

#13-096



PROFESSIONAL ENERGY CONSULTANTS

A DIVISION OF SMITH LAND SURVEYING, INC.

November 22, 2013

Mr. Dan Wellings
Floodplain Coordinator
Doddridge County Commission
118 East Court Street
West Union, WV 26456

2013 NOV 27 PM 12:44
BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

FILED

RE: CNX Gas Company, LLC
OXFD 13 Well Pad, Access Roads, and Stockpiles

Mr. Wellings,

On behalf of CNX, SLS is submitting this letter pursuant to the requirements of the Doddridge County Floodplain Ordinance to request concurrence to complete a project in Doddridge County, West Virginia. CNX has proposed a well pad, two access roads, and three stockpiles to aid in the development of individual Marcellus Shale gas wells. The well pad entrance is located at latitude 39.17002 and longitude -80.75018 (NAD 83) and the well pad is located at latitude 39.16865 and longitude -80.74768 (NAD 83)

SOUTH FORK OF HUGHES RIVER, Porto Rico

This site does not impact a floodplain. Please see the attached project location map, site plans, FEMA firmette, and WV Flood Tool Map.

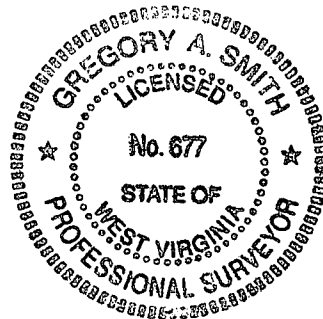
On behalf of CNX, SLS is requesting your concurrence to begin construction on the OXFD 13 Well Pad Project once the WVDEP drilling permits are received. Please feel to contact Thomas Meeks with SLS at 304-462-5634 or tmeeks@slssurveys.com, or Amanda Wright with CNX at 304-884-2027 or AmandaWright@consolenergy.com should you have any questions or comments.

Respectfully submitted,

Gregory A. Smith, P.S.
President

GAS/ch

cc: Amanda Wright/CNX Gas Company LLC



13-096
OXFD 13 well Pad,
Access Rds + Stockpiles

DODDRIDGE COUNTY

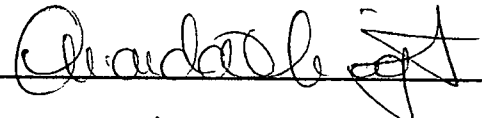
FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

NOV 27 PM 12:44
BETH A. ROGERS
COUNTY CLERK
DODDRIDGE COUNTY, WV

FILED

SECTION 1: GENERAL PROVISIONS (APPLICANT TO READ AND SIGN)

1. No work may start until a permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until a Certificate of Compliance is issued.
5. The permit will expire if no work is commenced within six months of issuance.
6. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal requirements.
7. Applicant hereby gives consent to the Floodplain Administrator/Manager or his/her representative to make inspections to verify compliance.
8. **I, THE APPLICANT CERTIFY THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS TO THIS APPLICATION ARE, TO THE BEST OF MY KNOWLEDGE, TRUE AND ACCURATE.**

APPLICANT'S SIGNATURE 

DATE 11/25/13

SECTION 2: PROPOSE DEVELOPMENT (TO BE COMPLETED BY APPLICANT).

IF THE APPLICANT IS NOT A NATURAL PERSON, THE NAME, ADDRESS, AND TELEPHONE NUMBER OF A NATURAL PERSON WHO SHALL BE APPOINTED BY THE APPLICANT TO RECEIVE NOTICE PURSUANT TO ANY PROVISION OF THE CURRENT DODDRIDGE COUNTY FLOODPLAIN ORDINANCE.

APPLICANT'S NAME: CNX Gas Company, LLC

ADDRESS: One Energy Drive Jane Lew, WV 26378

TELEPHONE NUMBER: 304-884-2027

BUILDER'S NAME: CNX Gas Company, LLC

ADDRESS: One Energy Drive Jane Lew, WV 26378

TELEPHONE NUMBER: 304-884-2027

ENGINEER'S NAME: Smith Land Surveying

ADDRESS: 226 West Main Street, Glenville, WV 26351

TELEPHONE NUMBER: 304-462-5634

PROJECT LOCATION: The site is located on a ridge east of County Route 40 approximately 4,405 feet south of the County Route 40 and County Route 54/1 intersection. The access road entrance is located at latitude 39.17002 and longitude -80.75018 (NAD 83). The well pad is located at latitude 39.16865 and longitude -80.74768 (NAD 83).

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) I.L Morris, Tyler and Lenora Bunting / I.L Morris

ADDRESS OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) _____

I.L Morris PO Box 397 Glenville, WV 26351

Tyler and Lenora Bunting PO Box 105 Smithburg, WV 26436

DISTRICT: Southwest District / New Milton District

DATE/FROM WHOM PROPERTY

PURCHASED _____

LAND BOOK DESCRIPTION: (Morris)-- South Fork 6600.75AC; 1 AC Rented House South Fork, (Bunting)-- South Fork of Hughes River LOT 12.03 AC, /(Morris)-- Toms Fk 183.25 AC

DEED BOOK REFERENCE: (Morris)--Deed Book 230 page 307, (Bunting)--Deed book 266 page 630, (Morris)--Deed book 230 page 307

TAX MAP REFERENCE: Doddridge County Southwest District Tax Map 10 Parcel 2 (Morris), 15-1 (Bunting), / Doddridge County New Milton District Tax map 18 Parcel 2 (Morris)

EXISTING BUILDINGS/USES OF PROPERTY: _____

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY _____

ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY _____

To avoid delay in processing the application, please provide enough information to easily identify the project location.

DESCRIPTION OF WORK (CHECK ALL APPLICABLE BOXES)

A. STRUCTURAL DEVELOPMENT

<u>ACTIVITY</u>	<u>STRUCTURAL TYPE</u>
<input checked="" type="checkbox"/> New Structure	<input type="checkbox"/> Residential (1 – 4 Family)
<input type="checkbox"/> Addition	<input type="checkbox"/> Residential (more than 4 Family)
<input type="checkbox"/> Alteration	<input type="checkbox"/> Non-residential (floodproofing)
<input type="checkbox"/> Relocation	<input type="checkbox"/> Combined Use (res. & com.)
<input type="checkbox"/> Demolition	<input type="checkbox"/> Replacement
<input type="checkbox"/> Manufactured/Mobil Home	

B. OTHER DEVELOPMENT ACTIVITIES:

- Fill Mining Drilling Pipelining
 - Grading
 - Excavation (except for STRUCTURAL DEVELOPMENT checked above)
 - Watercourse Altercation (including dredging and channel modification)
 - Drainage Improvements (including culvert work)
 - Road, Street, or Bridge Construction
 - Subdivision (including new expansion)
 - Individual Water or Sewer System
 - Other (please specify)
-

C. STANDARD SITE PLAN OR SKETCH

1. **SUBMIT ALL STANDARD SITE PLANS, IF ANY HAVE BEEN PREPARED.**
2. **IF STANDARD SITE PLANS HAVE NOT BEEN PREPARED:**
 SKETCH ON A SEPARATE 8 ½ X 11 INCH SHEET OF PAPER THE SHAPE AND LOCATION OF THE LOT. SHOW THE LOCATION OF THE INTENDED CONSTRUCTION OR LAND USE

ACTUAL TOTAL CONSTRUCTION COSTS OF THE COMPLETE DEVELOPMENT IRRESPECTIVE OF WHETHER ALL OR ANY PART OF THE SUBJECT PROPOSED CONSTRUCTION PROJECT IS WITHIN THE FLOODPLAIN \$ 100K

D. ADJACENT AND/OR AFFECTED LANDOWNERS:

1. NAME AND ADDRESS OF ALL OWNERS OF SURFACE TRACTS ADJACENT TO THE AREA OF THE SURFACE TRACT (UP & DOWN STREAM) UPON WHICH THE PROPOSED ACTIVITY WILL OCCUR AND ALL OTHER SURFACE OWNERS UP & DOWN STREAM) WHO OWN PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY (IF ONE HAS BEEN COMPLETED).

NAME: _____
ADDRESS: _____

NAME: _____
ADDRESS: _____

NAME: _____
ADDRESS: _____

NAME: _____
ADDRESS: _____

1. NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON ANY ADJACENT PROPERTY AT THE TIME THE FLOODPLAIN PERMIT APPLICATION IS FILED AND THE NAME AND ADDRESS OF AT LEAST ONE ADULT RESIDING IN ANY HOME ON ANY PROPERTY THAT MAY BE AFFECTED BY FLOODING AS IS DEMONSTRATED BY A FLOODPLAIN STUDY OR SURVEY.

NAME: _____
ADDRESS: _____

NAME: _____
ADDRESS: _____

NAME: _____
ADDRESS: _____

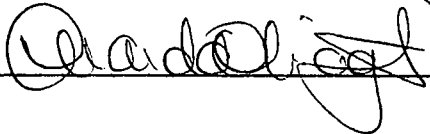
NAME: _____
ADDRESS: _____

E. CONFIRMATION FORM

THE APPLICANT ACKNOWLEDGES, AGREES, AND CONFIRMS THAT HE/IT WILL PAY WITHIN 30 DAYS OF RECEIPT OF INVOICE BY THE COUNTY FOR ALL EXPENSES RELATIVE TO THE PERMIT APPLICATION PROCESS GREATER THAN THE REQUIRED DEPOSIT FOR EXPENSES INCLUDING:

- (A) PERSONAL SERVICE OF PROCESS BY THE DODDRIDGE COUNTY SHERIFF AT THE RATES PERMITTED BY LAW FOR SUCH SERVICE.
- (B) SERVICE BY CERTIFIED MAIL RETURN RECEIPT REQUESTED.
- (C) PUBLICATION.
- (D) COURT REPORTING SERVICES AT ANY HEARINGS REQUESTED BY THE APPLICANT.
- (E) CONSULTANTS AND/OR HEARING EXPERTS UTILIZED BY DODDRIDGE COUNTY FLOODPLAIN ADMINISTRATOR/MANAGER OR FLOODPLAIN APPEALS BOARD FOR REVIEW OF MATERIALS AND/OR TESTIMONY REGARDING THE EFFICACY OF GRANTING OR DENYING THE APPLICANT'S FLOODPLAIN PERMIT.

NAME (PRINT): Amanda Wright

SIGNATURE:  DATE: 11/25/13

After completing SECTION 2, APPLICANT should submit form to Floodplain Administrator/Manager or his/her representative for review.

SECTION 3: FLOODPLAIN DETERMINATION (to be completed by Floodplain Administrator/Manager or his/her representative)

THE PROPOSED DEVELOPMENT:

THE PROPOSED DEVELOPMENT IS LOCATED ON:

FIRM Panel: 250
Dated: 10/04/2011

Is **NOT** located in a Specific Flood Hazard Area (Notify applicant that the application review is complete and **NO FLOODPLAIN DEVELOPMENT PERMIT IS REQUIRED**).

Is located in Special Flood Hazard Area.

FIRM zone designation _____
100-Year flood elevation is: _____ NGVD (MSL)

Is located in Special Flood Hazard Area.
FIRM zone designation _____
100-Year flood elevation is: _____ NGVD (MSL)

Unavailable

The proposed development is located in a floodway.
FBFM Panel No. _____ Dated _____

See section 4 for additional instructions.

SIGNED  DATE 12/02/2013

SECTION 4: ADDITIONAL INFORMATION REQUIRED (To be completed by Floodplain Administrator/Manager or his/her representative)

The applicant must submit the documents checked below before the application can be processed.

A plan showing the location of all existing structures, water bodies, adjacent roads, lot dimensions and proposed development.

Development plans, drawn to scale, and specifications, including where applicable: details for anchoring structures, storage tanks, proposed elevation of lowest floor, (including basement or crawl space), types of water resistant materials used below the first floor, details of flood proofing of utilities located below the first floor and details of enclosures below the first floor. Also _____

Subdivision or other development plans (If the subdivision or development exceeds 50 lots or 5 acres, whichever is the lesser, the applicant must provide 100-year flood elevations if they are not otherwise available).

Plans showing the extent of watercourse relocation and/or landform alterations.

- Top of new fill elevation _____ Ft. NGVD (MSL).
For floodproofing structures applicant must attach certification from registered engineer or architect.
- Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in any increase in the height of the 100-year flood. A copy of all data and calculations supporting this finding must also be submitted.
- Manufactured homes located in a floodplain area must have a West Virginia Contractor's License and a Manufactured Home Installation License as required by the Federal Emergency Management Agency (FEMA).
- Other:

SECTION 5: PERMIT DETERMINATION (To be completed by Floodplain Administrator/Manager or his/her representative)

I have determined that the proposed activity **(type is or is not)** in conformance with provisions of the Floodplain Ordinance adopted by the County Commission of Doddridge County on May 21, 2013. The permit is issued subject to the conditions attached to and made part of this permit.

SIGNED _____ DATE _____

If the Floodplain Administrator/Manager found that the above was not in conformance with the provisions of the Doddridge County Floodplain Ordinance and/or denied that application, the applicant may complete an appealing process below.

APPEALS: Appealed to the County Commission of Doddridge County? Yes No
 Hearing Date: _____
 County Commission Decision - Approved Yes No

CONDITIONS: _____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT before Certificate of Compliance is issued).

The following information must be provided for project structures. This section must be completed by a registered professional engineer or a licensed land surveyor (or attach a certification to this application).

COMPLETE 1 OR 2 BELOW:

- 1 Actual (As-Built) Elevation of the top of the lowest floor (including basement or crawl space is _____ FT. NGVD (MSL)
- 2 Actual (As Built) elevation of floodproofing is _____ FT. NGVD (MSL)

Note: Any work performed prior to submittal of the above information is at risk of the applicant.

SECTION 7: COMPLIANCE ACTION (To be completed by the Floodplain Administrator/Manager or his/her representative).

The Floodplain Administrator/Manager or his/her representative will complete this section as applicable based on inspection of the project to ensure compliance with the Doddridge County Floodplain Ordinance.

INSPECTIONS:

DATE: _____ BY: _____
DEFICIENCIES ? Y/N

COMMENTS _____

SECTION 8: CERTIFICATE OF COMPLIANCE (To be completed by Floodplain Administrator/Manager or his/her representative).

Certificate of Compliance issued: DATE: _____ BY: _____

**CERTIFICATE OF COMPLIANCE
FOR DEVELOPMENT IN SPECIAL FLOOD HAZARD AREA
(OWNER MUST RETAIN)**

PERMIT NUMBER: _____

PERMIT DATE: _____

PURPOSE –

CONSTRUCTION LOCATION: _____

OWNER'S ADDRESS: _____

THE FOLLOWING MUST BE COMPLETED BY THE FLOODPLAIN ADMINISTRATOR/MANAGER OR HIS/HER AGENT.

COMPLIANCE IS HEREBY CERTIFIED WITH THE REQUIREMENT OF THE FLOODPLAIN ORDINANCE ADOPTED BY THE COUNTY COMMISSION OF DODDRIDGE COUNTY ON MAY 21, 2013.

SIGNED _____ DATE _____

OXFD 13



This map is not the official regulatory FIRM or DFIRM. Its purpose is to assist with determining potential flood risk for the selected location.

Map Created on 11/20/2013

 Location of the mouse click

 **Flood Hazard Zone**
(1% annual chance floodplain)

User Notes:

Disclaimer:

The online map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. To obtain more detailed information in areas where Base Flood Elevations have been determined, users are encouraged to consult the latest Flood Profile data contained in the official flood insurance study. These studies are available online at www.nusc.fema.gov.

WV Flood Tool is supported by FEMA, WV NFIP Office, and WV GIS Technical Center (<http://www.MapWV.gov/flood>)

Flood Hazard Area: Selected site is NOT WITHIN any identified flood hazard area. Unmapped flood hazard areas may be present.

Elevation: About 1114 feet

Location (long, lat): 80.745170 W, 39.168129 N

Location (UTM 17N): (522014, 4335465)

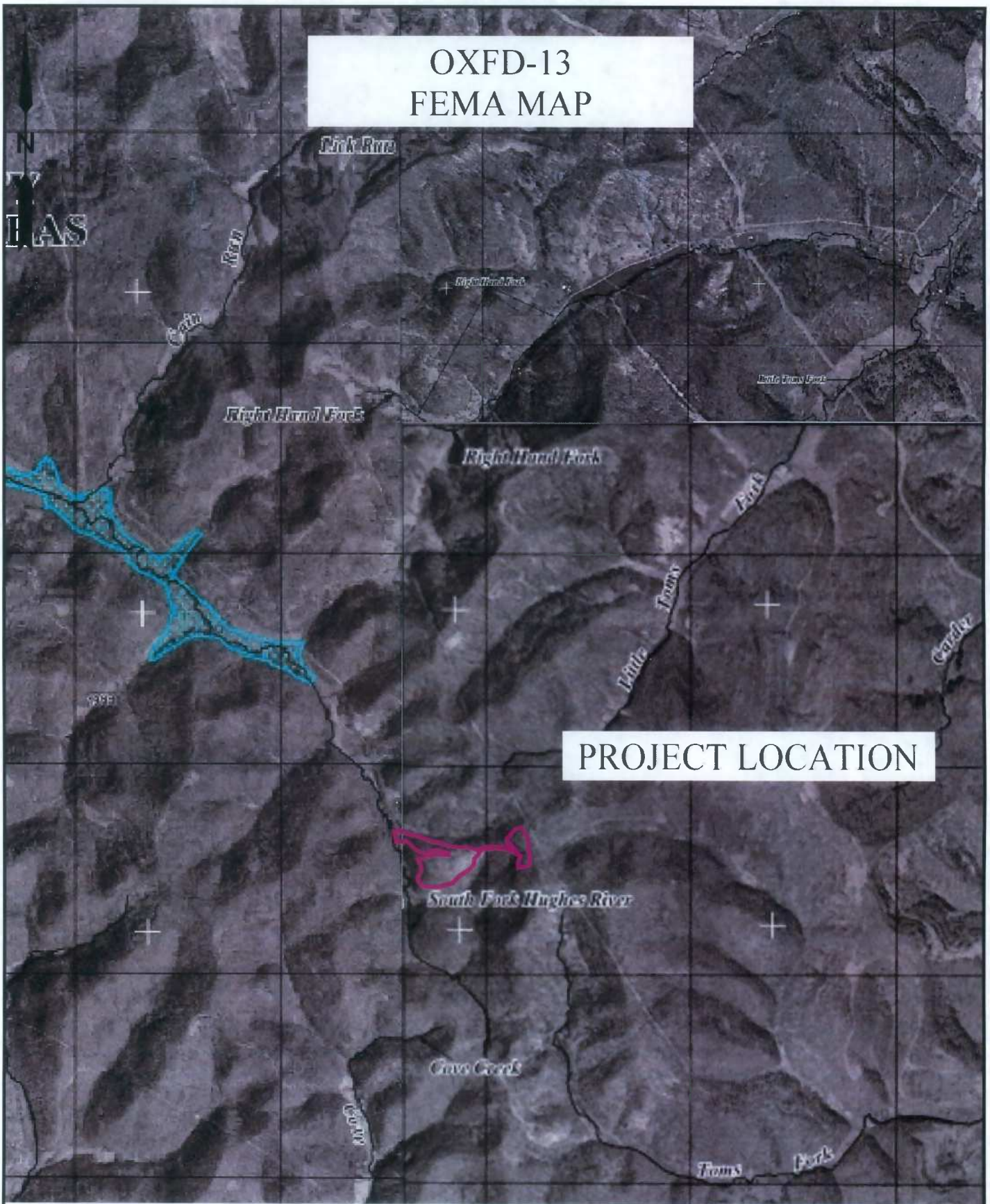
FEMA Issued Flood Map: 54017C0250C

Contacts: Doddridge County

CRS Information: No CRS information available

Parcel Number:

OXFD-13 FEMA MAP



PROJECT LOCATION

SCALE
1 INCH=2000-FEET



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING

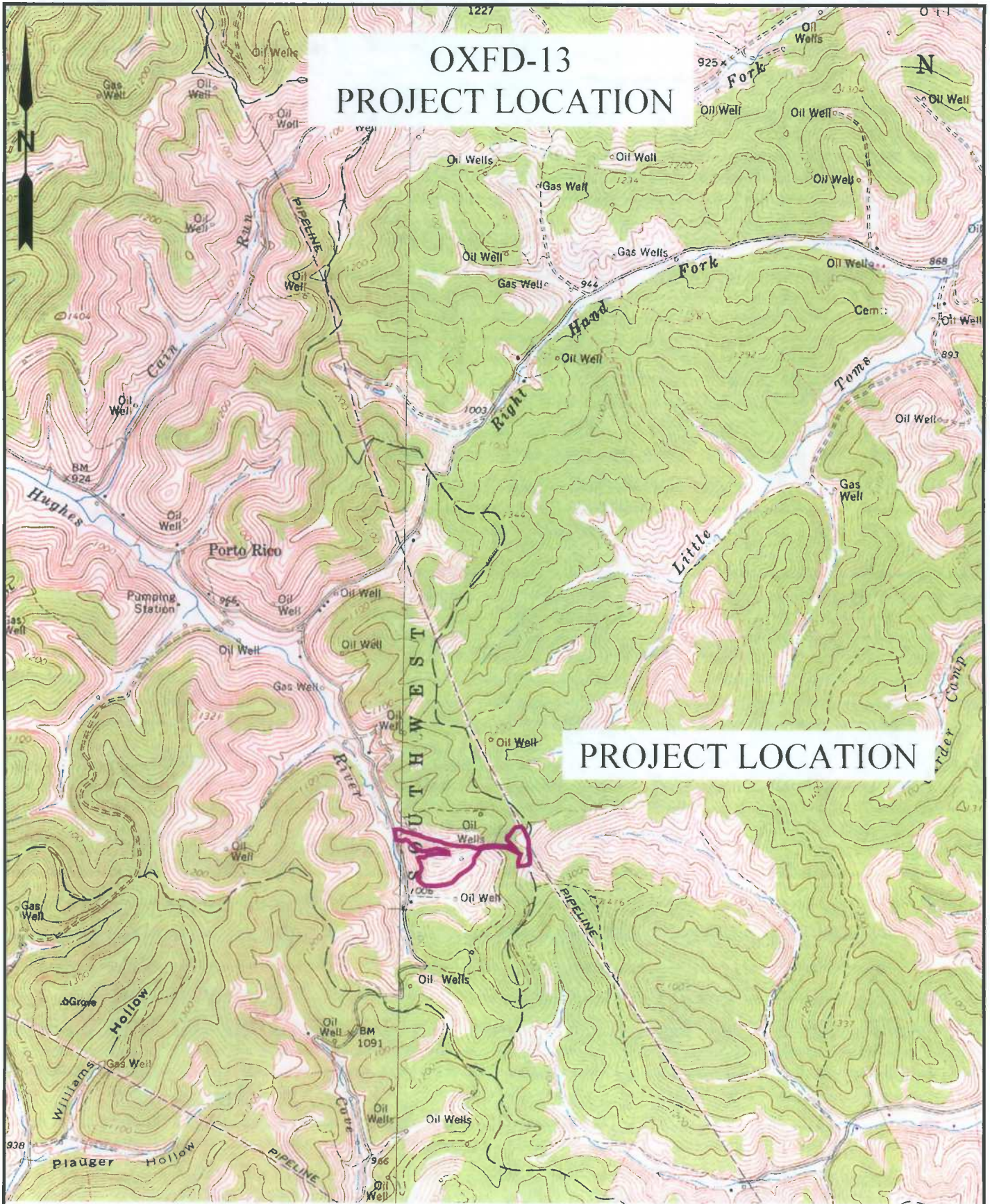
SURVEYORS PROJECT MGMT. **SLS** ENGINEERS ENVIRONMENTAL

225 West Main St.
P.O. Box 150
Glenville, WV 26351
(304) 492-8534
HONESTY. INTEGRITY. QUALITY

56045 Dives Bottom Road
Shadyside, OH 43047
(740) 871-9911

FILE NO: 7982B	DATE 11/22/2013	CADD FILE: 7902pp0013\icmap.dwg
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OXFD-13 PROJECT LOCATION



PROJECT LOCATION

SCALE
1 INCH=2000-FEET

0' 2000' 4000' 6000'



Professional Energy Consultants
A DIVISION OF SMITH LAND SURVEYING

SURVEYORS PROJECT MGMT **SLS** ENGINEERS ENVIRONMENTAL

225 West Main St.
P.O. Box 150
Glenville, WV 26035
(204) 482-5654

56085 Diners Bottom Road
Shadyfork, OH 43947
(740) 671-9911

HONESTY, INTEGRITY, QUALITY

FILE NO. 7982B	DATE 11/22/2013	CADD FILE: 7982p020713a.cmp.dwg
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PROJECT INFORMATION

PROJECT NAME: OXFD 13

TAX PARCEL & SURFACE OWNER:

TAX MAP/PARCEL 10-2 I L MORRIS SOUTHWEST DISTRICT
 TOTAL PROPERTY AREA: 8,603.75 ACRES
 TX MAP/PARCEL 15-1 TYLER & LENORA BUNTING SOUTHWEST DISTRICT
 TOTAL PROPERTY AREA: 12.03 ACRES
 TAX MAP/PARCEL 18-2 I L MORRIS NEW MILTON DISTRICT
 TOTAL PROPERTY AREA: 183.25 ACRES
 (ALL PROPERTIES ARE LOCATED IN DODDRIDGE COUNTY)

OIL AND GAS ROYALTY OWNER:

LINDSAY A. EDMONDSON ET AL
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV
 TOTAL PROPERTY AREA: 1,427 ± ACRES

SITE LOCATION:

THE OXFD 13 SITE IS LOCATED ON A RIDGE EAST OF CO. RT. 40, APPROXIMATELY 4,405 FT SOUTH OF THE CO. RT. 40 AND CO. RT. 54/1 INTERSECTION.

LOCATION COORDINATES

OXFD 13 WELL PAD ENTRANCE
 LATITUDE: 39.17002 LONGITUDE: -80.75018 (NAD 83)

OXFD 13 WELL PAD
 LATITUDE: 39.16865 LONGITUDE: -80.74768 (NAD 83)

GENERAL DESCRIPTION

THE WELL PAD IS BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

SITE DISTURBANCE COMPUTATIONS

PAD AREA = 10.6 ± ACRES*
 ACCESS ROAD = 5.8 ± ACRES
 TOTAL SITE DISTURBANCE = 16.4 ± ACRES
 *INCLUDES AREA OF THE WELL PAD & STOCKPILES

ENTRANCE PERMIT

CNX GAS CO. LLC 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 STATEMENT

MISS UTILITY OF WEST VIRGINIA WAS NOTIFIED FOR THE LOCATING OF UTILITIES PRIOR TO THIS PROJECT DESIGN. TICKET #1316943133. IN ADDITION, MISS UTILITY WILL BE CONTACTED PRIOR TO START OF THE PROJECT.

FLOODPLAIN NOTE

THE PROPOSED LIMITS OF DISTURBANCE FOR THIS PROJECT IS LOCATED IN FEMA FLOOD ZONE X, PER THE FLOOD INSURANCE RATE MAP (FIRM) NUMBER 54017C0250C, DATED OCT. 04, 2011.

ENVIRONMENTAL NOTES

A WETLAND DELINEATION WAS PERFORMED ON JUNE 11, 2013 BY FORENVICON, LLC TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE OCTOBER 08, 2013 REPORT WAS PREPARED BY FORENVICON, LLC 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 THE WVDEP. IT IS STRONGLY RECOMMENDED THAT THE AFOREMENTIONED AGENCIES BE CONSULTED IN AN EFFORT TO GAIN WRITTEN CONFIRMATION OF THE DELINEATION DESCRIBED BY THIS 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.

AN ADDITIONAL WETLAND DELINEATION WAS PERFORMED ON NOVEMBER 12, 2013 AND NOVEMBER 18, 2013 BY ALLSTAR ECOLOGY, LLC ON THE REMAINING STOCKPILE AREA. PER THE REPORT DATED NOVEMBER 21, 2013 THERE WERE NO JURISDICTIONAL AQUATIC FEATURES LOCATED WITHIN THE PROJECT AREA.

GEOTECHNICAL NOTES

A SUBSURFACE INVESTIGATION OF THE PROPOSED SITE WAS PERFORMED IN THE FIELD BY TRIAD ENGINEERING, INC. BETWEEN SEPTEMBER 9, 2013 & SEPTEMBER 25, 2013. THE REPORTS PREPARED BY TRIAD ENGINEERING, INC. DATED OCTOBER 03, 2013, REFLECTS THE RESULTS OF THE SUBSURFACE INVESTIGATION. THE INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS REPORT WAS USED IN THE PREPARATION OF THESE PLANS. PLEASE REFER TO THE SUBSURFACE INVESTIGATION REPORT BY TRIAD ENGINEERING, INC. FOR ADDITIONAL INFORMATION, AS NEEDED.

RESTRICTIONS NOTES:

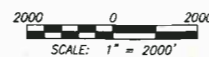
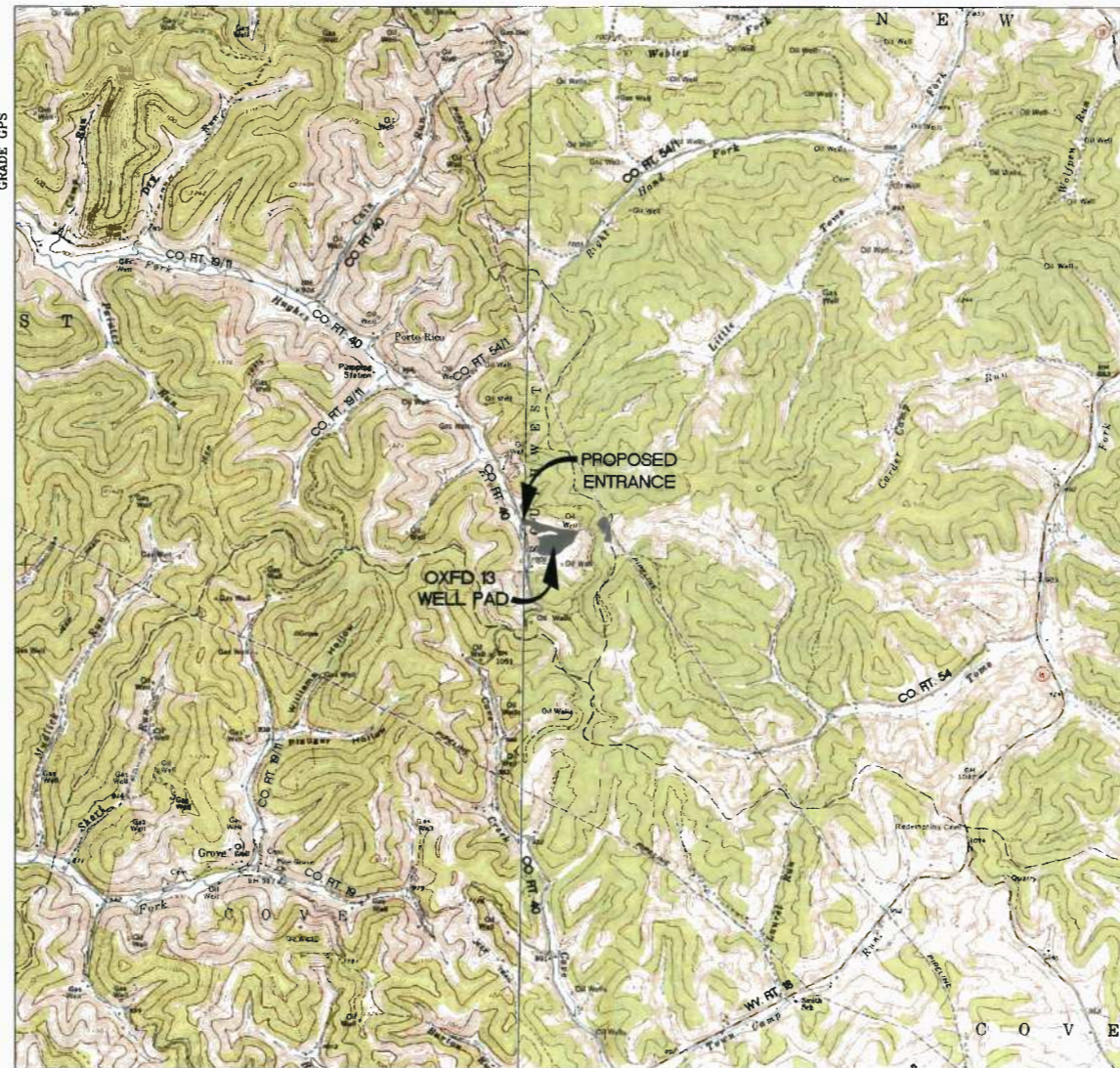
1. THERE ARE NO PERENNIAL STREAMS, LAKES, PONDS, WETLANDS, OR RESERVOIRS WITHIN 100 FEET OF THE PAD AND LOD. THERE ARE WETLANDS WITHIN 100 FEET OF THE PAD AND LOD, AND A PERMIT WILL BE APPLIED FOR THROUGH THE ARMY CORPS OF ENGINEERS FOR THE WETLAND FILL.
2. THERE IS NO NATURALLY PRODUCING TROUT STREAMS WITHIN 300 FEET OF THE PAD AND LOD.
3. THERE ARE NO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY FACILITIES WITHIN 1000 FEET OF THE PAD AND LOD.
4. THERE ARE NO EXISTING WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF THE WELL(S) BEING DRILLED.
5. THERE IS AN OCCUPIED DWELLING STRUCTURE WITHIN 625 FEET OF THE CENTER OF THE PAD. WAIVER TO BE OBTAINED.
6. THERE ARE NO AGRICULTURAL BUILDINGS LARGER THAN 2,500 SQUARE FEET WITHIN 625 FEET OF THE CENTER OF THE PAD.

OXFD 13 SITE PLAN CNX GAS COMPANY, LLC

PROPOSED WELL NO. OXFD 13 AHS, OXFD 13 BHS, OXFD 13 CHS, OXFD 13 DHS, OXFD 13 EHS,
OXFD 13 FHS, OXFD 13 GHS, OXFD 13 HHS, OXFD 13 IHS, & OXFD 13 JHS

SITUATE ON THE WATERS OF THE SOUTH FORK HUGHES RIVER IN
SOUTHWEST DISTRICT, DODDRIDGE COUNTY, WEST VIRGINIA.

GRID NORTH AND ELEVATIONS
SHOWN HEREON WERE
ESTABLISHED BY SURVEY
GRADE GPS



MISS Utility of West Virginia
 1-800-245-4848
 West Virginia State Law
 (Section XIV: Chapter 24-C)
 Requires that you call two
 business days before you dig in
 the state of West Virginia.
 IT'S THE LAW!!

LIST OF DRAWINGS

- 1 - COVER SHEET
- 2 - NOTES
- 3 - OVERALL PLAN SHEET INDEX & VOLUMES
- 4 - EXISTING UTILITY LAYOUT
- 5 - WELL PAD & ACCESS ROAD DETAILS
- 6 - STOCKPILE DETAILS
- 7 - WELL PAD SECTION & ROAD PROFILES
- 8 - ROAD SECTIONS
- 9 - ROAD SECTIONS
- 10 - ROAD SECTIONS
- 11 - WELL PAD RECLAMATION PLAN
- 12 - STOCKPILE RECLAMATION PLAN
- 13 - CONSTRUCTION DETAILS
- 14 - CONSTRUCTION DETAILS
- 15 - CONSTRUCTION DETAILS
- 16 - MATERIAL QUANTITIES

LEGEND	
EX INDEX CONTOUR	PROP. INDEX CONTOUR
EX INTERMEDIATE CONTOUR	PROP. INTERMEDIATE CONTOUR
EX BOUNDARY LINE	PROP. GRADING LIMITS
EX ROAD EDGE OF GRAVEL/DIRT	PROP. LIMITS OF DISTURBANCE
EX ROAD EDGE OF PAVEMENT	PROP. WELL PAD
EX ROAD CENTERLINE	PROP. WELL HEAD
EX DITCHLINE	PROP. 4" PVC DRAIN PIPE
EX CULVERT	PROP. SUMP DRAIN
EX GUARDRAIL	PROP. CONTAINMENT BERM
EX FENCELINE	PROP. PIT/IMPOUNDMENT CL
EX GATE	PROP. PERIMETER SAFETY FENCE
EX OVERHEAD UTILITY	PROP. ACCESS GATE WITH EMERGENCY LIFELINE
EX OVERHEAD UTILITY R/W	
EX POWER POLE	
EX GUY WIRE	
EX TELEPHONE LINE	
EX GASLINE	
EX GASLINE R/W	PROP. ROCK CONSTRUCTION ENTRANCE
EX WATERLINE	
EX WATER WELL	
EX GAS WELL	
EX TREETLINE	
EX REFERENCE TREE	PROP. ROAD EDGE OF GRAVEL
EX DELINEATED STREAM	PROP. ROAD CENTERLINE
EX DELINEATED WETLAND/POND	PROP. V-DITCH W/ CHECK DAMS
EX BUILDING	PROP. DITCH RELIEF CULVERT (DRC)
EX BRIDGE	PROP. RIP-RAP OUTLET PROTECTION
100' WETLAND/STREAM BUFFER	PROP. GUARDRAIL
EX BORING LOCATION	PROP. EARTHEN DIVERSION BERM
	PROP. ORANGE SAFETY FENCE
	PROP. COMPOST FILTER SOCK
	SECTION LINE
	MATCHLINE
	X-SECTION GRID INDEX
	X-SECTION GRID INTERMEDIATE
	X-SECTION PROPOSED GRADE
	X-SECTION EXISTING GRADE
	X-SECTION WATER SURFACE
	SPOT ELEVATION



THIS DOCUMENT WAS PREPARED BY:
 NAVITUS ENGINEERING INC.
 FOR: CNX GAS COMPANY, LLC

LOCATION MAP
OXFD 13
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 11/14/2013
 SCALE: 1" = 2000'
 DESIGNED BY: CSK
 FILE NO. 7982
 SHEET 1 OF 16
 REV: 11/22/2013

OPERATOR

CNX GAS COMPANY, LLC
 OPERATOR ID: 494458048
 P.O. BOX 1248
 JANE LEW, WV 26378
 PHONE: (304) 889-2009

ENGINEER

NAVITUS ENGINEERING, INC.
 151 WINDY HILL LANE
 WINCHESTER, VA 22602
 PHONE: (888) 682-4185

SURVEYOR

SMITH LAND SURVEYING, INC.
 226 WEST MAIN STREET
 P.O. BOX 150
 GLENVILLE, WV 26351
 PHONE: (304) 482-5834

CONSTRUCTION NOTES:

1. THE CONTRACTOR IS TO VERIFY FIELD CONDITIONS PRIOR TO AND DURING CONSTRUCTION AND WILL NOTIFY NAVITUS ENGINEERING AT (888) 662-4185 OR SMITH LAND SURVEYING AT (304) 462-5634 IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THE APPROVED PLAN. ANY WORK PERFORMED BY THE CONTRACTOR AFTER THE FINDING OF SUCH DISCREPANCIES, SHALL BE DONE AT THE CONTRACTOR'S RISK.
2. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS HEREIN SHALL CONFORM TO THE CURRENT COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR CURRENT WVDEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL STANDARDS AND SPECIFICATIONS. SHOULD A CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, AND PLANS OCCUR, THE MOST STRINGENT REQUIREMENT WILL APPLY. THE APPROVAL OF THESE PLANS IN NO WAY RELIEVES THE DEVELOPER OR HIS AGENT OF THE RESPONSIBILITIES CONTAINED IN THE WVDEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL.
3. AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE. ALSO, A REPRESENTATIVE OF THE DEVELOPER MUST BE AVAILABLE AT ALL TIMES.
4. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT THE STREETS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES.
5. THE LOCATION OF EXISTING UTILITIES SHOWN IN THESE PLANS ARE FROM FIELD LOCATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES AS NEEDED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ENGINEER OF ANY CONFLICTS ARISING FROM HIS EXISTING UTILITY VERIFICATION AND THE PROPOSED CONSTRUCTION.
6. THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION OF WATER AND/OR GAS PIPE LINES. INFORMATION SHOULD ALSO BE OBTAINED FROM THE APPROPRIATE AUTHORITY CONCERNING PERMITS, CUT SHEETS, AND CONNECTIONS TO EXISTING LINES.
7. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES TO THE EXISTING STREETS AND UTILITIES WHICH OCCURS AS A RESULT OF HIS CONSTRUCTION PROJECT WITHIN OR CONTIGUOUS TO THE EXISTING RIGHT-OF-WAY.
8. WHEN GRADING IS PROPOSED WITHIN EASEMENTS OF UTILITIES, LETTERS OF PERMISSION FROM ALL INVOLVED COMPANIES MUST BE OBTAINED PRIOR TO GRADING AND/OR SITE DEVELOPMENT.
9. THE DEVELOPER WILL BE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITIES WHICH IS REQUIRED AS A RESULT OF HIS PROJECT. THE RELOCATION SHOULD BE DONE PRIOR TO CONSTRUCTION.
10. THESE PLANS IDENTIFY THE LOCATION OF ALL KNOWN GRAVESITES. GRAVESITES SHOWN ON THIS PLAN WILL BE PROTECTED IN ACCORDANCE WITH STATE LAW. IN THE EVENT GRAVESITES ARE DISCOVERED DURING CONSTRUCTION, THE OWNER AND ENGINEER MUST BE NOTIFIED IMMEDIATELY.
11. THE CONTRACTOR(S) SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATING OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NOT MORE THAN TEN (10) WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.
12. CONTRACTOR TO CONTACT OPERATOR AND ENGINEER IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION.
13. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE EROSION AND SEDIMENT CONTROL INSPECTOR, 2 DAYS PRIOR TO THE START OF CONSTRUCTION.
14. THE CONTRACTOR IS RESPONSIBLE FOR ALL FILL MATERIAL TESTING REQUIRED DURING THE CONSTRUCTION OF THIS PROJECT. ALL MATERIAL TEST SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND A CERTIFICATION OF THE MATERIALS TESTED SHALL BE PROVIDED BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER CERTIFYING THE CONSTRUCTED FACILITY. FAILURE TO CONDUCT THE DENSITY TEST SHALL BE CAUSE FOR NON-ACCEPTANCE OF THE CONSTRUCTED FACILITY.
15. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SITE IN ACCORDANCE WITH THE DESIGN PLANS AND CONSTRUCTION DOCUMENTS AND THE SCOPE OF WORK SHALL CONFORM WITH THE GRADES, BERMS, DEPTHS, DIMENSIONS, ETC. SHOWN HEREON.

CONSTRUCTION SEQUENCE

- THE DEVELOPMENT OF THIS SITE SHALL BE CONSISTENT WITH THE FOLLOWING GENERAL SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL IMPLEMENT, MAINTAIN, AND OPERATE ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES TO EFFECTIVELY MITIGATE THE HAZARD OF ACCELERATED EROSION AND SEDIMENTATION TO ACCEPTABLE LEVELS. MINOR DEVIATIONS FROM THIS SEQUENCE SHALL BE EXECUTED BY THE PROJECT'S SUPERINTENDENT AS NEEDED TO ELIMINATE ANY POTENTIAL EROSION CONDITION THAT MAY ARISE FOR THE DURATION OF THE PROJECT. THE WVDEP OFFICE OF OIL AND GAS SHALL BE NOTIFIED OF ANY AND ALL SUCH DEVIATIONS FROM THE APPROVED PLANS.
- 1) A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR AND THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK TO REVIEW THE CONSTRUCTION DRAWINGS AND PROVIDE ANY REQUESTED GUIDANCE
 - 2) STAKE THE LIMITS OF CONSTRUCTION.
 - 3) INSTALL THE ROCK CONSTRUCTION ENTRANCE AS SHOWN ON THE PLANS.
 - 4) INSTALL ALL ORANGE SAFETY FENCE AS SHOWN AROUND ANY DELINEATED STREAMS AND WETLANDS TO CLEARLY IDENTIFY THOSE AREAS THAT ARE NOT TO BE DISTURBED.
 - 5) INSTALL ALL BMP'S (COMPOST FILTER SOCKS, SEDIMENT TRAPS, ETC) AS SHOWN ON THE PLANS AND DETAILS. THE SEDIMENT TRAPS SHOWN ON THIS PLAN WILL FUNCTION AS A PLUNGE POOL TO REDUCE THE VELOCITIES ON THE PROPOSED DITCHES DRAINING INTO THEM. THE RUNOFF DRAINING TO THESE FACILITIES WILL BE SEDIMENT FREE.
 - 6) CLEAR AND GRUB THE ACCESS ROAD AND PAD AREA. ALL WOODY MATERIAL, BRUSH, TREES, STUMPS, LARGE ROOTS, BOULDERS, AND DEBRIS SHALL BE CLEARED FROM THE SITE AREA AND KEPT TO THE MINIMUM NECESSARY FOR PROPER CONSTRUCTION, INCLUDING THE INSTALLATION OF NECESSARY SEDIMENT CONTROLS. TREES SIX INCHES IN DIAMETER AND LARGER SHALL BE CUT AND LOGS STACKED. SMALLER TREES, BRUSH, & STUMPS SHALL BE CUT AND OR GRUBBED AND WINDROWED IN APPROPRIATE AREAS FOR USE AS SEDIMENT BARRIERS AT WATER DRAINAGE OUTLETS, WINDROWED BELOW THE WELL SITE, USED FOR WILDLIFE HABITAT, BURNED (AS PER WV FOREST FIRE LAWS), REMOVED FROM SITE, OR DISPOSED OF BY OTHER METHODS APPROVED BY DEP.
 - 7) CONSTRUCT THE ACCESS ROAD. DITCH RELIEF CULVERTS SHALL BE INSTALLED AT A GRADE OF 1-8% TO MINIMIZE OUTLET VELOCITIES TO THE EXTENT POSSIBLE. INSTALL OUTLET PROTECTION AS SHOWN ON PLANS. STABILIZE THE ROAD WITH GEOTEXTILE FABRIC & STONE AND SIDE SLOPES AS SPECIFIED WITH PERMANENT SEEDING. STOCKPILE AND STABILIZE EXCESS MATERIAL ALONG THE ACCESS ROAD, AS NEEDED.
 - 8) STRIP THE TOPSOIL FROM THE PAD AREA. ALL STRIPPED TOPSOIL SHALL BE STOCKPILED IN AREAS SHOWN IN THE PLANS AND IMMEDIATELY STABILIZED. ADDITIONAL BMP MEASURE SHALL BE CONSTRUCTED AROUND TOPSOIL STOCKPILES, IF NECESSARY.
 - 9) ALL DITCH LINES SHALL BE CLEANED PRIOR TO INSTALLATION OF LINED PROTECTION. ALL DITCHES SHALL HAVE ROCK AND GEOTEXTILE FABRIC LINING. INSTALL OUTLET PROTECTION ONCE DITCH RELIEF CULVERTS ARE INSTALLED, AS SHOWN ON THIS PLAN.
 - 10) GRADE THE PAD AREA AS SHOWN ON THE PLANS. IMMEDIATELY STABILIZE THE OUTER AREAS OF THE WELL PAD. THE WELL PAD AND TURNAROUND AREA(S) SHALL BE STABILIZED WITH GEOTEXTILE FABRIC & STONE AND THE SIDE SLOPES WITH COCONUT EROSION CONTROL BLANKETS ON ALL SLOPES. APPLY SEED AND MULCH TO ALL DISTURBED AREAS. THIS SHALL INCLUDE ALL AREAS THAT WILL NOT BE SUBJECT TO REGULAR TRAFFIC ACTIVITY (TO BE STABILIZED WITH STONE), OR ANY DISTURBED AREA THAT WILL NOT BE RE-DISTURBED BEFORE SITE RECLAMATION BEGINS.
 - 11) PREVIOUSLY DISTURBED AREAS AND IMMEDIATE DOWN SLOPE AREAS SHALL BE INSPECTED AFTER EACH RAINFALL STORM EVENT AND MONITORED WEEKLY FOR SIGNS OF ACCELERATED EROSION. IMPLEMENT ADDITIONAL BMP'S AS DEEMED NECESSARY. THESE INSPECTIONS SHALL CONTINUE DURING THE DURATION OF THE PROJECT AND SUBSEQUENT SITE RECLAMATION.
 - 12) COMMENCE THE DRILLING ACTIVITY.
 - 13) ONCE DISTURBED AREAS HAVE BEEN RE-VEGETATED AND STABILIZED FOLLOWING RECLAMATION, THE TEMPORARY BMP'S IN THOSE AREAS MAY BE REMOVED. CONTINUE TO MONITOR THESE AREAS TO ENSURE A UNIFORM RATE OF POST-VEGETATIVE COVERAGE IS MAINTAINED. ANY AREAS FOUND TO BE DEFICIENT SHALL BE RE-SEEDED AND MULCHED.

SITE CLEANUP & RECYCLE PROGRAM

1. GARBAGE, FUELS OR ANY SUBSTANCE HARMFUL TO HUMAN, AQUATIC OR FISH LIFE, WILL BE PREVENTED FROM ENTERING SPRINGS, STREAMS, PONDS, LAKES, WETLANDS OR ANY WATER COURSE OR WATER BODY.
2. OILS, FUELS, LUBRICANTS AND COOLANTS WILL BE PLACED IN SUITABLE CONTAINERS AND DISPOSED PROPERLY.
3. ALL TRASH AND GARBAGE WILL BE COLLECTED AND DISPOSED PROPERLY.
4. ALL SEDIMENT REMOVED FROM SEDIMENT CAPTURING DEVICES SHALL BE PLACED ON THE TOPSOIL STOCKPILE, THEN SEEDED AND MULCHED, AS NECESSARY. ALTERNATIVELY, THE REMOVED SEDIMENT CAN BE TRANSPORTED TO A SITE WITH AN APPROVED PERMIT.


MAINTENANCE PROGRAM

1. BMP'S WILL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH MEASURABLE RAINFALL EVENT DURING THE ACTIVE CONSTRUCTION PHASE OF THE PROJECT.
2. ALL REVEGETATED ACCESS ROADS AND FACILITIES ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF EACH STRUCTURE.
3. CULVERTS, ROAD DITCHES, BROAD-BASED DIPS, DIVERSION DITCHES, AND ROCK CHECK DAMS MUST BE MAINTAINED IN PROPER WORKING ORDER AND WILL BE CLEANED OUT, REPAIRED, OR REPLACED AS NECESSARY.
4. FILTER STRIPS AND/OR SILT FENCE WILL BE MAINTAINED.
5. ALL AREAS OF EARTH DISTURBANCE WILL BE REPAIRED WHERE SIGNS OF ACCELERATED EROSION ARE DETECTED.
6. SEEDING AND MULCHING WILL BE REPEATED IN THOSE AREAS THAT APPEAR TO BE FAILING OR HAVE FAILED.

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Shenandoah, OH 43167
(614) 717-9911

Honesty, Integrity, Quality



THIS DOCUMENT WAS
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NAVITUS ENGINEERING
INC.
FOR: CNX GAS
COMPANY, LLC

NOTES

OXFD 13

SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013

SCALE: N/A

DESIGNED BY: CSK

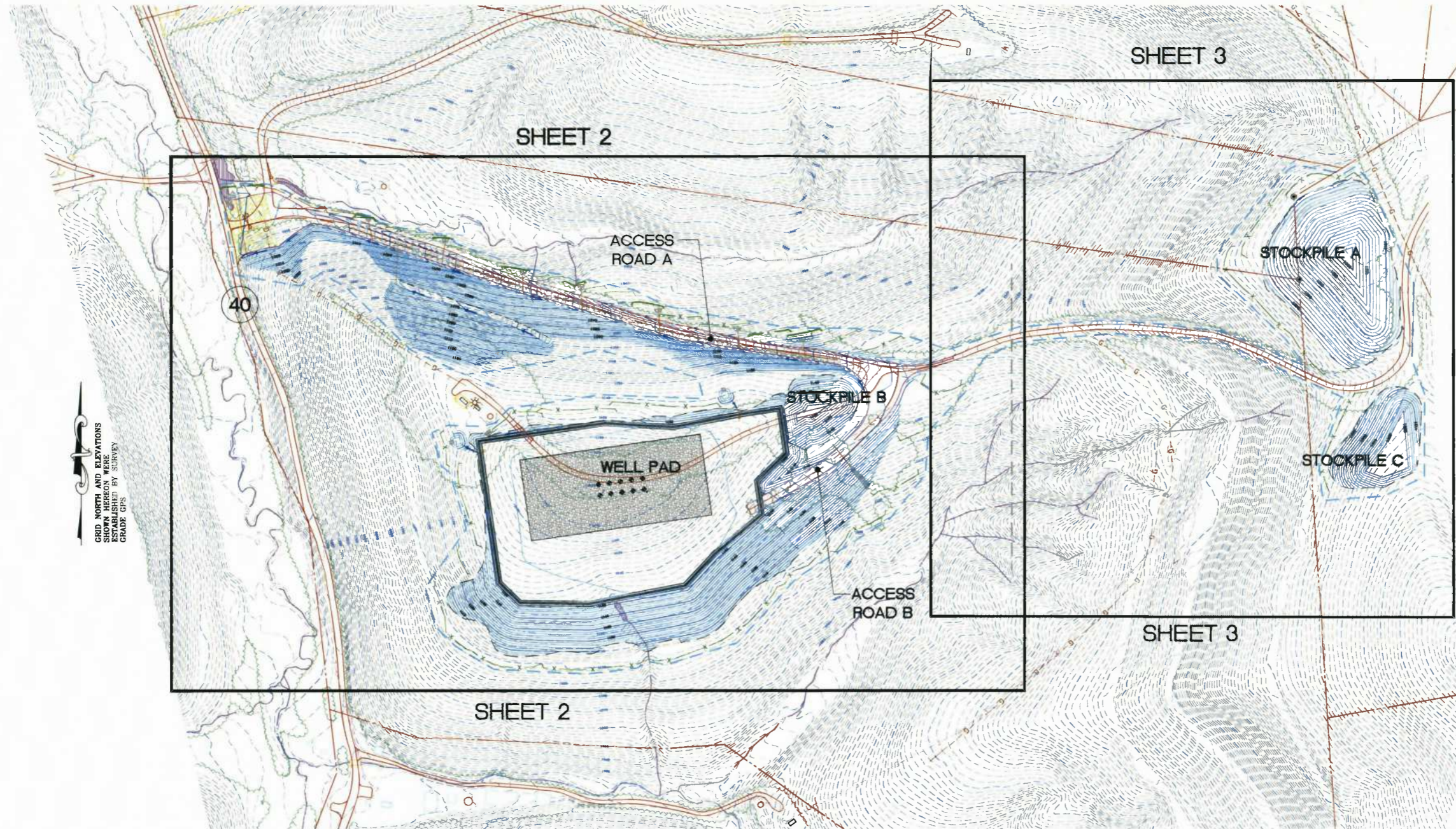
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SHEET 2 OF 16

REV: 11/22/2013

OXFD 13 OVERALL PLAN SHEET INDEX & VOLUMES

PROPOSED WELL NO. OXFD 13 AHS, OXFD 13 BHS, OXFD 13 CHS, OXFD 13 DHS, OXFD 13 EHS,
OXFD 13 FHS, OXFD 13 GHS, OXFD 13 HHS, OXFD 13 IHS, & OXFD 13 JHS



GRID NORTH AND ELEVATIONS SHOWN HEREON WERE DETERMINED BY SURVEY GRADE CPIS

0 100 200
SCALE: 1" = 100'

STREAM / WETLAND IMPACT	
Intermittent Stream Impact (Linear Feet)	
ST-11	88
ST-13	62
Total Impact	150
Ephemeral Stream Impact (Linear Feet)	
ST-14	127
Total Impact	127
PEM Wetland Impact (Square Feet)	
WETLAND-1 (Well Pad)	314
WETLAND-3 (Entrance)	571
Total Area	885

MATERIAL STOCKPILES		
Name	Excess	Topsoil
A	0.0	17,622.9
B	4,181.7	0.0
C	7,099.5	0.0
TOTAL (CY)	11,281.2	17,622.9

Limits Of Disturbance Area (ac)	
Total Site	
Access Road	5.8
Drill Pad	6.8
Excess/Topsoil Material Stockpiles	3.8
Total Affected Area	16.4
Total Wooded Acres Disturbed	11.6

OXFD 13 WELL PAD						
Description	Cut (CY)	Fill (CY)	Spoil (CY)	Borrow (CY)	Max. Slope (%)	Length of Slope (FT)
Access Road "A"	25,224.7	1,190.5	24,034.2	0.0	18.0	75.0
Access Road "B"	54.7	12,544.4	0.0	12,489.7	8.4	175.0
Well Pad	48,620.4	48,214.9	2,405.5	0.0	n/a	n/a
Stripped Topsoil (12")	14,180.6	0.0	14,180.6	0.0	n/a	n/a
Material Stockpiles	0.0	28,884.1	0.0	28,884.1	n/a	n/a
Totals	88,080.4	88,833.9	40,620.3	41,373.8	n/a	n/a
TOTAL SPOIL (CY) =	-753.5					

NOTE:

- ALL EARTHWORK VOLUMES WERE CALCULATED USING A CUT SWELL FACTOR OF 1.1 AND A FILL SHRINK FACTOR OF 1.0.
- AERIAL TOPOGRAPHIC MAPPING WAS PERFORMED BY BLUE MOUNTAIN AERIAL MAPPING, DATED 4-2-13.
- THE PROPERTY LINES SHOWN HEREON ARE APPROXIMATE AND DO NOT REPRESENT A BOUNDARY SURVEY ON ANY OF THE PARCELS SHOWN.
- WELL PAD SECTION TO UTILIZE 12" OF 0-6" BASE COMPACTED TO 10" AND 4" OF 3/4" CRUSHER RUN COMPACTED TO 2".
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NAVITUS ENGINEERING INC.

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ENGINEERS
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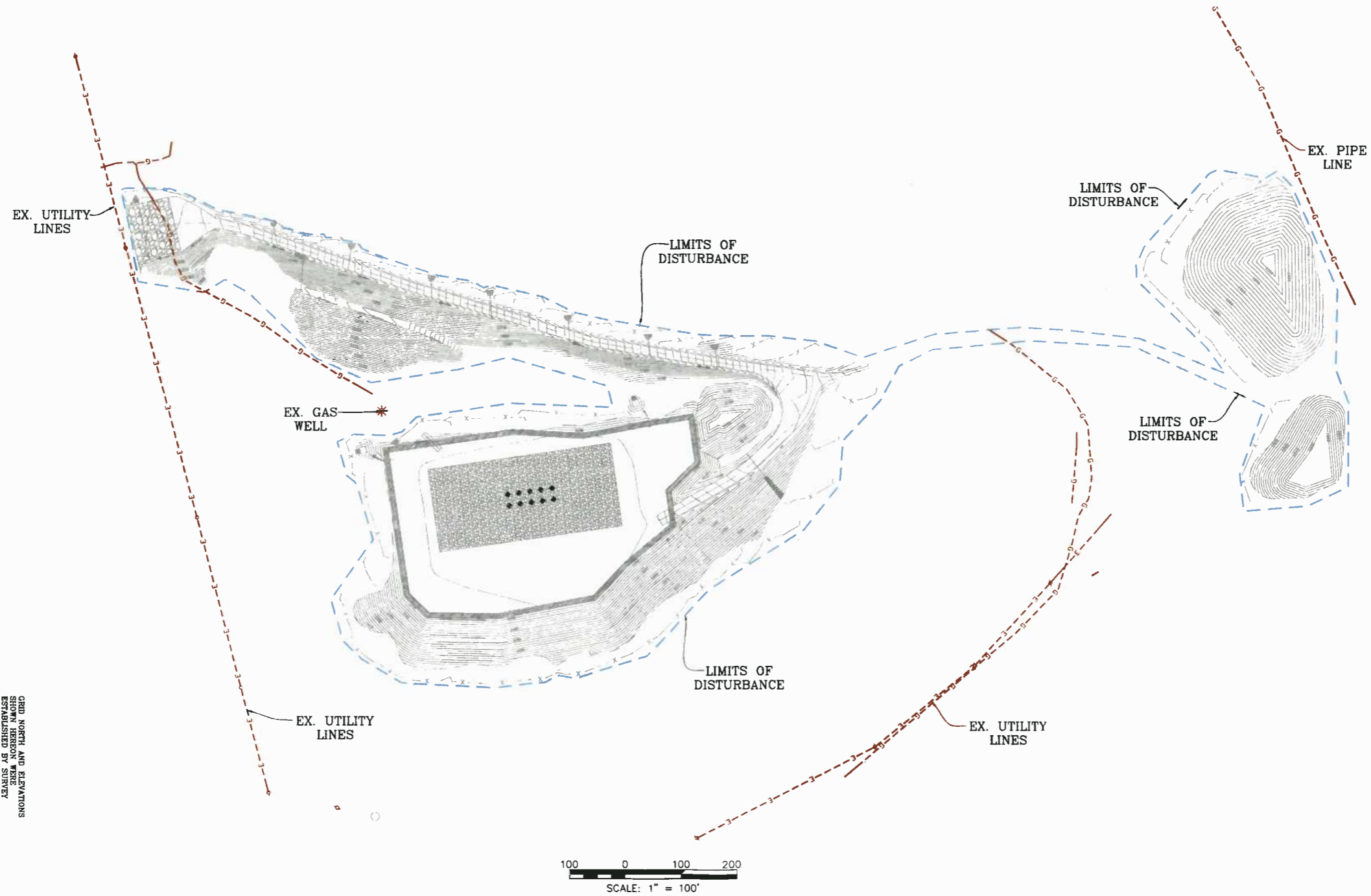
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NAVITUS ENGINEERING INC.
FOR: CNX GAS COMPANY, LLC

OVERALL PLAN SHEET INDEX & VOLUMES
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: 1" = 150'
DESIGNED BY: CSK
FILE NO. 7982
SHEET 3 OF 16
REV: 11/22/2013

OXFD 13 EXISTING UTILITY LAYOUT

PROPOSED WELL NO. OXFD 13 AHS, OXFD 13 BHS, OXFD 13 CHS, OXFD 13 DHS, OXFD 13 EHS,
OXFD 13 FHS, OXFD 13 GHS, OXFD 13 HHS, OXFD 13 IHS, & OXFD 13 JHS



GRID NORTH AND ELEVATIONS
SHOWN HEREON WERE
ESTABLISHED BY SURVEY
ON 08/05/13

GENERAL NOTES:

- THE UTILITIES AND THEIR LOCATIONS AS SHOWN HEREON ARE BASED ON: A) OBSERVABLE EVIDENCE OF THOSE VISIBLE, ABOVE-GROUND FACILITIES, FEATURES, AND MARKERS WHICH WERE FOUND ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY PERFORMED BY SLS, INC. AND B) FIELD MARKINGS PLACED BY UTILITY COMPANIES IN RESPONSE TO THE WV 811 TICKET SUBMITTED BY SLS, INC. SLS, INC. NOR NAVITUS ENGINEERING CANNOT GUARANTEE THE ACCURACY OF THE UTILITY MARKINGS PERFORMED BY OTHERS OR THAT ALL UTILITIES EXISTING WITHIN THE LIMITS OF THIS PLAN ARE SHOWN. ANY UTILITIES ENCOUNTERED SUBSEQUENT TO PLAN APPROVAL OR DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE PLAN SHOULD BE REPORTED TO SLS, INC., NAVITUS ENGINEERING AND/OR CNX GAS COMPANY, LLC.

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1000 Dunes Station Road
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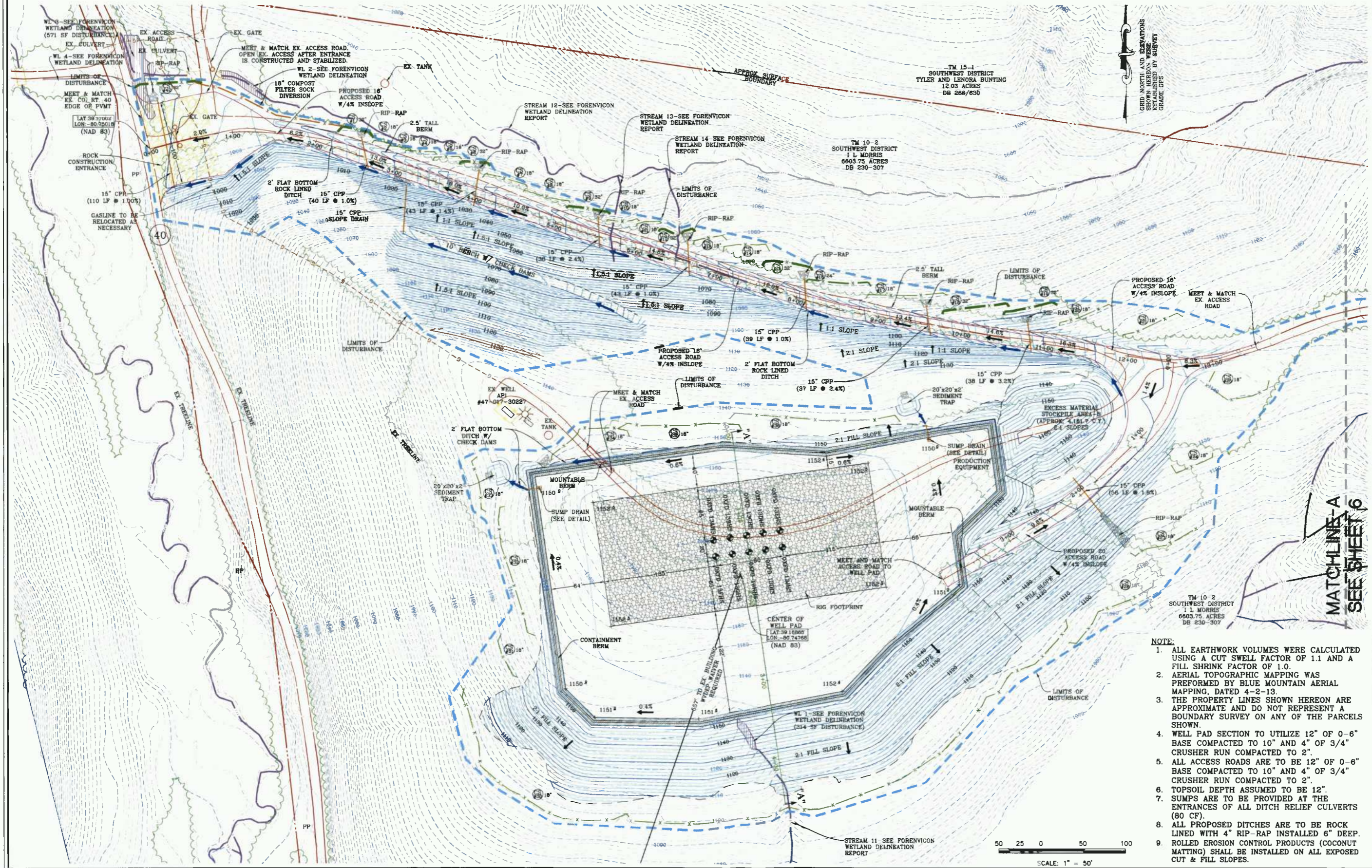
THIS DOCUMENT WAS
PREPARED BY:
NAVITUS ENGINEERING
INC.
FOR: CNX GAS
COMPANY, LLC

EXISTING UTILITY LAYOUT
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: 1" = 150'
DESIGNED BY: CSK
FILE NO. 7982
SHEET 4 OF 16
REV: 11/22/2013

OXFD 13 WELL PAD AND ACCESS ROAD DETAILS

PROPOSED WELL NO. OXFD 13 AHS, OXFD 13 BHS, OXFD 13 CHS, OXFD 13 DHS, OXFD 13 EHS,
OXFD 13 FHS, OXFD 13 GHS, OXFD 13 HHS, OXFD 13 IHS, & OXFD 13 JHS



MATCHLINE A
SEE SHEET 6

- NOTE:**
1. ALL EARTHWORK VOLUMES WERE CALCULATED USING A CUT SWELL FACTOR OF 1.1 AND A FILL SHRINK FACTOR OF 1.0.
 2. AERIAL TOPOGRAPHIC MAPPING WAS PERFORMED BY BLUE MOUNTAIN AERIAL MAPPING, DATED 4-2-13.
 3. THE PROPERTY LINES SHOWN HEREON ARE APPROXIMATE AND DO NOT REPRESENT A BOUNDARY SURVEY ON ANY OF THE PARCELS SHOWN.
 4. WELL PAD SECTION TO UTILIZE 12" OF 0-6" BASE COMPACTED TO 10" AND 4" OF 3/4" CRUSHER RUN COMPACTED TO 2".
 5. ALL ACCESS ROADS ARE TO BE 12" OF 0-6" BASE COMPACTED TO 10" AND 4" OF 3/4" CRUSHER RUN COMPACTED TO 2".
 6. TOPSOIL DEPTH ASSUMED TO BE 12".
 7. SUMPS ARE TO BE PROVIDED AT THE ENTRANCES OF ALL DITCH RELIEF CULVERTS (80 CF).
 8. ALL PROPOSED DITCHES ARE TO BE ROCK LINED WITH 4" RIP-RAP INSTALLED 6" DEEP. ROLLED EROSION CONTROL PRODUCTS (COCONUT MATTING) SHALL BE INSTALLED ON ALL EXPOSED CUT & FILL SLOPES.
 - 9.



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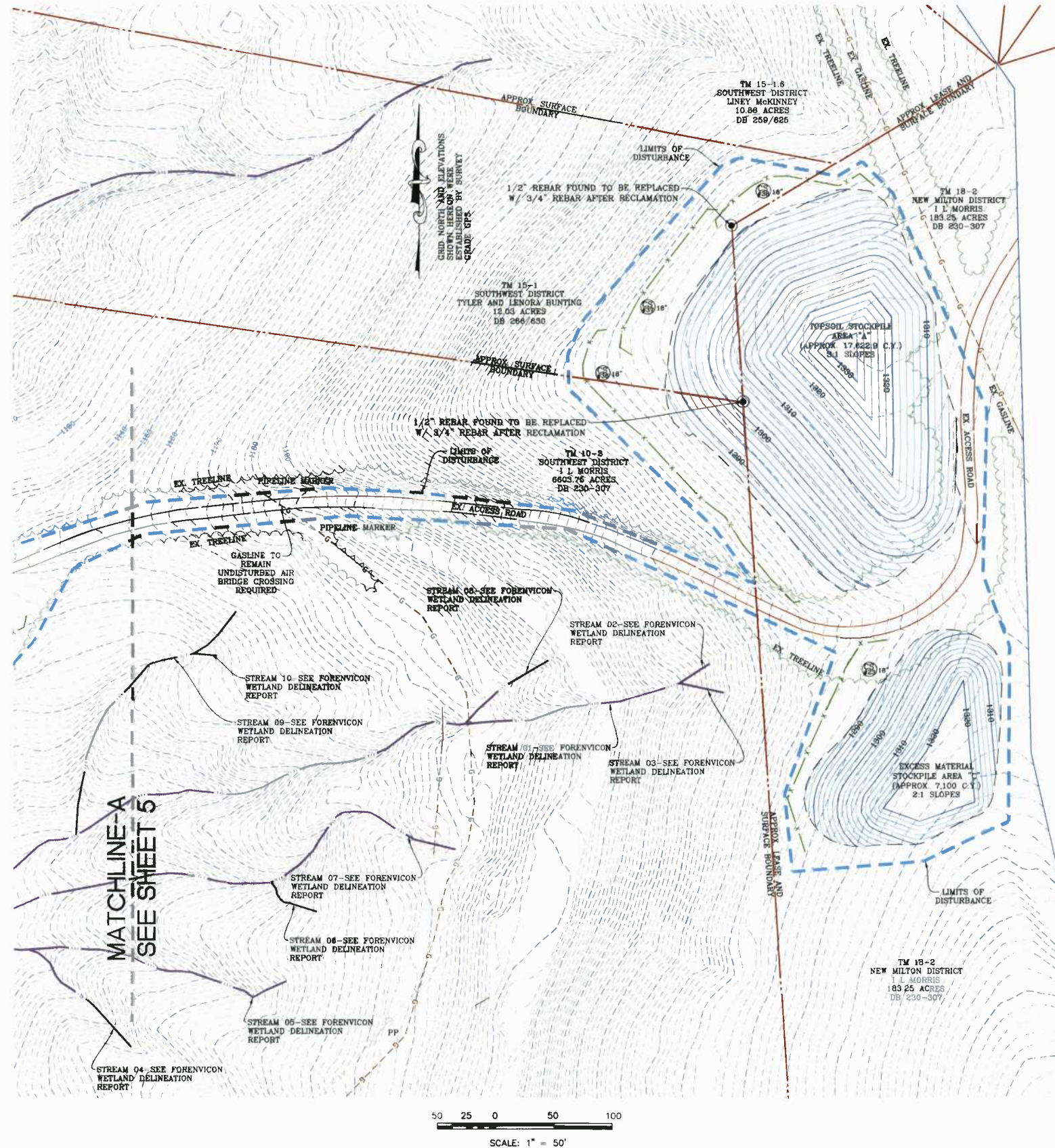
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DATE: 11/14/2013
SCALE: 1" = 50'
DESIGNED BY: CSK
FILE NO. 7982
SHEET 5 OF 16
REV: 11/22/2013

OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

OXFD 13 STOCKPILE DETAILS

PROPOSED WELL NO. OXFD 13 AHS, OXFD 13 BHS, OXFD 13 CHS, OXFD 13 DHS, OXFD 13 EHS,
OXFD 13 FHS, OXFD 13 GHS, OXFD 13 HHS, OXFD 13 IHS, & OXFD 13 JHS



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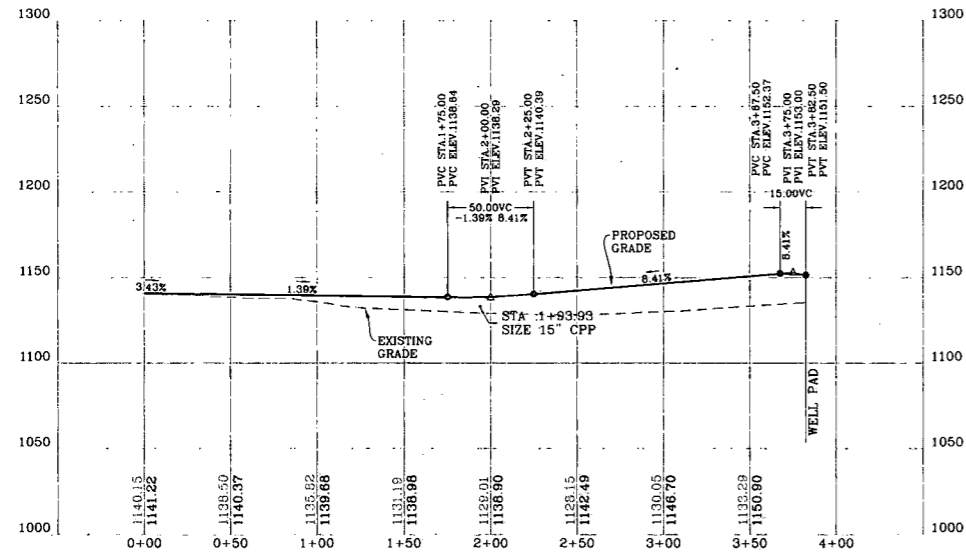


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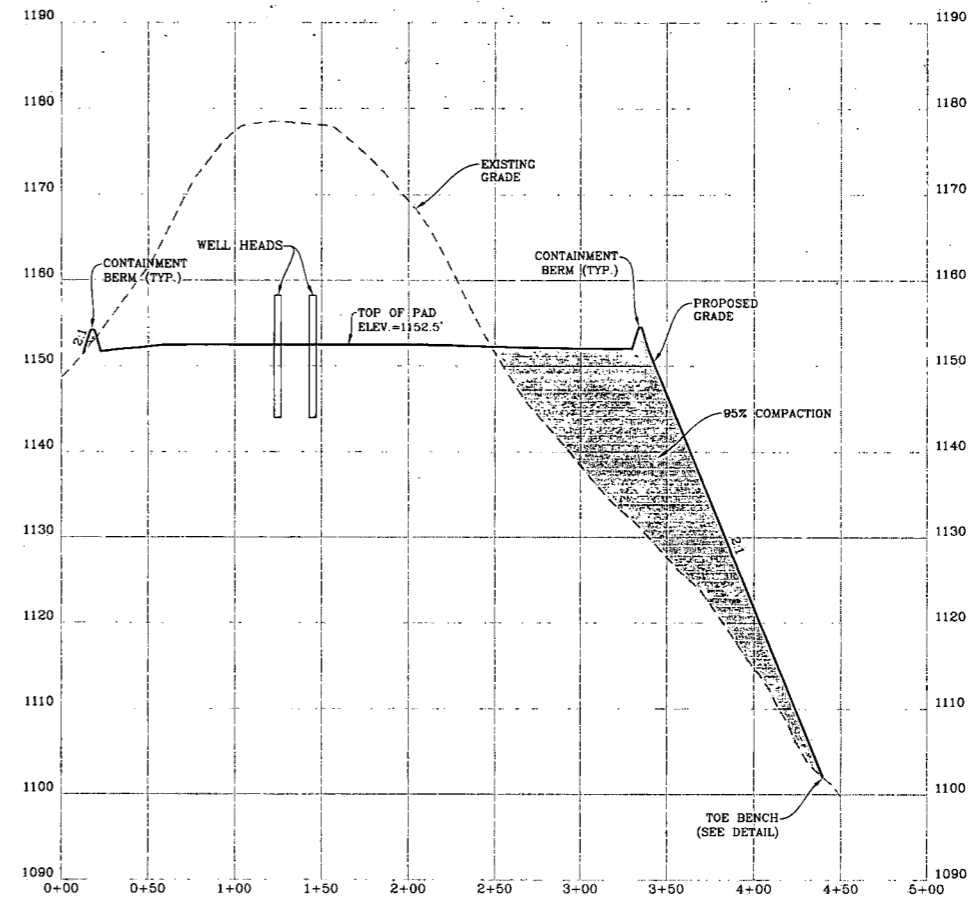
STOCKPILE DETAILS
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: 1" = 50'
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FILE NO. 7982
SHEET 6 OF 16
REV: 11/22/2013

WELL PAD SECTION & ROAD PROFILES

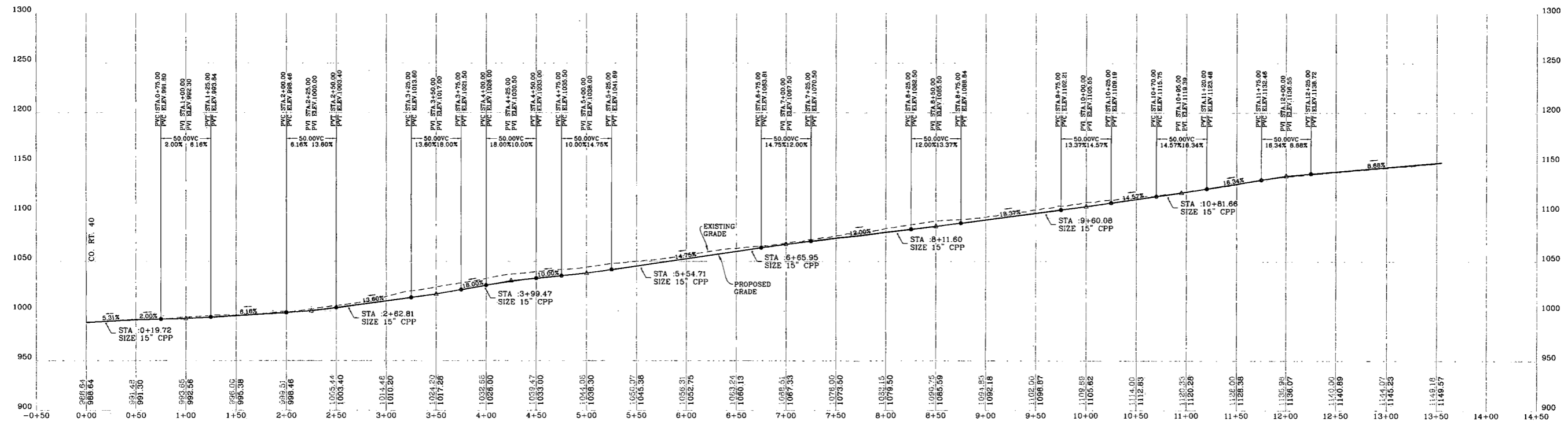


ACCESS ROAD "B" PROFILE
SCALE: HORIZ. 1" = 50' VERT. 1" = 50'



WELL PAD CROSS SECTION "A-A"
SCALE: HORIZ. 1" = 50' VERT. 1" = 10'

NOTE:
1. ALL FILL AREAS SHALL BE "KEYED IN" AND COMPACTED IN 12" (MAXIMUM) LOOSE LIFT THICKNESS WITH A VIBRATING SHEEPSFOOT ROLLER TO 95% COMPACTION PER STANDARD PROCTOR.



ACCESS ROAD "A" PROFILE
SCALE: HORIZ. 1" = 50' VERT. 1" = 50'

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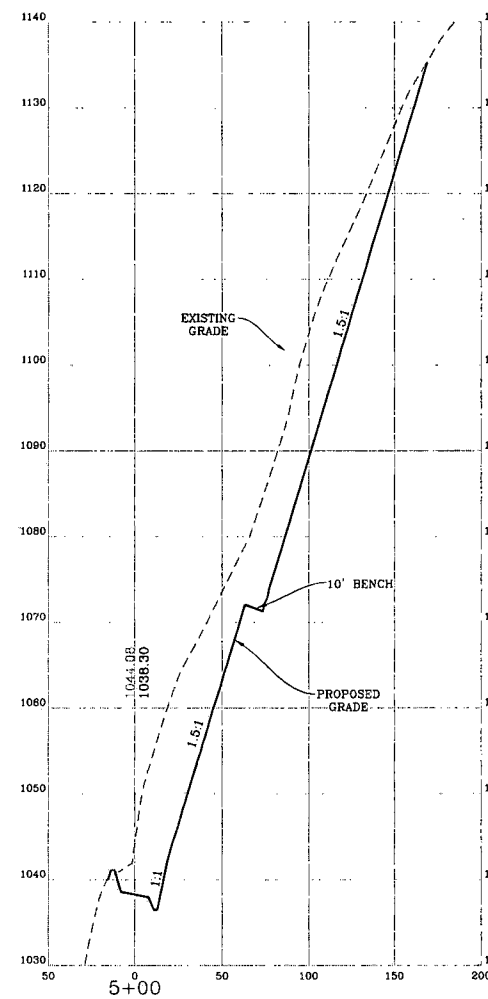
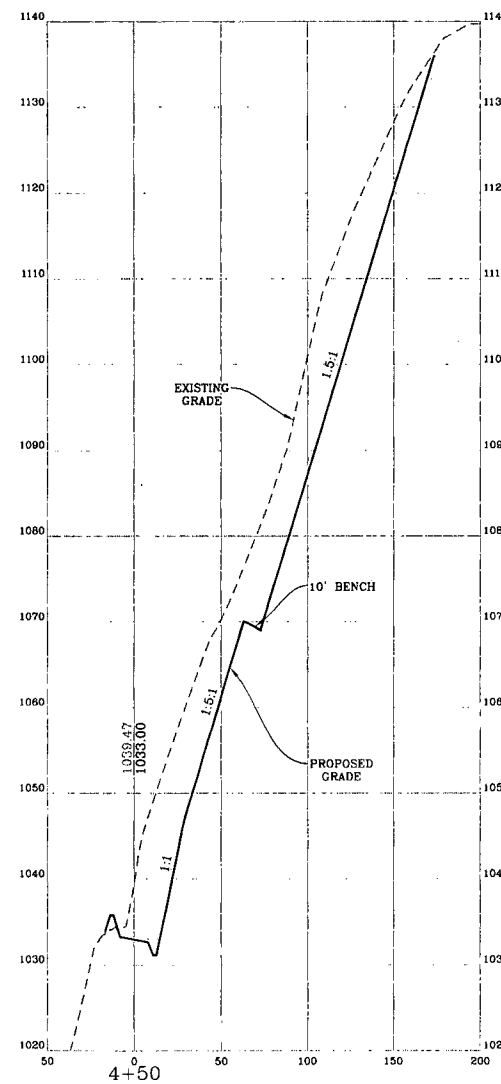
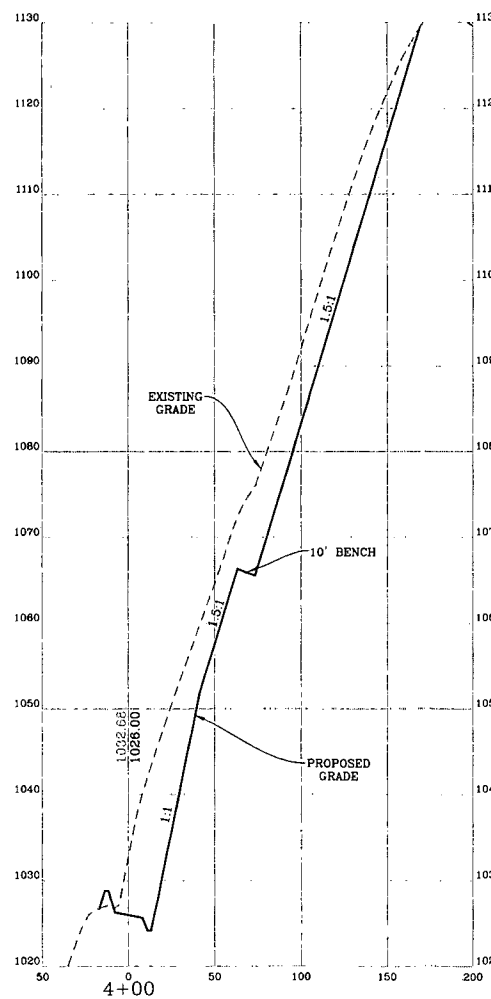
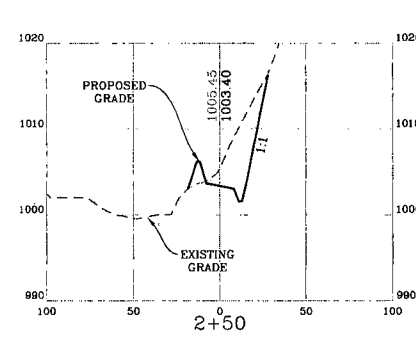
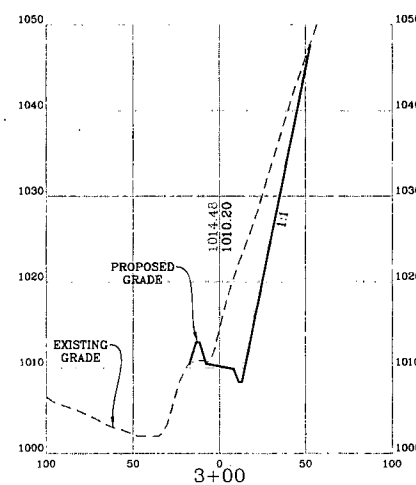
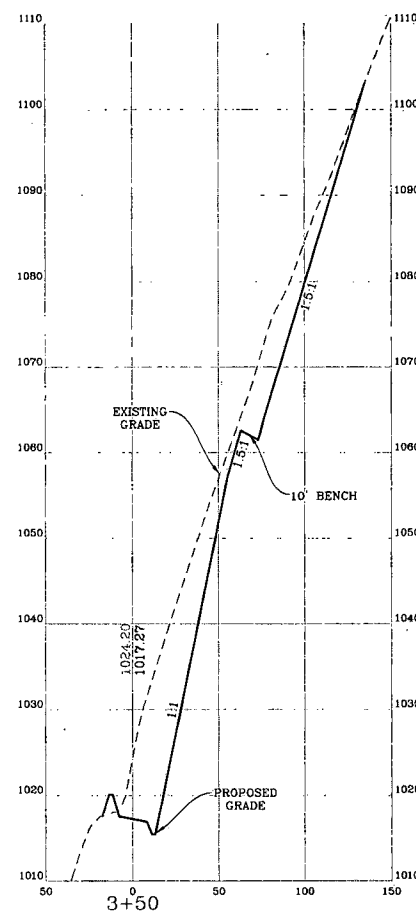
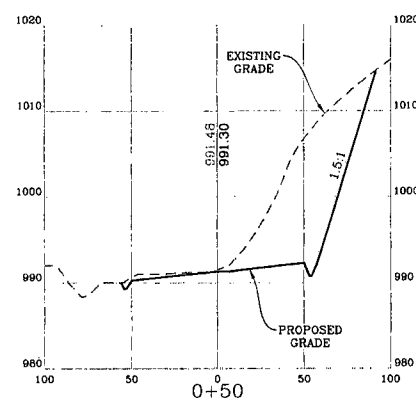
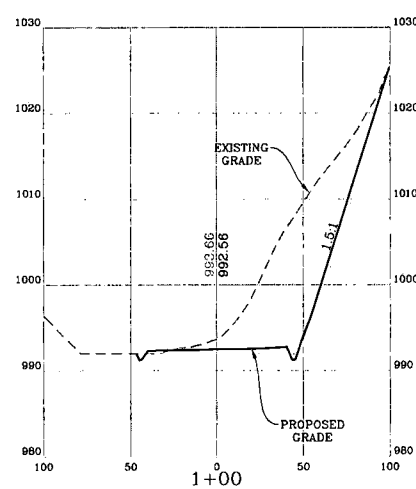
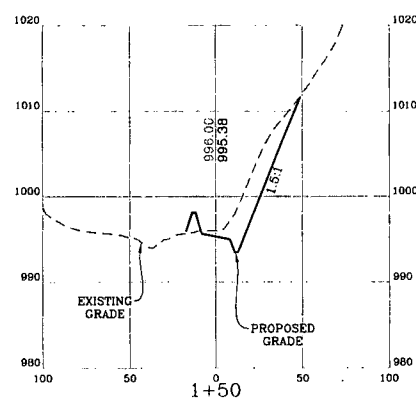
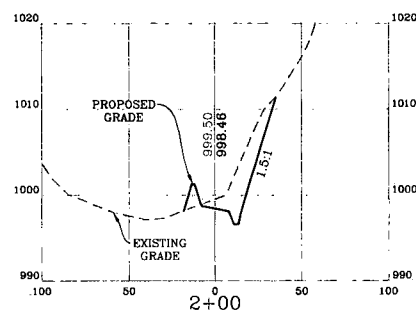
WELL PAD SECTION & ROAD PROFILES
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE:	11/14/2013
SCALE:	AS SHOWN
DESIGNED BY:	CSK
FILE NO.	7982
SHEET	7 OF 16
REV:	11/22/2013

ROAD SECTIONS

ACCESS ROAD "A" CROSS-SECTIONS

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'



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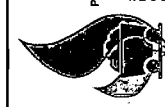
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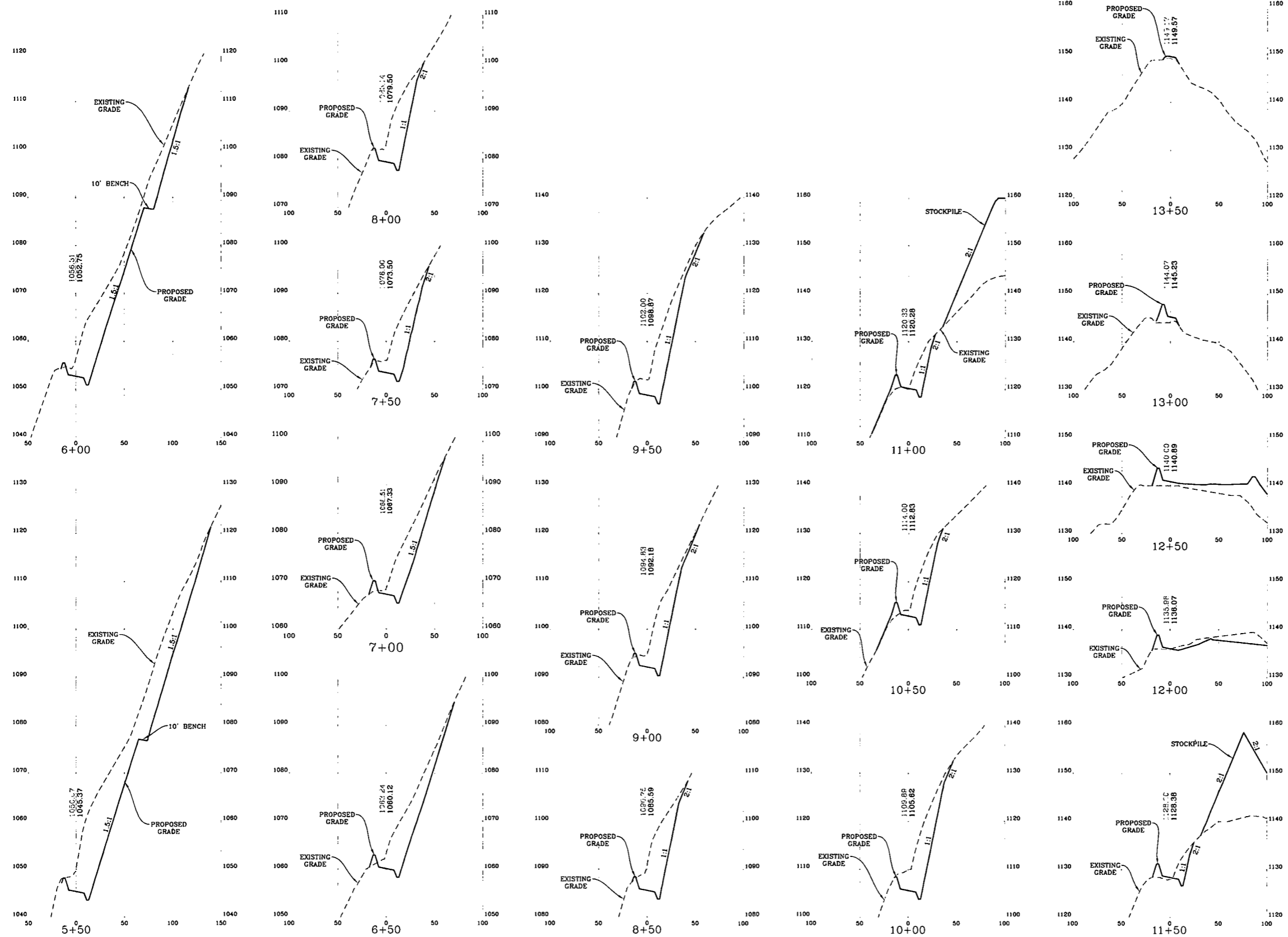
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OXFD 13
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DODDRIDGE COUNTY, WV

DATE: 11/14/2013
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ROAD SECTIONS

ACCESS ROAD "A" CROSS-SECTIONS

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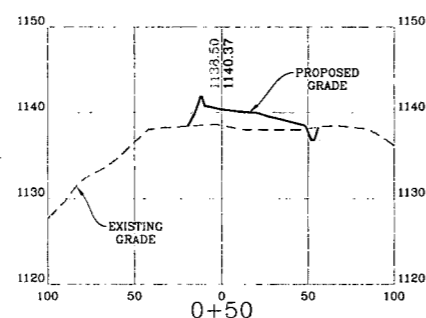
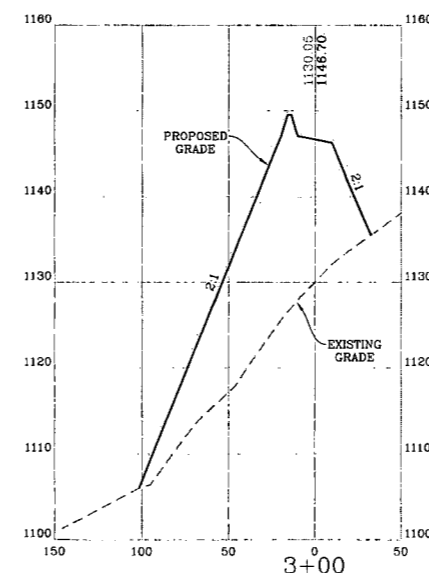
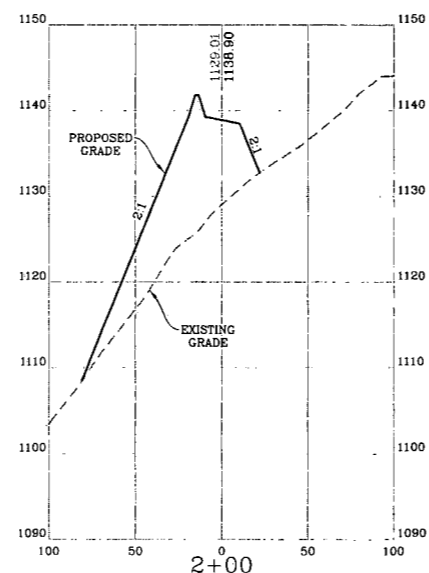
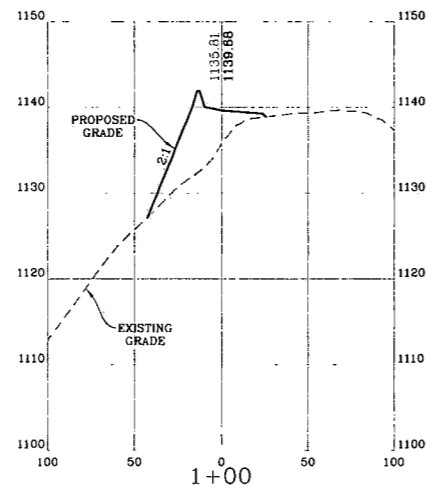
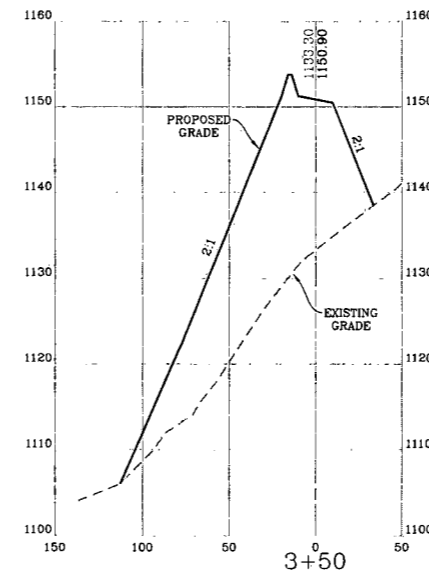
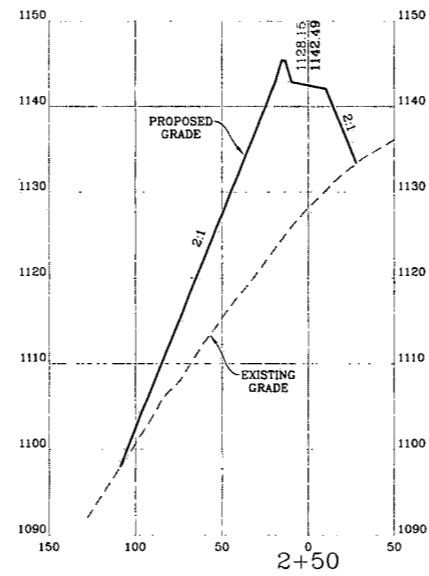
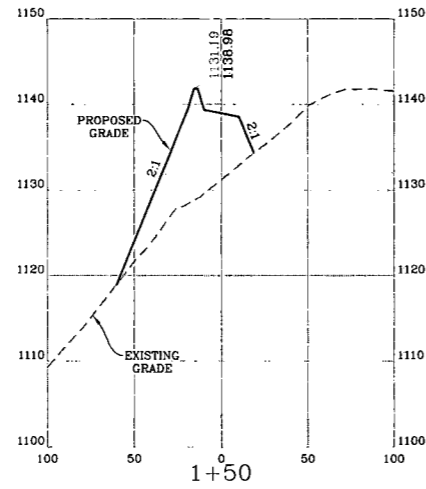
ROAD SECTIONS
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

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FILE NO. 7982
SHEET 9 OF 16
REV: 11/22/2013

ROAD SECTIONS

ACCESS ROAD "B" CROSS-SECTIONS

SCALE: HORIZ. 1" = 50' VERT. 1" = 10'



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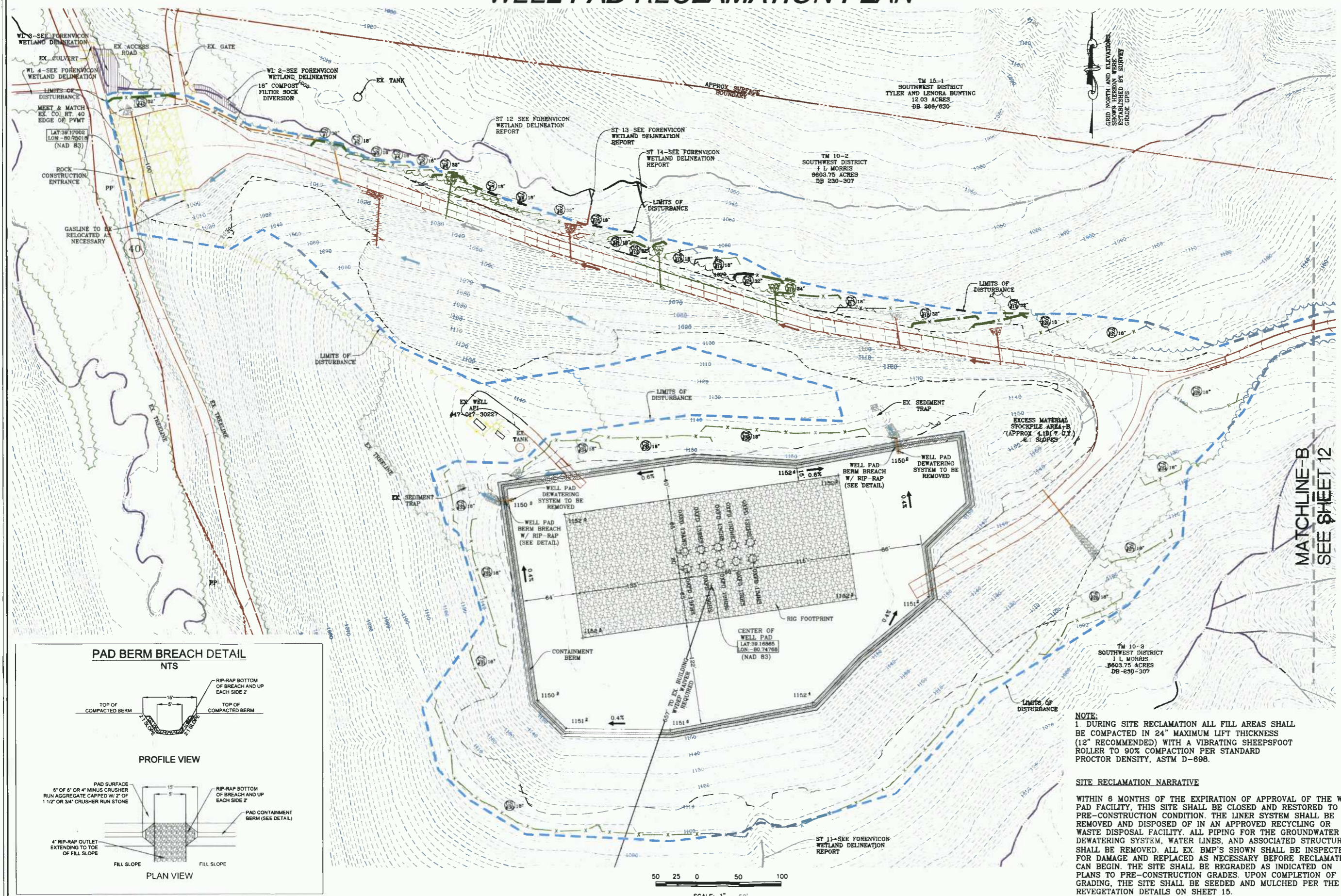


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ROAD SECTIONS
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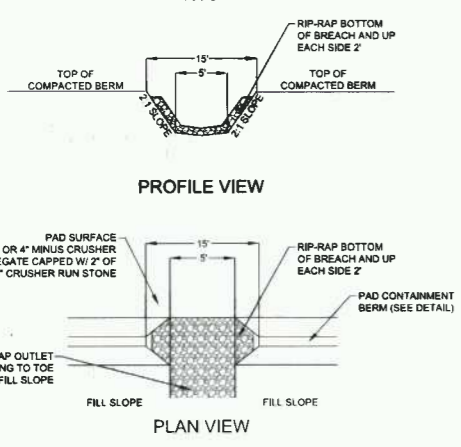
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SHEET 10 OF 16
REV: 11/22/2013

WELL PAD RECLAMATION PLAN



MATCHLINE-B
SEE SHEET 12

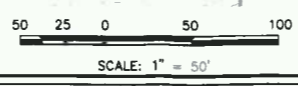
PAD BERM BREACH DETAIL NTS



NOTE:
1 DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D-698.

SITE RECLAMATION NARRATIVE

WITHIN 6 MONTHS OF THE EXPIRATION OF APPROVAL OF THE WELL PAD FACILITY, THIS SITE SHALL BE CLOSED AND RESTORED TO A 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 EX 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 SEED AND MULCHED PER THE REVEGETATION DETAILS ON SHEET 15.



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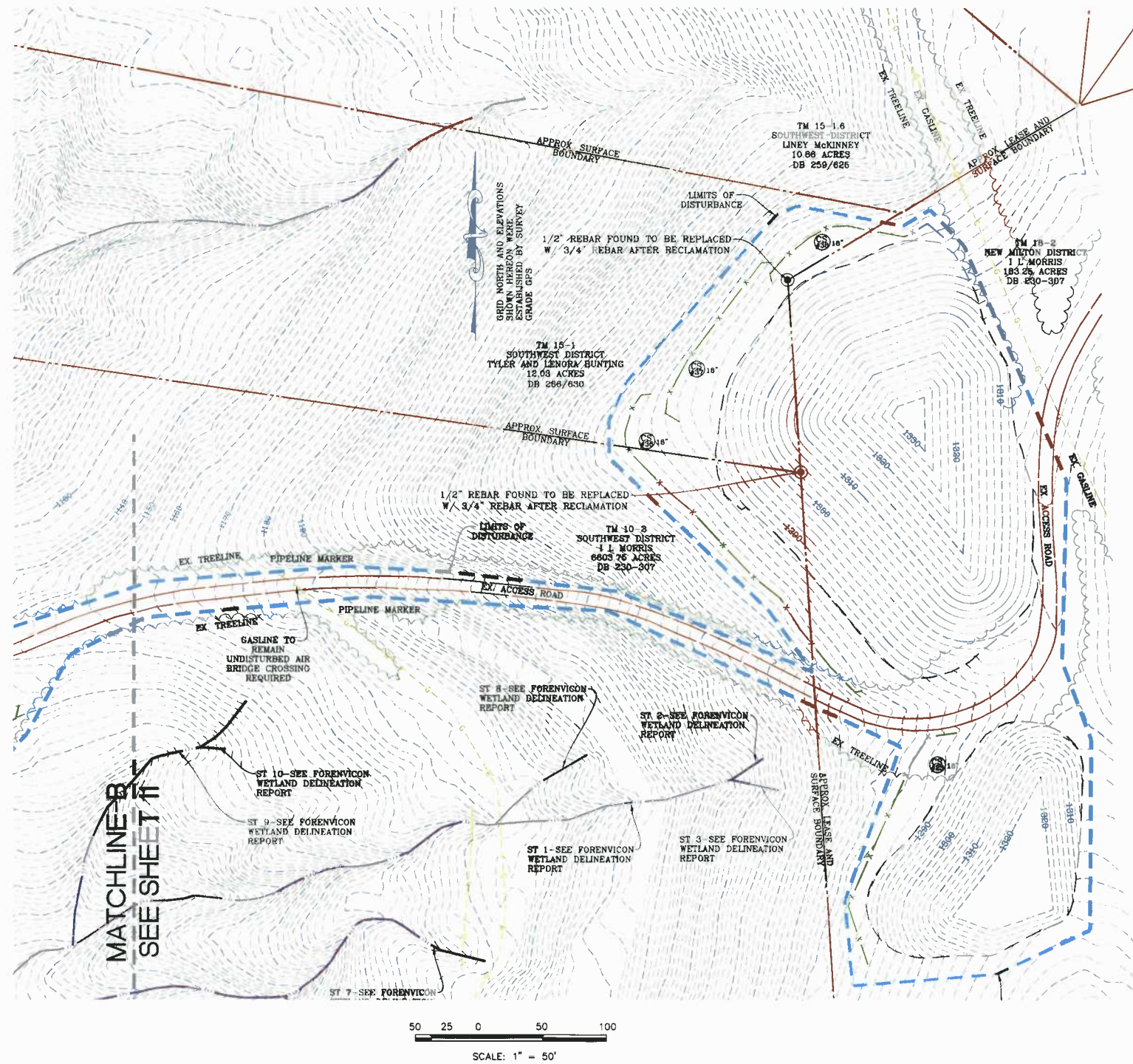


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WELL PAD RECLAMATION PLAN
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: 1" = 50'
DESIGNED BY: CSK
FILE NO. 7982
SHEET 11 OF 16
REV: 11/22/2013

STOCKPILE RECLAMATION PLAN



NOTE:
 1. DURING SITE RECLAMATION ALL FILL AREAS SHALL BE COMPACTED IN 24" MAXIMUM LIFT THICKNESS (12" RECOMMENDED) WITH A VIBRATING SHEEPSFOOT ROLLER TO 90% COMPACTION PER STANDARD PROCTOR DENSITY, ASTM D-698.

SITE RECLAMATION NARRATIVE

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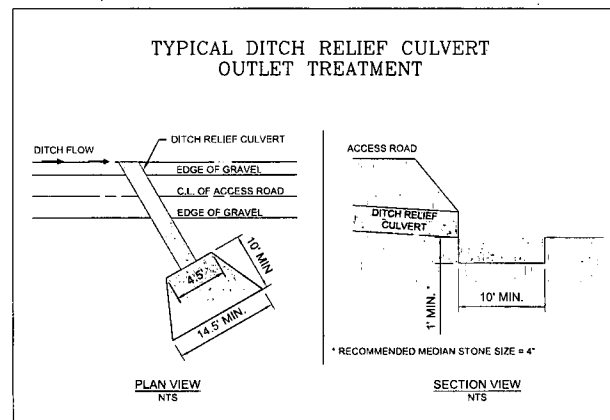
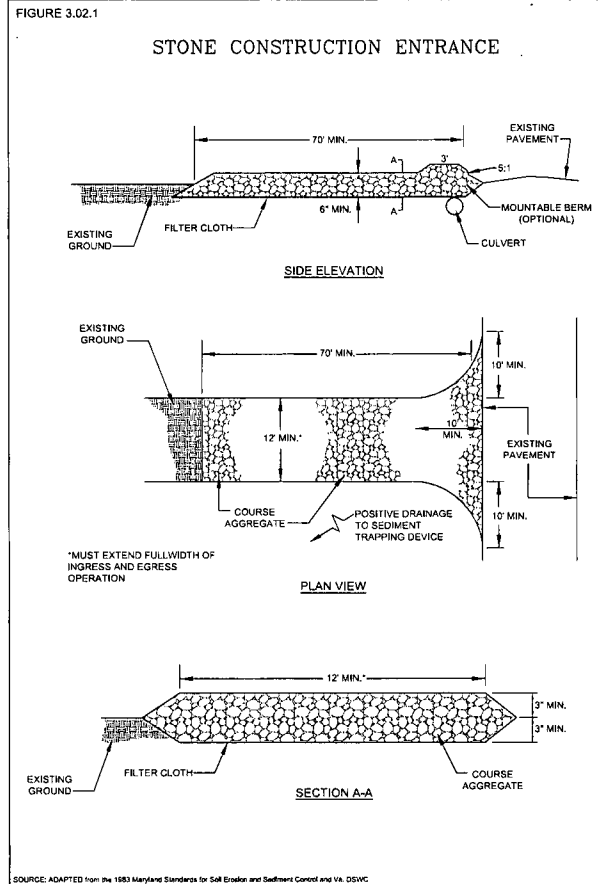
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STOCKPILE RECLAMATION PLAN
OXFD 13
 SOUTHWEST DISTRICT
 DODDRIDGE COUNTY, WV

DATE: 11/14/2013
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 FILE NO. 7982
 SHEET 12 OF 16
 REV: 11/22/2013



NOTE:
ALL DITCH LINE PROTECTION SHALL BE INSTALLED AS RECOMMENDED IN THE WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL. DITCH LINE PROTECTION SHALL BE ROCK LINED.
IF HIGH EROSION SOILS ARE ENCOUNTERED DURING CONSTRUCTION, THE ENGINEER SHOULD BE CONTACTED FOR FURTHER EVALUATION.

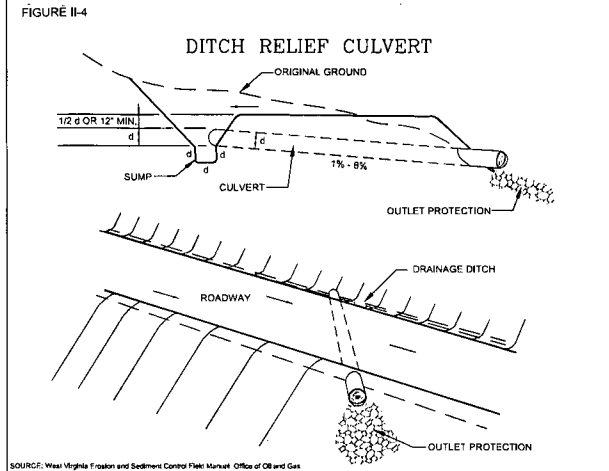
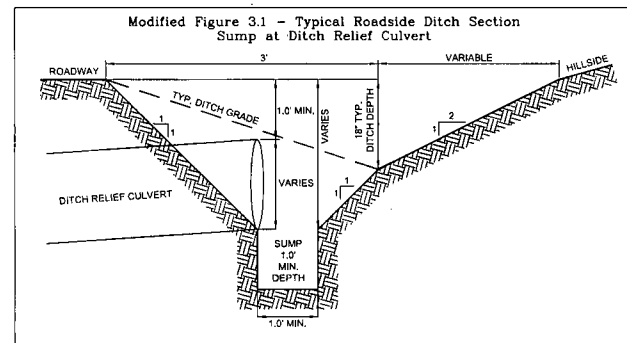
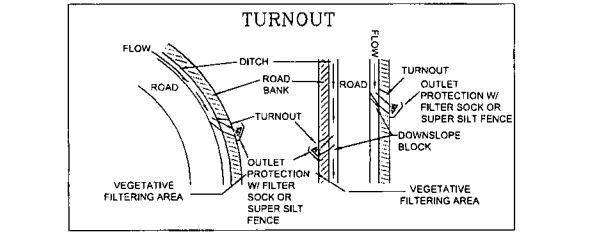
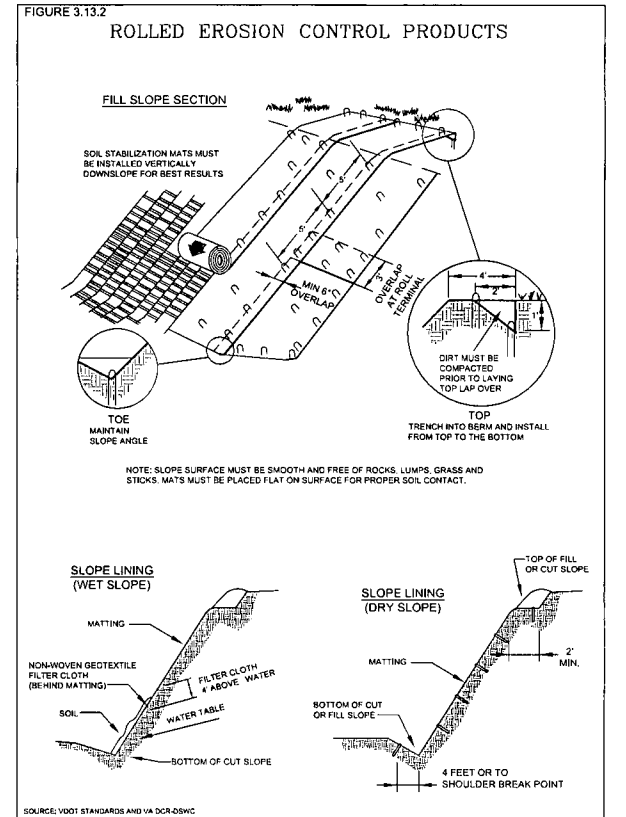
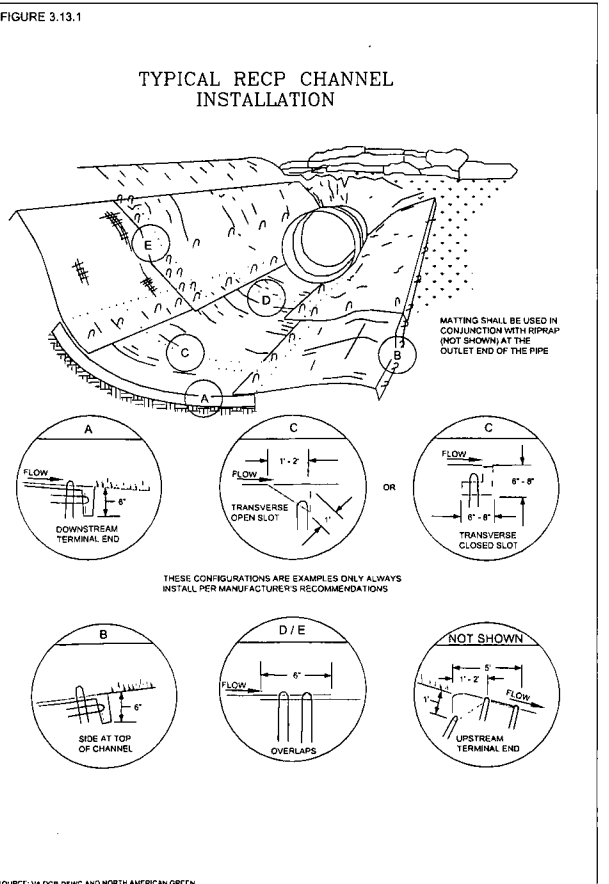
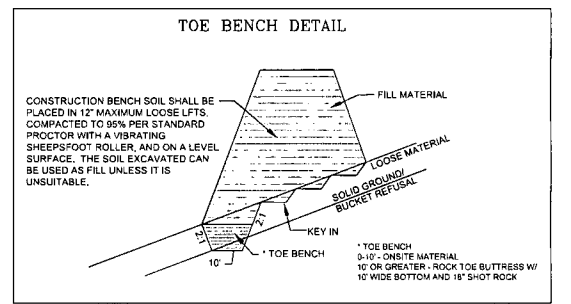
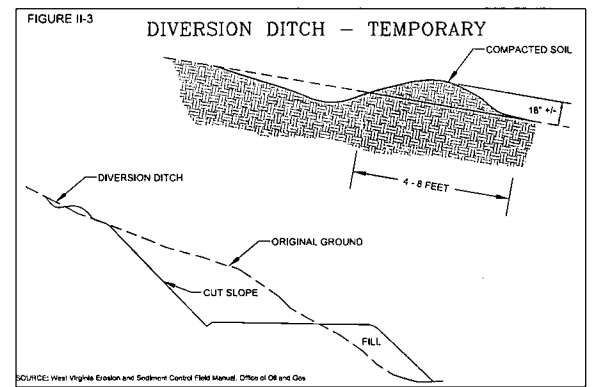
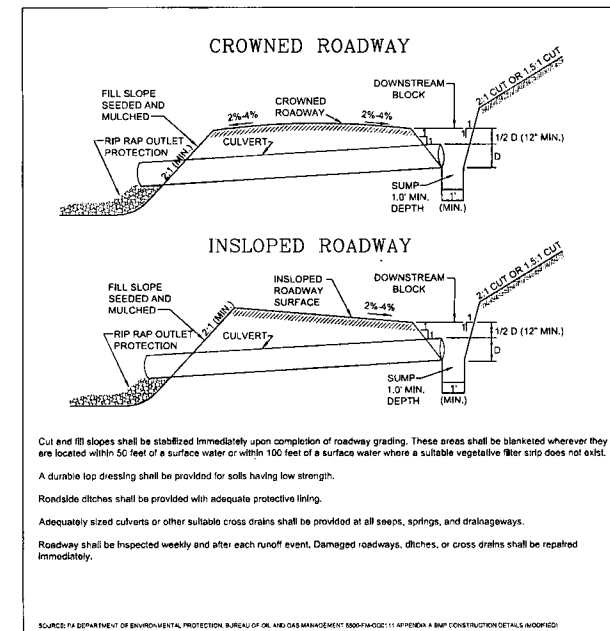
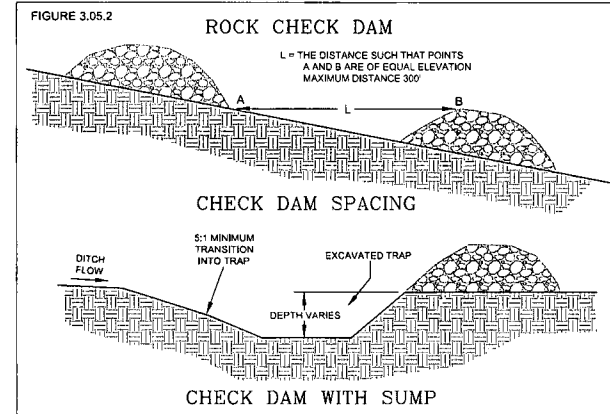
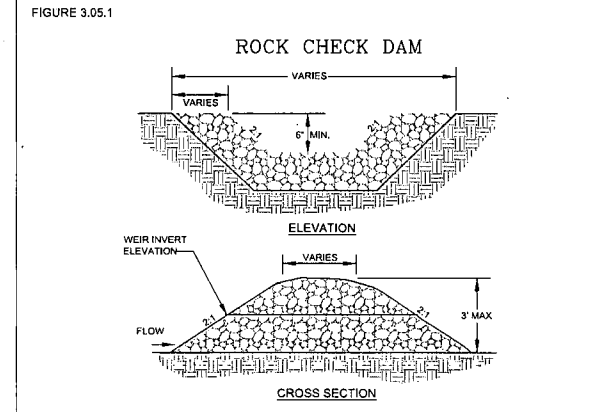


Table II-5
Pipe Sizes for Culverts Across Roads

Drainage Area (Ac)	Pipe Diameter (in)	Pipe Capacity (Cfs)
10	15	5
20	18	8
30	21	12
50	24	18
80	27	24
100	30	29
300	36	60
500	42	85

Table II-6
Spacing of Culverts

Road Grade %	Distance (Ft)
2-5	500-300
6-10	300-200
11-15	200-100
16-20	100



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REGISTERED PROFESSIONAL ENGINEER
STATE OF VIRGINIA
112212001

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FOR: CNX GAS COMPANY, LLC

CONSTRUCTION DETAILS
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: N/A
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FILE NO. 7982
SHEET 13 OF 16
REV: 11/22/2013

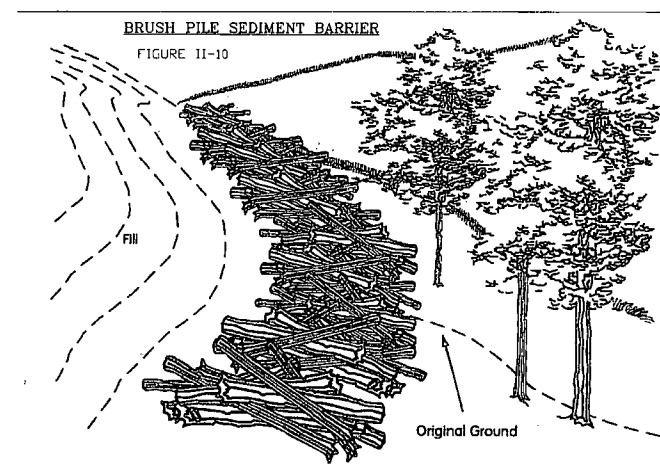
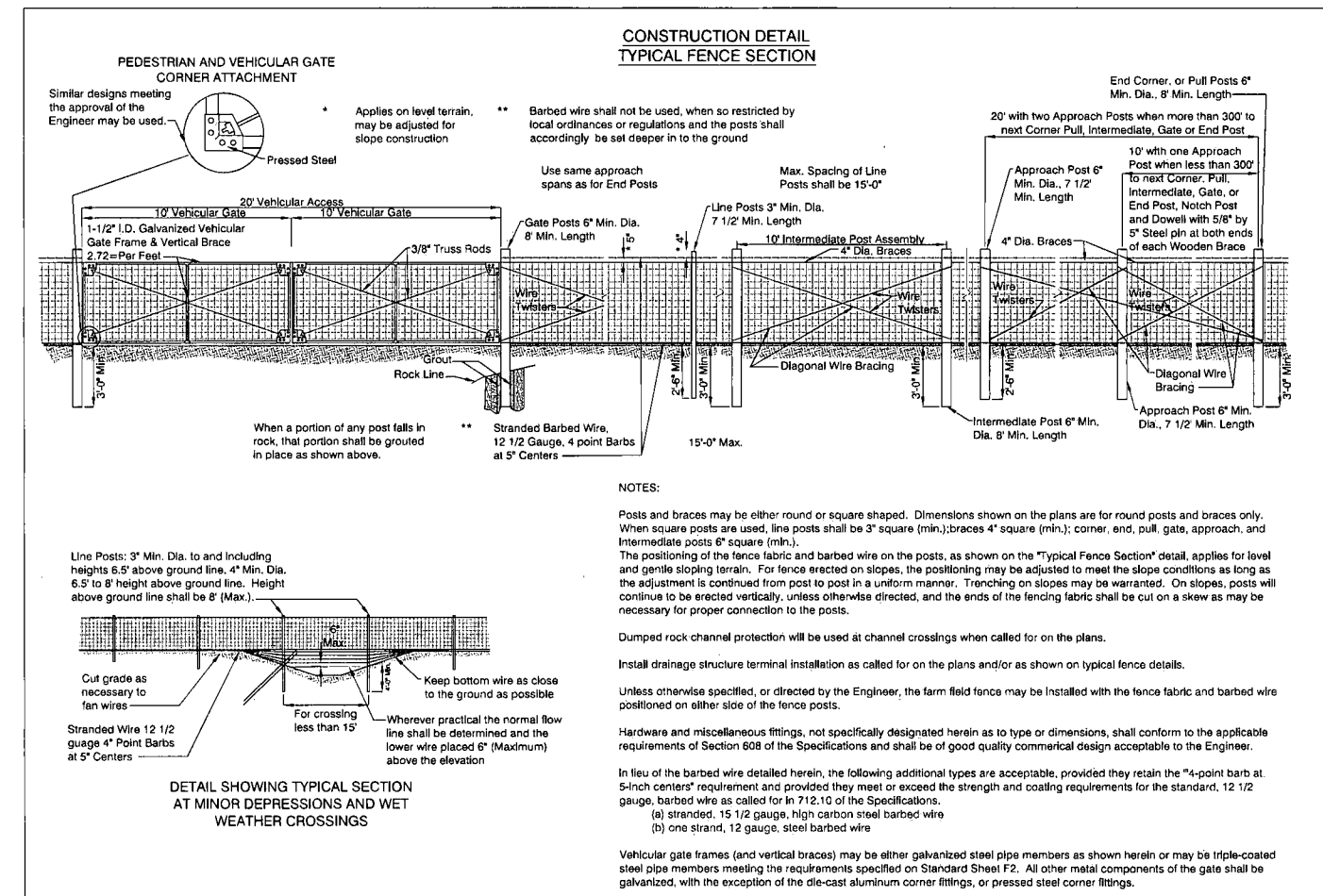
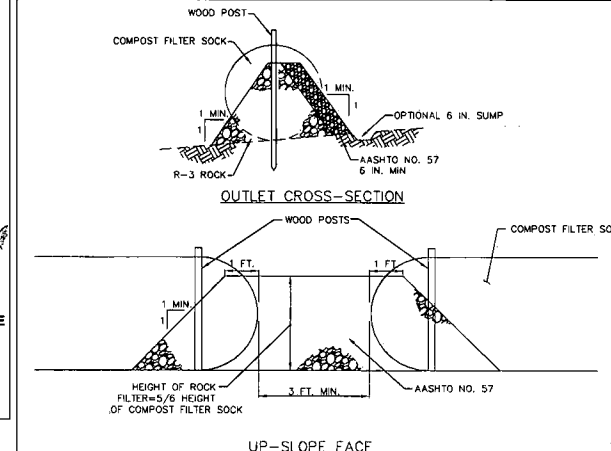
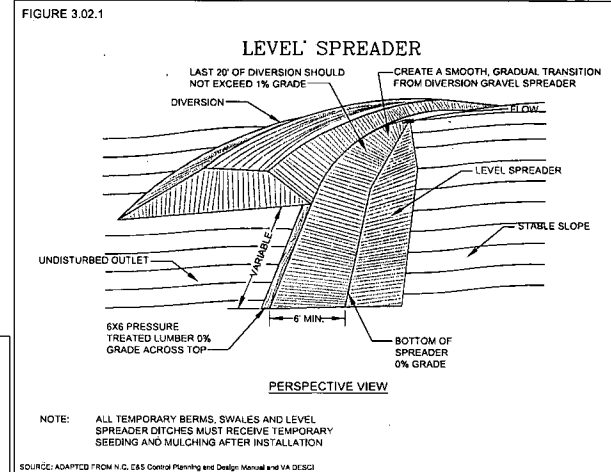
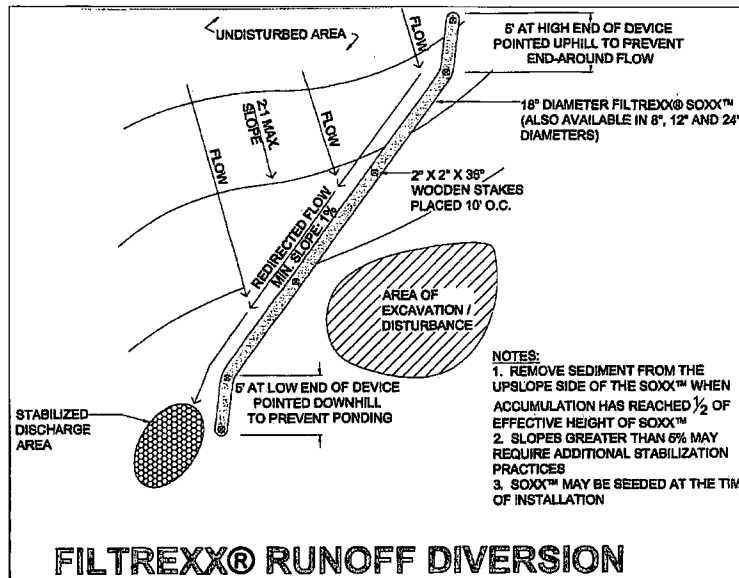
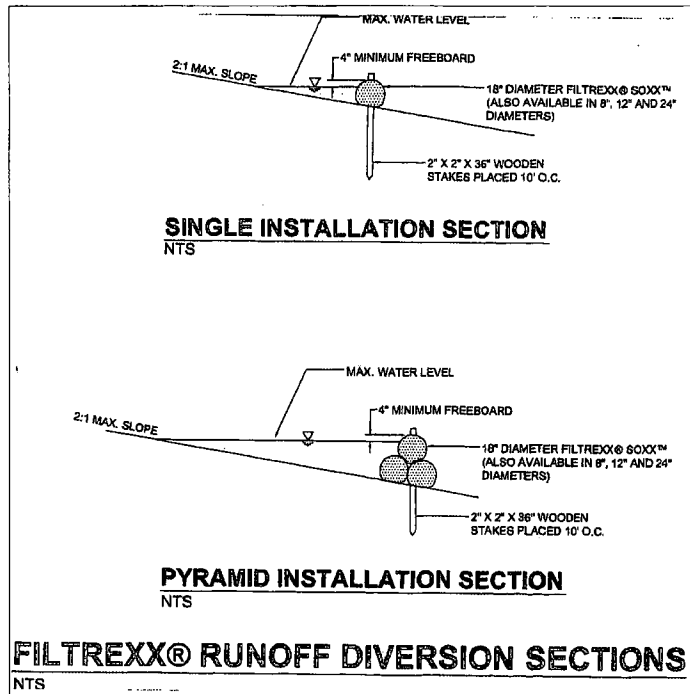
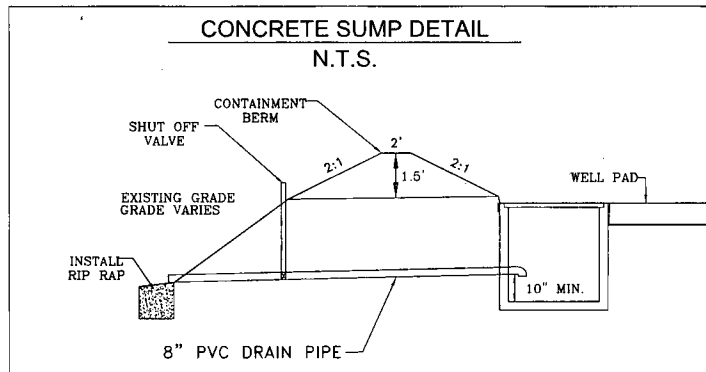
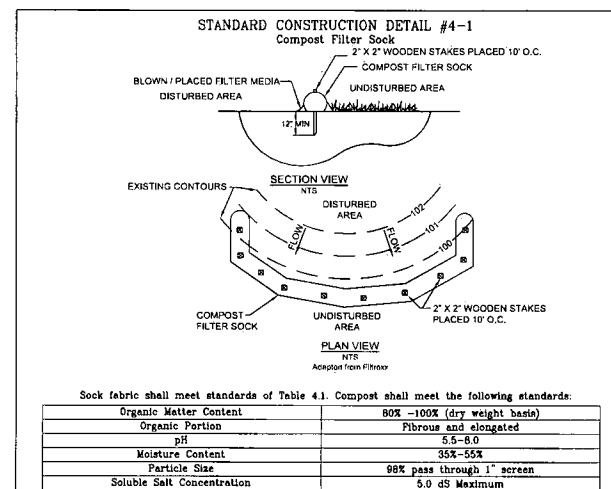


Table 4.1
Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE		5 mil HDPE		Multi-Filament Polypropylene (MFFP)		Heavy Duty Multi-Filament Polypropylene (HDMFFP)	
	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable	Photo-degradable	Photo-degradable	
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable	Photo-degradable	Photo-degradable	
Mesh Opening	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	
Tensile Strength	28 psi	28 psi	28 psi	44 psi	44 psi	202 psi	202 psi	
Ultraviolet Stability X Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.	23% at 1000 hr.	100% at 1000 hr.	100% at 1000 hr.	100% at 1000 hr.	100% at 1000 hr.	
Minimum Functional Longevity	6 months	9 months	6 months	1 year	1 year	2 years	2 years	

NOTES:
A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A COMPOST FILTER SOCK HAS OCCURRED DUE TO CONCENTRATED FLOW.
SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.



Compost Filter Sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up the slope at 45 degrees to the main sock alignment. Maximum slope length above any sock shall not exceed manufacturer's maximum permissible slope length.
Traffic shall not be permitted to cross filter socks.
Accumulated Sediment shall be removed when it reaches 1/2 the above ground height of the sock and disposed in the manner described elsewhere in the plan.
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.
Biodegradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.
Upon stabilization of the area tributary to the sock, stakes shall be removed. The mesh 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.
In the event the ground is frozen, #5 rebar with safety caps shall be used instead of wooden stakes to anchor the filter sock. Once the ground thaws the rebar anchors shall be removed and replaced with 2 inch x 2 inch wooden stakes and installed as shown in the detail above.

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STATE OF KY
11228202

THIS DOCUMENT WAS PREPARED BY:
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FOR: CNG GAS COMPANY, LLC

CONSTRUCTION DETAILS
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: N/A
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FILE NO. 7982
SHEET 14 OF 16
REV: 11/22/2013

REVEGETATION
Taken from the
West Virginia Erosion and Sediment Control Field Manual
West Virginia Division of Environmental Protection Office of Oil and Gas
Charleston, W.Va.
Section IV

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 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. Assume 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 time of seedbed preparation.

c. Permanent Seed Mixtures
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 italic are suitable for use in filter strips.

d. Seeding for Wildlife Habitat
Consider the use of the 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 seeding 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 immediately following seeding. Mulches conserve desirable soil properties, reduce soil moisture loss, prevent crusting and sealing of the soil surface and provide a suitable microclimate for seed germination. Areas that cannot be seeded because of the season 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 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 stepping the mulch netting in the soil.

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 likely
October 1 - December 1	HIGH RISK - freeze damage to young seedlings
December 1 - March 1	Good seeding period. Dormant seeding

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
Sundagrass	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 - 11/15	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 4a Permanent Seeding Mixture

Species/Mixture	Seeding Rate (lbs/acre)	Soil/Drainage preference	pH Range
Crownvetch / Tall Fescue	10 - 15	Well - Mod. Well	5.0 - 7.5
Crownvetch / Perennial Ryegrass	10 - 15	Well - Mod. Well	5.0 - 7.5
Flatpea or Perennial Pea / Tall Fescue	20	Well - Mod. Well	4.0 - 8.0
Ladino Clover / Serecia Lespedeza / Tall Fescue	15	Well - Mod. Well	4.5 - 7.5
Ladino Clover / Redtop	30	Well - Mod. Well	5.0 - 7.5
Serecia Lespedeza / Tall Fescue	25	Well - Mod. Well	4.5 - 7.5
Ladino Clover / Redtop	3	Well - Mod. Well	5.0 - 7.5
Crownvetch / Tall Fescue	10	Well - Mod. Well	5.0 - 7.5
Redtop	20	Well - Mod. Well	5.0 - 7.5
Tall Fescue / Birdsfoot Trefoil / Redtop	10	Well - Mod. Well	5.0 - 7.5
Serecia Lespedeza / Tall Fescue / Redtop	3	Well - Mod. Well	4.5 - 7.5
Tall Fescue / Redtop	30	Well - Mod. Well	5.0 - 7.5
Creeping Red / Tall Fescue	50	Well - Poorly	4.5 - 7.5
Perennial Ryegrass / Tall Fescue	10	Well - Poorly	5.8 - 8.0
Lathco Flatpea *	15	Well - Poorly	5.8 - 8.0

* 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 timeframe, add 50% more seed to the specified rate.
Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

Table 4b Wildlife and Farm Friendly Seed Mixtures

Species/Mixture	Seeding Rate (lbs/acre)	Soil/Drainage preference	pH Range
KY Bluegrass / Redtop	20	Well - Mod. Well	5.5 - 7.5
Ladino Clover or Birdsfoot Trefoil	3 / 10	Well - Mod. Well	5.5 - 7.5
Timothy / Alfalfa	5 / 12	Well - Mod. Well	6.5 - 8.0
Timothy / Birdsfoot Trefoil	5 / 8	Well - Poorly	5.5 - 7.5
Orchardgrass / Ladino Clover / Redtop	10 / 2 / 3	Well - Mod. Well	5.5 - 7.5
Orchardgrass / Ladino Clover	10 / 2	Well - Mod. Well	5.5 - 7.5
Orchardgrass / Perennial Ryegrass	20 / 10	Well - Mod. Well	5.5 - 7.5
Creeping Red Fescue / Perennial Ryegrass	30 / 10	Well - Mod. Well	5.5 - 7.5
Orchardgrass or KY Bluegrass	20	Well - Mod. Well	6.0 - 7.5
Birdsfoot Trefoil / Redtop	10 / 5	Well - Mod. Well	5.5 - 7.5
Orchardgrass / Lathco Flatpea */ Perennial Ryegrass	20 / 30	Well - Mod. Well	5.5 - 7.5
Lathco Flatpea */ Orchardgrass	30 / 20	Well - Mod. Well	5.5 - 7.5

* 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 timeframe, add 50% more seed to the specified rate.
Mixtures listed in bold are suitable for use in shaded woodland settings; those in italics are suitable for use in filter strips.

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.

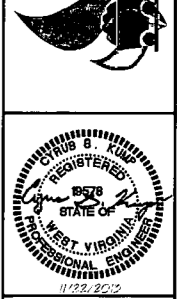
Table IV-6 Mulch Materials Rates and Uses

Material	Minimum Rates per acre	Coverage	Remarks
Hay or Straw	2 to 3 Tons	Cover 75% to 90% of Surface	Subject to wind blowing or washing unless tied down
Wood Fiber	1000 to 1500 lbs	Cover all	For hydroseeding
Pulp Fiber		Disturbed Areas	
Wood - Cellulose			
Recirculated Paper			

Tables IV 1-4 taken from Natural Resources Conservation Service Manual 'Critical Area Planting'

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THIS DOCUMENT WAS PREPARED BY:
NAVITUS ENGINEERING INC.
FOR: CNX GAS COMPANY, LLC

CONSTRUCTION DETAILS
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: N/A
DESIGNED BY: CSK
FILE NO. 7982
SHEET 15 OF 16
REV: 11/22/2013

WELL PAD SITE: OXFD-13				
Item Description	Quantity	Unit	Unit Cost	Item Total
1.0 Clearing and Grubbing				
1.a Tree Clearing	11.5	AC	\$	\$
1.b. Mowing	4.9	AC	\$	\$
2.0 Compost Filter Sock				
2.a. 12" Compost Filter Sock		LF	\$	\$
2.b. 18" Compost Filter Sock	3,679	LF	\$	\$
2.c. 24" Compost Filter Sock	81	LF	\$	\$
2.d. 32" Compost Filter Sock	500	LF	\$	\$
2.e. Compost Sock Diversion	184	LF	\$	\$
3.0 Aggregate Surfacing *				
3.a. Pad 12" of 0"-6" Aggregate (Compacted to 10")	8,502	TONS	\$	\$
3.b. Pad 4" of 3/4" Crusher Run (Compacted to 2")	1,176	TONS	\$	\$
3.c. Access Road 12" of 0"-6" Aggregate (Compacted to 10")	2,615	TONS	\$	\$
3.d. Access Road 4" of 3/4" Crusher Run (Compacted to 2")	1,017	TONS	\$	\$
3.e. Geotextile	4,754	SY	\$	\$
4.0 Coconut Slope Matting				
	21,852	SY	\$	\$
5.0 Seed & Mulch				
	11.8	AC	\$	\$
6.0 Ditch Lining				
6.a. Ditch Fabric	1,182	SY	\$	\$
6.b. R-3	295	TONS	\$	\$
7.0 CMP Culvert				
7.a. 4"	37	LF	\$	\$
7.b. 15"	500	LF	\$	\$
7.c. 18"		LF	\$	\$
7.d. 42"		LF	\$	\$
7.e. 48"		LF	\$	\$
7.f. 60"		LF	\$	\$
7.g. Sump Drains	2	EA	\$	\$
8.0 Excavation				
8.a. Drilling Pad (Cut w 10% Swell)	48,620	CY	\$	\$
8.b. Access Road (Cut w 10% Swell)	25,279	CY	\$	\$
8.c. Topsoil (12")	14,180	CY	\$	\$
9.0 Ditch Length				
	1,222	LF	\$	\$
10.0 Rip Rap Aprons				
	151	TONS	\$	\$
11.0 Rip Rap Weir				
	11	TONS	\$	\$
12.0 Keyway Excavation (Toe Length x 12' Width x 8' Depth)				
	13,368	CY	\$	\$

*Gravel quantities shown have been increased by 10%

NOTE:

1. THE SQUARE YARDAGE FOR THE GEOTEXTILE FABRIC, COCONUT MATTING, AND THE LINER SYSTEM DO NOT ACCOUNT FOR MATERIAL OVERLAP AND WASTE.

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THIS DOCUMENT WAS
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COMPANY, LLC

MATERIAL QUANTITIES
OXFD 13
SOUTHWEST DISTRICT
DODDRIDGE COUNTY, WV

DATE: 11/14/2013
SCALE: 1" = 50'
DESIGNED BY: CSK
FILE NO. 7982
SHEET 16 OF 16
REV: 11/22/2013