

IDAHO DEPARTMENT OF LANDS
DIRECTOR'S OFFICE
300 N 6th Street Suite 103
PO Box 83720
Boise ID 83720-0050
Phone (208) 334-0200
Fax (208) 334-5342



IDAHO OIL AND GAS
CONSERVATION COMMISSION
James Classen
Ken Smith
Margaret Chipman
Chris Beck
Sid Cellan

February 18, 2014

Rick Sandtveit
Trendwell West, Inc.
PO Box 560
Rockford, MI 49341

SUBJECT: Permit to Drill LU600553 (API#11-027-20-003), Smith 1-10

The Idaho Department of Lands has completed our review of this permit to drill for oil. Enclosed is a copy of the approved permit. This permit was approved with the following stipulations:

1. The permittee shall be required to submit an affidavit covering the initial BOP pressure test after installation signed by the operator or contractor attesting to the satisfactory pressure test.
2. The permittee shall ensure tanks are adequately sized, designed and constructed for the reception and confinement of mud and cuttings and to prevent contamination of streams and potable water.
3. Drilled holes cannot be used for any other purposes unless they are constructed according to the applicable well construction standards administered by the Idaho Department of Water Resources.
4. Applicant will obtain any needed water rights from Idaho Department of Water Resources if nearby wells will be used to supply water for the drilling operations.
5. All well log information required by IDAPA 20.07.02.091 will be submitted to IDL within 30 days of the logs being run.
6. In accordance with IDAPA 20.07.02.290 a gas to oil ratio test will be required to be conducted by the applicant no later than 30 days after the completion of the Smith 1-10. The results of the test will be provided within 20 days to the Idaho Department of Lands.
7. Idaho Department of Lands inspectors shall have 24 hour, unencumbered access for compliance and regulatory purposes.

Please ensure that all operations are conducted in accordance with the requirements of IDAPA 20.07.02 (Rules Governing Conservation Of Crude Oil And Natural Gas In The State Of Idaho).

This permit will be administered by Nancy Welbaum in our Southwest Supervisory Area. She will be inspecting the drilling operation. Please contact her at 208-334-3488 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Johnson', with a large, sweeping flourish extending to the right.

Robert R. Johnson P.G.
Oil & Gas Program Manager

cc: Nancy Welbaum, Senior Resource Specialist, IDL Southwest Office
Chad Hersley, IDWR, PO Box 83720, Boise, Idaho 83720-0098
Patricia A. Nilsson, Development Services Director, Canyon County

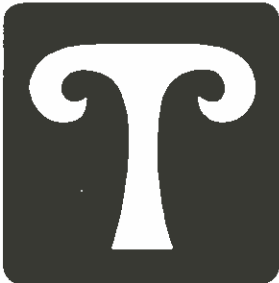
January 16, 2014

PO BOX 560
ROCKFORD
MICHIGAN 49341
PHONE: 616 866-5024
FAX: 616 866-3750

Idaho Department of Lands
Mr. Robert Johnson
Oil & Gas Manager
300 N. 6th Street
Boise, ID 83720-0050

RE: Smith 1-10 Permit Application
SW ¼ NE ¼ Section 10 T5N-R4W
Canyon County, Idaho

**TRENDWELL
ENERGY
CORPORATION**



FINDING ENERGY
FOR YOU

Dear Mr. Johnson,

Please find enclosed a well Permit Application for Permit to Drill, IDL Supplement to Permit Application, lease map with unit outline, copy of individual leases (two) subject to the proposed 40 acre drill unit and a permit fee check for \$2,000.00 for the Smith 1-10. Also enclosed is the form Idaho Oil and Gas Conservation Commission Organization Report, Form No. 0-1.

Trendwell West, Inc., "Trendwell" (an affiliate of Trendwell Energy Corp.) is applying for the Smith #1-10 as an oil well permit on a 40 acre unit described as the SW ¼ of the NE ¼ of Section 10-T5N-R4W, Canyon County, Idaho.

Trendwell is negotiating surface damages with the surface owner and anticipates this will be easily reached. Per IDL Regulation 075.01, Trendwell will provide the IDL an executed Surface Use Agreement prior to spud of the well.

For well bonding purposes (per IDL Regulation 070.01), a cashier's check in the amount of \$15,200.00 is enclosed.

Trendwell would like to request confidential status for this application as far as what is permitted in IDL Regulations.

If you have any questions, please contact me.

Sincerely,



Rick Sandtveit
Vice President Engineering

Enclosures (8)

2014 JAN 17 AM 9:34
BOISE, IDAHO

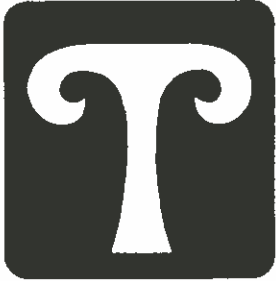
January 16, 2014

PO BOX 560
ROCKFORD
MICHIGAN 49341
PHONE: 616 866-5024
FAX: 616 866-3750

Idaho Department of Lands
Mr. Robert Johnson
Oil & Gas Manager
300 N. 6th Street
Boise, ID 83720-0050

RE: Smith 1-10 Permit Application
SW ¼ NE ¼ Section 10 T5N-R4W
Canyon County, Idaho

TRENDWELL
WEST INC.



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FOR YOU

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Sincerely,

A handwritten signature in blue ink that reads "Rick Sandtveit". The signature is written in a cursive, flowing style.

Rick Sandtveit
Vice President Engineering

Enclosures (8)



IDAHO OIL AND GAS CONSERVATION COMMISSION
Application For Permit to Drill, Deepen or Plug Back

API # 11-027-2003

LU600553

APPLICATION TO: Drill (\$2,000) [X] Deepen (\$500) [] Plug Back (\$500) []

NAME OF COMPANY OR OPERATOR: Trendwell West, Inc. Date: 01/15/2014

Address: 10 Bridge Street, Suite 200 PO Box 560

City: Rockford State: MI Zip Code: 49341 Telephone: (616) 866-5024

Contact Name: Richard Sandtveit Email Address: rick@trendwellenergy.com

DESCRIPTION OF WELL AND LEASE

Name of Lease: Smith Well Number: 1-10 Elevation (ground): 2,435'

Well Location: Section: 10 Township: T5N Range: R4W (or block and survey)

(give footage from Section lines): 3,300' from the south section line and 1,820' from the east section line

Field and Reservoir (if wildcat, so state): Oil Wildcat County: Canyon

Distance, in miles, and direction from nearest town or post office: The well is approximately 6 miles north of Notus, ID

Nearest distance from proposed location to property or lease line: bearing of N54W and 400' from the location to PL feet

Distance from proposed location to nearest drilling, completed or applied for on the same lease: NA feet

Proposed depth: 5,200' Rotary or cable tools: Rotary

Planned logging tools: Triple Combo - Gamma Ray, SP, CNL, CDT, Dual Induction

Approx date work will start: April 1, 2014 Number of acres in lease(s): 40 acre unit - 720.876 acres leased

Number of wells on lease, including this well, completed in or drilling to this reservoir: 1

If lease purchased with one or more wells drilled, complete the following information:

Purchased from (name)

Address of above

Status of bond

Remarks: (If this is an application to deepen or plug back, briefly describe work to be done, giving present producing zone and expected new producing zone)

CERTIFICATE: I, the undersigned, state that I am the Vice President of Engineering of Trendwell West, Inc. (company) and that I am authorized by said company to make this application and that this application was prepared under my supervision and direction and that the facts stated herein are true, correct and complete to the best of my knowledge.

Date: 1/15/2014

Signature:

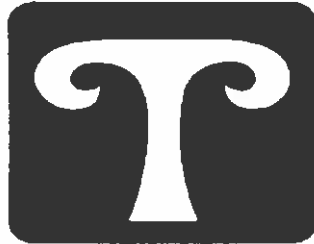
Richard A. Sandtveit

Permit Number: LU600553 Approval Date: 2-19-2014 Approved by:

API Number: 11-027-2003

Handwritten signatures of Richard A. Sandtveit and another official.

NOTICE: Before sending in this form, be sure that you have given all information requested. See instructions on back.



**Trendwell West, Inc.
10 E Bridge Street – Suite 200
PO Box 560
Rockford, MI 49341**

**IDL Supplement to Permit For
Smith #1-10 Well
Canyon County, Idaho**

January 15, 2014

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1. Background Information

The objective of this operation is to drill a vertical well to test productivity in primarily the Webber Sand and secondarily in the Hamilton and/or Willow Sands.

Well Type: Vertical
Well Name: Smith #1-10
State: Idaho
County: Canyon
Township: 5N
Range: 4W
Section: 10

Mapping Reference:

NAD83:

UTMI 11 Idaho West - Zone 1103

Mag Dec: 14.15⁰

Grid Conv: -0.75113⁰

Total Corr: 14.90113⁰

Coordinates – NAD83:

Surface Location:

Lat: N 43⁰ 47' 14.09435"

Long: W 116⁰ 48' 00.23737"

SPCS: N 774572.674'

E 2347381.323'

Bottom Hole Location:

Lat: N 43⁰ 47' 14.09435"

Long: W 116⁰ 48' 00.23737"

SPCS: N 774572.674'

E 2347381.323'

Elevations:

GL: 2,435'

KB: 2,450' (estimated)

Intended Total Depth of Well:

MD: 5,200'

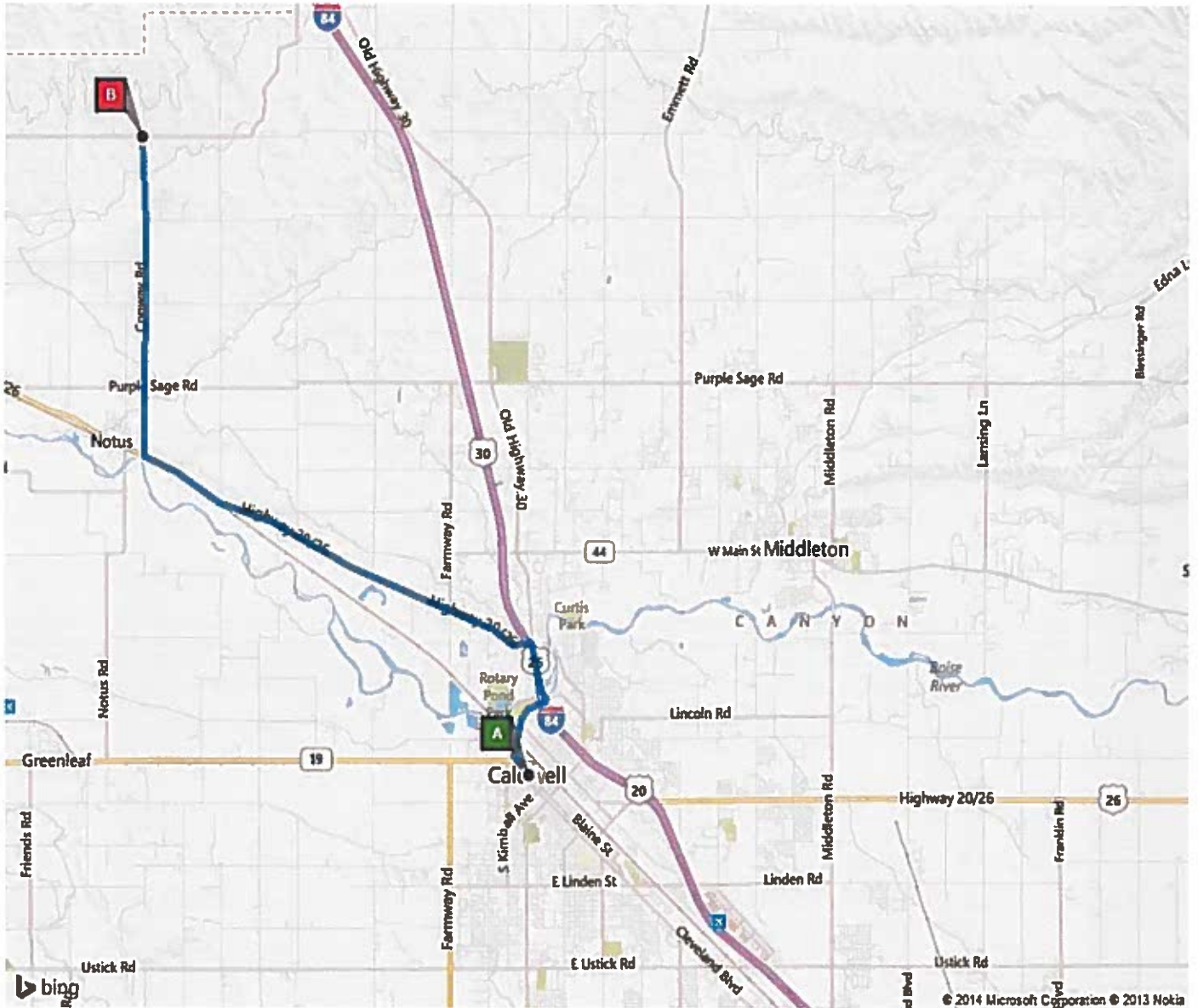
TVD: 5,200'

1.1. Well Location Information

Directions from Caldwell, ID:

Go northwest on I-84 and take exit 26 on US-20/US-26. Go left on US-20/US-26 approximately 5.6 miles to Conway Road (just outside the town of Notus). Turn right or north on Conway road and follow approximately 6 miles to Market Road. Turn left or west on Market Road and go about ¼ mile to the lease road on the right or north side of Market Road. Follow the lease road about 3,400 feet to location.

1.2. Access Map



1.3. Vicinity Map

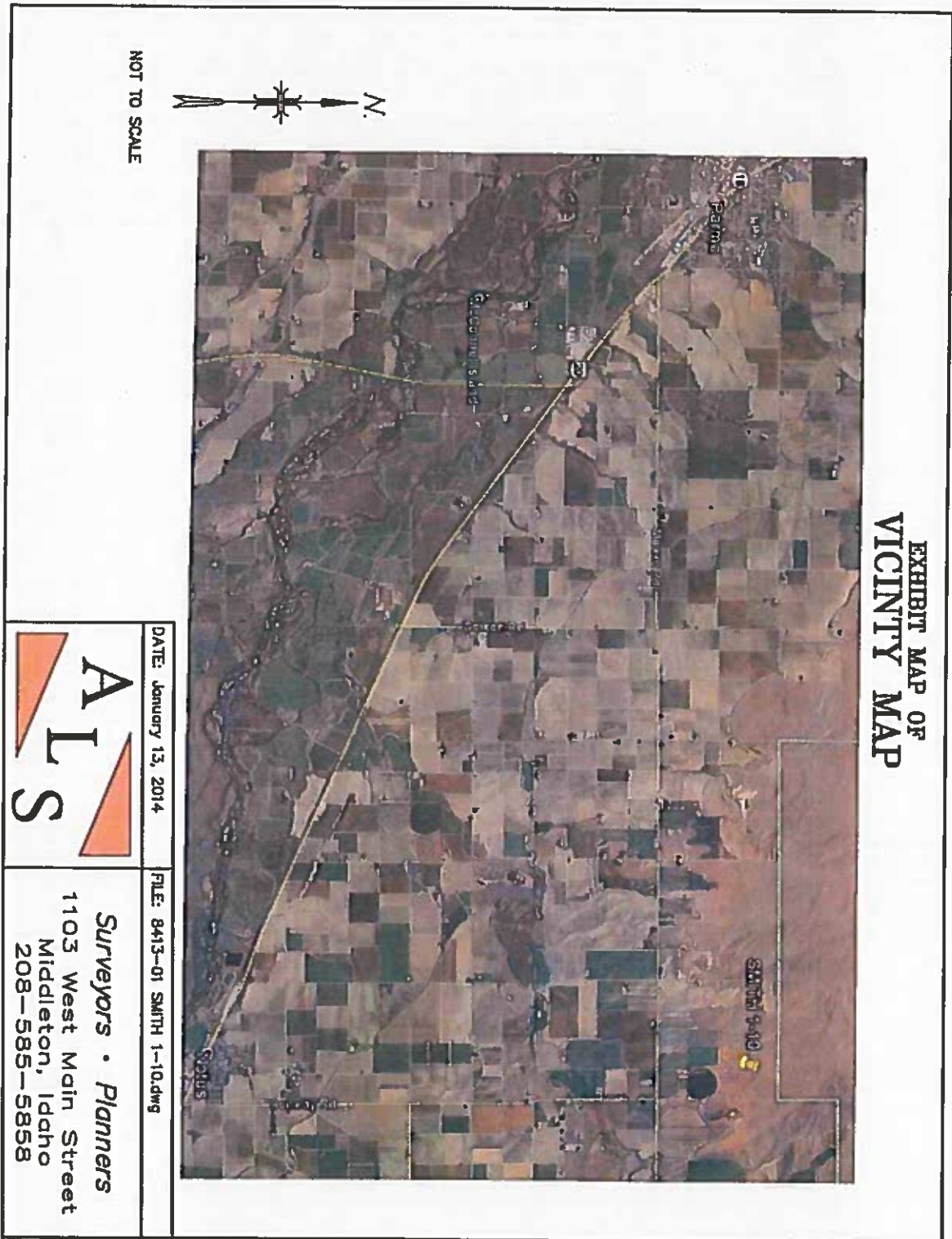
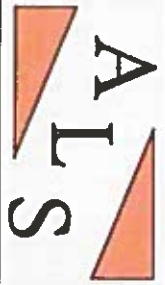


EXHIBIT MAP OF
VICINITY MAP

DATE: January 13, 2014

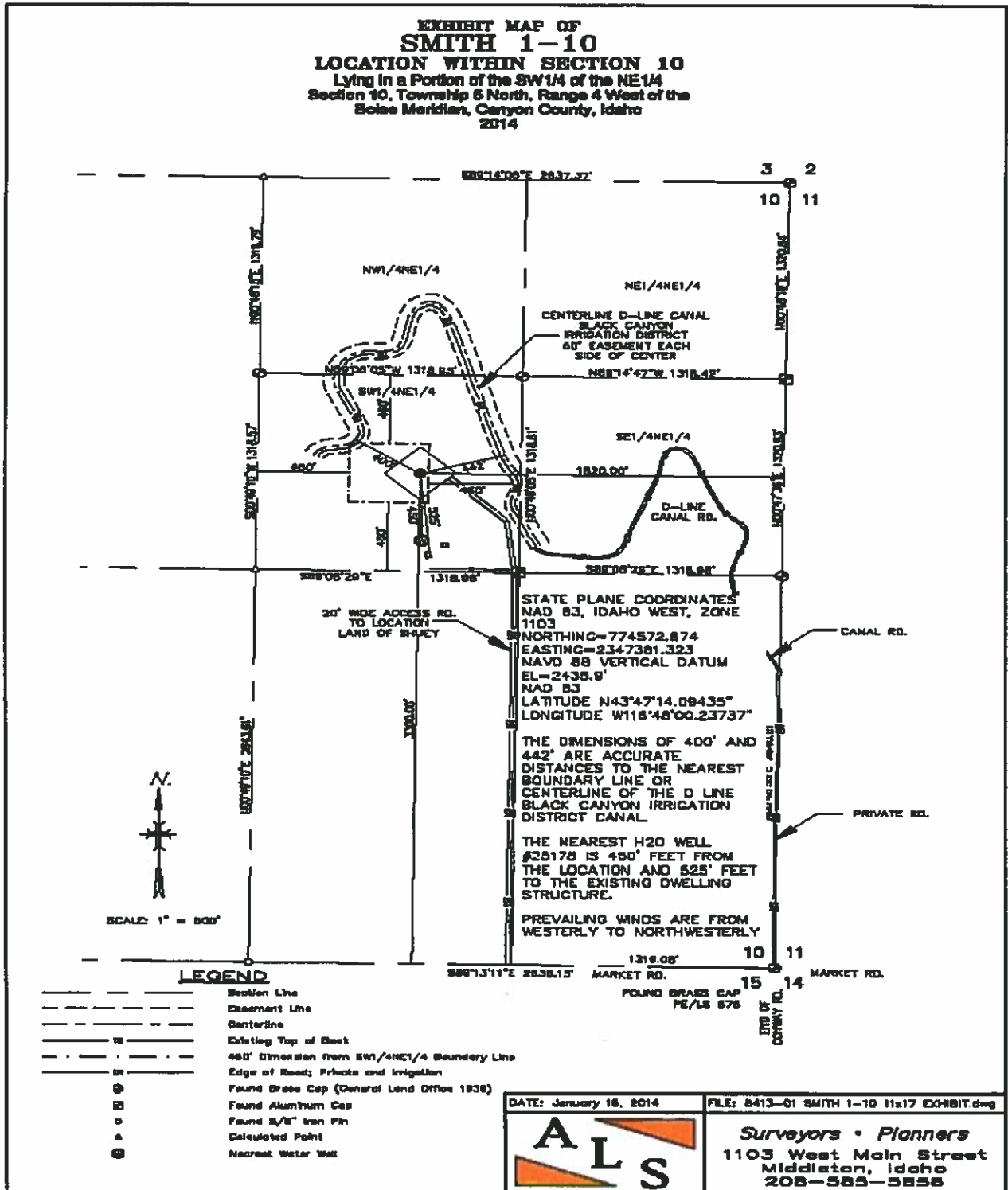
FILE: 8413-01 SMITH 1-10.dwg



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1103 West Main Street
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208-585-5858

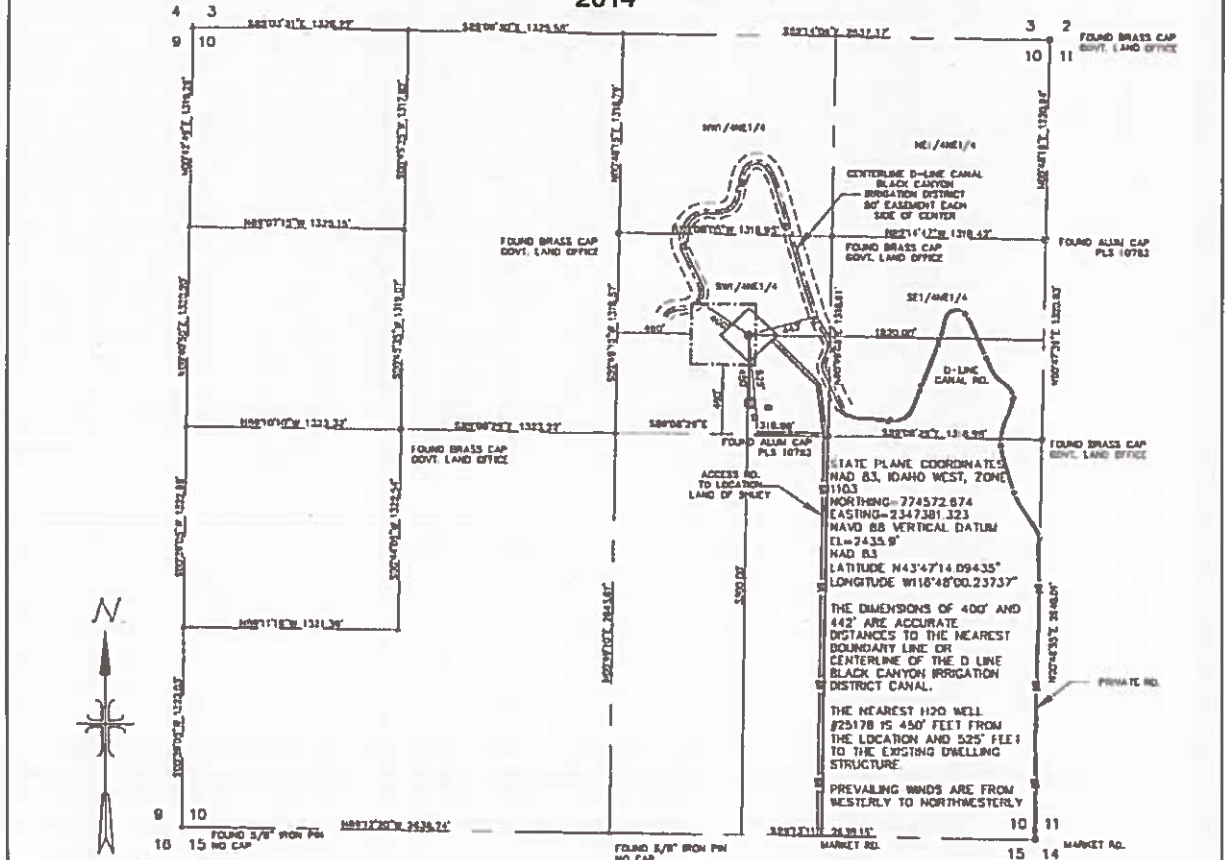
1.4. Surveyor's Maps

1.4.1. Location Map East Half of Section



1.4.2 Location Map Full Section

EXHIBIT MAP OF SMITH 1-10 LOCATION WITHIN SECTION 10 Lying in a Portion of the SW1/4 of the NE1/4 Section 10, Township 5 North, Range 4 West of the Boise Meridian, Canyon County, Idaho 2014



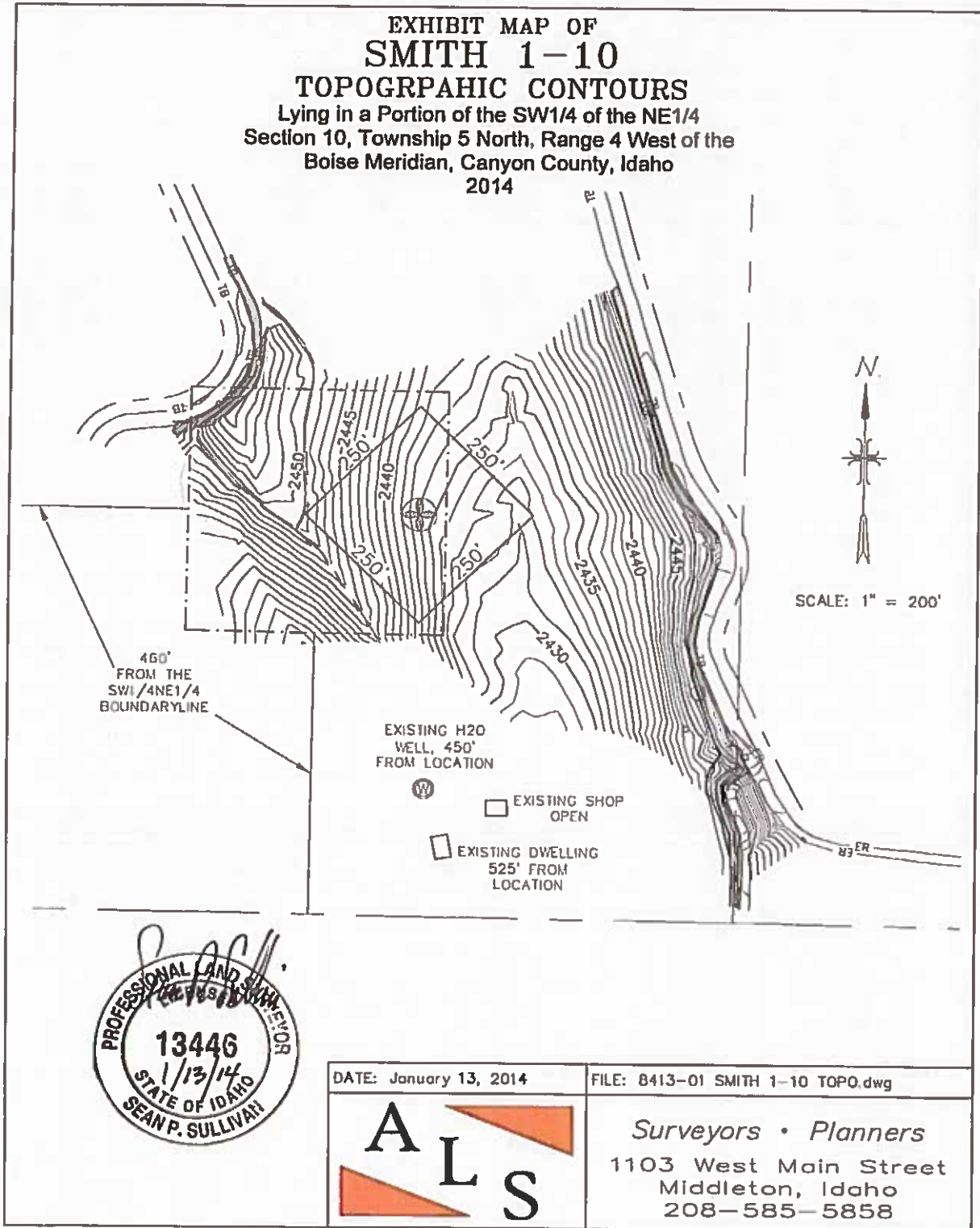
SCALE: 1" = 1000'



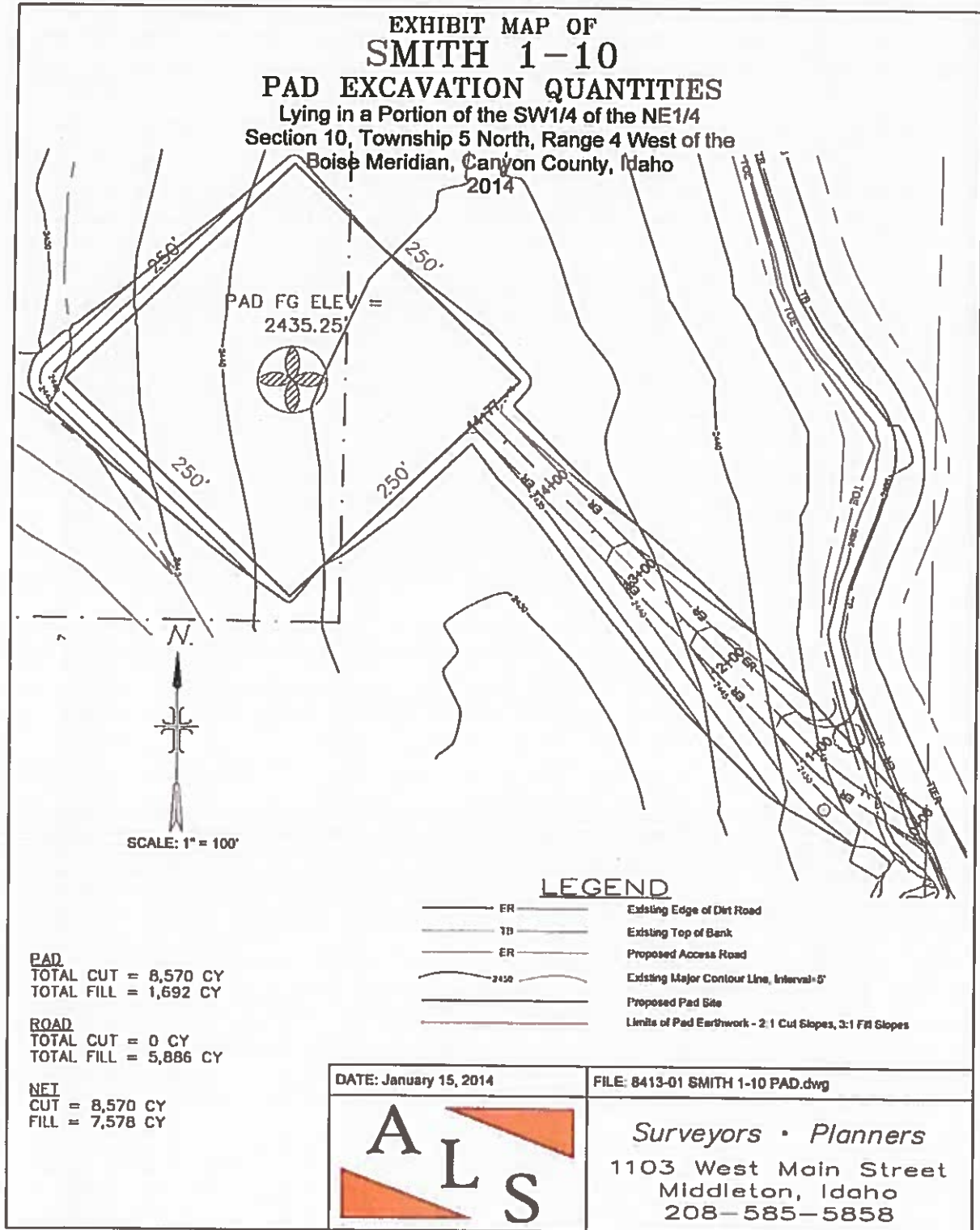
LEGEND	
	Section Line
	Easement Line
	Centerline
	Nearest Top of Bank of D-Line Canal
	Edge of Existing Road, Private and Irrigation

DATE: January 15, 2014	FILE: 8413-01 SMITH 1-10.dwg
	Surveyors • Planners 1103 West Main Street Middleton, Idaho 208-585-5858

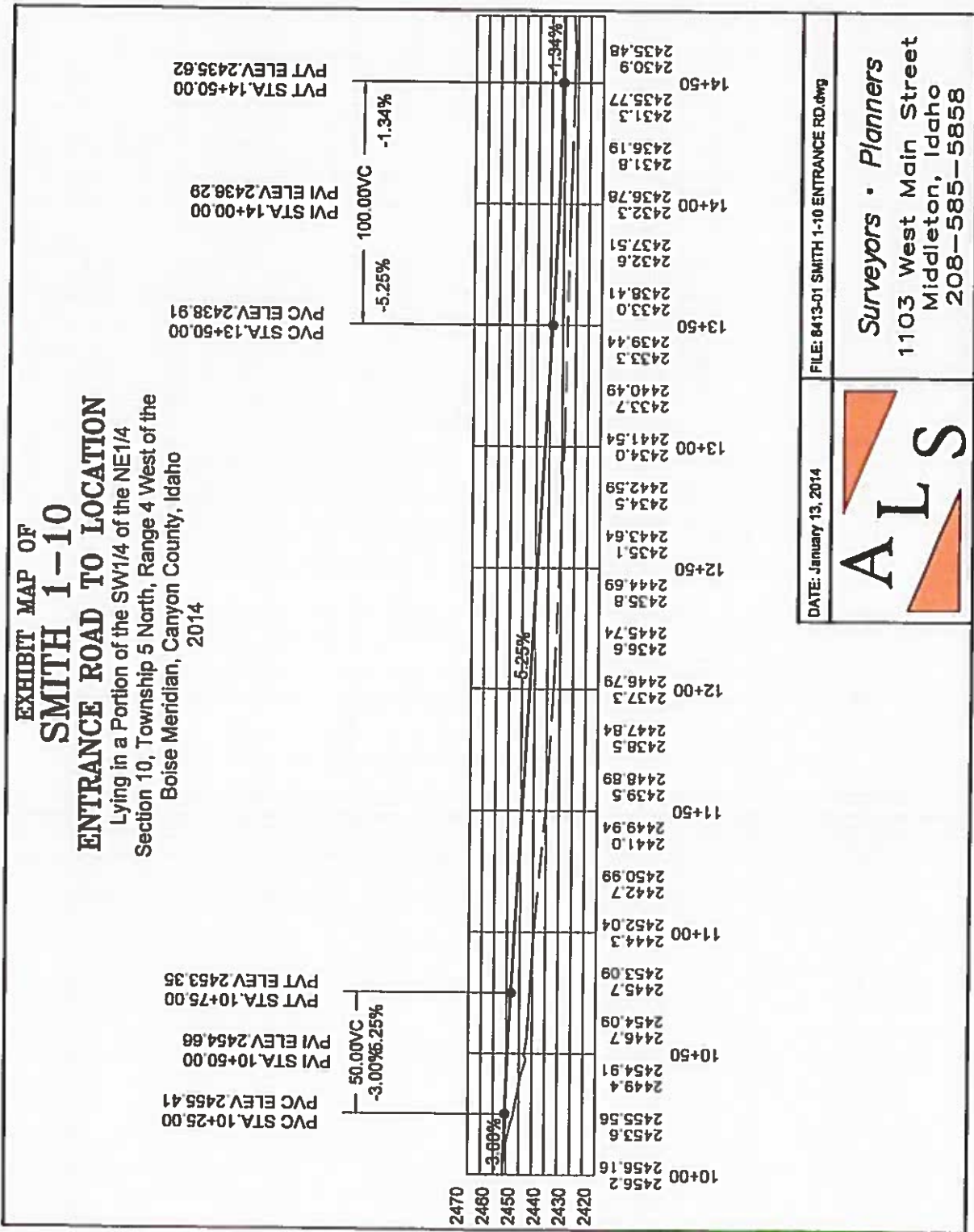
1.4.3. Contour Map



1.4.4. Excavation Map



1.4.5. Road Elevations at Pad Entrance

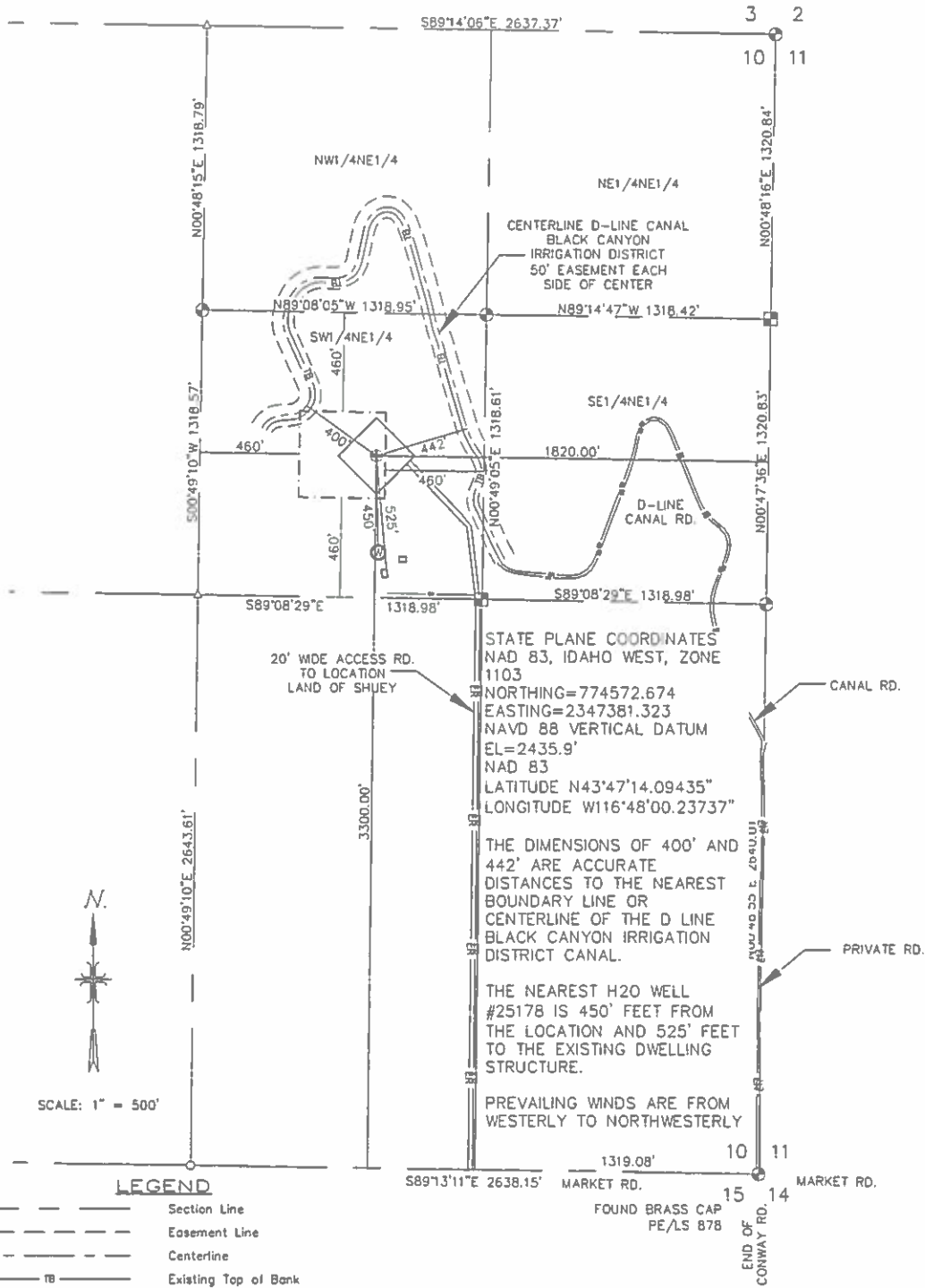


DATE: January 13, 2014

FILE: 8413-01 SMITH 1-10 ENTRANCE RD.dwg

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1103 West Main Street
Middleton, Idaho
208-585-5858

**EXHIBIT MAP OF
SMITH 1-10**
LOCATION WITHIN SECTION 10
Lying in a Portion of the SW1/4 of the NE1/4
Section 10, Township 5 North, Range 4 West of the
Boise Meridian, Canyon County, Idaho
2014

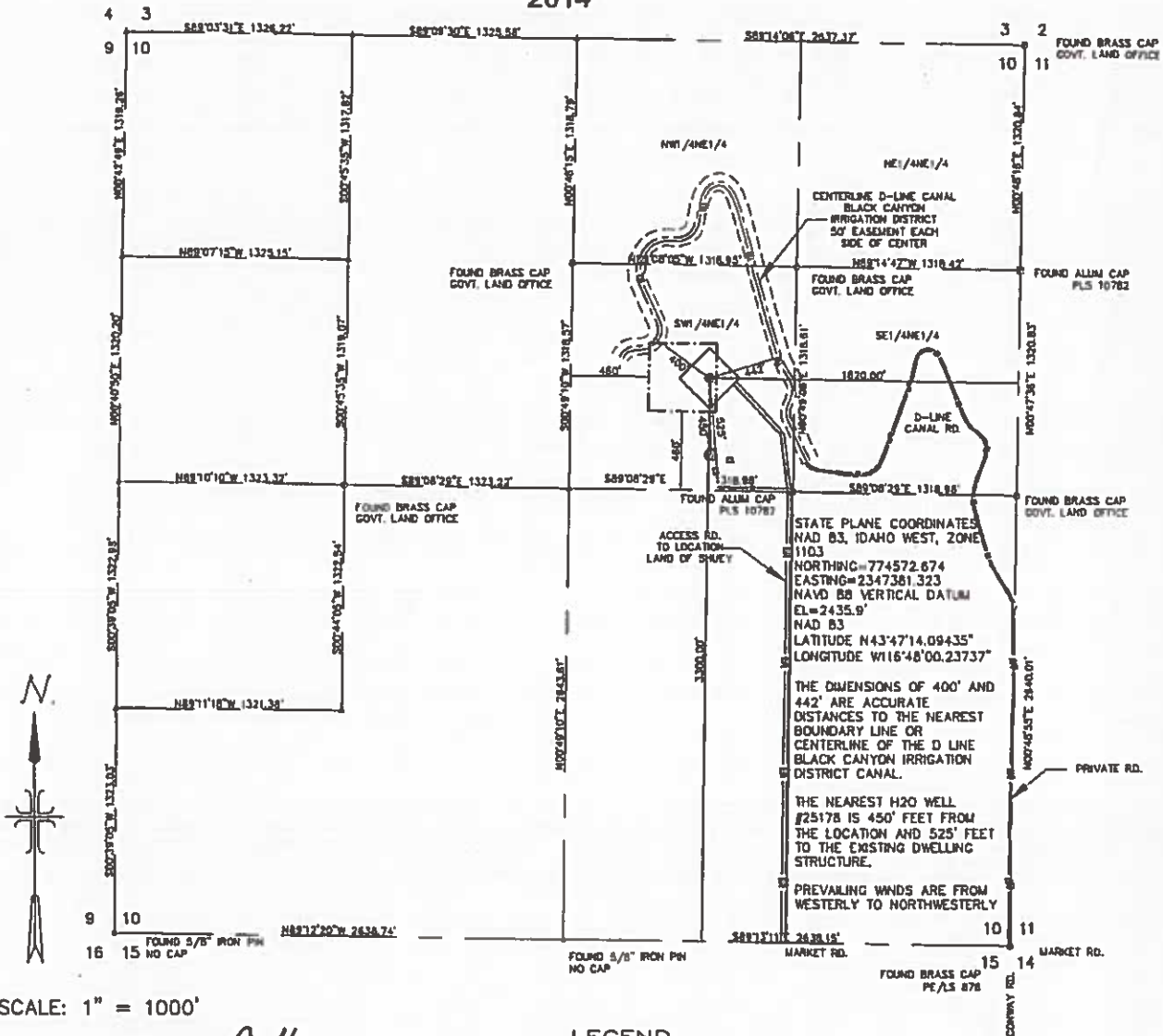


LEGEND

- Section Line
- - - Easement Line
- - - Centerline
- |— Existing Top of Bank
- - - 460' Dimension from SW1/4NE1/4 Boundary Line
- |— Edge of Road; Private and Irrigation
- ⊕ Found Brass Cap (General Land Office 1936)
- ⊠ Found Aluminum Cap
- Found 5/8" Iron Pin
- △ Calculated Point
- ⊙ Nearest Water Well

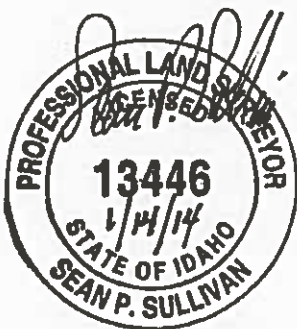
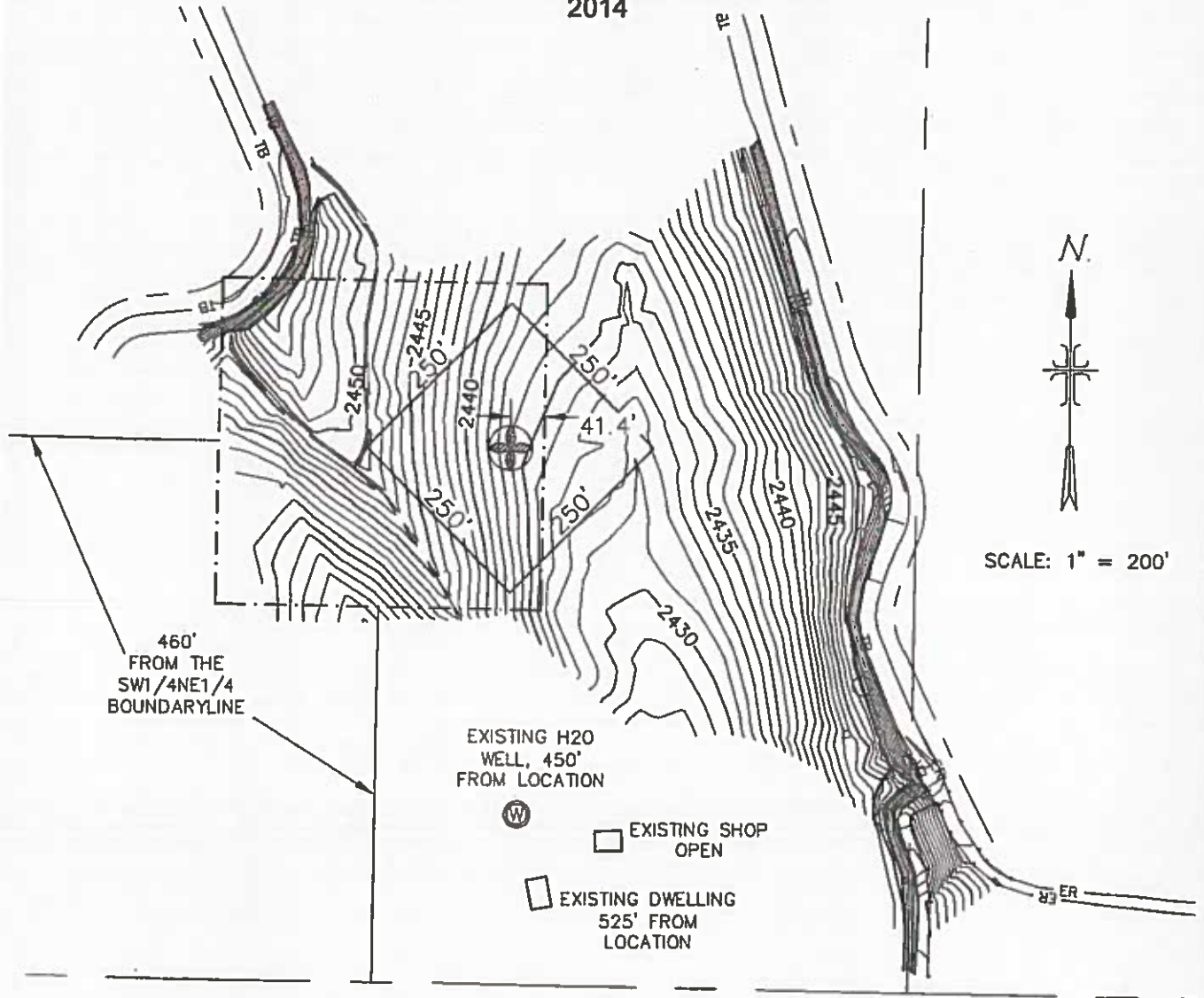
DATE: January 15, 2014	FILE: 8413-01 SMITH 1-10 11x11 EXHIBIT.dwg
ALS	Surveyors • Planners 1103 West Main Street Middleton, Idaho 208-585-5858

**EXHIBIT MAP OF
SMITH 1-10**
LOCATION WITHIN SECTION 10
Lying in a Portion of the SW1/4 of the NE1/4
Section 10, Township 5 North, Range 4 West of the
Boise Meridian, Canyon County, Idaho
2014



DATE: January 15, 2014	FILE: 8413-01 SMITH 1-10.dwg
ALS	Surveyors • Planners 1103 West Main Street Middleton, Idaho 208-585-5858

**EXHIBIT MAP OF
SMITH 1-10
TOPOGRAPHIC CONTOURS**
Lying in a Portion of the SW1/4 of the NE1/4
Section 10, Township 5 North, Range 4 West of the
Boise Meridian, Canyon County, Idaho
2014



DATE: January 14, 2014

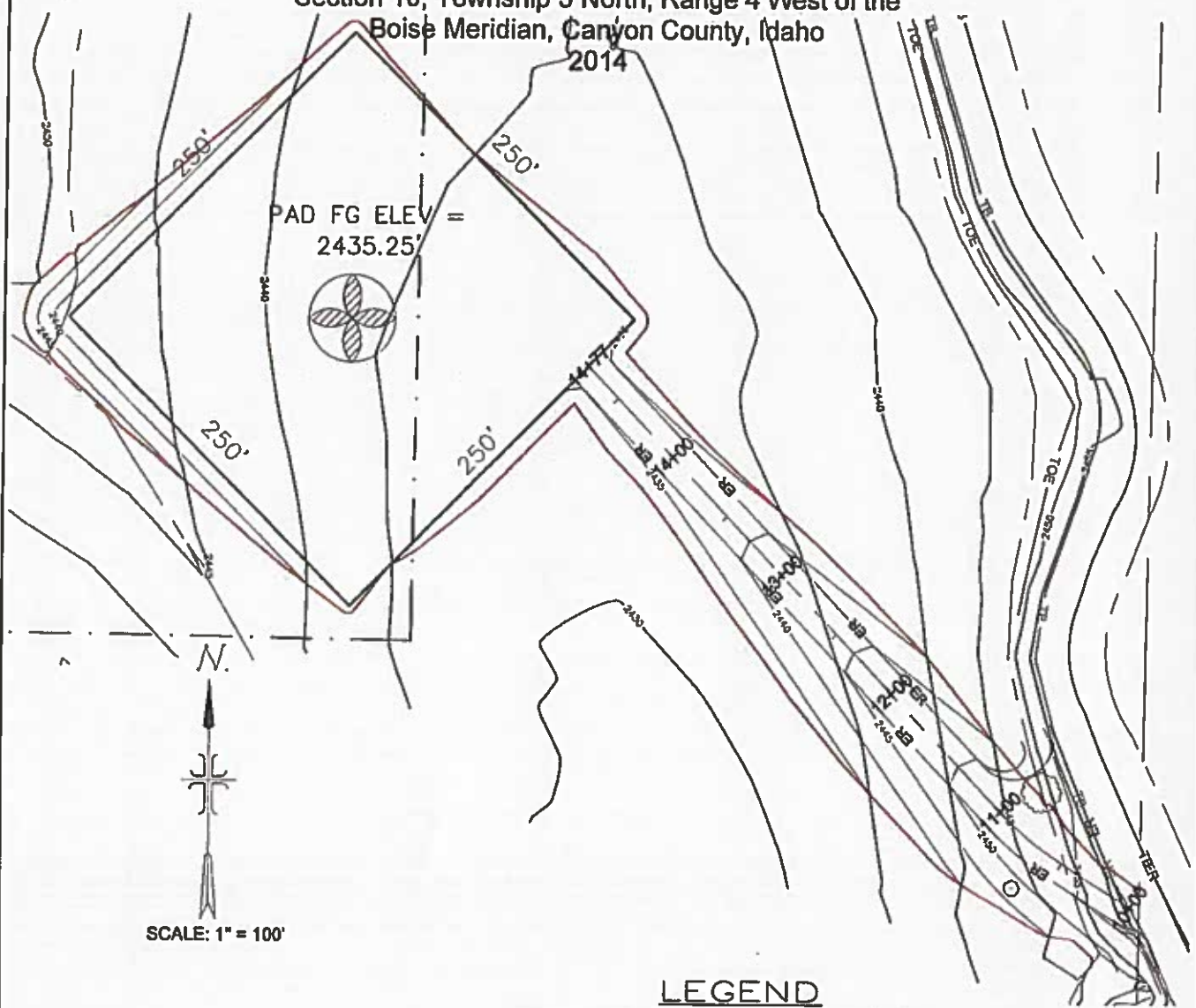
FILE: 8413-01 SMITH 1-10 TOPO.dwg



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1103 West Main Street
Middleton, Idaho
208-585-5858

**EXHIBIT MAP OF
SMITH 1-10
PAD EXCAVATION QUANTITIES**
Lying in a Portion of the SW1/4 of the NE1/4
Section 10, Township 5 North, Range 4 West of the
Boise Meridian, Canyon County, Idaho

2014



PAD FG ELEV =
2435.25'



LEGEND

- ER Existing Edge of Dirt Road
- TD Existing Top of Bank
- ER Proposed Access Road
- 2450 Existing Major Contour Line, Interval=5'
- Proposed Pad Site
- Limits of Pad Earthwork - 2:1 Cut Slopes, 3:1 Fill Slopes

PAD
TOTAL CUT = 8,570 CY
TOTAL FILL = 1,692 CY

ROAD
TOTAL CUT = 0 CY
TOTAL FILL = 5,886 CY

NET
CUT = 8,570 CY
FILL = 7,578 CY

DATE: January 15, 2014

FILE: 8413-01 SMITH 1-10 PAD.dwg



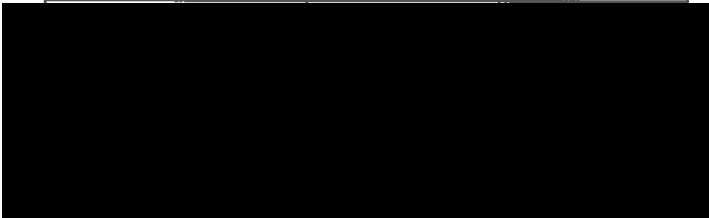
Surveyors • Planners
1103 West Main Street
Middleton, Idaho
208-585-5858

2. Geological Prognosis

2.1. Anticipated Formation Tops

Trendwell West, Inc.
Canyon County,
Idaho

Smith #1-10	
10-5N-4W	
SWNE	
Ground Elevation Estimate	2,436'

	TVD (GL)
Surface Casing	1000'
	
TD	5200'

2.2. Potential Drilling Hazards

2.2.1. Shallow Gas

There is the potential to encounter shallow gas in this well at multiple depths. The



 have had gas shows throughout the basin.

2.2.2. Ash beds

Mud logs of several wells in the Willow field area (Payette County) describe zones of shales that contain bentonite. Bentonite clay is generally formed by the weathering of volcanic ash, and it tends to expand a great deal as it absorbs fluid. The Bridge ML 1-10 experienced a zone of shale that included bentonite approximately 400' thick at depths of +/- 3250' -3650' MD. The drilling report states that they experienced a noticeable drop in ROP and upon pulling the bit out of the hole they found the bit to be balled solid with sticky, mushy clay. Strict attention to the mud program should help mitigate any issues in the prospect well.

3. Site Preparation

3.1. Access Roads

The proposed surface location is to be accessed by an upgraded private road off Waters Road about ¼ mile west of the intersection with Conway Road. The length of the road upgrade is approximately 3,400' on private property. See attached drawings 1.4.1, 1.4.2, and 1.4.5.

3.2. Location and Erosion Control

Appropriate grading, mechanical stabilization (rip-rap or hay bales), chemical stabilization (soil cement), and silt fencing will be used to prevent soil erosion. All cut and fill slopes are designed with a minimum 2: 1 grade to minimize runoff erosion and ensure mechanical stability. See attached drawing 1.4.4.

3.3. Cellar Design

An 8' deep round cellar box will be installed after the conductor is set and cemented.

3.4. Proposed Pit System

A closed-loop circulating system will be used for this well from spud. Zero discharge practices will be implemented, and all cuttings and waste fluid will be solidified and disposed of at an approved facility.

3.5. Sump

The location will have a 2' deep trench on downhill sides where the spoil from that trench will be used to construct an earthen berm around the location. The trench will act as a sump to collect rain and wash water for controlled release or appropriate disposal as required. See attached drawing 1.4.4.

3.6. Disposition of Drill Cuttings

After the cuttings are solidified, they will be disposed of at an approved land fill disposal site.

4. Well Construction

4.1. Casing and Cementing Program

Well Interval	Bit Size	Casing Size, Grade, and Weight	Casing Set Depth	Top of Cement	Cement Excess, Type, and Volume
Surface	17 1/2"	13 3/8" H-40 48 lb/ft	130'	Cement to Surface	100% Class A 140 sks
Intermediate	10 5/8"	8 5/8" J-55 24 lb/ft	1,000'	Cement to Surface	60% Lead – Thixmix (13.1 ppg), 175 sks Tail – Surface Tail (14.8 ppg) 100 sks
Production	7 7/8"	5 1/2" J-55 15.5 lb/ft	5,200'	Cement to Surface	60% Lead –TCI Lite (12.7 ppg) Tail – Gas Seal (16.0 ppg) 210 sks

See wellbore schematic on next page

Trendwell Energy Corporation
Canyon County, Idaho – Smith 1-10

4.2 Wellbore Schematic

Bit Size	Casing Size	Casing Grade/Weight		Set Depth	Cement Vol/Type	Top of Cement
17 1/2"	13 3/8"	H-40 48 lb/ft		GL ref 130'	100% Excess 167 cuft 140 sks Class A 15.6 ppg 1.18 cuft/sk	Surface
10 5/8"	8 5/8"	J-55 24 lb/ft		GL ref 1,000'	60% Excess Lead: 323 cuft 175 sks Thixmix Tail: 136 cuft 100 sks Surface Tail	Surface
7 7/8"	5 1/2"	J-55 15.5 lb/ft		GL ref 5,200'	60% Excess Lead: 910 cuft 500 sks TCI Lite Tail: 242 cuft 210 sks Gas Seal	Surface

4.3. Blow-Out Prevention

4.3.1. BOP Configuration

BOP Stack configuration includes an annular preventer and double ram preventers. The top most ram preventer will be fitted with variable ram blocks, the lower ram preventer will be fitted with blind ram blocks. A full-opening safety valve, inside BOP, and functioning wrench -specific to the pipe in use and only those specific to the pipe in use - are to be kept on the rig floor with easy access at all times .

4.3.2. BOP Testing

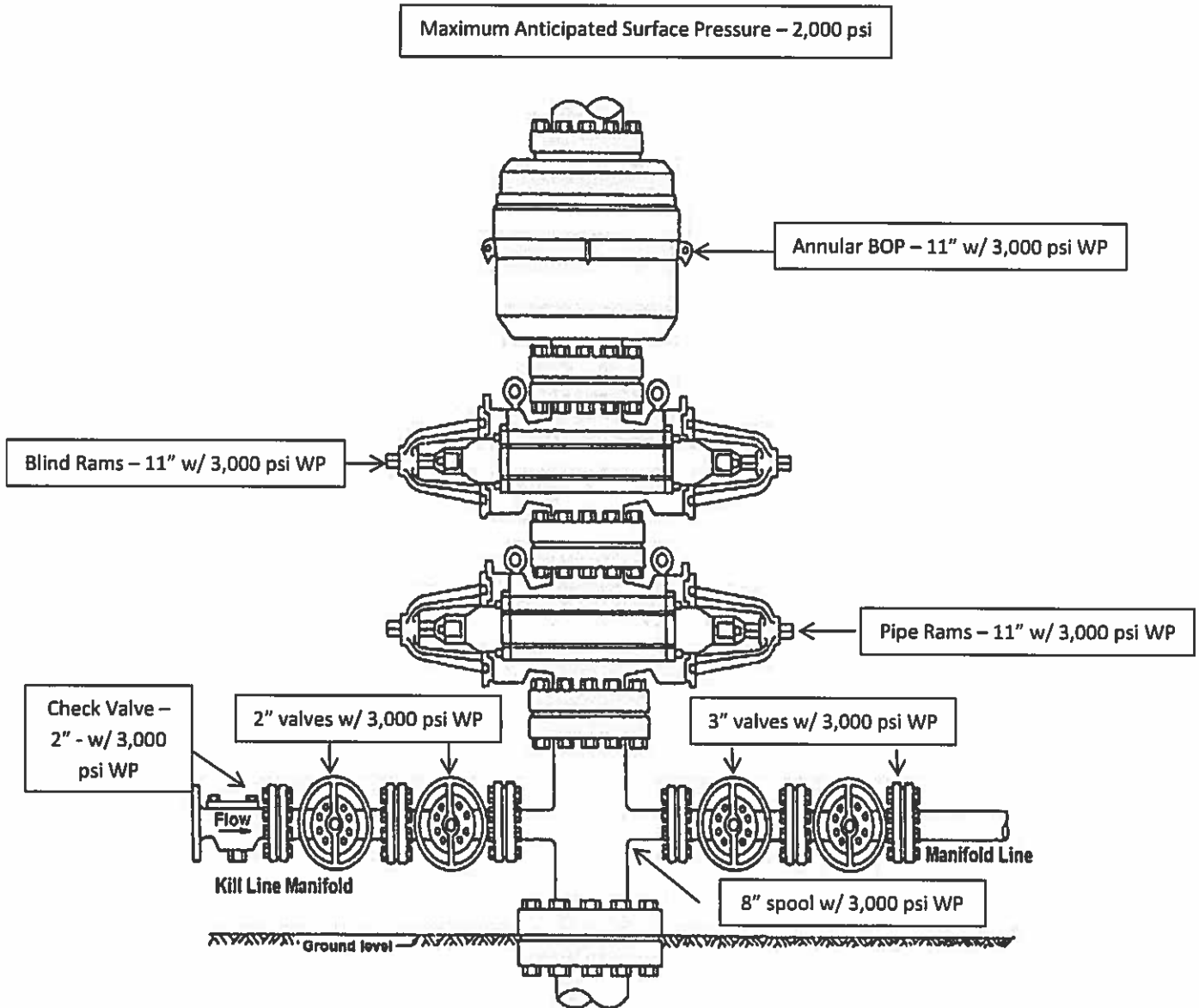
Test annular, rams, choke manifold, FOSV, and BOP when BOP is first nipped up on casinghead. Low-pressure test to 250 psi and high-pressure test to 3,000 psi (100% of SM wellhead), except for annular. Test annular preventer to 2,100 psi (70% of 3,000 psi rating). Test the kelly hose and standpipe back to pump isolation valves to 200 psi above pop off setting or minimum of 3,000 psi. All tests must hold for five minutes. Retest specific component each time a seal is broken. Work BOP's and flush choke lines each trip. Tighten BOP and wellhead bolts every 3 days. Non-ported float valves to be used in BHA after surface casing set.

During drilling and completion operations, the ram-type blow-out preventer shall be function tested by closing on the drill pipe once every seven (7) days. Independently powered accumulators or accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. All tests may be conducted using a test plug. Tests shall be recorded by charts, if required by the Supervisor.

See BOP diagram on next page

4.3.1 Blow Out Prevention - Configuration

Trendwell West, Inc.
BOP Configuration
Canyon County, Idaho – Smith 1-10



4.4. General Mud Program

GENERAL DRILLING/MUD OVERVIEW

INTERVAL I: 0 – 130'

1.	Hole size	: 17 ½"
2.	Casing size	: 13 3/8"
3.	Mud type	: Low solids, nondispersed polymer (LSND)
4.	Total mud volume	: 200 bbls (150 bbls surface volume)
5.	Directional Program	: Vertical Hole
6.	Interval Duration	: 1 day
7.	Drilling Challenges	: Surface Alluvium and Clays

INTERVAL II: 130' - 1,000' MD

1.	Hole size	: 10 5/8"
2.	Casing size	: 8 5/8"
3.	Mud type	: LSND DMA Polymer System
4.	Total mud volume	: 400 bbls. (250 bbls surface volume)
5.	Directional Program	: Vertical/Straight Hole
6.	Interval Duration	: 3 days
7.	Drilling Challenges	: Surface Unconsolidated Sands/Swelling Clays

INTERVAL III: 1,000' - 5,200' MD

1.	Hole size	: 7 7/8"
2.	Casing size	: 5 ½"
3.	Mud type	: Freshwater LSND DMA System
4.	Total mud volume	: 650 bbls. (250 bbls surface volume)
5.	Directional Program	: Vertical/Straight Hole
6.	Interval Duration	: 9 days
7.	Drilling Challenges	: Swelling clays, shales, possible gas influx

GENERAL MUD PROGRAM NOTES/REMARKS

- I. Mud weights to be adjusted as dictated by hole conditions or formation pressure, especially through the 7 7/8" production interval. Maintain minimum mud weights possible for safe hole conditions, and to minimize the severity of lost circulation and differential sticking tendencies.
- II. Implement an effective closed-loop solids removal program, to include linear shakers, mud cleaner, and centrifuge. Drill solids should be stabilized with Zorbix, Sawdust or other appropriate reagent, and disposed offsite to local landfill (as approved).
- III. Continuous Mud Engineer will be utilized.

- IV. Monitor all drilling parameters on a continual basis to determine safe, cost-effective drilling operations and mud treatments.
- V. Maintain an adequate supply of Barite and LCM additives on location at all times. Maximum mud weights of ~10.5ppg may be anticipated, and the potential for significant whole mud losses should be expected, especially in the shallow hole intervals and through any volcanics.
- VI. The area of interest is near an active Geothermal resource that is being developed for electricity generation. Bottom hole temperatures of over 200°F should be expected, therefore mud treatments and cement should be considered to accommodate elevated temperatures.

17 1/2" Surface Interval			
MD (ft)	0 to 130 feet		
Drilling Fluid System	Ca++ Fresh Water		
Interval Target Mud Properties			
Mud Weight (ppg)	8.4 to 8.6	Plastic Viscosity (cp)	4 to 10
Funnel Viscosity (s/qt)	26 to 32	Yield Point (lb/100 ft ²)	4 to 10
pH	8.0 to 9.0	Ca+ (mg/L)	700 to 1,100
API FL (ml/30 min)	Natural	CaCl (mg/L)	<1,200

Safety Recommendations:

- Ensure all proper PPE is used when handling products.
- Wear a respirator while mixing all drilling additives.
- Review MSDS prior to use of unfamiliar materials.

Interval Objective:

- Drill a 17 1/2" hole from 0 to 130 ft (MD) and set 13 3/8" casing.
- The recommended fluid system for the 17 1/2" interval is Ca++ Water.

Mud Weight:

- Mud density in this interval should be unweighted and 8.4-8.6.
- Use solids control equipment throughout interval and dilute if SCE is ineffective.

System Maintenance:

- Spud in with fresh water and start additions of Gypsum.
- Follow (System Setup) protocols if using recycled WBM from a prior well

- If gravel is encountered, Mud up and raise Vise to > 60 s/qt.
- Use PHPA high viscosity hole cleaning sweeps every 150-250 ft while drilling.
- Add Soap and SAPP sticks (alternate Yi stick every connection) for bit balling if encountered
- Mud rings may be avoided by additions of SAPP.
- Maintain pH between 8.0-9.0.
- Use all available solids control equipment to maintain drill solids as low as possible.

System Setup:

- Move 250 bbls of prior well transferred mud into pits and add 250 bbls water (if available)

10 5/8" Intermediate Interval			
MD (ft)	130 to 1,000 feet		
Drilling Fluid System	Ca++ - Fresh water base low solids, nondispersed polymer system		
Interval Target Mud Properties			
Mud Weight (ppg)	8.6 to 9.4	Plastic Viscosity (cp)	8 to 18
Funnel Viscosity (s/qt)	40 to 55	Yield Point (lb/100 ft ²)	8 to 18
pH	8.5 to 9.5	Ca+ (mg/L)	700 to 1,100
API FL (ml/30 min)	< 8	CaCl (mg/L)	<1,200

Safety Recommendations:

- Caustic Soda will be utilized throughout this section to maintain pH and alkalinities, so ensure all proper PPE is used when handling (face shield, rubber gloves, and apron).
- Wear a respirator while mixing all drilling additives .
- Review MSDS prior to use of unfamiliar materials.

Interval Objective:

- Drill a 10 5/8" hole from 130-1,000 ft (MD) and run 8 5/8" casing.
- The recommended fluid system for the end of the 10 5/8" interval from 130-1,000 ft (MD) is Ca++ LSND.

Mud Weight:

- Mud density in this interval should range from 8.6-9.4 ppg.
- Mud weight should be increased as needed to assist with shale ECD's.
- Use solids control equipment as needed.
- Maintain expected MW or as hole conditions dictate per Drilling Engineer and/or Company Man.
- If higher MW is required and lower solids are required, raise MW with additions of barite.

See calculation below: Equation: Sacks of Barite (100 lb sacks) = Total Volume x 14.9 x (Final MW (ppg) - Original MW (ppg))/(35 - Final MW (ppg))

Example: Sacks of Barite (100 lb sacks) = 1000 bbls x 14.9 x (10.0 ppg - 9.0 ppg)/(35 - 10.0 ppg) = 596 sacks

- Take continuous MW readings while mixing barite.

System Maintenance:

- Raise pH (8.5 -9.5) with caustic soda through the Chem barrel.
- Raise the total hardness to 700-1100 mg/l with additions of Gypsum to control sloughing shales.
- A sudden drop in pH could signal the presence of CO₂ in the formation and immediate action will be required to counteract the CO₂. If CO₂ is encountered, pH will decrease, the bicarbonate reading on the alkalinity mud test will increase, and viscosity will decrease.
- Add Lime as needed over a circulation and running Caustic through the chemical barrel until pH is back to 8.5-9.5.
- Maintain FV around 40-55 s/qt.
- Begin lowering API FL to <8 ml/30 min with the addition of FLA.

Solids Control:

- Use the best combination of screens on the shakers, DeSander, DeSilter, and Centrifuge for the system.
- If available, run centrifuge in mechanical stripping mode constantly to maintain solids content at or below 8%. (Note: Running centrifuge in full mechanical stripping mode will strip HGS from the system - additional barite will be needed after running centrifuge in this manner.) If the centrifuge is ineffective in stripping ultrafine materials, the practice of dump and dilute is the last resort.
- Solids, viscosity, and density should all be controlled with the use of the centrifuge and product additions.
- Ensure solids control equipment is functioning properly hourly.
- Any recommendation for screen changes (for size or condition), must be discussed with the Solids Control personnel, CM, and the Fluid Engineer.

Potential Problems:

- High ROPs are common in this interval. Keep an eye on drill solids increasing and be sure to use proper solids control equipment when necessary to maintain low drill solids.
- Make sure properties are maintained and hole cleaning is not an issue. If hole cleaning becomes an issue, adjust properties accordingly.
- Proper drilling practices are also an integral part of hole cleaning. Reciprocating the full

stand prior to connection will aid in hole cleaning and scrape extra filter cake off the well bore.

- Additions of Cantone will inhibit shale issues and produce a quality filter cake.
- Watch for lost circulation risks and plan ahead accordingly.
- Gel strengths, MBTs, and rheology should be maintained for borehole stability.

7 7/8" Production Interval			
MD (ft)	1,000 to 5,200 feet		
Drilling Fluid System	Ca++ - Fresh water base low solids, nondispersed polymer system		
Interval Target Mud Properties			
Mud Weight (ppg)	8.6 to 10.5	Plastic Viscosity (cp)	8 to 18
Funnel Viscosity (s/qt)	40 to 55	Yield Point (lb/100 ft²)	11 to 20
pH	8.5 to 9.5	Ca+ (mg/L)	700 to 1,100
API FL (ml/30 min)	< 8	CaCl (mg/L)	<1,200

Safety Recommendations:

- Caustic Soda will be utilized throughout this section to maintain pH and alkalinities, so ensure all proper PPE is used when handling (face shield, rubber gloves, and apron).
- Wear a respirator while mixing all drilling additives.
- Review MSDS prior to use of unfamiliar materials.

Interval Objective:

- Drill a 7 7/8" hole from 1,000-5,200 ft (MD) and run 5 1/2" casing.
- The recommended fluid system for the end of the 7 7/8" interval from 1,000-5,200 ft (MD) is Ca++ LSND.

Mud Weight:

- Mud density in this interval should range from 8.6-10.5 ppg.
- Mud weight should be increased as needed to assist with shale ECD's.
- Use solids control equipment as needed.
- Maintain expected MW or as hole conditions dictate per Drilling Engineer and/or Company Man.
- If higher MW is required and lower solids are required, raise MW with additions of barite. See calculation below: Equation: Sacks of Barite (100 lb sacks) = Total Volume x 14.9 x (Final MW (ppg) - Original MW (ppg))/(35 - Final MW (ppg))
 Example: Sacks of Barite (100 lb sacks) = 1000 bbls x 14.9 x (10.0 ppg - 9.0 ppg)/(35 - 10.0 ppg) = 596 sacks

- Take continuous MW readings while mixing barite.

System Maintenance:

- Raise pH (8.5 -9.5) with caustic soda through the Chem barrel.
- Raise the total hardness to 700-1100 mg/l with additions of Gypsum to control sloughing shales.
- A sudden drop in pH could signal the presence of CO₂ in the formation and immediate action will be required to counteract the CO₂. If CO₂ is encountered, pH will decrease, the bicarbonate reading on the alkalinity mud test will increase, and viscosity will decrease.
- Add Lime as needed over a circulation and running Caustic through the chemical barrel until pH is back to 8.5-9.5.
- Maintain FV around 40-55 s/qt.
- Begin lowering API FL to <8 ml/30 min with the addition of FLA.

Solids Control:

- Use the best combination of screens on the shakers, DeSander, DeSilter, and Centrifuge for the system.
- If available, run centrifuge in mechanical stripping mode constantly to maintain solids content at or below 8%. (Note: Running centrifuge in full mechanical stripping mode will strip HGS from the system - additional barite will be needed after running centrifuge in this manner.) If the centrifuge is ineffective in stripping ultrafine materials, the practice of dump and dilute is the last resort .
- Solids, viscosity, and density should all be controlled with the use of the centrifuge and product additions.
- Ensure solids control equipment is functioning properly hourly.
- Any recommendation for screen changes (for size or condition), must be discussed with the Solids Control personnel, CM, and the Fluid Engineer.

Potential Problems:

- High ROPs are common in this interval. Keep an eye on drill solids increasing and be sure to use proper solids control equipment when necessary to maintain low drill solids.
- Make sure properties are maintained and hole cleaning is not an issue. If hole cleaning becomes an issue, adjust properties accordingly.
- Proper drilling practices are also an integral part of hole cleaning. Reciprocating the full stand prior to connection will aid in hole cleaning and scrape extra filter cake off the well bore.
- Additions of Contone will inhibit shale issues and produce a quality filter cake .
- Watch for lost circulation risks and plan ahead accordingly.

- Gel strengths, MBTs, and rheology should be maintained for borehole stability.

4.5. Electric Logging Program

The intended electric wireline logging program at total depth (TD) will include:

- High Definition Induction Log
- Compensated Z-Densilog
- Compensated Neutron Log
- Gamma Ray Log
- Caliper Log.

We intend to use Baker Hughes for wireline logging; however this may change subject to availability. Logs will be made available to IDL as required.

5. Completion

Method of completion will be determined subsequent to review of open-hole log data and cased hole cement bond logs (CBL). If the well is to be completed, it will be equipped with a 3,000 psi WP tree with appropriate spools and valving for access to each annular and tubular space. Also, if the well is completed, we anticipate using 2 7/8" API J-55 6.5 lb/ft production tubing. Hydraulic fracturing is not contemplated and the expectation is that these potential reservoirs will respond to conventional completion techniques.

6. Abandonment Procedure

If the well is nonproductive, the well will be plugged with cement in accordance with appropriate State of Idaho regulations as described in IDAPA 20.07.02 section 320 – Well Plugging.

7. Reclamation of Drill Site

Reclamation will be conducted in accordance with IDAPA 20.07.02.325. To achieve those requirements, Trendwell West, Inc. intends to address reclamation through a multistep process which is outlined below. As provided for in IDAPA 20.07.02.325.08, Trendwell West, Inc. will enter into a Surface Use Agreement with the landowner the terms of which will ensure that the site is left in a stable, non-eroding condition as required.

1. Re-establish slope stability, surface stability, and desired topographic diversity.
2. Maintain the integrity of the topsoil and subsoil (where appropriate and not otherwise dictated by the Surface Use Agreement)

3. Prepare site for revegetation upon completion of well activities - plugging/abandonment.
 - a) Redistribute soil materials in a manner similar to the original vertical profile.
 - b) Provide suitable conditions to support the long term establishment and viability of the desired plant community.
 - c) Protect seed and seedling establishment (e.g. erosion control matting, mulching, hydro-seeding, surface roughening, fencing, etc. to be determined based upon site specific conditions)
4. Establish a desired self-perpetuating native plant community based upon region specific guidance available from NRCS
 - a) Establish species composition, diversity, structure, and total ground cover appropriate for the desired plant community
 - b) Select genetically appropriate and locally adapted native plant materials based on the site characteristics and setting.
 - c) Select non-native plants only as a short term and non-persistent alternative to native plant materials. Ensure the non-natives are designed to aid in the re-establishment of native plant communities. Revegetate in accordance with best practices described below:
 - d) Plant communities shall be evaluated annually for two years to ensure revegetation success as determined by IDAPA 20.07.02.325

**IDAHO DEPARTMENT OF LANDS
DIRECTOR'S OFFICE**
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**IDAHO OIL AND GAS
CONSERVATION COMMISSION**
James Classen
Ken Smith
Margaret Chipman
Chris Beck
Sid Cellan

March 18, 2014

Trendwell West, Inc.
Attn: Rick Sandtveit, P.E.
PO Box 560
Rockford, MI 49341

Subject: Deviation Request

Mr. Sandtveit,

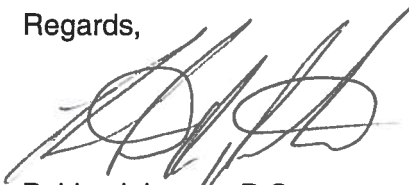
The Idaho Department of Lands Oil and Gas Program is in receipt of your electronically submitted request on March 18, 2014 for variance from standard operating procedure and industry best practices in regards to the Smith #1-10, API # 11-027-20-003.

Upon review of the data that was presented to this office under a confidential request, it has been determined that Trendwell West, Inc. has in good faith and practice followed the requirements as set forth in the as built plans submitted to this office. It is also noted that the annular seal will be within industry standards and best practice upon completion of the items set forth in the variance request.

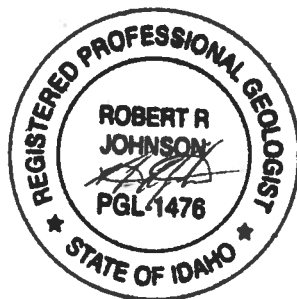
Therefore, your deviation request to complete the annular seal from 130 feet bgs to surface via tremie pipe or equivalent method utilizing neat cement is granted.

Please, continue to keep this office informed in a timely manner of all deviation to the planned exploration program as approved by this office.

Regards,



Bobby Johnson, P.G.
Oil and Gas Program Manager



BJ/tla