

Commercial/Industrial Floodplain Development Permit

Doddridge County, WV Floodplain Management

This permit has been issued to **CNX Gas Company, LLC**, and is for the approved commercial and/or industrial development project associated with this permit that impacts the FEMA-designated floodplain and/or floodway of Doddridge County, WV, pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance. This permit must be posted at the site of work as to be clearly visible, and must remain posted during entirety of development.

**Permit: #14-310 ~ CNX Gas Company, LLC ~
OXFD17HS Well Site**

Date Approved: 10/23/2014

Expires: N/A

Issued to: CNX Gas Company, LLC

**POC: Kelly Eddy
304-884-2131**

**Company Address: One Energy Drive, PO Box 1248
Jane Lew, WV 26378**

**Project Address: Southwest District
Lat/Long: 39.179811N/80.760614W**

Purpose of development: Well pad construction. Project does not impact floodplain.

Issued by: Edwin L. "Bo" Wriston, Doddridge County FPM (or designee)

Date: 10/23/2014

For additional information regarding this permit, please contact
Doddridge County Floodplain Manager at 304.873.2631, or via email at
doddridgecountyfpm@gmail.com
118 East Court Street; West Union, WV 26456



Blue Mountain Inc.
11023 Mason Dixon Hwy
Burton WV, 26562

Ed Race, EIT
Project Engineer

Ph: 304-662-6486
Fax: 304-662-6501
bmi@bluemtninc.com
www.bluemtninc.com

GIS • DESIGN • SURVEYING • ENGINEERING • AERIAL MAPPING • ENVIRONMENTAL SCIENCE



#14-310
FILED

2014 OCT 23 AM 9:21

BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

October 20, 2014

Mr. Bo Wriston
Doddridge County Floodplain Office
118 East Court Street
West Union, WV 26456

RE: OXFD17HS Well Site

Mr. Wriston:

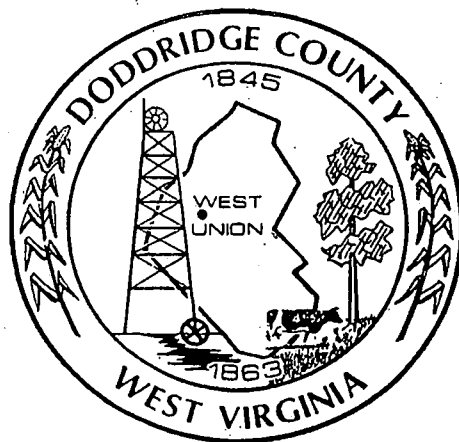
On behalf of CNX Gas Company LLC, we are requesting a permit to construct a 275'x400' Natural Gas Well Pad near the intersection of CR19/11 and CR 54/1. This project does not propose any impact to any floodplain.

Should you have any questions or comments, please feel free to contact me at (304) 662-6486.

Sincerely,

Ed Race, EIT, SIT
Project Manager
Blue Mountain Inc.

Enclosures



Commercial/Industrial Floodplain Development Permit Application

Doddridge County, WV Floodplain Management

This document is to be used for commercial and/or industrial development projects that impact/potentially impact the FEMA-designated floodplain and/or floodway of Doddridge County, WV pursuant to the rules and regulations established by all applicable Federal, State and local laws and ordinances, including the Doddridge County Floodplain Ordinance.

Permit Application #: _____ *(To be completed by Floodplain Manager or designee)*

Date Submitted: _____

90 Day Window Date: _____

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Applicant Information:

Please provide all pertinent data.

Applicant Information		
Responsible Company Name: CNX Gas Company LLC		
Corporate Mailing Address: One Energy Drive, PO Box 1248		
City: Jane Lew	State: WV	Zip: 26378
Corporate Point of Contact (POC): Kelly Eddy		
Corporate POC Title: Permitting Supervisor		
Corporate POC Primary Phone: (304) 884-2131		
Corporate POC Primary Email: KellyEddy@consolenergy.com		
Corporate FEIN: 20-3170639	Corporate DUNS:	
Corporate Website: www.consolenergy.com		
Local Mailing Address: Same as above		
City:	State:	Zip:
Local Project Manager (PM): John Sampson		
Local PM Primary Phone: 304-777-7811		
Local PM Secondary Phone:		
Local PM Primary Email: JohnSampson@consolenergy.com		
Person Filing Application: Ed Race, Blue Mountain Inc.		
Applicant Title: Project Engineer		
Applicant Primary Phone: (304) 662-6486		
Applicant Secondary Phone:		
Applicant Primary Email: BMI@bluemtninc.com		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Proposed Development:

Please check all elements of the proposed project that apply.

Project Description: (Check all that apply)	
<input checked="" type="checkbox"/>	New Construction
<input type="checkbox"/>	Commercial Structure
<input type="checkbox"/>	Industrial Structure
<input type="checkbox"/>	Pipeline
<input checked="" type="checkbox"/>	Drill Pad
<input type="checkbox"/>	Storage Yard/Facility
<input checked="" type="checkbox"/>	Roadway Construction
<input checked="" type="checkbox"/>	Bridge/ <u>Culvert</u> (Please circle)
<input type="checkbox"/>	Utility placement
<input type="checkbox"/>	Utility displacement
<input checked="" type="checkbox"/>	Grade/Excavation/Fill
<input type="checkbox"/>	Watercourse Alteration
<input type="checkbox"/>	Above ground chemical or HAZMAT storage tanks
<input type="checkbox"/>	Above ground storage tanks (other)
<input type="checkbox"/>	Below ground storage tanks (any)
<input type="checkbox"/>	Well/Septic System
<input type="checkbox"/>	Other
If other, please describe:	

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Development Site/Property Information:

Please provide physical description of the site/property, along with pertinent ownership (surface and mineral rights) data as applicable. Attach appropriate maps from sources such as Google Earth, WV Flood Tool, etc. showing location of proposed development. Use additional copies of this page if development spans multiple property boundaries. Designate each property by number (i.e. Property 1 of 1, Property 2 of 7, etc.)

Property Designation: 1 of 1

Site/Property Information:		
Legal Description: See enclosed site plan.		
Physical Address/911 Address:		
Decimal Latitude/Longitude: N39°10'47.32" W80°45'38.21" (NAD83)		
DMS Latitude/Longitude: N39.179811 W80.760614° (NAD83)		
District: Southwest (7)	Map: 10	Parcel: 2
Land Book Description:		
Deed Book Reference: BK/PG: 230/307		
Tax Map Reference:		
Existing Buildings/Use of Property: There are several existing buildings and existing well pads around the property (see enclosed site plan).		

Floodplain Location Data: (to be completed by Floodplain Manager or designee)			
Community:	Number:	Panel:	Suffix:
Location (Lat/Long):		Approximate Elevation:	
		Estimated BFE:	
Is the development in the floodway?		Is the development in the floodplain?	
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No Zone: _____	
Notes:			

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Property Owner Data:

Please provide data on current site/property landowner(s), both surface and mineral rights (as applicable). Use additional copies of this page as needed. Designate each page in relation to each property listed above.

Property Designation: 1 of 1

Property Owner Data:		
Name of Primary Owner (PO): Ike Morris		
PO Address: P.O. Box 397		
City: Glenville	State: WV	Zip: 26351
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Surface Rights Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Mineral Rights Owner Data: (As Applicable)		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Contractor Data:

Please provide all pertinent data for contractors and sub-contractors that may be participating in this project. Use additional copies of this page as needed. Designate each page in relation to each property listed above.

Property Designation: 1 of 1

Contractor/Sub-Contractor (C/SC) Information:		
C/SC Company Name: Project will be bid out in the future.		
C/SC WV License Number:		
C/SC FEIN:	C/SC DUNS:	
Local C/SC Point of Contact (POC):		
Local C/SC POC Title:		
C/SC Mailing Address:		
City:	State:	Zip-Code:
Local C/SC Office Phone:		
Local C/SC POC Phone:		
Local C/SC POC E-Mail:		

Contractor/Sub-Contractor (C/SC) Information:		
C/SC Company Name:		
C/SC WV License Number:		
C/SC FEIN:	C/SC DUNS:	
Local C/SC Point of Contact (POC):		
Local C/SC POC Title:		
C/SC Mailing Address:		
City:	State:	Zip-Code:
Local C/SC Office Phone:		
Local C/SC POC Phone:		
Local C/SC POC E-Mail:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Engineering Firm Data:

Please provide all pertinent data for engineering firm(s) that may be participating in this project. Use additional copies of this page as needed. Designate each page in relation to each property listed above.

Property Designation: 1 of 1

Engineer Firm Information:		
Engineer Firm Name: Blue Mountain, Inc.		
Engineer WV License Number: 4449		
Engineer Firm FEIN: 550704426	Engineer Firm DUNS: 805979713	
Engineer Firm Primary Point of Contact (POC): Ed Race		
Engineer Firm Primary POC Title: Project Engineer		
Engineer Firm Mailing Address: 11023 Mason Dixon Hwy		
City: Burton	State: WV	Zip-Code: 26562
Engineer Firm Office Phone: (304) 662-6486		
Engineer Firm Primary POC Phone:		
Engineer Firm Primary POC E-Mail: BMI@bluemtninc.com		

Engineer Firm Information:		
Engineer Firm Name:		
Engineer WV License Number:		
Engineer Firm FEIN:	Engineer Firm DUNS:	
Engineer Firm Primary Point of Contact (POC):		
Engineer Firm Primary POC Title:		
Engineer Firm Mailing Address:		
City:	State:	Zip-Code:
Engineer Firm Office Phone:		
Engineer Firm Primary POC Phone:		
Engineer Firm Primary POC E-Mail:		

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Adjacent and/or Affected Landowners Data

Please provide data for all adjacent and/or affected surface owners (both up and down stream) whose property may be impacted by proposed development as demonstrated by a floodplain study or survey. Use additional copies of this page as needed.

Adjacent Property Owner Data:		
Name of Primary Owner (PO): N/A		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Adjacent Property Owner Data:		
Name of Primary Owner (PO):		
PO Address:		
City:	State:	Zip:
PO Primary Phone:		
PO Secondary Phone:		
PO Primary Email:		

Site Plan

A Site Plan is an accurate and detailed map of the proposed development for this project. It shows the size, shape, location and special features of the project property, and the size and location of any development planned to the property, especially as that development will impact the floodplain and/or floodway. Site plans show what currently exists on the project property, and any changes or improvements you are proposing to make. **Two complete sets of plans and specifications are required** when applying for a Floodplain Permit. The Floodplain Manager will retain one set, and one set will be dated and returned to the applicant when the permit is issued. **A certified and licensed engineering firm should complete site plans.**

A SITE PLAN MUST CONTAIN THE FOLLOWING INFORMATION: See Attachment 1

1. Legal description of the parcel, north arrow and scale
2. All property lines and their dimensions
3. Names of adjacent roads, location of driveways
4. Location of sloughs, tributaries, streams, rivers, wetlands, ponds, and lakes, with setbacks indicated, and including FEMA floodplain data based on most updated FIRM.
5. Location, size, shape of all buildings, existing and proposed, with elevation of lowest floor indicated.
6. Location and dimensions of existing or proposed on-site sewage systems.
7. Location of all propane tanks, fuel tanks or other liquid storage tanks whether above ground or below ground level.
8. Location and dimensions of any proposed pipeline placement(s) into floodplain/floodway.
9. Location and dimensions of any roadway development into floodplain/floodway. *(Includes initial development access roads)*
10. Location and dimensions of any bridge and/or culvert development into floodplain/floodway.
11. Location and dimensions of any storage yard or facility into the floodplain/floodway.
12. Location of any existing utilities and/or proposed utility placement and/or displacement.
13. Location, dimensions and depth of any existing or proposed fill on site.
14. A survey showing the **existing ground elevations** of at least location on the building site. **ELEVATION NOTE:** All vertical datum will reference either NGVD 29 or NAVD 88. Assumed datum will not be acceptable unless the property is located in an area where vertical datum has not been published. For those areas where vertical datum has not been established, a site plan with contours, elevations using assumed datum, high water marks and existing water levels of sloughs, rivers, lakes or streams and proposed lowest floor elevations is required.

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Applicable Permits:

1. WV DEP Horizontal 6A Permit
2. WV DOH District 4 MM109 Driveway Permit (#04-2014-1197)
3. Office of Land and Streams Permit
4. U.S. Army Corps of Engineers Nationwide Permit #39

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Applicant

Please initial beside each bullet point, print name, sign and date.

- I certify that I am authorized to submit this application for the primary project developer.
- I certify that the information included in this application is to the best of my knowledge true and complete.
- I certify that all required Federal, State, and local permits required by law and/or ordinance for the above described development of this project have been properly attained, are current and valid, and must be presented with this application before a Doddridge County Floodplain Permit may be issued.
- I understand that if in the course of the development project additional permits become required that were not needed during the initial proposal, the primary developer must notify the Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work" order may be issued for all project work directly impacting the floodplain or floodway, until such time the required additional permits are acquired.
- I understand that once the floodplain permit is submitted, the application will be entered into official public record at the next regularly scheduled Doddridge County Commission meeting after the date of submittal.
- I understand that from the date of submittal of the fully completed permit application, the Doddridge County Floodplain Manager has ninety (90) days to make a determination to either grant or deny said permit application. During this approval period, the Doddridge County Floodplain Manager may, at his or her discretion, conduct a review and/or additional study of provided documentation by means of an independent engineering firm. All costs associated with said review and/or study must be reimbursed to the County before issuance of approved permit.
- I understand that during the approval period, the Doddridge County Floodplain Manager or designee may at his or her discretion conduct site visits and document conditions of proposed development pursuant to the permit application.
- I understand that once the Floodplain Permit is granted, the permit will be entered into official public record at the next scheduled Doddridge County Commission meeting after the date of issuance. Appeals to the permit may be made no later than twenty (20) days after said issuance. If a valid appeal is submitted, as determined by the Doddridge County Floodplain Manager, a "Stop Work" order will be issued for all project development directly involving the floodplain or floodway. A public hearing by the Doddridge County Appeals Board will be scheduled no less than ten (10) days after the next regularly scheduled Doddridge County Commission meeting.
- I understand that all decisions of the Doddridge County Appeals Board shall be final.
- **I understand issuance of a Floodplain Permit authorizes me to proceed with construction as proposed. A Certificate of Compliance is required upon substantial completion of the project.**
- In signing this application, the primary developer hereby grants the Doddridge County Floodplain Manager or designee the right to enter onto the above-described location to inspect the development work proposed, in progress, and/or completed.
- I understand that if I do not follow exactly the site-plan submitted and approved by this permit that a "Stop Work" order may be issued by the Wirt County Floodplain Manager and that I must stop all construction immediately until discrepancies of actual work vs. proposed work is resolved.

Applicant Signature: Kelley Eddy, ^{permitting} supervisor Date: 10-16-14

Applicant Printed Name: Kelley Eddy, permitting supervisor

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Permit Issuance

- I certify that I am authorized to accept this granted Doddridge County Floodplain Permit for the primary project developer.
- I certify that all required Federal, State, and local permits required by law and/or ordinance for the approved development of this project have been properly attained, and are current and valid.
- I understand that if in the course of the development project additional permits become required that were not needed during the initial proposal, the primary developer must notify the Doddridge County Floodplain Manager within 48 hours of such need, and that a "Stop Work" order may be issued for all project work directly impacting the floodplain or floodway, until such time the required additional permits are acquired.
- I understand that once the Floodplain Permit is granted, the permit will be entered into official public record at the next scheduled Doddridge County Commission meeting after the date of issuance. Appeals to the permit may be made no later than twenty (20) days after said issuance. If a valid appeal is submitted, as determined by the Doddridge County Floodplain Manager, a "Stop Work" order will be issued for all project development directly involving the floodplain or floodway. A public hearing by the Doddridge County Appeals Board will be scheduled no less than ten (10) days after the next regularly scheduled Doddridge County Commission meeting.
- I understand that all decisions of the Doddridge County Appeals Board shall be final.
- **I understand issuance of a Floodplain Permit authorizes me to proceed with construction as proposed. A Certificate of Compliance is required upon substantial completion of the project.**
- I understand that the granted Doddridge County Floodplain Permit must be visibly displayed at the development site at or near floodplain or floodway activity. *(Doddridge County Floodplain Manager will provide one (1) laminated permit for display. Additional copies are available upon request.)*
- In signing this application, the primary developer grants the Doddridge County Floodplain Manager or designee the right to enter onto the above-described location to inspect the development work proposed, in progress, and/or completed.
- I understand that if I do not follow exactly the site-plan submitted and approved by this permit that a "Stop Work" order may be issued by the Wirt County Floodplain Manager and that I must stop all construction immediately until discrepancies of actual work vs. proposed work is resolved.

Primary Developer Permit Recipient

Signature: _____

Printed Name: _____

Title: _____

Floodplain Manager or Designee

Signature: _____

Date: _____

Doddridge County Commercial/Industrial
Floodplain Development Permit Application

Permit # _____

Floodplain Manager Checklist:

Date submitted, Date required for completion, date of public notice of permit application at commission meeting, date of paper notification, date of paper publication, permit payment received, payment data, payment cleared bank, date submitted to engineer, date report received from engineer, date permit issued/rejected, date of site visit and documentation

Last date for appeal
Appeal received
Appeal valid/invalid
Stop work order issued
Commission meeting
Last date for FPM decision appeal
FPM decision appeal received
Commission meeting
Board of Appeals public hearing
Final BOA decision

Date of work completion
Date of closeout

STATE OF WEST VIRGINIA,
COUNTY OF DODDRIDGE, TO WIT

I, Virginia Nicholson, Editor of THE
HERALD RECORD, a weekly newspaper
published regularly, in Doddridge County,
West Virginia, Do Hereby Certify
That the Accompanying Legal Notice
Entitled:

Floodplain Permit
14-310
OXFD 17HS Well Site

was published in said paper for ... *2* ...

successive weeks beginning with the issue
of ... *November 11th* ... 2014 and

ending with the issue of
November 18th ... 2014 and

that said notice contains ... *189* ...

WORD SPACE at ... *115* ... cents a word

amounts to the sum of \$... *21.74* ...

FOR FIRST PUBLICATION, SECOND
PUBLICATION IS 75% OF THE FIRST
PUBLICATION

\$ *16.31* ...

and each publication thereafter

\$ *38.05* ... TOTAL

EDITOR

Virginia Nicholson

SWORN TO AND SUBSCRIBED

BEFORE ME THIS THE ... *18th* ... DAY

OF ... *November* ... 2014

NOTARY PUBLIC

Laura J. Stickle

THE HERALD RECORD

Legal Advertisement

LEGAL ADVERTISEMENT
Doddridge County

Floodplain Permit Application

Please take notice that on the 23rd day of October, 2014
CNX Gas Company, LLC filed an application for a
Floodplain Permit to develop land located at or about:
Southwest District 39, 179811N/80760614W Permit #14-
310, OXFD 17HS Well Site. (Note: This project is not
within the floodplain). The Application is on file with the
Clerk of the County Court and may be inspected or
copied during regular business hours. As this project is
outside the FEMA identified floodplain of Doddridge
County, Doddridge County Floodplain Management has
no regulatory authority. Any interested persons who
desire to comment shall present the same in writing by
November 27, 2014.

Delivered to the:

Clerk of the County Court

118 E. Court Street, West Union, WV 26456

Beth A. Rogers, Doddridge County Clerk

Edwin L. "Bo" Wriston, Doddridge County Flood Plain

Manager

11-11-2xb





LOCATION MAP
NOT TO SCALE

PROJECT INFORMATION

SURFACE OWNER: IKE MORRIS
 TAX MAP/PARCEL 07-10-2
 TOTAL PROPERTY AREA: 6,600.75 AC.

KEY OIL COMPANY
 TAX MAP/PARCEL 7-11-1
 TOTAL PROPERTY AREA: 55.0 AC.

SITE LOCATION:
 THE OXF7HS SITE IS LOCATED NORTH OF COUNTY ROUTE 19/11 APPROXIMATELY 84 FEET WEST OF ITS INTERSECTION WITH COUNTY ROUTE 40.

ENTRANCE PERMIT

CNX GAS COMPANY WILL OBTAIN AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.

MISS UTILITY

MISS UTILITY OF WEST VIRGINIA WAS NOTIFIED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN (TICKET NO. 1404502887). IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO THE START OF THE PROJECT.

FLOODPLAIN NOTE

THE PROPOSED LIMITS OF DISTURBANCE FOR THIS PROJECT ARE NOT LOCATED IN A FLOOD ZONE, PER THE FLOOD INSURANCE RATE MAP (FIRM) NUMBERS 54017C0225C, 54017C0250C & 54017C0230C.

NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

SHEET INDEX	
DRAWING NUMBER	DRAWING NAME
1	COVER SHEET
2	GENERAL NOTES
3	GENERAL NOTES
4	1/2 MILE BOUNDARY OVERVIEW
5	EXISTING CONDITIONS
6	OVERALL SITE PLAN
7	OVERALL SITE PLAN W/ ORTHO
8	DETAILED SITE PLAN (1 OF 4)
9	DETAILED SITE PLAN (2 OF 4)
10	DETAILED SITE PLAN (3 OF 4)
11	DETAILED SITE PLAN (4 OF 4)

SHEET INDEX	
DRAWING NUMBER	DRAWING NAME
12	ROAD PROFILES & SECTIONS
13	PAD PROFILES & SECTIONS
14	RECLAMATION PLAN (1 OF 4)
15	RECLAMATION PLAN (2 OF 4)
16	RECLAMATION PLAN (3 OF 4)
17	RECLAMATION PLAN (4 OF 4)
18	CONSTRUCTION DETAILS
19	CONSTRUCTION DETAILS
20	CONSTRUCTION DETAILS
21	MATERIAL QUANTITIES



CNX GAS COMPANY LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378

OXFD17HS WELL SITE

PAD CENTER LOCATION

NAD 83 - LAT: N 39° 11' 01.18"; LONG: W 80° 45' 29.98"
 NAD 27 - LAT: N 39° 11' 00.87"; LONG: W 80° 45' 30.61"
 UTM, NAD 83 - N: 4337185.788; E: 520872.626

ENTRANCE LOCATION

NAD 83 - LAT: N 39° 10' 47.32"; LONG: W 80° 45' 38.21"
 NAD 27 - LAT: N 39° 10' 47.01"; LONG: W 80° 45' 38.84"
 UTM, NAD83 - N: 4336758.012; E: 520676.307

SOUTHWEST DISTRICT,

DODDRIDGE COUNTY, WEST VIRGINIA

DATE: SEPTEMBER 22, 2014



Engineers and Land Surveyors

11023 Mason Dixon Hwy.
 Burton, WV 26562-9656
 (304) 662-6486



Know what's below.
 Call before you dig.



LOCATION MAP
OXFORD 7.5M USGS QUADRANGLE
SCALE: 1"=2000'

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED ON JUNE 17 & 18, 2014 BY BLUE MOUNTAIN INC. TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION. THE JUNE 23, 2014 REPORT FOR OXF7HS, WHICH WAS PREPARED BY BLUE MOUNTAIN INC, SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE REPORT DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFOREMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN CONFIRMATION OF THE DELINEATION DESCRIBED BY THE REPORT PRIOR TO ENGAGING CONSTRUCTION ON THE PROPERTY DESCRIBED HEREIN. THE DEVELOPER SHALL OBTAIN THE APPROPRIATE PERMITS FROM THE FEDERAL AND/OR STATE REGULATORY AGENCIES PRIOR TO ANY PROPOSED IMPACTS TO WATERS OF THE U.S., INCLUDING WETLAND FILLS AND STREAM CROSSINGS.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED IN THE FIELD BY RETTEW ASSOCIATES, INC. BETWEEN JULY 31 - AUGUST 29, 2014. THE REPORTS PREPARED BY RETTEW ASSOCIATES, INC. DATED SEPTEMBER 17, 2014, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT FOR ADDITIONAL INFORMATION, AS NEEDED.

RESTRICTIONS

1. THERE ARE NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300' OF THE PAD & LOD.
2. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000' OF THE PAD AND LOD.
3. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250' OF THE WELLS BEING DRILLED.
4. THERE ARE NO OCCUPIED DWELLING STRUCTURES WITHIN 625' OF THE CENTER OF THE PAD.
5. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625' OF THE CENTER OF THE PAD.

CERTIFICATION:

I DO HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THAT THE EROSION AND SEDIMENT CONTROL PLAN AND SITE RESTORATION PLAN AND POST CONSTRUCTION BMPs ARE TRUE AND CORRECT, REPRESENT ACTUAL FIELD CONDITIONS AND ARE IN ACCORDANCE WITH THE WEST VIRGINIA CODE AND THE DEPARTMENT'S RULES AND REGULATIONS. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

SIGNATURE: William P. Foley DATE: 09/22/2014



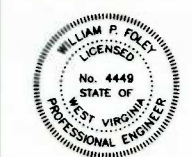
CNX GAS COMPANY LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378



OXFD17HS WELL SITE
 COVER

REVISIONS

DATE	TYPE



DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: AS SHOWN
 JOB NO.
 DRAWING NAME

SHEET NO. 1

General Notes

- 1. Please refer to Geotechnical Report dated September 17, 2014 prepared by RETTEW Associates, Inc. Blue Mountain Inc. shall assume responsibility for any unforeseen site conditions during or after construction, including any potential slope or embankment failures due to surcharge load or other causes.
- 2. Blue Mountain Inc. will not be responsible for means, methods, procedures, techniques, or sequences of construction that are not specified herein. Blue Mountain will not be responsible for safety on the work site, or for failure by the contractor to perform work according to design plans and specifications.
- 3. The contractor shall be solely responsible for complying with all Federal, State and Local safety requirements including the occupational safety and health act of 1970. The contractor shall always exercise precaution for the protection of persons including employees and property. It shall also be the sole responsibility of the contractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work, including the requirements for confined spaces per CFR 1910.146.
- 4. The contractor shall restrict construction activity to the areas shown on the plans unless otherwise authorized by CNX Gas Company LLC.
- 5. The contractor shall carefully preserve benchmarks, property corners, reference points, stakes and other survey reference monuments or markers. In cases of willful or careless destruction, the contractor shall be responsible for restorations. Resetting of markers shall be performed by a professional surveyor as approved by CNX Gas Company LLC.
- 6. All structures, landscaping, signs if any or other appurtenances disturbed or damaged during construction shall be replaced or repaired to the satisfaction of CNX Gas. The cost of this work shall be the responsibility of the contractor.
- 7. All trees within the construction area will be preserved except the trees that are to be removed as shown in the plans.
- 8. Contractor shall maintain adequate clearance from all electric lines, if any, in accordance with the national electrical safety code.
- 9. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
- 10. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
- 11. The contractor shall minimize all clearing and disturbance to the environment to the maximum extent possible. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence.
- 12. Perimeter sediment barriers shall be implemented as the first step of grading within seven (7) days from the start of clearing and grubbing, and shall continue to function until the slope development area is restabilized.
- 13. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
- 14. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
- 15. No solid (other than sediment) or liquid waste, including building materials, shall be discharged in storm water runoff. All non-sediment pollutants must be disposed of in accordance with the Department's Solid Waste Management Regulations. Rubbish, trash, garbage, litter, or other such materials shall be disposed into sealed containers. Materials shall be prevented from leaving the site through the action of wind or storm water discharge into drainage ditches or waters of the state.
- 16. If the action of vehicles traveling over the stabilized construction exit does not sufficiently remove most of the dirt and mud, then the tires must be washed before vehicles enter a public road. Tracking or spilling mud, dirt or debris upon streets or drives is prohibited. Any such occurrence shall be cleaned up immediately by the contractor at no additional cost to CNX Gas Company LLC. If the contractor fails to remove said mud, dirt, debris, or spillage, any fines levied against CNX Gas Company LLC by local and state regulators will be charged to contractor.
- 17. Dust control using approved materials must be performed at all times. The use of motor oils and other petroleum based or toxic liquids for dust suppression is prohibited. On-site and off-site stockpile and borrow areas shall be protected from erosion and sedimentation by the use of best management practices. These areas must be shown in the site map and permitted in accordance with general permit requirements. At a minimum compost filter socks are to be placed at perimeter of stockpile area to prevent soil from leaving the stockpile area. All materials spilled, dropped, washed, or tracked onto the roadways or into the storm sewers must be removed immediately.
- 18. All construction shall be stabilized at the end of each day; this includes backfilling of trenches for utility construction and placement of gravel or asphalt for road construction. The last layer of soil, including top soil should be compacted to 80% - 85% of the maximum standard proctor density, in areas that will receive vegetation. This is particularly important in cut slope and embankment areas. The contractor shall maintain traffic on local county roads to the public at all times during construction. All traffic lanes shall be open to traffic at all times. The contractor shall use caution & proper traffic control devices (i.e drums, signs, flaggers, etc) when working in the vicinity of the project site.
- 19. The contractor shall add additional controls if conditions warrant.
- 20. The contractor shall be solely responsible for ensuring safety of monitoring and pedestrian traffic during performance of the work.
- 21. There shall be no discharge from the well pad sumps during drilling operations. Sumps are to be removed and berms are to be breached during reclamation of the site.

General Utility Notes

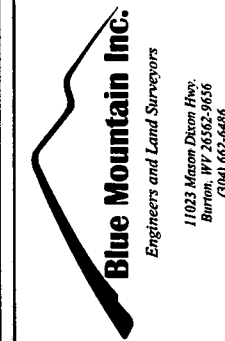
- 1. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, Miss Utility shall be notified by dialing 811 for the location of existing underground utilities.
- 2. The identity and locations of existing underground utilities in the construction area have been shown on the plans as accurately as provided by the owner of the underground utility. Blue Mountain Inc. & CNX Gas Company LLC assumes no responsibility for the accuracy of depths, and locations of underground facilities shown on the approved construction drawings. If damage is caused, the contractor shall be responsible for repair of the same and for any resulting contingent damage.
- 3. Location, support, protection and restoration of all existing utilities and appurtenances, whether shown or not shown on the approved construction drawings, shall be the responsibility of the contractor.
- 4. When unknown or incorrectly located underground utilities are encountered during construction, the contractor shall immediately notify CNX Gas Company LLC.
- 5. When making excavations, the contractor shall do the following:
 - A. Maintain reasonable clearance between any underground facility and the cutting edge or point of powered equipment.
 - B. Protect and preserve the markings of approximate locations of underground utility facilities until those markings are no longer required for proper and safe excavations.
 - C. When approaching underground utility facilities while excavating with powered equipment, require an individual other than the equipment operator, to look for any sign of underground utility facility.
 - D. Conduct the excavation in the vicinity of the underground utility facility in a careful and prudent manner, excavating by hand, if necessary, to determine the precise location of the facility and to prevent damage.
 - E. As soon as any damage is discovered, including gouges, dents, or breaks to coatings, cable sheathes, and cathodic protection anodes or wiring, report the type and location of the damage to the utility and permit the utility a reasonable amount of time to make necessary repairs.
 - F. Immediately report to the utility and, if necessary, to the appropriate law enforcement agencies and fire departments, and damage to an underground utility facility that results in escaping flammable, corrosive, explosive, or toxic liquids or gas, and take reasonable appropriate actions needed to protect persons or property and to minimize safety hazards until those agencies and departments and the utility arrive at the scene.
- 6. Contractor shall comply with all provisions of the national electric safety code, especially when working near live electric lines.

Construction Sequence

- 1. Field-mark limits of disturbance and environmentally sensitive areas (including steep slopes, riparian buffers, wetlands, springs, and floodways).
- 2. Construct rock construction entrance.
- 3. Install BMP's associated with the access road.
- 4. Clear and grub entire site.
- 5. Remove and stockpile topsoil as shown on the plans.
- 6. Stabilize topsoil stockpile(s).
- 7. Construct access road and associated ditches and culverts.
- 8. As soon as road reaches final grade, install geotextile, base and finishing stone. Temporary and/or permanent seeding and mulching shall follow earthmoving activity as closely as possible and should be stabilized within 24 hours of any cessation of earthmoving activities.
- 9. Install remaining BMP's associated with the construction of the pad.
- 10. Remove and stockpile topsoil as shown on the plans.
- 11. Stabilize topsoil stockpile(s).
- 12. Begin pad grading utilizing cut material to be compacted up to pad grade.
- 13. As soon as Pad reaches final grade, slopes and other disturbed areas will be stabilized with permanent seeding and mulching and pad will be covered with geotextile, base and finishing stone. Temporary and/or permanent seeding and mulching shall follow earthmoving activity as closely as possible and should be stabilized within 24 hours of any cessation of earthmoving activities.
- 14. Once final grading is complete and the site has reached a minimum vegetation of 70%, and upon DEP inspection, Site E&S controls may be removed.
- 15. Following completion of the wells, the gravel surface of the well pad will be restored to the minimum area necessary to maintain the wells. Due to the large amount of earthwork, this will only included placing topsoil, seeding and mulching.

Grading & Compaction Notes

- 1. Perform test pits in the presence of the engineer prior to initiating mass grading in areas directed by the field engineer and during construction when directed by the engineer.
- 2. Clearing, grubbing, stripping of organic surface soils and the removal of unsuitable/unstable soils and existing uncontrolled fill shall be performed in all structural areas.
- 3. After stripping has been completed, the resulting subgrade should be proof rolled with a fully loaded tandem axle dump truck prior to structural fill placement. Subgrade soils identified as being unsuitable or unstable, including unstable colluvial soils, shall be undercut to a stable soil stratum and backfilled with controlled, compacted soil fill or rock fill, where indicated on the Plans. All unsuitable soil containing excessive organics or debris shall be wasted.
- 4. Provide drainage measures for springs or perched water that are encountered during construction. The treatment, which will be determined in the field depending on the conditions, may include placement of drain tile, mattress drains, interceptor trenches, and/or sumps to collect the water. All water shall be outletted by gravity outside of the limits of the pad slopes.
- 5. The excavation contractor shall be solely responsible for evaluating the excavation effort required for the highly weathered to competent rock strata and to size material that complies with *WYDOH Construction Manual 2002, Section 207.7 Rock Embankment*, and has a maximum particle size and lift thickness of 18 inches. Provide on-site crushing and blending as necessary to meet acceptable gradations for excavated rock. Where embankment soil fill or native soils are located against rock fill, create a suitable rock fill gradation to prevent soil migration by blending the rock fill with soil or choking the rockfill with imported aggregate.
- 6. On-site soils meeting USCS designations of CL, ML, or more granular with a maximum particle size of six inches shall be used as soil fill. If available, rock or soil fill consisting of on-site granular soils meeting the USCS classification of SC, SM, GC, and GM or more granular should be utilized in the toe benches. Unsuitable materials with unacceptable fractions of organics or debris are not permitted for use as fill. If coal or carbonaceous material is encountered during excavation, immediately contact the client and engineer.
 - Soil fill below the upper two feet of pad subgrade -- maximum nine inch loose lifts compacted to 95% of max dry density and within three percentage points of the optimum moisture content as determined by ASTM D-698.
 - Soil fill within the upper two feet of pad subgrade -- maximum nine inch loose lifts compacted to 98% of max dry density and within two percentage points of the optimum moisture content as determined by ASTM D-698.
 - Rock fill -- maximum 18 inch loose lifts compacted to non-movement under compaction equipment.
- 7. Place all fill on a stable, nearly level subgrade. Compaction equipment shall consist of large (20 ton minimum) vibratory, self-propelled sheepfoot rollers for cohesive soils and smooth-drum rollers for granular soils. Smooth-drum rollers are not permitted for the initial compaction of cohesive soils.
- 8. Compact structural fill to the following minimum specifications:
 - It is not recommended to use soil fill that is more than three percentage points above the optimum moisture content or soils that classify as fat clay (CH) or elastic silt (MH). If the client decides to use these soils the following measures shall be provided to enhance stability.
 - Compaction shall be controlled by determining the maximum achievable compaction from a control strip.
 - These soils shall not be placed in embankment slopes, within the upper three feet of the pad surface, or under areas of the pad that will support rig loads. Consult the field engineer for areas of fill placement.
 - Ensure the maximum recommended lift thickness is maintained to allow for maximum achievable compaction.
 - Dry soils by mixing with drier soil and/or rock.
 - Sequence construction to allow for some moisture reduction by natural drying or aerating.
 - Static compaction methods may be specified to reduce instability.
 - Provide mass grading observation and testing to make sure that the contractor is controlling material placement and compaction in the most effective manner.
- 9. Fill slopes constructed in a manner to ensure adequate compaction to the edge of the fill, which may require constructing the slope wider than necessary and then cutting back to the required grade. Upon completion of the final grading, the slopes shall be tracked down with tracked equipment prior to placing topsoil.
- 10. Toe benches are required for each fill slope in accordance with the Benching and Transition Detail. Different bench dimensions and configurations may be necessary as dictated by subsurface conditions, such as wet or unstable colluvial soils, high plasticity clays, or clay seams located within the bedrock. These occurrences may be revealed during grading, or during test pit excavation performed during toe bench construction. The field engineer is responsible for proof rolling and performing test pits in the toe benches to assess the presence of these materials. Drainage measures shall be provided as indicated in the Benching and Transition Detail. Additional drainage measures shall be installed as directed by the field engineer. Bench drains shall connect to drainage mains, which are outletted via gravity laterals where indicated. Excavations for toe benches and bonding benches in coal and/or carbonaceous shale may encounter perched groundwater. Plans to control, drain and treat if necessary are recommended.
- 11. Construct bonding benches to the crest of embankment where slopes are placed over existing slopes 5H:1V or steeper. Bonding benches shall be in accordance with the Benching and Transition Detail.
- 12. The sides of temporary excavations shall be adequately sloped or shored/braced to provide stable sides and safe working conditions for operators, laborers and engineering inspectors to proof roll the subgrade and perform test pits. All applicable Occupational Safety and Health Administration (OSHA) safety standards shall be followed by the contractor.
- 13. Proof roll the final pad/road surface with a loaded triaxle dump truck to identify any areas of unstable soils. Unstable soils shall be removed by over-excavation and replacement with controlled compacted soil or rock fill. Provide a cut/fill transition zone and place subsurface drains at the transition zone as directed by the engineer.
- 14. The subgrade shall be sealed on a daily basis to minimize disturbance and moisture intrusion.
- 15. Earthwork operations shall be observed and tested on a full-time basis by a soils technician under the supervision of a geotechnical engineer. The observation and testing shall include observation of stability of toe and bonding benches, including presence of unstable colluvial soils; installation of drainage measures, lift thickness of material, compactive effort, type and moisture of soil, gradation of the rockfill and, moisture and density of compaction. All compactive effort shall be verified by in-place density testing on each lift at a maximum 100-foot grid pattern.



CNX GAS COMPANY LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378



**OXFD17HS WELL SITE
GENERAL NOTES**

REVISIONS	
DATE	TYPE



DRAWN BY: WSH
CHECKED BY: WPF
DATE: 09/22/14
SCALE: AS SHOWN
JOB NO.
DRAWING NAME:
SHEET NO. 2

General Erosion And Sediment Control Methods / Procedures

1. Erosion and sediment control facilities shall be constructed, stabilized, and functional before any site disturbance begins within the tributary areas of those facilities.
2. In all cases, the smallest practical area of stable land surface will be disturbed.
3. At no time will sediment laden runoff be allowed to leave the site and enter State waters without first passing through a sediment filtering device. Should site conditions, construction procedures, etc. alter the approved plan to the point where sediment and sediment laden runoff is not being controlled and filtered before it leaves the site, additional erosion control facilities are to be implemented.
4. Although the staging of earthmoving activities has been described within certain areas, the work may occur over the entire project area simultaneously. Measures shall be implemented as necessary to continue the integrity of the erosion and sedimentation control plan.
5. Earth disturbance activities, including movement of construction vehicles, shall be avoided / minimized below the location of the perimeter erosion control facilities. Should earth disturbance occur below the perimeter erosion control facilities, permanent stabilization shall be immediately applied to those disturbed areas.
6. Waste and excess materials shall be stockpiled or disposed of in a lawful manner on site or at an approved facility.
7. All offsite borrow areas, waste disposal areas, and/or storage areas shall have an approved erosion and sediment pollution control plan prior to the start of any earthmoving activities in these offsite areas.
8. Topsoil and excess material stockpiles shall be seeded and mulched if they are to remain for more than 4 days. Stockpiles are to be placed in a location where they will not interfere with construction activities and are not to be located within the flow path of a natural or constructed waterway. Stockpile areas are to have side slopes of 2H:1V or flatter.
9. Permanent stabilization is required as soon as a disturbed area is brought to grade or final earth moving has been completed. Where it is not possible to permanently stabilize a disturbed area immediately after the final earthmoving has been completed or where the activity ceases for more than 4 days, temporary stabilization measures shall be implemented promptly.
10. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches - 6 to 12 inches on compacted soils - prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outlopes shall have a minimum of 2 inches of topsoil.
11. Any erosion and sedimentation control facility required or necessary to protect areas from erosion during the stabilization period shall be maintained until permanent stabilization of the contributing drainage area is completed. Upon completion of permanent stabilization, all unnecessary or unstable control measures and facilities shall be removed. The disturbed areas created by this activity shall be brought to final grade and the soils shall be immediately stabilized.
12. Schedule construction so that grading operations can begin and end as quickly as possible.
13. Clearly mark areas that are not to be disturbed by flags, signs, etc.

General Maintenance / Contractor Responsibilities

1. The maintenance for the project shall be in accordance with the approved erosion and sedimentation control plan. The contractor shall be responsible for the continuous maintenance of all erosion and sediment measures and devices for the duration of the project and until which time the area is stabilized with a minimum uniform 70% perennial vegetative cover.
2. All facilities shall be inspected and repaired, if necessary, after each measurable rainfall event and a period not to exceed one week. All preventative maintenance work, including clean out, repair, replacement, regrading, reseeding, re mulching, and anchoring of the mulch shall be performed immediately. Sediment collected from the erosion control structures shall be placed upstream of those controls and immediately stabilized with seed and an anchored mulch or hauled off site to a disposal area with an approved erosion and sediment pollution control plan.
3. At no time will sediment laden runoff be allowed to leave the site and enter State waters without first passing through a sediment filtering device. If erosion control facilities fail to perform as expected, alternative facilities or modifications of those facilities installed will be required.
4. All permanently seeded areas that become eroded shall have the topsoil replaced, the erosion control matting replaced (if applicable), the grass resown and mulch reapplied and anchored. If erosion persists, the area shall be either lined with sod or stabilized with rock riprap.
5. A copy of the approved erosion and sediment control plan shall be kept available for inspection on the construction site at all times throughout the term of the project.
6. The intent of this plan / narrative is to indicate general means of compliance with the requirements of the rules and regulations of The West Virginia Department of Environmental Protection. It shall be the responsibility of the contractor to implement these methods, plus additional methods, as may be necessary because of conditions created by localized site conditions and/or construction procedures in order to assure compliance with applicable law. It will further be the responsibility of the contractor to maintain all erosion and sediment control facilities so that they perform as required by applicable law.
7. Fines and related costs resulting from the contractor's failure to provide adequate protection against soil erosion and for any violations of the rules and regulations promulgated thereunder shall be borne by the contractor.

Recycling And Disposal Methods

Remove waste materials including trash and debris and legally dispose of them off the site to a WVDEP approved dump site. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Material to be removed shall be removed daily and shall not be allowed to accumulate at the site.

Temporary Control Measures and Facilities

1. General - see plans and details for proposed locations and construction details for BMP's.
2. Temporary vegetation - a vegetative cover, annual or perennial, but typically rapid growing annual grasses, small grains or legumes. Used to provide erosion protection to a disturbed area until active earthmoving resumes or permanent protection is provided.
3. Compost filter socks - Compost filter socks shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up slope at 45 degrees to the main sock alignment.
4. Rock filter - Rock filters may be used to control runoff within constructed channels at the downstream end of the channel during construction until the protective lining is installed or during a temporary disturbance within the channel. They may also be used below construction work within an existing stream channel while flow is being diverted past the work area. In such cases, the filter should be located between the work area and the discharge from the bypass system. Rock filters may not be used instead of an adequate protective lining in sediment basin emergency spillways. This can reduce the effective discharge capacity of the spillway and, in so doing, increase the possibility of embankment failure.
5. Rock construction entrance - Shall be installed prior to exiting the site to avoid excessive tracking of mud onto a highway. Access to the site should be limited to the stabilized entrance(s).
6. Compost Sock Sediment Traps - Shall be constructed in the location shown on the erosion and sediment control plan in accordance with the erosion and sediment control plan details. Consideration should be given to how the location of any proposed trap will be accessed. If a proposed location is not easily accessible, special attention should be given to any access roads roads that will need to be constructed.

Permanent Control Measures and Facilities

1. Vegetative cover - The permanent seeding rates are listed on the standard construction detail sheet #20
2. Provide liming rates as recommended by the soil test result. Fertilizer shall be applied per details in Detail Sheet 20. Work soil supplements into soil or apply with hydroseeding. Mulch area with straw or hay mulch at 3 tons per acre. Inspect seeded areas after each measurable event. Eroded areas shall have topsoil replaced, seed resown and mulch reapplied and anchored. If erosion persists, the area will be either lined with sod or stabilized with rock riprap.
3. Mulch or straw or hay - Mulch shall be applied over seeded areas no later than 48 hours after seeding. Spread mulch uniformly, in a continuous blanket at a minimum rate of 3 tons per acre. Mulch may be spread by hand or with an acceptable mechanical blower. Machines which cut mulch into short pieces will not be permitted. Mulch shall be anchored by use of crimping, netting, asphaltic or a nonasphaltic emulsion mulch binder immediately following mulch spreading. If any asphaltic or nonasphaltic emulsion mulch binder is used, the number of passes over the mulch as needed to secure it firmly shall not exceed three passes with maximum applied binder not exceeding 10 gallons per 1,000 Sq. Ft.
4. Erosion control blankets - Erosion control blankets should be used on all slopes that are 3H:1V or steeper and where potential exists for sediment pollution to receiving surface waters. Cut slopes in competent bedrock and rock fill slopes need not be blanketed. Erosion control blankets should be used for all seeded areas within 50 feet of a surface water - 100 feet of a special protection water - regardless of slope.

Erosion & Sediment Control Structure Maintenance Procedures

Rock Construction Entrance

The entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately. Wheels on all vehicles shall be cleaned to remove sediment prior to entrance onto public rights-of-way. If washing is required, it shall be done on an area stabilized with stone and which drains into approved sediment trapping device. If the street is washed precautions must be taken to prevent muddy water from running into waterways or storm sewers.

Compost Filter Sock

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection. Accumulated sediment shall be removed when it reaches half the aboveground height of the sock and disposed in the manner described elsewhere in the plan. Polypropylene socks shall be replaced according to manufacturer's recommendations. Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

Compost Sock Sediment Trap

All sediment traps shall be inspected at least weekly and after each runoff event. Access for sediment removal and other required maintenance activities shall be provided. Dispose of materials removed from the trap in the manner described in the E&S plan. Check embankments, spillways, and outlets for erosion, piping and settlement. Clogged or damaged spillways and/or embankments shall be immediately restored to the design specifications.

Erosion Control Blanket

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be restored or replaced within 4 calendar days.

Riprap Apron

All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.



Know what's below.
Call before you dig.



Engineers and Land Surveyors
11023 Maclean Dixon Hwy
Burrton, WV 26562-9656
(304) 662-4486

CNX GAS COMPANY LLC
ONE ENERGY DRIVE
JANE LEW, WV 26578



**OXFD17HS WELL SITE
GENERAL NOTES**

REVISIONS

DATE	TYPE



DRAWN BY: NSH

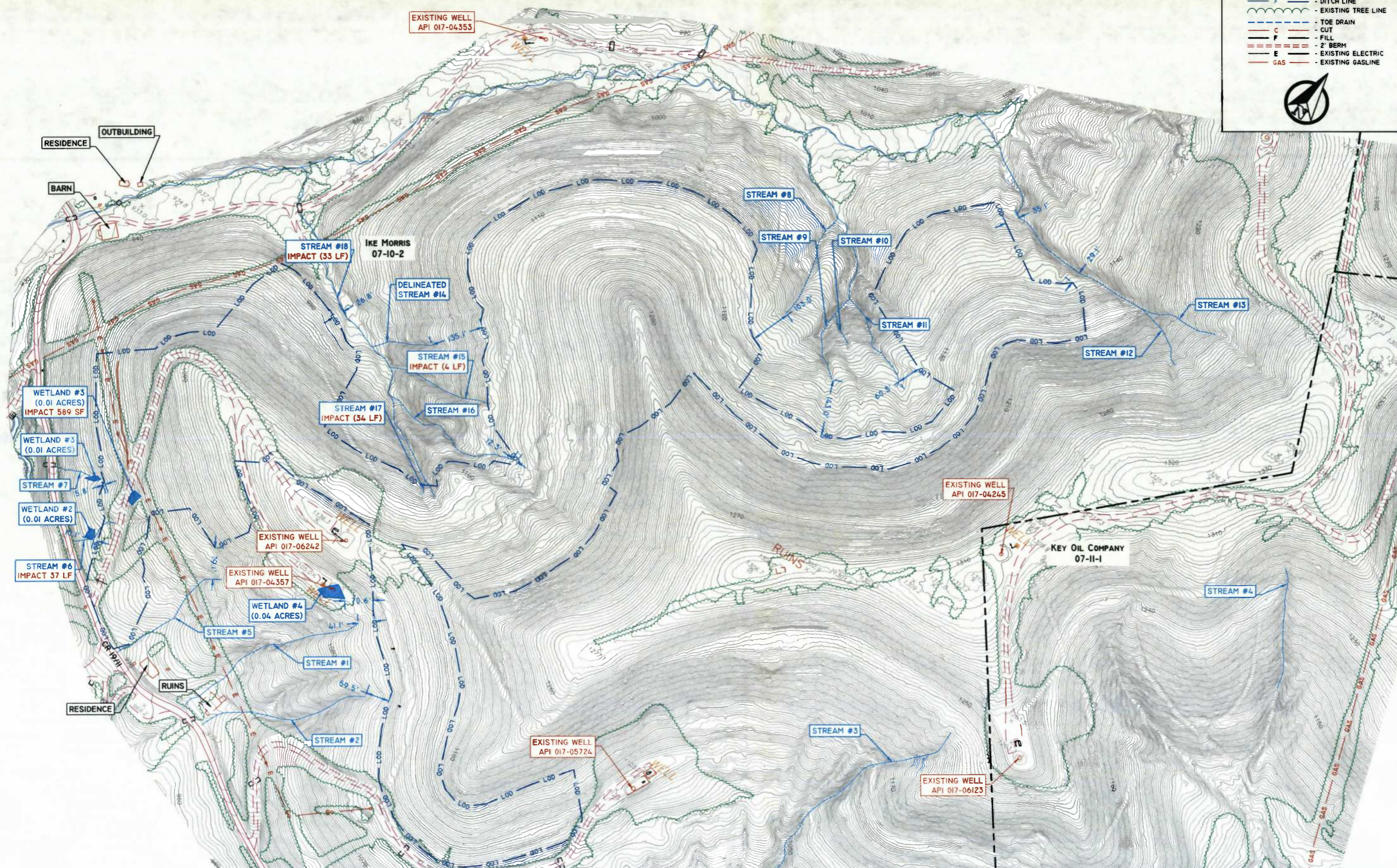
CHECKED BY: WPF

DATE: 09/22/16

SCALE: AS SHOWN

JOB NO.

DRAWING NAME:



LEGEND

- - - PROPERTY BOUNDARY
- X - X - X - FENCE LINE
- - - EXISTING CONTOURS
- - - 1000
- - - PROPOSED CONTOURS
- CFS - COMPOST FILTER SOCK
- LOD - LIMIT OF DISTURBANCE
- - - DITCH LINE
- - - EXISTING TREE LINE
- - - TOE DRAIN
- - - CUT
- - - FILL
- - - 2' BERM
- E - EXISTING ELECTRIC
- GAS - EXISTING GASLINE

Blue Mountain Inc.
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 11023 Mann Dason Hwy.
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CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378

CNX GAS

OXFD17HS Well Site
EXISTING CONDITIONS

REVISIONS

DATE	TYPE

WILLIAM P. FOLEY
 LICENSED
 No. 4449
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL ENGINEER

DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=120'
 JOB NO.
 DRAWING NAME

0 60 120 240 FEET
 SCALE: 1"=120'

NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

REVISIONS

DATE	TYPE



DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=20'
 JOB NO.
 DRAWING NAME

EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	29,831	CY
EXCESS (10% SWELL)	16,903	CY
PAD		
TOPSOIL (12" DEPTH)	10,483	CY
CUT	90,662	CY
EXCESS (10% SWELL)	20,238	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,036	CY
CUT	120,493	CY
EXCESS (10% SWELL)	37,141	CY

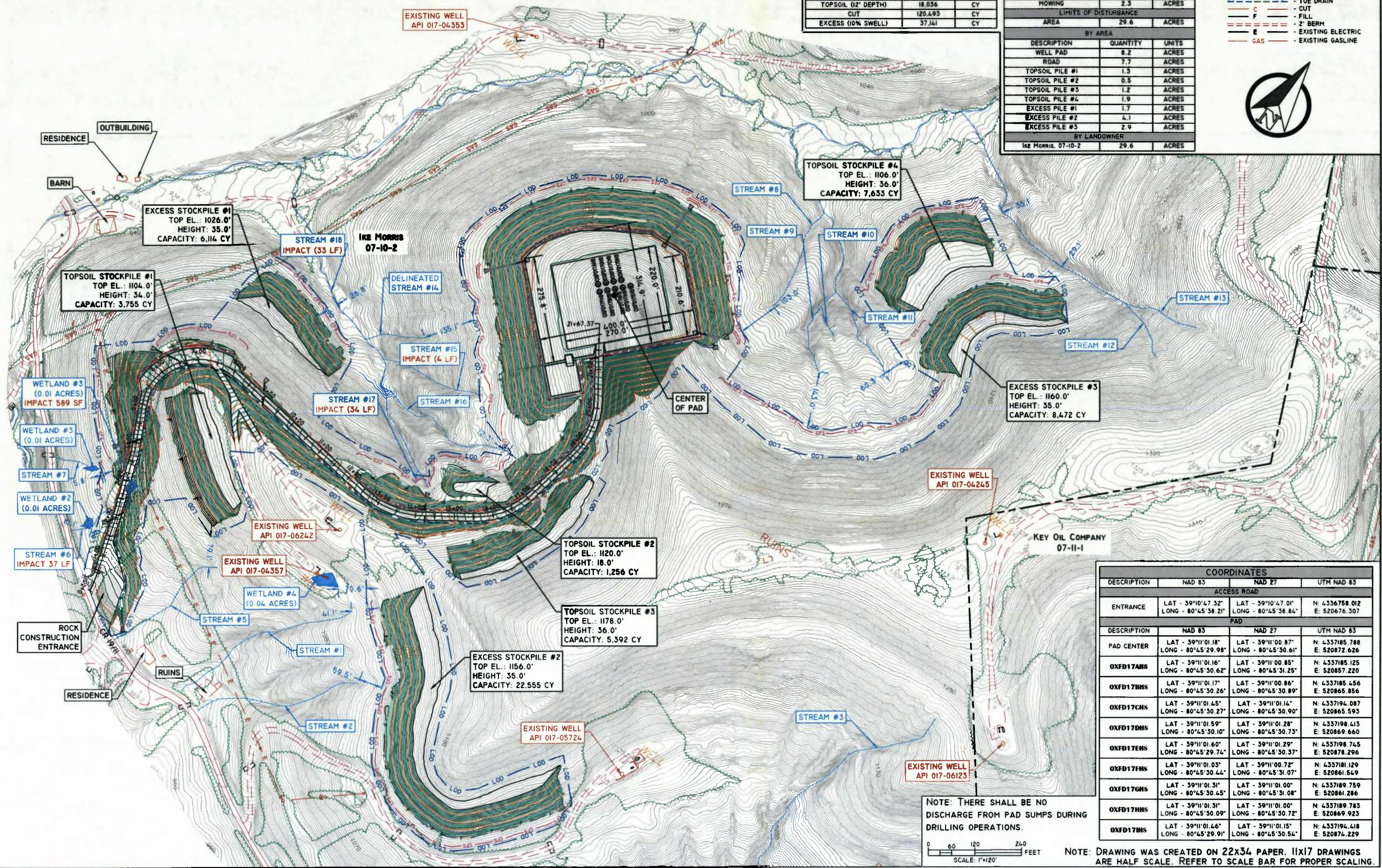
STREAM/WETLAND IMPACTS		
# OF IMPACTS	TOTAL LENGTH	TOTAL AREA
STREAMS		
4	108 LF	-
WETLANDS		
1	-	589 SF (0.01 ACRES)

LIMITS OF DISTURBANCE AREA		
DESCRIPTION	QUANTITY	UNITS
CLEARING AND GRUBBING		
TREE CLEARING	27.3	ACRES
MOWING	2.3	ACRES
LIMITS OF DISTURBANCE		
AREA	29.6	ACRES

BY AREA		
DESCRIPTION	QUANTITY	UNITS
WELL PAD	8.2	ACRES
ROAD	7.7	ACRES
TOPSOIL PILE #1	1.3	ACRES
TOPSOIL PILE #2	0.5	ACRES
TOPSOIL PILE #3	1.2	ACRES
TOPSOIL PILE #4	1.9	ACRES
EXCESS PILE #1	1.7	ACRES
EXCESS PILE #2	4.1	ACRES
EXCESS PILE #3	2.9	ACRES
BY LANDOWNER		
IKE MORRIS, 07-10-2	29.6	ACRES

LEGEND

- - - - - PROPERTY BOUNDARY
- x - x - x - FENCE LINE
- 1000 - EXISTING CONTOURS
- - - - - PROPOSED CONTOURS
- - - - - COMPOST FILTER SOCK
- - - - - LIMIT OF DISTURBANCE
- - - - - DITCH LINE
- - - - - EXISTING TREE LINE
- - - - - TOE DRAIN
- - - - - CUT
- - - - - FILL
- - - - - 2' BERM
- - - - - EXISTING ELECTRIC
- - - - - EXISTING GASLINE



TOPSOIL STOCKPILE #4
 TOP EL.: 1106.0'
 HEIGHT: 36.0'
 CAPACITY: 7,633 CY

EXCESS STOCKPILE #1
 TOP EL.: 1026.0'
 HEIGHT: 35.0'
 CAPACITY: 6,114 CY

TOPSOIL STOCKPILE #1
 TOP EL.: 1104.0'
 HEIGHT: 34.0'
 CAPACITY: 3,755 CY

EXCESS STOCKPILE #3
 TOP EL.: 1160.0'
 HEIGHT: 35.0'
 CAPACITY: 8,472 CY

TOPSOIL STOCKPILE #2
 TOP EL.: 1120.0'
 HEIGHT: 18.0'
 CAPACITY: 1,256 CY

TOPSOIL STOCKPILE #3
 TOP EL.: 1178.0'
 HEIGHT: 36.0'
 CAPACITY: 5,392 CY

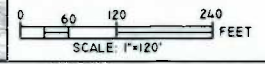
EXCESS STOCKPILE #2
 TOP EL.: 1156.0'
 HEIGHT: 35.0'
 CAPACITY: 22,555 CY

EXISTING WELL
 API 017-05724

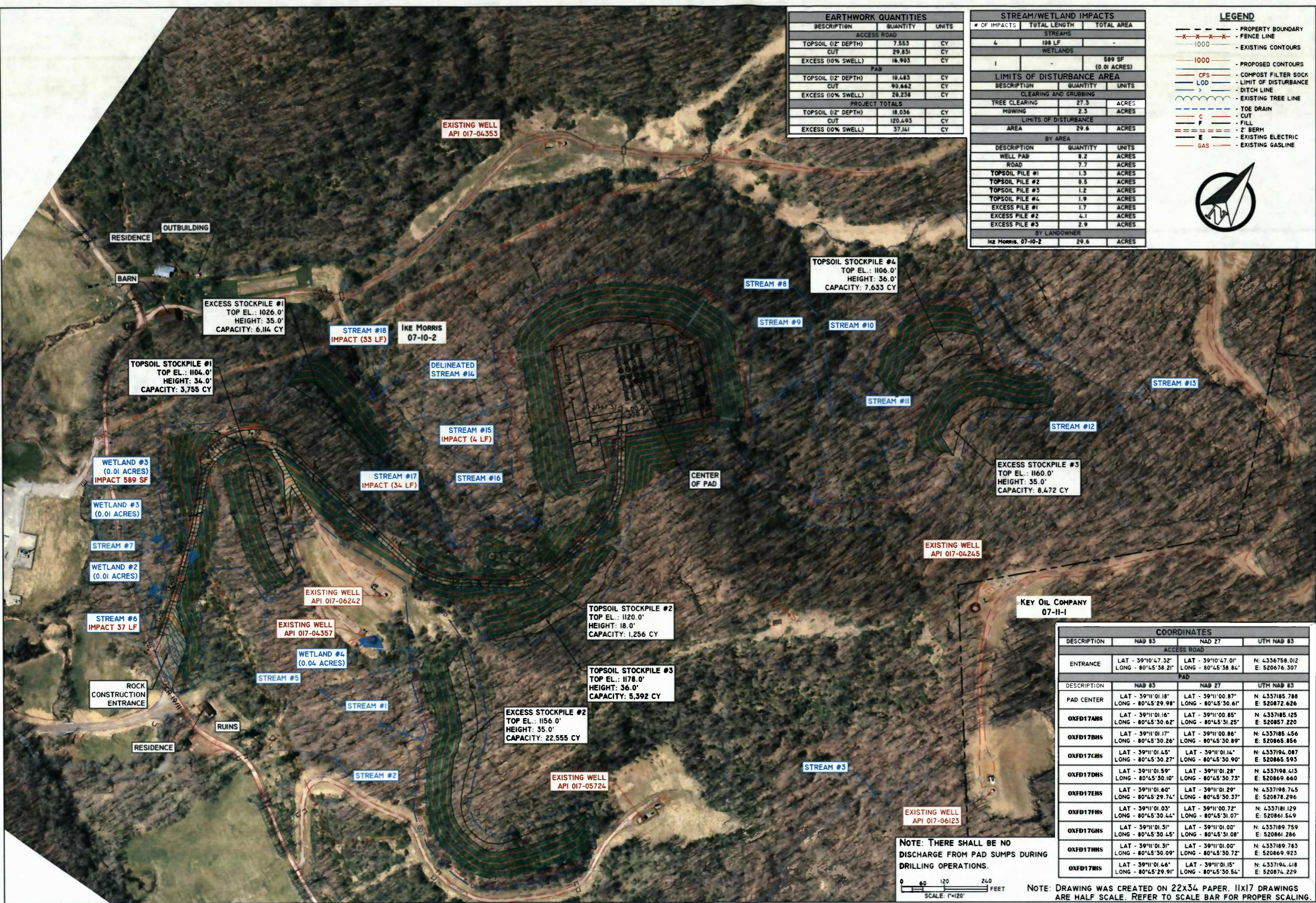
EXISTING WELL
 API 017-06123

COORDINATES			
DESCRIPTION	NAD 83	NAD 27	UTM NAD 83
ACCESS ROAD			
ENTRANCE	LAT - 39°10'47.32" LONG - 80°45'38.21"	LAT - 39°10'47.01" LONG - 80°45'38.84"	N: 4336758.012 E: 520676.307
PAD			
PAD CENTER	LAT - 39°11'01.18" LONG - 80°45'29.98"	LAT - 39°11'00.87" LONG - 80°45'30.61"	N: 4337185.788 E: 520872.626
OXFD17AHS	LAT - 39°11'01.16" LONG - 80°45'30.62"	LAT - 39°11'00.85" LONG - 80°45'31.25"	N: 4337185.125 E: 520857.220
OXFD17BHS	LAT - 39°11'01.17" LONG - 80°45'30.26"	LAT - 39°11'00.86" LONG - 80°45'30.89"	N: 4337185.456 E: 520865.856
OXFD17CHS	LAT - 39°11'01.45" LONG - 80°45'30.27"	LAT - 39°11'01.14" LONG - 80°45'30.90"	N: 4337194.087 E: 520865.593
OXFD17DHS	LAT - 39°11'01.59" LONG - 80°45'30.10"	LAT - 39°11'01.28" LONG - 80°45'30.73"	N: 4337198.413 E: 520869.660
OXFD17EHS	LAT - 39°11'01.60" LONG - 80°45'29.74"	LAT - 39°11'01.29" LONG - 80°45'30.37"	N: 4337198.745 E: 520878.296
OXFD17FHS	LAT - 39°11'01.03" LONG - 80°45'30.44"	LAT - 39°11'00.72" LONG - 80°45'31.07"	N: 4337181.129 E: 520861.549
OXFD17GHS	LAT - 39°11'01.31" LONG - 80°45'30.45"	LAT - 39°11'01.00" LONG - 80°45'31.08"	N: 4337189.759 E: 520861.286
OXFD17HHS	LAT - 39°11'01.31" LONG - 80°45'30.09"	LAT - 39°11'01.00" LONG - 80°45'30.72"	N: 4337189.783 E: 520869.923
OXFD17HS	LAT - 39°11'01.46" LONG - 80°45'29.91"	LAT - 39°11'01.15" LONG - 80°45'30.54"	N: 4337194.418 E: 520874.229

NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.



NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	29,831	CY
EXCESS (10% SWELL)	16,985	CY
PAD		
TOPSOIL (12" DEPTH)	19,443	CY
CUT	93,642	CY
EXCESS (10% SWELL)	28,238	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,036	CY
CUT	120,493	CY
EXCESS (10% SWELL)	37,141	CY

STREAM/WETLAND IMPACTS		
# OF IMPACTS	TOTAL LENGTH	TOTAL AREA
STREAMS		
4	198 LF	-
WETLANDS		
1	-	589 SF (0.01 ACRES)
LIMITS OF DISTURBANCE AREA		
DESCRIPTION	QUANTITY	UNITS
CLEARING AND GRUBBING		
TREE CLEARING	27.3	ACRES
MOWING	2.3	ACRES
LIMITS OF DISTURBANCE		
AREA	29.6	ACRES
BY AREA		
DESCRIPTION	QUANTITY	UNITS
WELL PAD	0.2	ACRES
ROAD	7.7	ACRES
TOPSOIL PILE #1	1.3	ACRES
TOPSOIL PILE #2	9.5	ACRES
TOPSOIL PILE #3	1.2	ACRES
TOPSOIL PILE #4	1.9	ACRES
EXCESS PILE #1	1.7	ACRES
EXCESS PILE #2	4.1	ACRES
EXCESS PILE #3	2.9	ACRES
BY LANDOWNER		
IKE MORRIS, 07-10-2	29.6	ACRES

- LEGEND**
- - - - - PROPERTY BOUNDARY
 - X - X - X - FENCE LINE
 - - - - - 1000
 - - - - - EXISTING CONTOURS
 - - - - - 1000
 - - - - - PROPOSED CONTOURS
 - CFS - COMPOST FILTER SOCK
 - LOD - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - - - - - EXISTING TREE LINE
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE



CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378

CNX GAS

OXFD17HS WELL SITE
 OVERALL SITE PLAN W/ ORTHO

REVISIONS	
DATE	TYPE

WILLIAM P. FOLEY
 LICENSED
 No. 4448
 STATE OF WEST VIRGINIA
 PROFESSIONAL ENGINEER

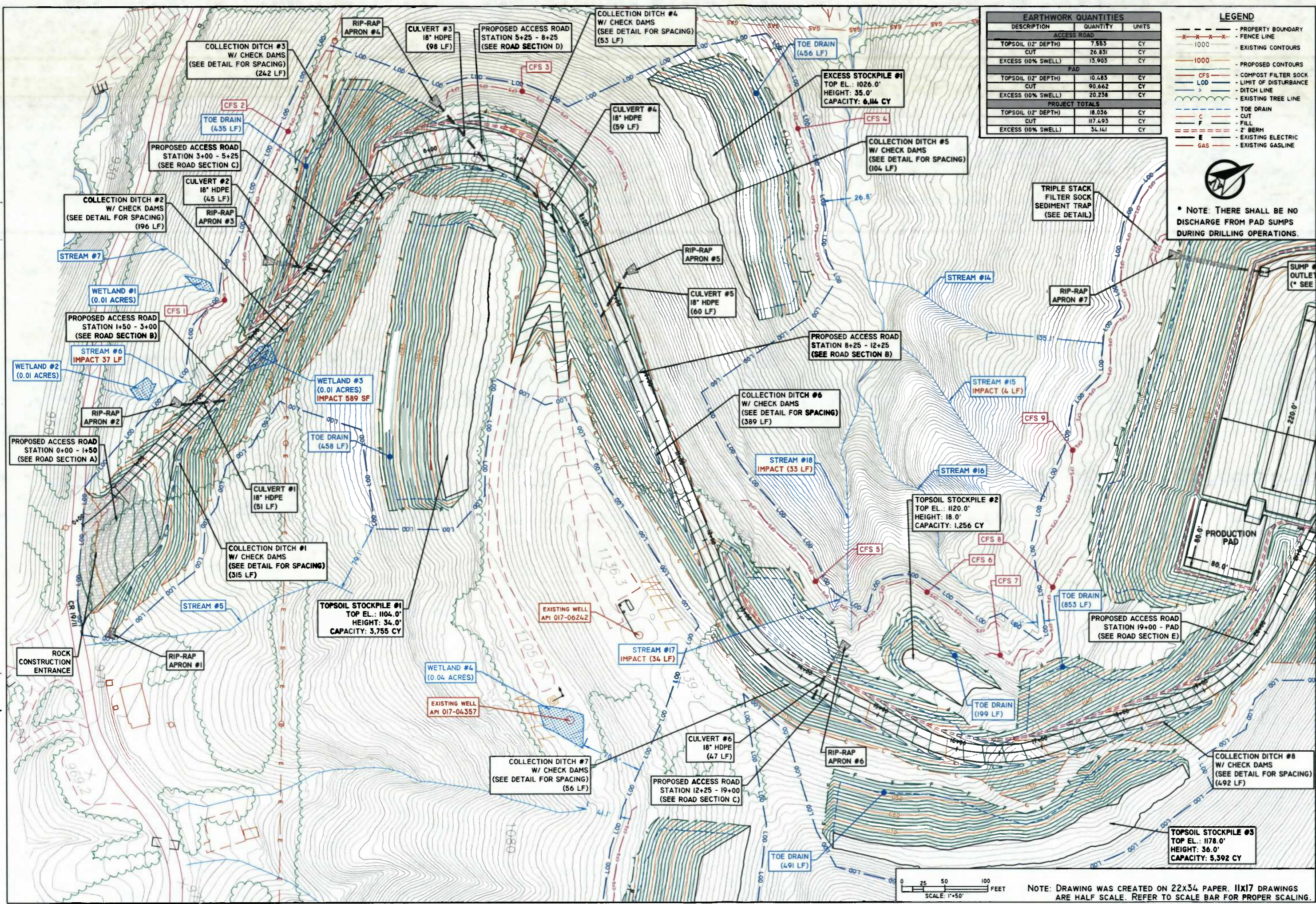
DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=120'
 JOB NO.
 DRAWING NAME:

SHEET NO. 7

DESCRIPTION	COORDINATES		
	NAD 83	NAD 27	UTM NAD 83
ACCESS ROAD			
ENTRANCE	LAT - 39°10'47.32" LONG - 80°45'58.21"	LAT - 39°10'47.01" LONG - 80°45'58.84"	N: 4336758.012 E: 520676.307
PAD			
PAD CENTER	LAT - 39°11'01.18" LONG - 80°45'29.98"	LAT - 39°11'00.87" LONG - 80°45'30.61"	N: 4337185.788 E: 520872.626
OXFD17AMS	LAT - 39°11'01.16" LONG - 80°45'30.62"	LAT - 39°11'00.85" LONG - 80°45'31.25"	N: 4337185.125 E: 520857.220
OXFD17BHS	LAT - 39°11'01.17" LONG - 80°45'30.26"	LAT - 39°11'00.86" LONG - 80°45'30.89"	N: 4337185.456 E: 520865.856
OXFD17CHS	LAT - 39°11'01.45" LONG - 80°45'30.27"	LAT - 39°11'01.14" LONG - 80°45'30.90"	N: 4337194.087 E: 520865.593
OXFD17DHS	LAT - 39°11'01.59" LONG - 80°45'30.10"	LAT - 39°11'01.28" LONG - 80°45'30.73"	N: 4337198.413 E: 520869.660
OXFD17EHS	LAT - 39°11'01.60" LONG - 80°45'29.74"	LAT - 39°11'01.29" LONG - 80°45'30.37"	N: 4337198.745 E: 520878.296
OXFD17FHS	LAT - 39°11'01.03" LONG - 80°45'30.44"	LAT - 39°11'00.72" LONG - 80°45'31.07"	N: 4337181.129 E: 520861.549
OXFD17GHS	LAT - 39°11'01.31" LONG - 80°45'30.45"	LAT - 39°11'01.00" LONG - 80°45'31.08"	N: 4337189.759 E: 520861.286
OXFD17HHS	LAT - 39°11'01.31" LONG - 80°45'30.09"	LAT - 39°11'01.00" LONG - 80°45'30.72"	N: 4337189.783 E: 520869.923
OXFD17HS	LAT - 39°11'01.46" LONG - 80°45'29.91"	LAT - 39°11'01.15" LONG - 80°45'30.54"	N: 4337194.418 E: 520874.229

NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.

NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	26,831	CY
EXCESS (10% SWELL)	13,905	CY
PAD		
TOPSOIL (12" DEPTH)	10,485	CY
CUT	90,662	CY
EXCESS (10% SWELL)	20,256	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,038	CY
CUT	117,493	CY
EXCESS (10% SWELL)	34,161	CY

- LEGEND**
- - - - - PROPERTY BOUNDARY
 - - - - - FENCE LINE
 - 1000 - - - - - EXISTING CONTOURS
 - 1000 - - - - - PROPOSED CONTOURS
 - - - - - COMPOST FILTER SOCK
 - - - - - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - - - - - EXISTING TREE LINE
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.

Blue Mountain Inc.
 Engineers and Land Surveyors
 11023 Mason Dixon Hwy
 Burton, WV 26624-9656
 (304) 662-4486

CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378



**OXFD17HS WELL SITE
 DETAILED SITE PLAN (1 OF 4)**

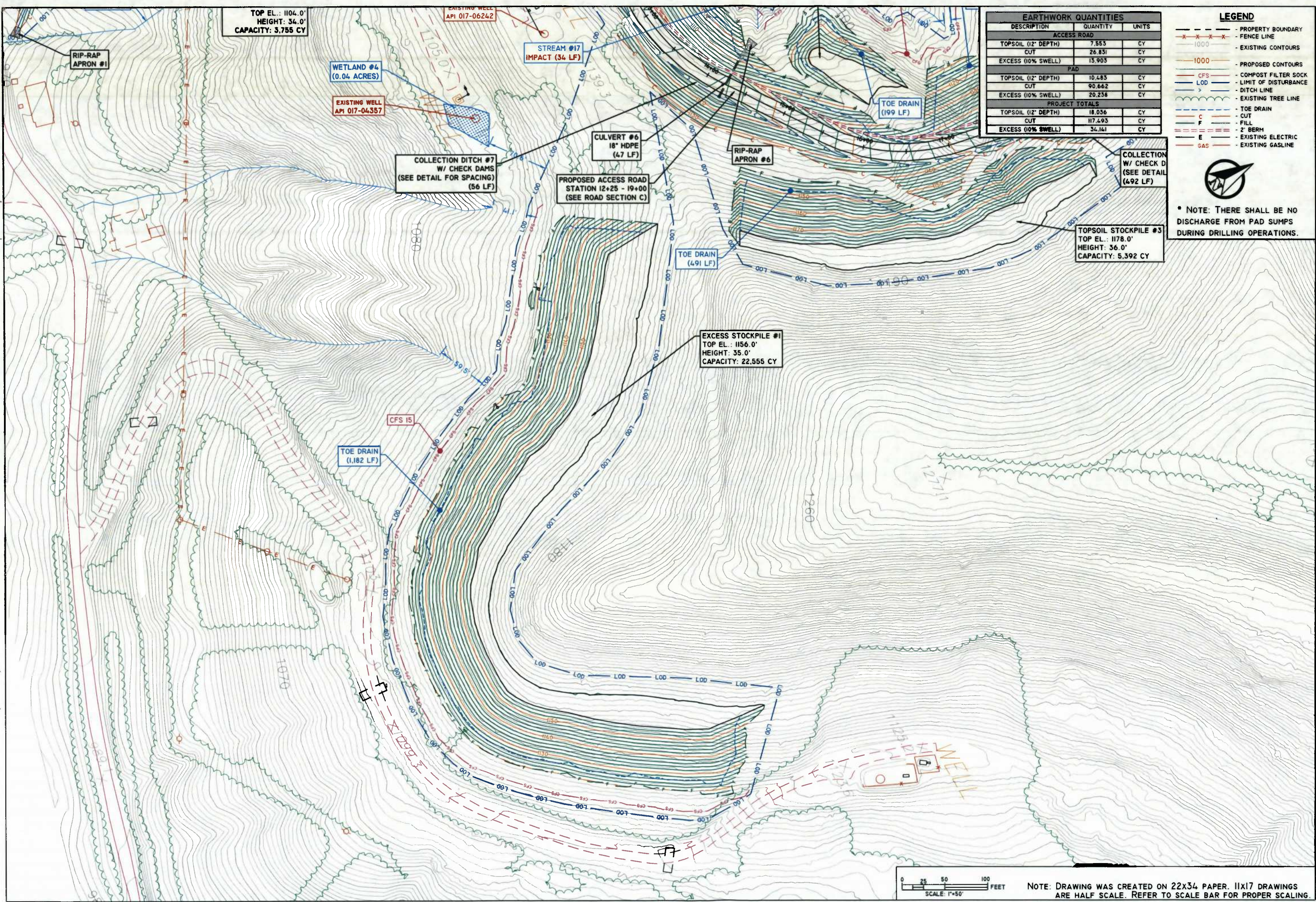
REVISIONS

DATE	TYPE



DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=50'
 JOB NO.
 DRAWING NAME:

NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



TOP EL.: 1104.0'
HEIGHT: 34.0'
CAPACITY: 3,755 CY

WETLAND #4
(0.04 ACRES)

EXISTING WELL
API 017-04357

STREAM #17
IMPACT (34 LF)

CULVERT #6
18" HDPE
(47 LF)

TOE DRAIN
(199 LF)

COLLECTION DITCH #7
W/ CHECK DAMS
(SEE DETAIL FOR SPACING)
(56 LF)

PROPOSED ACCESS ROAD
STATION 12+25 - 19+00
(SEE ROAD SECTION C)

RIP-RAP
APRON #6

COLLECTION
W/ CHECK D
(SEE DETAIL
(492 LF)

TOPSOIL STOCKPILE #3
TOP EL.: 1178.0'
HEIGHT: 36.0'
CAPACITY: 5,392 CY

EXCESS STOCKPILE #1
TOP EL.: 1156.0'
HEIGHT: 35.0'
CAPACITY: 22,555 CY

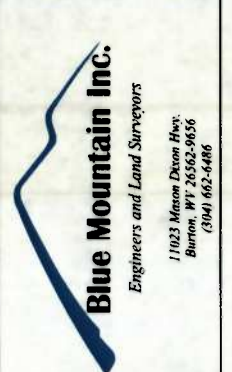
TOE DRAIN
(1,182 LF)

CFS 15

EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	26,831	CY
EXCESS (10% SWELL)	13,905	CY
PAD		
TOPSOIL (12" DEPTH)	10,483	CY
CUT	90,662	CY
EXCESS (10% SWELL)	20,238	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,036	CY
CUT	117,493	CY
EXCESS (10% SWELL)	34,141	CY

- LEGEND**
- - - - - PROPERTY BOUNDARY
 - - - - - FENCE LINE
 - - - - - EXISTING CONTOURS
 - - - - - PROPOSED CONTOURS
 - - - - - COMPOST FILTER SOCK
 - - - - - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - - - - - EXISTING TREE LINE
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.



CNX GAS COMPANY, LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378



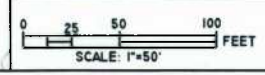
**OXFD17HS WELL SITE
DETAILED SITE PLAN (2 OF 4)**

REVISIONS

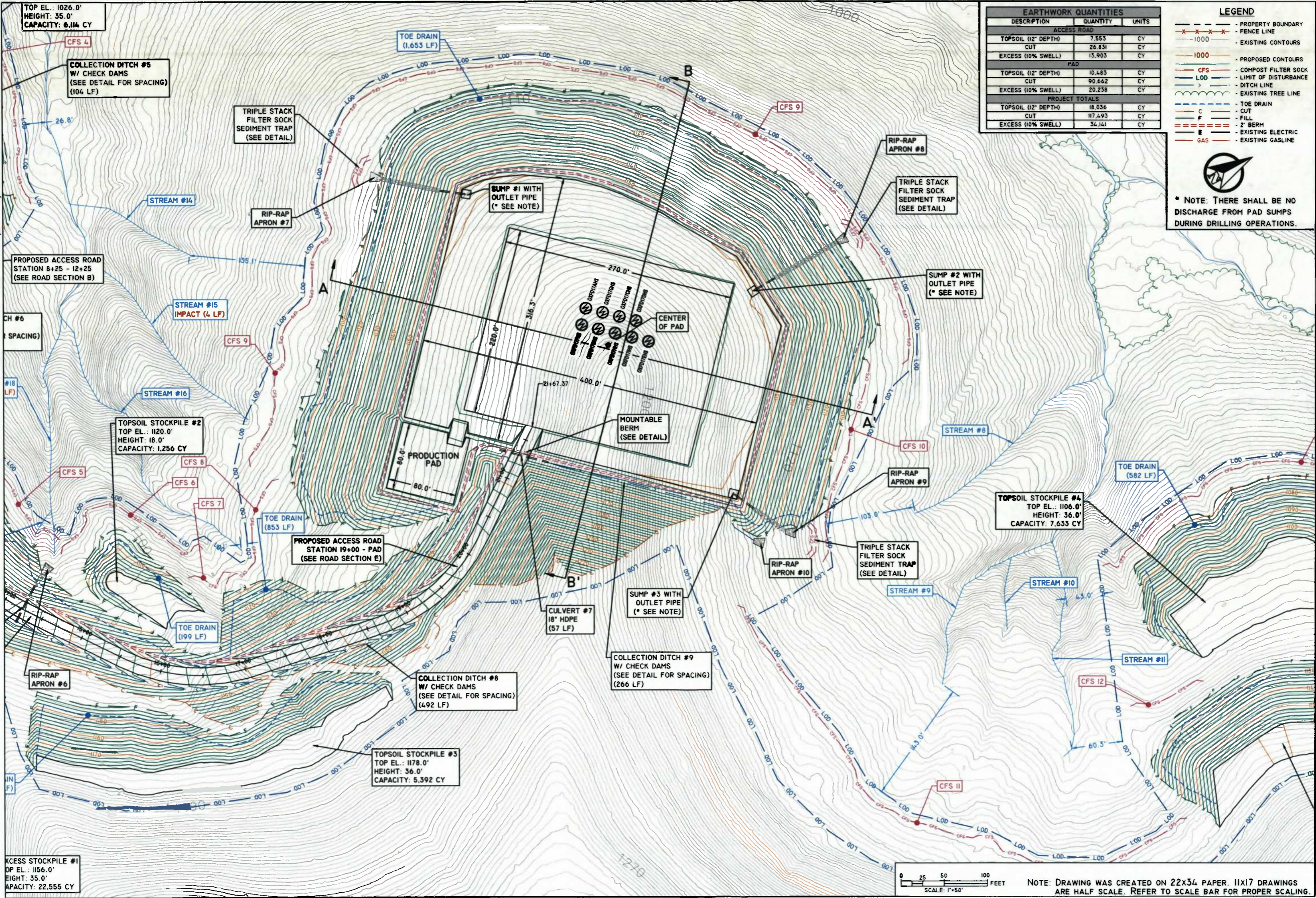
DATE	TYPE



DRAWN BY: WSH
CHECKED BY: MPP
DATE: 09/22/14
SCALE: 1"=50'
JOB NO:
DRAWING NAME:



NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



TOP EL.: 1026.0'
HEIGHT: 35.0'
CAPACITY: 6,114 CY

COLLECTION DITCH #5
W/ CHECK DAMS
(SEE DETAIL FOR SPACING)
(104 LF)

TRIPLE STACK
FILTER SOCK
SEDIMENT TRAP
(SEE DETAIL)

TOE DRAIN
(1,653 LF)

SUMP #1 WITH
OUTLET PIPE
(* SEE NOTE)

RIP-RAP
APRON #8

TRIPLE STACK
FILTER SOCK
SEDIMENT TRAP
(SEE DETAIL)

SUMP #2 WITH
OUTLET PIPE
(* SEE NOTE)

PROPOSED ACCESS ROAD
STATION 8+25 - 12+25
(SEE ROAD SECTION B)

STREAM #15
IMPACT (4 LF)

TOPSOIL STOCKPILE #2
TOP EL.: 1120.0'
HEIGHT: 18.0'
CAPACITY: 1,256 CY

PRODUCTION PAD

MOUNTABLE
BERM
(SEE DETAIL)

TOPSOIL STOCKPILE #4
TOP EL.: 1106.0'
HEIGHT: 36.0'
CAPACITY: 7,633 CY

PROPOSED ACCESS ROAD
STATION 19+00 - PAD
(SEE ROAD SECTION E)

TOE DRAIN
(199 LF)

CULVERT #7
18" HDPE
(57 LF)

SUMP #3 WITH
OUTLET PIPE
(* SEE NOTE)

COLLECTION DITCH #9
W/ CHECK DAMS
(SEE DETAIL FOR SPACING)
(266 LF)

COLLECTION DITCH #8
W/ CHECK DAMS
(SEE DETAIL FOR SPACING)
(492 LF)

TOPSOIL STOCKPILE #3
TOP EL.: 1178.0'
HEIGHT: 36.0'
CAPACITY: 5,392 CY

EXCESS STOCKPILE #1
TOP EL.: 1156.0'
HEIGHT: 35.0'
CAPACITY: 22,555 CY

EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	26,831	CY
EXCESS (10% SWELL)	13,903	CY
PAD		
TOPSOIL (12" DEPTH)	10,483	CY
CUT	90,662	CY
EXCESS (10% SWELL)	20,238	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,036	CY
CUT	117,493	CY
EXCESS (10% SWELL)	34,141	CY

- LEGEND**
- - - - - PROPERTY BOUNDARY
 - - - - - FENCE LINE
 - - - - - EXISTING CONTOURS
 - - - - - 1000
 - - - - - PROPOSED CONTOURS
 - - - - - COMPOST FILTER SOCK
 - - - - - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - - - - - EXISTING TREE LINE
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.

Blue Mountain Inc.
Engineers and Land Surveyors
11023 Mecon Drive Hwy.
Burton, WV 26626-9636
(304) 662-4486

CNX GAS COMPANY, LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378



**OXFD17HS WELL SITE
DETAILED SITE PLAN (3 OF 4)**

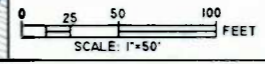
REVISIONS

DATE	TYPE

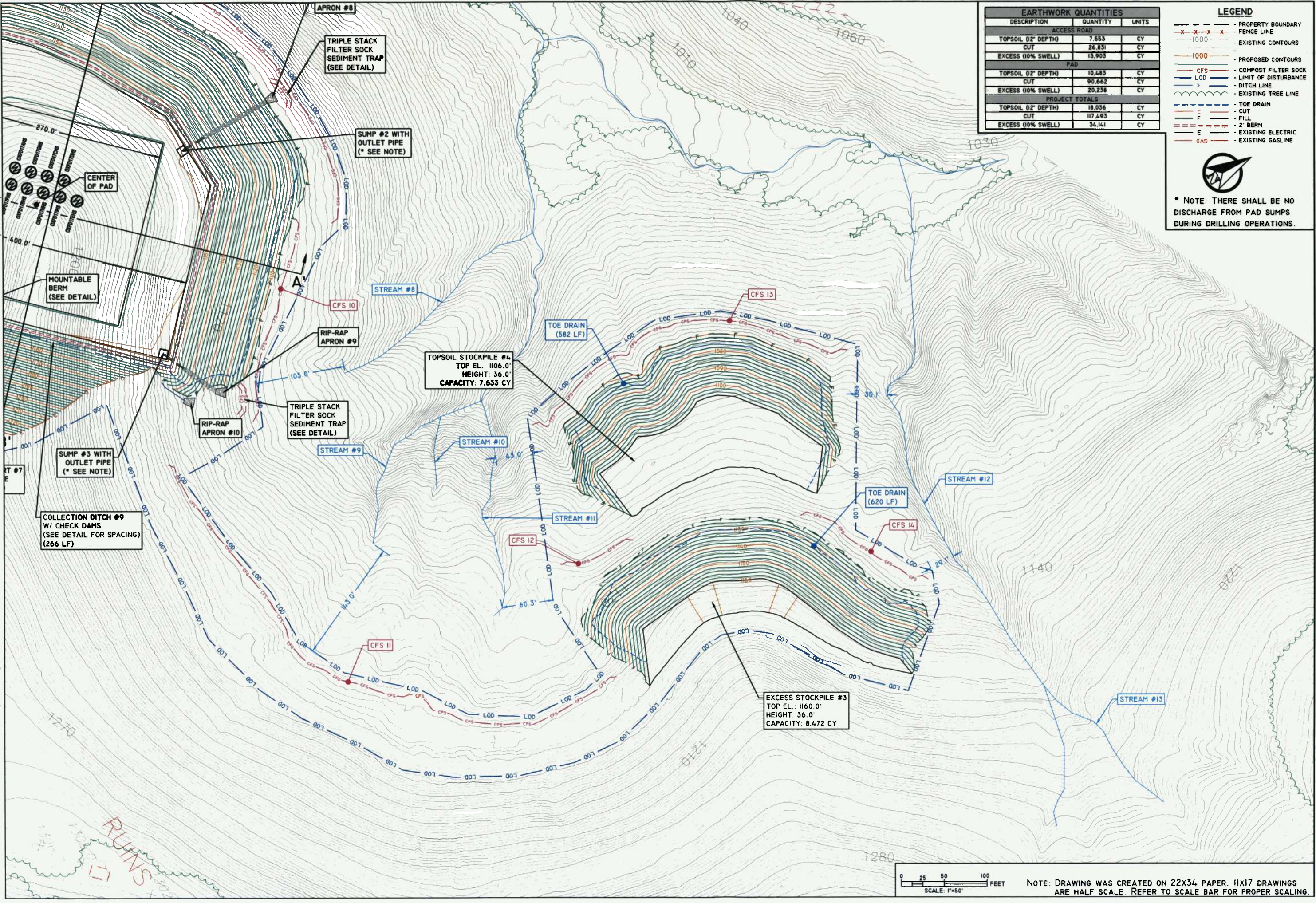


DRAWN BY: WSH
CHECKED BY: WPF
DATE: 09/22/14
SCALE: 1"=60'
JOB NO.
DRAWING NAME:

SHEET NO. 10



NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



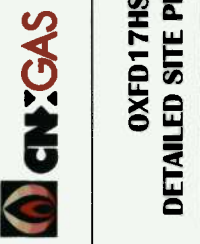
EARTHWORK QUANTITIES		
DESCRIPTION	QUANTITY	UNITS
ACCESS ROAD		
TOPSOIL (12" DEPTH)	7,553	CY
CUT	26,831	CY
EXCESS (10% SWELL)	15,903	CY
PAD		
TOPSOIL (12" DEPTH)	10,483	CY
CUT	90,662	CY
EXCESS (10% SWELL)	20,258	CY
PROJECT TOTALS		
TOPSOIL (12" DEPTH)	18,036	CY
CUT	117,493	CY
EXCESS (10% SWELL)	34,161	CY

- LEGEND**
- - - - - PROPERTY BOUNDARY
 - - - - - FENCE LINE
 - - - - - EXISTING CONTOURS
 - - - - - 1000
 - - - - - 1000
 - - - - - PROPOSED CONTOURS
 - - - - - CFS
 - - - - - LOD
 - - - - - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - - - - - EXISTING TREE LINE
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.



CNX GAS COMPANY, LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378

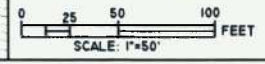


REVISIONS

DATE	TYPE



DRAWN BY: WSH
CHECKED BY: WPF
DATE: 09/22/14
SCALE: 1"=40'
JOB NO.
DRAWING NAME



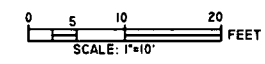
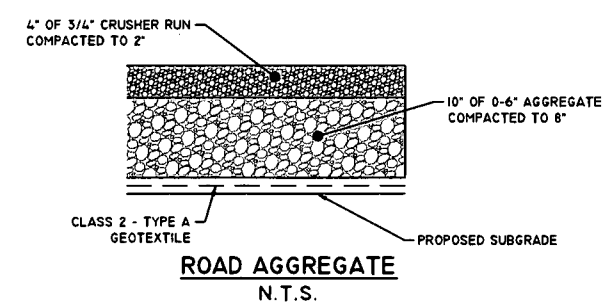
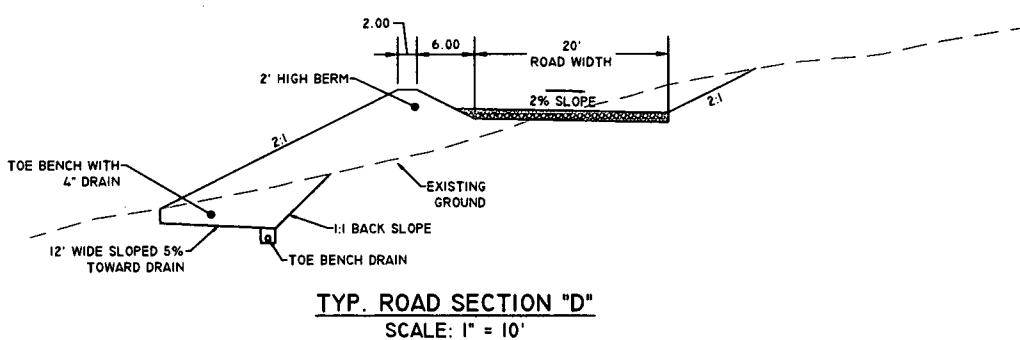
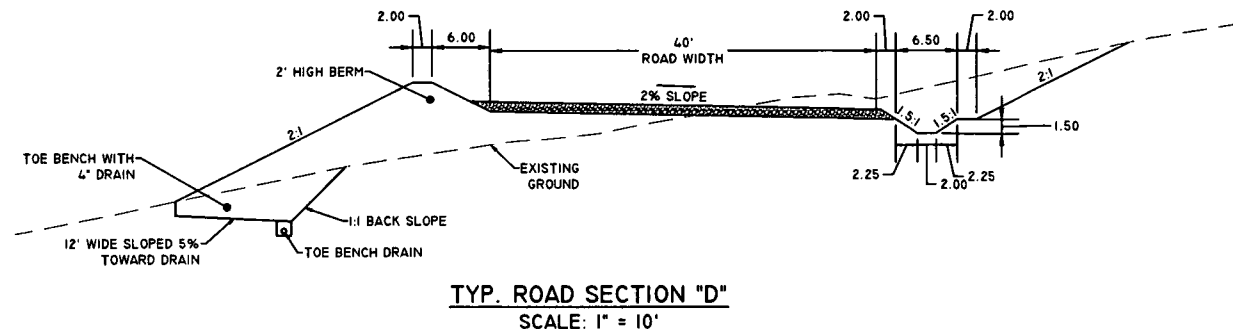
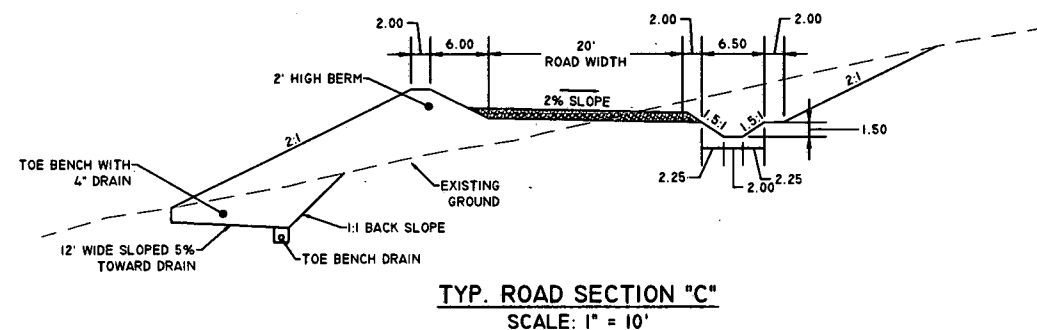
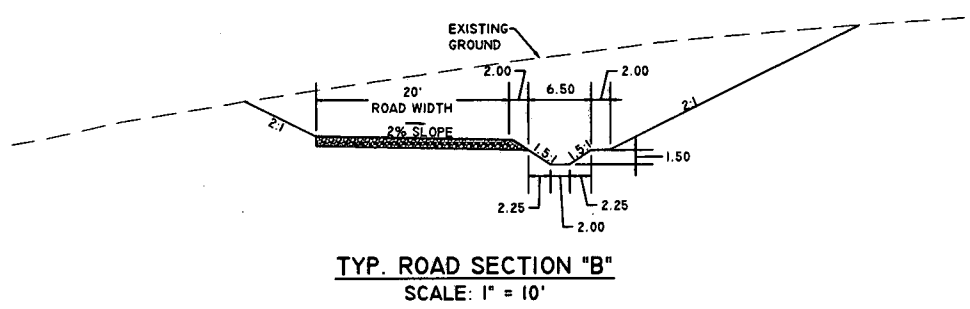
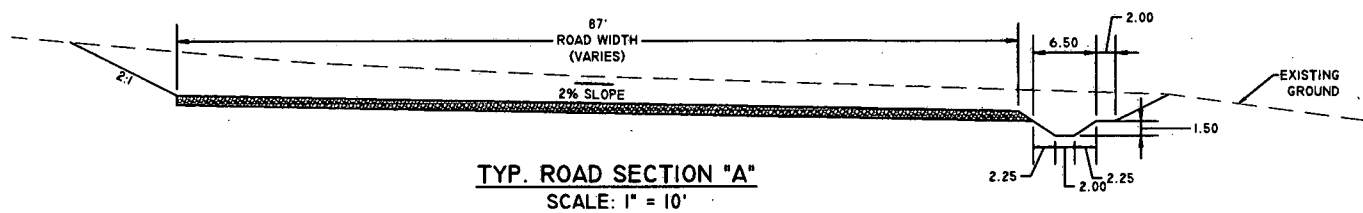
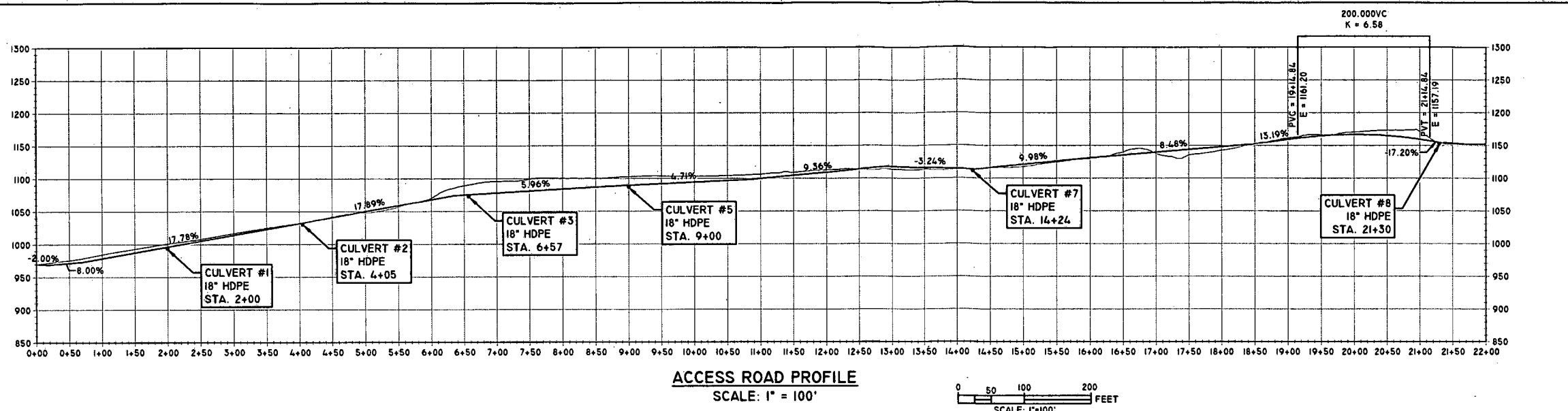
NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

REVISIONS

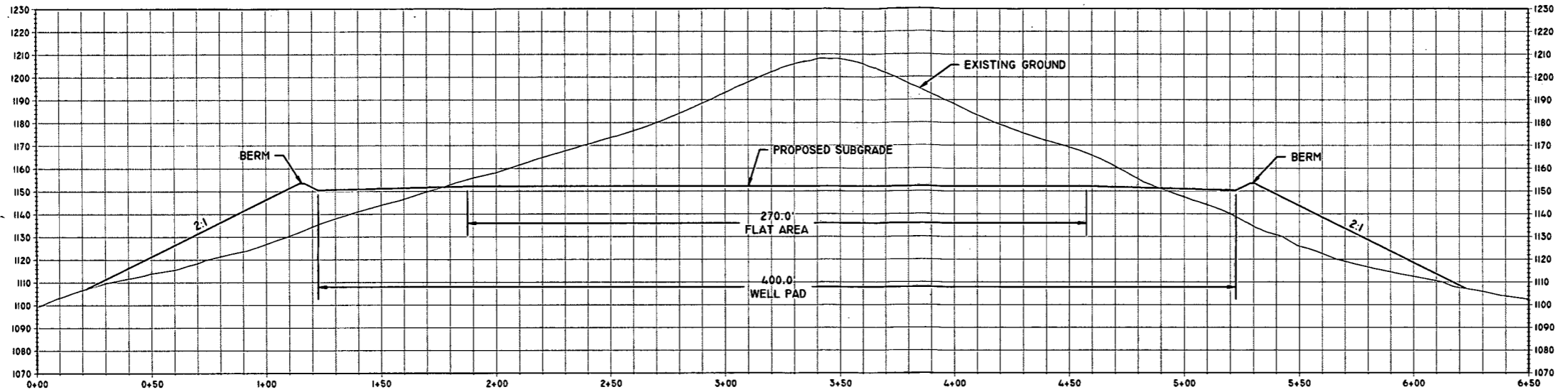
DATE	TYPE



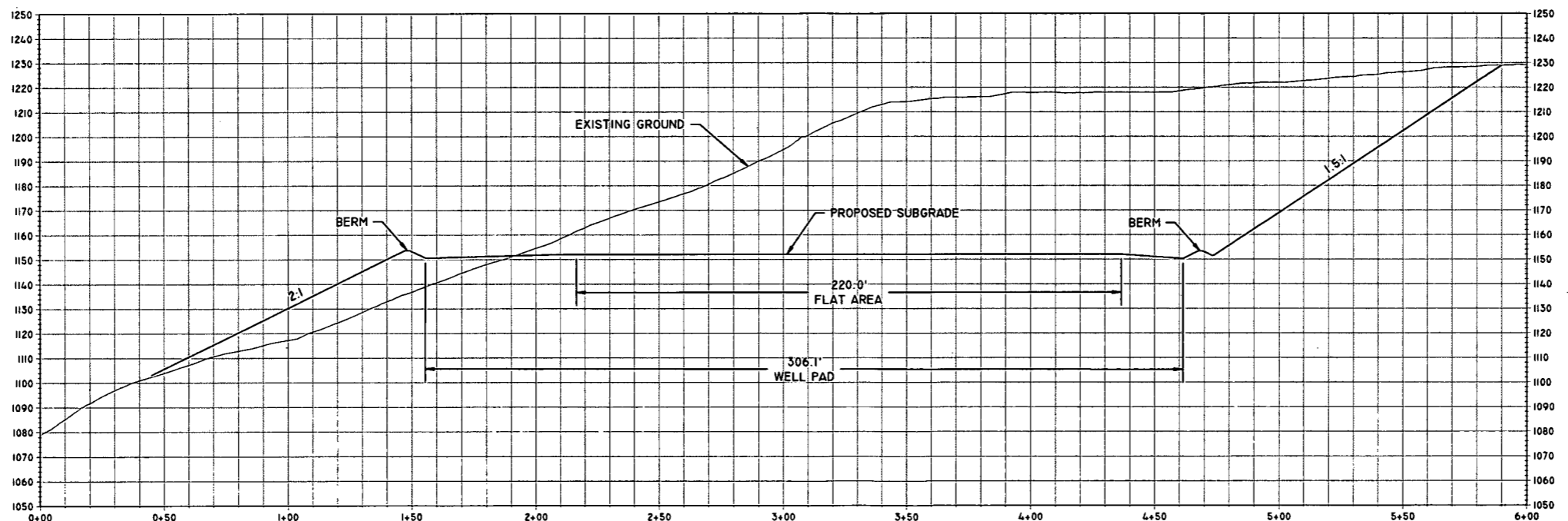
DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: AS SHOWN
 JOB NO.
 DRAWING NAME:



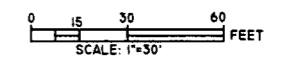
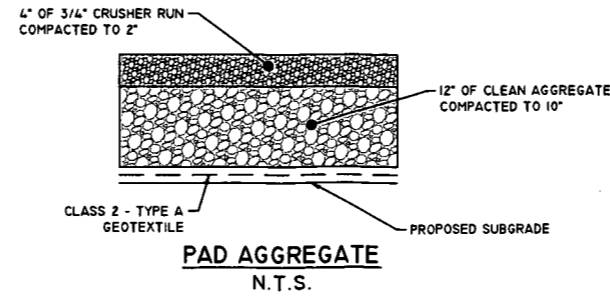
NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



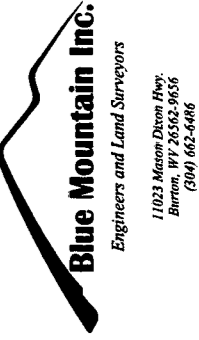
PAD CROSS SECTION A-A'
SCALE: 1" = 30'



PAD CROSS SECTION B-B'
SCALE: 1" = 30'



NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

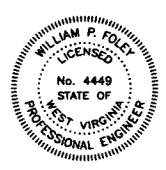


CNX GAS COMPANY LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378

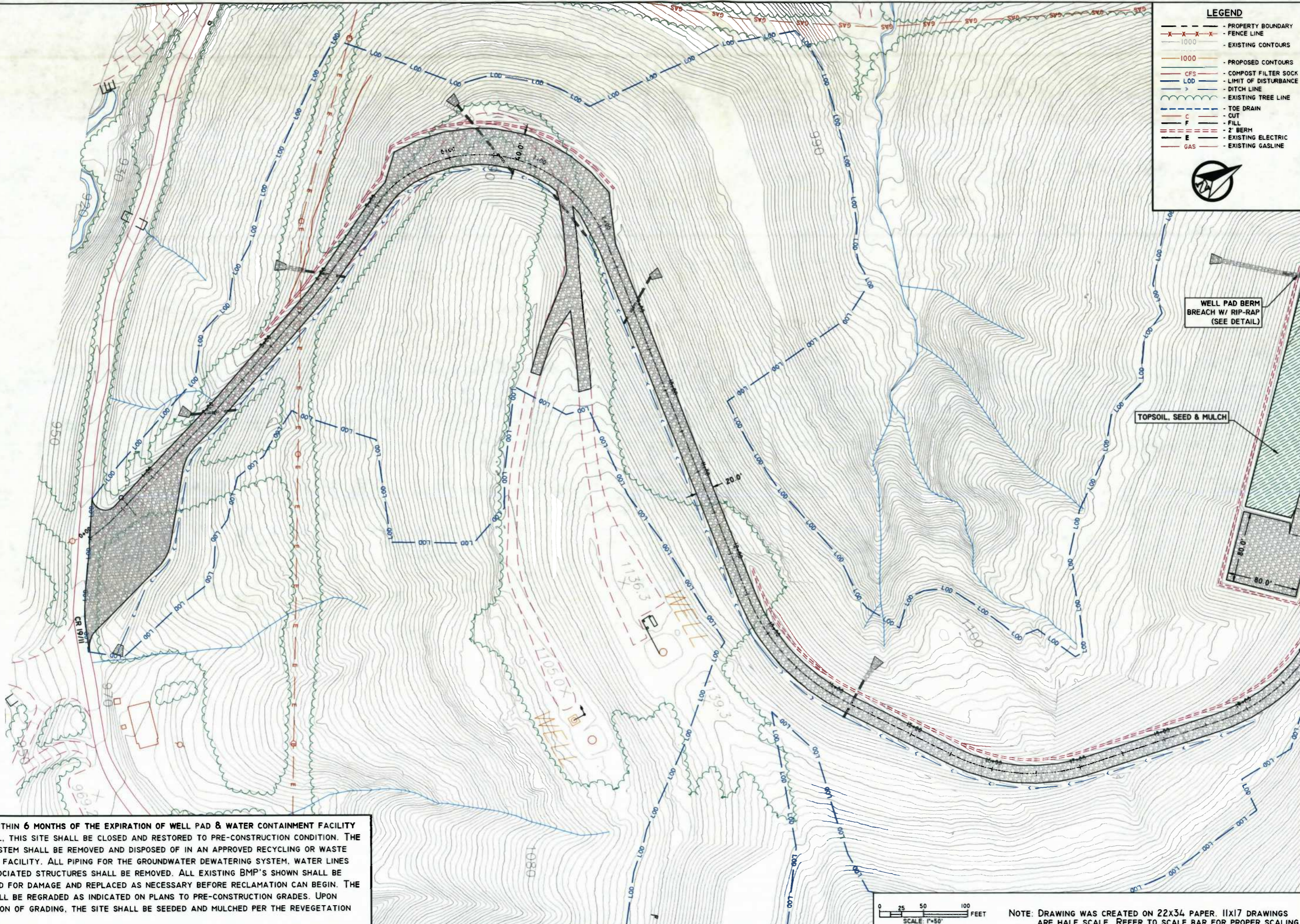


**OXFD17HS WELL SITE
PAD PROFILES & SECTIONS**

REVISIONS	
DATE	TYPE



DRAWN BY: WSH
CHECKED BY: WPF
DATE: 09/22/14
SCALE: AS SHOWN
JOB NO.
DRAWING NAME:



LEGEND

- - - - - PROPERTY BOUNDARY
- X - X - X - FENCE LINE
- 1000 - EXISTING CONTOURS
- 1000 - PROPOSED CONTOURS
- CFS - COMPOST FILTER SOCK
- LOD - LIMIT OF DISTURBANCE
- - - - - DITCH LINE
- - - - - EXISTING TREE LINE
- - - - - TOE DRAIN
- - - - - CUT
- - - - - FILL
- - - - - 2' BERM
- E - EXISTING ELECTRIC
- GAS - EXISTING GASLINE

NOTE: WITHIN 6 MONTHS OF THE EXPIRATION OF WELL PAD & WATER CONTAINMENT FACILITY APPROVAL, THIS SITE SHALL BE CLOSED AND RESTORED TO PRE-CONSTRUCTION CONDITION. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES AND ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE REGRADED AS INDICATED ON PLANS TO PRE-CONSTRUCTION GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDDED AND MULCHED PER THE REVEGETATION DETAILS.

Blue Mountain Inc.
 Engineers and Land Surveyors
 11023 Mason Dixon Hwy.
 Burton, WV 26362-9656
 (304) 662-5486

CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378

CNX GAS

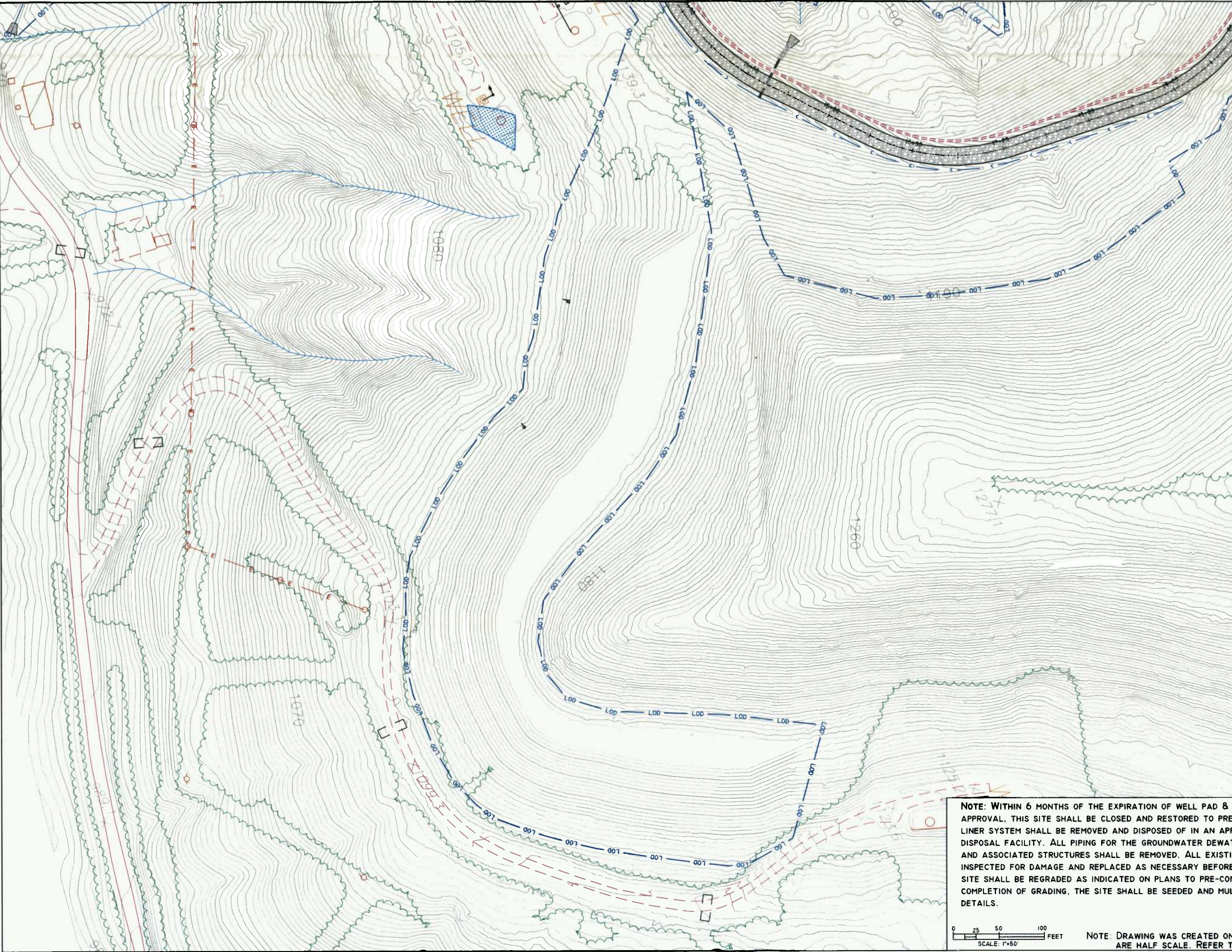
**OXFD17HS WELL SITE
 DETAILED SITE PLAN (1 OF 3)**

REVISIONS

DATE	TYPE

WILLIAM P. FOLEY
 LICENSED
 No. 4449
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL ENGINEER

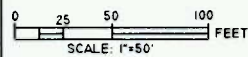
DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=50'
 JOB NO.:
 DRAWING NAME:
SHEET NO. 14



- LEGEND**
- - - PROPERTY BOUNDARY
 - X - X - X - FENCE LINE
 - 1000 - EXISTING CONTOURS
 - 1000 - PROPOSED CONTOURS
 - CFS - COMPOST FILTER SOCK
 - L - LIMIT OF DISTURBANCE
 - > - DITCH LINE
 - - - EXISTING TREE LINE
 - - - TOE DRAIN
 - C - CUT
 - F - FILL
 - E - 2' BERM
 - - - EXISTING ELECTRIC
 - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.

NOTE: WITHIN 6 MONTHS OF THE EXPIRATION OF WELL PAD & WATER CONTAINMENT FACILITY APPROVAL, THIS SITE SHALL BE CLOSED AND RESTORED TO PRE-CONSTRUCTION CONDITION. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES AND ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE REGRADED AS INDICATED ON PLANS TO PRE-CONSTRUCTION GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDED AND MULCHED PER THE REVEGETATION DETAILS.



NOTE: DRAWING WAS CREATED ON 22x34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378



**OXFD17HS WELL SITE
 DETAILED SITE PLAN (2 OF 4)**

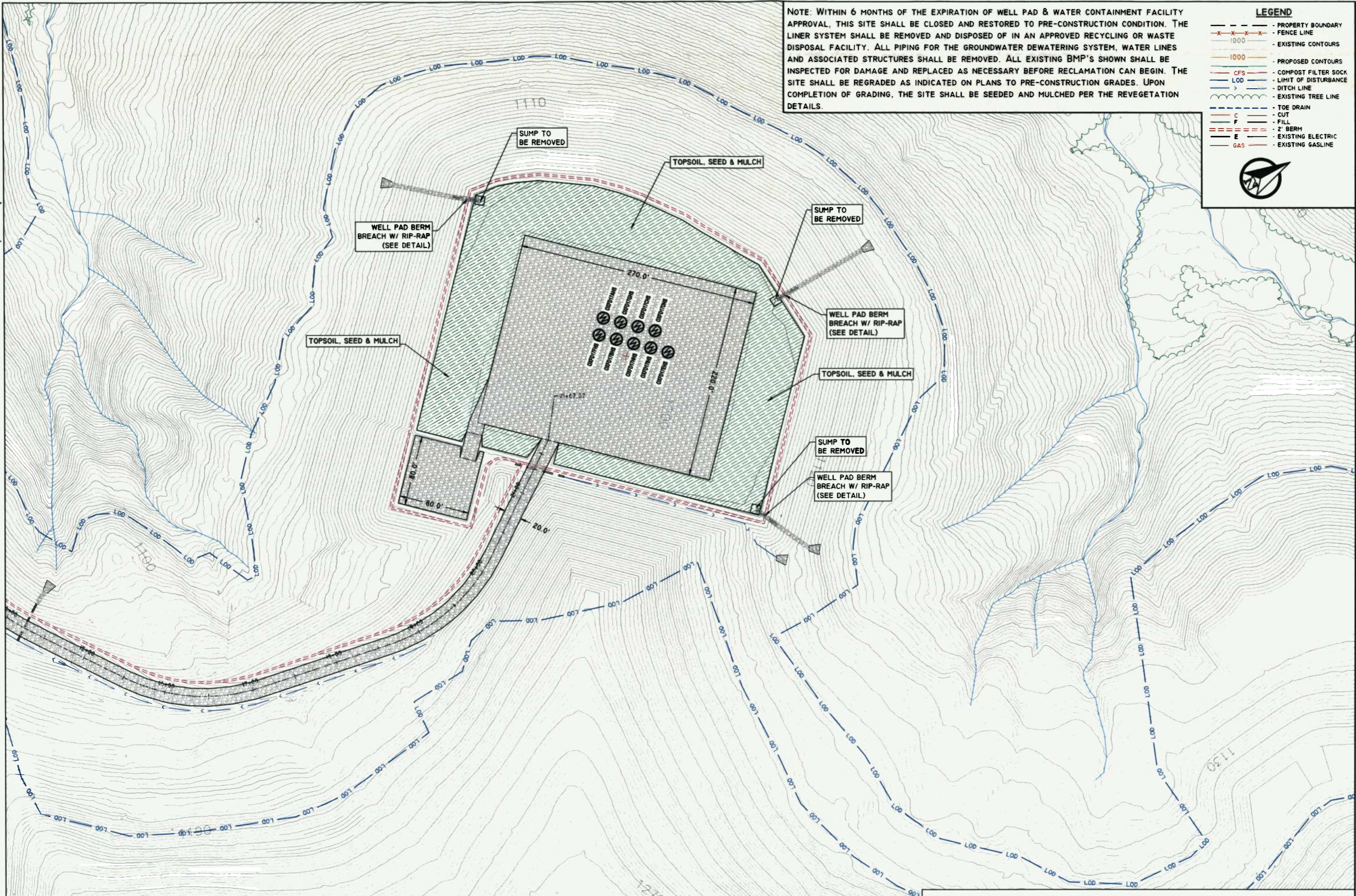
REVISIONS

DATE	TYPE



DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=50'
 JOB NO:
 DRAWING NAME:

SHEET NO. 15



NOTE: WITHIN 6 MONTHS OF THE EXPIRATION OF WELL PAD & WATER CONTAINMENT FACILITY APPROVAL, THIS SITE SHALL BE CLOSED AND RESTORED TO PRE-CONSTRUCTION CONDITION. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES AND ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE REGRADED AS INDICATED ON PLANS TO PRE-CONSTRUCTION GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDED AND MULCHED PER THE REVEGETATION DETAILS.

LEGEND

- - - - - PROPERTY BOUNDARY
- X - X - X - FENCE LINE
- - - - - EXISTING CONTOURS
- - - - - 1000
- - - - - 1000
- - - - - PROPOSED CONTOURS
- - - - - CFS
- - - - - COMPOST FILTER SOCK
- - - - - LOD
- - - - - LIMIT OF DISTURBANCE
- - - - - DITCH LINE
- - - - - EXISTING TREE LINE
- - - - - TOE DRAIN
- - - - - CUT
- - - - - FILL
- - - - - 2' BERM
- - - - - EXISTING ELECTRIC
- - - - - EXISTING GASLINE

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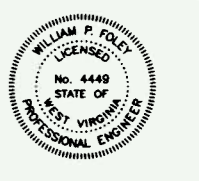
CNX GAS COMPANY, LLC
 ONE ENERGY DRIVE
 JANE LEW, WV 26378

CNX GAS

**OXFD17HS WELL SITE
 DETAILED SITE PLAN (2 OF 3)**

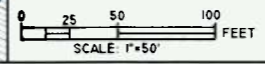
REVISIONS

DATE	TYPE

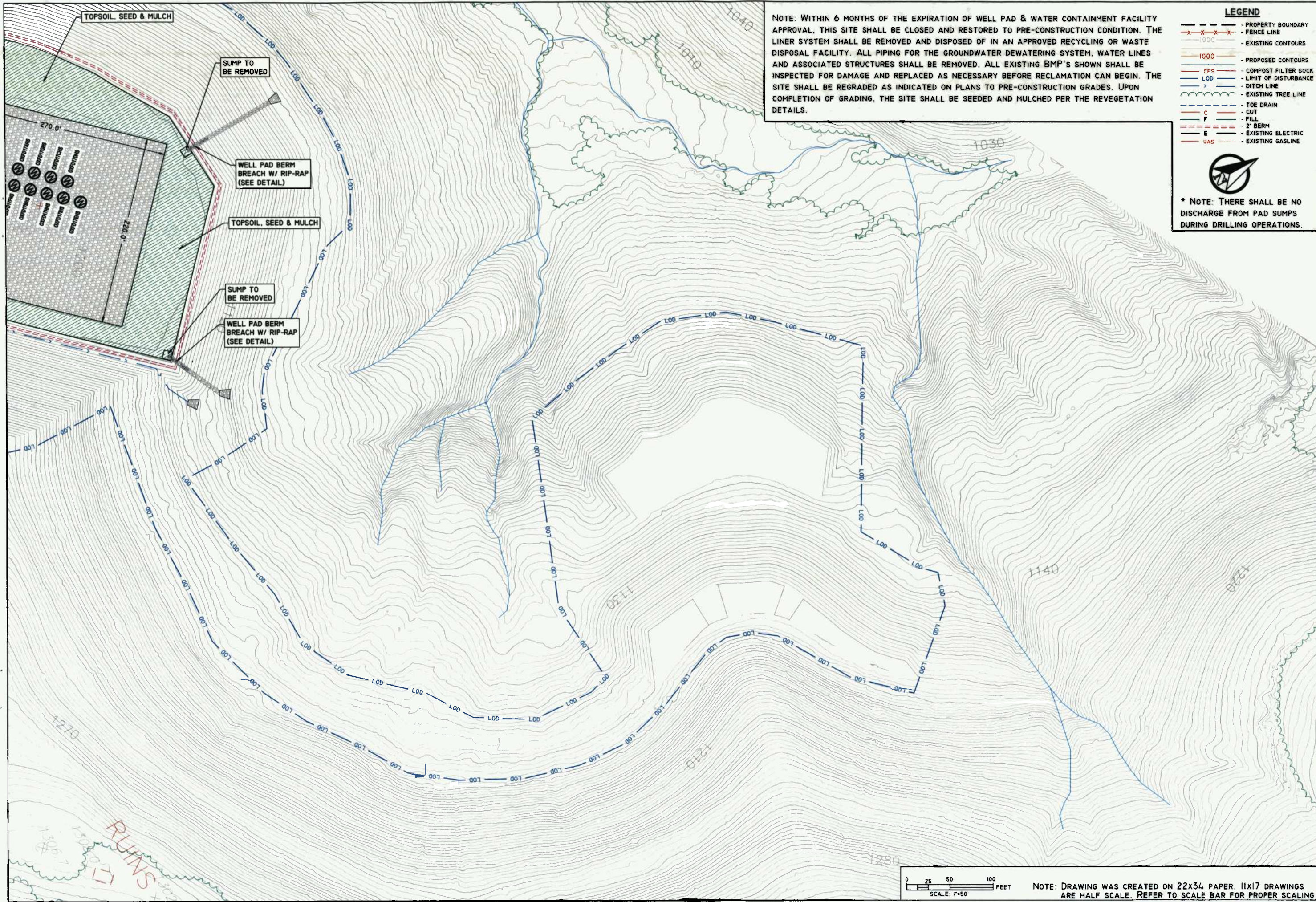


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 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: 1"=50'
 JOB NO.
 DRAWING NAME

SHEET NO. 16



NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



NOTE: WITHIN 6 MONTHS OF THE EXPIRATION OF WELL PAD & WATER CONTAINMENT FACILITY APPROVAL, THIS SITE SHALL BE CLOSED AND RESTORED TO PRE-CONSTRUCTION CONDITION. THE LINER SYSTEM SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED RECYCLING OR WASTE DISPOSAL FACILITY. ALL PIPING FOR THE GROUNDWATER DEWATERING SYSTEM, WATER LINES AND ASSOCIATED STRUCTURES SHALL BE REMOVED. ALL EXISTING BMP'S SHOWN SHALL BE INSPECTED FOR DAMAGE AND REPLACED AS NECESSARY BEFORE RECLAMATION CAN BEGIN. THE SITE SHALL BE REGRADED AS INDICATED ON PLANS TO PRE-CONSTRUCTION GRADES. UPON COMPLETION OF GRADING, THE SITE SHALL BE SEEDED AND MULCHED PER THE REVEGETATION DETAILS.


- LEGEND**
- - - - - PROPERTY BOUNDARY
 - x - x - x - FENCE LINE
 - - - - - EXISTING CONTOURS
 - 1000 - PROPOSED CONTOURS
 - - - - - COMPOST FILTER SOCK
 - LOD - LIMIT OF DISTURBANCE
 - - - - - DITCH LINE
 - Existing Tree Line ---
 - - - - - TOE DRAIN
 - - - - - CUT
 - - - - - FILL
 - - - - - 2' BERM
 - - - - - EXISTING ELECTRIC
 - - - - - EXISTING GASLINE

* NOTE: THERE SHALL BE NO DISCHARGE FROM PAD SUMPS DURING DRILLING OPERATIONS.



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CNX GAS COMPANY, LLC
ONE ENERGY DRIVE
JANE LEW, WV 26378



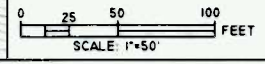
**OXFD17HS WELL SITE
DETAILED SITE PLAN (3 OF 3)**

REVISIONS

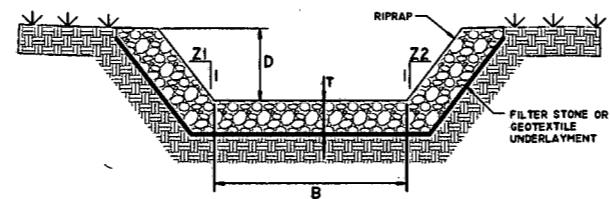
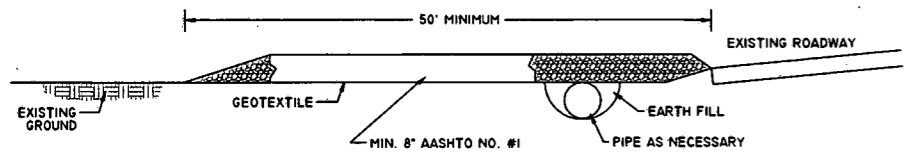
DATE	TYPE

WILLIAM P. FOLEY
LICENSED
No. 4448
STATE OF
WEST VIRGINIA
PROFESSIONAL ENGINEER

DRAWN BY: WSH
CHECKED BY: MPP
DATE: 09/22/14
SCALE: 1"=50'
JOB NO:
DRAWING NAME:



NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.



CHANNEL	LOCATION	B	D	Z1	Z2	RIPRAP GRADATION	T	UNDERLAYMENT
CD-1	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-2	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-3	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-4	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-5	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-6	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-7	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE
CD-8	ACCESS ROAD	2'	1.5'	1.5'	1.5'	4"	6"	GEOTEXTILE

NOTES:
 FILTER STONE UNDERLAYMENT FOR BED SLOPES GREATER THAN 0.10 FT/FT SHALL BE USED.
 CHANNEL DIMENSIONS ARE FOR THE COMPLETED CHANNEL AFTER ROCK PLACEMENT.
 CHANNEL MUST BE OVER-EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE VOLUME OF ROCK, WHILE PROVIDING THE SPECIFIED FINISHED DIMENSIONS.
 CHANNEL DIMENSIONS SHALL BE MAINTAINED. CHANNEL SHALL BE CLEARED WHENEVER TOTAL CHANNEL DEPTH IS REDUCED BY 25% AT ANY LOCATION.
 SEDIMENT DEPOSITS SHALL BE REMOVED WITHIN 24 HRS OF DISCOVERY OR AS CONDITIONS PERMIT.
 DAMAGED LINING SHALL BE REPAIRED WITHIN 48 HRS OF DISCOVERY.

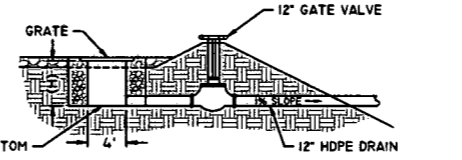
RIPRAP LINED CHANNEL
 (NOT TO SCALE)

ROCK CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

PLAN

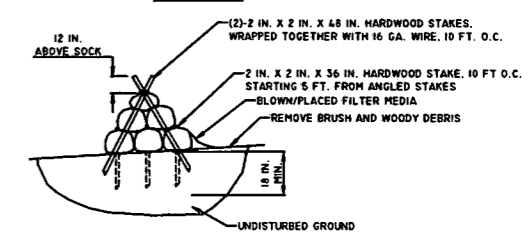
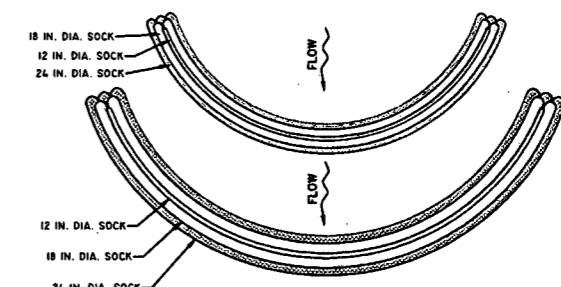
- NOTE:
 1. 8' X 8' STONE PIT AREA W/ 4" DIAMETER SUMP CULVERT TO 12" DISCHARGE PIPE WITH A GATE VALVE OUTSIDE OF BERM AREA.
 2. 4" DIAMETER SUMP CULVERT TO BE PERFORATED WITH 1" HOLES SPACE 6 TO 8". PIPE IS NOT TO BE PERFORATED ON THE BERM SIDE.
 3. INLET GRATE TO BE PLACED OVER 4" SUMP CULVERT.
 4. THERE SHALL BE NO DISCHARGE DURING DRILLING OPERATIONS & COMPLETION ACTIVITIES ON THE WELL PAD. VALVE IS TO REMAINED CLOSED AT ALL TIMES DURING DRILLING OPERATIONS.



UNDERDRAIN SUMP DETAIL

NOT TO SCALE

SUMP NO.	INVERT IN	INVERT OUT	TOP ELEV.	(H) TOTAL HEIGHT
1	1145.4'	1144.0'	1149.4'	4'
2	1145.9'	1144.0'	1149.9'	4'
3	1149.3'	1144.0'	1149.3'	4'



DESIGN NOTES:

- COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
- MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
- SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
- SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
- ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

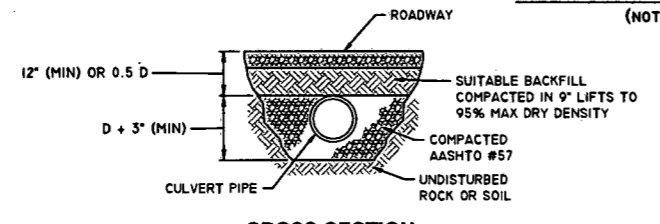
THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

COMPOST SOCK SEDIMENT TRAP

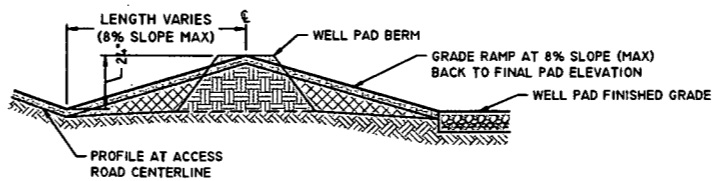
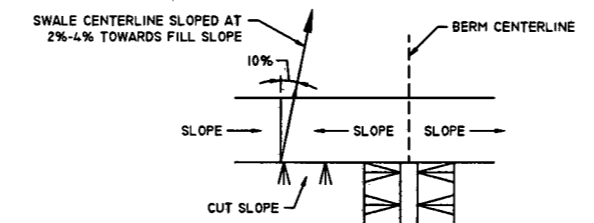
NOT TO SCALE



NOTE:
 1. WHEN NECESSARY, INSTALL INLET PROTECTION AS SPECIFIED PER PLAN.

ACCESS ROAD CULVERT INSTALLATION DETAIL

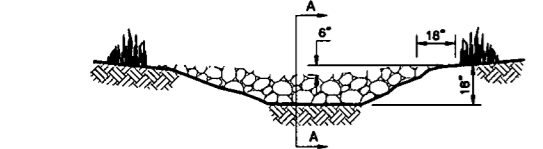
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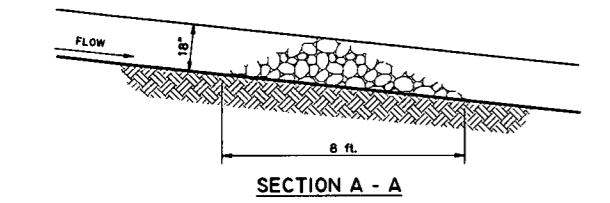
NOTE:
 1. INSTALL SWALE AT, OR NEAR 10 DEGREES FROM PERPENDICULAR TO THE ACCESS ROAD CENTERLINE IN THE DIRECTION OF THE ROAD GRADE.

WELL PAD ENTRANCE SWALE DETAIL

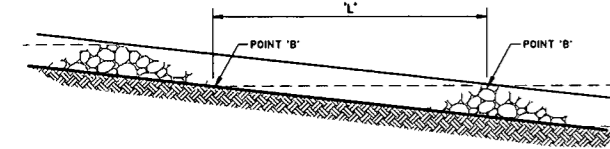
NOT TO SCALE



NOTE:
 KEY STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18' TO PREVENT OVER FLOW AROUND DAM.



L = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.



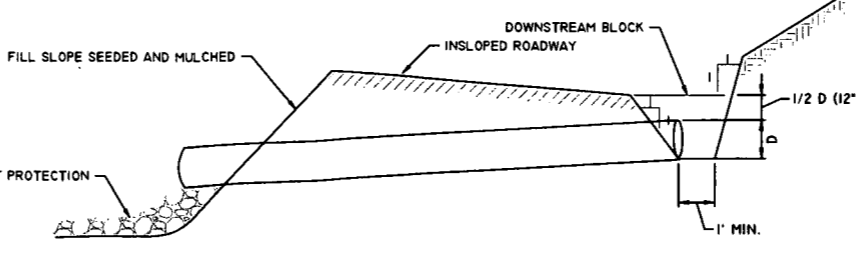
ROCK CHECK DAM

NOT TO SCALE

OUTLET	PIPE DIA Pd (IN)	RIPRAP		LENGTH La (FT)	APRON	
		SIZE (R-)	THICK RT (IN)		INITIAL WIDTH Aiw (FT)	TERMINAL WIDTH ATW (FT)
APRON 1	N/A	3	9	6	4	6.5
APRON 2	18"	3	9	12	8	13
APRON 3	N/A	3	9	6	4	6.5
APRON 4	18"	3	9	12	8	13
APRON 5	18"	3	9	12	8	13
APRON 6	N/A	3	9	6	4	6.5
APRON 7	N/A	3	9	6	4	6.5
APRON 8	N/A	3	9	6	4	6.5
APRON 9	N/A	3	9	6	4	6.5
APRON 10	N/A	3	9	6	4	6.5

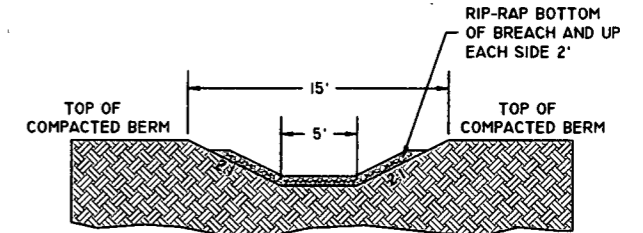
RIPRAP APRON

NOT TO SCALE



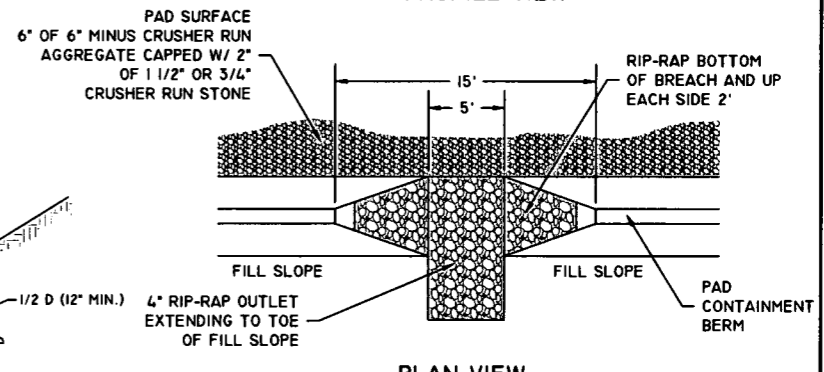
TYPICAL INSLOPED ROADWAY @ CULVERT

NOT TO SCALE



PAD BERM BREACH DETAIL

NOT TO SCALE



PAD BERM BREACH DETAIL

NOT TO SCALE

NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11X17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

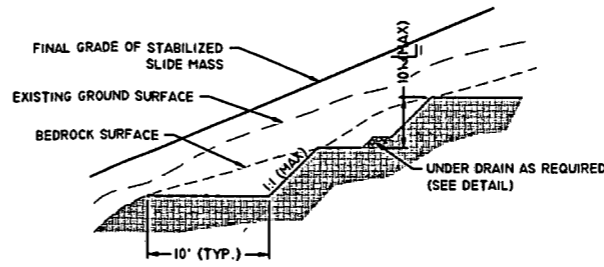
REVISIONS	
DATE	TYPE



DRAWN BY: WSH
 CHECKED BY: WPF
 DATE: 09/22/14
 SCALE: AS SHOWN
 JOB NO.
 DRAWING NAME:
 SHEET NO. 18

TOE BENCH TABLE								
SLOPE STATIONING	* MAXIMUM NATURAL SLOPE	PROPOSED SLOPE	**MAXIMUM SLOPE HEIGHT (FT)	MINIMUM TOE BENCH DIMENSIONS (FT)	DRAINAGE MEASURES REQUIRED	BONDING BENCHES REQUIRED	ROCK FILL ELEVATION	CALCULATED SAFETY FACTOR
WELL PAD NORTHEAST TO NORTHWEST EMBANKMENT SLOPE	2H:IV	2H:IV FILL	50	EXTEND TO COMPETENT RESIDUAL SOIL (6'±) X 12' WIDE	TOE DRAINS AT REAR OF THE TOE BENCH; OTHER DRAINS AS NECESSARY	REQUIRED TO TOP OF CREST, CONSTRUCT @ 2.25H:IV	A MINIMUM OF 10 VERTICAL FEET OF ROCK FILL REQUIRED TO EL 1110 FROM BASE OF TOE BENCH	SF = 1.31
WELL PAD EMBANKMENT SLOPES SOUTHWEST	2.2H:IV	2H:IV FILL	50	EXTEND TO COMPETENT RESIDUAL SOIL (6'±) X 12' WIDE	TOE DRAINS AT REAR OF THE TOE BENCH; OTHER DRAINS AS NECESSARY	REQUIRED TO TOP OF CREST, CONSTRUCT AT 2.5H:IV	A MINIMUM OF 12 VERTICAL FEET OF ROCK FILL REQUIRED TO EL 1110 FROM BASE OF TOE BENCH	SF = 1.33
ROADWAY EMBANKMENT IN VICINITY OF STA. 17+00 - 18+00	1.5H:IV	2H:IV FILL	40	EXTEND TO COMPETENT RESIDUAL SOIL (6'±) X 12' WIDE	TOE DRAINS AT REAR OF THE TOE BENCH; OTHER DRAINS AS NECESSARY	REQUIRED TO INNER EDGE OF ROAD, CONSTRUCT @ 2.5H:IV	NONE REQUIRED	SF = 1.33
ROADWAY EMBANKMENT IN VICINITY OF STA. 15+50	2.0H:IV	2H:IV FILL	44	EXTEND TO COMPETENT RESIDUAL SOIL (4'±) X 8' WIDE	TOE DRAINS AT REAR OF THE TOE BENCH; OTHER DRAINS AS NECESSARY	REQUIRED TO INNER EDGE OF ROAD, CONSTRUCT @ 2.5H:IV	A MINIMUM OF 12 VERTICAL FEET OF ROCK FILL REQUIRED TO EL 1025 FROM BASE OF TOE BENCH	SF = 1.39
TOPSOIL STOCKPILE #1	2.5H:IV	2H:IV FILL	34	EXTEND TO COMPETENT RESIDUAL SOIL (4'±) X 8' WIDE	N/A	CONSTRUCT AT 2H:IV	NONE REQUIRED	--
EXCESS STOCKPILE #1 & #2 TOPSOIL STOCKPILE #3	2.5H:IV	2H:IV FILL	34	EXTEND TO COMPETENT RESIDUAL SOIL (6'±) X 12' WIDE	DAYLIGHT ALONG PROPOSED ACCESS ROAD	CONSTRUCT AT 2H:IV	NONE REQUIRED	SF = 1.35
EXCESS STOCKPILE #3 & TOPSOIL STOCKPILE #4	1.8H:IV	2H:IV FILL	36	N/A	NONE REQUIRED	N/A	N/A	--

(INFORMATION FROM GEOTECHNICAL ENGINEERING REPORT PREPARED BY RETTEW ASSOCIATES, INC. DATED SEPTEMBER 17, 2014)

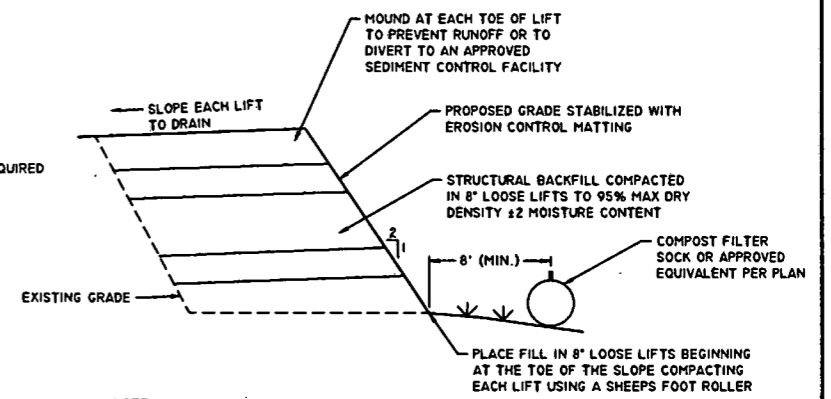
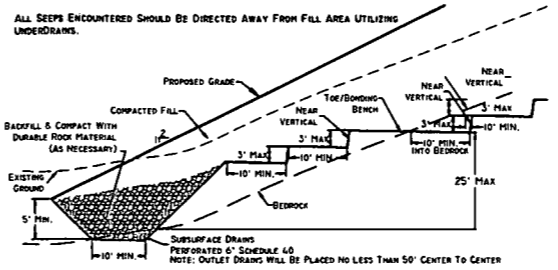


GENERAL NOTES

WHERE THE EXISTING GROUND SURFACE AT THE TOE IS LESS THAN 10% OR THE DEPTH OF BED ROCK EXCEEDS 15 VERTICAL FEET, THEN THE TOE KEY WILL BE BACKFILLED AS AN ENGINEERED COMPACTED FILL WITH ON-SITE NON-PLASTIC SOIL MATERIALS AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.

ALL TOE/BONDING BENCHES ARE TO BE CONSTRUCTED TO ROCK OR COMPETENT MATERIAL PER GEOTECHNICAL REQUIREMENTS.

ALL SEEPS ENCOUNTERED SHOULD BE DIRECTED AWAY FROM FILL AREA UTILIZING UNDERDRAINS.

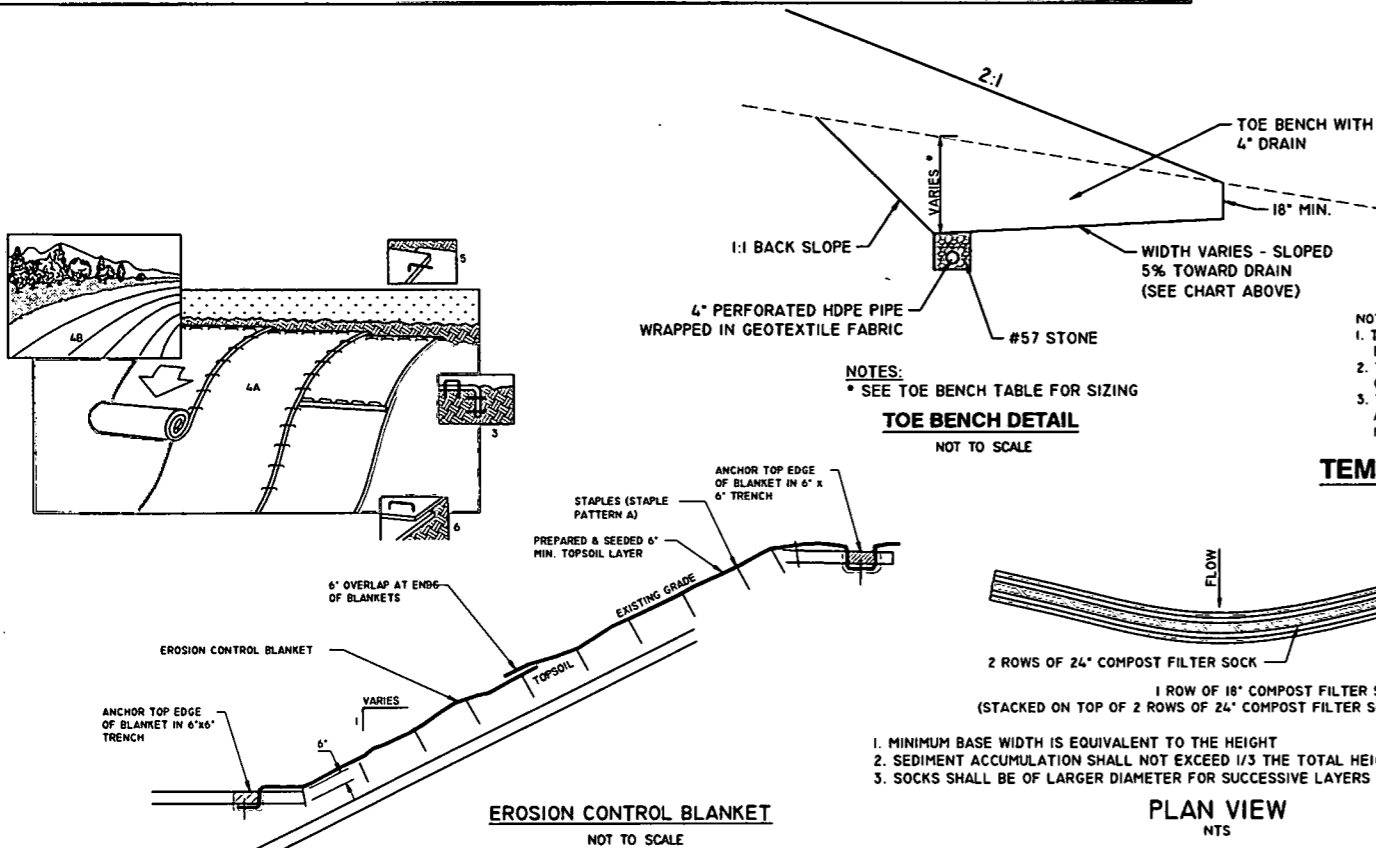


NOTE:

- REFERENCE GEOTECHNICAL ENGINEERING REPORT, PREPARED BY RETTEW ASSOCIATES, INC. DATED APRIL 1, 2014 FOR FILL PLACEMENT INSTRUCTIONS, LIFT THICKNESS, COMPACTION ETC.
- THE EXISTING TOPSOIL/ORGANICS SHOULD BE STRIPPED FROM ALL PLANNED FILL AREAS. EXISTING SLOPE SOILS SHOULD BE EXCAVATED TO RESULT IN A SERIES OF "BOND BENCHES" PRIOR TO AND DURING FILL PLACEMENT. EXCAVATED MATERIAL MAY BE USED AS BACKFILL BUT MUST BE COMPACTED/CONDITIONED/DRIED TO ACHIEVE A MINIMUM OF 95% OF THE MATERIALS MAX. DRY DENSITY AS DETERMINED FROM A STANDARD PROCTOR TEST (ASTM D698). THE MOISTURE CONTENT DURING PLACEMENT USING A NUCLEAR GAGE AT A FREQUENCY OF 1 TEST PER 100 CUBIC YARDS PLACED, INDIVIDUAL LOOSE LIFTS OF FILL SHALL NOT EXCEED 12 INCHES. ALL MATERIALS (ROCK/DEBRIS) WHICH ARE LARGER THAN 6 INCHES SHALL BE REMOVED FROM THE FILL AND SHALL BE DISPOSED OF.
- FOLLOWING PLACEMENT OF THE FILL FILL MATERIAL, THE EXPOSED SLOPE SURFACE SHALL BE CUT OR TRIMMED TO THE FINAL LINES AND GRADES INDICATED ON THE GRADING PLAN. THE FINAL SURFACE SHALL BE "TRACKED" AND "SCARIFIED" UP AND DOWN THE SLOPE USING TRACKED EQUIPMENT.
- ALL SLOPE ACCESS ROADS SHALL BE REGARDED, REMOVED, AND REVEGETATED TO PREVENT THE CONCENTRATION OF STORMWATER RUNOFF ALONG AND ON THE FILL SLOPES.

COMPOST FILTER SOCK SIZE CHART

SOCK #	SIZE	SLOPE (%)	ACTUAL SLOPE LENGTH (FT)	MAX SLOPE LENGTH (FT)	SOCK LENGTH (FT)	LOCATION
CFS-1	24"	50	43	54	85	ACCESS ROAD
CFS-2	STACKED	50	98	-	302	ACCESS ROAD
CFS-3	18"	33	43	71	272	ACCESS ROAD
CFS-4	STACKED	50	89	-	302	EXCESS PILE #1
CFS-5	STACKED	50	81	-	204	ACCESS ROAD
CFS-6	32"	50	64	68	224	TOPSOIL PILE #2
CFS-7	STACKED	50	89	-	63	ACCESS ROAD
CFS-8	STACKED	50	131	-	155	ACCESS ROAD
CFS-9	STACKED	50	135	-	1,305	WELL PAD
CFS-10	STACKED	50	130	-	230	WELL PAD
CFS-11	STACKED	50	322	-	683	ACCESS TO PILES
CFS-12	STACKED	50	95	-	93	EXCESS PILE #3
CFS-13	STACKED	50	91	-	428	TOPSOIL PILE #4
CFS-14	STACKED	50	97	-	176	EXCESS PILE #3
CFS-15	STACKED	50	94	-	1,077	EXCESS PILE #1

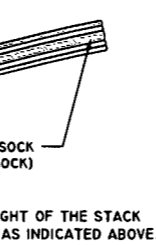


TOE BENCH DETAIL
NOT TO SCALE

NOTES:

- THE DIVERSION SHALL BE CONSTRUCTED AT THE TOP OF THE FILL AT THE END OF EACH WORK DAY AS NEEDED.
- THE DIVERSION SHALL BE LOCATED AT LEAST 2 FEET INSIDE THE TOP EDGE OF THE FILL.
- THE SUPPORTING RIDGE SHALL BE CONSTRUCTED WITH A UNIFORM HEIGHT ALONG ITS ENTIRE LENGTH. WITHOUT UNIFORM HEIGHT, THE FILL DIVERSION MAY BE SUSCEPTIBLE TO BREACHING.

TEMPORARY DIVERSION CHANNEL DETAIL
NOT TO SCALE

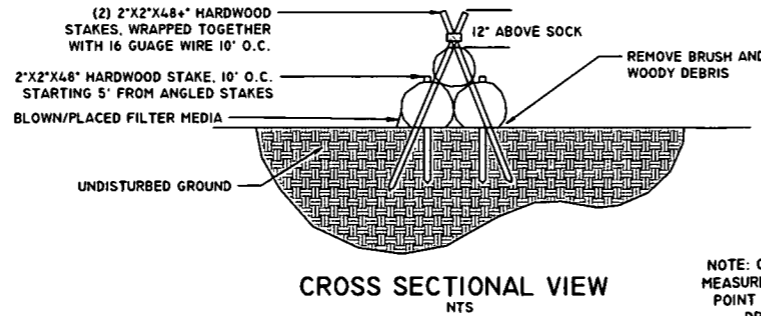


NOTES:

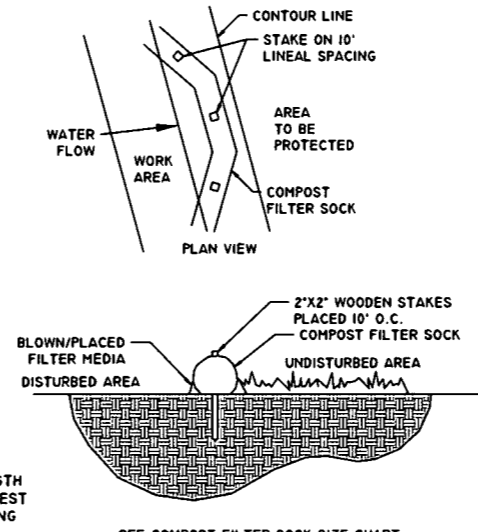
- MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT
- SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE STACK
- SOCKS SHALL BE OF LARGER DIAMETER FOR SUCCESSIVE LAYERS AS INDICATED ABOVE.

NOTES:

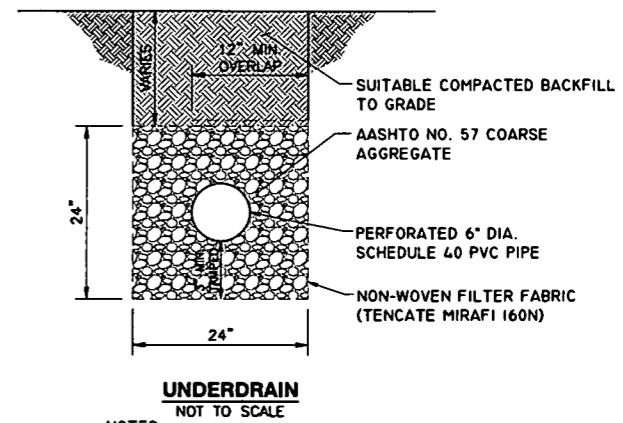
- SPREAD A MINIMUM OF 6" OF TOPSOIL ON SLOPES BEFORE INSTALLATION OF SLOPE MATTING.
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12' OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM POSITION, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET. FOLLOW MANUFACTURER'S RECOMMENDATIONS.
- WHEN BLANKETS MUST BE SPICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
- IF SOIL CONDITIONS ARE LOOSE, STAKED OR STAPLED, LENGTHS GREATER THAN 6" MAY BE NECESSARY TO SECURE THE BLANKET PROPERLY.
- EROSION CONTROL BLANKETS SHALL BE INSTALLED ON ALL 3:1 OR STEEPER SLOPES WITH A MINIMUM OF 6 INCHES OF TOPSOIL.



TRIPLE COMPOST FILTER SOCK STACK DETAIL
NOT TO SCALE



COMPOST FILTER SOCK DETAIL
NOT TO SCALE



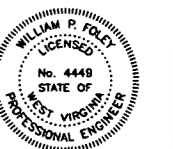
NOTES:

- THE FILTER FABRIC SHALL BE OVERLAPPED 1.0 FOOT MIN. AT ALL JOINTS.

NOTE: DRAWING WAS CREATED ON 22X34 PAPER. 11x17 DRAWINGS ARE HALF SCALE. REFER TO SCALE BAR FOR PROPER SCALING.

REVISIONS

DATE	TYPE



DRAWN BY: NSH
CHECKED BY: WPP
DATE: 09/22/14
SCALE: AS SHOWN
JOB NO.
DRAWING NAME:

Temporary Seeding

- a. General Conditions Where Practice Applies
Where exposed soil surfaces are not to be fine-graded or worked for periods longer than 21 days. Temporary vegetative cover with sediment controls must be established where runoff will go directly into a stream. Immediately upon construction of the site (site includes road and location), vegetation must be established on road bank and location slopes. A permanent vegetative cover shall be applied to areas that will be left un-worked for a period of more than six months.
- b. Seed Mixtures and Planting Dates
Refer to Tables 2 through 4 for recommended dates to establish vegetative cover and the approved lists of temporary and permanent plant species, and planting rates. Table 3 gives recommended types of temporary vegetation, rates of application, and optimum seeding dates. In situations where another cover is desired, contact the local soil conservation district for seeding recommendations.
- c. Seed Application
Apply seed by broadcasting, drilling, or by hydroseed according to the rates indicated in Table IV-3. Perform all planting operations at right angles to the slope. Necessary site preparation and roughening of the soil surface should be done just prior to seeding. Seedbed preparation may not be required on newly disturbed areas.

Permanent Seeding

- a. General
Permanent vegetative cover will be established where no further soil disturbance is anticipated or needed. Soil fertility and pH level should be tested and adjusted according to the seed species planted. Planting of permanent vegetative covers must be performed on all disturbed areas after completion of the drilling process. Any site that contains significant amounts of topsoil shall have the topsoil removed and stockpiled when feasible. Topsoil should not be added to slopes steeper than 2:1 unless a good bonding to the sub-layer can be achieved. After proper grading and seedbed preparation, the vegetation will reestablish ground cover for the control of surface water runoff erosion. All required seedbed preparation and loosening of soil by disking or dozer tracking should be performed just prior to seeding. If seedbed preparation is not feasible, 50% more seed shall be added to the recommended rates shown in Tables IV-3 and IV-4. When hydroseeding, seedbed preparation may not be necessary if adequate site preparation was performed. Incorporate the appropriate amount of lime and/or fertilizer in the slurry mix when hydroseeding. When hydroseeding, first mix the lime, fertilizer, and hydro-mulch in the recommended amount of water. Mix the seed and inoculants together within one hour prior to planting, and add to the slurry just before seeding. Apply the slurry uniformly over the prepared site. Assure that agitation is continuous throughout the seeding operation and the mix is applied within one hour of initial mixing.
- b. Lime and Fertilizer
 - 1. Lime Shall be applied to all permanent seedings. The pH of the soil is to be determined and lime applied accordingly. Once the pH is known, select the amount of lime to be applied from Table IV-5.
 - 2. Fertilizer shall be applied in all permanent seedings. Apply the equivalent for 500 lbs. minimum 10-20-20 fertilizer per acre or use the amount of fertilizer and lime recommended by a certified soil test.
 - 3. Application: For best results and maximum benefits, the lime and fertilizer are to be applied at the same time as seedbed preparation.

- c. Permanent Seed Mixture
Planners should take into consideration the species makeup of the existing pasture and the landowner's future pasture management plans when recommending seed mixtures. Selection: From Tables IV 4a and b, Permanent Seeding Mixtures Suitable for Establishment in West Virginia.

- Notes:
- 1. All legumes must be planted with the proper inoculants prior to seeding.
 - 2. 'Lathco' Flatpea is potentially poisonous to some livestock.
 - 3. Only endophyte free varieties of Tall Fescue should be used. Tall Fescue and Crownvetch are also very invasive species, non-native to WV.
 - 4. For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate. Mixtures in Table 4b are more wildlife and farm friendly; those listed in bold are suitable for use in shaded woodland settings. Mixtures in *italics* are suitable for use in filter strips.

- d. Seeding for Wildlife Habitat
Consider the use of native plants or locally adapted plants when selecting cover types and species for wildlife habitat. Wildlife friendly species or mixes that have multiple values should be considered. See wildlife friendly species/mixtures in Table IV-4b. Consider selecting no or low maintenance long-lived plants adaptable to sites which may be difficult to maintain with equipment.

Mulching

- a. General Organic Mulches
The application of straw, hay, or other suitable materials to the soil surface to prevent erosion. Straw made from wheat or oats is the preferred mulch, the use of hay is permissible, but not encouraged due to the risk of spreading invasive species. Mulch must be applied to all temporary and permanent seedings on all disturbed areas. Depending on site conditions, in critical areas such as waterways or steep slopes, additional or substitute soil protective measures may be used if deemed necessary. Examples include jute mesh and soil stabilization blankets or erosion control matting. Areas that have been temporarily or permanently seeded should be mulched to provide some protection to the soil surface. An organic mulch, straw, or hay should be used and the area then seeded as soon as weather or seasonal conditions permit. Do not use fiber mulch (cellulose-hydroseed) alone for this practice; at normal application rates it will not give the soil protection of other types of mulch. Wood cellulose fiber mulch is used in hydroseeding operations and applied as part of the slurry. It creates the best seed-soil contact when applied over the top of (as a separate operation) newly seeded areas. Fiber mulch does not alone provide sufficient protection on highly erodible soils, or during less than favorable growing conditions. Fiber mulch should not be used alone during the dry summer months or when used for late fall mulch cover. Use straw mulch during these periods and fiber mulch may be used to tack (anchor) the straw mulch. Fiber mulch is well suited for steep slopes, critical areas, and areas susceptible to wind.
- b. Chemical Mulches, Soil Binders, and Tackifiers
A wide range of synthetic spray on materials are marketed to stabilize and protect the soil surface. These are mixed with water and sprayed over the mulch and to the soil. They may be used alone in some cases as temporary stabilizers, or in conjunction with fiber mulch, straw, or hay. When used alone along most chemical mulches do not have the capability to insulate the soil or retain soil moisture that organic mulches have.
- c. Specifications
From Table IV-6 select the type of mulch and rate of application that will best suit the conditions at the site.
- d. Anchoring
Depending on the field situation, mulch may not stay in place because of wind action or rapid water runoff. In such cases, mulch is to be anchored mechanically or with mulch netting.
 - 1. Mechanical Anchoring
Apply mulch and pull mulch anchoring tool over the mulch. When a disk is used, set the disk straight and pull across slope. Mulch material should be tucked into the soil about three inches.
 - 2. Mulch Netting
Follow manufacturer's recommendation when positioning and stapling the mulch netting in the soil.

Table 2			
Acceptable Fertilization Recommendation			
Species	N (lbs/ac)	P2O5 (lbs/ac)	Example Rec. (per acre)
Cool Season Grass	40	80	400 lbs 10-20-20
CS Grass & Legume	30	60	300 lbs 10-20-20
Temporary Cover	40	40	200 lbs 19-19-19

Table 3				
Temporary Cover				
Species	Seeding Rate (lbs/acre)	Optimum Seeding Dates	Drainage	pH Range
Annual Ryegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Poorly	5.5 - 7.5
Field Bromegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Mod. Well	6.0 - 7.0
Spring Oats	96	3/1 - 6/15	Well - Poorly	5.5 - 7.0
Sudangrass	40	5/15 - 8/15	Well - Poorly	5.5 - 7.5
Winter Rye	168	8/15 - 10/15	Well - Poorly	5.5 - 7.5
Winter Wheat	180	8/15 - 10/15	Well - Mod. Well	5.5 - 7.0
Japanese Millet	30	6/15 - 8/15	Well	4.5 - 7.0
Redtop	5	3/1 - 6/15	Well	4.0 - 7.5
Annual Ryegrass	26	3/1 - 6/15	Well - Poorly	5.5 - 7.5
Spring Oats	64	3/1 - 6/15	Well - Poorly	5.5 - 7.5

NOTE: These rates should be increased by 50% if planted April 15 - August 1 and October 1 - March 1.

Table IV-1	
Recommended Seeding Dates	
Planting Dates	Suitability
March 1 - April 15 and August 1 - October 1	Best Seeding Periods
April 15 - August 1	HIGH RISK - moisture stress less likely
October 1 - December 1	HIGH RISK - freeze damage to young seedlings
December 1 - March 1	Good seeding period. Dormant seeding

Table IV-5		
Lime and Fertilizer Application Table		
pH of Soil	Lime in Tons Per Acre	Fertilizer, Lbs., per Acre 10-20-20 or Equivalent
Above 6.0	2	500
5.0 to 6.0	3	500
Below 5.0	4	500

The pH can be determined with a portable pH testing kit or by sending the soil samples to a soil testing laboratory. When 4 tons of lime per acre are applied it must be incorporated into the soil by disking, backblading, or tracking up and down the slope.

Table IV-6			
Mulch Materials Rates and Uses			
Material	Minimum Rates Per Acre	Coverage	Remarks
Hay or Straw	2 to 3 Tons	Cover 75% to	Subject to Wind blowing
	100 to 150 Bales	90% of Surface	or washing unless tied down
Wood Fiber	1000 to 1500 lbs	Cover all	For Hydroseeding
Pulp Fiber		Disturbed Areas	
Wood-Cellulose			
Recirculated Paper			

Table 4a			
Permanent Seeding Mixture			
Species/Mixture	Seeding Rate (lbs/acre)	Soil Drainage Preference	pH Range
Crownvetch/	10 - 15	Well - Mod. Well	5.0 - 7.5
Tall Fescue	30		
Crownvetch/	10 - 15	Well - Mod. Well	5.0 - 7.5
Perennial Ryegrass	20		
Flatpea or Perennial Pea/	20	Well - Mod. Well	4.0 - 8.0
Tall Fescue	15		
Ladino Clover/	30		
Serecia Lespedeza/	25	Well - Mod. Well	4.5 - 7.5
Tall Fescue	2		
Tall Fescue/	40		
Ladino Clover/	3	<i>Well - Mod. Well</i>	5.0 - 7.5
Redtop	3		
Crownvetch/	10		
Tall Fescue/	20	Well - Mod. Well	5.0 - 7.5
Redtop	3		
Tall Fescue/	40		
Birdsfoot Trefoil/	10	Well - Mod. Well	5.0 - 7.5
Redtop	3		
Serecia Lespedeza/	25		
Tall Fescue/	30	Well - Mod. Well	4.5 - 7.5
Redtop	3		
Redtop/	30		
Tall Fescue/	3	Well - Mod. Well	5.0 - 7.5
Creeping Red	50		
Tall Fescue	50	<i>Well - Poorly</i>	4.5 - 7.5
Perennial Ryegrass/	10		
Tall Fescue/	15	<i>Well - Poorly</i>	5.0 - 8.0
Lathco Flatpea*	20		

Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

**Lathco Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding.*

For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate.

Table 4b			
Wildlife and Farm Friendly Seed Mixtures			
Species/Mixture	Seeding Rate (lbs/acre)	Soil Drainage Preference	pH Range
KY Bluegrass/	20		
Redtop/	3	Well - Mod. Well	5.5 - 7.5
Ladino Clover or Birdsfoot Trefoil	2/10		
Timothy/	5	Well - Mod. Well	6.5 - 8.0
Alfalfa	12		
Timothy/	5	Well - Poorly	5.5 - 7.5
Birdsfoot Trefoil	8		
Orchardgrass/	10		
Ladino Clover/	2	<i>Well - Mod. Well</i>	5.5 - 7.5
Redtop	3		
Orchardgrass/	10	<i>Well - Mod. Well</i>	5.5 - 7.5
Ladino Clover	2		
Orchardgrass/	20	<i>Well - Mod. Well</i>	5.5 - 7.5
Perennial Ryegrass	10		
Creeping Red Fescue/	30	Well - Mod. Well	5.5 - 7.5
Perennial Ryegrass	10		
Orchardgrass or Kentucky Bluegrass	20	Well - Mod. Well	6.0 - 7.5
Birdsfoot Trefoil/	10		
Redtop/	5	Well - Mod. Well	5.5 - 7.5
Orchardgrass	20		
Lathco Flat Pea/	30	Well - Mod. Well	5.5 - 7.5
Perennial Ryegrass	20		
Lathco Flat Pea/	30	Well - Mod. Well	5.5 - 7.5
Orchardgrass	20		

Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

**Lathco Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding.*

For unprepared seedbeds or seeding outside the optimum timeframes, add 50% more seed to the specified rate.

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ONE ENERGY DRIVE
JANE LEW, WV 26378



**OXFD17HS WELL SITE
DETAIL SHEET 3**

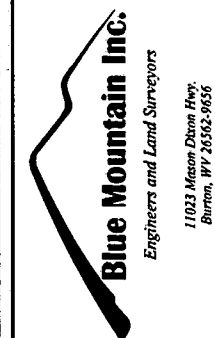
REVISIONS	
DATE	TYPE



DRAWN BY: NSH
CHECKED BY: WFF
DATE: 09/22/14
SCALE: AS SHOWN
JOB NO.
DRAWING NAME:

SHEET NO. 20

QUANTITY SUMMARY		
DESCRIPTION	UNITS	QUANTITY
I.) CLEARING AND GRUBBING		
1A.) TREE CLEARING	ACRES	27.3
1B.) MOWING	ACRES	2.3
2.) COMPOST FILTER SOCK		
2A.) 12"	LF	0
2B.) 18"	LF	272
2C.) 24"	LF	85
2D.) 32"	LF	224
2E.) STACKED"	LF	5,018
3.) COMPOST FILTER SOCK SEDIMENT TRAPS		
3A.) 12" COMPOST FILTER SOCK	LF	252
3B.) 18" COMPOST FILTER SOCK	LF	168
3C.) 24" COMPOST FILTER SOCK	LF	252
4.) AGGREGATE SURFACING		
4A.) PADS 3" CLEAN AGGREGATE (12" COMPACTED TO 10")	TONS	4,158
4B.) PADS (FLAT DRILL AREA) 3" CLEAN AGG. (10" COMPACTED TO 8")	TONS	3,208
4C.) PADS 3/4" CRUSHER RUN (4" COMPACTED TO 2")	TONS	1,386
4D.) ACCESS ROAD 0"-6" AGGREGATE (10" COMPACTED TO 8")	TONS	3,452
4E.) ACCESS ROAD 3/4" CRUSHER RUN (4" COMPACTED TO 2")	TONS	1,381
4F.) GEOTEXTILE	SY	20,830
5.) SLOPE MATTING		
5A.) SLOPE MATTING	SY	72,295
6.) SEED & MULCH		
6A.) SEED & MULCH	AC	14.9
7.) DITCH LINING		
7A.) 4" RIPRAP (6" DEEP)	TONS	520
8.) EXCAVATION		
8A.) CUT-ACCESS ROAD (10% SWELL)	CY	29,831
8B.) CUT-WELL PAD (10% SWELL)	CY	90,662
TOTAL CUT FOR PROJECT (NO SWELL)	CY	120,493
8C.) TOPSOIL-ACCESS ROAD (12" DEPTH)	CY	7,553
8D.) TOPSOIL-WELL PAD (12" DEPTH)	CY	10,483
TOTAL TOPSOIL FOR PROJECT (ASSUME 12")	CY	18,036
9.) DITCHES		
9A.) COLLECTION DITCH LENGTH W/ ROCK CHECK DAMS	LF	1,847
10.) RIP RAP APRON & ROCK LEVEL SPREADERS		
10A.) RIP RAP APRON	EA	10
11.) KEYWAY EXCAVATION		
11A.) KEYWAY EXCAVATION (TOE LENGTH X WIDTH X DEPTH)(SEE DETAIL FOR SIZING)	CY	14,028
11B.) ROCK FILL (SEE GEOTECH REPORT)	TONS	7,430
12.) CULVERTS		
12A.) 12" HDPE CULVERT	LF	0
12A.) 18" HDPE CULVERT	LF	417
12B.) 24" HDPE CULVERT	LF	0
13.) TOE DRAIN		
13A.) TOE DRAIN	LF	6,929
13B.) AASHTO NO. 57 COARSE AGGREGATE	TONS	1,796



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JANE LEW, WV 26378



OXFD17HS WELL SITE
QUANTITIES

REVISIONS

DATE	TYPE



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