 2018


AMEREDEV
AMEREDEV OPERATING, LLC

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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
WWW.TOPOGRAPHIC.COM


| NORTH WATER LINE EASEMENT | REVISION: | |
|---|---|---|
| | MML | 04/30/18 |
| | ACC | 07/11/18 |
| DATE: 02/05/18 | AMD | 08/08/18 |
| FILE: EP_NORTH_WATER_SEC_31_REV3 | | |
| DRAWN BY: A.M.D. | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
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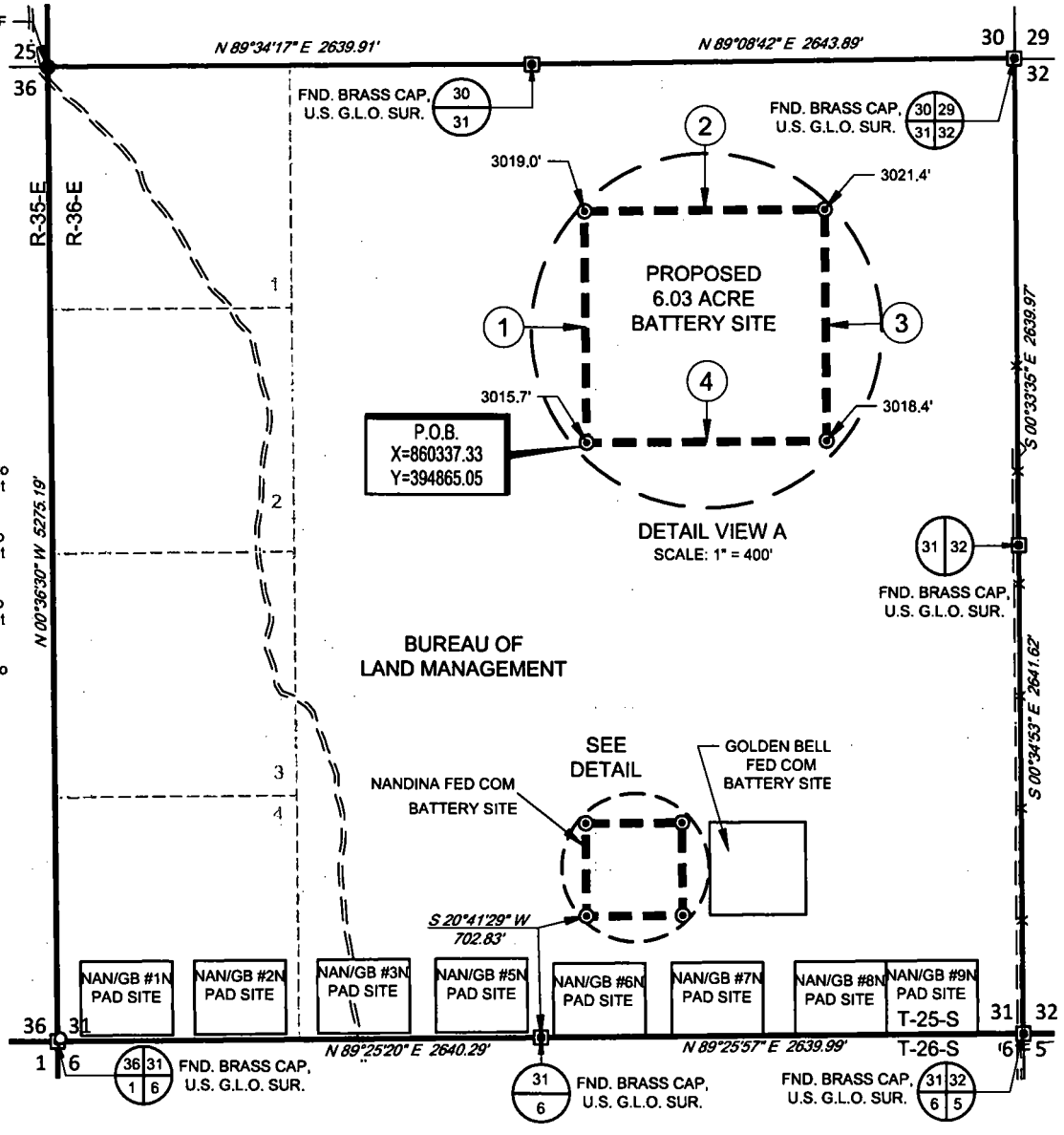
4. P.O.B. = POINT OF BEGINNING
5. P.O.E. = POINT OF EXIT

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




## NANDINA FED COM BATTERY SITE

Metes and Bounds Description of a proposed 6.03 acre battery site located within Section 31, Township 25 South, Range 36 East, N.M.P.M., in Lea County, New Mexico.

BEGINNING at a 1/2" iron rod with cap stamped "Topographic" set for the Southwest corner of this site, from whence a U.S. G.L.O. brass cap found for the South Quarter corner of said Section 31, bears: S 20°41'29" W, a distance of 702.83 feet;

Thence N 00°34'53" W, a distance of 500.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northwest corner of this site;

Thence N 89°25'57" E, a distance of 525.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Northeast corner of this site;

Thence S 00°34'53" E, a distance of 500.00 feet to a 1/2" iron rod with cap stamped "Topographic" set for the Southeast corner of this site;

Thence S 89°25'57" W, a distance of 525.00 feet to the Point of Beginning.

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- TRACT BORDER
- PROPOSED SITE
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- LOT LINE
- MONUMENT
- IRON ROD SET
- IRON ROD FOUND

## LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°34'53" W | 500.00' |
| 2 | N 89°25'57" E | 525.00' |
| 3 | S 00°34'53" E | 500.00' |
| 4 | S 89°25'57" W | 525.00' |

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 24, 2018

AMEREDEV
AMEREDEV OPERATING, LLC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LOYALTY INNOVATION LEGACY
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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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| NANDINA FED COM BATTERY SITE | REVISION: INT | DATE |
|---|---|---|
| DATE: 05/24/2018 | | |
| FILE: BO_NANDINA_FED_COM_BATTERY_SITE | | |
| DRAWN BY: IMU | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
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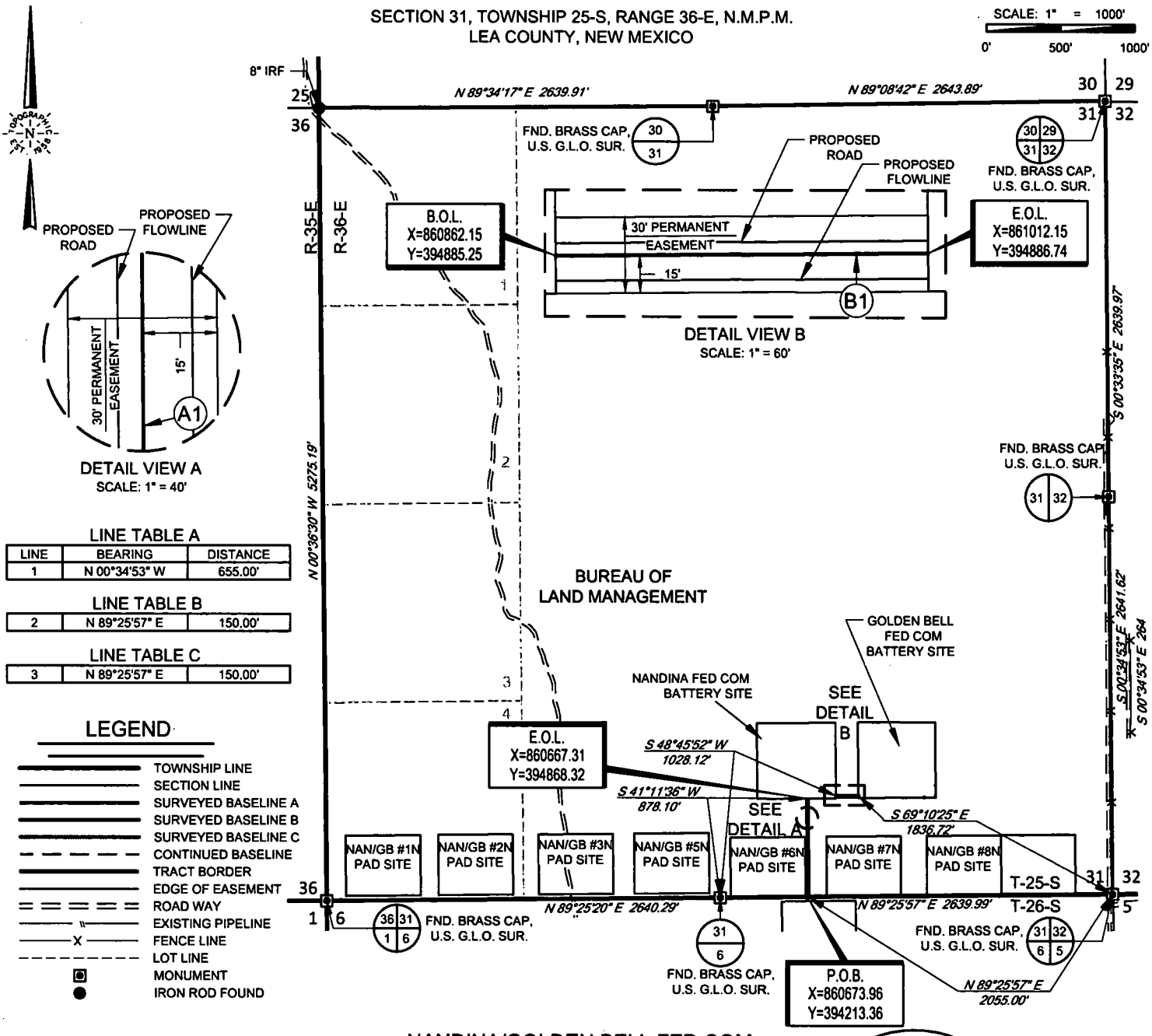
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY, MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY AMEREDEV OPERATING LLC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. P.O.B. = POINT OF BEGINNING

S:\SURVEY\AMEREDEV_OPERATING_LLC\NANDINA_FED_COM\FINAL_PRODUCTS\BO_NANDINA_FED_COM_BATTERY_SITE.DWG 5/29/2018 9:58:53 AM ccaston

SECTION 31, TOWNSHIP 25-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




## LINE TABLE A

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | N 00°34'53" W | 655.00' |

## LINE TABLE B

| | | |
|---|---|---|
| 2 | N 89°25'57" E | 150.00' |

## LINE TABLE C

| | | |
|---|---|---|
| 3 | N 89°25'57" E | 150.00' |

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE A
- SURVEYED BASELINE B
- SURVEYED BASELINE C
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- FENCE LINE
- LOT LINE
- MONUMENT
- IRON ROD FOUND

# NANDINA/GOLDEN BELL FED COM ROAD EASEMENT

Being proposed road easements being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 955.00 feet or 57.88 rods, containing 0.66 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
MAY 24, 2018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AMEREDEV OPERATING, LLC

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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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| NANDINA/GOLDEN BELL FED COM ROAD EASEMENT | REVISION: INT | DATE |
|---|---|---|
| DATE: 05/24/2018 | | |
| FILE: EP_NAN_GB_FED_COM_RD_SEC_31 | | |
| DRAWN BY: IMU | | |
| SHEET: 1 OF 1 | | |

NOTES:
1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM OF 1983, EAST ZONE, U.S. SURVEY FEET.
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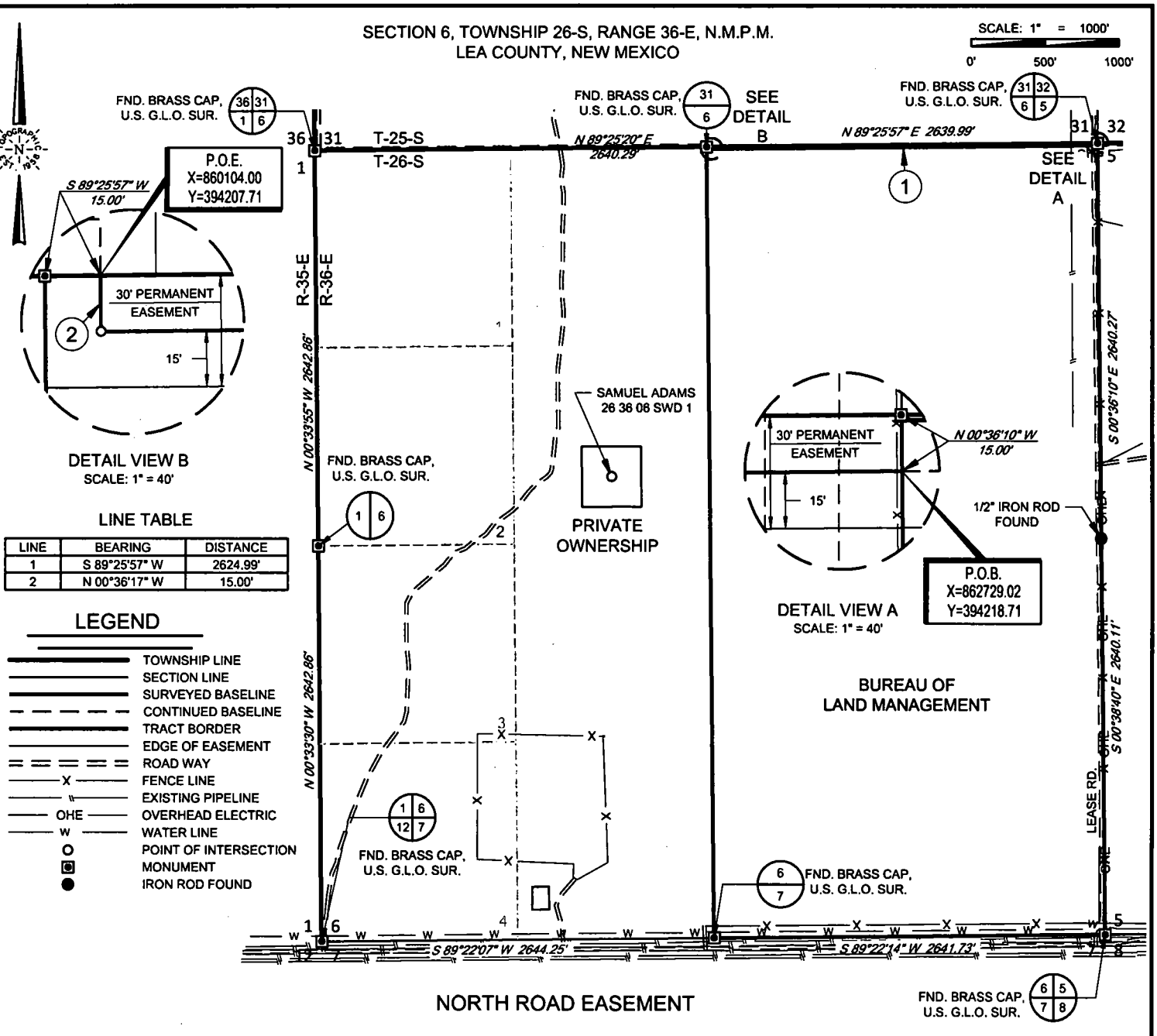
4. B.O.L. = BEGINNING OF LINE
5. P.O.E. = POINT OF EXIT

S:\SURVEY\AMEREDEV_OPERATING_LLC\NANDINA_FED_COM\FINAL_PRODUCTS\EP_NAN_GB_FED_COM_RD_SEC_31.DWG 5/29/2018 9:59:57 AM ccaston

SECTION 6, TOWNSHIP 26-S, RANGE 36-E, N.M.P.M.
LEA COUNTY, NEW MEXICO

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




DETAIL VIEW B
SCALE: 1" = 40'

DETAIL VIEW A
SCALE: 1" = 40'

## LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°25'57" W | 2624.99' |
| 2 | N 00°36'17" W | 15.00' |

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- FENCE LINE
- EXISTING PIPELINE
- OVERHEAD ELECTRIC
- WATER LINE
- POINT OF INTERSECTION
- MONUMENT
- IRON ROD FOUND

## NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 2639.99 feet or 160.00 rods, containing 1.82 acres more or less.

STAN W. LLOYD
NEW MEXICO
19642
PROFESSIONAL SURVEYOR

Stan W. Lloyd

Stan W. Lloyd, P.S. No. 19642
APRIL 30, 2018

**AMEREDEV**
AMEREDEV OPERATING, LLC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TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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| NORTH ROAD EASEMENT | REVISION: | |
|---|---|---|
| | MML | 04/30/18 |
| DATE: 02/05/18 | | |
| FILE: EP_NORTH_ROAD_EASEMENT_SEC_6_REV1 | | |
| DRAWN BY: A.M.D. | | |
| SHEET: 1 OF 1 | | |

NOTES:
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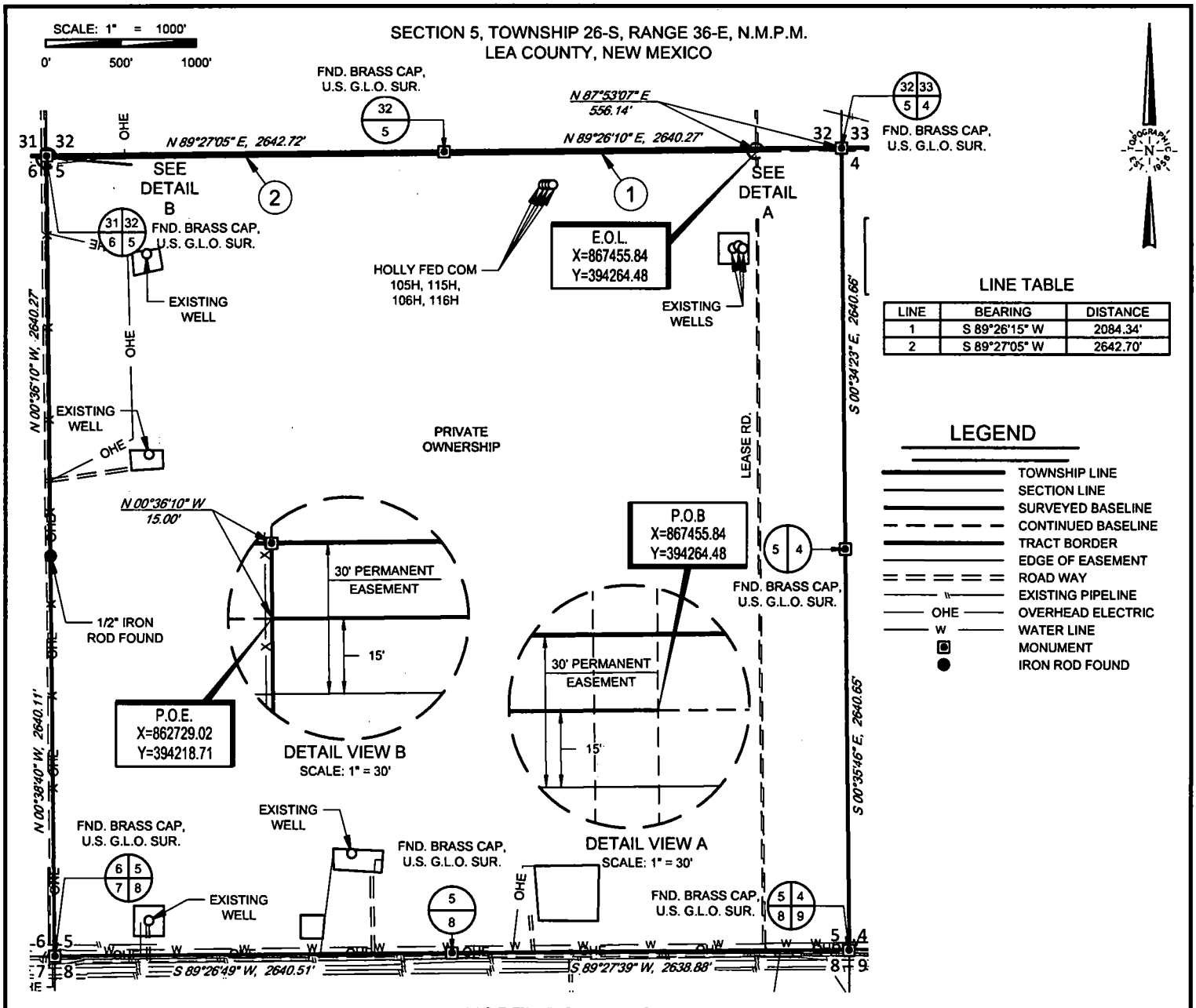
5. P.O.E. = POINT OF EXIT

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_NORTH_ROAD_EASEMENT_SEC_6_REV1.DWG 5/3/2018 8:21:52 AM ccaston




## LINE TABLE

| LINE | BEARING | DISTANCE |
|---|---|---|
| 1 | S 89°26'15" W | 2084.34' |
| 2 | S 89°27'05" W | 2642.70' |

## LEGEND

- TOWNSHIP LINE
- SECTION LINE
- SURVEYED BASELINE
- CONTINUED BASELINE
- TRACT BORDER
- EDGE OF EASEMENT
- ROAD WAY
- EXISTING PIPELINE
- OHE — OVERHEAD ELECTRIC
- W — WATER LINE
- MONUMENT
- IRON ROD FOUND

# NORTH ROAD EASEMENT

Being a proposed road easement being 30 feet in width, 15 feet left and right of the above platted centerline total line footage containing 4727.04 feet or 286.49 rods, containing 3.26 acres more or less.

STAN W. LLOYD NEW MEXICO 19642 PROFESSIONAL SURVEYOR

Stan W. Lloyd, P.S. No. 19642
NOVEMBER 03, 2017

AMEREDEV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LOYALTY INNOVATION LEGACY
1400 EVERMAN PARKWAY, Ste. 146 • FT. WORTH, TEXAS 76140
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2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705
TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743
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| NORTH ROAD EASEMENT | REVISION: | |
|---|---|---|
| | AMD | 02/05/2018 |
| DATE: 11/03/17 | | |
| FILE: EP_ROAD_EASEMENT_SEC_5_REV1 | | |
| DRAWN BY: MML | | |
| SHEET: 1 OF 1 | | |

NOTES:
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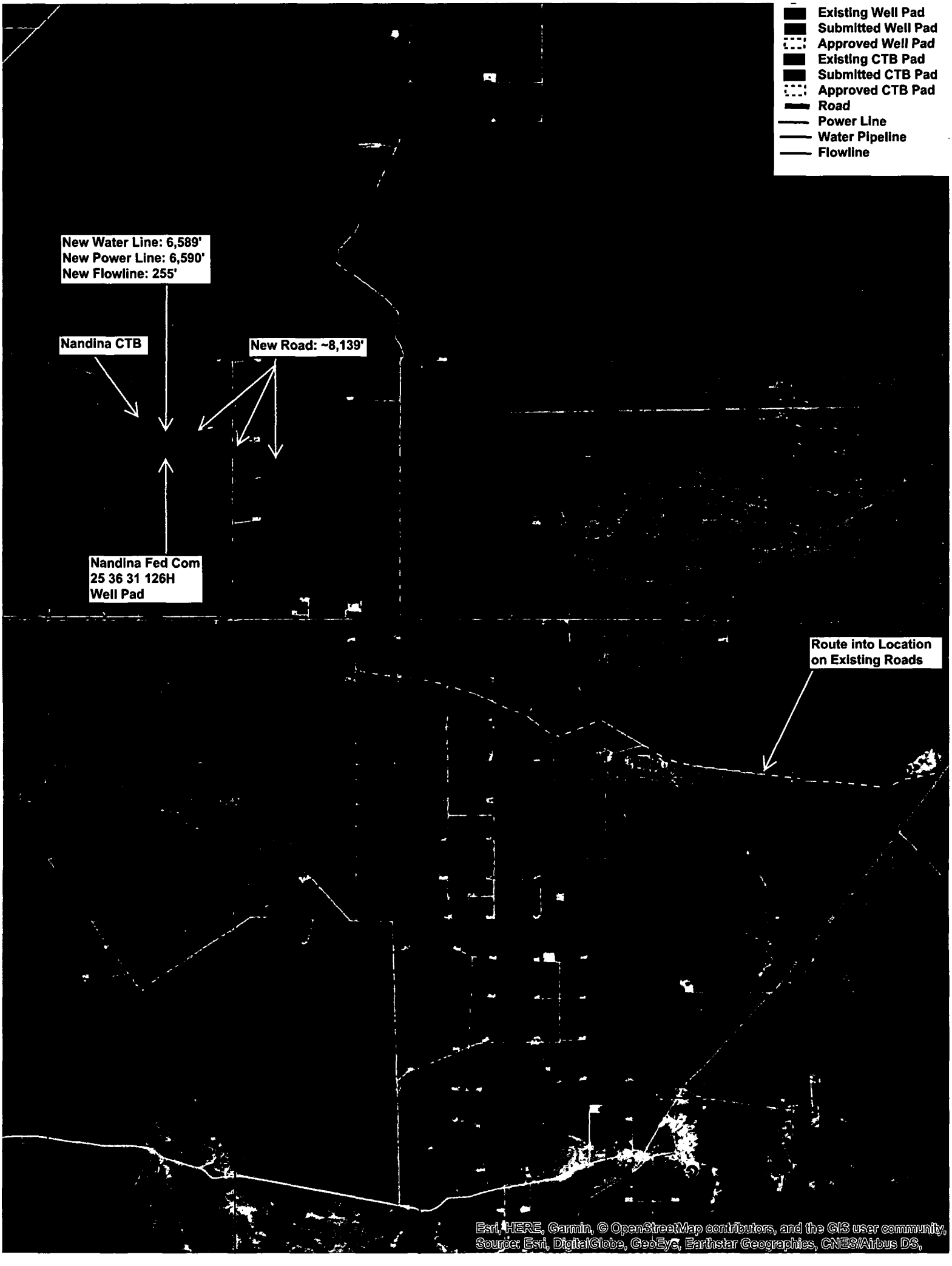
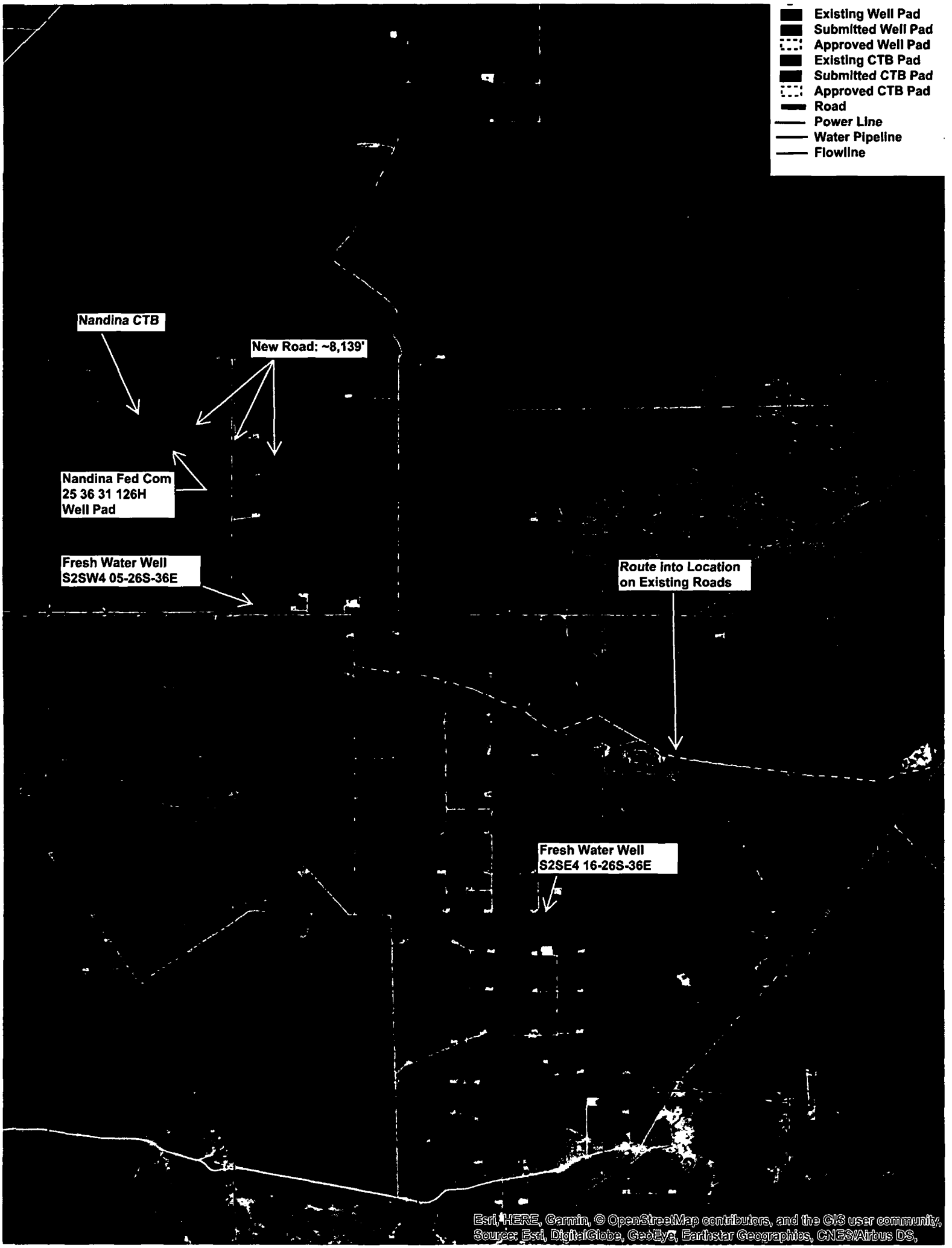
5. E.O.L. = END OF LINE

S:\SURVEY\AMEREDEV_OPERATING_LLC\LEA_PROSPECT_NORTH_EASEMENTS\FINAL_PRODUCTS\EP_ROAD_EASEMENT_SEC_5_REV1.DWG 2/8/2018 1:00:43 PM bgregory


Existing Well Pad
Submitted Well Pad
Approved Well Pad
Existing CTB Pad
Submitted CTB Pad
Approved CTB Pad
Road
Power Line
Water Pipeline
Flowline
New Water Line: 6,589'
New Power Line: 6,590'
New Flowline: 255'
Nandina CTB
New Road: ~8,139'
Nandina Fed Com
25 36 31 126H
Well Pad
Route into Location
on Existing Roads
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

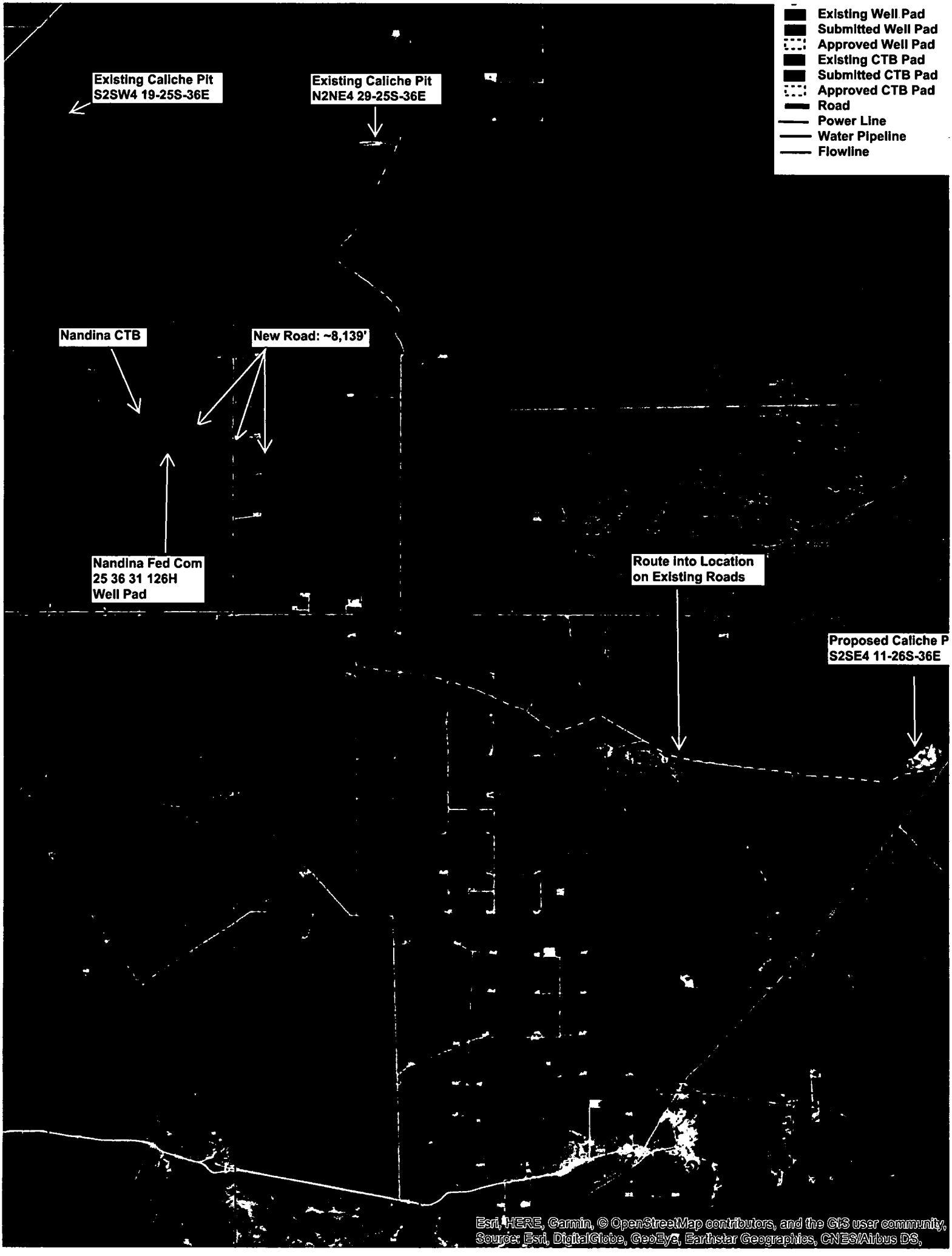

Existing Well Pad
Submitted Well Pad
Approved Well Pad
Existing CTB Pad
Submitted CTB Pad
Approved CTB Pad
Road
Power Line
Water Pipeline
Flowline
Nandina CTB
New Road: ~8,139'
Nandina Fed Com
25 36 31 126H
Well Pad
Fresh Water Well
S2SW4 05-26S-36E
Route into Location
on Existing Roads
Fresh Water Well
S2SE4 16-26S-36E
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

AMEREDEV

| Permit # | Well Name | Location (Lat/Lon) |
|---|---|---|
| CP 1049 POD 2 | Bennett | 32°04'14.32" N, 103°12'32.30" W |
| CP 1378 | S. Eppenour | 32°05'40.62" N, 103°13' 35.26" W |
| CP 1285 | Sec. 5 | 32°03'56.50" N, 103°17'37.04" W |
| CP 857 | Capped | 32°04'39.70" N, 103°16'51.13" W |
| C 2287 | #1 | 32°03'59.0" N, 103°33'16.8" W |
| C 2286 | #2 | 32°03'59.2" N, 103°33'15.2" W |
| C 2290 | #3 | 32°04'1.0" N, 103°33' 12.6" W |
| C 2285 | #4 | 32°04'3.7" N, 103°33'9.7" W |
| C 2288 | #5 | 32°04'0.5" N, 103°33'8.4" W |
| C 2294 | Garden | 32°03'3.2" N, 103°32'38.1" W |
| C 2293 | House | 32°03'2.3" N, 103°32'36.8" W |
| J-11-S-3 | Farm Well #2 | 32°03'08.4" N, 103°16'35.2" W |
| J-11-S-2 | Farm Well #3 | 32°03'11.5" N, 103°17'02.0" W |
| J-11-S | Farm Well #4 | 32°03'24.6" N, 103°17'02.1" W |
| CP 1170 POD 1 | CB 1 | 32°03'57.2" N, 103°18'45.3" W |
| CP 1170 POD 5 | | 32°07'17.1" N, 103°17'48.0" W |
| CP 1263 POD 5 | CB 2 | 32°03'56.27" N, 103°18'27.4" W |
| CP 1263 POD 3 | CB 3 | 32°03'54.90" N, 103°18'16.74" W |
| CP 1351 POD 1 | CB 4 | 32°03'57.16" N, 103°17'45.13" W |
| CP 1351 POD 2 | CB 5 | 32°03'30.70" N, 103°17'45.70" W |
| J 26 | Ryan | 32°01'20.41" N, 103°15'49.46" W |
| J 3 | | 32°02'41.5" N, 103°18'55.8" W |

***Exhibit 4 – Water Wells***


Existing Well Pad
Submitted Well Pad
Approved Well Pad
Existing CTB Pad
Submitted CTB Pad
Approved CTB Pad
Road
Power Line
Water Pipeline
Flowline
Existing Caliche Pit
S2SW4 19-25S-36E
Existing Caliche Pit
N2NE4 29-25S-36E
Nandina CTB
New Road: ~8,139'
Nandina Fed Com
25 36 31 126H
Well Pad
Route into Location
on Existing Roads
Proposed Caliche P
S2SE4 11-26S-36E
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community,
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS,

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

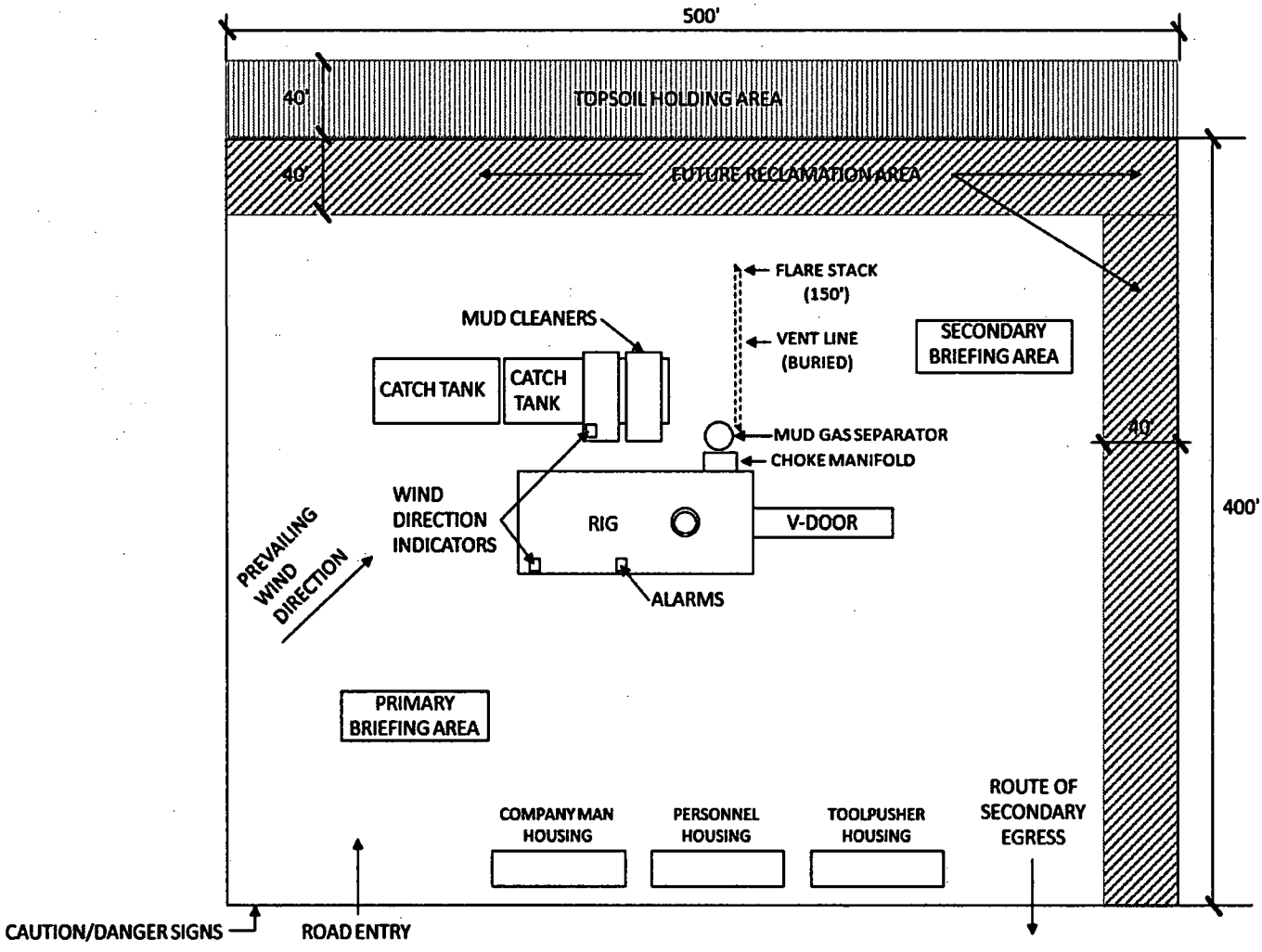



***Exhibit 5 – Enlarged Well Site Diagram***

Ameredev Operating, LLC
Nandina Fed Com 25 36 31 126H
Section 31, Township 25S, Range 36E
Lea County, New Mexico

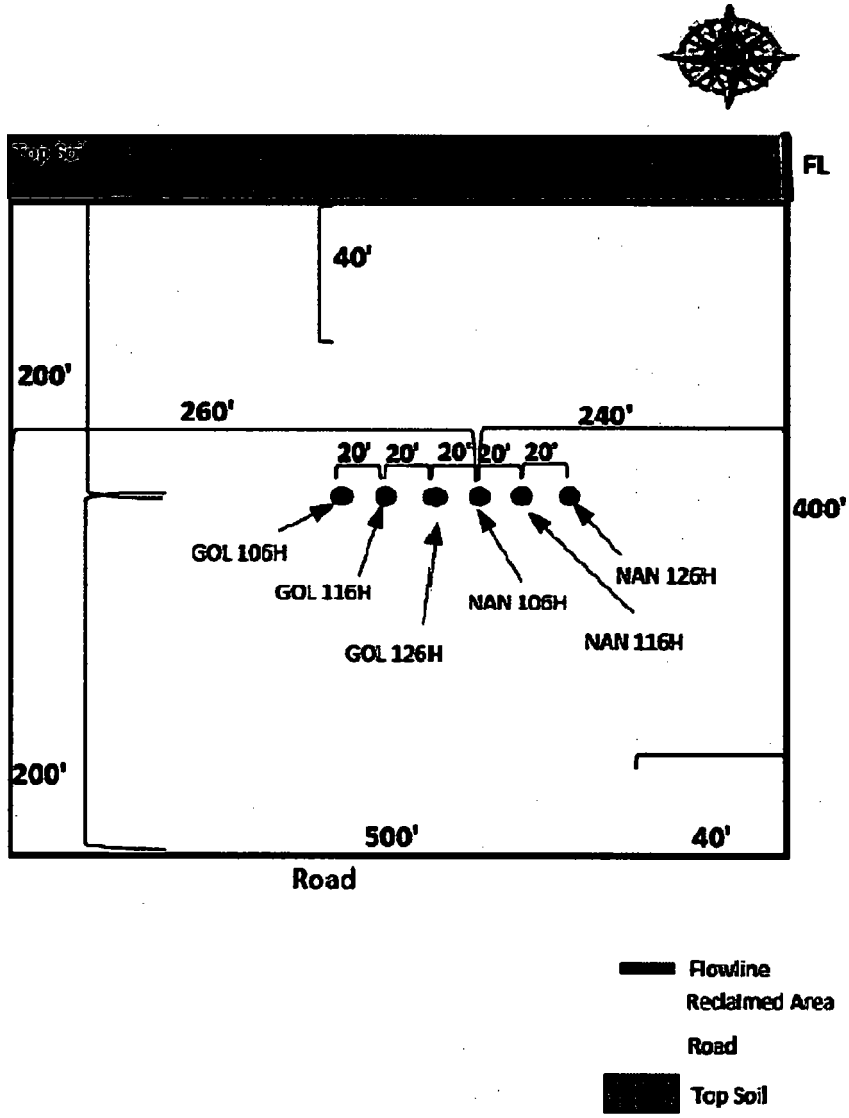



*Exhibit 3 – Well Site Diagram*

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

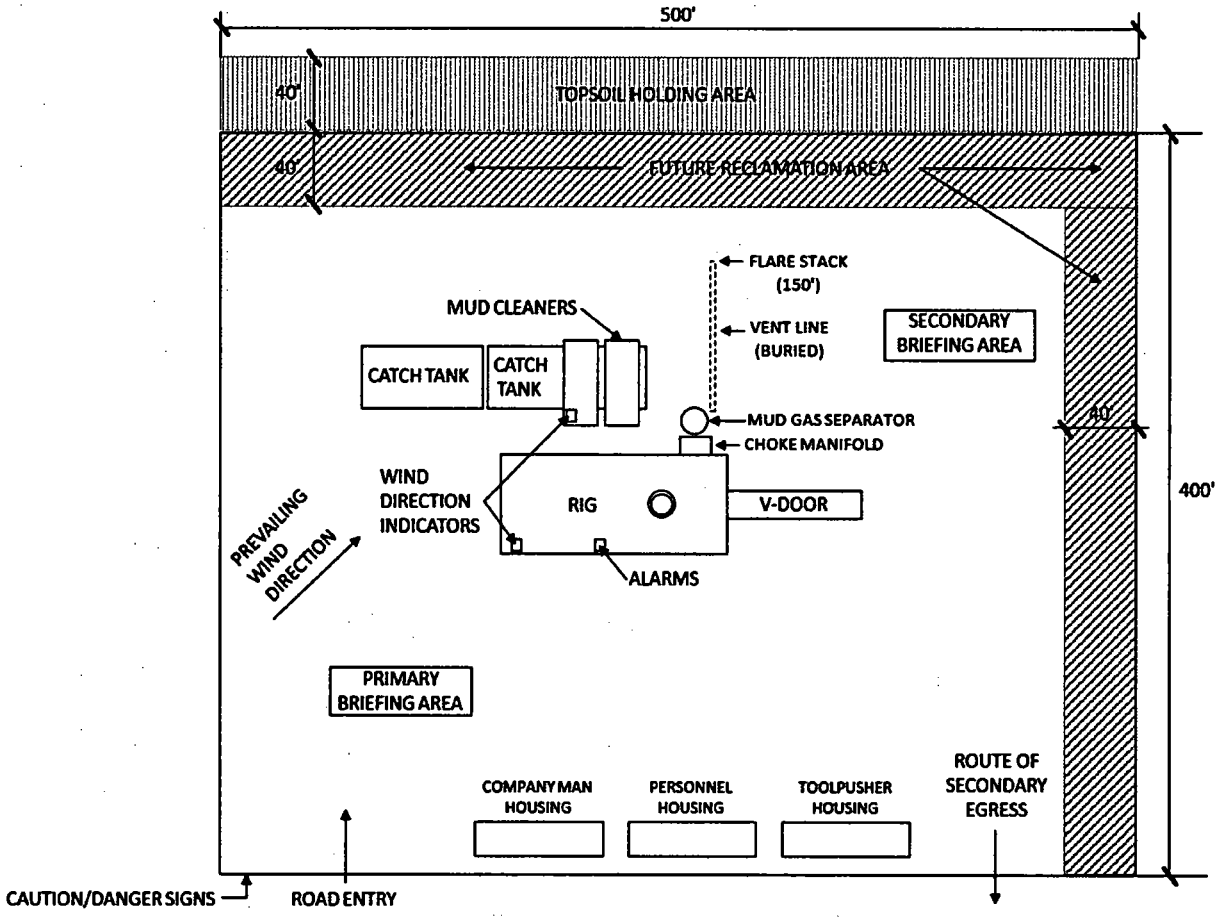



***Exhibit 5 – Enlarged Well Site Diagram***

Ameredev Operating, LLC
Nandina Fed Com 25 36 31 126H
Section 31, Township 25S, Range 36E
Lea County, New Mexico

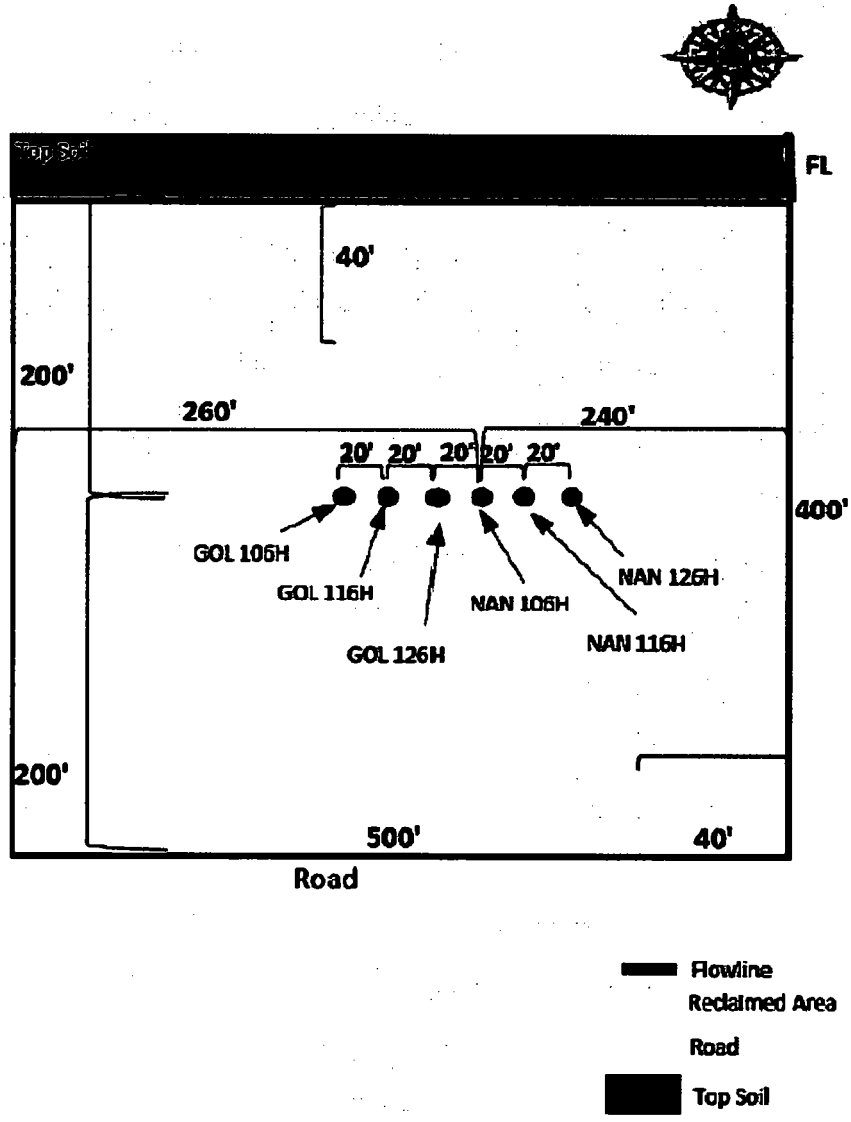



*Exhibit 3 – Well Site Diagram*

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

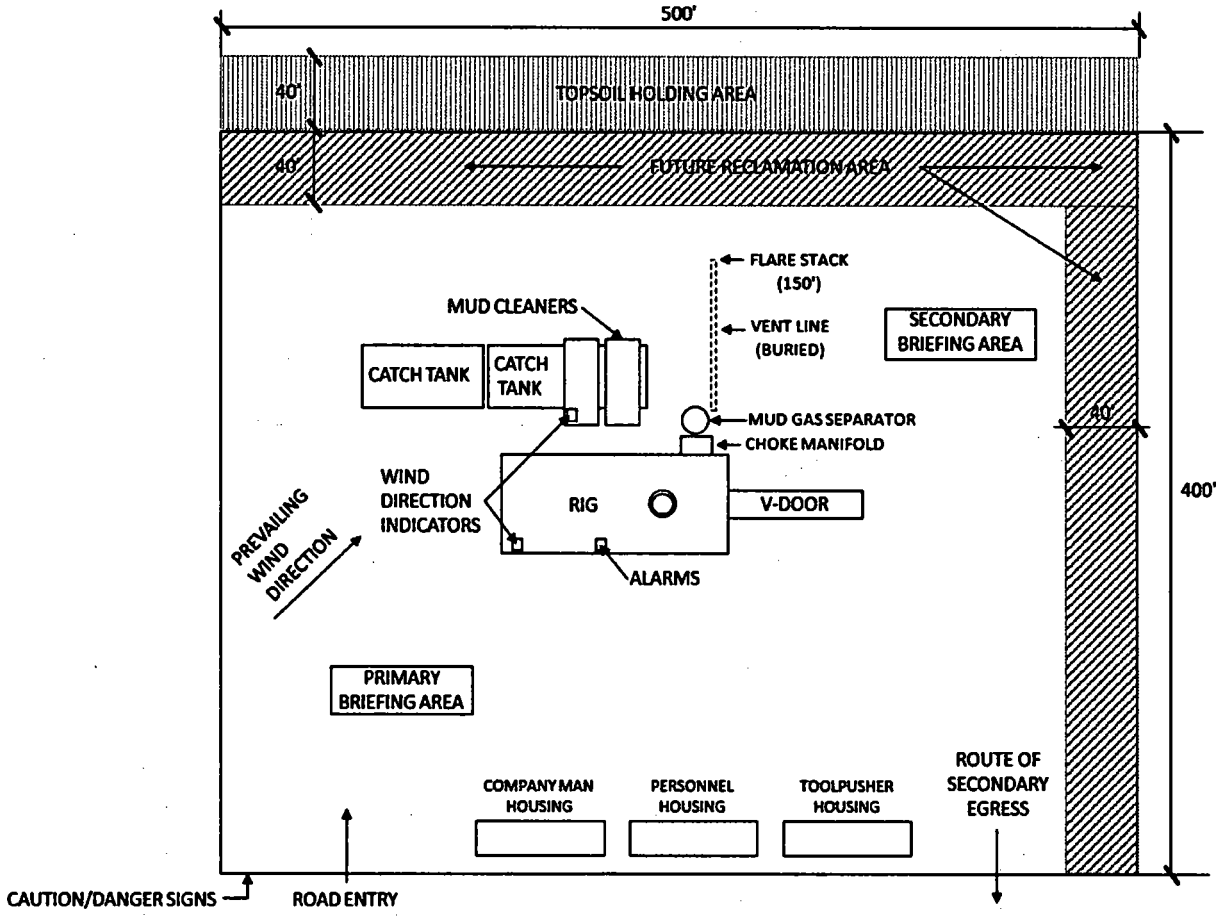



***Exhibit 5 – Enlarged Well Site Diagram***

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

# Surface Use Plan of Operations

## Introduction

The following Surface Use Plan of Operations will be implemented by Ameredev Operating, LLC (Ameredev), after APD approval. No disturbance will be created other than those described in this surface use plan. If any additional surface disturbance becomes necessary after APD approval, the appropriate BLM approved sundry notice or right of way application will be acquired prior to such disturbance. This Surface Use Plan includes Ameredev's well pad, battery site, electrical, water and flow lines, and access roads.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soil storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction is in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are displaced, they will be replaced before construction proceeds. Adjacent operators will be contacted before construction starts to mark adjacent pipelines.

## Directions to proposed pad:

At the intersection of NM-205 & 3rd St/NM-128/Frying Pan Rd, Head south on 3rd St/NM-128/Frying Pan Road approximately 5.6 miles. Turn west (right) on Anthony Road and proceed approximately 3.4 miles. Follow Anthony Road North (right) and proceed approximately .3 miles. Turn east (right) on Pipeline Road and proceed approximately .3 miles. Turn north (left) on unnamed lease road and proceed approximately 1 mile. Turn west (left) on unnamed lease road and proceed 6,152 ft. Location is on the North side of the road. See *Exhibit 1 – Well Pad Access* for a map of the route.

**Ameredev Operating, LLC**
**Nandina Fed Com 25 36 31 126H**
**Section 31, Township 25S, Range 36E**
**Lea County, New Mexico**

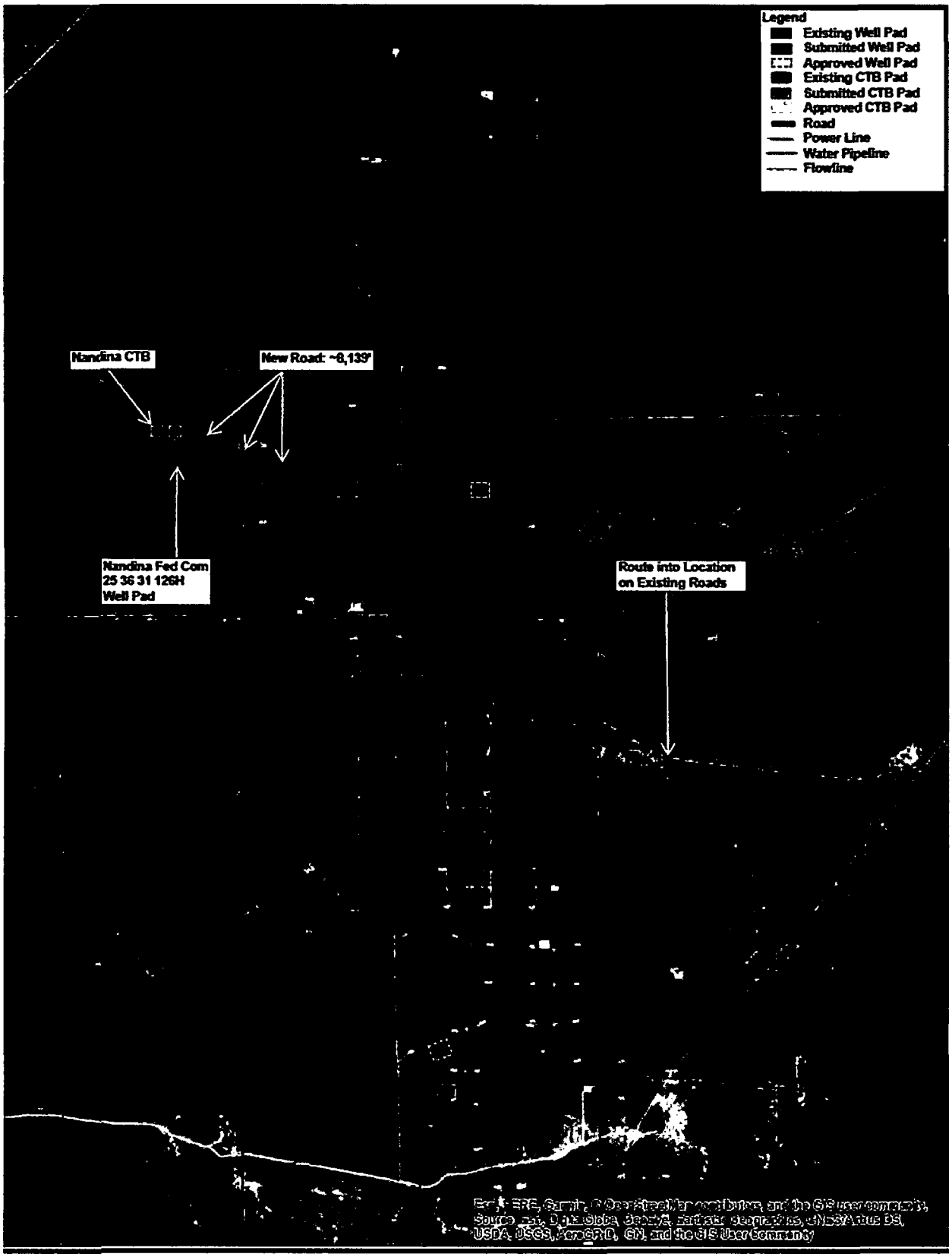


***Exhibit 1 – Well Pad Access***

## Section 1 – Existing Roads

**A.** The existing access road route to the proposed project is depicted on *Exhibit 1 – Well Pad Access*. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan.

**B.** Right-Of-Way will be acquired before construction begins.

**C.** The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.

**D.** Operator will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

## Section 2 – New or Reconstructed Access Roads

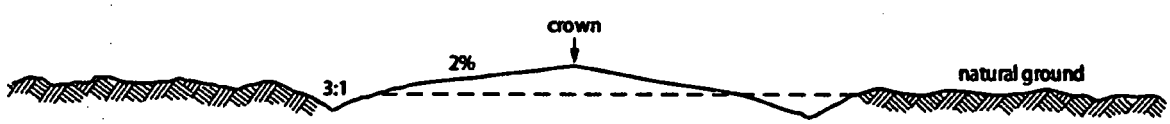
**A.** Sections of new access road will be needed for this proposed project. See *Exhibit 1 – Well Pad Access*, for locations.

**B.** The total length of new access road needed to be constructed for this proposed project is approximately 8,139 feet.

**C.** New access roads will be constructed with 6 inches of compacted caliche.

**D.** The maximum driving width of the access road will be 20 feet. The maximum width of surface disturbance when constructing the access road will not exceed 30 feet. All areas outside of the driving surface will be revegetated.

**E.** When the road travels on fairly level ground, the road will be crowned and ditched with a maximum 2% slope from the tip of the road crown to the edge of the driving surface. Ditches will be constructed on each side of the road. The ditches will be 3 feet wide with 3:1 slopes. See road cross section diagram below:




**F.** No turnouts will be constructed on the new portions of access road.

**G.** No cattle guards will be installed on the new portions of access road.

**H.** Right-of-way will be acquired before construction begins.

I. No culverts or low water crossings will be constructed for the new portions of access road.
J. Since the access road is on level ground, no lead-off ditches will be constructed for the new portions of access road.
K. Any sharp turns in the in the new road will be rounded to facilitate turning by trucks.
L. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.
M. All topsoil and fragmented rock removed in excavation will be used as directed in approved plan.

## Section 3 – Location of Existing Wells

*Exhibit 2 – One Mile Radius Existing Wells* depicts all known wells within a one mile radius of the Nandina Fed Com 25 36 31 126H. See *Exhibit 2a – One Mile Radius Wells List* for a list of wells depicted.

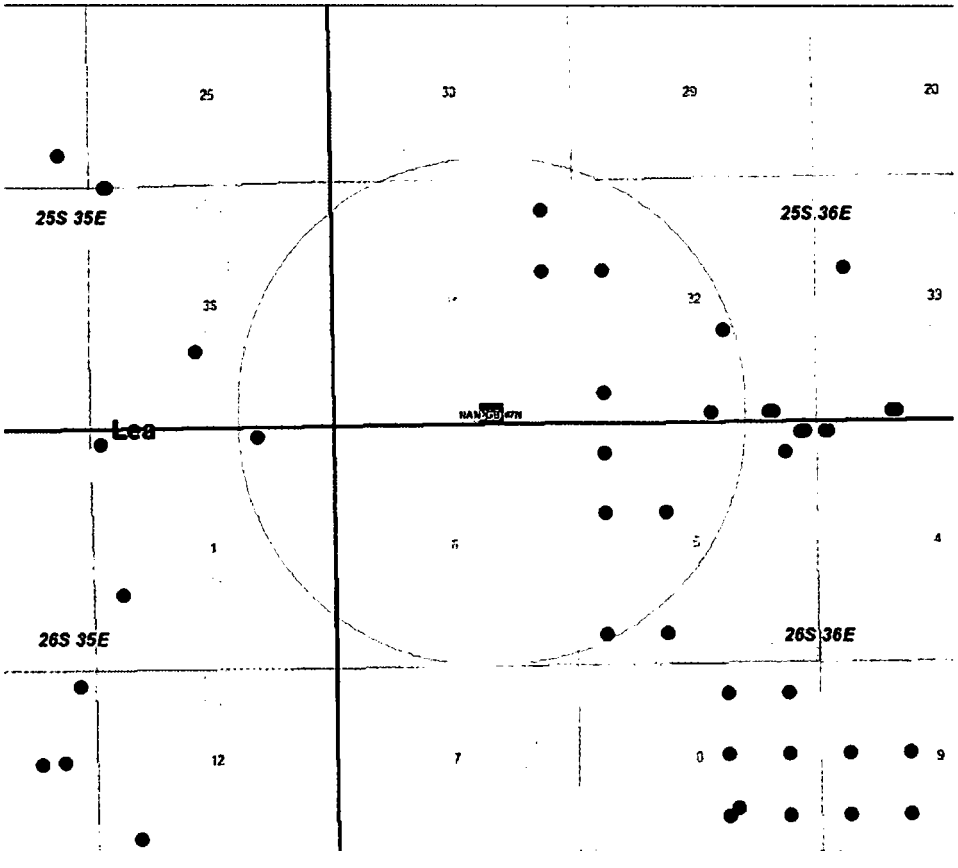



***Exhibit 2 – One Mile Radius Existing Wells***

| API | WELL NAME | STATUS | TD |
|---|---|---|---|
| 30025098400000 | SAND HILLS UNIT - 9 | DHSO | 3386 |
| 30025261530000 | SPOTTED TAIL FED - 2 | ABDNLOC | 0 |
| 30025260100000 | SPOTTED TAIL FED - 1 | OIL | 3336 |
| 30025260090000 | STANDING BEAR - 1 | PLUGOIL | 3280 |
| 30025260170000 | SITTING BULL - 1 | OIL | 3379 |
| 30025260270000 | SITTING BULL - 1 | OIL | 3368 |
| 30025268920000 | SITTING BULL - 2 | DRY | 3746 |
| 30025259400000 | BUSSELL FEDERAL - 1 | ABDNLOC | 0 |
| 30025268760000 | STANDING BEAR FED - 2 | PLUGOIL | 3311 |
| 30025444700000 | REDBUD 25-36-32 STA - 105H | START | 0 |
| 30025444710000 | REDBUD 25-36-32 STA - 115H | PILOT | 13503 |
| 30025444710100 | REDBUD 25-36-32 STA - 115H | START | 0 |
| 30025445050000 | USHANKA FEDERAL COM - 023H | PILOT | 12500 |
| 30025445050100 | USHANKA FEDERAL COM - 023H | AT-TD | 19355 |

***Exhibit 2a – One Mile Radius Existing Wells List***

**Section 4 - Location of Existing and/or Proposed Production Facilities**

**A.** The multiple well pad will be located on Section 31, and will measure 400'x500'. Should any type of production facilities be located on the well pad, they will be strategically placed to allow for maximum interim reclamation, re-contouring, and revegetation of the well location.

**B.** Production from the proposed well will be transported to a new production facility named Nandina CTB, north of the well pad.

**C.** A 4" poly flowline will be run approximately 255' from the Nandina Fed Com 25 36 31 126H to the Nandina CTB that will be north of the well pad. A 12" poly water line will be run from the Nandina CTB to a planned line that will be installed taking our produced water in the area to an SWD that is operated by OWL. The new line will be approximately 6,589'. A power line will be run parallel to the water line and will connect into a power line that we will be installing for a well in the area. The power line will be approximately 6,590'. The Nandina CTB will be 500'x525' and will include a separator, Heat Exchanger, VRU, VRT, meter run and a tank battery. The new production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

**D.** All permanent (lasting more than six months) above ground structures including but not limited to pump jacks, storage tanks, barrels, pipeline risers, meter housing, etc., that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM

Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.

**E.** If any plans change regarding the production facility or other infrastructure (pipeline, electrical lines, etc.), Ameredev will submit a sundry notice or right-of-way (if applicable) prior to installation or construction.

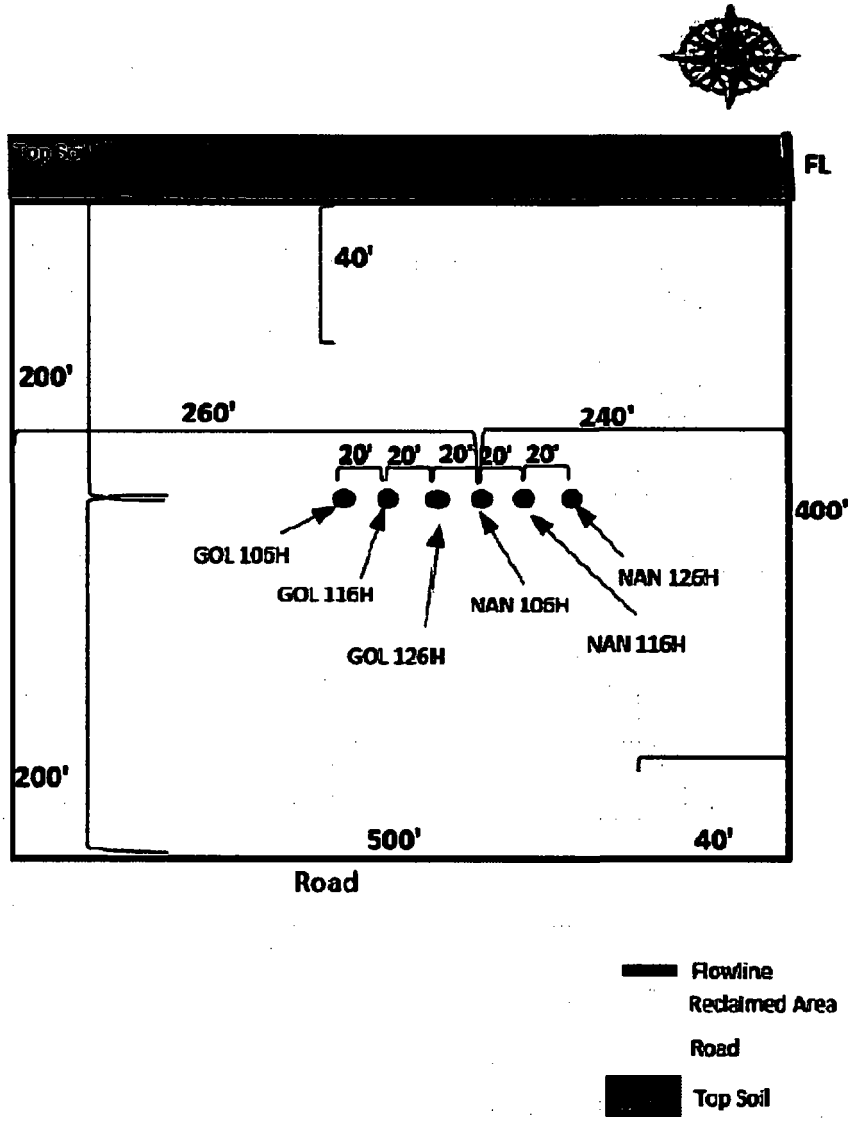



***Exhibit 3 – Well Site Diagram***

## Section 5 - Location and Types of Water Supply

**A.** This location will be drilled using a combination of water and mud systems (outlined in the Drilling Program). The water will be obtained from preexisting water wells, by running a pump directly to the drilling rig. See *Exhibit 4 - Water Wells*, for a list of available water wells. In cases where a polyline is used to transport water for drilling or completion purposes, the existing and proposed roads into location will be utilized.

| Permit # | Well Name | Location (Lat/Lon) |
|---|---|---|
| CP 1049 POD 2 | Bennett | 32°04'14.32" N, 103°12'32.30" W |
| CP 1378 | S. Eppenour | 32°05'40.62" N, 103°13' 35.26" W |
| CP 1285 | Sec. 5 | 32°03'56.50" N, 103°17'37.04" W |
| CP 857 | Capped | 32°04'39.70" N, 103°16'51.13" W |
| C 2287 | #1 | 32°03'59.0" N, 103°33'16.8" W |
| C 2286 | #2 | 32°03'59.2" N, 103°33'15.2" W |
| C 2290 | #3 | 32°04'1.0" N, 103°33' 12.6" W |
| C 2285 | #4 | 32°04'3.7" N, 103°33'9.7" W |
| C 2288 | #5 | 32°04'0.5" N, 103°33'8.4" W |
| C 2294 | Garden | 32°03'3.2" N, 103°32'38.1" W |
| C 2293 | House | 32°03'2.3" N, 103°32'36.8" W |
| J-11-S-3 | Farm Well #2 | 32°03'08.4" N, 103°16'35.2" W |
| J-11-S-2 | Farm Well #3 | 32°03'11.5" N, 103°17'02.0" W |
| J-11-S | Farm Well #4 | 32°03'24.6" N, 103°17'02.1" W |
| CP 1170 POD 1 | CB 1 | 32°03'57.2" N, 103°18'45.3" W |
| CP 1170 POD 5 | | 32°07'17.1" N, 103°17'48.0" W |
| CP 1263 POD 5 | CB 2 | 32°03'56.27" N, 103°18'27.4" W |
| CP 1263 POD 3 | CB 3 | 32°03'54.90" N, 103°18'16.74" W |
| CP 1351 POD 1 | CB 4 | 32°03'57.16" N, 103°17'45.13" W |
| CP 1351 POD 2 | CB 5 | 32°03'30.70" N, 103°17'45.70" W |
| J 26 | Ryan | 32°01'20.41" N, 103°15'49.46" W |
| J 3 | | 32°02'41.5" N, 103°18'55.8" W |

***Exhibit 4 – Water Wells***

## Section 6 – Construction/Construction Materials

**A.** Caliche will be obtained from the caliche pit located at Lat: 32° 6'28.78"N, Long: 103°16'58.77"W, the caliche pit at Lat: 32° 6'33.14"N, Long: 103°18'44.16"W, or the caliche pit at Lat: 32° 3'8.30"N, Long: 103°13'57.00"W.

**B.** Caliche utilized for the drilling pad will be obtained either from the locations listed above, an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "flipping" the well location. A mineral material permit will be obtained from the BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for "flipping" a well location is as follows:

1. An adequate amount of topsoil/root zone (usually top 6 inches of soil) will be stripped from the proposed well location and stockpiled along the side of the well location as depicted on the *Exhibit 3 - Well Site Diagram.*
2. An area will be used within the proposed well site dimensions to excavate caliche.
3. Subsoil will be removed and stockpiled within the surveyed well pad dimensions.
4. Once caliche/surfacing mineral is found, the mineral material will be excavated and stock piled within the approved drilling pad dimensions.
5. Subsoil will then be pushed back in the excavated hole and caliche will be spread accordingly across the entire well pad and road (if available).
6. Neither caliche, nor subsoil will be stockpiled outside of the well pad dimensions. Topsoil will be stockpiled along the edge of the pad as depicted in *Exhibit 5 – Enlarged Well Site Diagram.*
7. In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or federal land.

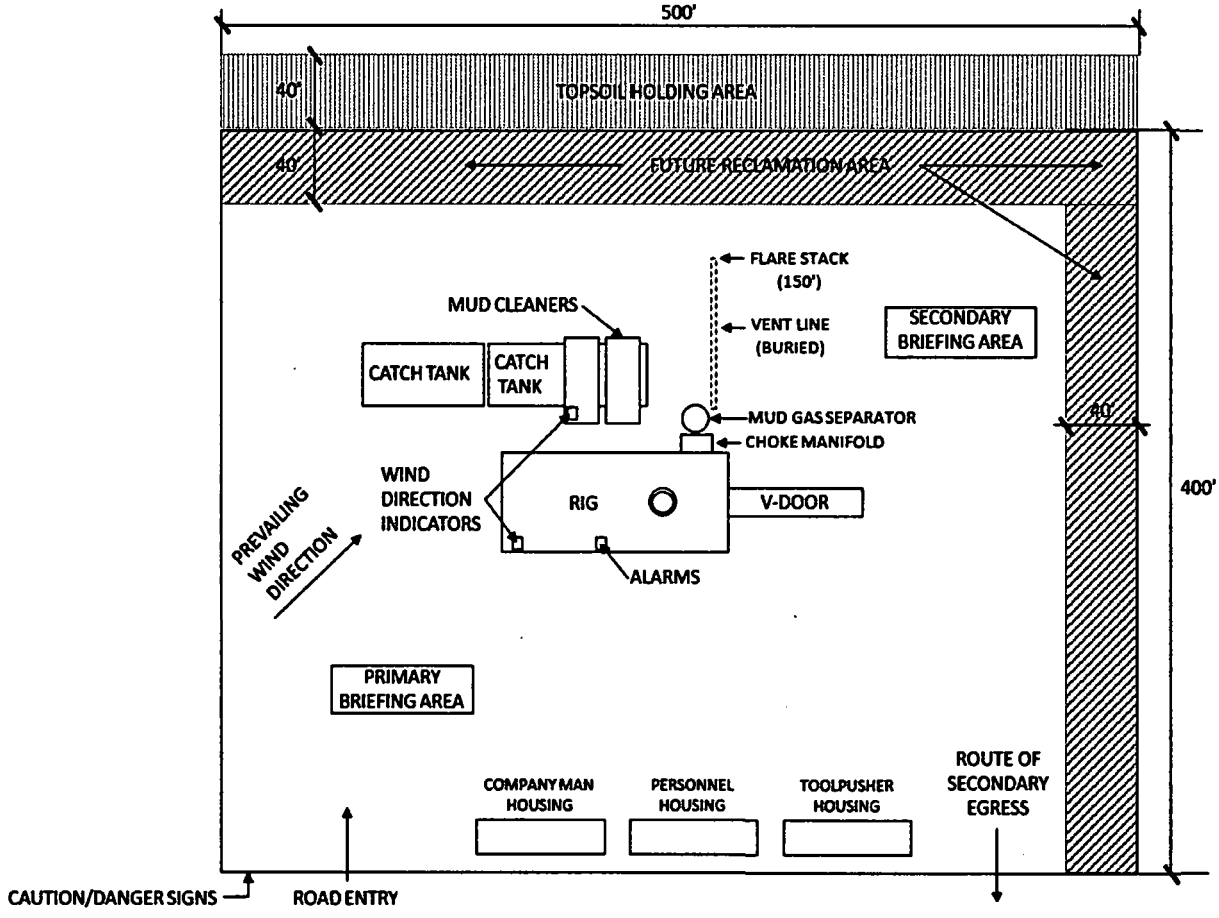



***Exhibit 5 – Enlarged Well Site Diagram***

## Section 7 - Methods of Handling Waste

**A.** Drill cuttings, mud, salts and other chemicals will be properly disposed of into steel tanks on site and hauled to a State approved commercial disposal facility.

**B.** Garbage and trash produced during drilling and completion operations will be collected in a portable metal trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.

**C.** Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.

**D.** After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a State approved commercial disposal facility.

## Section 8 - Ancillary Facilities

**A.** No ancillary facilities will be needed for the proposed project.

## Section 9 - Well Site Layout

**A.** See *Exhibit 3 - Well Site Diagram* and *Exhibit 5 – Enlarged Well Site Diagram.* The following information is presented:
1. Reasonable scale
2. Well pad dimensions/orientation
3. Drilling rig components/layout
4. Proposed access road
5. Topsoil stockpile

**B.** The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.

**C.** Topsoil salvaging
1. Grass, forbs, and small woody vegetation such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and re-spread evenly on the site following topsoil re-spreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

## Section 10 - Plans for Final Surface Reclamation

**Reclamation Objectives**

**A.** The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil, to control erosion, and to minimize habitat and forage loss, visual impact, and weed infestation during the life of the well or facilities.

**B.** The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

C. The BLM will be notified at least 3 days prior to the commencement of any reclamation procedures.
D. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on location has been completed or plugged. Ameredev will gain written permission from the BLM if more time is needed.
E. Interim reclamation will performed on the well site after the well is drilled and completed. *Exhibit 3 – Well Site Diagram* and *Exhibit 5 – Enlarged Well Site Diagram* depict the location and dimension of the planned interim reclamation for the well site.

**Interim Reclamation Procedures (if performed)**

A. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.
B. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
C. The areas planned for interim reclamation will then be contoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 Ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be re-contoured to the above ratios during interim reclamation.
D. Topsoil will be evenly re-spread and aggressively revegetated over the entire disturbed area not needed for all-weather operations, including cuts and fills. To seed the area, the proper BLM mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting, in order to break the soil crust and create seed germination micro-sites.
E. Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.
F. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

**Final Reclamation Procedures (well pad, buried pipelines, etc.)**

A. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
B. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
C. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be re-contoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to re-contouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

D. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting, in order to break the soil crust and create seed germination micro-sites.
E. Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.
F. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.
G. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not re-disturbed, and that erosion is controlled.

**Section 11 - Surface Ownership**

A. BLM has surface ownership for proposed project area.

**Section 12 - Other Information**

A. There are no dwellings within 1 mile of this location.
B. An on-site meeting for Ameredev's Nandina Fed Com 25 36 31 126H well was held on May 23, 2018.

**Ameredev field representative:**

Zac Boyd, Operations Supervisor

Cell: (432) 385-6996

Email: zboyd@ameredev.com

**Ameredev office contact:**

Christie Hanna, Regulatory Coordinator

Direct: (737) 300-4723

Email: channa@ameredev.com

Address: 5707 Southwest Parkway Building 1, Suite 275 Austin, Texas 78735

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# PWD Data Report

09/30/2019

**APD ID:** 10400027676 **Submission Date:** 02/23/2018

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Well Type:** OIL WELL **Well Work Type:** Drill

## Section 1 - General

**Would you like to address long-term produced water disposal?** NO

## Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

## Section 3 - Unlined Pits

**Would you like to utilize Unlined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):** **PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

## Section 4 - Injection

**Would you like to utilize Injection PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:** **Injection well name:**

**Assigned injection well API number?** **Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## Section 6 - Other

**Would you like to utilize Other PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:** **PWD disturbance (acres):**

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31 **Well Number:** 126H

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

# Bond Info Data Report

09/30/2019

**APD ID:** 10400027676

**Submission Date:** 02/23/2018

**Operator Name:** AMEREDEV OPERATING LLC

**Well Name:** NANDINA FED COM 25 36 31

**Well Number:** 126H

**Well Type:** OIL WELL

**Well Work Type:** Drill

[redacted]

Show Final Text

## Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NMB001478

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**

AMEREDEV

October 1, 2019

ATTN: Paul Kautz
NMOCD
1625 N. French Drive
Hobbs, NM 88240
(575) 393-6161 ext. 104

Paul,

Enclosed is a copy of the BLM approved APD COA packet for the Nandina Fed Com 25 36 31 126H well, for your review and approval. Please let me know if you have any questions.

Best regards,

Christie Hanna
Regulatory Coordinator