

Doddridge County Sheriff
Flood Plain Ordinance Fund

1012
69-217/515

DATE July 2, 2013

PAY TO THE ORDER OF ANTERO RESOURCES

\$ 5,662.89

Five Thousand Six Hundred Sixty-Two Dollars and 89/100 -----

DOLLARS  Security features included. Details on back.



Ralph Sandora
Beth A. Rogers
MP

MEMO #13-017 Chestnut Pad Reimbursement

⑈001012⑈ ⑈051502175⑈ 1196499⑈



ANTERO RESOURCES APPALACHIAN
 1625 17th STREET, SUITE 300
 DENVER, COLORADO 80202

Vendor Name	Vendor No.	Date	Check Number	Check Total
DODDRIDGE COUNTY COMMISSION	43312	Jun-18-2013	31799	\$5,908.30

VOUCHER	VENDOR INV #	INV DATE	TOTAL AMOUNT	PRIOR PMTS & DISCOUNTS	NET AMOUNT
06-AP-8196	CHESTNUTPAD	06/18/13	5,908.30	0.00	5,908.30
FLOOD PLAIN PERMIT - CHESTNUT PAD					
TOTAL INVOICES PAID					5,908.30

By: BH - MEH - AML
 Asst. Chief Tax Deputy

Michael Headley
 Sheriff of Doddridge County

The Person paying Money into the Treasury shall forthwith file one of these Receipts with the County Clerk

Doddridge County, West Virginia

No. 4774

Date: June 25, 2013
 Customer copy

Received: #13-017 Antero Resources \$5,908.30

In Payment For: 318 Building Permits (LP)

For: 12-Flood Plain Ordinanc Fund #20 Fund

By: BH - MEH - AML
 Asst. Chief Tax Deputy

Michael Headley
 Sheriff of Doddridge County

Doddridge County Flood Plain Refund Calculator (if not in Flood Plain)**Chestnut Pad**

Estimated Construction Costs	881,659.00
Amount over \$100,000	781,659.00
Drilling Oil and Gas Well Fee	1,000.00
Deposit for additional charges	1,000.00
\$5 per \$1,000 over \$100,000	3,908.30
Amount Due with application	5,908.30
95% of Application Fee minus \$1,000 deposit	4,662.88
Cost for Permit	245.41
Total Refund (Includes 100% of 1,000 deposit)	\$5,662.88



June 21, 2013

Doddridge County Commission
Attn: Dan Wellings, Doddridge County Floodplain Manager
118 East Court Street, Room 102
West Union, WV 26456

Antero Resources
1625 17th Street
Denver, Colorado 80202
Office 303.357.7310
Fax 303.357.7315

Mr. Wellings:

Antero Resources Appalachian Corporation (Antero) would like to submit a Doddridge County Floodplain permit application for our Chestnut Drill Pad. Our project is located in Doddridge County, Greenbrier District and per FIRM map #54017C0130C, this location is not within the floodplain.

Attached you will find the following:

- Doddridge County Floodplain Permit Application
- FIRM Map
- A detailed set of plans signed by a WV licensed professional engineer
- Site Safety Plan

If you have any questions please feel free to contact me at (303) 357-6820.

Thank you in advance for your consideration.

Sincerely,

Shauna Redican
Permit Representative
Antero Resources Appalachian Corporation

Enclosures

2013 JUN 25 PM 2:49
COUNTY CLERK
DODDRIDGE COUNTY, WV

DODDRIDGE COUNTY FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

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 June 21, 2013

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.

Antero Resources Appalachian Corporation - Shauna Redican,
Permit Representative

APPLICANT'S NAME:

ADDRESS: 1625 17th Street, Denver, CO 80202

TELEPHONE NUMBER: Contact Shauna Redican: 303-357-6820

BUILDER'S NAME: Antero Resources Appalachian Corporation

ADDRESS: 1625 17th Street, Denver, CO 80202

TELEPHONE NUMBER: (303) 357-7310

ENGINEER'S NAME: White Brothers Consulting, LLC - Timothy T. White

ADDRESS: 447 Call Road, Suite 216, Charleston, WV 25312

TELEPHONE NUMBER: 304-550-9484

PROJECT LOCATION:

NAME OF SURFACE OWNER/OWNERS (IF NOT THE APPLICANT) See Attached Exhibit A

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

See Attached Exhibit A

DISTRICT: Central

DATE/FROM WHOM PROPERTY

PURCHASED: N/A

LAND BOOK DESCRIPTION:

DEED BOOK REFERENCE: See Attached Exhibit A

TAX MAP REFERENCE: See Attached Exhibit A

EXISTING BUILDINGS/USES OF PROPERTY: None

NAME OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY Denzil F. Pratt

ADDRESS OF AT LEAST ONE ADULT RESIDING IN EACH RESIDENCE LOCATED UPON THE SUBJECT PROPERTY RR 1, Box 359, Salem, WV 26426

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

ACTIVITY

STRUCTURAL TYPE

- | | | | |
|--------------------------|-------------------------|--------------------------|----------------------------------|
| <input 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:

- | | | | | | | | |
|-------------------------------------|---|--------------------------|--------|---|----------|--------------------------|------------|
| <input checked="" type="checkbox"/> | Fill | <input type="checkbox"/> | Mining | <input checked="" type="checkbox"/> | Drilling | <input type="checkbox"/> | Pipelining |
| <input checked="" type="checkbox"/> | Grading | | | | | | |
| <input type="checkbox"/> | Excavation (except for STRUCTURAL DEVELOPMENT checked above) | | | | | | |
| <input type="checkbox"/> | Watercourse Altercation (including dredging and channel modification) | | | | | | |
| <input checked="" type="checkbox"/> | Drainage Improvements (including culvert work) | | | | | | |
| <input checked="" type="checkbox"/> | Road, Street, or Bridge Construction | | | | | | |
| <input type="checkbox"/> | Subdivision (including new expansion) | | | *Access Road Construction as shown on page 10 of attached Chestnut Pad Design | | | |
| <input type="checkbox"/> | Individual Water or Sewer System | | | | | | |
| <input type="checkbox"/> | 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 INDICATING BUILDING SETBACKS, SIZE & HEIGHT. IDENTIFY EXISTING BUILDINGS, STRUCTURES OR LAND USES ON THE PROPERTY.
- 3. SIGN AND DATE THE SKETCH.**

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 \$ 881,659.00

*See attached Floodplain Calculation Fee

D. ADJACENT AND/OR AFFECTED LANDOWNER

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: N/A
 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: N/A
 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.

Chesnut Pad Doddridge County Floodplain Permit – Exhibit A

Surface Owner Name	Address	Deed/Page	Tax Map/ Parcel
Denzil F. Pratt	RR 1 Box 359, Salem, WV 26426	DB 202/227, 195/395	TM 5, Pcl 10, 19 and 20
Robert J. Smith	2725 Canton Rd., West Union, WV 26456	DB 245, Pg 324	TM 5, Pcl 9
Trustees of Chestnut Grove Church, c/o Jennings J. Thompson (Trustee)	PO Box 205, Smithburg, WV 26436	DB 183, Pg 581	TM 5, Pcl 30 and 30.1

- (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): Anthony Smith
 SIGNATURE: [Handwritten Signature] DATE: 6/24/13

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: 130
 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)

Unavailable

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

See section 4 for additional instructions.

SIGNED Don Kellings

DATE 06/25/2013

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 proffing 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 Dan Wellings DATE 06/25/2013

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: 13-017

PERMIT DATE: 6/25/2013


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** 06/25/2013

ANTERO RESOURCES APPALACHIAN CORPORATION

CHESTNUT PAD

SCHEDULE OF QUANTITIES

CLEARING & GRUBBING; EROSION & SEDIMENT CONTROLS				
	QUANTITY	UNIT		
MOBILIZATION	1.0	EA	\$19,140.00	\$19,140.00
CONSTRUCTION ENTRANCE	1.0	EA	\$3,172.76	\$3,172.76
CLEARING & GRUBBING	19.0	AC	\$4,513.25	\$85,751.75
TREE REMOVAL	16.9	AC	\$2,953.00	\$49,905.70
8" COMPOST FILTER SOCK	0.0	LF		\$0.00
12" COMPOST FILTER SOCK	0.0	LF		\$0.00
18" COMPOST FILTER SOCK	0.0	LF		\$0.00
24" COMPOST FILTER SOCK	1,329.0	LF	\$9.23	\$12,266.67
SUPER SILT FENCE	3,230.0	LF	\$8.48	\$27,390.40
9" STRAW WATTLES	0.0	LF		\$0.00
TOTAL				\$197,627.28
SITE				
	QUANTITY	UNIT		
DRILL PAD EXCAVATION	98,325.0	CY	\$3.75	\$368,718.75
ACCESS ROADS EXCAVATION	23,974.0	CY	\$4.16	\$99,731.84
SPOIL PAD EXCAVATION	9,304.0	CY	\$4.13	\$38,425.52
TOPSOIL	7,670.0	CY	\$4.09	\$31,370.30
DIVERSION DITCH	820.0	LF	\$4.50	\$3,690.00
ROADSIDE DITCH	1,050.0	LF	\$3.99	\$4,189.50
TOTAL				\$546,125.91
SUMP(S) PER ANTERO RESOURCES STANDARD DETAIL				
	QUANTITY	UNIT		
INSTALL 102" x 78" x 44" PRE CAST SUMP	4.0	EA	\$844.22	\$3,376.88
VALVE BOX HDPE PIPE (MINIMUM 12" DIAMETER x 48" HEIGHT)	4.0	EA	\$545.50	\$2,182.00
4" PVC CONNECTIVE PIPE (ANTERO SUMP DRAIN DETAIL)	50.0	LF	\$9.42	\$471.00
TOTAL				\$6,029.88
AGGREGATE SURFACING - SPREADING, COMPACTION, and/or INSTALLATION				
	QUANTITY	UNIT		
DRILL PAD AASHTO #1 (8" THICK)	2,960.0	TON	\$2.59	\$7,666.40
DRILL PAD 1 1/2" or 3/4" CRUSHER RUN STONE (2" THICK)	740.0	TON	\$2.89	\$2,138.60
DRILL PAD GEOTEXTILE FABRIC (US 200)	6,620.0	SY	\$1.06	\$7,017.20
ACCESS ROADS 6" OR 4" MINUS CRUSHER RUN AGGREGATE (8" THICK)	8,715.0	TON	\$2.83	\$24,663.45
ACCESS ROAD 1 1/2" OR 3/4" CRUSHER RUN STONE (2" THICK)	2,175.0	TON	\$2.95	\$6,416.25
ACCESS ROADS GEOTEXTILE FABRIC (US 200)	19,505.0	SY	\$1.02	\$19,895.10
*INSTALL TENSAR TX190 GEOGRID or EQUIVALENT	1.0	SY		\$0.00
TANK PAD 6" OR 4" MINUS CRUSHER RUN AGGREGATE (8" THICK)	0.0	TON	\$2.43	\$0.00
TANK PAD 1 1/2" or 3/4" CRUSHER RUN AGGREGATE (2" THICK)	0.0	TON	\$2.56	\$0.00
TANK PAD GEOTEXTILE FABRIC (US 200)	0.0	SY	\$1.16	\$0.00
*INSTALL TENSAR TX190 GEOGRID or EQUIVALENT	1.0	SY		\$0.00
TOTAL				\$67,797.00
ROAD CULVERTS				
	QUANTITY	UNIT		
15" HDPE	0.0	LF		\$0.00
18" HDPE	89.0	LF	\$23.33	\$2,076.37
24" HDPE	0.0	LF		\$0.00
30" HDPE	0.0	LF		\$0.00
30" RCP	0.0	LF	\$50.00	\$0.00
42" HDPE	0.0	LF		\$0.00
48" HDPE	0.0	LF	\$60.00	\$0.00
60" HDPE	0.0	LF		\$0.00
R4 RIP RAP (INLETS/OUTLETS)	25.0	TON	\$35.69	\$892.25
AASHTO #1 STONE (DITCH CHECKS)	10.0	TON	\$61.10	\$611.00
DITCH LINING - (ACCESS ROAD) SYNTHETIC MATTING (TRM)*	800.0	SY	\$3.45	\$2,760.00
DITCH LINING - (ACCESS ROAD) RIP RAP	250.0	SY	\$26.28	\$6,570.00
TOTAL				\$12,909.62

ANTERO RESOURCES APPALACHIAN CORPORATION

CHESTNUT PAD

SCHEDULE OF QUANTITIES

FENCING/GATES				
	QUANTITY	UNIT		
4 FT WOVEN WIRE FARM FENCE w/MINIMUM 10 FT POST SPACING (WOODEN and/or "T" POST	0.0	LF		\$0.00
16 FT DOUBLE GATE	0.0	EA		\$0.00
TOTAL				\$0.00
SEEDING				
	QUANTITY	UNIT		
SITE SEEDING (LIME, FERTILIZER, SEEDING, AND HYDRO-MULCH w/TACK (HYC-2 OR EQUAL))	15.5	AC	\$3,301.25	\$51,169.38
TOTAL				\$51,169.38
UNFORESEEN SITE CONDITIONS				
	QUANTITY	UNIT		
*ROCK CLAUSE - BLASTING	1.0	CY		\$0.00
*ROCK CLAUSE - HOE RAMMING	1.0	CY		\$0.00
*FRENCH DRAINS	1.0	FT		\$0.00
*PHASE 1 FENCING - STEEL CORRUGATED PANELS w/"T" POST (10 FT CENTERS) - WETLAND PROTECTION	1.0	LF		\$0.00
*PHASE 2 FENCING - SILT FENCE AND OR FILTER SOCK OUTSIDE OF PHASE 3 FENCING - WETLAND PROTECTION	1.0	LF		\$0.00
*PHASE 3 FENCING - ORANGE SAFETY FENCE w/"T" POST (10FT CENTERS) - WETLAND PROTECTION	1.0	LF		\$0.00
*SILT FENCE	1.0	LF		\$0.00
*TEMPORARY SEEDING	1.0	AC		\$0.00
*CONSTRUCTION STAKEOUT	1.0	HOUR		\$0.00
* JUTE MATTING - SLOPE MATTING	1.0	SY		\$0.00
TOTAL				\$0.00
	GRAND TOTAL			\$881,659.07
ANTERO RESOURCES WILL SUPPLY THE FOLLOWING:				
102"X 78" X 44" PRE CAST SUMP				
VALVE FOR THE VALVE BOX HDPE PIPE				
AGGREGATE				
GEOTEXTILE FABRIC (US 200) OR EQUIVALENT				
TENSAR TX190 GEOGRID OR EQUIVALENT				
15" HDPE ROAD CULVERT				



Well Site Safety Plan

Antero Resources

Well Name: Mishka Unit 1H, McMillan Unit 1H and 2H,
Hoskinson Unit 1H and 2H

Pad Location: CHESTNUT PAD
Doddridge County/ Grant District

GPS Coordinates: Lat 39°21'47.85"/Long 80°43'16.23" (NAD83)

Driving Directions:

From the intersection of US-50 W and County Rd 50/73 near the town of Salem head west on US-50 for 2.9 miles. Turn right onto Co Route 3/Big Flint Rd for 8.6 miles. Lease road will be on your left.

Approval Sheet

The West Virginia Department of Environmental Protection Office of Oil and Gas has set forth minimum requirements for a Well Site Safety Plan which shall be submitted with each horizontal well application. A horizontal well shall be any well which meets the definition as provided for in Title 35, Series 8, Section 2.2 of the West Virginia Department of Environmental Protection Office of Oil and Gas.

Approved Safety Plans should be maintained and available at the drilling rig at all times and provided to the local emergency planning committee for the emergency planning district in which the well work will occur or to the county office of emergency services at least seven days before commencement of well work or site preparation work that involves any disturbance of land.

The Safety Plan, once approved, may only be modified upon approval by the West Virginia Department of Environmental Protection Office of Oil and Gas ("Office").

This plan has met the requirements of the West Virginia Department of Environmental Protection Office of Oil and Gas Well Site Safety Plan Standards.

Approved this day _____ of month _____, 20__ by

Date: _____

Date: _____

Plan Modification*

Revision No.	Description of Revision	Antero Preparer	Antero Reviewer/Approver	Agency Approval	Date

*The Office of Oil and Gas must approve all changes and modifications to previously approved plans.

Site Specific Safety Plan

Antero Resources

1.0 Siting Requirements

1.1. Exhibit 1 provides a plan view map showing the well location, access road, pits, flare lines, dwellings, and noting the north and prevailing wind directions.

1.2. Exhibit 2 also provides an area topographical map showing the well site location

2.0 Site Safety Plan

2.1. Safety Meeting

Safety meetings will be conducted as follows:

- Pre-Drilling,
- Pre-Completion,
- Pre-Workover
- Post Accident/Near Miss, and
- As-Needed.

Safety meetings should be held on-site weekly, at a minimum, prior to the beginning of operations, and:

- Includes personnel employed and involved in the operations, and
- Includes the District Oil and Gas Inspector (or other designated Office of Oil and Gas representative, for the pre-spud meeting only).

Typically, contractor of the operator will conduct these safety meetings with Antero Resources personnel participating as needed. Please list the above personnel as a record of attendance using the form found in Appendix A, or one similar. These records may be maintained separate from this plan.

2.2 Personnel and Visitor Log

This log is intended to provide a current headcount of all persons present at the site at any given time. All personnel and visitors must sign in upon entering the site and sign out upon departure. This log, or one similar, is provided in Appendix B and will be maintained at all times by the Drilling Supervisor or Toolpusher.

2.3 Evacuation Plan

The Drilling Supervisor or Toolpusher will establish a muster point at which all persons on site will assemble for personnel safety and verification of headcount. This point will be located at the entrance to the site.

In the event of an emergency requiring the evacuation of personnel, an audible or visual alarm will be sounded. The Drilling Supervisor and/or the Toolpusher will determine if local residents should be evacuated at this time depending on the outcome of their assessment of the situation.

If local resident evacuation is indicated, the Drilling Supervisor and/or the Toolpusher will be responsible for notifying the local impacted residents, or the local authorities will take this responsibility depending on the urgency, availability and direction of the local authorities. Local authorities have indicated that they will take this responsibility typically and will notify of evacuation mandates via television and radio media announcements in addition to public address units on patrol vehicles. In the event that Antero is directed to take this responsibility, notification will be by dispatching a worker to each affected residence to inform them of evacuation requirements and procedures. See section 8.1 for additional information.

Evacuated local residents may be temporarily housed in local hotels depending on the severity and duration of the emergency. Included in Exhibits 1 & 2 are maps and drawings that may assist in the emergency response and evacuation process.

The Drilling Supervisor and/or the Toolpusher will secure the Personnel and Visitor log before evacuating the site in order to perform a headcount at the muster point.

2.4 Emergency Response Personnel

Requesting public emergency response assistance for this location would be accomplished by the Drilling Supervisor or Toolpusher via telephone to Harrison County Dispatch which can be reached by dialing 911. From there, they will dispatch the appropriate and available emergency response agencies depending on the nature and extent of the emergency.

A list of Emergency Contacts, including Antero's 24 hour emergency contact telephone number, any contractors of the operator, the Department, the local oil and gas inspector, and local emergency response units are found in Appendix C. This list will be posted at the well site.

2.5 Local Schools and Public Facilities

In the event of an emergency requiring the evacuation of schools and public facilities the Drilling Supervisor or Toolpusher will make the required notifications unless the local public emergency responders take on this responsibility. Generally, local emergency responders have stated that they will assume this responsibility. Exhibit 3 lists all schools and public facilities, with their contact information, within a one-mile radius of the horizontal well location.

2.6 Material Safety Data Sheets

The Drilling Supervisor or Contractor of the Operator will maintain Material Data Safety Sheets (MSDS) for all materials and chemicals used on the well site. The MSDS sheets should be located in the Company Representatives Office on-site. Copies of the MSDS sheets may also be obtained from the area Safety Coordinator, the operator contact for maintaining MSDSs, by calling the local Antero Resource Office at 304-622-3842.

3.0 Casing Requirements

3.1 Geologic Prognosis

A list of anticipated freshwater, saltwater, oil and gas, hydrogen sulfide, thief zones, and high pressure and high volume zones, including their expected depth are attached to this plan in Exhibit 4, WW-6B.

3.2 Casing and Cementing Program

Exhibit 4 shows the detailed casing and cementing program, which meets the standards of the American Petroleum Institute (API) and employs a minimum of three strings of casing which are of sufficient weight, quantity and quality for the anticipated conditions to be encountered. This casing and cementing program is designed to maintain well control and integrity. The casing setting depths are sufficient to cover and seal off those zones as identified in Exhibit 4.

4.0 BOP Requirements

4.1 BOP Equipment

The following is a list of all BOP equipment with types, sizes and ratings to be utilized and available during the drilling, completion and work-over of the well.

5M system:

- Annular preventer*
- Pipe ram, blind ram, and, if conditions warrant, as specified by the authorized officer, another pipe ram shall also be required*
- A second pipe ram preventer shall be used with a tapered drill string
- Drilling spool, or blowout preventer with 2 side outlets (choke side shall be a 3-inch minimum diameter, kill side shall be at least 2-inch diameter)*
- 3 inch diameter choke line
- 2 choke line valves (3 inch minimum)*
- Kill line (2 inch minimum)
- 2 chokes with 1 remotely controlled from rig floor
- 2 kill line valves and a check valve (2 inch minimum)*
- Upper kelly cock valve with handle available
- When the expected pressures approach working pressure of the system, 1 remote kill line tested to stack pressure (which shall run to the outer edge of the substructure and be unobstructed)
- Lower kelly cock valve with handle available
- Safety valve(s) and subs to fit all drill string connections in use
- Inside BOP or float sub available
- Pressure gauge on choke manifold
- All BOPE connections subjected to well pressure shall be flanged, welded, or clamped*
- Fill-up line above the uppermost preventer.

If repair or replacement of the BOPE is required after testing, this work shall be performed prior to drilling out the casing shoe.

When the BOPE cannot function to secure the hole, the hole shall be secured using cement, retrievable packer or a bridge plug packer, bridge plug, or other acceptable approved method to assure safe well conditions.

Minimum standards for choke manifold equipment.

- i. All choke lines shall be straight lines unless turns use tee blocks or are targeted with running tees, and shall be anchored to prevent whip and reduce vibration.
- ii. Choke manifold equipment configuration shall be functionally equivalent to the appropriate example diagram shown in Appendix C. The actual configuration of the chokes may vary.

All valves (except chokes) in the kill line choke manifold, and choke line shall be a type that does not restrict the flow (full opening) and that allows a straight through flow).

Pressure gauges in the well control system shall be a type designed for drilling fluid service

5M and higher system accumulator shall have sufficient capacity to open the hydraulically-controlled gate valve (if so equipped) and close all rams plus the annular preventer (for 3 ram systems add a 50 percent safety factor to compensate for any fluid loss in the control system or preventers) and retain a minimum pressure of 200 psi above precharge on the closing manifold without use of the closing unit pumps. The fluid reservoir capacity shall be double the usable fluid volume of the accumulator system capacity and the fluid level of the reservoir shall be maintained at the manufacturer's recommendations. Two independent sources of power shall be available for powering the closing unit pumps. Sufficient nitrogen bottles are suitable as a backup power source only, and shall be recharged when the pressure falls below manufacturer's specifications.

Accumulator Precharge Pressure Test

This test shall be conducted prior to connecting the closing unit to the BOP stack and at least once every 6 months. The accumulator pressure shall be corrected if the measured precharge pressure is found to be above or below the maximum or minimum limit specified below (only nitrogen gas may be used to precharge):

Power Availability

Power for the closing unit pumps shall be available to the unit at all times so that the pumps shall automatically start when the closing valve manifold pressure has decreased to the pre-set level.

Accumulator Pump Capacity

Each BOP closing unit shall be equipped with sufficient number and sizes of pumps so that, with the accumulator system isolated from service, the pumps shall be capable of opening the hydraulically-operated gate valve (if so equipped), plus closing the annular preventer on the smallest size drill pipe to be used within 2 minutes, and obtain a minimum of 200 psi above specified accumulator precharge pressure.

Locking Devices

A manual locking device (i.e., hand wheels) or automatic locking devices shall be installed on all systems of 2M or greater. A valve shall be installed in the closing line as close as possible to the annular preventer to act as a locking device. This valve shall be maintained in the open position and shall be closed only when the power source for the accumulator system is inoperative.

Accumulator working pressure rating	Minimum acceptable operating pressure	Desired precharge pressure	Maximum acceptable precharge pressure	Minimum acceptable precharge pressure
1,500 psi	1,500 psi	750 psi	800 psi	700 psi
2,000 psi	2,000 psi	1,000 psi	1,100 psi	900 psi
3,000 psi	3,000 psi	1,000 psi	1,100 psi	900 psi

Remote Controls

Remote controls shall be readily accessible to the driller. Remote controls for all 3M or greater systems shall be capable of closing all preventers. Remote controls for 5M or greater systems shall be capable of both opening and closing all preventers. Master controls shall be at the accumulator and shall be capable of opening and closing all preventers and the choke line valve (if so equipped). No remote control for a 2M system is required.

4.2 Procedure and Schedule for Testing BOP Equipment

Well Control Equipment Testing

- i. Perform all tests described below using clear water or an air..
- ii. Ram type preventers and associated equipment shall be tested to approved stack working pressure if isolated by test plug or to 80 percent of internal yield pressure of casing if BOP stack is not isolated from casing. Pressure shall be maintained for at least 10 minutes or until requirements of test are met, whichever is longer. If a test plug is utilized, no bleed-off of pressure is acceptable. For a test not utilizing a test plug, if a decline in pressure of more than 10 percent in 30 minutes occurs, the test shall be considered to have failed. Valve on casing head below test plug shall be open during test of BOP stack.
- iii. Annular type preventers shall be tested to 70 percent of rated working pressure. Pressure shall be maintained at least 10 minutes or until provisions of test are met, whichever is longer.
- iv. As a minimum, the above test shall be performed:
 - a. when initially installed:
 - b. whenever any seal subject to test pressure is broken:
 - c. following related repairs: and
 - d. 30-day intervals.
- v. Valves shall be tested from working pressure side during BOPE tests with all downstream valves open.
- vi. When testing the kill line valve(s), the check valve shall be held open or the ball removed.
- vii. Annular preventers shall be functionally operated at least weekly.
- viii. Pipe and blind rams shall be activated each trip, however, this function need not be performed more than once a day.
- ix. A BOPE pit level drill shall be conducted weekly for each drilling crew.
- x. Pressure tests shall apply to all related well control equipment.
- xi. All of the above described tests and/or drills shall be recorded in the drilling log.
- xii. For intermediate wellbore drilling phase, the BOP equipment will be pressure and function tested upon initial installation.
- xiii. For the bottom and horizontal wellbore drilling phase, the BOP equipment will be pressure and function tested upon initial installation, weekly, and after each bit trip.

4.3 BOP Installation Schedule

The BOP will be installed after running surface casing as well as after running intermediate casing. BOP equipment shall be installed on the innermost string of casing after the surface casing.

4.4 Well Control Training

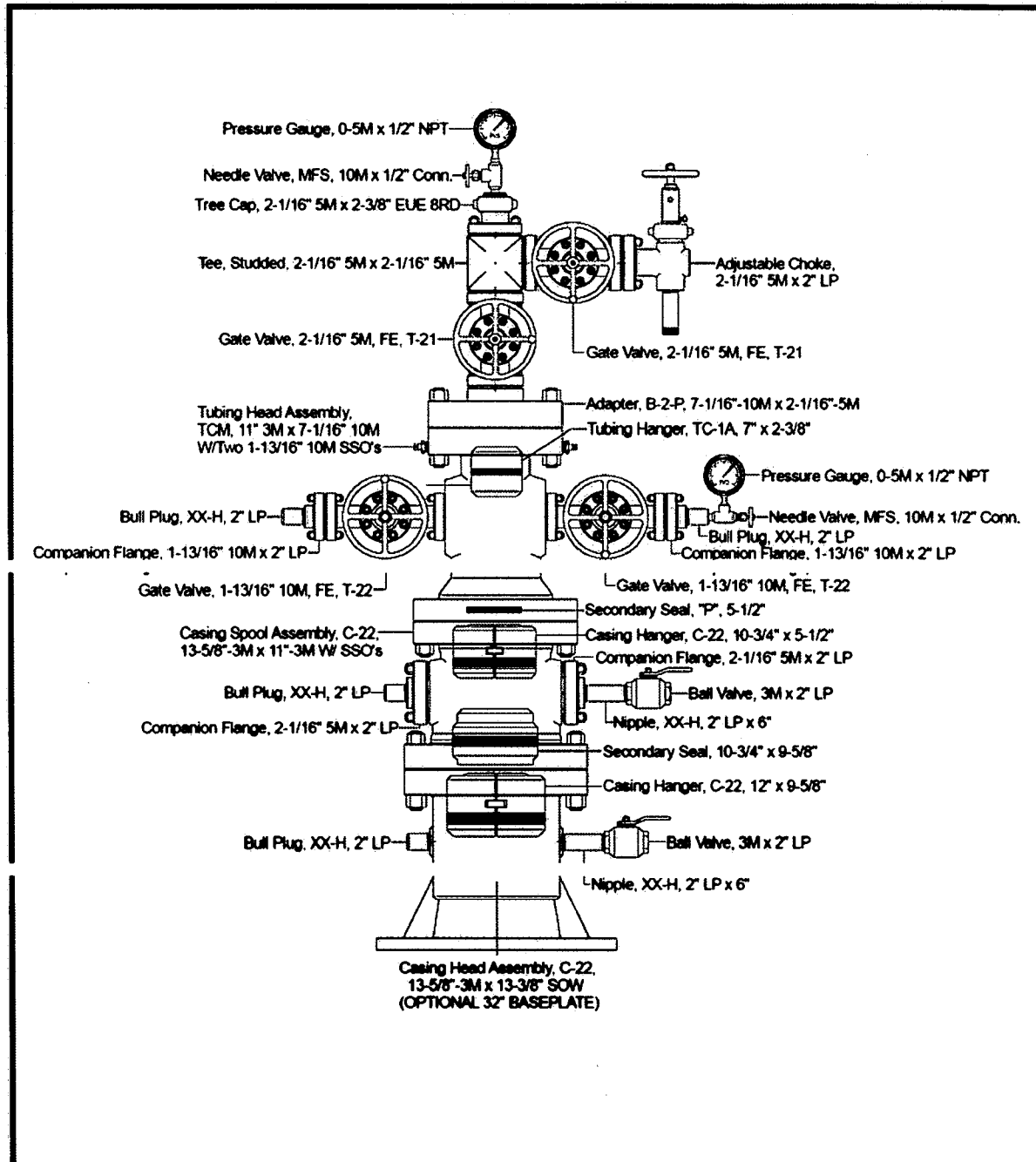
All Drilling Supervisors and Toolpushers used on this well will be IADC trained and certified. A trained person will be present during the drilling operations. Training certificates will be available for review on the location. The list of personnel with said training is provided in Appendix E.

4.5 Drilling Record

The Drilling Supervisor will maintain detailed records of significant drilling events such as lost circulation, hydrogen sulfide gas, fluid entry, kicks and abnormal pressures through the electronic data entry and recording system, Wellview. This system allows the Drilling Supervisor to enter daily reports containing the specified information. The records are then retained electronically at Antero Main Office in Denver, CO.

The Emergency Response Plan for this operating area requires the Drilling Supervisor to notify the district oil and gas inspector or the designated Office of Oil and Gas representative any unusual drilling events such as hydrogen sulfide gas or significant kicks that occur during drilling operations. Any encounter of hydrogen sulfide gas requires immediate notification of the Office of Oil and Gas.

4.6 Schematic and Description of the Wellhead Assembly



5.0 Well Flaring Operations

5.1 Size, Construction and Length of Flare Line

The flare line will be a 4" diameter, steel line that extends 50' from the well. The line will be anchored to the surface of the ground by cross pinning it in place using metal staking at multiple points along the line.

The choke assembly is described in previous section of this document and in drawing "5M Choke Manifold Equipment" BLM drawing Onshore Oil and Gas Order Number 2, Appendix D.

We do not anticipate flaring since we would first attempt to route the flow to the Gas Buster and work the gas kick off from there. Flaring would occur as a last resort or if needed.

5.2 Flare Lighting System

The system for lighting the flare will be an automatic flare igniter using a solar collector panel and battery charger system. A second igniter will be installed as a backup. Should flaring be required or needed.

The Drilling Supervisor will give notification to the local fire department prior to lighting the flare, if practicable, or as soon as possible thereafter.

5.3 Flare Safe Distances

The flare line(s) discharge shall be located not less than 50 feet from the well head, having straight lines unless turns are targeted with running tees, and shall be positioned downwind of rig and trailers. The flare system shall have an effective method for ignition. All flammable material beyond the end of the flare line will be cleared to a minimum distance of 50feet.

5.4 Flare Duration

The flare duration should not exceed the maximum time requirements needed to complete the operation.

6.0 Well Killing Operations

6.1 Mud Mixing Inventory

The following shows the inventory of all materials that will be on-site for the mixing of mud:

- 20 sack of Soda Ash
- 480 sacks of KCL
- 200 sacks of Biolose
- 40 sack of Xan-Plex
- 20 buckets of X-Cide 102
- 3 Drums of KD-40
- 5 Buckets of LD-S
- 15 super sack of MIL Bar
- 100 sacks of Soletex
- 40 Sacks of Graphite
- 300 Sack of Salt

Volume of mixed mud = pit volume + equivalent volume in tanks
= 500 bbls + 500 bbls
= 1000 bbls total

Mixed Mud Weight The mixed mud weight will vary depending on the bottom hole pressures and will be calculated and adjusted as we gather more information; we intend to use 12.8 lb – 13.0 lb mud but will adjust the mud weight as information becomes available

Volume of Add'l

Weighting Mat'l Antero will have the necessary materials available to mix up enough mud to weight the mud up 1 lb more than the mud used for drilling; as an estimate, we expect to have 10 pallets of barite on site and 12 pallets of bentonite

Volume Water for Mixing The rig has a 400 bbl rig water tank and the location will have 800 bbls additional in separate tanks.

6.2 Mud Mixing Units

The drilling rig is equipped with 2 mud tanks with agitators and jets such that it can make two pills.

6.3 Kill Procedures

The following paragraph describes the methodology and type of kill procedures that will be used if needed. These procedures are recognized by the IADC.

Once a Kick is detected a prompt shut in of the well is essential. The exact shut in method will be dictated by the operation being performed at the time of the kick, available equipment, plus other extenuating circumstance. The following types of kill operations may be performed to bring the well back under control. The different methods listed below to be used will be determined by the operation being performed at the time of the kick.

Kill Procedures

- 1.) Drillers Method
- 2.) Wait and Weight Method
- 3.) Circulate and Weight Method
- 4.) Concurrent Method
- 5.) Reverse Circulation Method
- 6.) Dynamic Kill Method
- 7.) Bullheading Method
- 8.) Volumetric Method

7.0 Hydrogen Sulfide Operations

7.1 H₂S Monitoring

The equipment and method used for the monitoring, detection and warning of the presence of hydrogen sulfide gas during drilling, completions and work-over operations will be portable electronic gas detection such as BW gas detectors or equivalent. These detectors will be

typically located near the well bore on the drilling rig, outside the data van or on the drillers stand.

7.2 H2S Training

All personnel that will be involved in the drilling operations will be trained in H2S in drilling operations to a minimum of the awareness level. Additional training will be given to the Drilling Supervisors both in H2S and emergency response duties related specifically to air toxins. All of the aforementioned training will be completed prior to spudding the well. These records may be kept separate from this plan.

7.3 Personal Protection Equipment

The following personal protection equipment will be available and in use as needed on location:

- Fire Retardant Clothing (FRC),
- Hardhats,
- safety shoes,
- safety glasses and/or safety goggles/face shields,
- hearing protection earplugs,
- cotton and chemical resistant work gloves, and
- dust mask respirators.

In the event that other hazards are identified or presented during the drilling operation, we will attempt to eliminate the hazard, and if not practical, additional PPE will be provided to mitigate the risk to the worker. In the event that H2S is detected, a hazard assessment will be performed for this exposure along with risk mitigation.

7.4 H2S Notification and Control

The emergency alarm will be audible or visual type which will be detectable by all personnel on location. If dangerous levels of H2S are detected, we will immediately implement our Emergency Response Plan which will provide for site control and evacuation as needed. Generally, the site will be secured such that access is allowed only for trained emergency response personnel. Site security will be accomplished by trained workers stationed at safe points on the perimeter and access road to the site.

If H2S is detected and confirmed, a telephonic notification will be made to the local oil and gas inspector.

8.0 Notification and Protection Zone Standards

8.1 Method of Notification

In an emergency which requires the notification of residents and emergency personnel that may be affected during drilling such as release of H₂S, flaring, etc., the emergency response plan will be immediately implemented. This plan specifies the roles and responsibilities of on-site personnel in case of emergency and addresses emergency notification of potentially affected residents and public emergency response personnel.

In general under the situation presently described, after the activation of the emergency alarm, the on-site personnel will muster for a headcount by the On-Scene Incident Commander which is usually the Drilling Supervisor or Toolpusher. After initial assessment of the situation, the OSIC will notify the public emergency response agency from which direction will be taken. If the agency directs, on-site personnel will notify all local impacted residents of the incident by dispatching a worker by truck to each potentially affected residence. If the public emergency responder does not direct this notification to be made by the operator, then the public response agency will be responsible for this notification. The local emergency responders have, in general, stated that emergency notification of local residents will be accomplished by their means including television and radio announcement as well as public address systems on patrol vehicles. Antero safety coordinators who are located in the field may assist with the notification of local residents.

8.2 Established Protection Zones

Protection zones will be established and maintained based on the nature, extent and severity of the event. These protection zones will be based on those safe distances outlined in the applicable portions of the DOT Emergency Response Guidebook.

Safety Meeting Log

Date: _____ Location(Pad): _____ Well Name: _____

	<u>Name</u>	<u>Organization</u>	<u>Job Title</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
13.	_____	_____	_____
14.	_____	_____	_____
15.	_____	_____	_____
16.	_____	_____	_____
18.	_____	_____	_____
19.	_____	_____	_____
20.	_____	_____	_____
21.	_____	_____	_____
22.	_____	_____	_____
23.	_____	_____	_____
24.	_____	_____	_____
25.	_____	_____	_____

Appendix B.

Daily Personal and Visitor Log

DATE	TIME IN	TIME OUT	NAME	ORGANIZATION

Appendix C.

EMERGENCY CONTACT LIST AND PHONE NUMBERS

Contact	Phone Number
<p>Designated Person and Incident Commander:</p> <p>John Kawcak, <i>Operations Manager</i> Tim Culberson, <i>Midstream Construction Manager</i> Terry Wyckoff, <i>Midstream Production Manager</i></p>	<p>817.368.1553 John 918.916.0116 Tim 304.991.0720 Terry</p>
<p>Designated Backup Person Incident Commander/Response Coordinator:</p> <p>Mike Ward Ricky Jones Norman Wood Stanley Dudley Jeff Partridge Landon West Tim Henrich Mike Alcorn James Harvey Tim Murrell Delf Martinez Ralph Ybarra Virgil Gaither James Neal</p>	<p>580.276.7484 Mike 580.927.6276 Ricky 903.353.4429 Norman 970.618.7602 Stanley 940.577.2288 Jeff 940.389.0602 Landon 720.530.3059 Tim H. 304.627.7070 Mike 918.916.4340 James 903.256.6040 Tim 970.629.0055 Delf 580.927.5606 Ralph 580.504.2366 Virgil 607.644.8701 James</p>
<p>Frontier #3 Frontier #14 Frontier #17 Frontier #8 Frontier #22 Hall Drilling #3</p>	<p>832.487.7965 Rig Sat Phone 713.758.0662 Rig Sat Phone 713.758.0730 Rig Sat Phone 832.531.7014 Rig Sat Phone 713.758.0893 Rig Sat Phone 713.758.0881 Rig Sat Phone</p>
<p>Antero Resources Denver Office 1625 17th Street, Suite 300 Denver, CO 80202</p>	<p>Office: (303) 357-7310 Fax: 303-357-7315</p>
<p>Environmental Manager Jerry Alberts</p>	<p>Direct: (303) 357-7341 Cell: 720-201-0160 24hr</p>

Contact	Phone Number
Safety Manager Rick Blankenship	Direct: (303) 357-7378 Cell: (720) 235-2775 24hr
Vice President Production Kevin Kilstrom	Direct: (303) 357-7335 Cell: (303) 808-0254 24hr
Federal and State Agencies	
National Response Center	(800) 424-8802
West Virginia Office of Water Resources' Emergency Notification Number, Oil Spill Response	1-800-642-3074
West Virginia Office of Oil and Gas Sam Ward, WVDEP Inspector – Harrison County Joe Taylor, WVDEP Inspector – Tyler County David Cowan, WVDEP Inspector – Ritchie County Douglas Newlon, WVDEP Inspector – Doddridge County	(304) 389-7583 cell Sam Ward (304) 380-7469 cell Joe Taylor (304) 389-3509 cell David Cowan (304) 932-8049 cell Douglas Newlon
Environmental Protection Agency (EPA) Region 3	Phone: 215-814-3231 Fax: 215-814-3163
West Virginia Worker's Compensation	1-888-4WVCOMP 1-304-926-3400
West Virginia Fish and Wildlife Service, Field Office, Elkins, WV	Phone: 304-636-6586 Fax: 304-636-7824
US OSHA Charles Green	1-800-321-OSHA (1-800-321-6742) 304.347.5937
Local Agencies and Responders	
Sheriff/Police/Fire Department	911
Harrison County LEPC	304.624.9700 John Keeling
Hospital- United Hospital Center--Clarksburg	304. 624.2121
Harrison County Emergency and Dispatch Business Office	911 304.623.6559

Contact	Phone Number
Doddridge County Emergency	911 304.873.3253
Doddridge County LEPC	304.782.2124 Roland W. Kniceley
WV Highway Patrol	304,782,2124 doddridgeoes@dishmail.net
Public Water Intakes (see App G for add'l points)	to be determined
Waste Removal	
TK Stanley—Waste Removal, Vac Truck	304.622.6677
Stallion	330.760.4248
Waste Management	
Contractors	
Hall Drilling Services MT Hall	304588 3368
TK Stanley	304.622.6677
Cleanup Crews	
Ryan Environmental	304.641.0244
Water Haulers	
TK Stanley	304.476.0396
Hall Drilling	304.483.8125
Frac Tank Suppliers	
TK Stanley—Frac Tank Rental	304.622.6677
Stallion	330.760.4248
Winch Trucks	
TK Stanley	304.476.9588

Contact	Phone Number
Water Moving/Pumping	
TK Stanley	304.476.0396
Pumping Services—Kill Fluids	
Halliburton—Jane Lew	724.743.6601 Central Dispatch
Light Plants	254.434.1469 Hot Lights- Josh
Wolfpack	304-623-1199.
BOPs	
Blue Dot	304.290.7399
Snubbing Services	Basic Energy- 724-825-2548 Bryan Berlison
Cudd Well Control	713.849.2769 Houston
Wild Well Control	281.353.5481
Roustabout Crews	740.473.1305 Hall Drilling Office 304.588.66474 Hall Drilling- Jack 601.410.7440- TK Stanley Office 724.984.7626- TK Stanley- Brett

WV Emergency Reporting

In the event of a hazardous waste or hazardous material release or emergency, please contact:
1-800-642-3074.

Additional Contact Information

1-800-424-8802 National Response Center

1-304-558-5938 DEP Elkview Emergency Response Unit

Email Contacts:

Mike Dorsey Mike.H.Dorsey@wv.gov

Rusty Joins Rusty.T.Joins@wv.gov

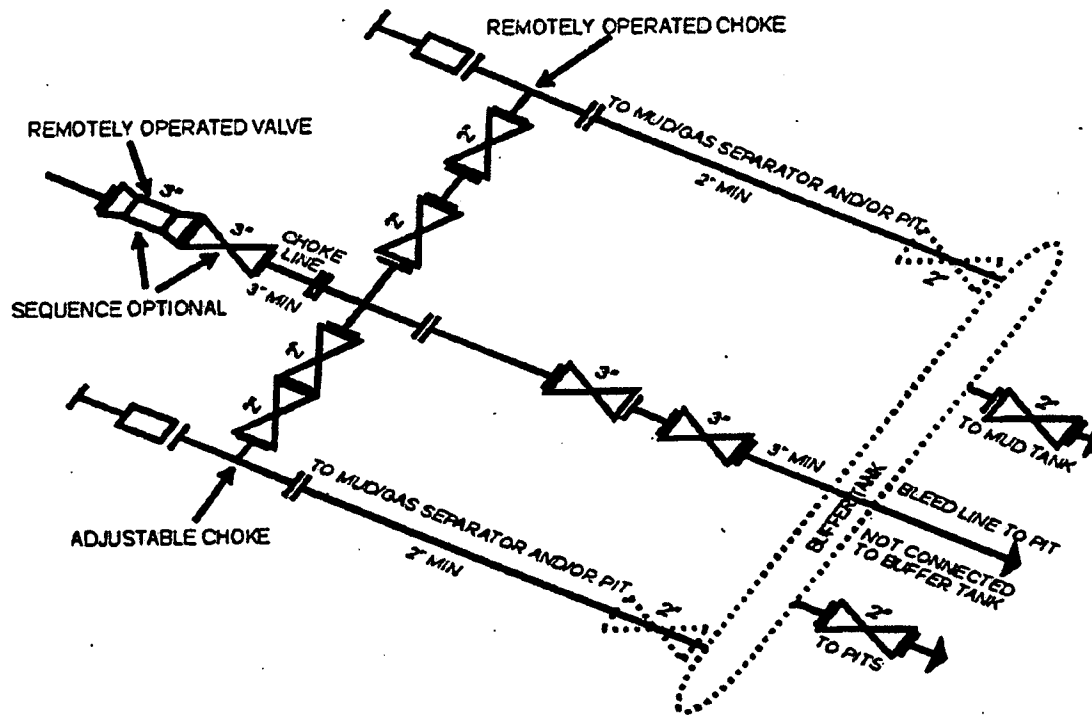
WHERE TO FIND HELP

Doddridge County:

Ambulance, Fire, Law Enforcement Emergencies Call 911
Poison Control Center....1-304-388-4211 or 1-800-222-1222
Emergency Alert System Radio WFBY-FM 106.5

FIRE:	
Doddridge County Ambulance Authority	304-838-5718
Greenwood V.F.D	304-873-3669
McClellan V.F.D	304-782-2774
Smithburg V.F.D	304-873-1493
West Union V.F.D	304-873-1391
B.A.N.C.S V.F.D	304-873-3722
EMS:	
Doddridge County Office of Emergency Service	304-782-2124
Doddridge County EMS	304-873-3330
LAW ENFORCEMENT:	
Doddridge County Sheriff Department	304-873-1000
West Union Police Department	304-873-1107
West Virginia State Police Doddridge County Detachment	304-873-2101
OTHER IMPORTANT NUMBERS:	
W.V. Dept. of Health & Human Resources	304-627-2295
National Response Center (Chemical, Oil Spills & Chemical/Biological Terrorism) (State Emergency Spill Notification)	1-800-424-8802 1-800-642-3074
Allegheny Power	1-800-255-3443
WV State Fire Marshal (Arson Hotline)	304-588-2191 1-800-233-3473
Dominion Hope Gas	1-800-688-4673

Appendix D: Choke Manifold Schematic



5M CHOKES MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]

Appendix E. List of Well Control Trained Personnel

1. John Kawcak- Antero
2. Mike Ward- Drilling Consultant
3. Ricky Jones- Drilling Superintendent
4. Mike Alcorn- Drilling Superintendent
5. Landon West- Completion Consultant
6. Jeff Partridge-Completion Consultant
7. Norman Wood- Drilling Consultant
8. Delf Martinez- Drilling Consultant
9. James Harvey- Drilling Consultant
10. Steve Guffey- Drilling Consultant
11. Tim Murell- Drilling Consultant
12. James Neal-Drilling Consultant
13. Virgil Gaither-Drilling Consultant
14. Ralph Ybarra- Drilling Consultant
15. Bob Belcher- Completion Consultant (Willowbend)
16. Kris Humpert- Completion Consultant (Willowbend)
17. Ronnie Fuller- Completion Consultant (Willowbend)
18. Trevor Lively- Completion Consultant (Willowbend)
19. Trey Armstrong- Completion Consultant (Willowbend)
20. Gary Linn- Completion Consultant (Willowbend)
21. Justin Bowers- Completion Consultant (Willowbend)
22. Michael Petitt- Completion Consultant (Willowbend)
23. Stephen Sanders- Completion Consultant (Willowbend)

Appendix F. List of Hazardous Chemicals used during Phases of Operation:

<u>Chemical Name</u>	<u>Daily Qty. on Location</u>	<u>Storage Container</u>
	<u>Construction</u>	
Diesel Fuel Oil	2000 Gallons	Double Walled Tank
	<u>Drilling</u>	
Airfoam HD	275 gallons	Drum
Alpha 1655	220 gallons	Drum
Aluminum Stearate	150 lbs	Tote
Caustic Soda	1500 lbs	Bag
Claytrol	440 gallons	Drum
Conqor 404	55 gallons	Drum
Diesel Fuel Oil	8000 gallons	Double Walled Tank
Gear Oil	250 gallons	Double Walled Tank
Hydraulic Fluid	250 gallons	Double Walled Tank
KCL (Potassium Chloride)	15000 lbs	Bag
LD-9	100 gallons	Bucket
Lime	2500 lbs	Bag
Mil-Bar	80000 lbs	Super Sack
Mil-Lube	220 gallons	Drum
Milmica	2500 lbs	Bag
Mil-Pac LV	2500 lbs	Bag
Mil-Plug (Walnut Shells)	5000 lbs	Bag
Milstarch	10000 lbs	Bag
Mineral Oil	265 gallons	Tote
Motor Oil	250 gallons	Double Walled Tank
New-Drill	160 gallons	Bucket
Perma-Lose HT	10000 lbs	Bag
Salt	30000 lbs	Super Sack
Soda Ash	1000 lbs	Bag
SWF	265 gallons	Drum
W.O. Defoam	160 gallons	Bucket
Xan-Plex D	1200 lbs	Bag
X-Cide 102	160 gallons	Bucket
	<u>Completions</u>	
15% Hydrochloric Acid	1000 gallons	Acid Tanker
DAP 901 (Scale Inhibitor)	284 gallons	Tote
DAP-923 (Acid Additive)	1.8 gallons	Acid Tanker
Diesel Fuel Oil	8000 gallons	Tanker
DWP-111 (Gel)	4980 gallons	Tote
DWP-204 (Buffer)	496 gallons	Tote
DWP-612 (FR)	1116 gallons	Tote
DWP-901 (Oxide Breaker)	1112 pounds	Bucket
DWP-944 (Biocide)	224 gallons	Tote
Oil 40 (Pump Flush)	300 gallons	Tote
EB-4L(Gel Breaker)	362 gallons	Tote
HCl Acid	1000 gallons	Tanker
KR-153SL(Biocide)	74 gallons	Tote

Appendix F. CONTINUED

Completions -CONTINUED

Super Scale Inhibitor	112 gallons	Tote
WFR-3B(Friction Reducer)	372 gallons	Tote

Service/Work over

FR-1100(Friction Reducer)	800 gallons	Bucket
FR-1205(Pipe on Pipe)	265 gallons	Bucket
FR1302(Liquid Beads)	80 gallons	Bucket
FR-1400(Gel Sweep/Friction Reducer)	550 gallons	Tote
76 DynaLife LEP Grease	20 gallons	Bucket
LithoPlex rt. No. 2 grease	2 gallons	Tube
Hi Temp red grease	3 gallons	Tube
50/50 antifreeze	15 gallons	Bucket
Hydraulic oil 68	15 gallons	Bucket
Hydraulic oil 46	25 gallons	Bucket
Premium Lithium grease	1 gallon	Spray Can
P.B. Blaster	2 gallons	Spray Can
Transmission fluid	10 gallons	Bucket
Max-gear	15 gallons	Bucket
Brakleen	3 gallons	Spray Can
Off-road diesel	700 gallons	Double Walled Tank

Reclamation

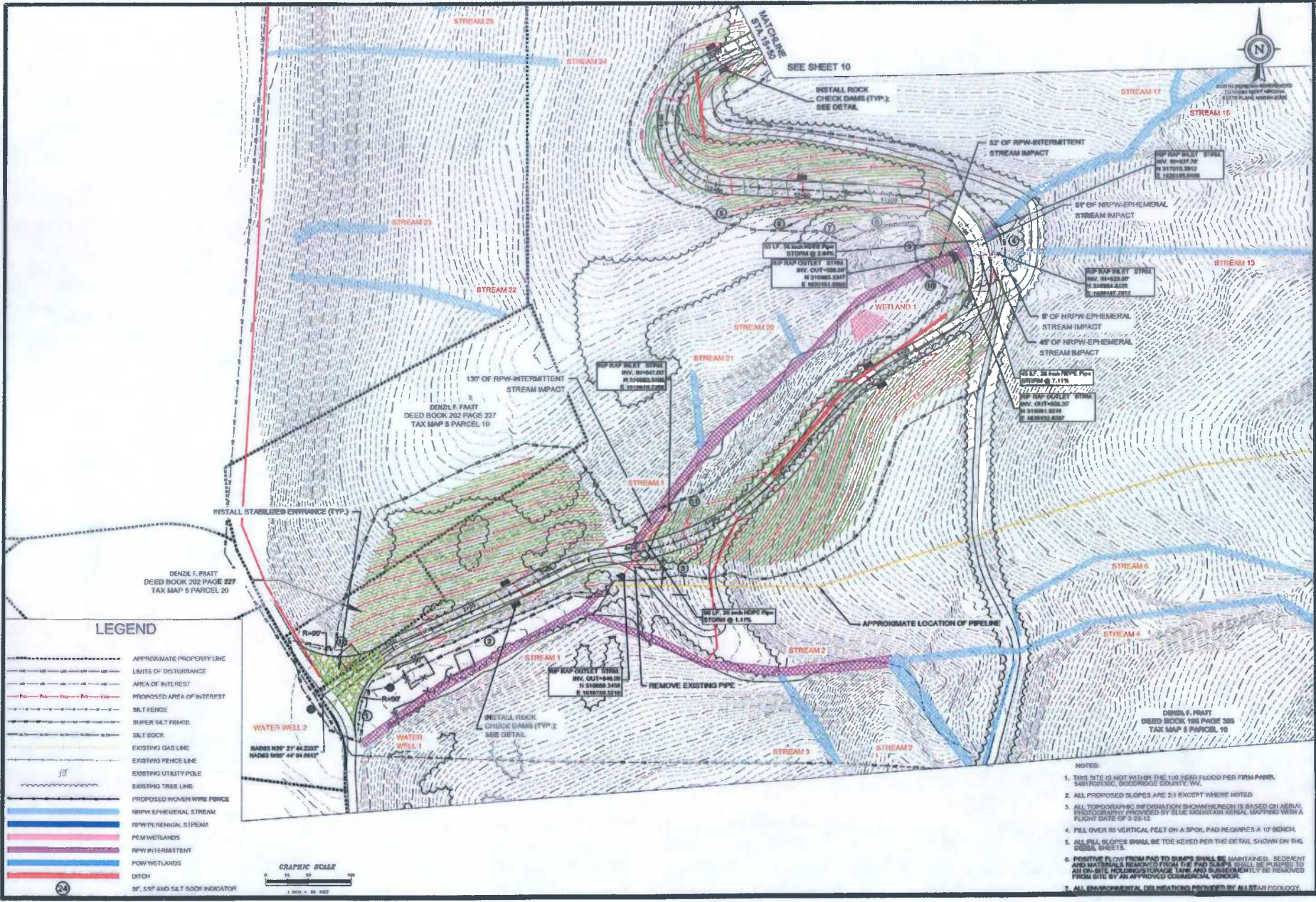
Diesel Fuel Oil	2000 gallons	Double Walled Bulk Tank
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Salem Compressor Station

Used Oil	50 barrels	Bulk Tank
Compressor Oil	1600 gallons	Bulk Tank
Engine Oil	1600 gallons	Bulk Tank
Ethylene Glycol	2000 gallons	Bulk Tank
Produced Water	420 barrels	Bulk Tank

Note: The attached list represents anticipated materials used for planned operations on the well site. In the event of an unplanned event on the well site, additional materials may be required. Additional MSDS for any unplanned events will be maintained on the well site in accordance with OSHA CFR 1910.1200 standards.

The Drilling Supervisor or Contractor of the Operator will maintain Material Data Safety Sheets (MSDS) for all materials and chemicals used on the well site in accordance with OSHA CFR 1910.1200 standards. The MSDS should be located in the Company Representative's Office on-site. Copies of the MSDS may also be obtained from the area Safety Coordinator, the operator contact for maintaining MSDS, by calling the local Antero Resource Office at 304-622-3842 or 800-878-1373.



DATE	NO.	BY	REV.
10-07-10	1		



THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CBEP

FINAL DESIGN
 SITE PLAN
CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDIDGE COUNTY, WV

NO.	DATE	BY	CHKD.

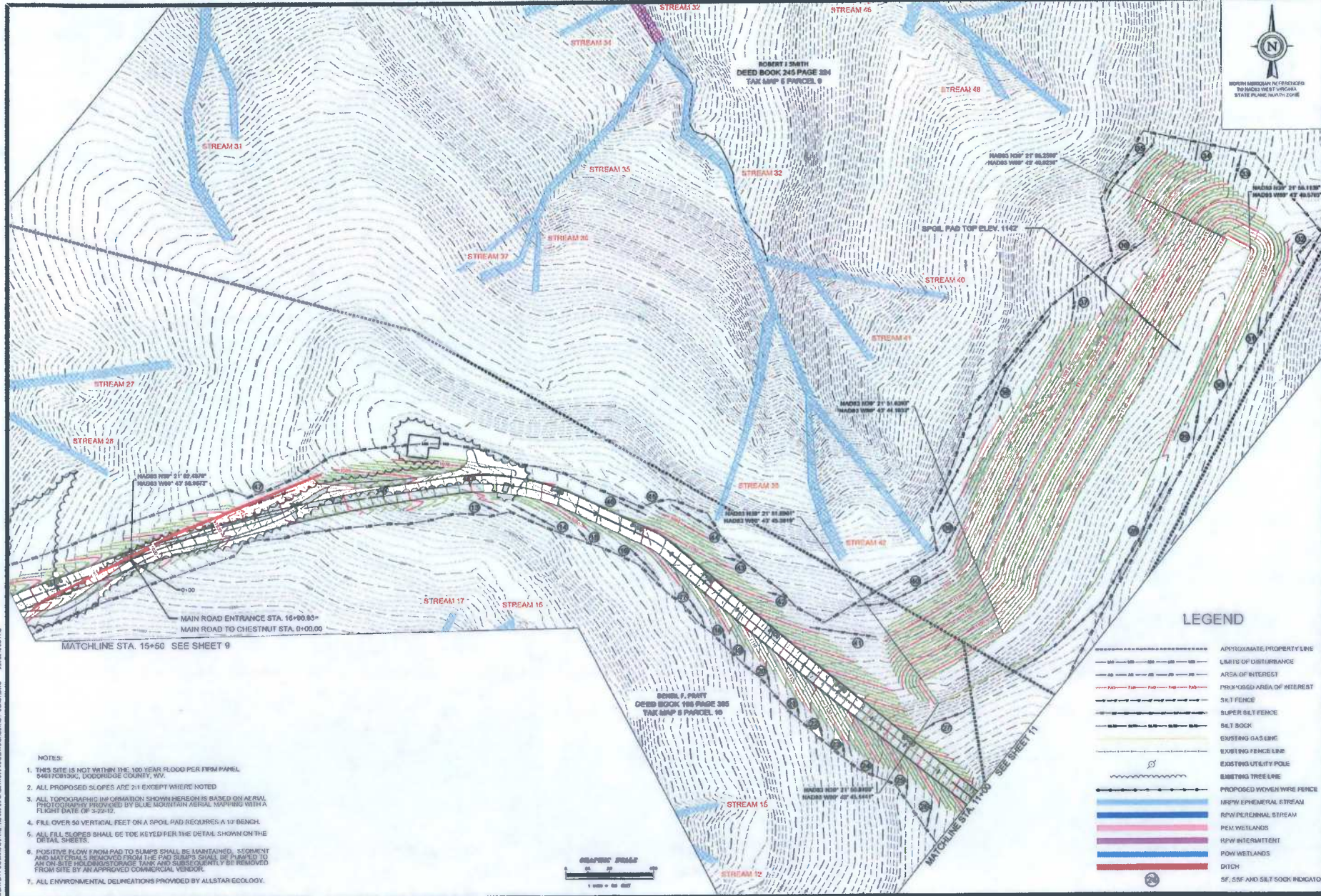
LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- SALT FENCE
- SUPER SALT FENCE
- SALT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING TREE LINE
- PROPOSED WOVEN WIRE FENCE
- NRPW EPHEMERAL STREAM
- RPW PERENNIAL STREAM
- PFM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SALT SOCK INDICATOR

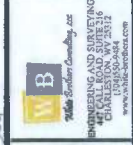


- NOTES:
- THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FROM PANEL 540 FOOTING, DODDIDGE COUNTY, WV.
 - ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED.
 - ALL TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING WITH A FLIGHT DATE OF 3/29/12.
 - FILL OVER 50 VERTICAL FEET ON A SPUR PAD REQUIRES A 10' BENCH.
 - AN ELL SLOPES SHALL BE TOE KEYS FOR THE DETAIL SHOWN ON THE DETAIL SHEETS.
 - POSITIVE FILL ON FROM PAD TO STUMPS SHALL BE MAINTAINED. BEDROCK AND NATURAL MATERIALS REMOVED FROM THE PAD SOARS SHALL BE PLACED TO AN ON-SITE HOLDING/STORAGE TANK AND SUBSEQUENTLY BE REMOVED FROM SITE BY AN APPROVED COMMERCIAL VEHICLE.
 - ALL ENVIRONMENTAL DESIGNATIONS PROVIDED BY A STATE ECOLOGY.

EXHIBIT 1, PAGE 1



DATE REVISIONED	REVISION	BY
5-29-2013	10	BT



FINAL DESIGN
 SITE PLAN
CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIIDGE COUNTY, WV

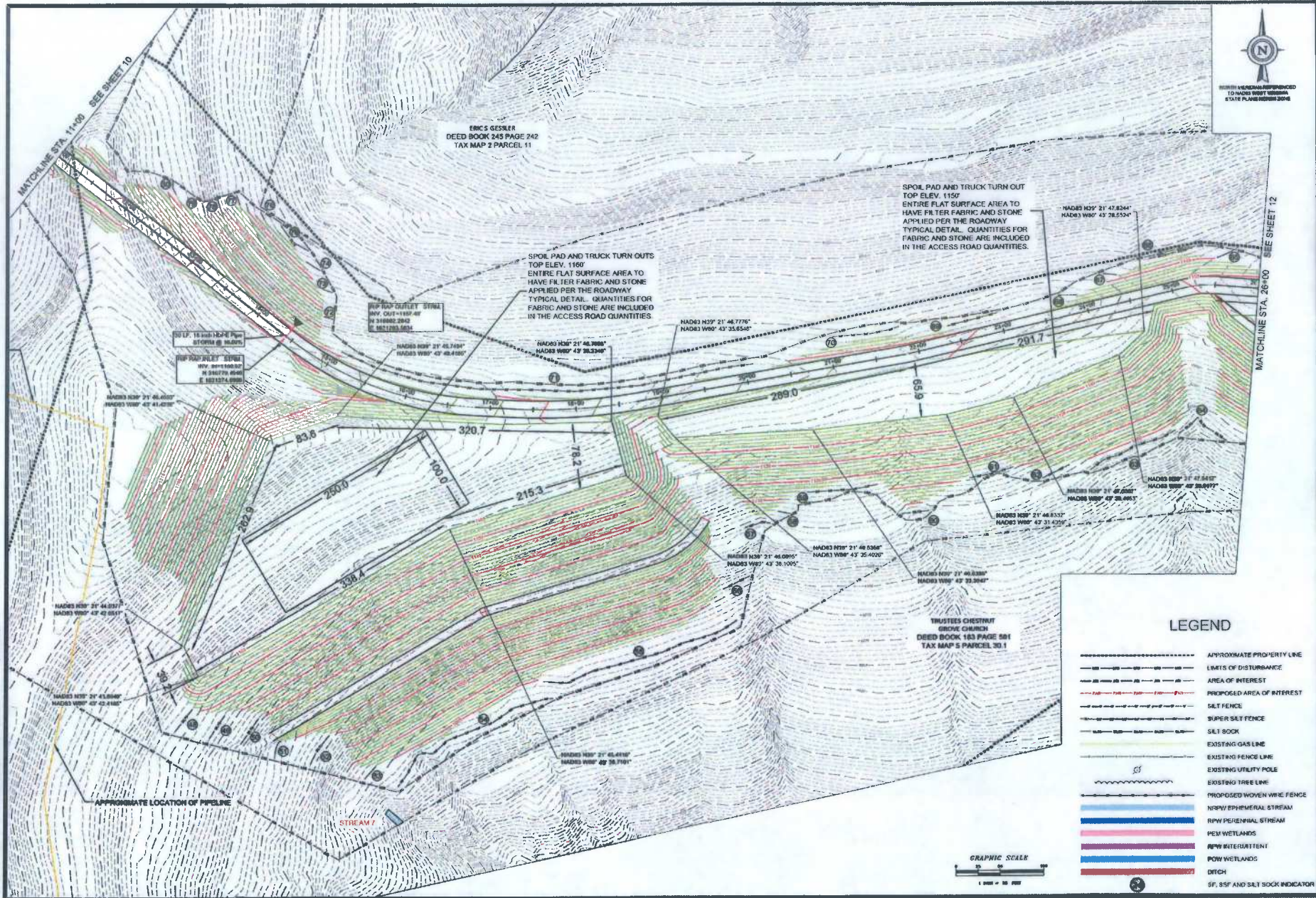
LEGEND

	APPROXIMATE PROPERTY LINE
	LIMITS OF DISTURBANCE
	AREA OF INTEREST
	PROPOSED AREA OF INTEREST
	SILT FENCE
	SUPER SILT FENCE
	SILT SOCK
	EXISTING GAS LINE
	EXISTING FENCE LINE
	EXISTING UTILITY POLE
	EXISTING TREE LINE
	PROPOSED WOVEN WIRE FENCE
	10' W/ EPHEMERAL STREAM
	10' W/ PERENNIAL STREAM
	PEM WETLANDS
	10' W/ INTERMITTENT
	10' W/ WETLANDS
	DITCH
	5', 5.5' AND SILT SOCK INDICATOR



- NOTES:
1. THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 04017C8190C, DODDRIIDGE COUNTY, WV.
 2. ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED
 3. ALL TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHS PROVIDED BY BLUE HORIZON AERIAL MAPPING WITH A FLIGHT DATE OF 3-22-12.
 4. FILL OVER 50 VERTICAL FEET ON A SPOIL PAD REQUIRES A 10' BENCH.
 5. ALL FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON THE DETAIL SHEETS.
 6. POSITIVE FLOW FROM PAD TO SLUMPS SHALL BE MAINTAINED. SEDIMENT AND MATERIALS REMOVED FROM THE PAD SLUMPS SHALL BE PUMPED TO AN ON-SITE HOLDING STORAGE TANK AND SUBSEQUENTLY BE REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR.
 7. ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.

10/28/13 10:50:21 C:\SITE\FINAL\DWG\SETUP\CONST.DWG
 10/28/13 10:50:21 C:\SITE\FINAL\DWG\SETUP\CONST.DWG



DATE: 1-29-2013
SCALE: 1" = 20'

W.B. **W & B**
W & B
Professional Surveying & Engineering, Inc.
1000 W. Main Street
Chattanooga, TN 37402
www.wandb.com






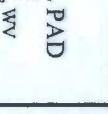
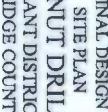




THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP.

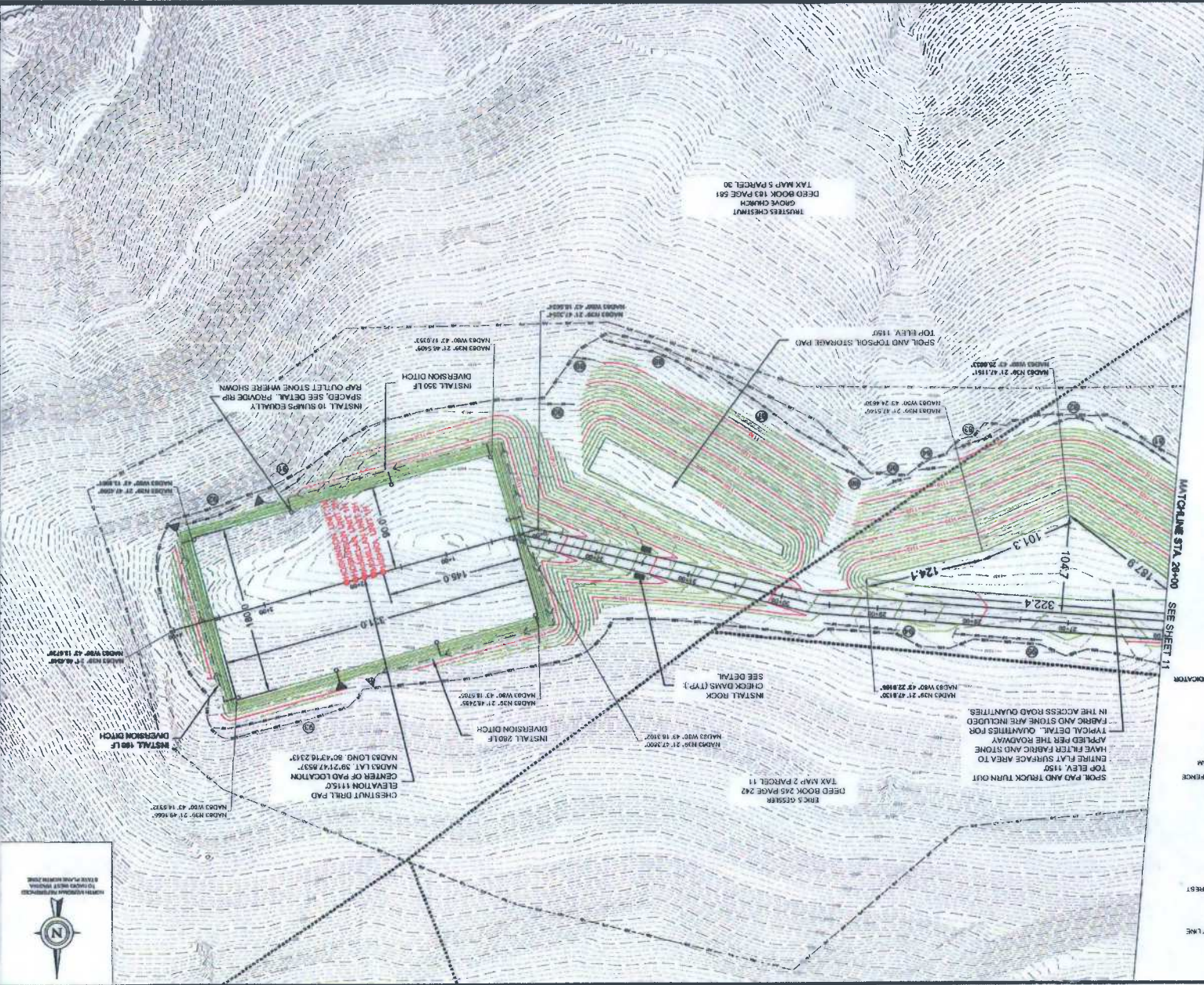
FINAL DESIGN
SITE PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- SALT FENCE
- SUPER SALT FENCE
- SALT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING TREE LINE
- PROPOSED WOVEN WIRE FENCE
- NRW EPHEMERAL STREAM
- RPW PERIPHERAL STREAM
- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND S&T SOCK INDICATOR

NO.	DATE	BY	REVISION

								
<p>FINAL DESIGN SITE PLAN CHESTNUT DRILL PAD GRANT DISTRICT DODDRIDGE COUNTY, WV</p>								
<p>DATE: 10/20/11</p>	<p>SCALE: 1" = 40'</p>	<p>PROJECT: CHESTNUT DRILL PAD</p>	<p>CLIENT: ANTERO RESOURCES</p>	<p>DESIGNER: GOLDER ASSOCIATES</p>	<p>APPROVER: [Signature]</p>	<p>DATE: 10/20/11</p>	<p>SCALE: 1" = 40'</p>	<p>PROJECT: CHESTNUT DRILL PAD</p>



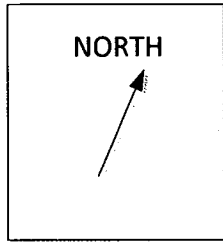
MAYTOWNE STA. 20+00 SEE SHEET 11

LEGEND

- APPROXIMATE PROPERTY LINES
- LIMITS OF DISTANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- RAIL FENCE
- SUPER SALT FENCE
- SALT ROCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING THREE LINE
- PROPOSED WOODEN WIRE FENCE
- RIVER EMBANKMENT STREAM
- PERMANENT STREAM
- PERMANENT BRIDGEMAN
- PERMANENT FENCE
- PERMANENT
- POW WETLANDS
- POW WETLANDS
- DITCH
- SF, SS, SF AND SALT SOCK INDICATION

GRAPHIC SCALE
1" = 40'

ANTERO RESOURCES
 1000 WEST MAIN STREET, SUITE 1000, CHARLOTTE, NC 28202
 TEL: 704.366.1000
 WWW.ANTERO.COM



PREVAILING WIND
DIRECTION NNE



EXHIBIT 1, PAGE 5

EXHIBIT 1
CHESTNUT PAD

DRILLING LAYOUT/FLARE LINES/PREVAILING WINDS

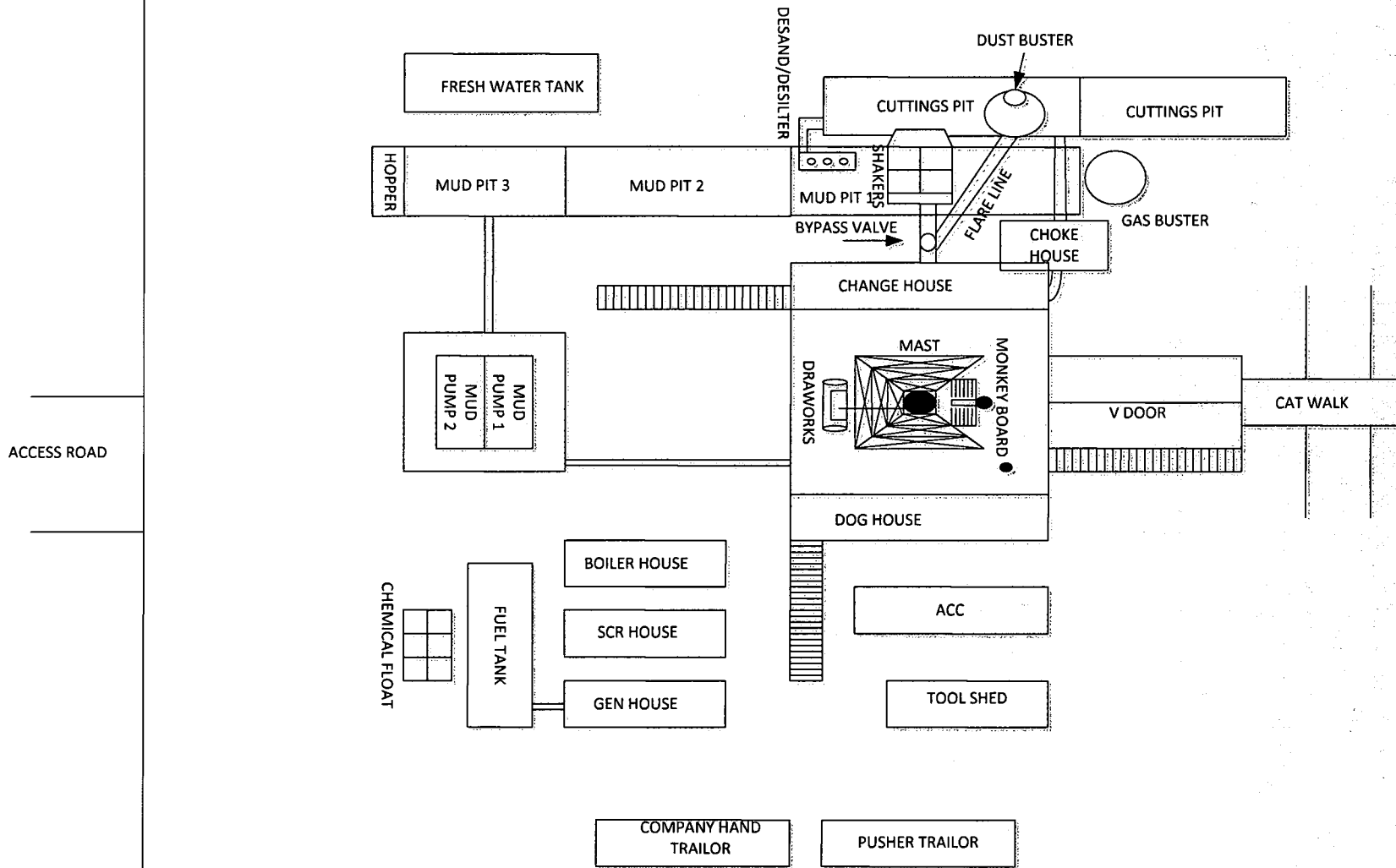
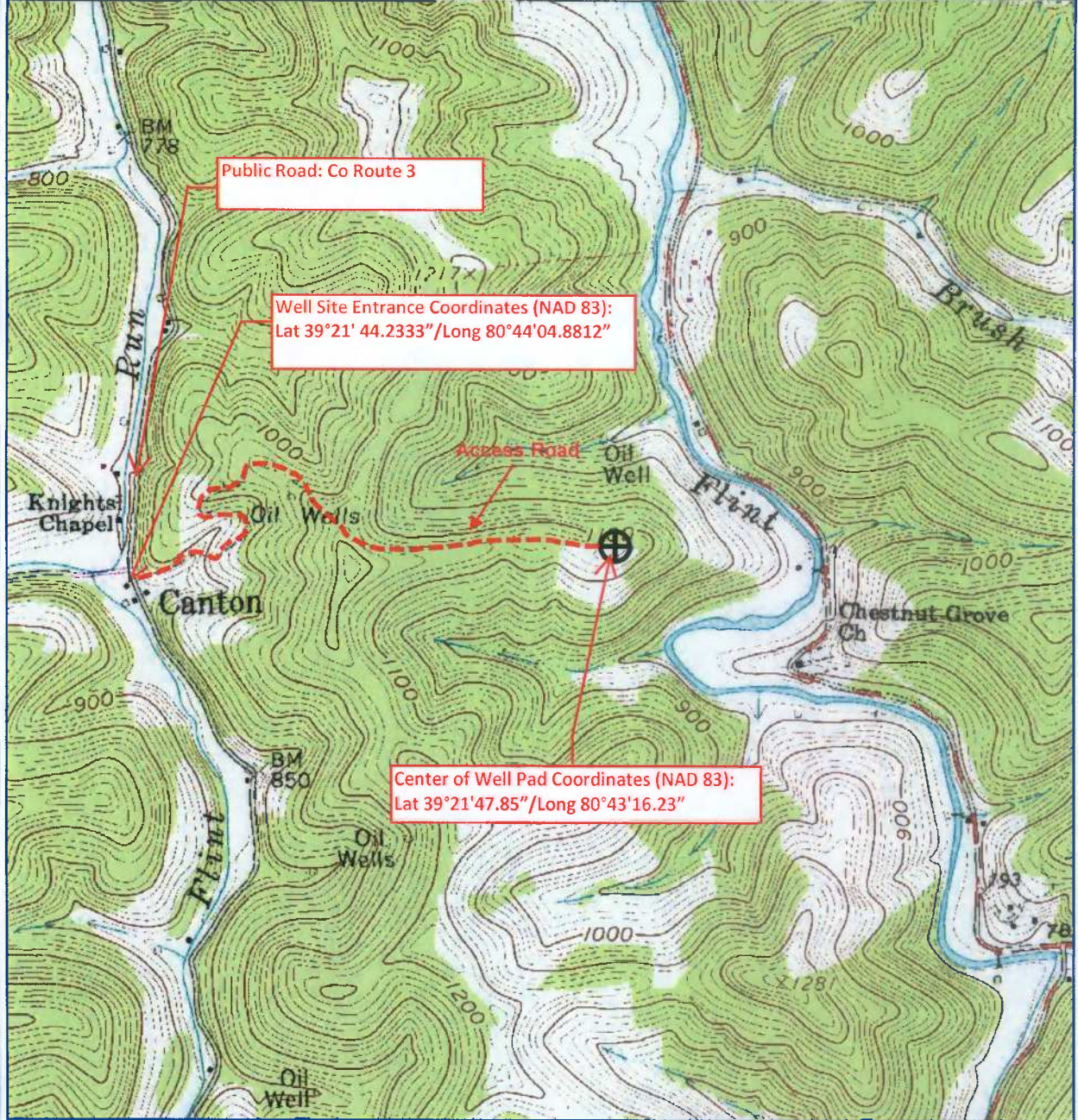


EXHIBIT 2, TOPOGRAPHICAL MAP OF WELL SITE LOCATION (CHESTNUT PAD)



PETRA 4/16/2013 5:03:01 PM

Antero Resources Corp

APPALACHIAN BASIN

CHESTNUT PAD

Doddridge County

REMARKS
 QUADRANGLE: SMITHBURG
 WATERSHED: LITTLE FLINT RUN
 DISTRICT: GRANT

By: ECM



EXHIBIT 3
LIST OF ALL SCHOOLS & PUBLIC FACILITIES WITHIN A
ONE- MILE RADIUS OF PROPOSED WELL SITE

Facility Name	Telephone Number
None identified within a 1-mile radius	

EXHIBIT 4.a to SSP- WW-6B FORM

WW - 6B
(3/13)

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Appalachian Corporation 494488557 017-Doddridge Grant Smithburg 7.5'
Operator ID County District Quadrangle

2) Operator's Well Number: Mishka Unit 2H Well Pad Name: Chestnut Pad

3 Elevation, current ground: -1155' Elevation, proposed post-construction: 1115'

4) Well Type: (a) Gas Oil Underground Storage

Other

(b) If Gas: Shallow Deep

Horizontal

5) Existing Pad? Yes or No: No

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):

Marcellus Shale: 7200' TVD, Anticipated Thickness- 55 Feet, Associated Pressure- 2950#

7) Proposed Total Vertical Depth: 7200' TVD

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 17300' MD

10) Approximate Fresh Water Strata Depths: 222', 249'

11) Method to Determine Fresh Water Depth: Offset well records. Depths have been adjusted according to surface elevations.

12) Approximate Saltwater Depths: 1020', 1514'

13) Approximate Coal Seam Depths: 295', 812', 1122'

14) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

15) Does proposed well location contain coal seams directly overlying or adjacent to an active mine? If so, indicate name and depth of mine: No

16) Describe proposed well work: Drill, perforate, fracture a new horizontal shallow well and complete Marcellus Shale

*Antero will be air drilling the fresh water string which makes it difficult to determine when freshwater is encountered, therefore we have built in a buffer for the casing setting depth which helps to ensure that all fresh water zones are covered.

17) Describe fracturing/stimulating methods in detail:

Antero plans to pump Slickwater into the Marcellus Shale formation in order to ready the well for production. The fluid will be comprised of approximately 90 percent water and sand, with less than 1 percent special-purpose additives as shown in the attached "List of Anticipated Additives Used for Fracturing or Stimulating Well."

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 16.91 acres

19) Area to be disturbed for well pad only, less access road (acres): 2.69 acres

WW - 6B
(3/13)

20)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	20"	New	H-40	94#	40'	40'	CTS, 38 Cu. Ft.
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/ 48#	300'	300'	CTS, 417 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2450'	2450'	CTS, 998 Cu. Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	17300'	17300'	4359 Cu. Ft.
Tubing	2-3/8"	New	N-80	4.7#		6900'	
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	24"	0.438"	1530	Class A	1.18
Fresh Water	13-3/8"	17-1/2"	0.38"/0.33"	2730/1730	Class A	1.18
Coal	9-5/8"	12-1/4"	0.352"	3520	Class A	1.18
Intermediate						
Production	5-1/2"	8-3/4" & 8-1/2"	0.361"	12630	Lead-H/POZ & Tall - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200		
Liners						

PACKERS

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

21) Describe centralizer placement for each casing string.

Conductor: no centralizers

Surface Casing: one centralizer 10' above the float shoe, one on the insert float collar and one every 4th joint spaced up the hole to surface.

Intermediate Casing: one centralizer above float joint, one centralizer 5' above float collar and one every 4th collar to surface.

Production Casing: one centralizer at shoe joint and one every 3 joints to top of cement in intermediate casing.

22) Describe all cement additives associated with each cement type.

Conductor: no additives, Class A cement.

Surface: Class A cement with 2% calcium and 1/4 lb flake, 5 gallons of clay treat

Intermediate: Class A cement with 1/4 lb of flake, 5 gallons of clay treat

Production: Lead cement- 50/50 Class H/Poz + 1.5% salt + 1% C-45 + 0.5% C-16a + 0.2% C-12 + 0.45% C-20 + 0.05% C-51

Production: Tail cement- Class H + 45 PPS Calcium Carbonate + 1.0% FL-160 + 0.2% ACGB-47 + 0.05% ACSA-51 + 0.2% ACR-20

23) Proposed borehole conditioning procedures.

Conductor: blowhole clean with air, run casing, 10 bbls fresh water.

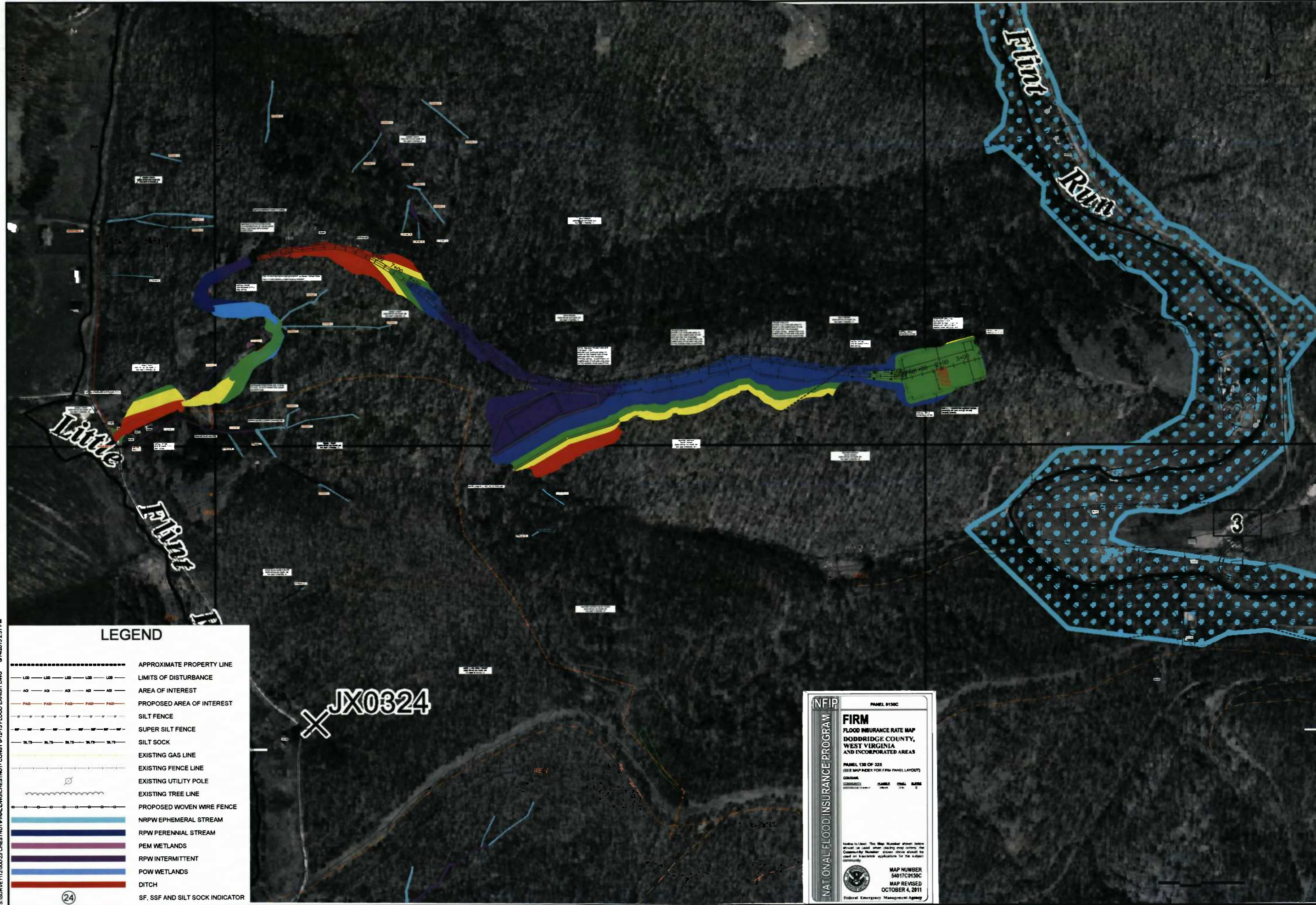
Surface: blowhole clean with air, trip to conductor shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate pipe capacity + 40 bbls fresh water followed by 25 bbls bentonite mud, 10 bbls fresh water spacer.

Intermediate: blowhole clean with air, trip to surface casing shoe, trip to bottom, blowhole clean with air, trip out, run casing, circulate 40 bbls brine water followed by 10 bbls fresh water and 25 bbls bentonite mud, pump 10 bbls fresh water.

Production: circulate with 14 lb/gal NaCl mud, trip to middle of lateral, circulate, pump high viscosity sweep, trip to base of curve, pump high viscosity sweep, trip to top of curve, trip to bottom, circulate, pump high viscosity sweep, trip out, run casing, circulate 10 bbls fresh water, pump 48 bbls barite pill, pump 10 bbls fresh water followed by 48 bbls mud flush and 10 bbls water.

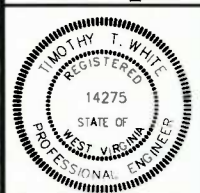
*Note: Attach additional sheets as needed.

S:\SURVE\112500-23 CHESTNUT\FINAL\DWG\CHESTNUT_CONST 6-12-13 FLOOD EXHIBIT.DWG 6/14/2013 2:31 PM



DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
6-13-2013	10	36

White Brothers Consulting, LLC
 ENGINEERING AND SURVEYING
 447 CALLE ROAD, SUITE 216
 CHARLOTTE, NC 28217
 (704) 530-0444
 www.white-brothers.com



THIS DOCUMENT
 PREPARED FOR
 ANTERO RESOURCES
 APPALACHIAN CORP

**FINAL DESIGN
 SITE PLAN FLOOD EXHIBIT
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV**

NUMBER	SHEET	REVISION	DATE	BY

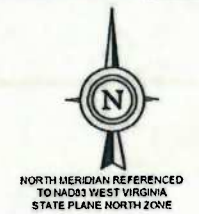
LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
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- RPW PERENNIAL STREAM
- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SILT SOCK INDICATOR

X JX0324

NFIP
 NATIONAL FLOOD INSURANCE PROGRAM
 PANEL 8130C
FIRM
 FLOOD INSURANCE RATE MAP
 DODDRIDGE COUNTY,
 WEST VIRGINIA
 AND INCORPORATED AREAS
 PANEL 130 OF 325
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)
 CONTRACT NO. 54017C0130C
 MAP NUMBER 54017C0130C
 MAP REVISED OCTOBER 4, 2011
 Federal Emergency Management Agency

CHESTNUT DRILL PAD SITE FINAL SITE DESIGN, CONSTRUCTION PLAN, AND EROSION & SEDIMENT CONTROL PLANS ANTERO RESOURCES APPALACHIAN CORPORATION



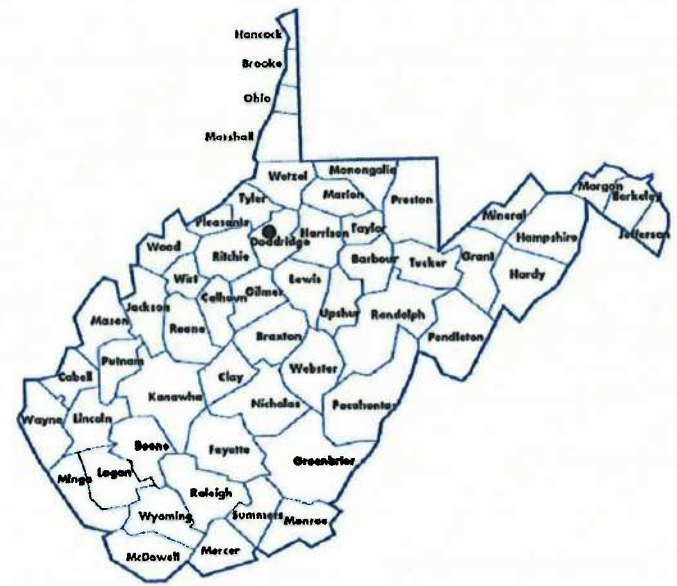
DATE SUBMITTED	SHEET NO	TOTAL SHEETS
4-28-2013	1	35

White Brothers Consulting, LLC
ENGINEERING AND SURVEYING
447 CALL ROAD, SUITE 216
CHARLESTON, WV 25312
(304) 550-9484
www.white-brothers.com

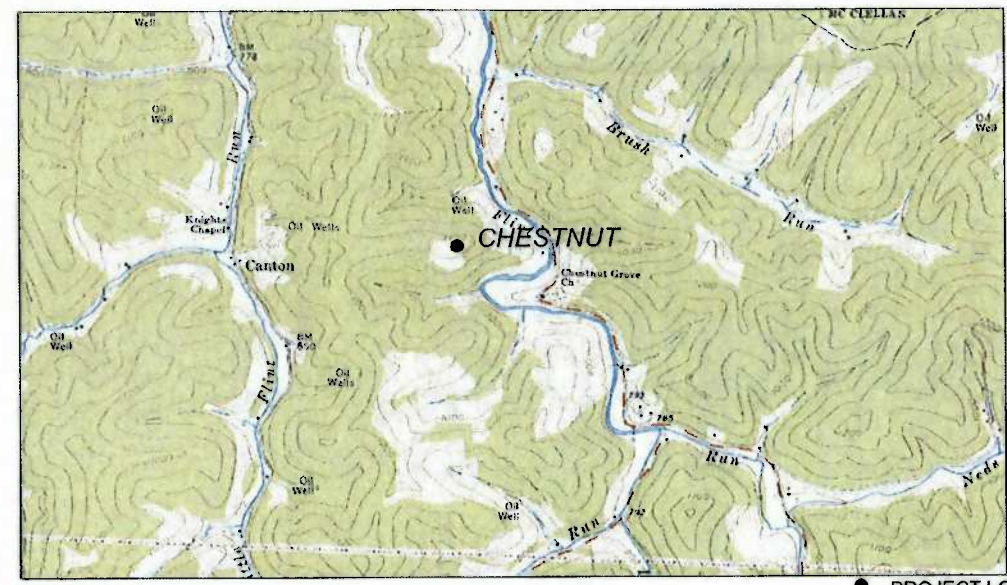


THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

FINAL SITE DESIGN, QUANTITIES AND CONSTRUCTION SEQUENCE
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV



● PROJECT LOCATION



WATERSHED (HUC8): LITTLE MUSKINGUM-MIDDLE ISLAND SMITHBURG 7.5 QUAD ● PROJECT LOCATION SCALE 1" = 2000'

AFFECTED TAX PARCELS:

DENZIL F. PRATT DB 202 PAGE 227 TM 5 PARCEL 20 GRANT DISTRICT	DENZIL F. PRATT DB 202 PAGE 227 TM 5 PARCEL 19 GRANT DISTRICT	DENZIL F. PRATT DB 195 PAGE 395 TM 5 PARCEL 10 GRANT DISTRICT	ROBERT J. SMITH DB 245 PAGE 324 TM 5 PARCEL 9 GRANT DISTRICT	TRUSTEES CHESTNUT GROVE CHURCH DB 183 PAGE 581 TM 5 PARCEL 30 GRANT DISTRICT	TRUSTEES CHESTNUT GROVE CHURCH DB 183 PAGE 581 TM 5 PARCEL 30.1 GRANT DISTRICT
--	--	--	---	---	---

PROJECT CONTACTS
ANTERO RESOURCES
ANTHONY SMITH, FIELD ENGINEER
304-869-3405 OFFICE
304-673-6196 CELL

ELI WAGONER, ENVIRONMENTAL ENGINEER
304-622-3842, EXT. 311
OFFICE 304-476-9770

JOHN KAWCAK, ENGINEER
817-368-1553

AARON KUNZLER, CONSTRUCTION SUPERVISOR
405-277-8344

SURVEYOR & ENGINEER
WHITE BROTHERS CONSULTING, LLC
LEE SNYDER, P.S.
304-550-9484
TIMOTHY T. WHITE, P.E.
304-561-4477

MISS UTILITY OF WEST VIRGINIA
1-800-245-4848
WEST VIRGINIA STATE LAW REQUIRES
THAT YOU CALL TWO BUSINESS DAYS
BEFORE YOU DIG IN THE STATE OF
WEST VIRGINIA. IT'S THE LAW!!



Know what's below.
Call before you dig.

SITE LOCATIONS
STATE PLANE NAD 83 (WV NORTH ZONE)

	LATITUDE	LONGITUDE
CENTER OF PAD	39-21-47.8537	-80-43-16.2343
BEGIN ENTRANCE ROAD	39-21-44.2333	-80-44-04.6812
CENTER OF PAD (UTM 83-17 M)	N 4357129.892	E 524019.909

TOTAL DISTURBANCE (ACRES)

LAND OWNER	AREA
DENZIL F. PRATT (PAR. 10)	2.30
DENZIL F. PRATT (PAR. 19)	0.22
DENZIL F. PRATT (PAR. 20)	0.24
ROBERT J. SMITH (PAR. 9)	2.23
TRUSTEES CHESTNUT GROVE CHURCH (PAR. 30)	4.41
TRUSTEES CHESTNUT GROVE CHURCH (PAR. 30.1)	12.75

NOTE: A PORTION OF THE TOTAL LOD WAS ACCOUNTED FOR IN THE RJ SMITH PAD SITE DESIGN.

LOD AREAS (ACRES)

DESCRIPTION	AREA
MAIN ACCESS ROADS TO PADS	3.98
DRILL PAD	2.69
SPOIL PADS & AUXILIARY PAD	11.24
TOTAL	17.91
TOTAL WOODED	17.91

NOTE: A PORTION OF THE TOTAL LOD WAS ACCOUNTED FOR IN THE RJ SMITH PAD SITE DESIGN.

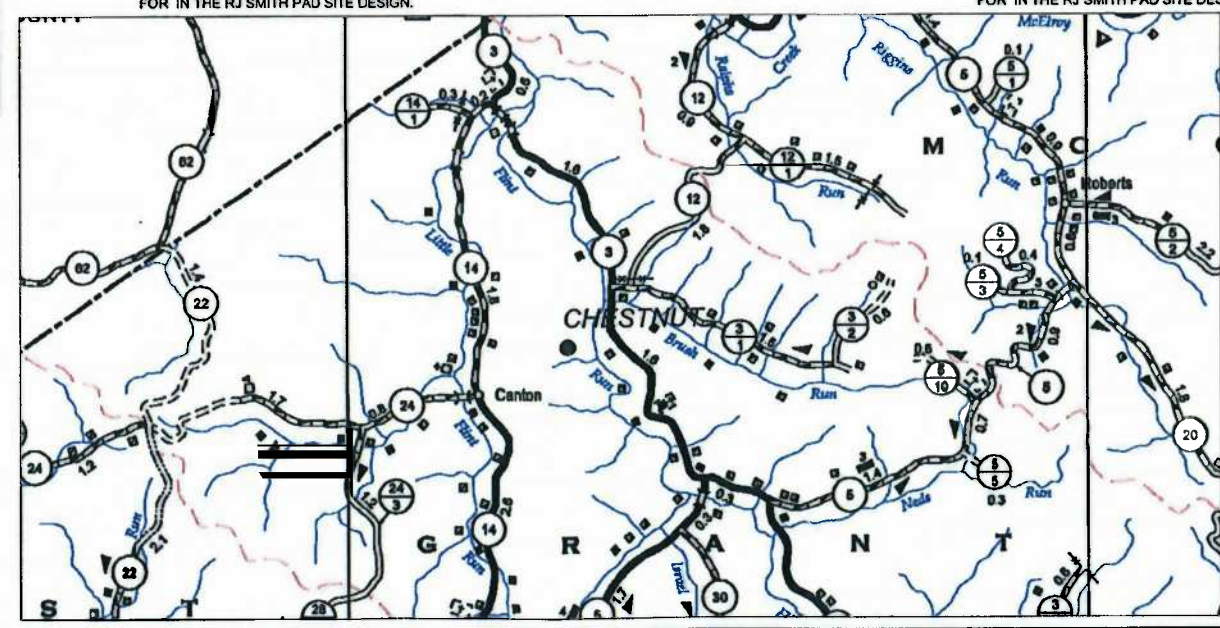
LENGTH (FEET)

DESCRIPTION	FEET
COUNTY ROUTE TO PAD	4,838
TOTAL	4,838

STREAM IMPACTS (LINEAR FEET)

DESCRIPTION	LINEAR FEET
RPW PERENNIAL	0
NRPW EPHEMERAL	0
PEM WETLANDS	0
RPW INTERMITTENT	0
TOTAL	0

NOTE: ALL STREAM IMPACTS WERE ACCOUNTED FOR IN THE RJ SMITH PAD SITE DESIGN.



WELL HEAD LAYOUT
STATE PLANE NAD 83 (WV NORTH ZONE)

	NORTH	EAST	LATITUDE	LONGITUDE
MISHKA UNIT 2H	316775.9748	1623222.9669	39-21-47.7969	-80-43-16.4848
McMILLAN UNIT 2H	316778.6503	1623232.6024	39-21-47.8246	-80-43-16.3626
McMILLAN UNIT 1H	316781.3257	1623242.2378	39-21-47.8524	-80-43-16.2404
HOSKINSON UNIT 2H	316784.0011	1623251.8733	39-21-47.8801	-80-43-16.1162
HOSKINSON UNIT 1H	316788.6765	1623261.5087	39-21-47.9078	-80-43-15.9960

DRILL PAD ELEVATION=1115.0'

WELL LOCATION RESTRICTIONS

- THE PAD COMPLIES WITH THE FOLLOWING RESTRICTIONS:
- 250' FROM AN EXISTING WELL OR DEVELOPED SPRING USED FOR HUMAN OR DOMESTIC ANIMALS
 - 625' FROM AN OCCUPIED DWELLING OR BARN GREATER THAN 2500SF USED FOR POULTRY OR DAIRY MEASURED FROM THE CENTER OF THE PAD
 - 100' FROM EDGE OF DISTURBANCE TO WETLANDS, PERENNIAL STREAMS, NATURAL OR ARTIFICIAL LAKE, POND OR RESERVOIR
 - 300' FROM EDGE OF DISTURBANCE TO NATURALLY REPRODUCING TROUT STREAMS
 - 1000' OF SURFACE OR GROUND WATER INTAKE TO A PUBLIC WATER SUPPLY

FLOODPLAIN CONDITIONS

DO SITE CONSTRUCTION ACTIVITIES TAKE PLACE IN FLOODPLAIN:	NO
PERMIT NEEDED FROM COUNTY FLOODPLAIN COORDINATOR:	NO
HEC-RAS STUDY COMPLETED:	N/A
FLOODPLAIN SHOWN ON DRAWINGS:	N/A
FIRM MAP NUMBER(S) FOR SITE:	54017C0130C
ACREAGES OF CONSTRUCTION IN FLOODPLAIN:	N/A

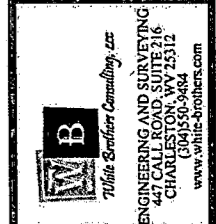
SHEET INDEX

COVER PAGE & LOCATION MAP	1
SCHEDULE OF QUANTITIES	2
CONSTRUCTION, GENERAL AND E&S NOTES	3
EXISTING CONDITIONS PLAN	4
OVERALL SITE PLAN	5
EROSION & SEDIMENT CONTROL PLAN	6-9
FINAL SITE DESIGN	10-13
DRILL PAD PROFILE & CROSS-SECTIONS	14
ROAD PROFILES	15-17
ENTRANCE ROAD CROSS-SECTIONS	18-21
ROAD TO CHESTNUT CROSS-SECTIONS	22-32
CONSTRUCTION DETAILS	33-34
RECLAMATION PLAN	35-38

DESIGN CERTIFICATION
THE DRAWINGS, CONSTRUCTION NOTES, AND REFERENCE DIAGRAMS ATTACHED HERETO HAVE BEEN PREPARED IN ACCORDANCE WITH THE WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS §35-4-21.

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

NO.	DATE	REVISION



THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

FINAL DESIGN
 SCHEDULE OF QUANTITIES
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY

SCHEDULE OF QUANTITIES CHESTNUT DRILL PAD SITE				
ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
1. CLEARING, GRUBBING, E&S CONTROLS				
A. CLEARING & GRUBBING	AC	17.91	\$	\$
B. TIMBER REMOVAL	AC	17.91	\$	\$
C. 24" SILT SOCK	LF	1,352	\$	\$
D. SUPER SILT FENCE	LF	4,231	\$	\$
2. EXCAVATION (CUT ONLY)				
A. CONSTRUCTION ENTRANCE	EA	1	\$	\$
B. DRILL PAD	CY	81,131	\$	\$
C. AUXILIARY PAD	CY	15,947	\$	\$
D. ACCESS ROADS	CY	51,179	\$	\$
E. TOPSOIL	CY	8,700	\$	\$
F. DIVERSION DITCH	LF	1,385	\$	\$
G. ROADSIDE DITCH	LF	820	\$	\$
H. DITCH LINING (ACCESS ROAD)				
1. SYNTHETIC MATTING (TRM)	SY	775	\$	\$
2. RIP RAP	SY	2,832	\$	\$
I. 4" PVC OUTLET PIPE & RISER PIPE				
J. 24" SUMP	EA	10	\$	\$
3. STONE				
A. 6"-8" RIP RAP (INLETS/OUTLETS)	TN	12	\$	\$
B. #3 STONE (DITCH CHECKS)	TN	6	\$	\$
4. AGGREGATE SURFACING - DRILL PAD				
A. DRILL PAD 40 MIL. LINER	SY	7,190	\$	\$
B. DRILL PAD 10 OZ. FELT	SY	7,190	\$	\$
C. DRILL PAD 1" MINUS CRUSHER RUN AGGREGATE (2")	TN	740	\$	\$
D. DRILL PAD 3" CLEAN AGGREGATE (6")	TN	2,210	\$	\$
E. DRILL PAD #57 STONE (2")	TN	740	\$	\$
F. ACCESS ROADS 4" MINUS CRUSHER RUN AGREGATE (8")	TN	10,515	\$	\$
G. ACCESS ROADS GEOTEXTILE FABRIC (US 200)	SY	23,535	\$	\$
5. ROAD CULVERTS				
A. 18" HDPE	LF	102	\$	\$
B. 36" HDPE	LF	225	\$	\$
6. HYDRO SEEDING				
A. 18" HDPE	AC	15.5	\$	\$
7. RECLAMATION				
A. 18" HDPE	AC	5.00	\$	\$
TOTAL				
				\$

TOPSOIL QUANTITY FOR THIS SITE WAS ESTIMATED AT A UNIFORM THICKNESS OF 3" OVER THE ENTIRE EXCAVATED AREA. ACTUAL QUANTITY MAY VARY.

* GRADING VOLUMES			
DESCRIPTION	CUT (CY)	FILL (CY)	NET (CY)
MAIN ACCESS ROAD TO PADS	51,179	65,512	-14,333
DRILL PAD CHESTNUT	81,131	313	80,818
AUXILIARY PAD	15,947	39,629	-23,682
SPOIL PADS CHESTNUT	0	44,856	-44,856
TOTAL	148,257	150,310	-2,053

*THE EARTHWORK QUANTITIES PROVIDED ARE AN ESTIMATE FOR CONSIDERATION. THE QUANTITIES SHOWN MAY BE GREATER OR LESS THAN ACTUALLY EXCAVATED. THE ENGINEER IS NOT RESPONSIBLE FOR VARIANCES FROM THE ESTIMATED QUANTITIES AND DOES NOT CERTIFY TO THEIR ACCURACY.

GRADING	
CUT SLOPE	2:1
FILL SLOPE	2:1
PAD CONTAINMENT BERM SLOPE	1.5:1
CUT SHRINK FACTOR	0.90
FILL SWELL FACTOR	1.00
PAD ELEVATION	1115.0

CHESTNUT DRILL PAD SITE EXISTING CONDITIONS PLAN

ANTERO RESOURCES APPALACHIAN CORPORATION



NORTH MERIDIAN REFERENCED
TO NAD83 WEST VIRGINIA
STATE PLANE NORTH ZONE

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	4	38

White Brothers Consulting, LLC
ENGINEERING AND SURVEYING
440 CALLETON AVENUE, SUITE 200
CHARLESTON, WV 25312
(304) 550-3484
www.white-brothers.com



THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP

FINAL DESIGN
EXISTING CONDITIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

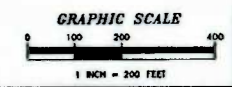
NO.	DATE	BY	REVISION	SHEET NUMBER

LEGEND ① THRU ⑪

ID#	TYPE	SF
1	BARN	391
2	BARN	880
3	BARN	378
4	CABIN	764
5	OUTHOUSE	50
6	HOUSE	1,074
7	HOUSE	2,243
8	HOUSE	2,117
9	CHURCH	1,274
10	BUILDING	768
11	HOUSE	1,480

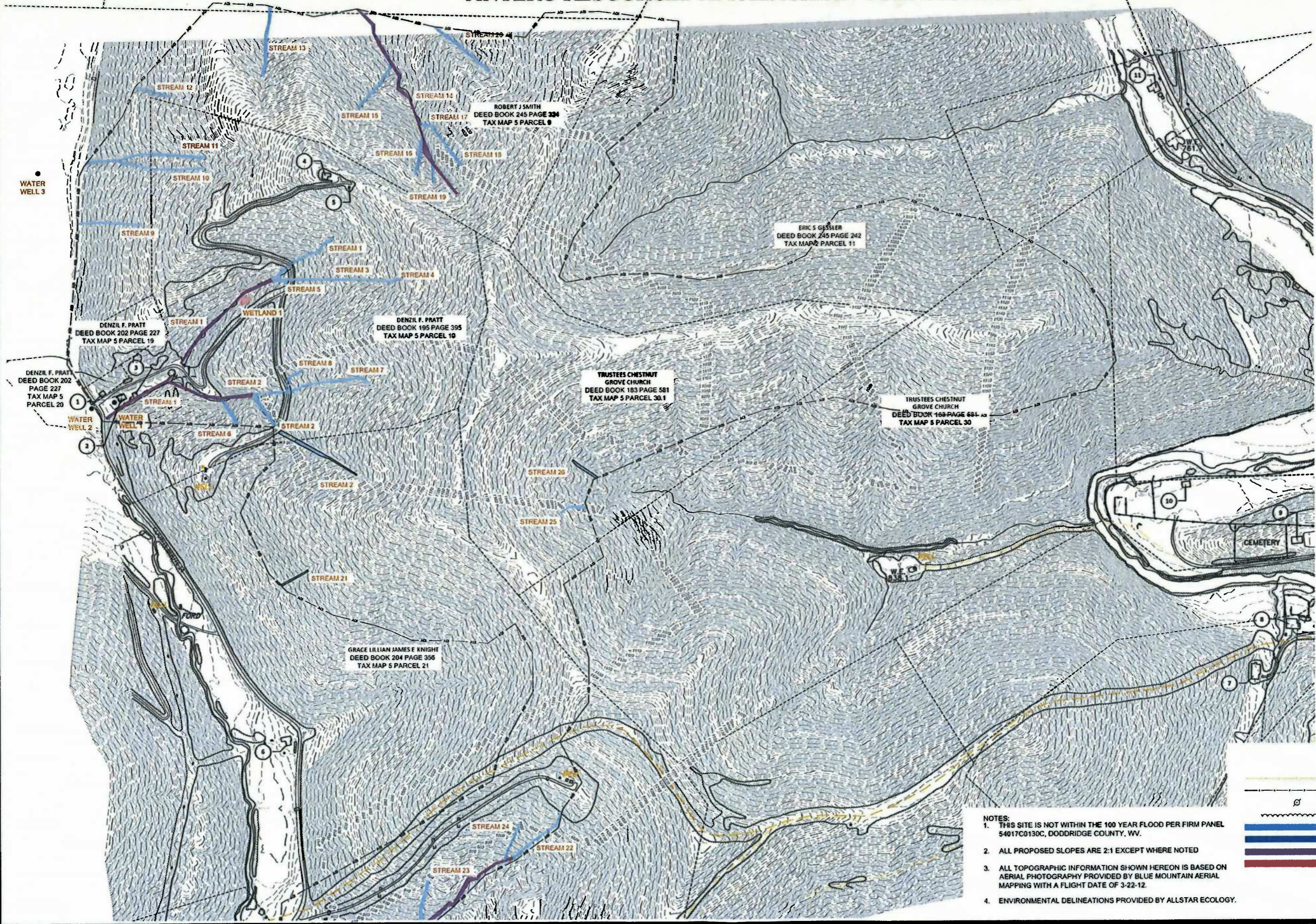
LEGEND

	EXISTING GAS LINE
	EXISTING FENCE LINE
	EXISTING UTILITY POLE
	EXISTING TREE LINE
	NRPW EPHEMERAL STREAM
	RPW PERENNIAL STREAM
	RPW INTERMITTENT STREAM
	PEM WETLANDS



NOTES:

- THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 54017C0130C, DODDRIDGE COUNTY, WV.
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- ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.



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CHESTNUT DRILL PAD SITE OVERALL SITE PLAN



NORTH MERIDIAN REFERENCED
TO NAD83 WEST VIRGINIA
STATE PLANE NORTH ZONE

LEGEND ① THRU ⑪

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	5	38

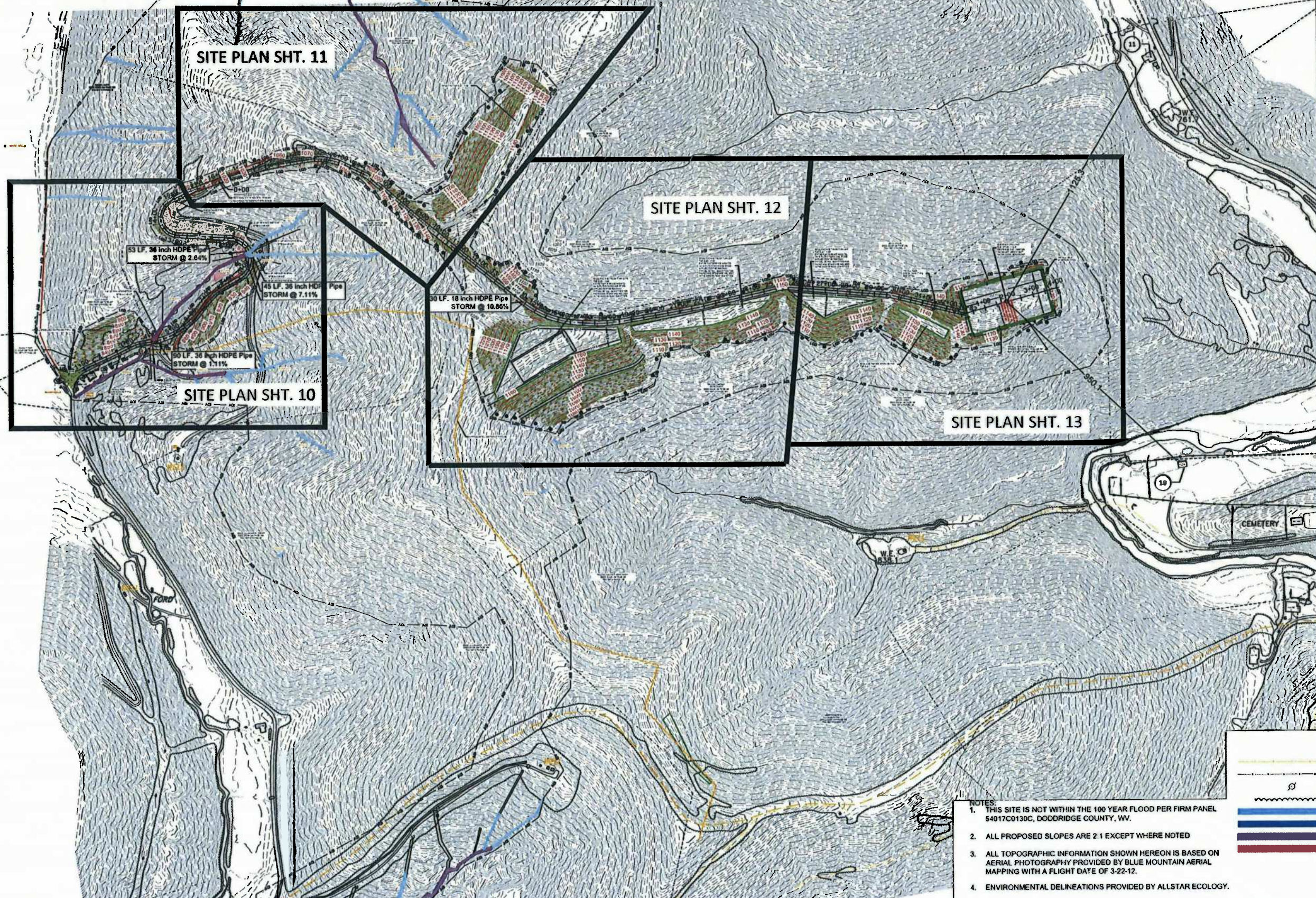
White Southern Consulting, LLC
WB
 ENGINEERING AND SURVEYING
 447 CALL ROAD, SUITE 216
 CHARLESTON, WV 25312
 (304) 535-9404
 www.white-southern.com



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ANTERO RESOURCES
APPALACHIAN CORP

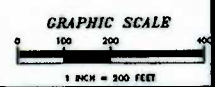
FINAL DESIGN
OVERALL SITE PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY



LEGEND

	EXISTING GAS LINE
	EXISTING FENCE LINE
	EXISTING UTILITY POLE
	EXISTING TREE LINE
	NRPW EPHEMERAL STREAM
	RPW PERENNIAL STREAM
	RPW INTERMITTENT STREAM
	PEM WETLANDS



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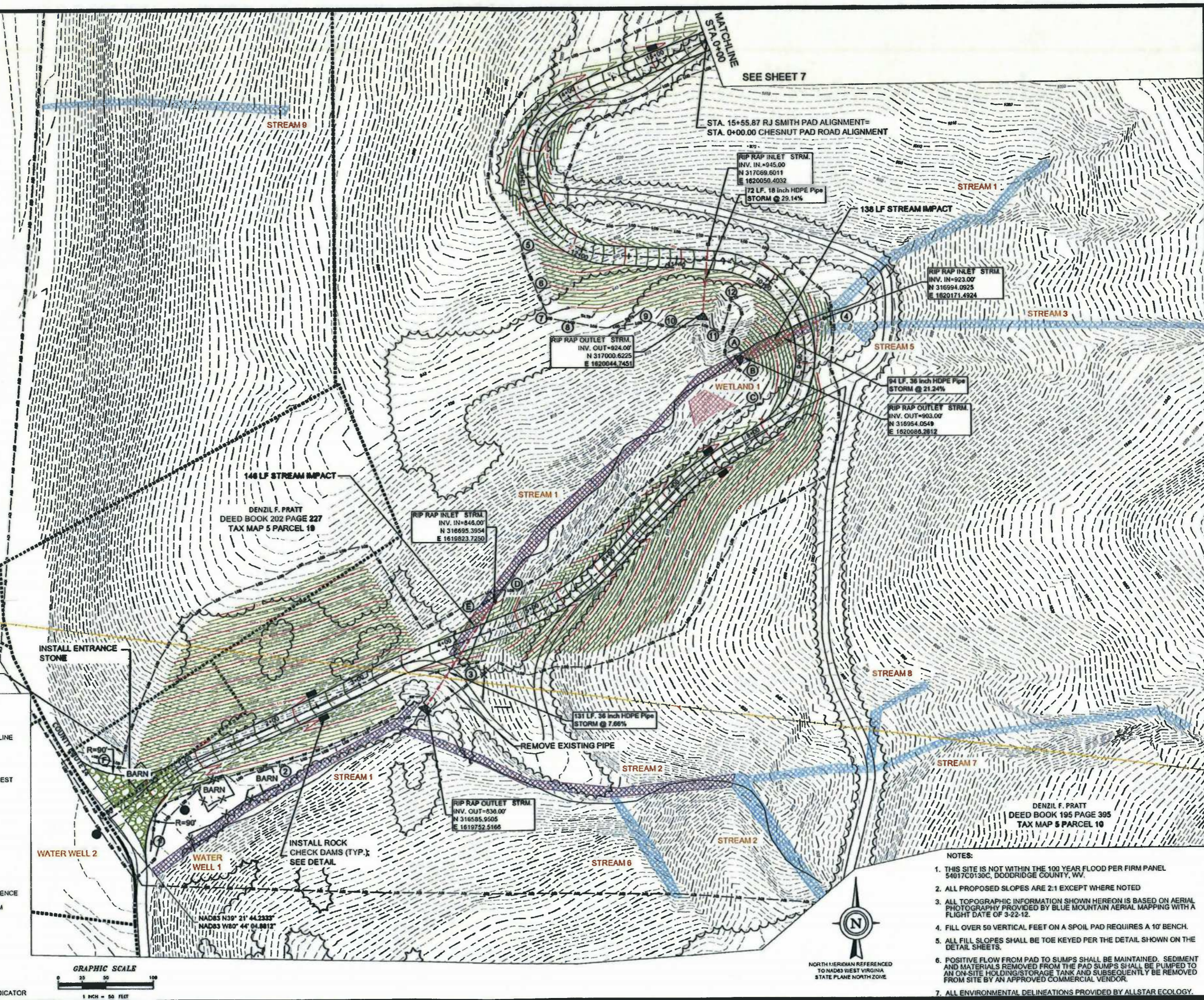
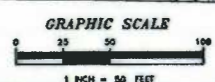
SF, SSF & SILT SOCK TABLE

ID NUMBER	SF (LF)	SSF (LF)	SS (LF)
1		90	
2		225	
3		62	
4		42	
5			10
6			14
7			24
8			28
9			42
10			19
11			20
12			32
A			18
B			13
C			17
D			7
E			34
F		43	
SUBTOTAL	0	462	276

SERVER:\POS\CANSURVE\102-500-93 CHESTNUT\WV\DRG\WV\TAX\20\TAX MAP 5 PARCEL 10.DWG 4/22/2013 3:48 PM

LEGEND

- APPROXIMATE PROPERTY LINE
- - - LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- - - SILT FENCE
- - - SUPER SILT FENCE
- - - SILT SOCK
- - - EXISTING GAS LINE
- - - EXISTING FENCE LINE
- - - EXISTING UTILITY POLE
- - - EXISTING TREE LINE
- - - PROPOSED WOVEN WIRE FENCE
- - - NRPW EPHEMERAL STREAM
- - - RPW PERENNIAL STREAM
- - - PEM WETLANDS
- - - RPW INTERMITTENT
- - - POW WETLANDS
- - - DITCH
- SF, SSF AND SILT SOCK INDICATOR



DATE SUBMITTED: 4-28-2013, SHEET NO: 6, TOTAL SHEETS: 36

White Brothers Consulting, LLC
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CHARLOTTE, NORTH CAROLINA 28216
(304) 550-4444
www.white-brothers.com

TIMOTHY T. WHITE
REGISTERED PROFESSIONAL ENGINEER
NO. 12473
STATE OF WEST VIRGINIA

ANTERO RESOURCES

THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APALACHIAN CORP

FINAL DESIGN
EROSION & SEDIMENT CONTROL PLANS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

REVISION	DATE	BY

NUMBER SHEET
REVISION NUMBER

- NOTES:
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 2. ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED
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 7. ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.



NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE NORTH ZONE



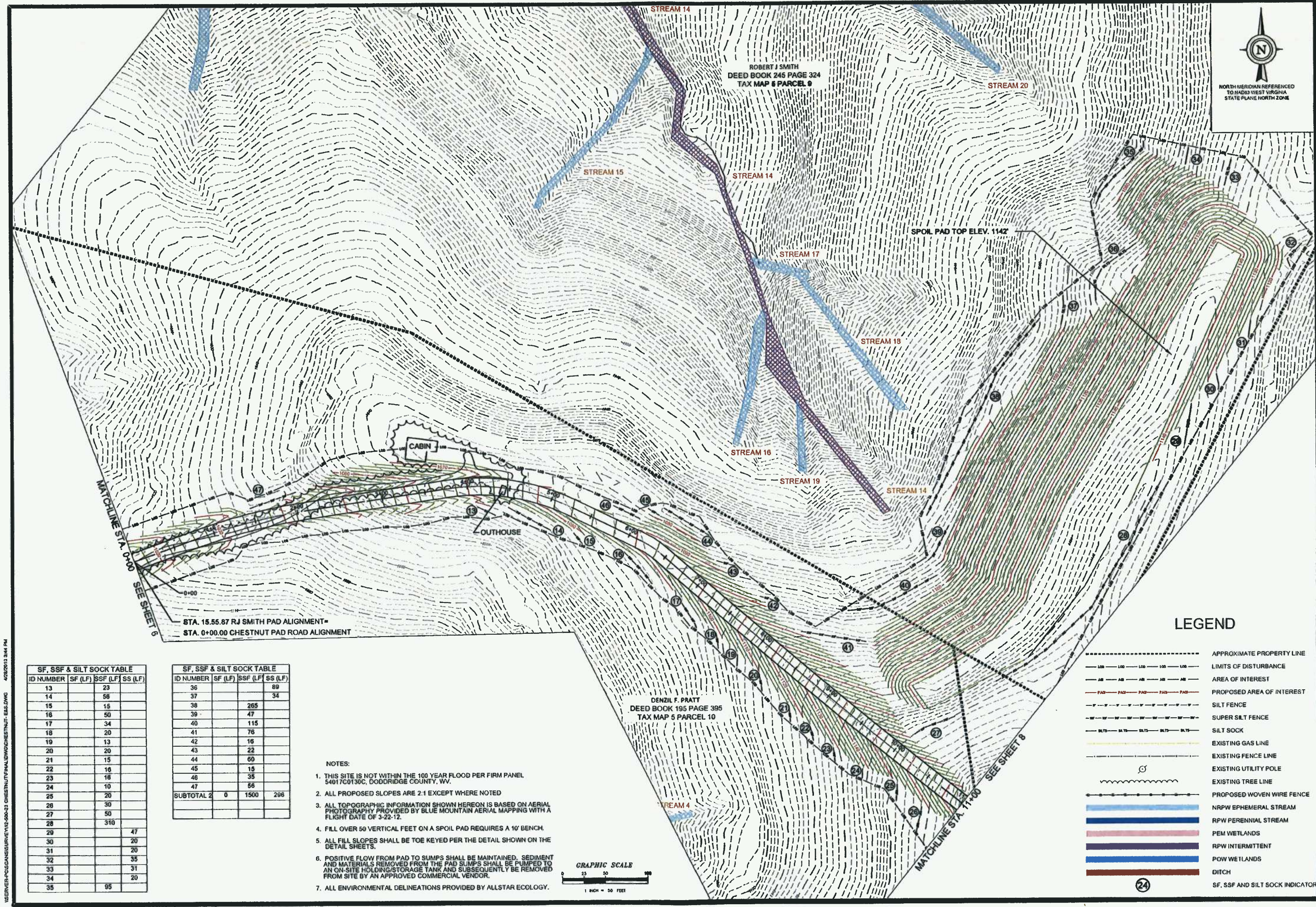
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	7	38



THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

FINAL DESIGN
EROSION & SEDIMENT CONTROL PLANS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY

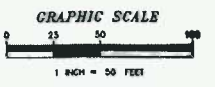


STA. 15.55.87 R.J. SMITH PAD ALIGNMENT
STA. 0+00.00 CHESTNUT PAD ROAD ALIGNMENT

ID NUMBER	SF (LF)	SSF (LF)	SS (LF)
13	23		
14	56		
15	15		
16	50		
17	34		
18	20		
19	13		
20	20		
21	15		
22	16		
23	16		
24	10		
25	20		
26	30		
27	50		
28	310		
29		47	
30		20	
31		20	
32		35	
33		31	
34		20	
35		95	

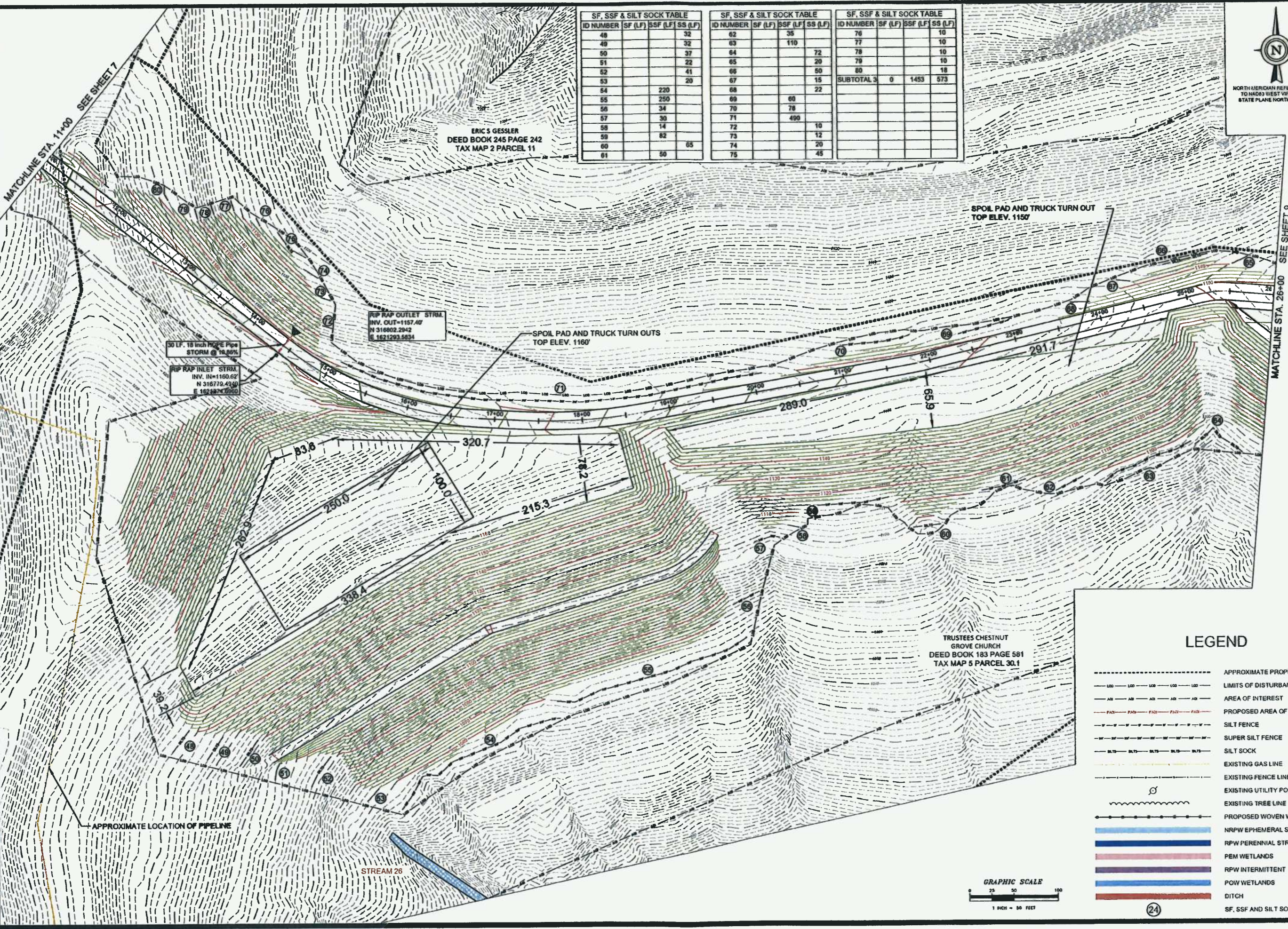
ID NUMBER	SF (LF)	SSF (LF)	SS (LF)
36			89
37			34
38		265	
39		47	
40		115	
41		76	
42		16	
43		22	
44		60	
45		15	
46		35	
47		56	
SUBTOTAL 2	0	1500	296

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 - ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.



LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- SILT FENCE
- SUPER SILT FENCE
- SILT SOCK
- EXISTING GAS LINE
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- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SILT SOCK INDICATOR



SF, SSF & SILT SOCK TABLE			
ID NUMBER	SF (LF)	SSF (LF)	SSF (LF) SS (LF)
48			32
49			32
50			37
51			22
52			41
53			20
54		220	
55		250	
56		34	
57		30	
58		14	
59		82	
60			65
61		50	

SF, SSF & SILT SOCK TABLE			
ID NUMBER	SF (LF)	SSF (LF)	SSF (LF) SS (LF)
62			35
63			110
64			72
65			20
66			50
67			15
68			22
69		60	
70		78	
71		490	
72			10
73			12
74			20
75			45

SF, SSF & SILT SOCK TABLE			
ID NUMBER	SF (LF)	SSF (LF)	SSF (LF) SS (LF)
76			10
77			10
78			10
79			10
80			18
SUBTOTAL			0 1453 573



DATE SUBMITTED: 4-28-2013
 SHEET NO.: 8
 TOTAL SHEETS: 38

WB
White Brothers Consulting, LLC
 ENGINEERING AND SURVEYING
 447 CALL ROAD, SUITE 216
 CHARLESTON, WV 25312
 (304) 526-0044
 www.white-brothers.com

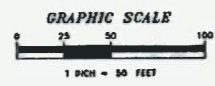


THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

FINAL DESIGN
 EROSION & SEDIMENT CONTROL PLANS
CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
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NO.	REVISION	DATE	BY

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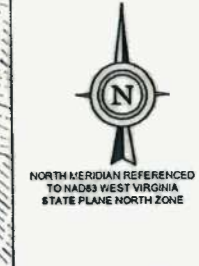
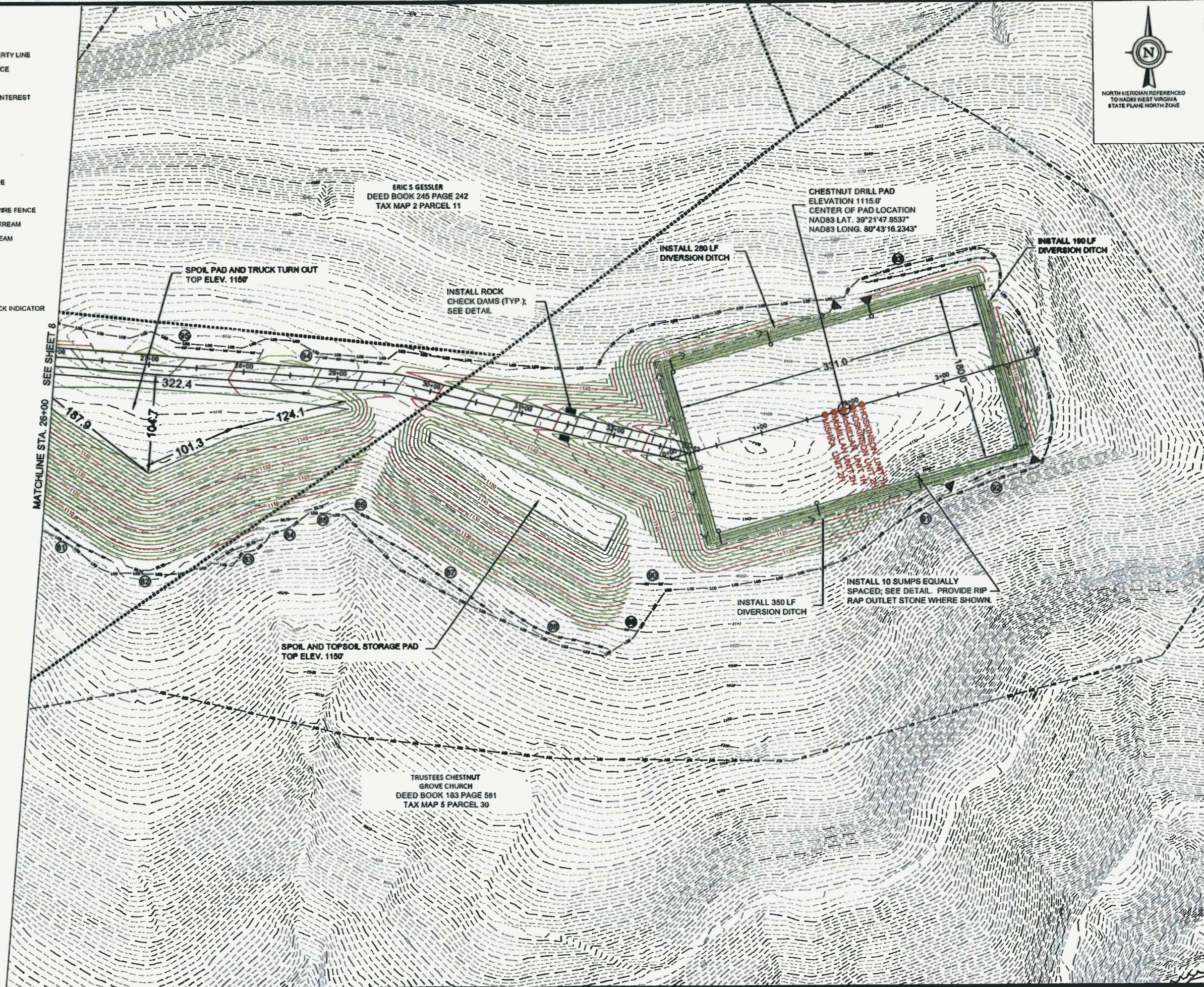
LEGEND

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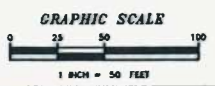
ID NUMBER	SF (LF)	SSF (LF)	SS (LF)
81		76	50
82			55
83			30
84			27
85			45
86			
87	150		
88	118		
89	22		
90	38		
91	34		
92	62		
93	138		
94	80		
95	92		
SUBTOTAL 4	0	816	207
SUBTOTAL 3	0	1,453	573
SUBTOTAL 2	0	1,500	298
SUBTOTAL 1	0	462	276
TOTALS	0	4,231	1,352

24




MATCHLINE STA. 26+00 SEE SHEET 8

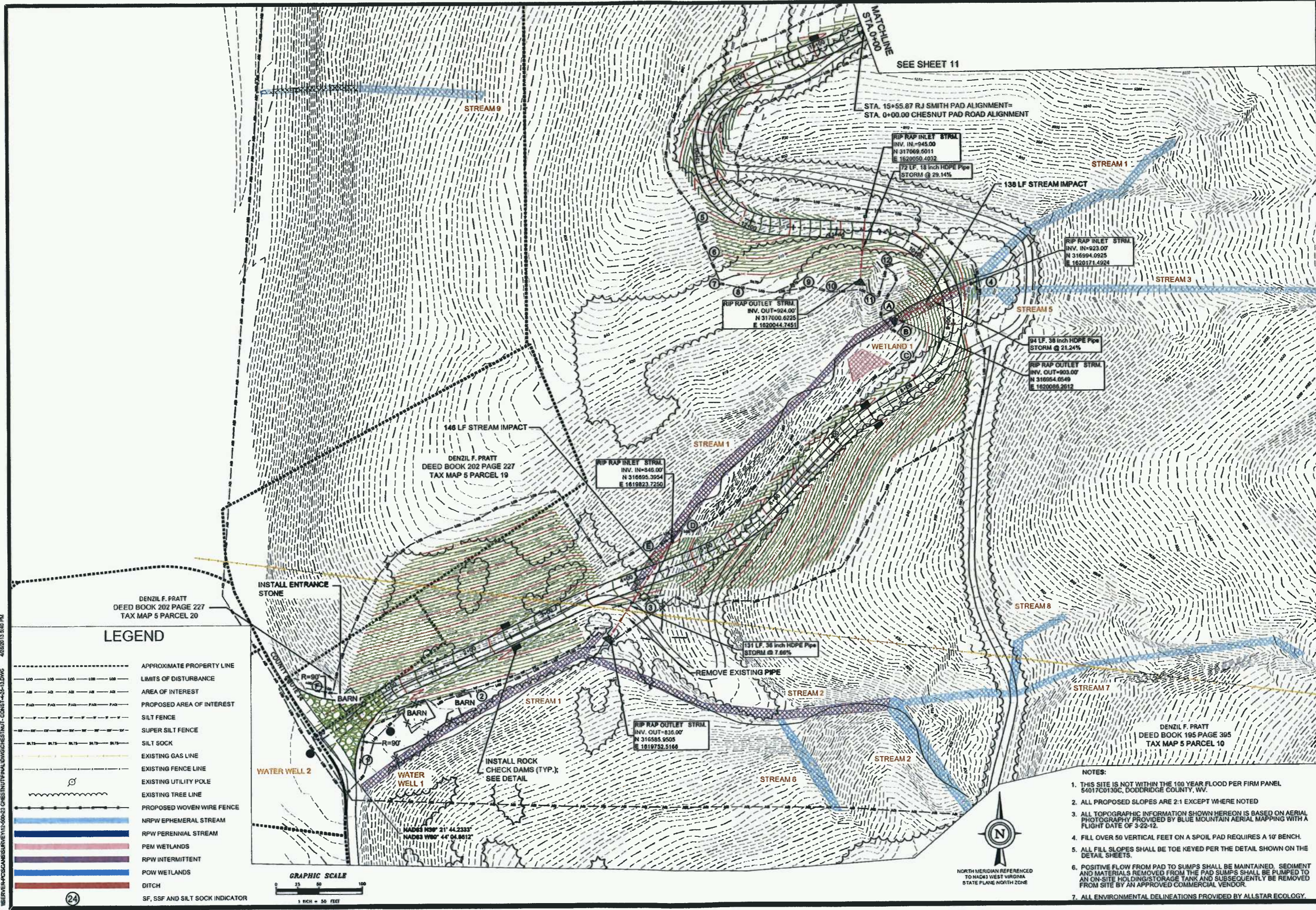


DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	9	38
 White Southern Consulting, LLC ENGINEERING AND SURVEYING 447 CALL ROAD, SUITE 216 CHARLESTON, WV 25312 www.white-southern.com		
 TIMOTHY T. WHITE REGISTERED PROFESSIONAL ENGINEER No. 17607		
 ANTERO RESOURCES		
THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP		
FINAL DESIGN EROSION & SEDIMENT CONTROL PLANS CHESTNUT DRILL PAD GRANT DISTRICT DODDRIDGE COUNTY, WV		
NO.	DATE	BY



4/28/2013 5:40 PM
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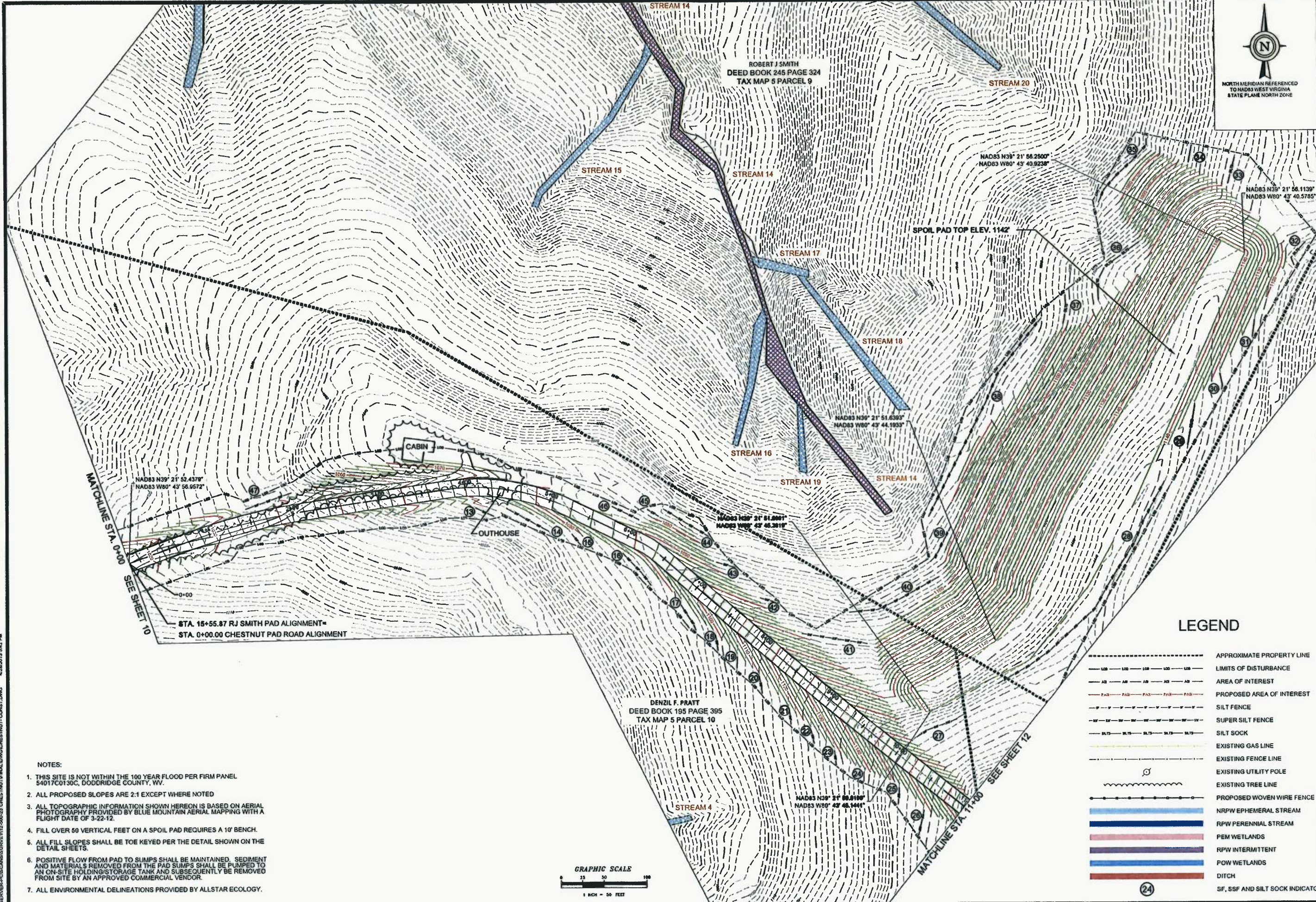
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS	
4-28-2013	10	38	
 White Brothers Consulting, LLC ENGINEERING AND SURVEYING 401 CALLETS ROAD, SUITE 1110 CHARLOTTE, NC 28217 (704) 520-2484 www.white-brothers.com			
			
			
THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP			
FINAL DESIGN SITE PLAN CHESTNUT DRILL PAD GRANT DISTRICT DODDRIDGE COUNTY, WV			
NO.	REVISION	DATE	BY



LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
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- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SILT SOCK INDICATOR

- NOTES:**
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NORTH MERIDIAN REFERENCED
TO NAD83 WEST VIRGINIA
STATE PLANE NORTH ZONE

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-25-2013	11	38

White Earth Consulting, LLC
ENGINEERING AND SURVEYING
447 CALL ROAD, SUITE 216
CHARLESTON, WV 25312
www.white-earth.com



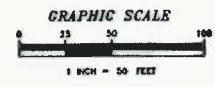
THIS DOCUMENT
PREPARED FOR
ANTERO RESOURCES
APPALACHIAN CORP

FINAL DESIGN
SITE PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

LEGEND

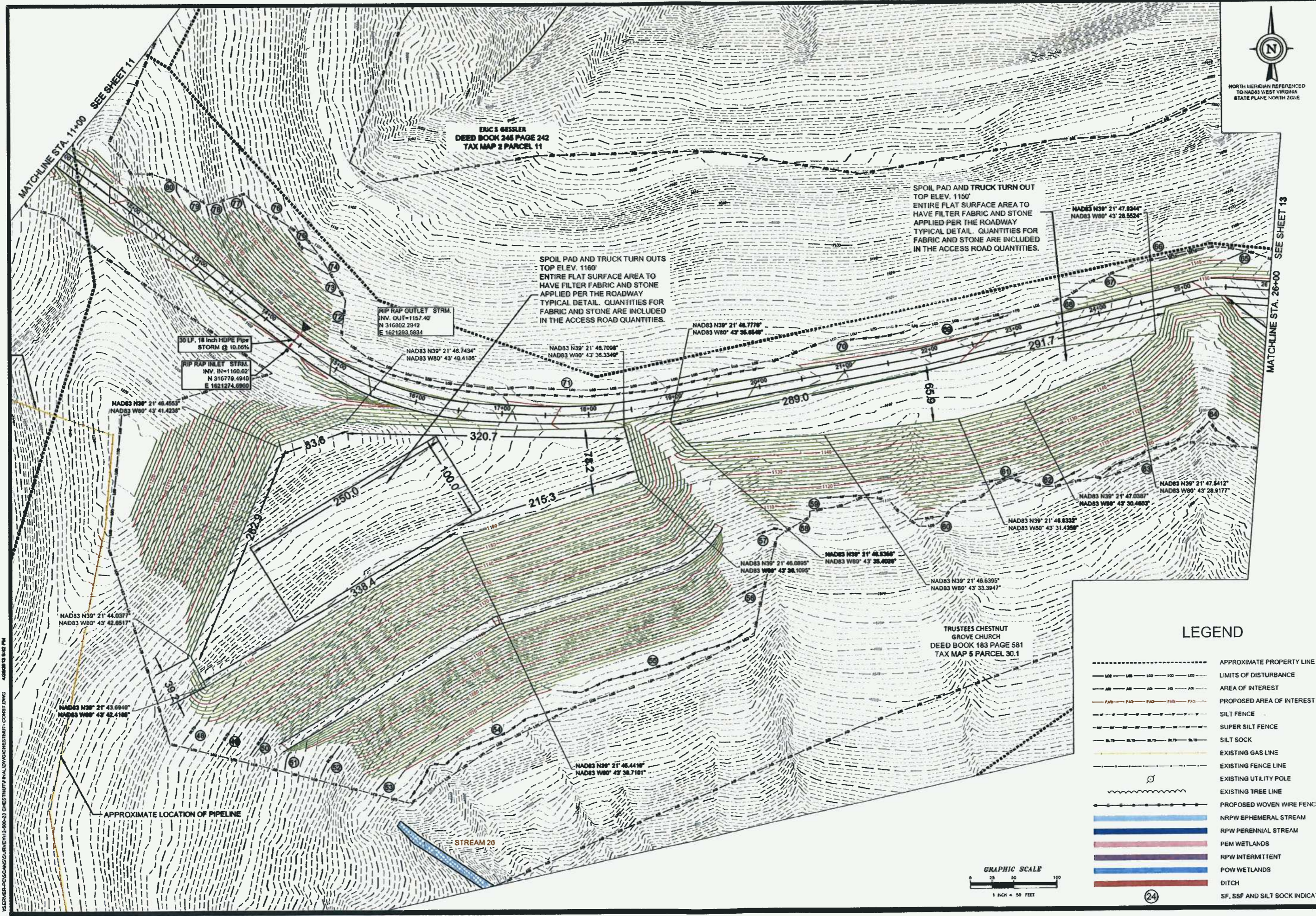
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- THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 54017C0130C, DODDRIDGE COUNTY, WV.
 - ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED
 - ALL TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING WITH A FLIGHT DATE OF 3-22-12.
 - FILL OVER 50 VERTICAL FEET ON A SPOIL PAD REQUIRES A 10' BENCH.
 - ALL FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON THE DETAIL SHEETS.
 - POSITIVE FLOW FROM PAD TO SUMPS SHALL BE MAINTAINED. SEDIMENT AND MATERIALS REMOVED FROM THE PAD SUMPS SHALL BE PUMPED TO AN ON-SITE HOLDING/STORAGE TANK AND SUBSEQUENTLY BE REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR.
 - ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.



4/28/2013 3:42 PM USER:POCSAN\SURVEY\12-200-03 CHESTNUT\FINAL.DWG\CHESTNUT.CONST.DWG

NO.	REVISION	DATE	BY



DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-25-2013	12	30

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 ENGINEERING AND SURVEYING
 447 CALL ROAD, SUITE 216
 CHARLESTON, WV 25312
 www.white-swallow.com

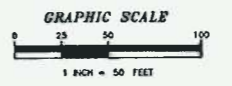


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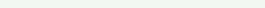
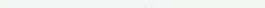

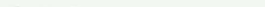
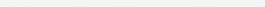

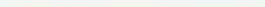


FINAL DESIGN
 SITE PLAN
CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- - - AREA OF INTEREST
- - - PROPOSED AREA OF INTEREST
- SILT FENCE
- SUPER SILT FENCE
- SILT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING TREE LINE
- PROPOSED WOVEN WIRE FENCE
- NRPW EPHEMERAL STREAM
- RPW PERENNIAL STREAM
- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SILT SOCK INDICATOR



LEGEND

-  APPROXIMATE PROPERTY LINE
-  LIMITS OF DISTURBANCE
-  AREA OF INTEREST
-  PROPOSED AREA OF INTEREST
-  SILT FENCE
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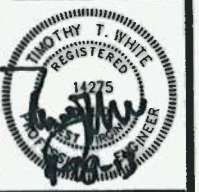
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NORTH MERIDIAN REFERENCED
TO NAD83 WEST VIRGINIA
STATE PLANE NORTH ZONE

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
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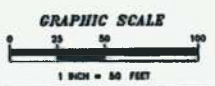
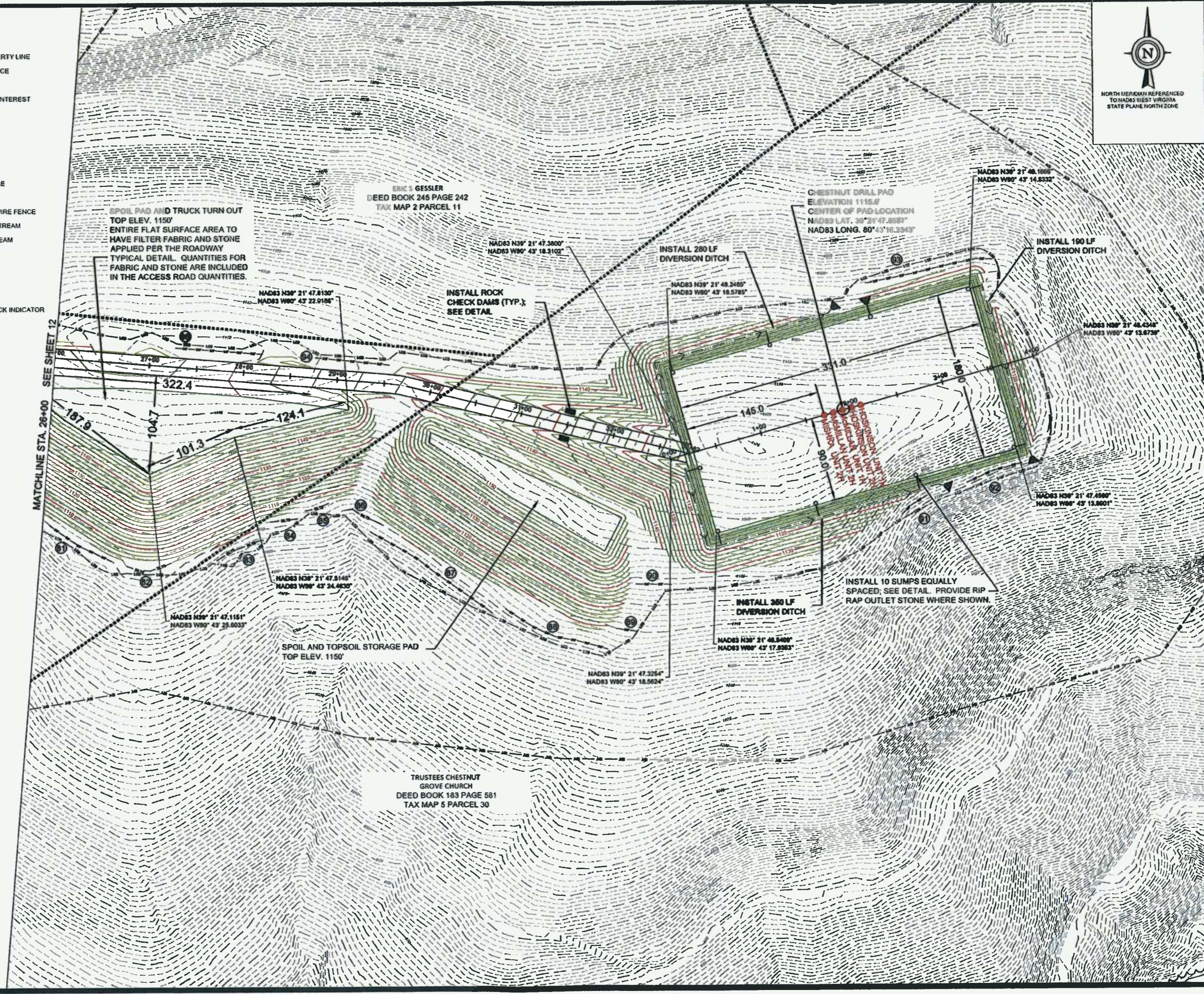
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FINAL DESIGN
SITE PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	DATE	BY	REVISION



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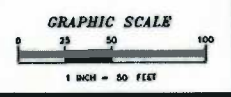
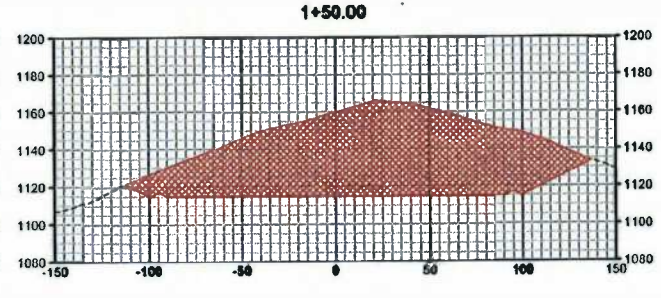
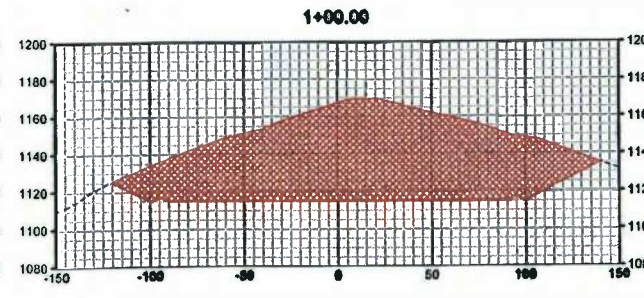
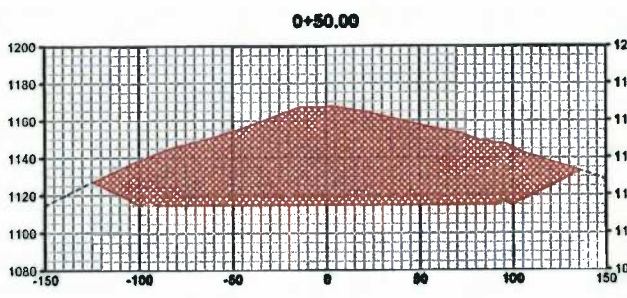
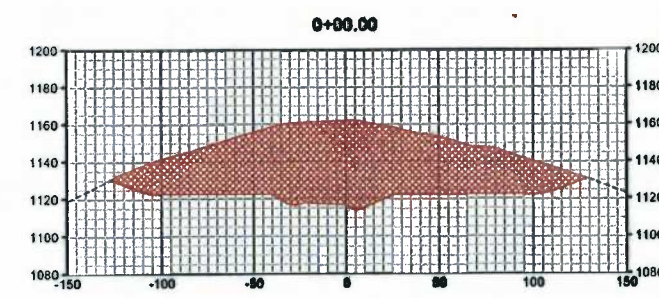
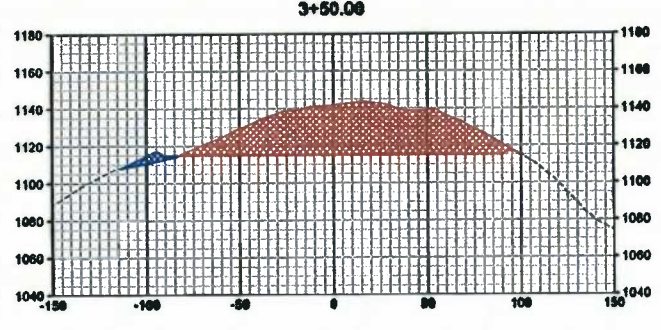
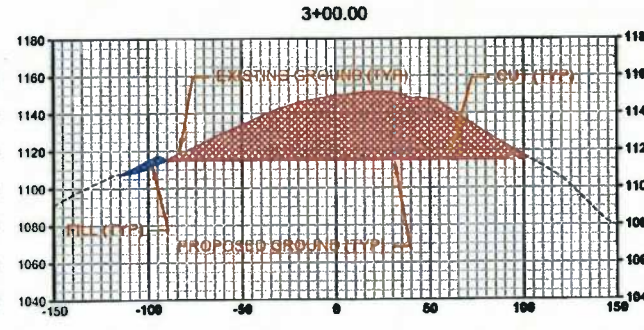
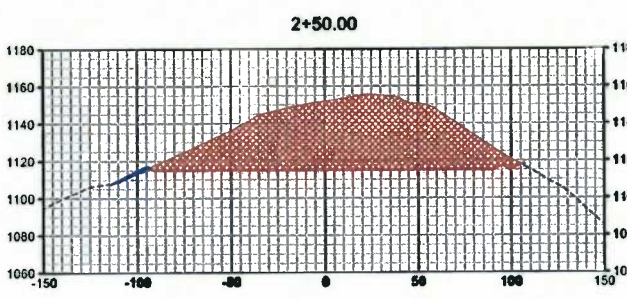
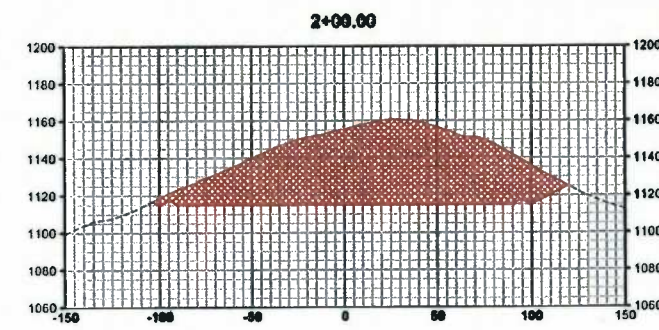
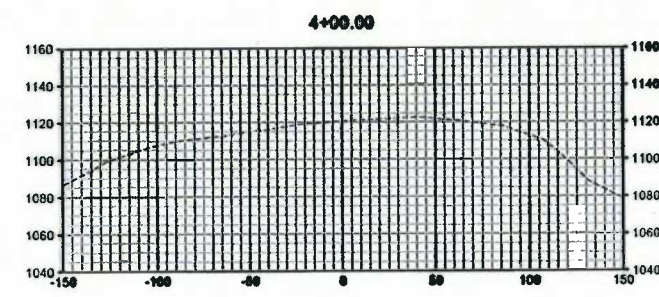
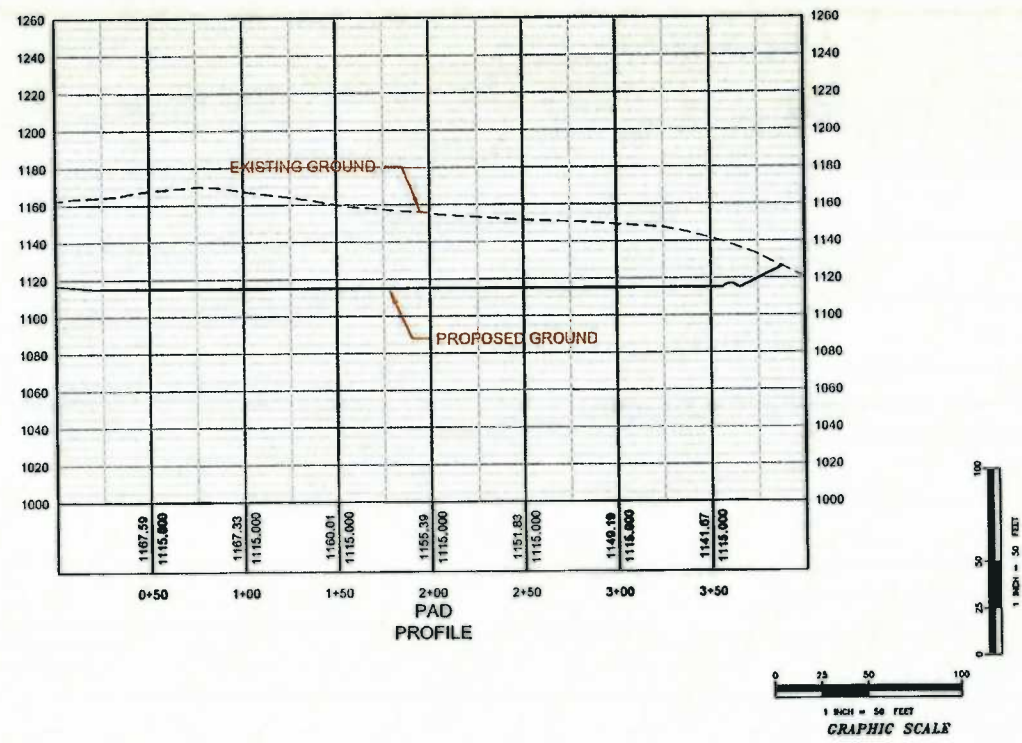
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	14	38

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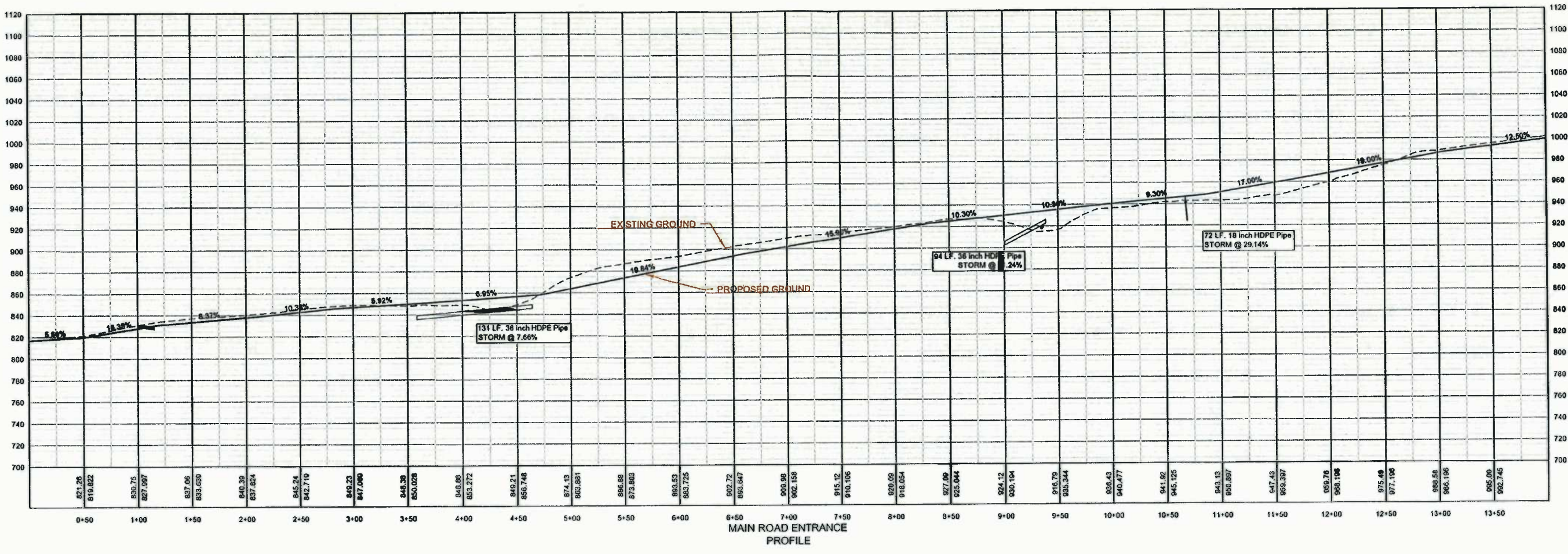
FINAL DESIGN
PAD PROFILE & CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV



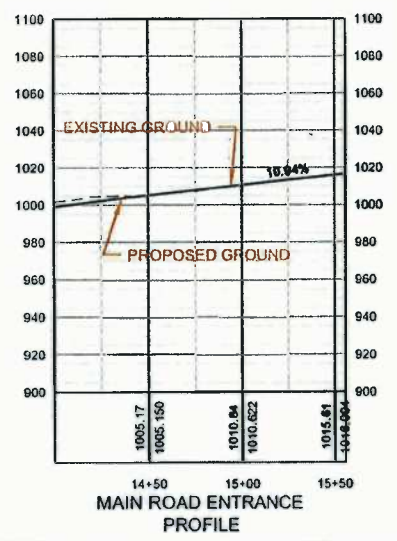
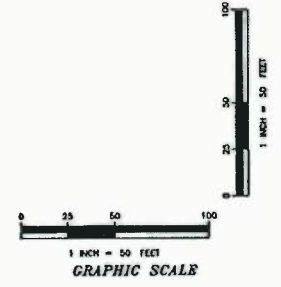
REVISION	DATE	BY

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FINAL DESIGN
 RJ SMITH PAD ENTRANCE ROAD PROFILE
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV



NOTE:
 1. CONTRACTOR SHALL INSTALL DITCH LINING AS FOLLOWS:
 JUTE MATTING = 0% TO 4%
 SYNTHETIC MATTING (TRM) = 4% TO 10%
 6"-8" RIPRAP = 10% TO 20%



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NUMBER	SHEET	REVISION	DATE	BY

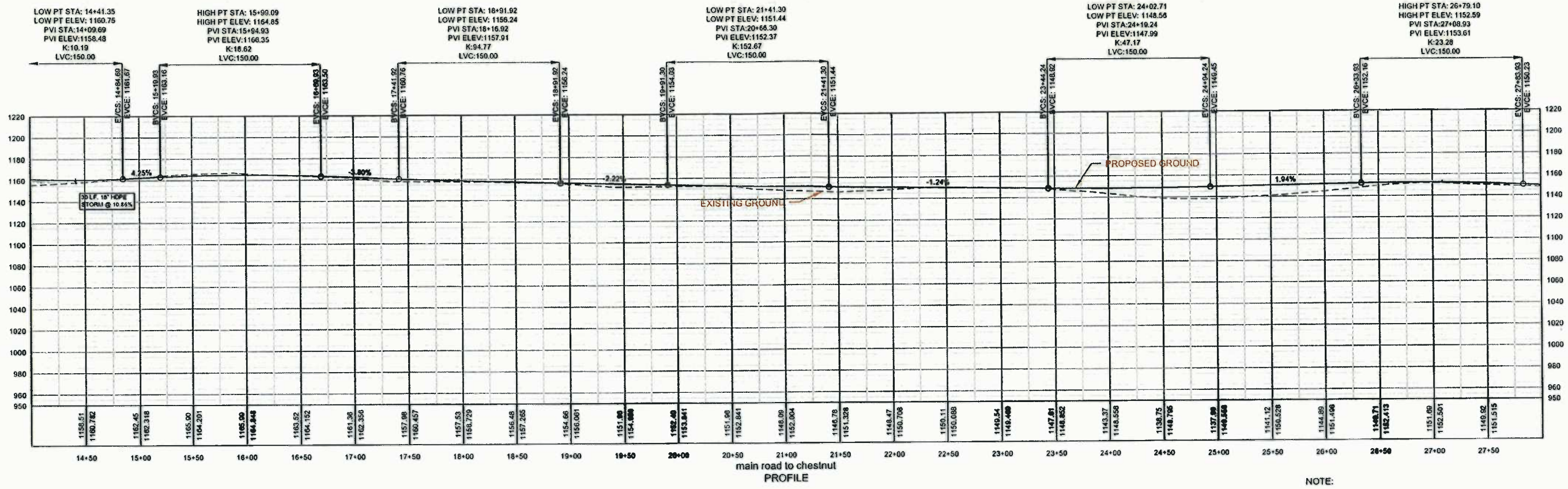
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	16	38

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CHARLESTON, WV 25312
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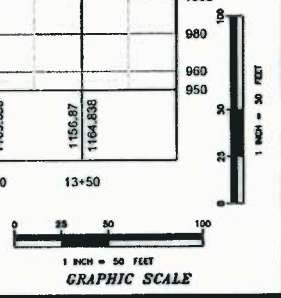
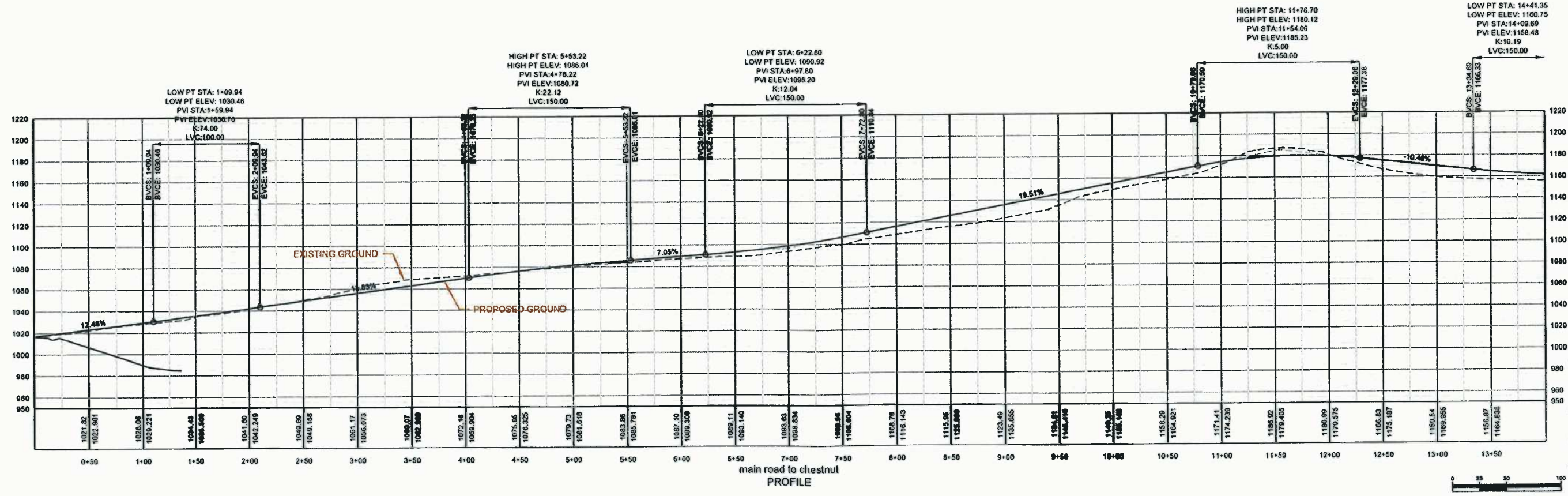


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FINAL DESIGN
ROAD TO CHESTNUT PAD PROFILE
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV



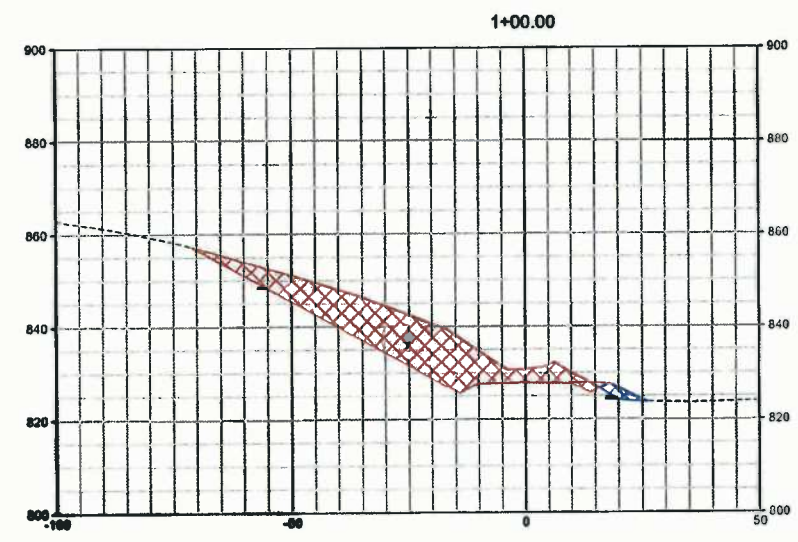
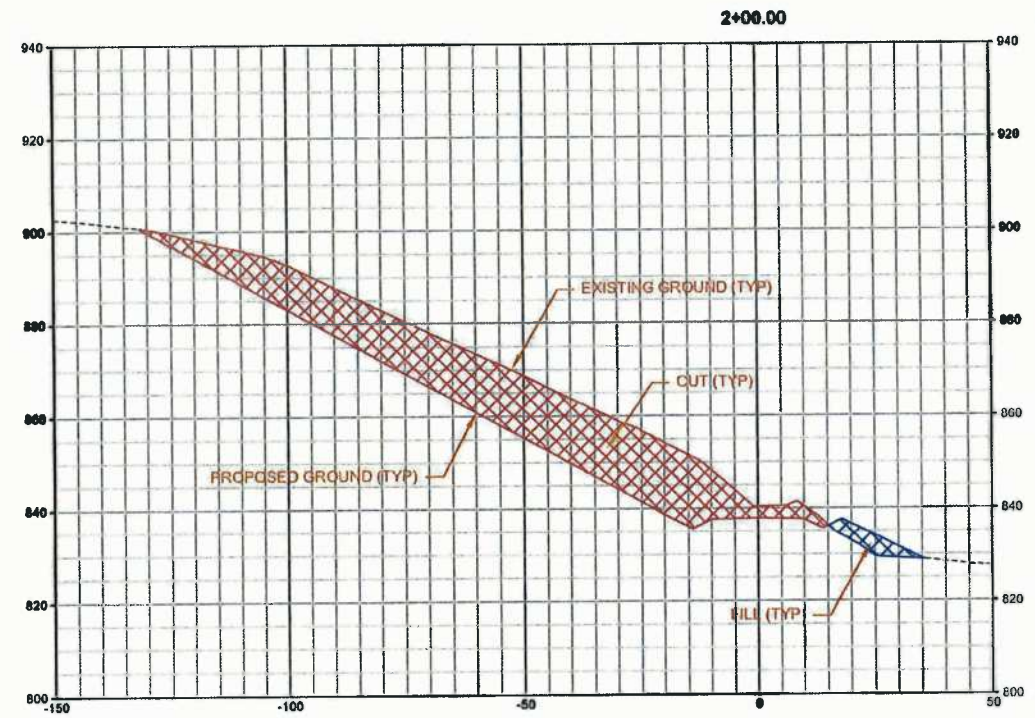
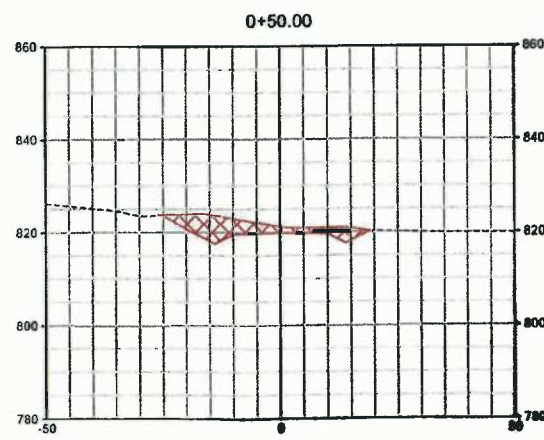
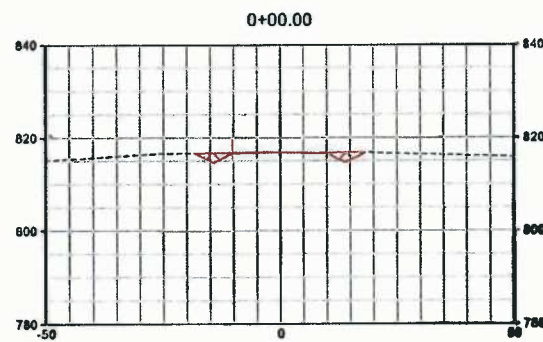
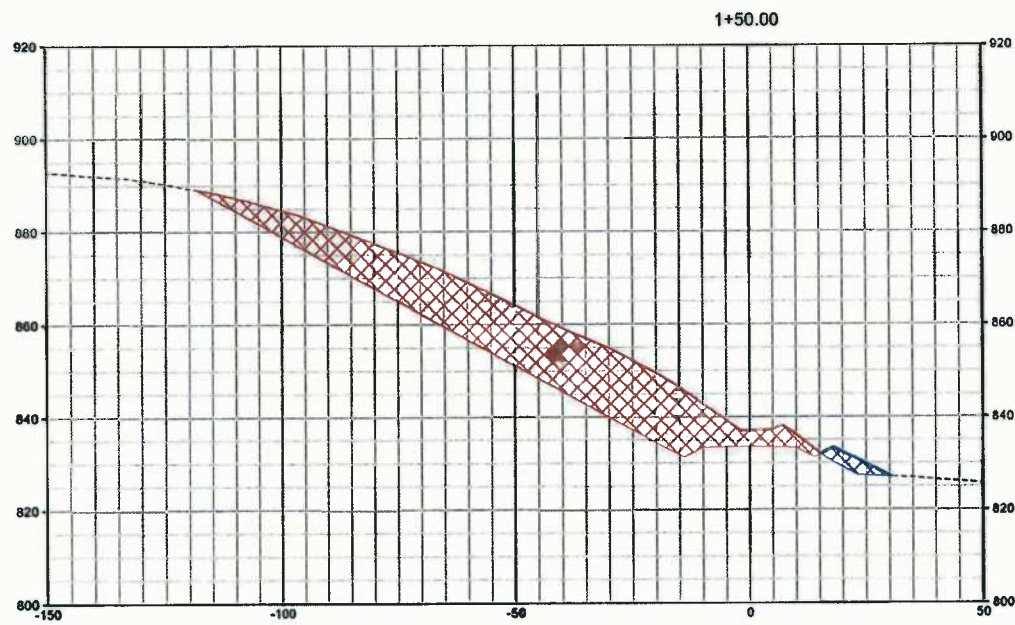
- NOTE:
- CONTRACTOR SHALL INSTALL DITCH LINING AS FOLLOWS:
 JUTE MATTING = 0% TO 4%
 SYNTHETIC MATTING (TRM) = 4% TO 10%
 6"-8" RIPRAP = 10% TO 20%



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NUMBER	SHEET	REVISION	DATE	BY

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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	18	38

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 CHARLESTON, WV 25312
 (304) 550-9484
 www.white-brothers.com

TIMOTHY T. WHITE
 REGISTERED PROFESSIONAL ENGINEER

ANTERO RESOURCES

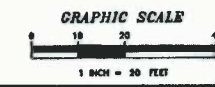
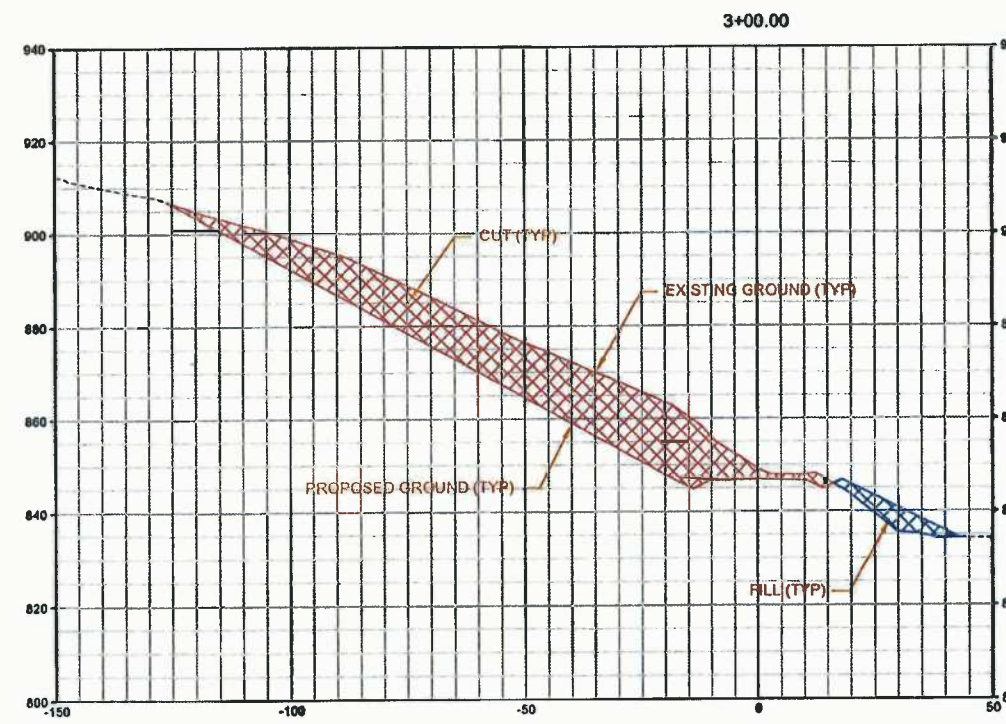
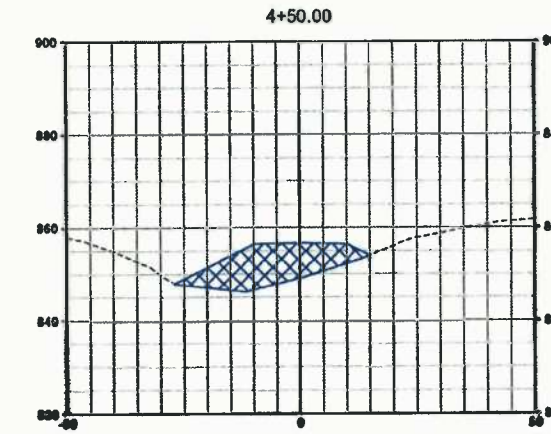
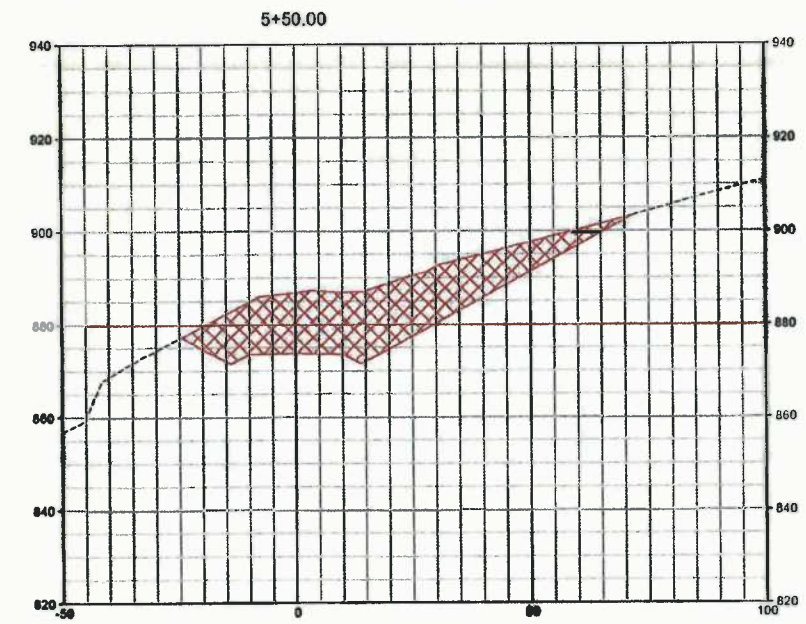
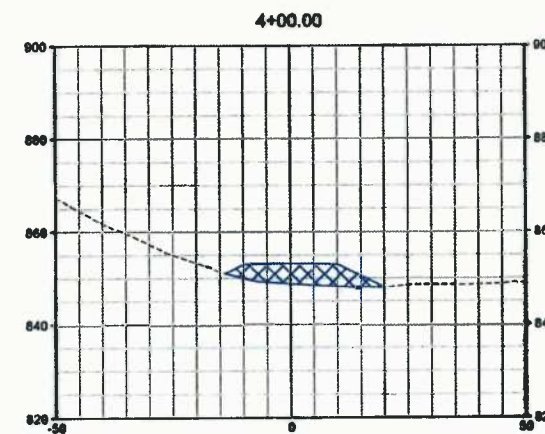
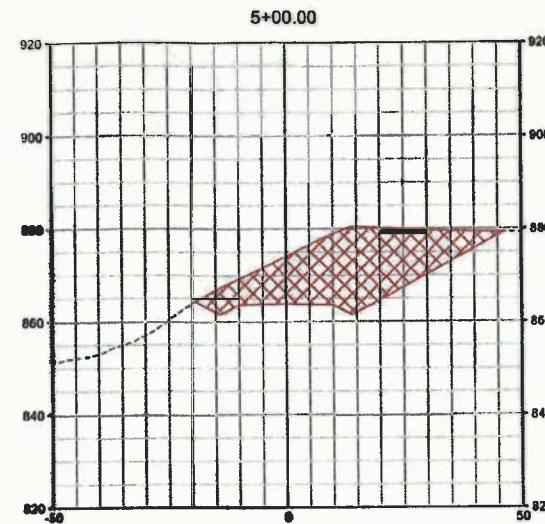
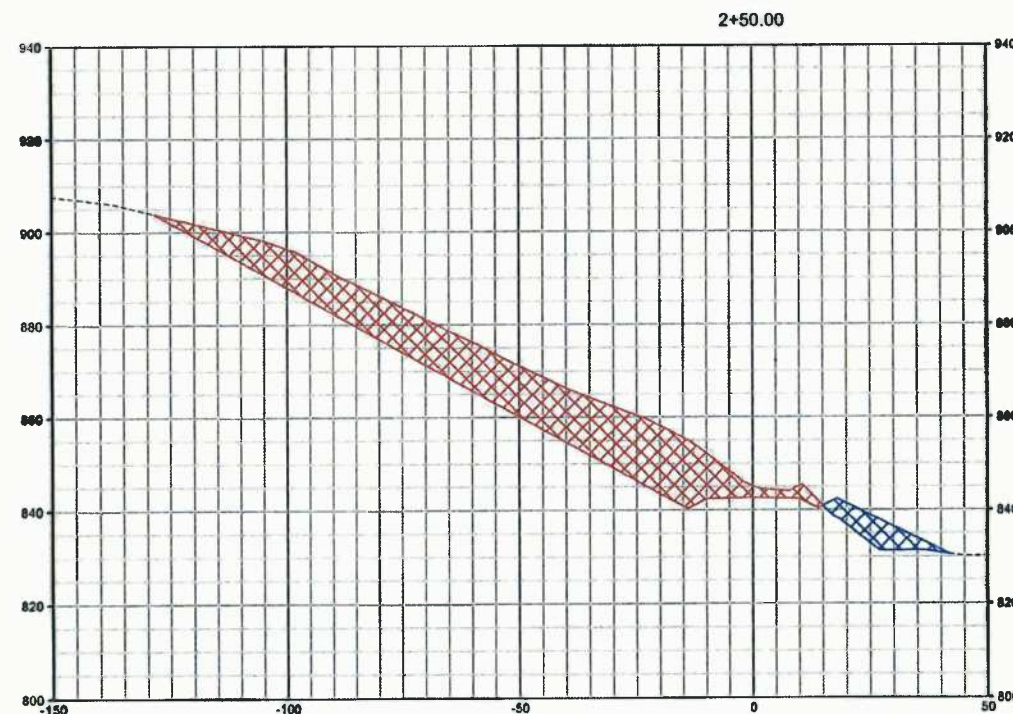
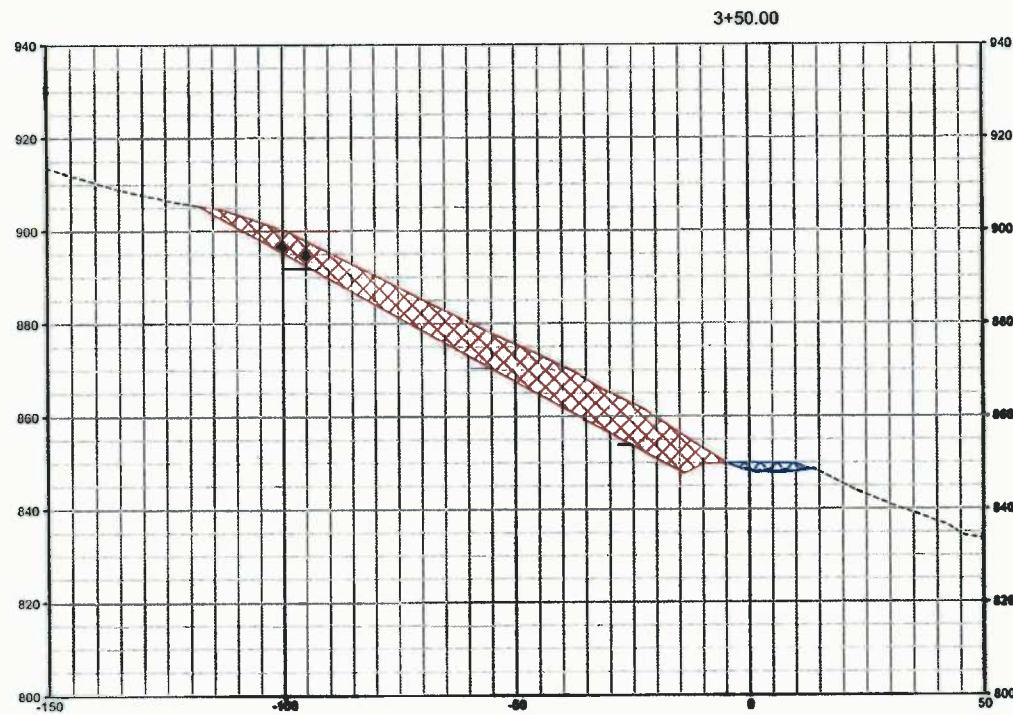
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FINAL DESIGN
 RJ SMITH ENTRANCE RD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

REVISION	DATE	BY

NUMBER	SHEET NUMBER

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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	19	38

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TIMOTHY T. WHITE
REGISTERED PROFESSIONAL ENGINEER
14275

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FINAL DESIGN

RJ SMITH ENTRANCE RD CROSS SECTIONS

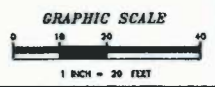
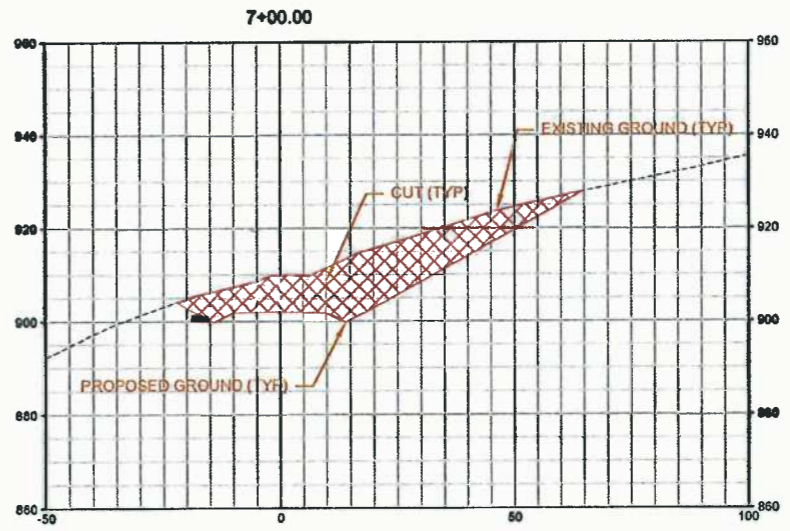
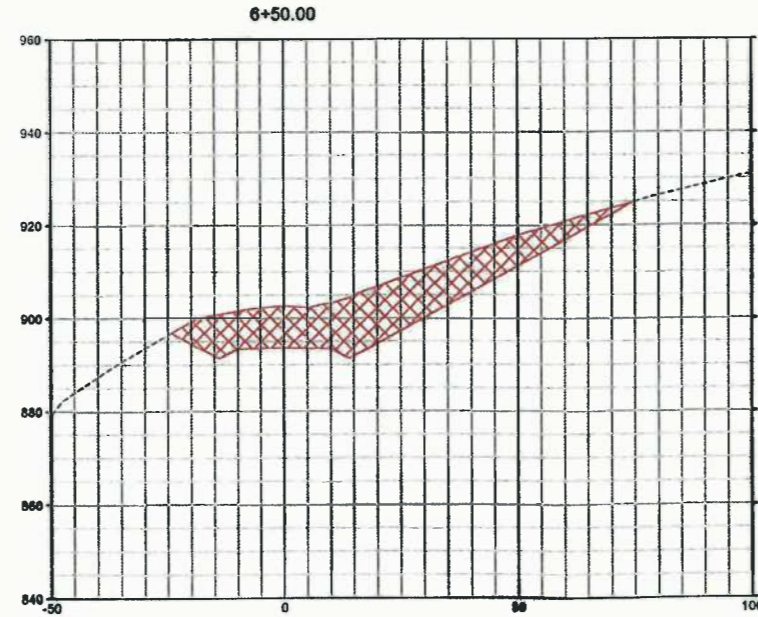
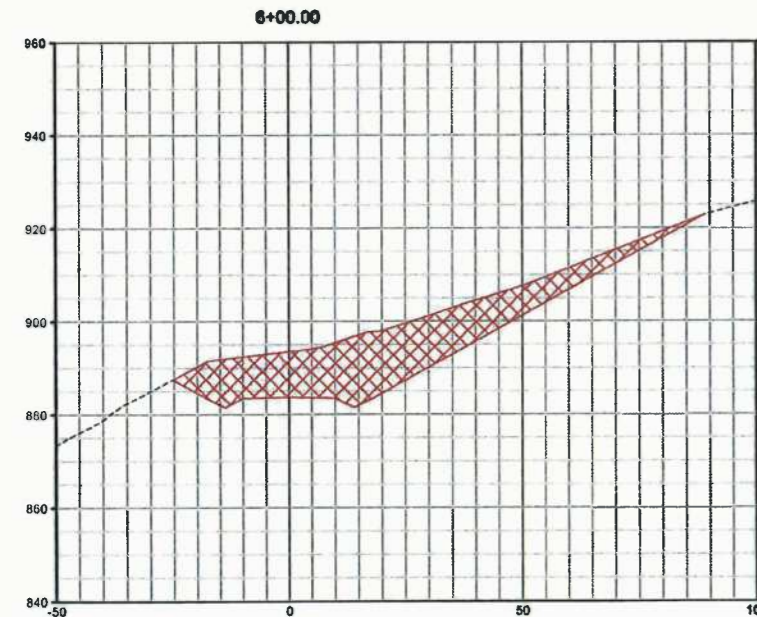
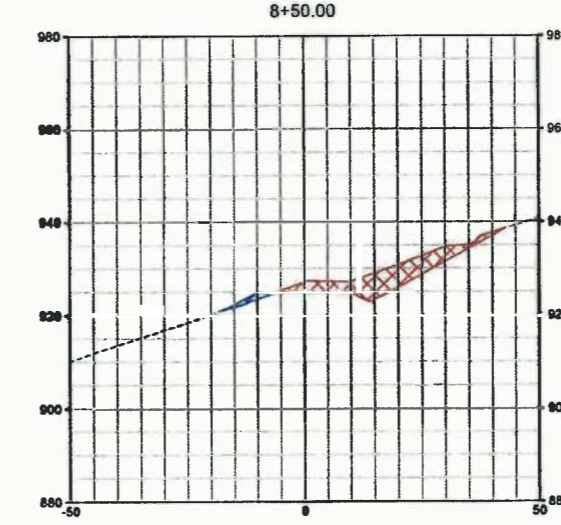
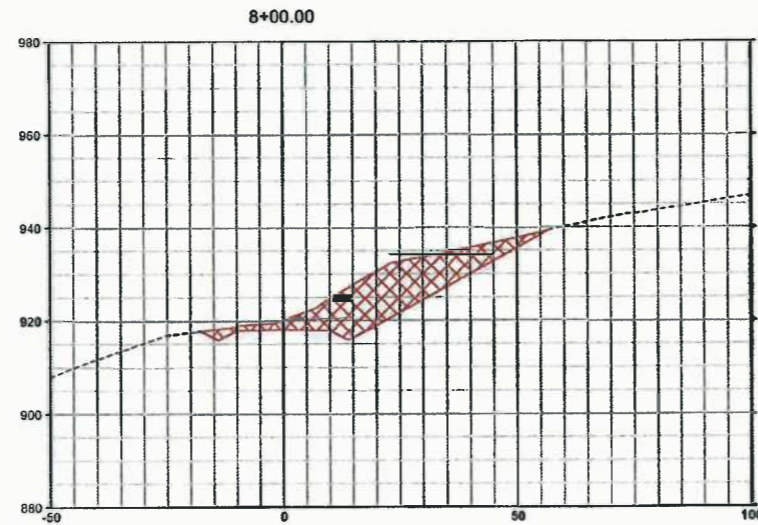
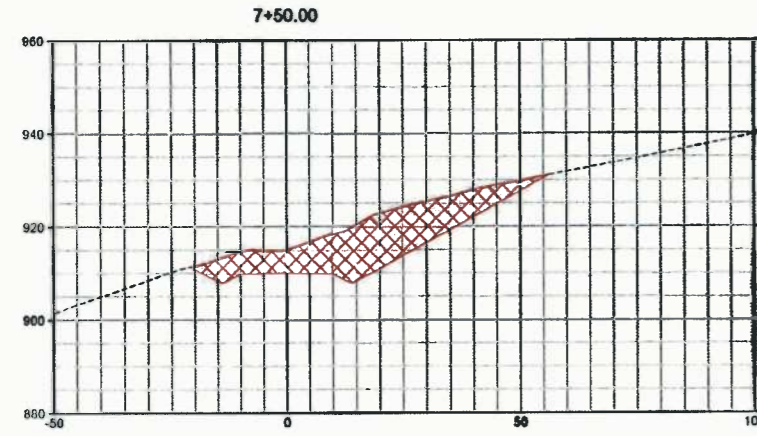
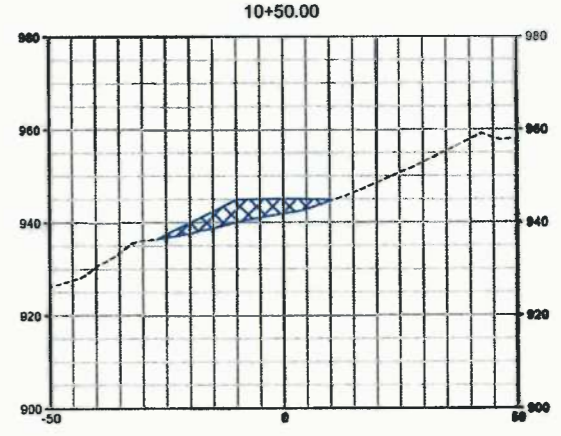
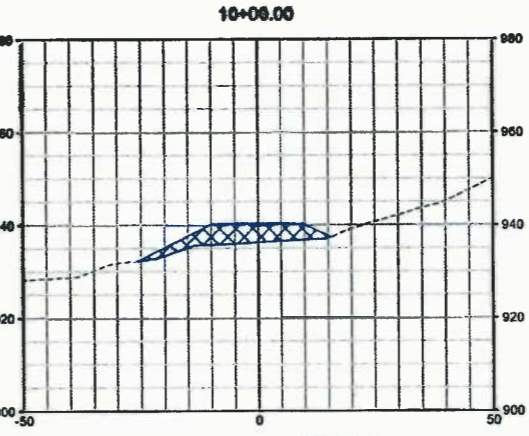
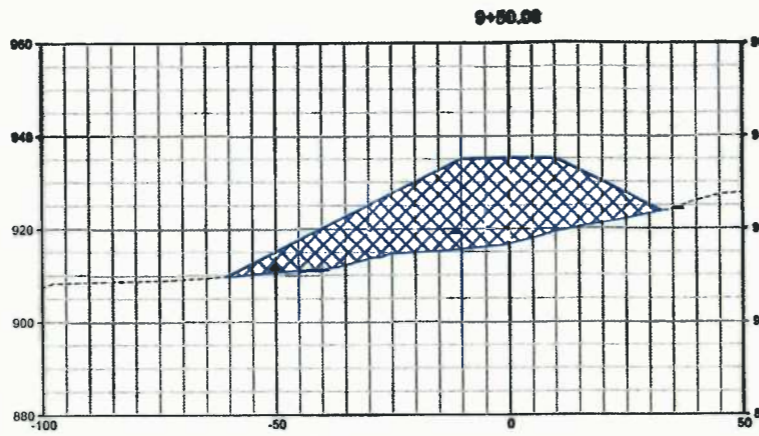
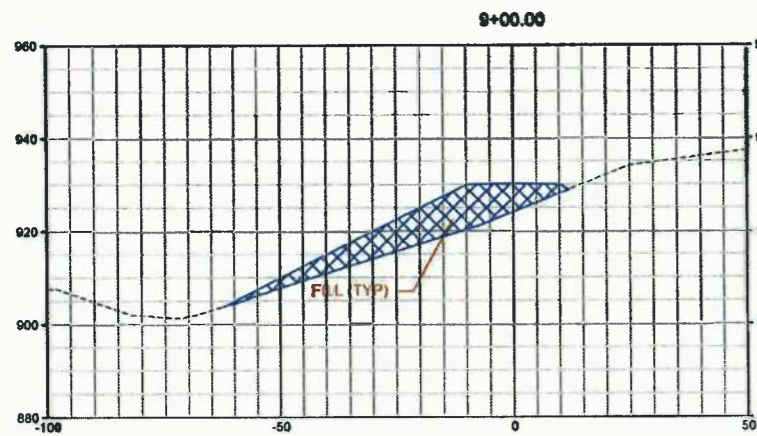
CHESTNUT DRILL PAD

GRANT DISTRICT

DODDRIDGE COUNTY, WV

NUMBER	SHEET	REVISION	DATE	BY

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4-28-2013	20	38

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CHARLOTTE, NC 28212
(304) 550-8484
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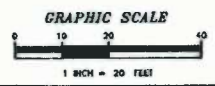
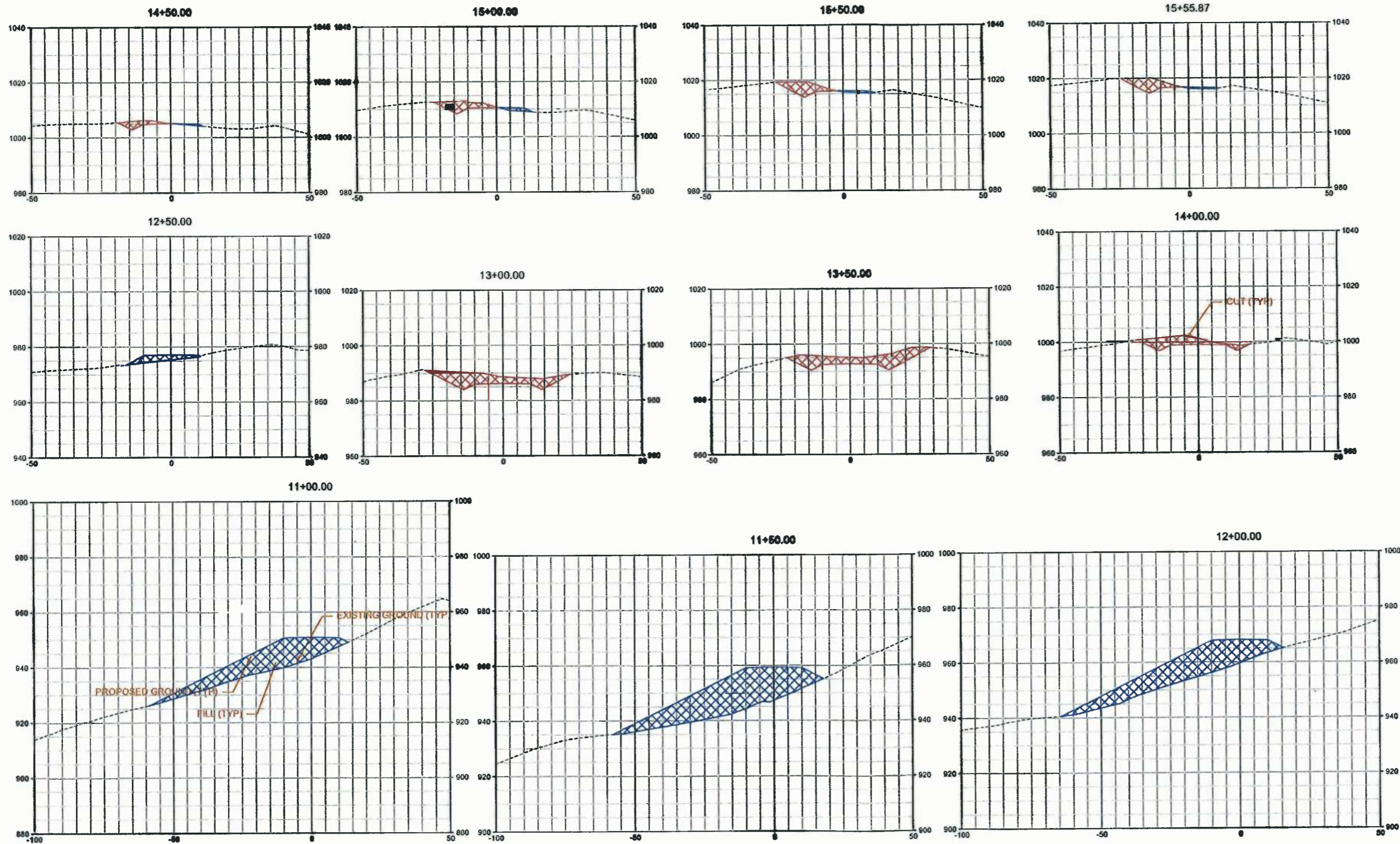


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FINAL DESIGN
RJ SMITH ENTRANCE RD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NUMBER	SHEET	REVISION	DATE	BY

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4-28-2013	21	38

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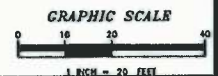
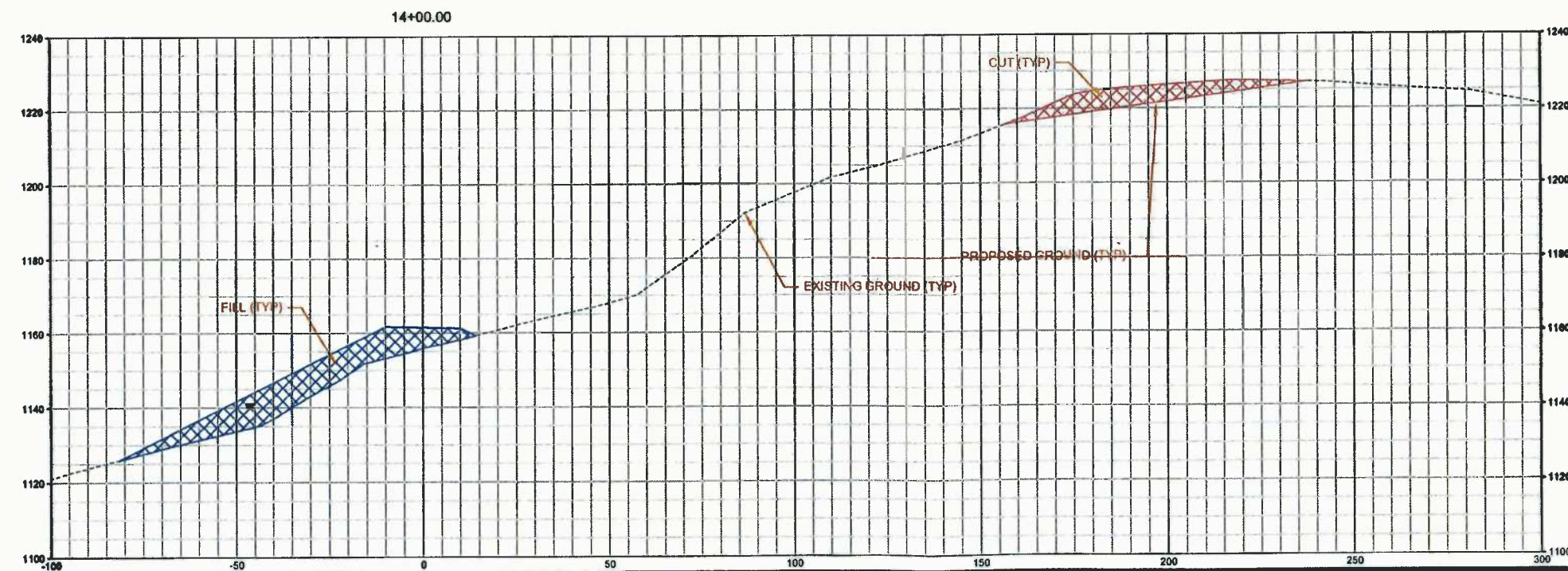
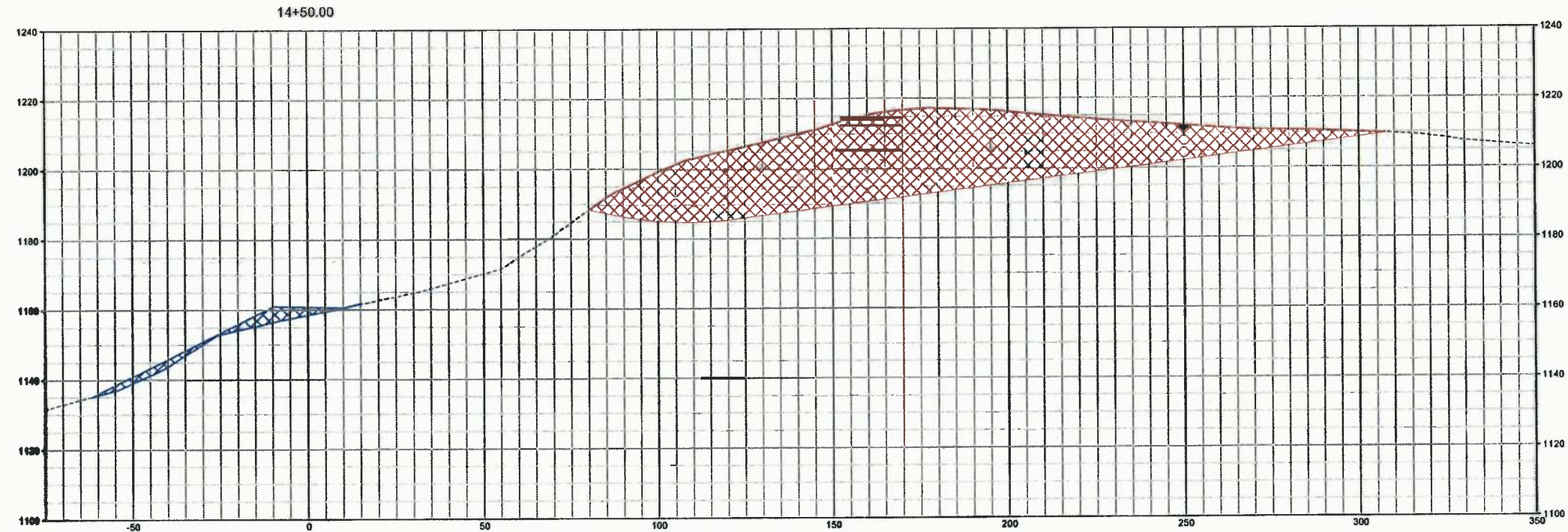
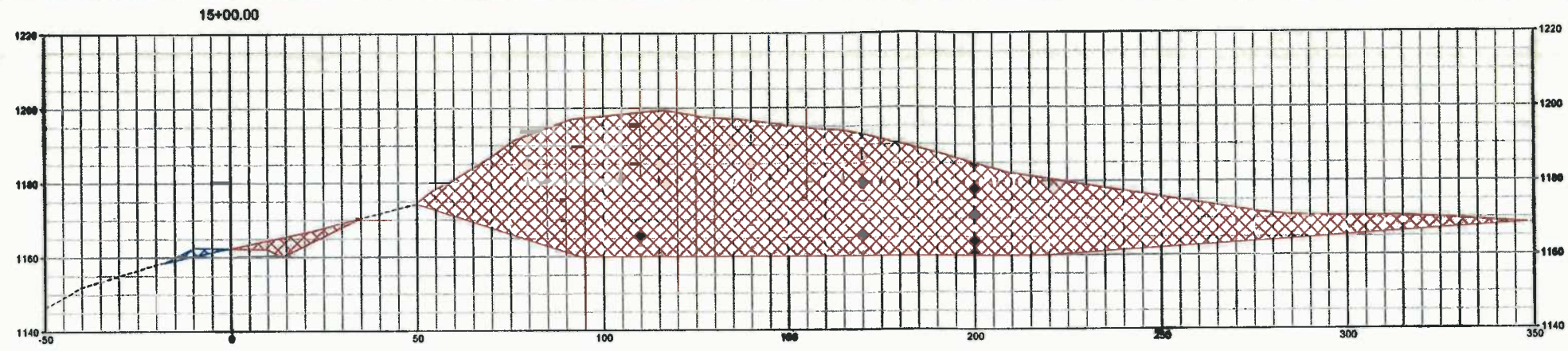


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FINAL DESIGN
 RJ SMITH ENTRANCE RD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

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DATE SUBMITTED	SHEET NO	TOTAL SHEETS
4-28-2013	24	38

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CHARLESTON, WV 25312
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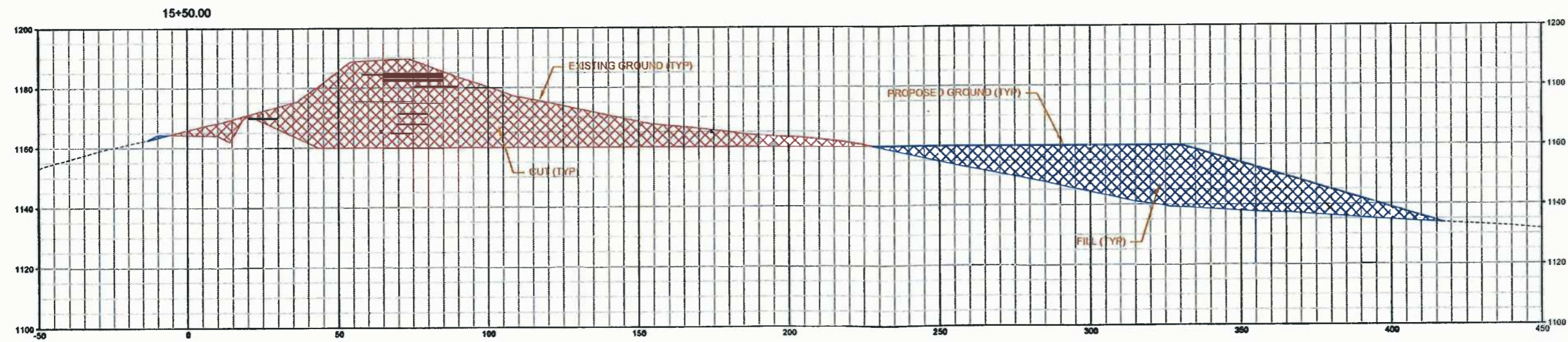
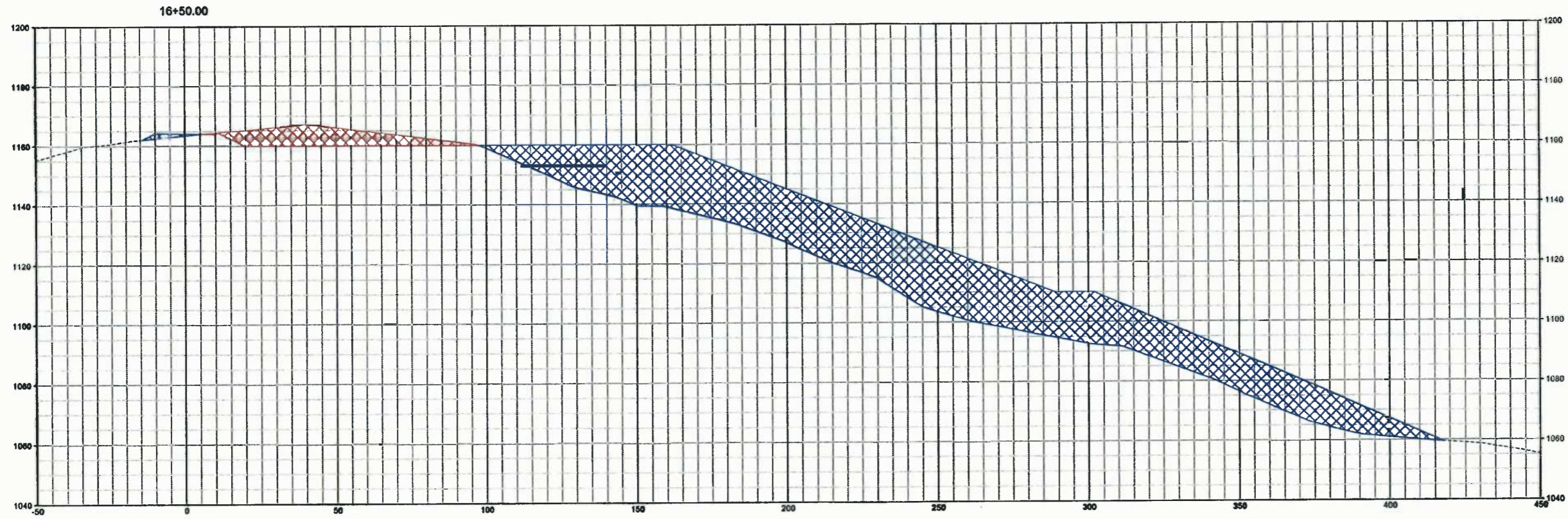


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FINAL DESIGN
ROAD TO CHESTNUT PAD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY

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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	25	38

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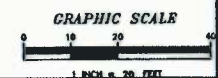
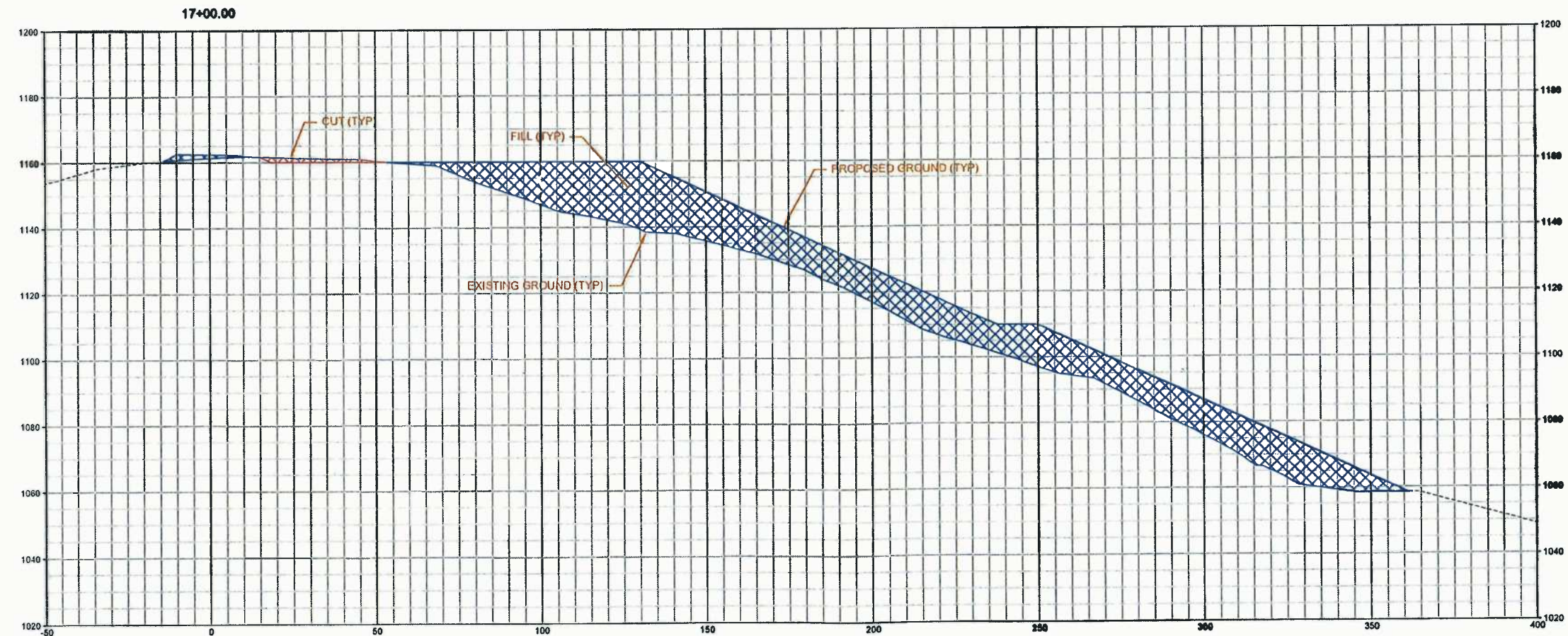
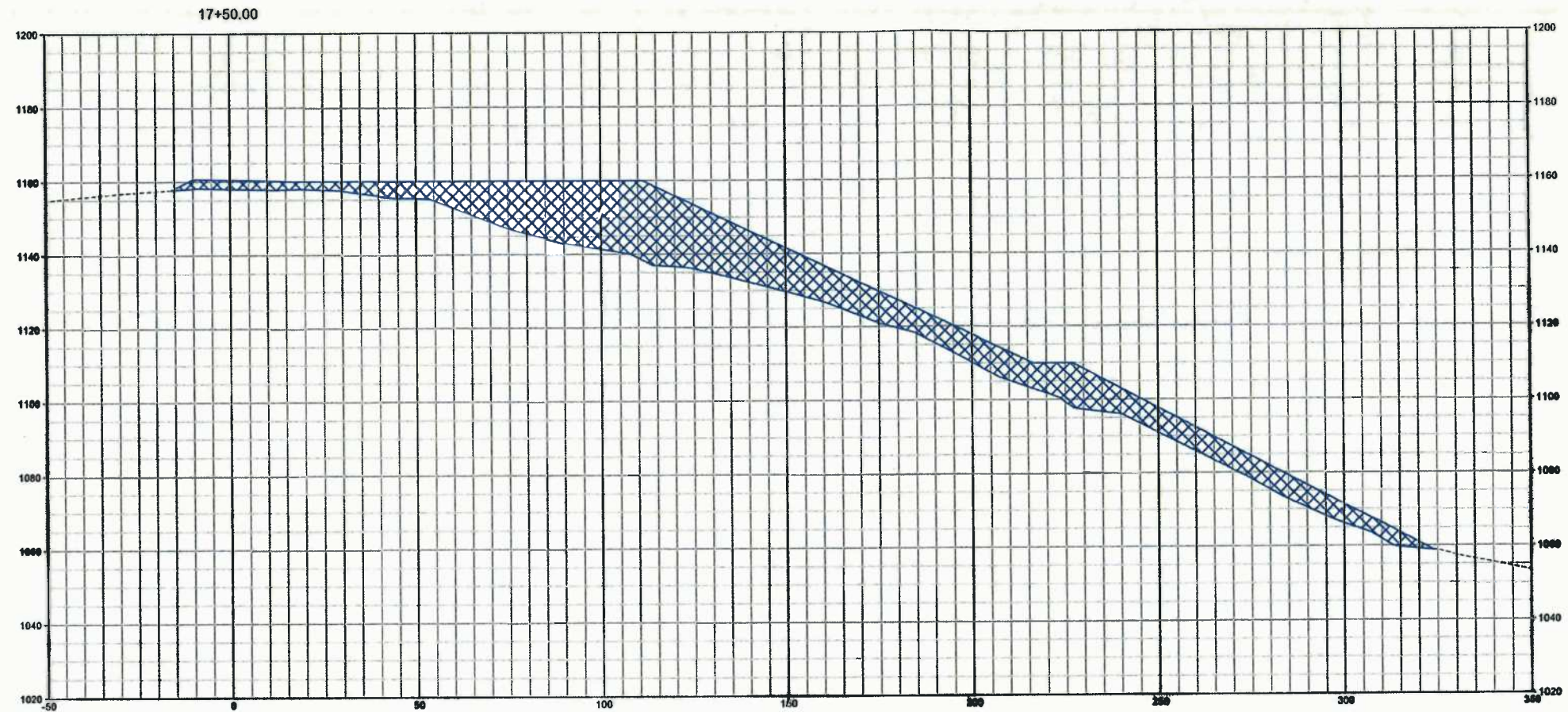


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APPALACHIAN CORP

FINAL DESIGN
ROAD TO CHESTNUT PAD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY

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DATE SUBMITTED	SHEET NO	TOTAL SHEETS
4-28-2013	26	38

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White Brothers Consulting, LLC
ENGINEERING AND SURVEYING
447 CALL ROAD, SUITE 216
CHARLESTON, WV 25312
(304) 550-9484
www.whitebrothers.com

TIMOTHY T. WHITE
REGISTERED
1975
PROFESSIONAL ENGINEER

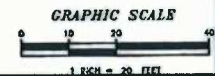
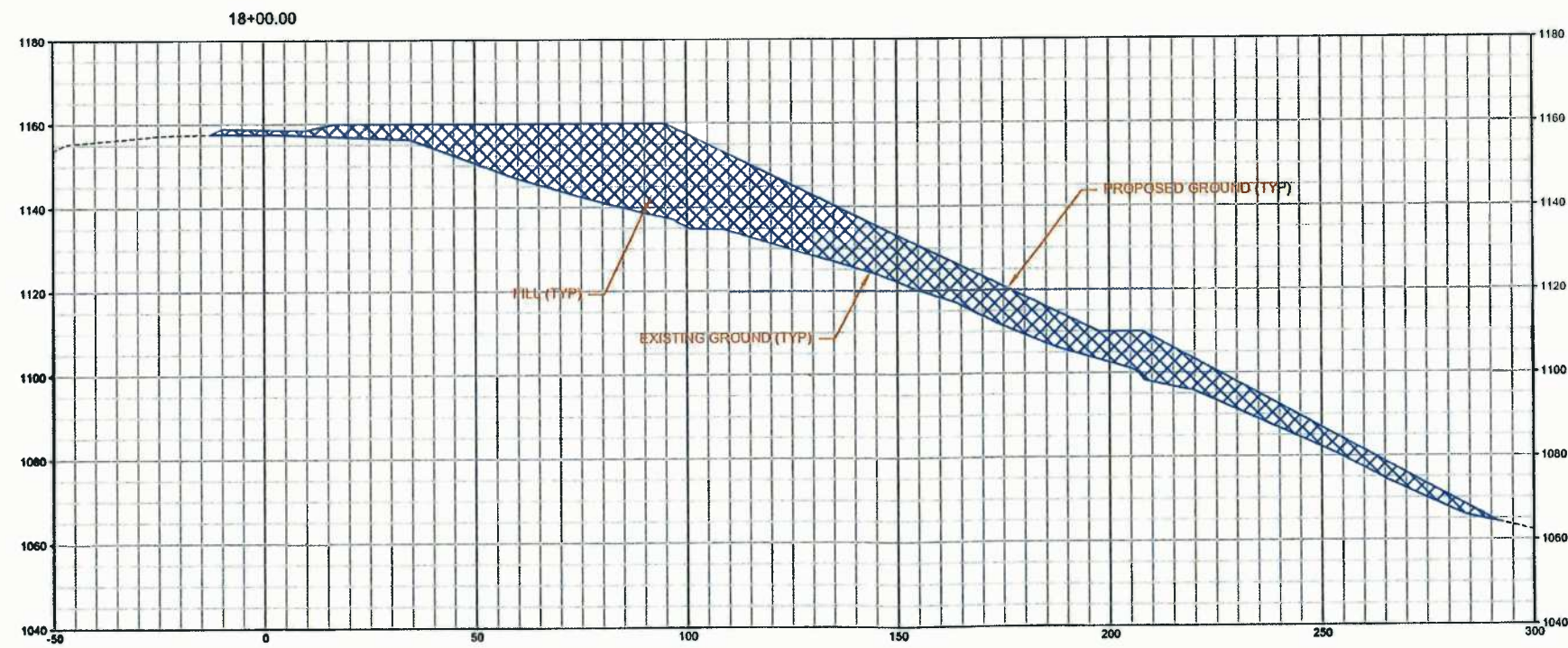
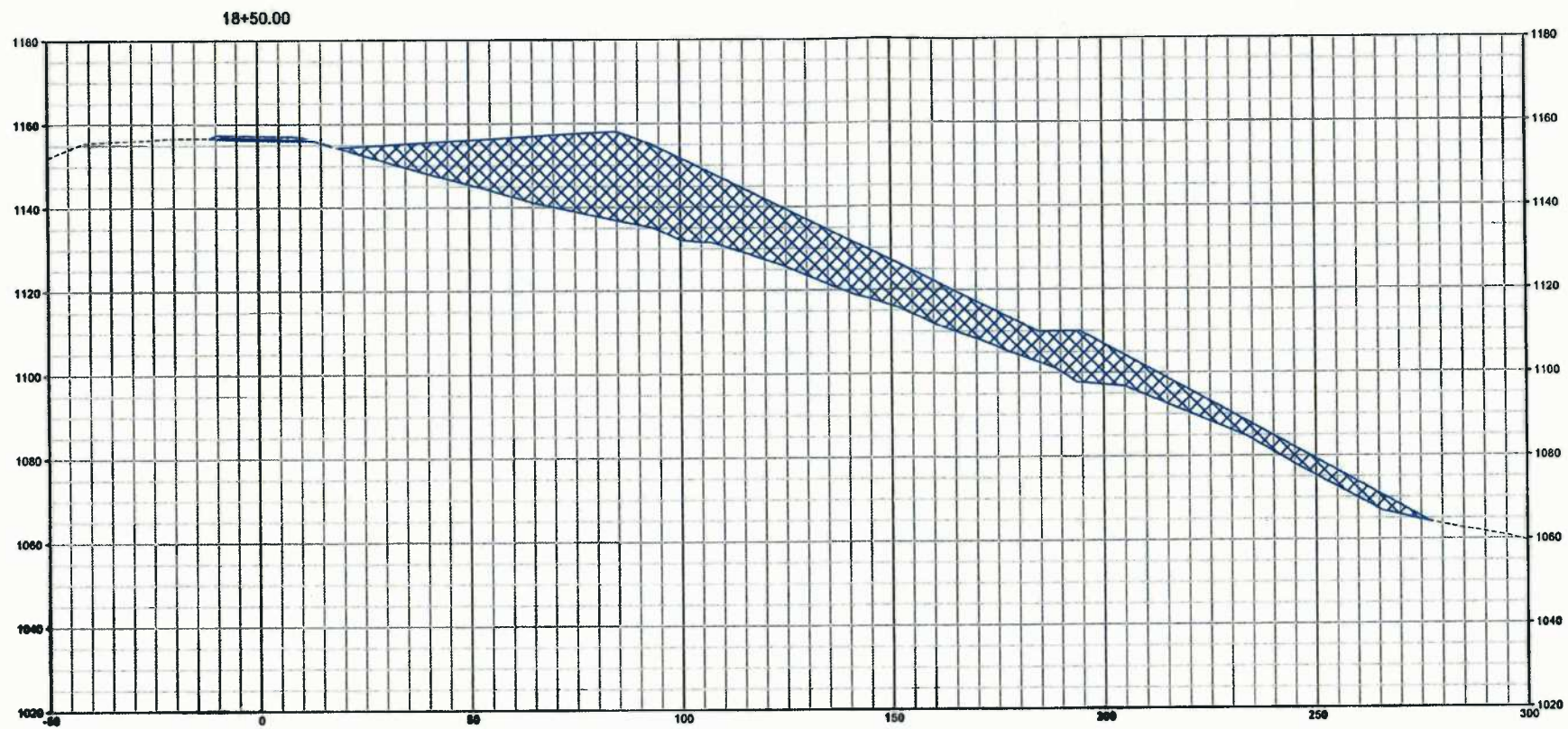
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FINAL DESIGN
ROAD TO CHESTNUT PAD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
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NUMBER	SHEET	REVISION	DATE	BY

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TIMOTHY T. WHITE
REGISTERED
14278
PEACE
PROFESSIONAL ENGINEER

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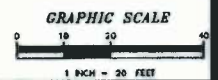
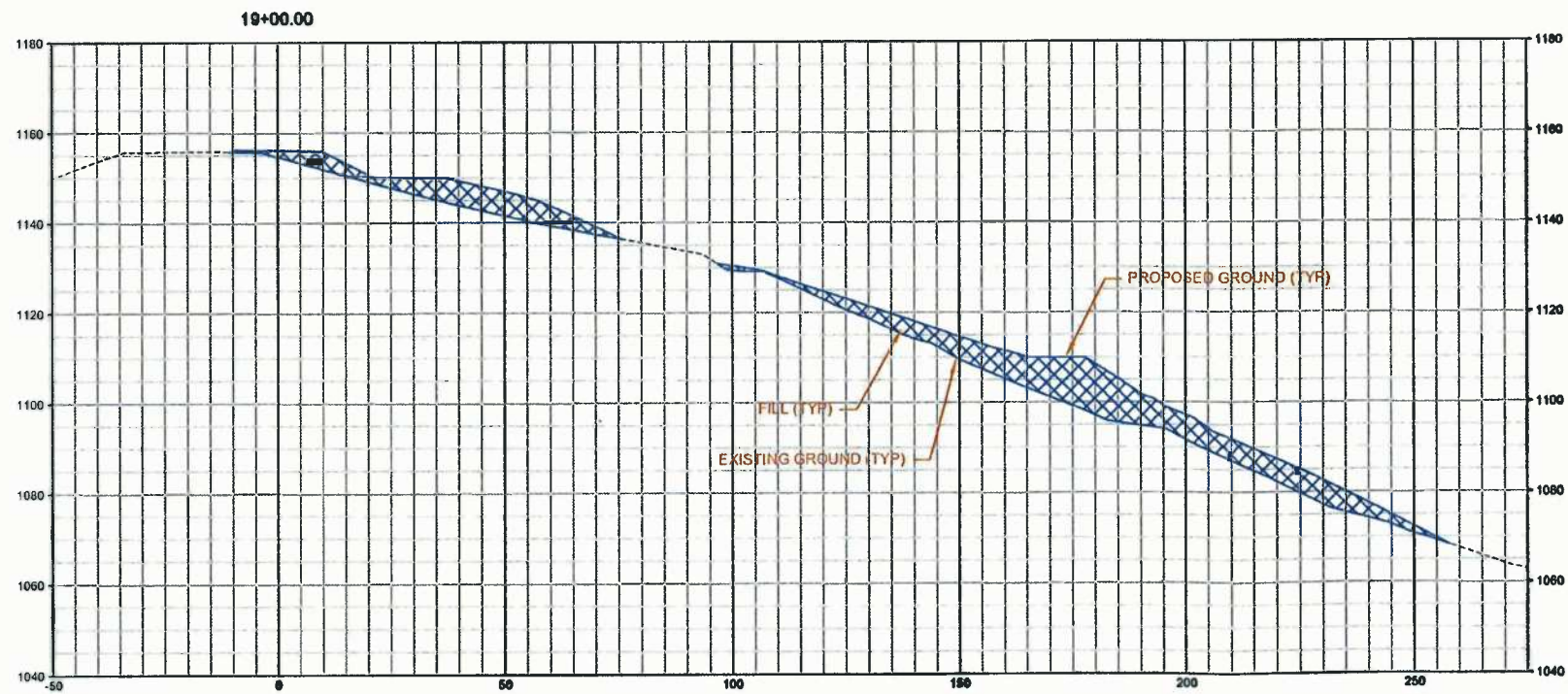
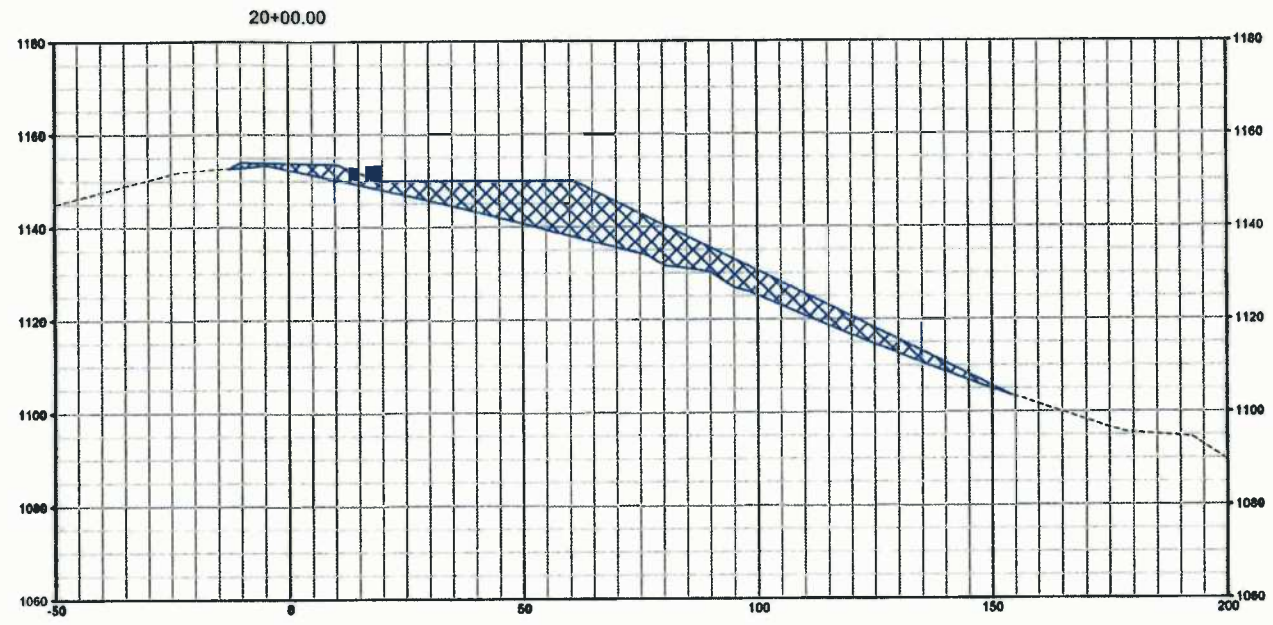
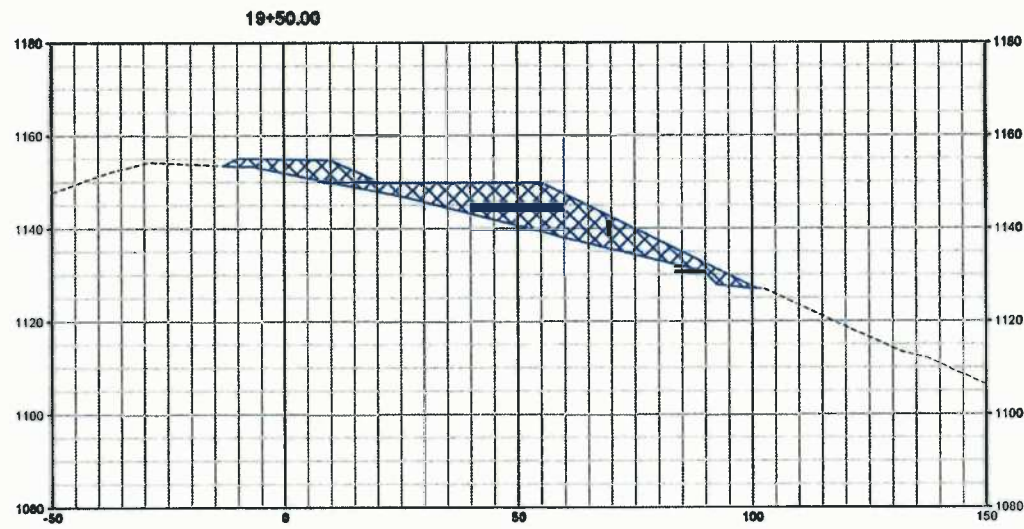
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ROAD TO CHESTNUT PAD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NUMBER	SHEET	REVISION	DATE	BY

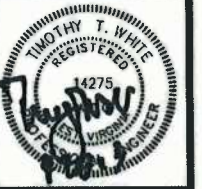
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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	28	38

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 (304) 520-9404
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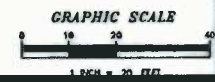
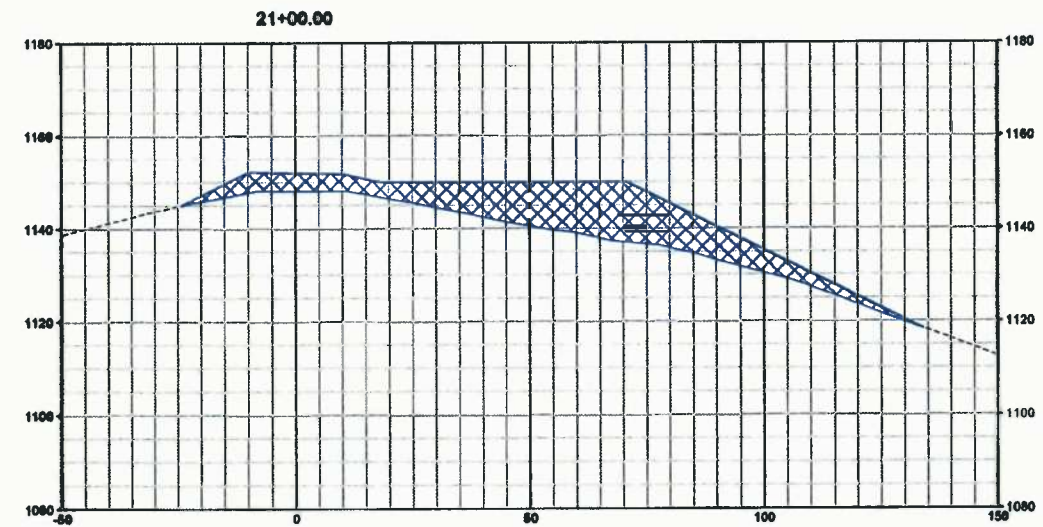
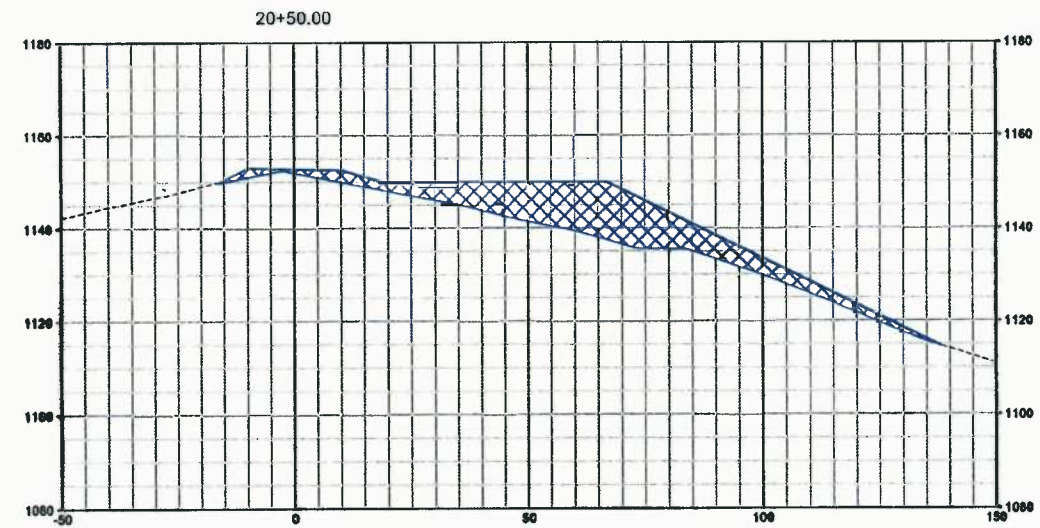
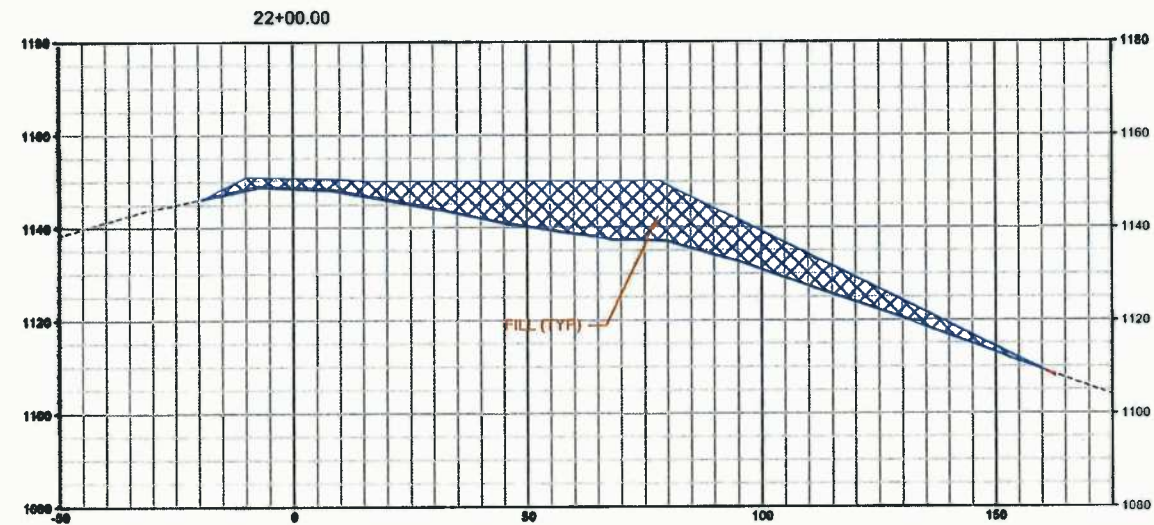
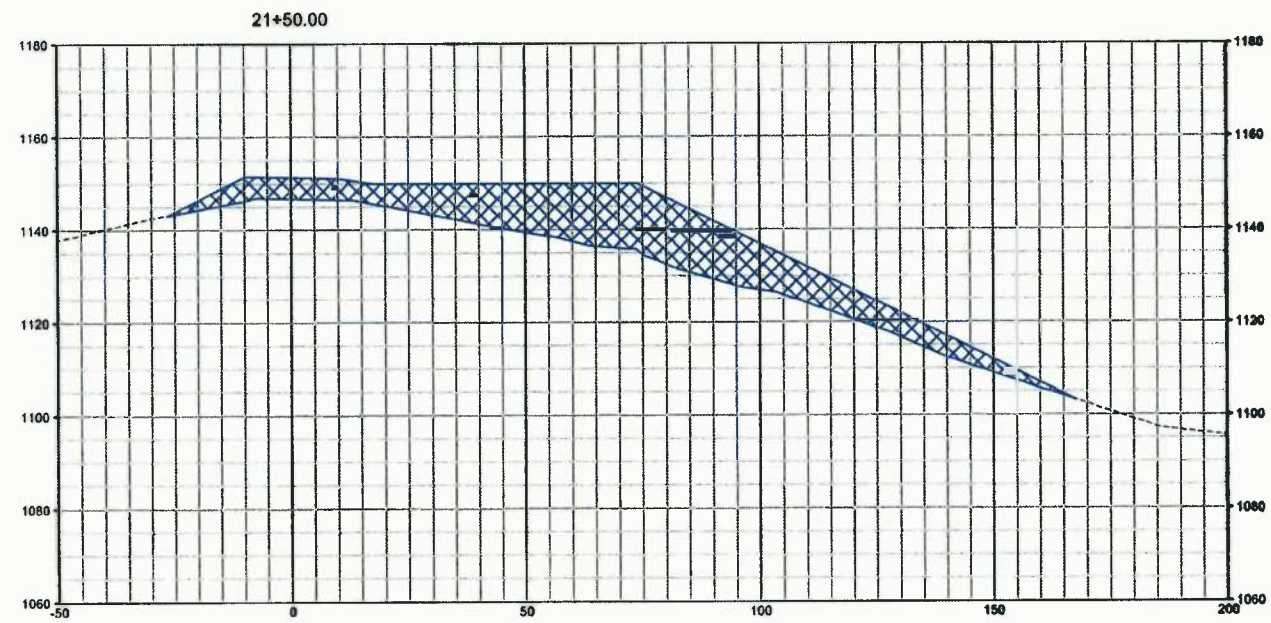
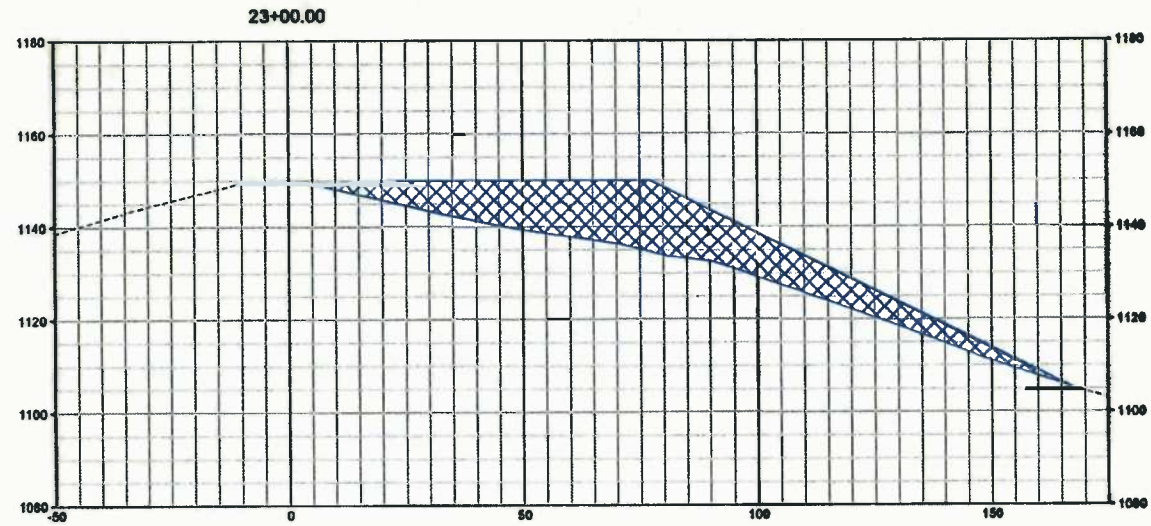
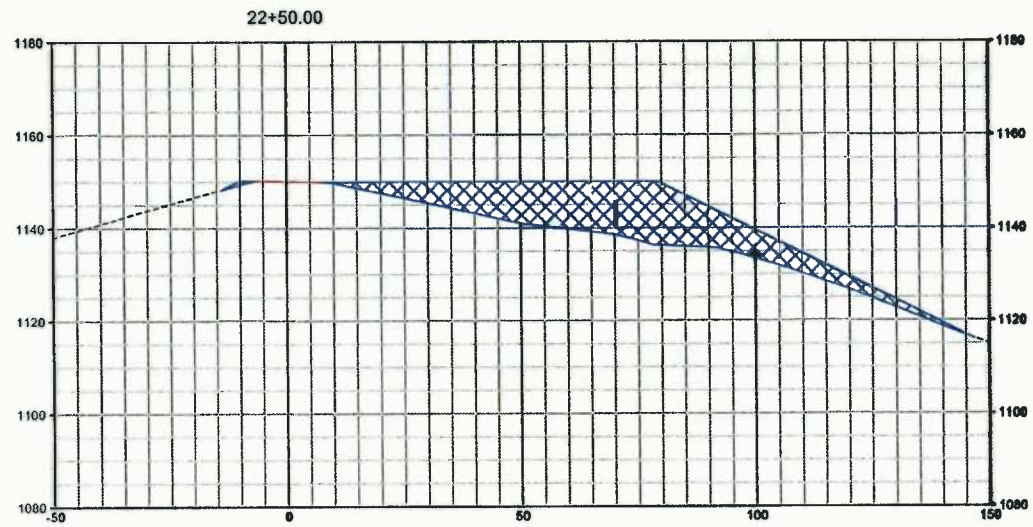


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FINAL DESIGN
 ROAD TO CHESTNUT PAD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
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REVISION NUMBER	REVISION	DATE	BY

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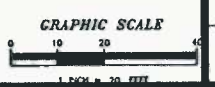
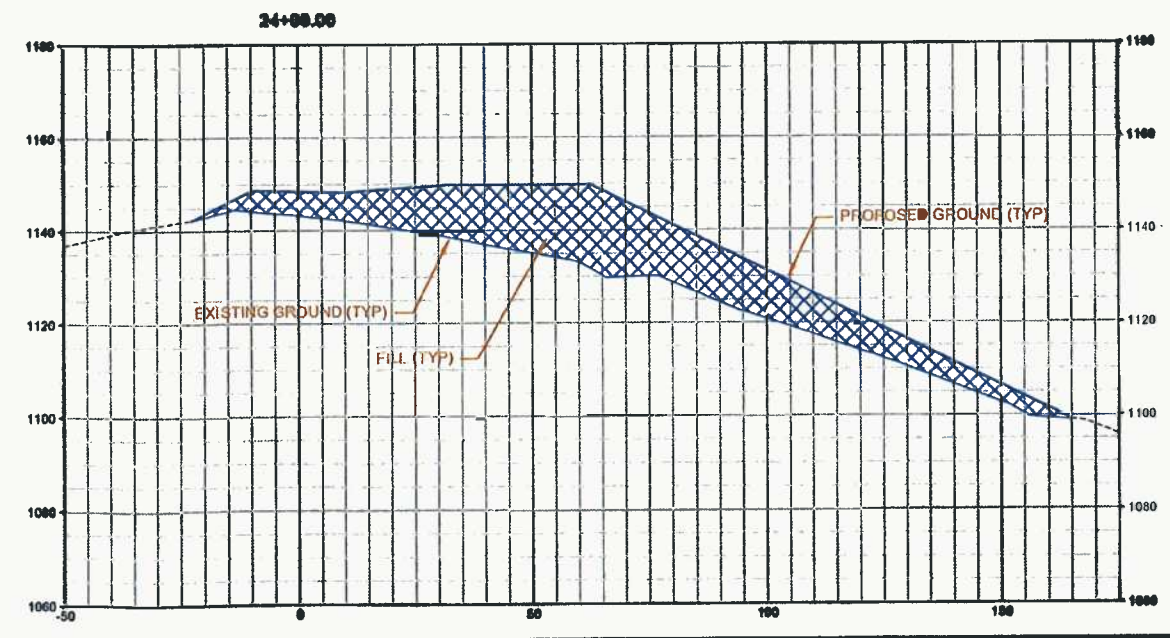
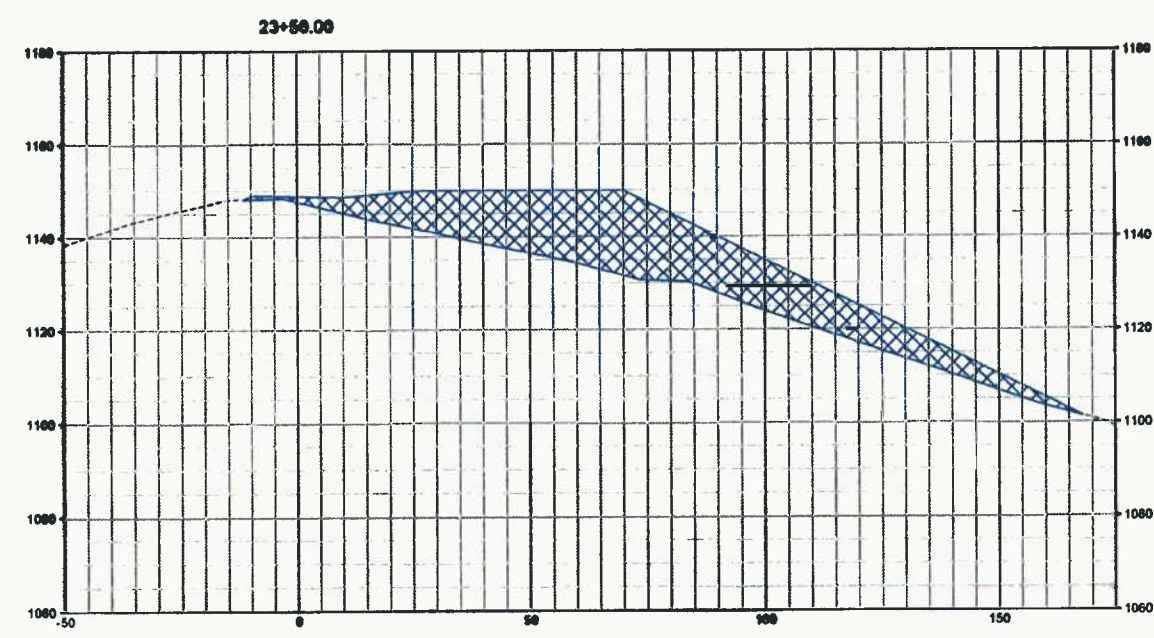
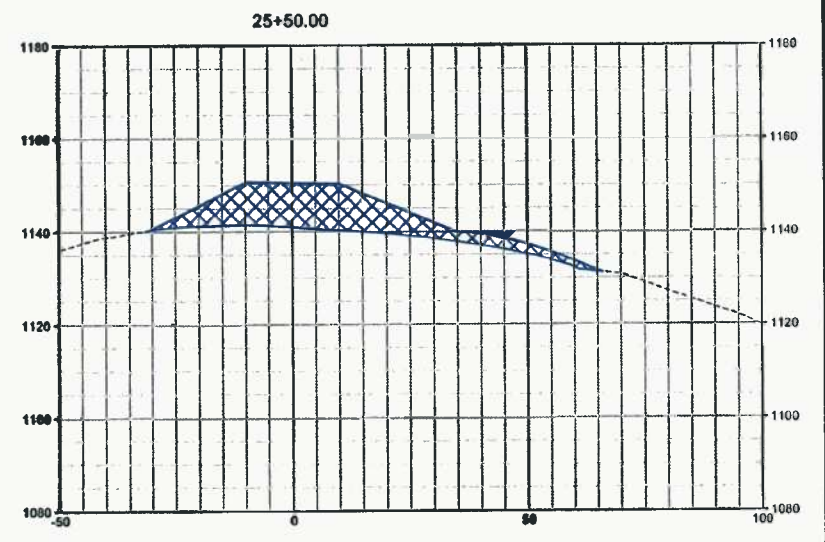
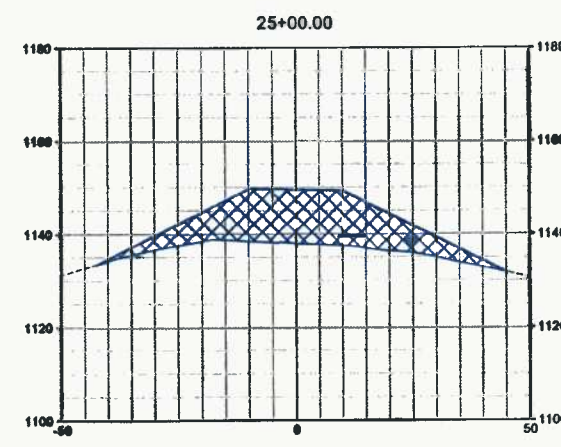
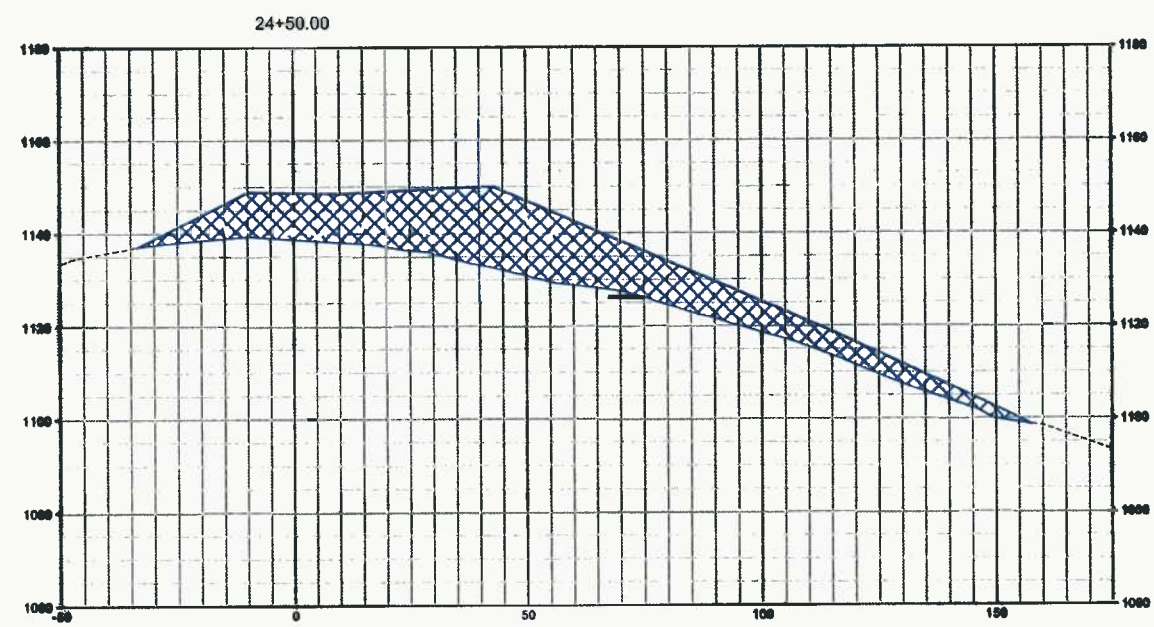
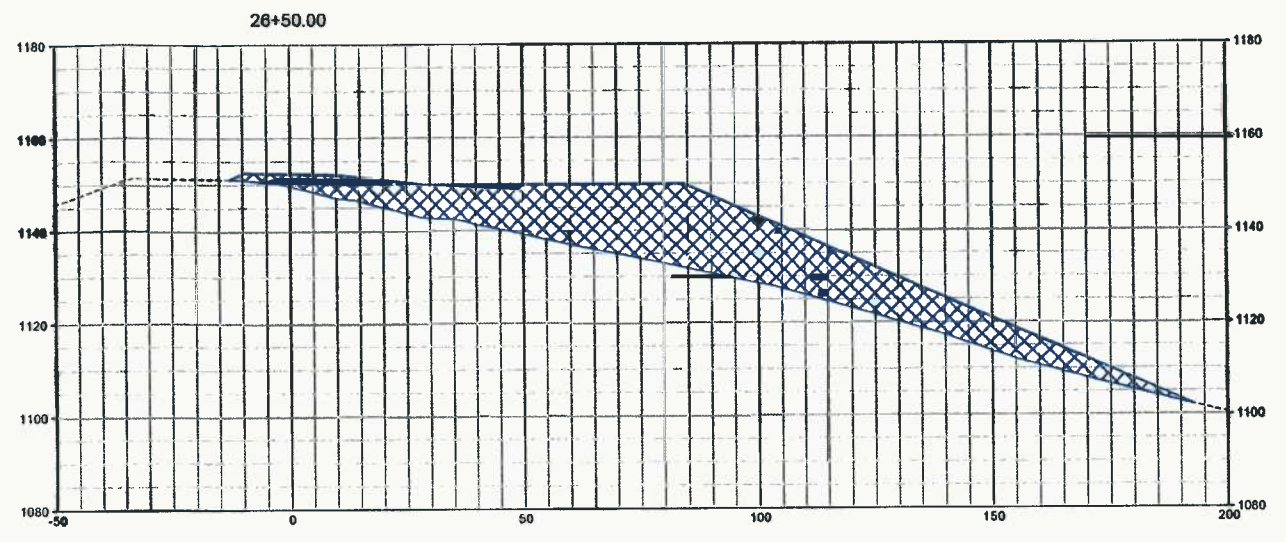
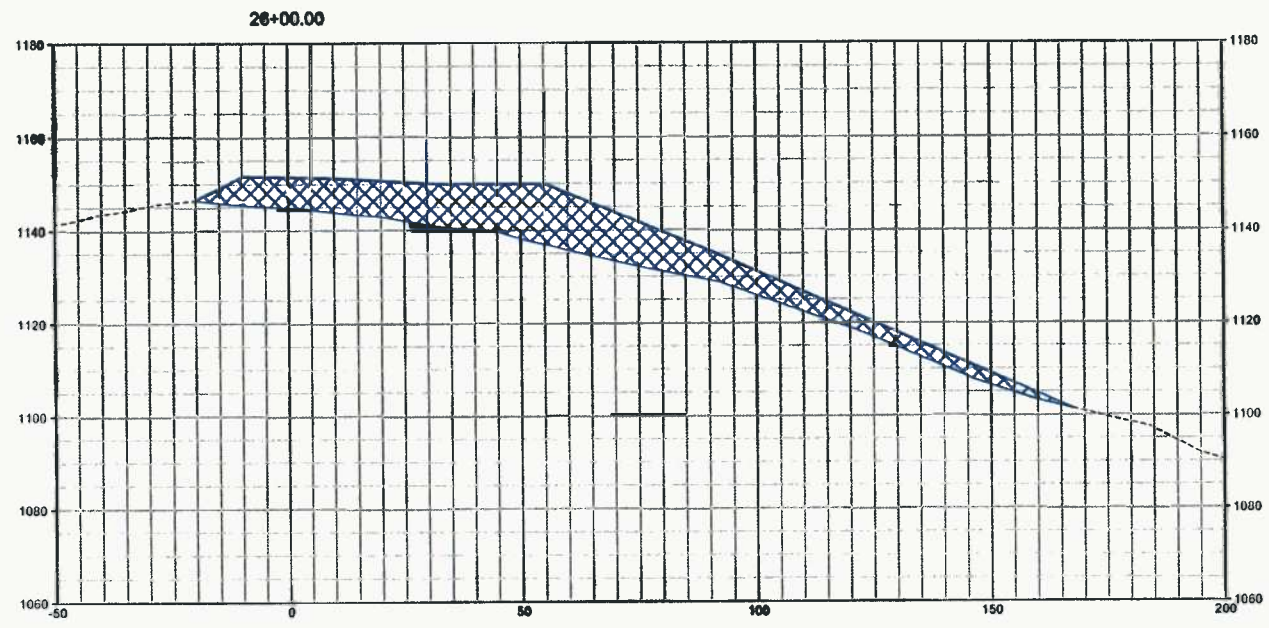
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FINAL DESIGN
 ROAD TO CHESTNUT PAD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

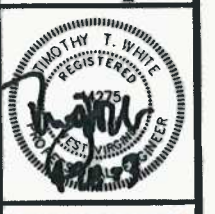
NUMBER	REVISION	DATE	BY

SHEET 29 OF 38

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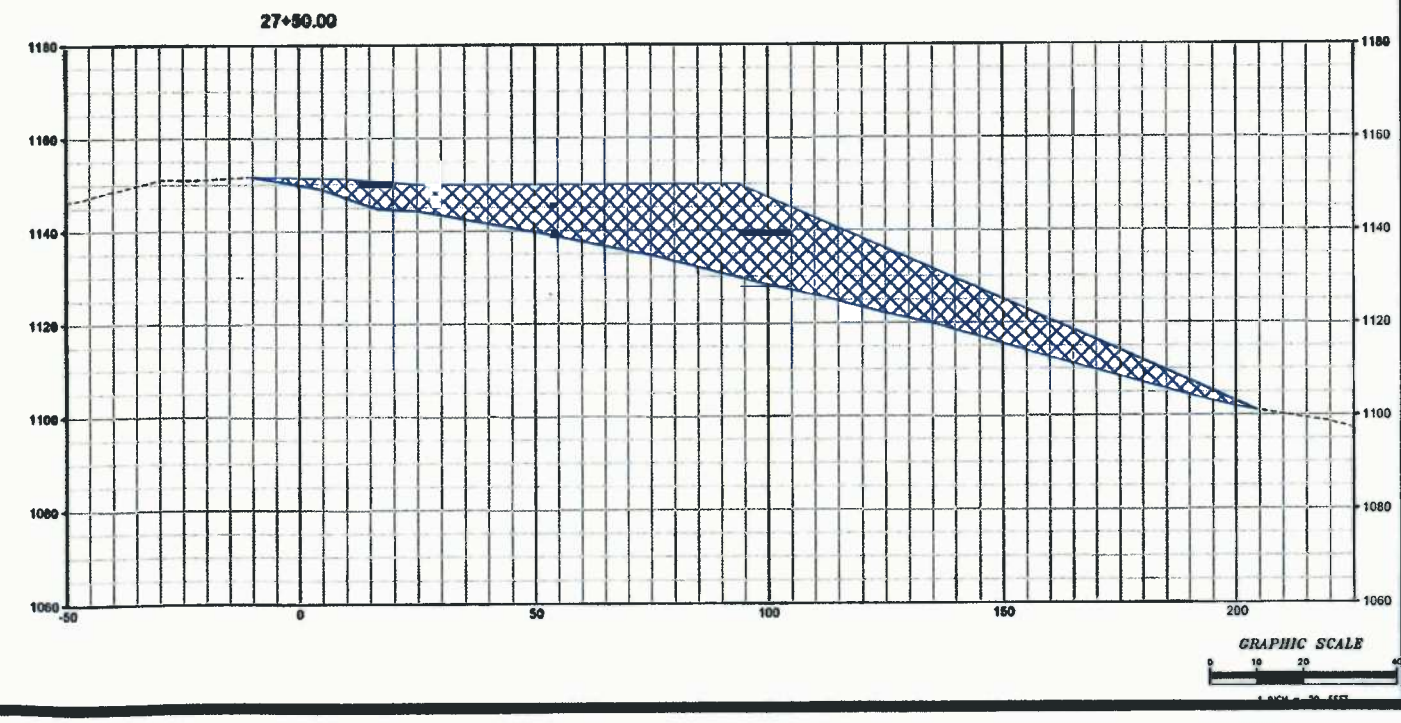
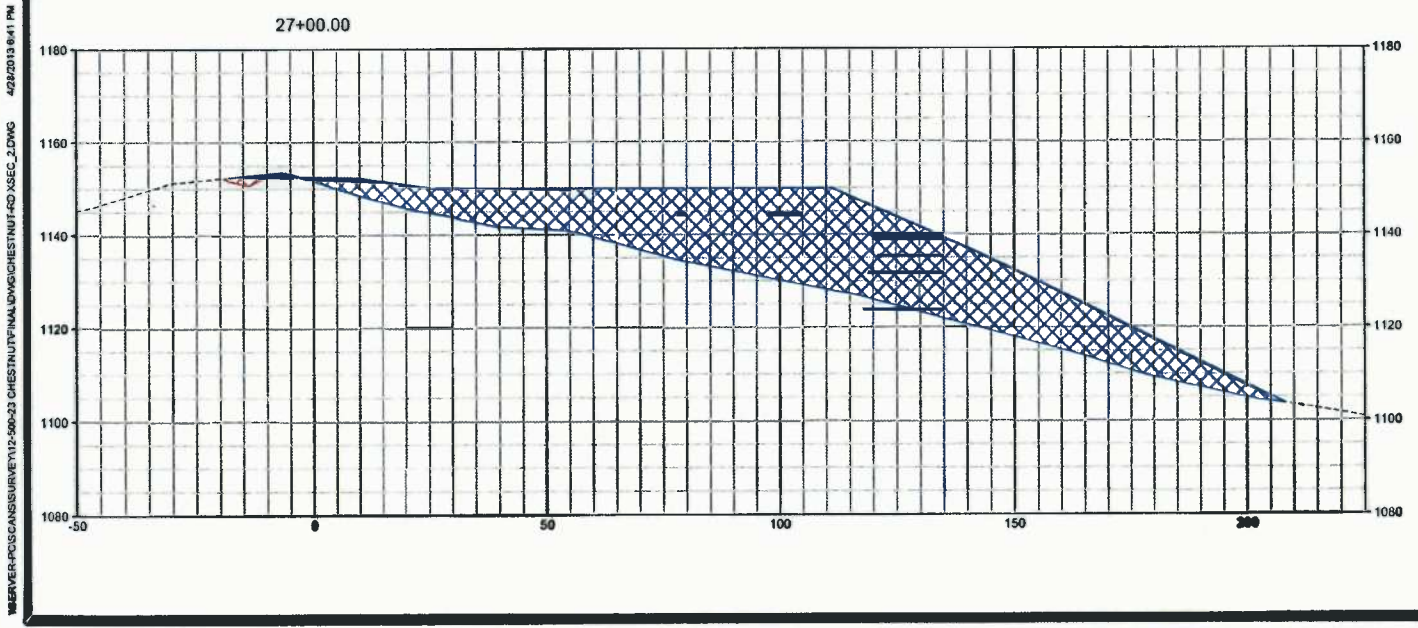
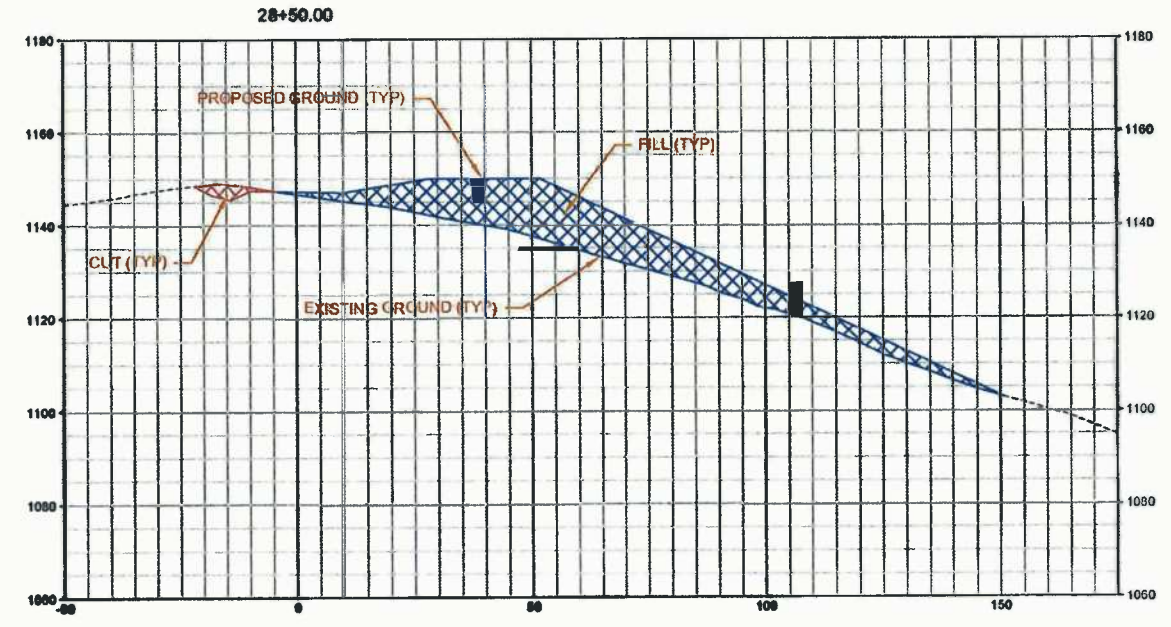
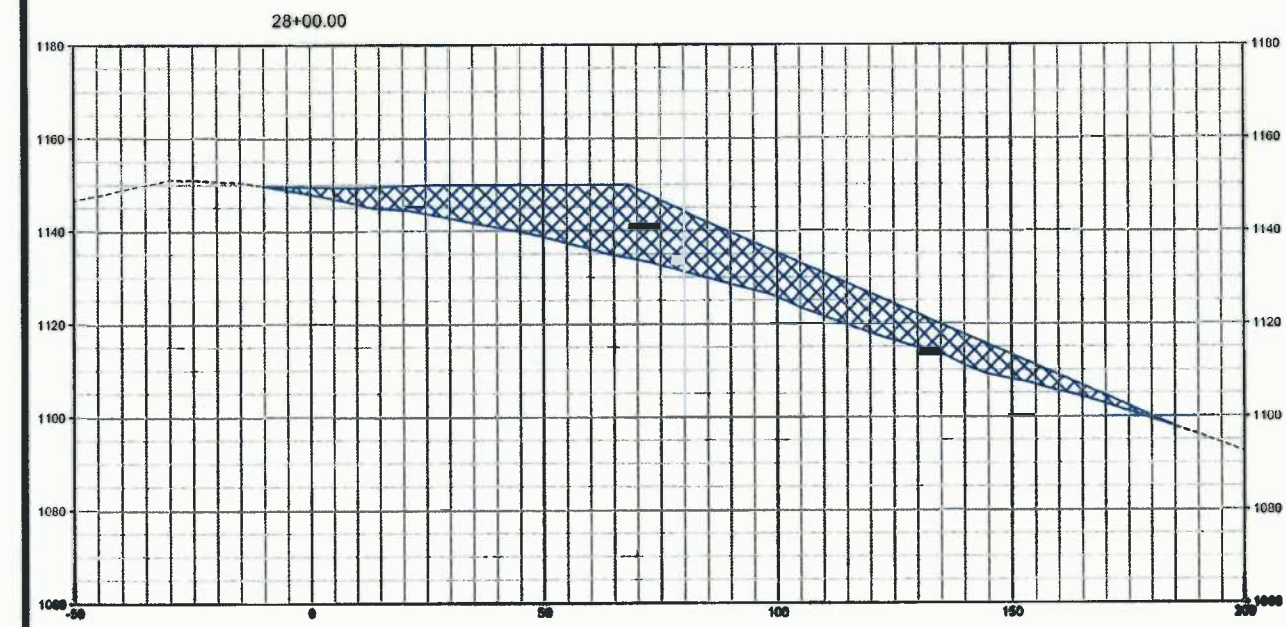
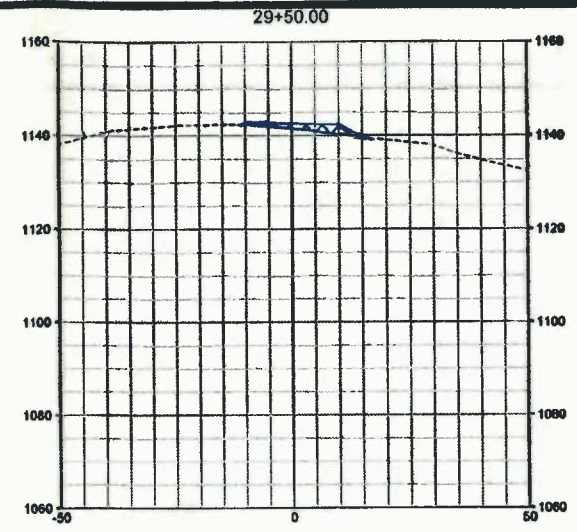
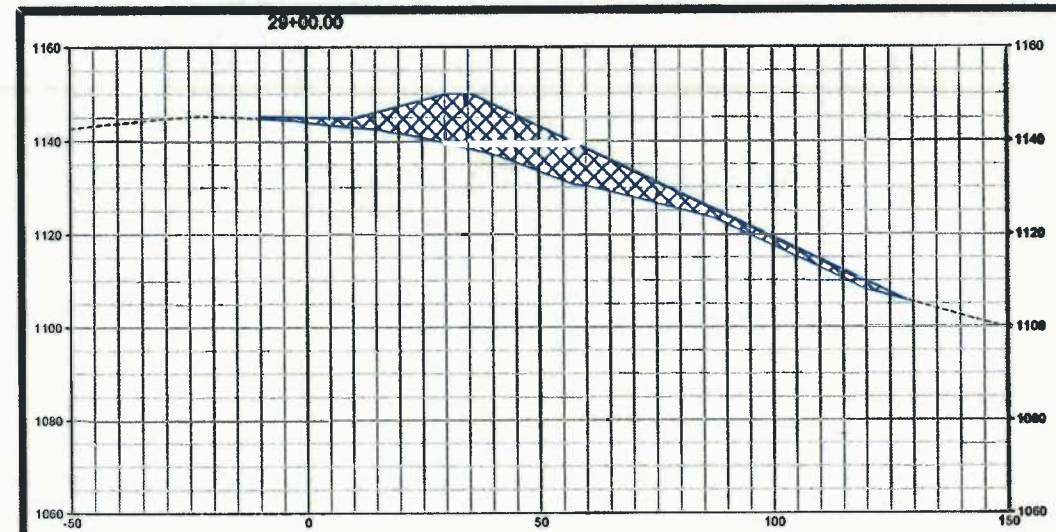
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
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FINAL DESIGN
ROAD TO CHESTNUT PAD CROSS SECTIONS
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

REVISION	DATE	BY



DATE SUBMITTED	SHEET NO	TOTAL SHEETS
4-28-2013	31	38

WB Miller Brothers Consulting, LLC
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 4047 CALL ROAD, SUITE 216
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 (304) 550-0484
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TIMOTHY T. WHITE
 REGISTERED PROFESSIONAL ENGINEER
 14275

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FINAL DESIGN
 ROAD TO CHESTNUT PAD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

NUMBER	SHEET	REVISION	DATE	BY

GRAPHIC SCALE
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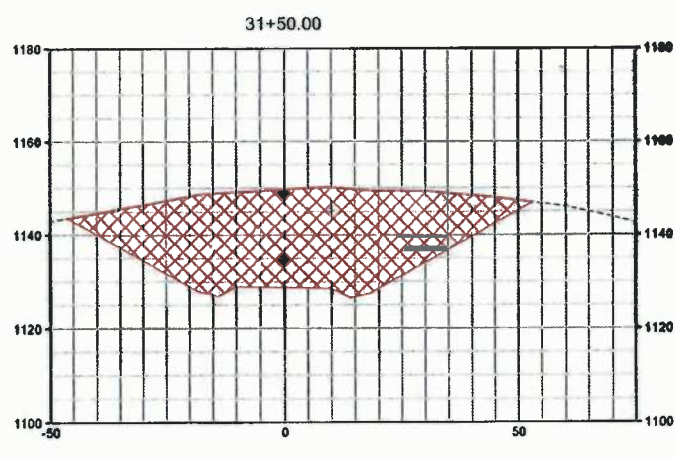
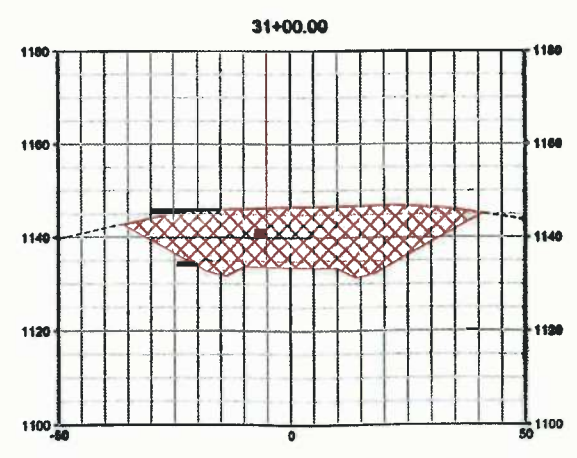
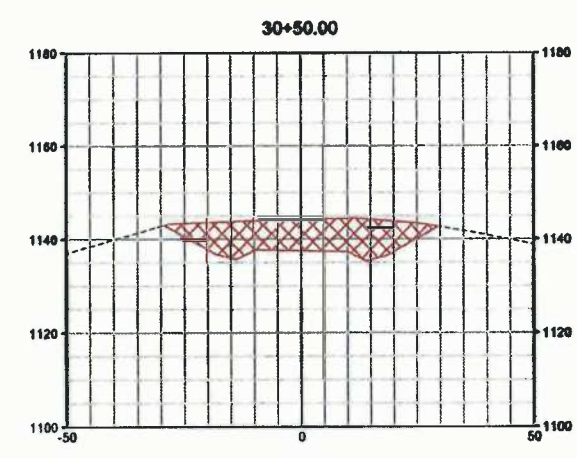
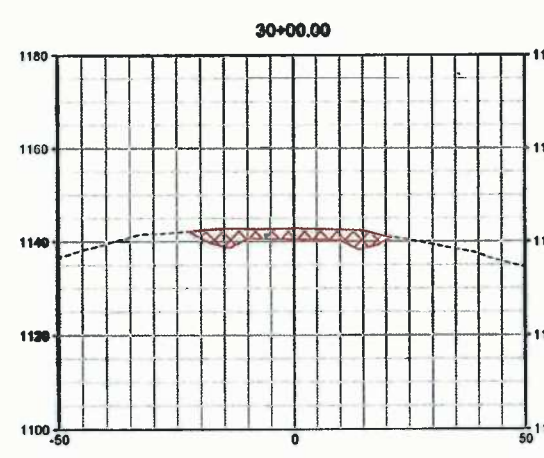
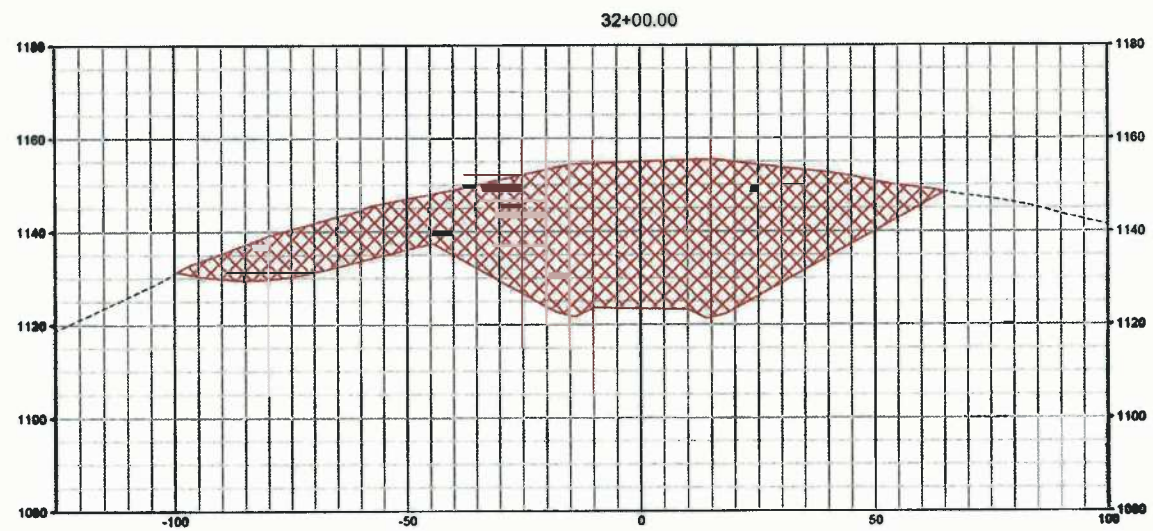
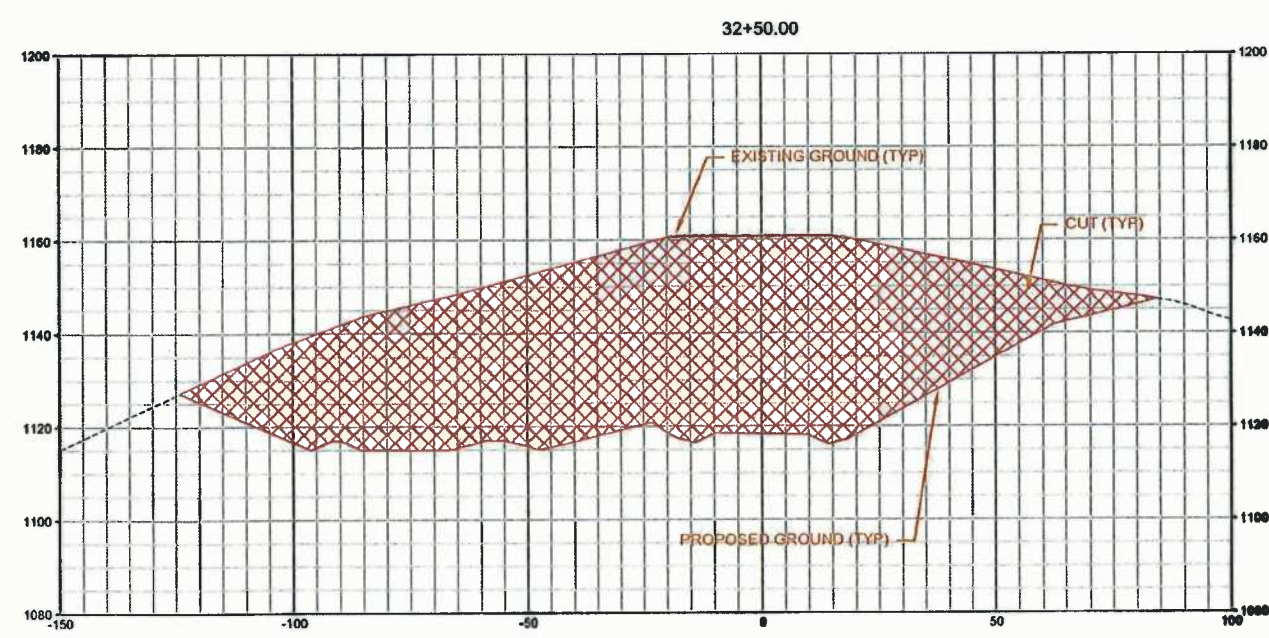
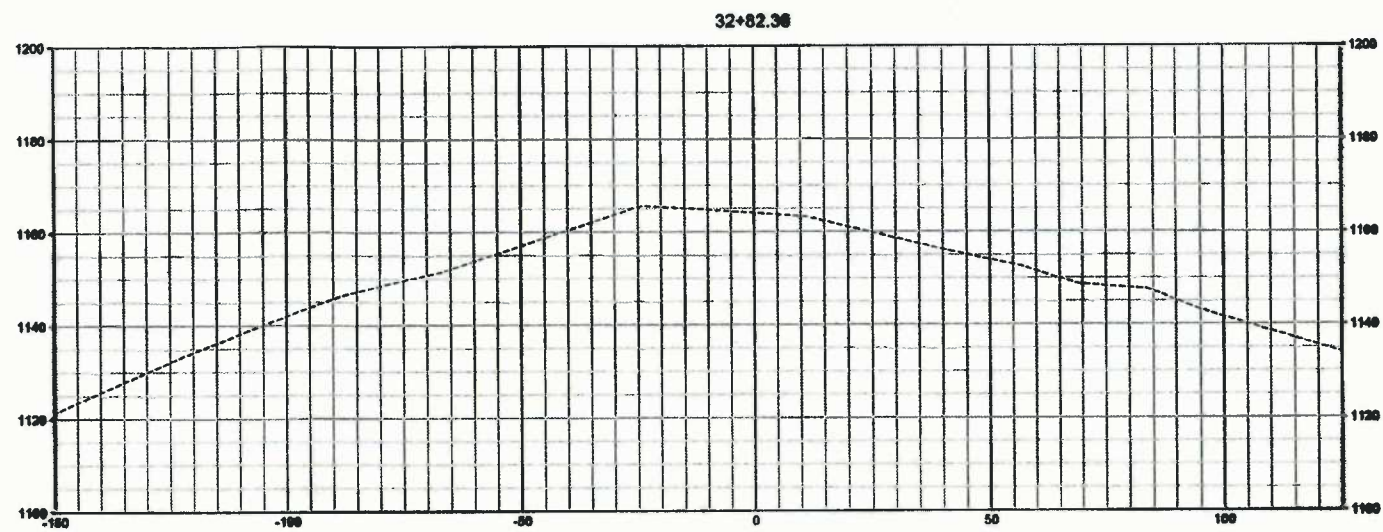
WB White Brothers Consulting, LLC
 ENGINEERING AND SURVEYING
 101 CALLOWAY SUITE 210
 CHARLESTON, WV 25312
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FINAL DESIGN
 ROAD TO CHESTNUT PAD CROSS SECTIONS
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

NO.	REVISION	DATE	BY



DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	34	38

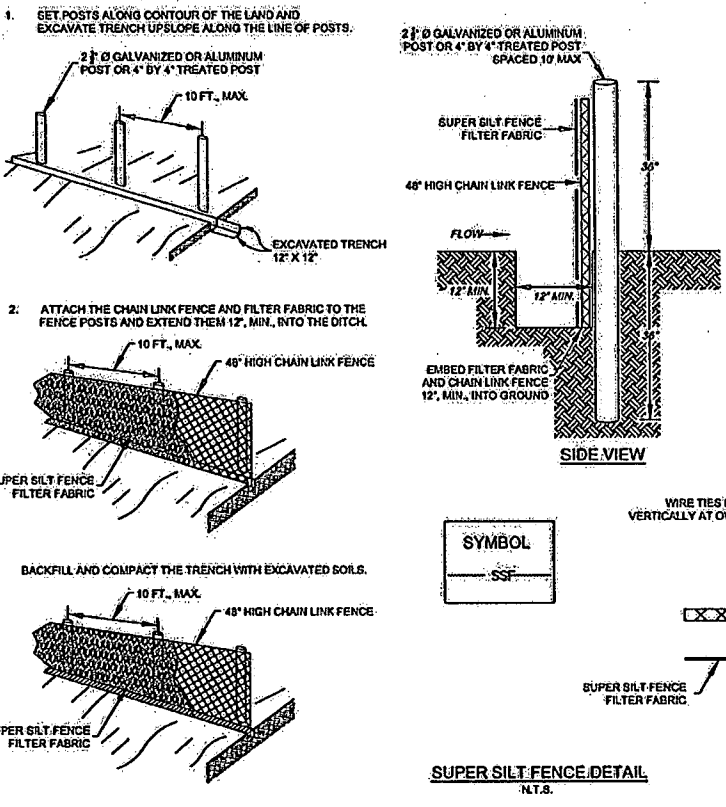
White Swallow Consulting LLC
 ENGINEERING AND SURVEYING
 447 CALL ROAD, SUITE 2118
 CHARLESTON, WV 25312
 (304) 550-5454
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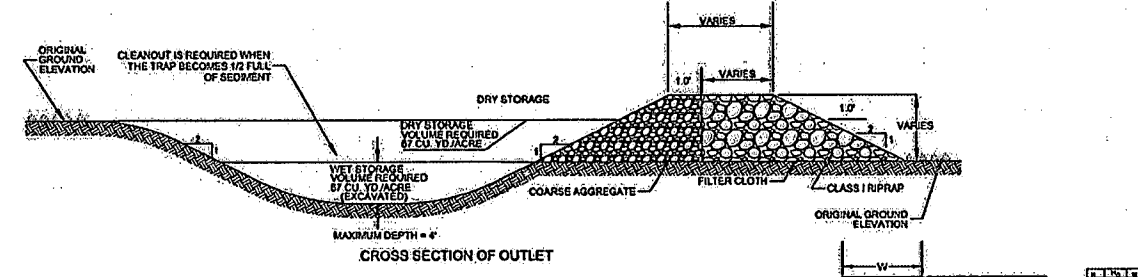
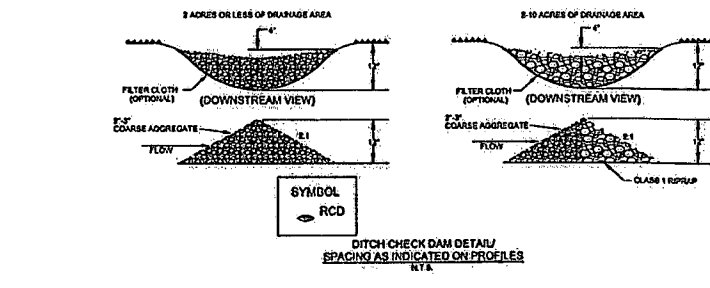
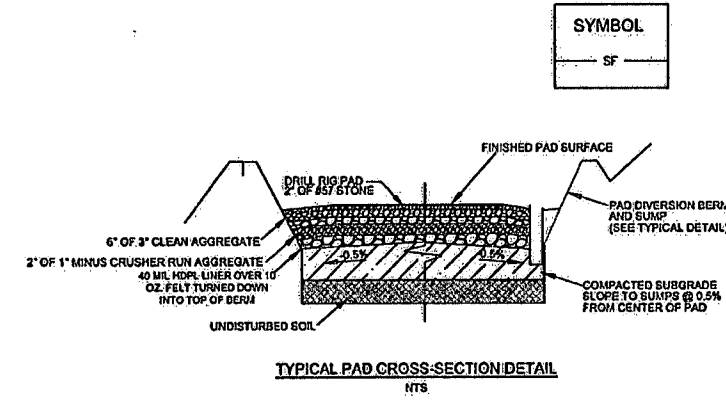
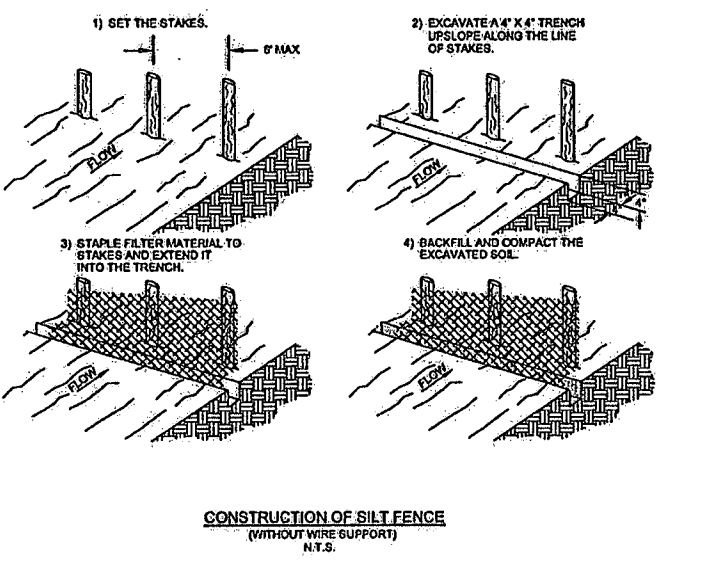
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FINAL SITE DESIGN
 DETAILS
CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV

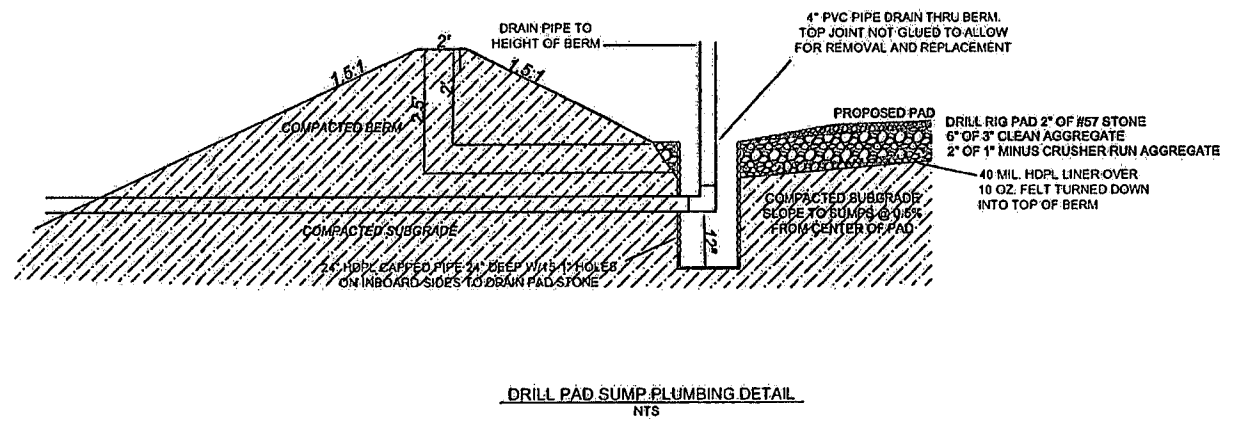
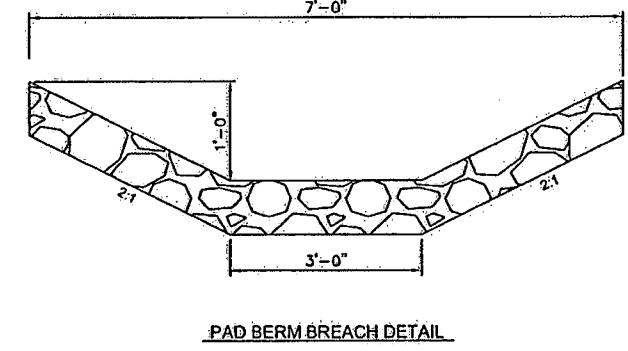
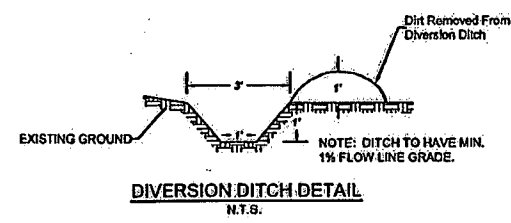
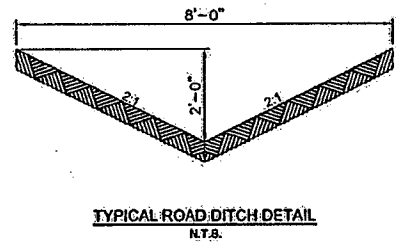
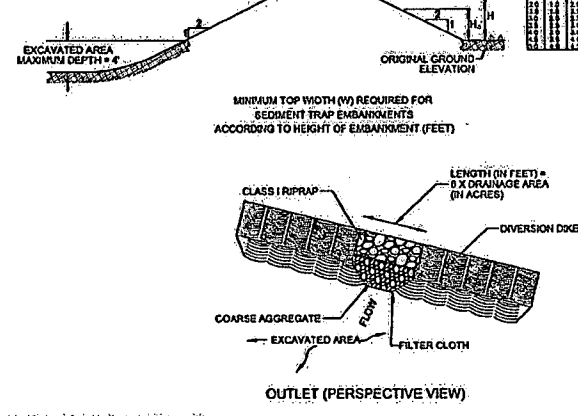
NO.	REVISION	DATE	BY



- SUPER SILT FENCE NOTES:**
- CHAIN LINK FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 903 OF THE WVDOT SPECIFICATIONS. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE POSTS WITH WIRE TIES OR STAPLES.
 - POSTS NEED NOT BE SET IN CONCRETE.
 - THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.
 - FABRIC AND FENCE SHALL BE EMBEDDED 12", MINIMUM, INTO THE GROUND.
 - A 6" MINIMUM OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC ADJOIN. THE OVERLAPPED FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.
 - 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.
 - THE LENGTH OF SLOPE ABOVE THE FENCE SHALL NOT EXCEED 400 FEET IN STEEP TERRAIN. IN FLATTER AREAS THE LENGTH CAN BE EXTENDED WITH THE APPROVAL OF THE ENGINEER.



- TEMPORARY SEDIMENT TRAP NOTES:**
- THE DETAIL SHOWN IS A GENERAL SCHEMATIC. THE CONTRACTOR SHALL DESIGN AND SIZE EACH TRAP ACCORDING TO HIS GRADING PLAN.
 - SEDIMENT TRAPS SHALL BE USED IN AREAS WHERE THE TOTAL CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES.
 - FILL MATERIAL FOR ANY SEDIMENT TRAP EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION. ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIAL, THE EMBANKMENT SHOULD BE COMPACTED IN 6" LAYERS BY TRAVERSING WITH CONSTRUCTION EQUIPMENT.
 - ANY SEDIMENT TRAP EMBANKMENT SHALL BE SEEDED WITH TEMPORARY VEGETATION IMMEDIATELY AFTER INSTALLATION.
 - CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
 - THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE UPSLOPE DRAINAGE AREA HAS BEEN STABILIZED.
 - ALL CUT AND FILL SLOPES FORMING THE SEDIMENT TRAP SHALL BE 2:1 OR FLATTER.
 - SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 OF THE VOLUME. SEDIMENT REMOVED FROM THE TRAP SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.
 - THE STRUCTURE SHOULD BE CHECKED REGULARLY TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
 - A RIPRAP SPILLWAY CHANNEL MAY BE NECESSARY IF A CONCENTRATED OUTLET FLOW IS ANTICIPATED.
 - FILTER FABRIC SHALL BE REGULARLY CHECKED TO ENSURE THAT FILTRATION PERFORMANCE IS MAINTAINED. STONE CHOKED WITH SEDIMENT SHALL BE REMOVED AND CLEANED OR REPLACED.



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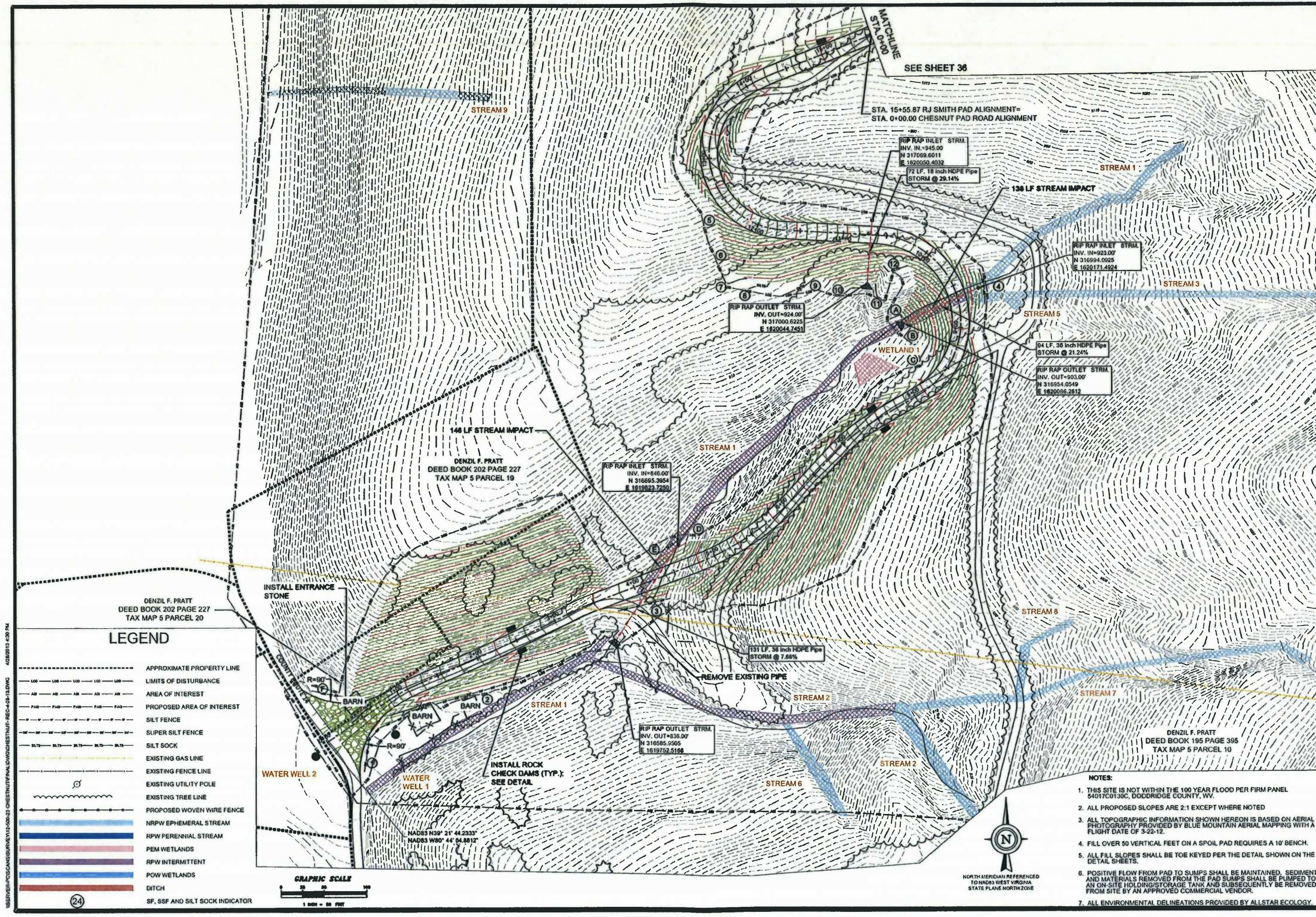
DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-29-2013	35	38

WB
 White Brothers Consulting, LLC
 ENGINEERING AND SURVEYING
 481 CALLETT ROAD
 CHARM, WV 26024
 (304)520-4844
 www.white-brothers.com



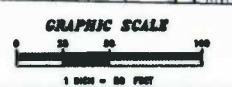
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FINAL DESIGN
 RECLAMATION PLAN
 CHESTNUT DRILL PAD
 GRANT DISTRICT
 DODDRIDGE COUNTY, WV



LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- - - SILT FENCE
- - - SUPER SILT FENCE
- - - SILT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
- EXISTING UTILITY POLE
- EXISTING TREE LINE
- PROPOSED WOVEN WIRE FENCE
- NRPW EPHEMERAL STREAM
- RPW PERENNIAL STREAM
- PEM WETLANDS
- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- - - SF, SSF AND SILT SOCK INDICATOR

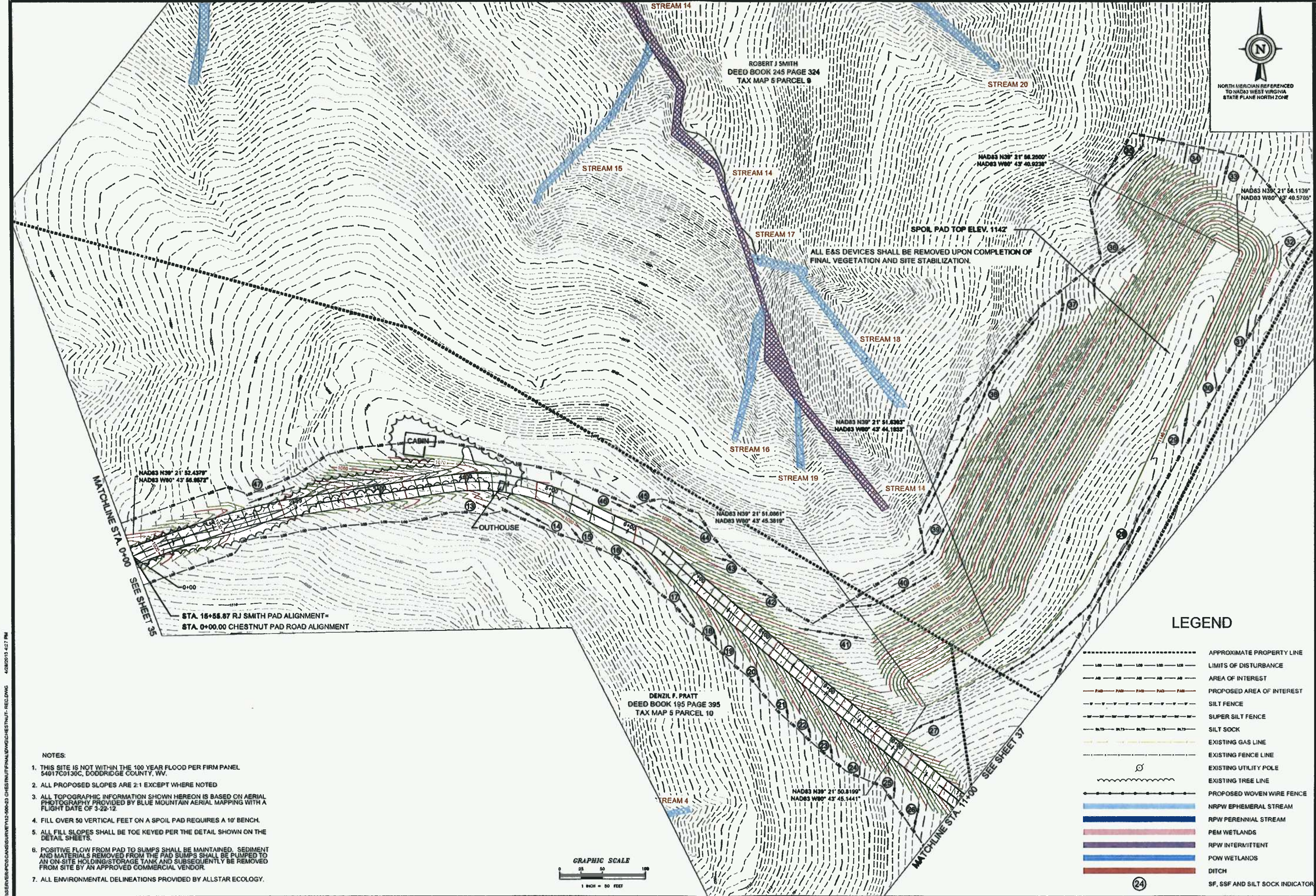


NORTH MERIDIAN REFERENCED
 TO NAD83 WEST VIRGINIA
 STATE PLANE NORTH ZONE

- NOTES:
- THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 54017C0130C, DODDRIDGE COUNTY, WV.
 - ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED
 - ALL TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING WITH A FLIGHT DATE OF 3-22-12.
 - FILL OVER 50 VERTICAL FEET ON A SPOIL PAD REQUIRES A 10' BENCH.
 - ALL FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON THE DETAIL SHEETS.
 - POSITIVE FLOW FROM PAD TO SUMPS SHALL BE MAINTAINED. SEDIMENT AND MATERIALS REMOVED FROM THE PAD SUMPS SHALL BE PUMPED TO AN ON-SITE HOLDING/STORAGE TANK AND SUBSEQUENTLY BE REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR.
 - ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.

NO.	REVISION	DATE	BY

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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	36	38

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 ENGINEERING AND SURVEYING
 447 CALL ROAD, SUITE 216
 CHARLESTON, WV 25312
 (304) 550-4484
 www.white-southern.com

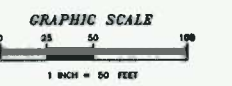


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APPALACHIAN CORP

FINAL DESIGN
RECLAMATION PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

LEGEND

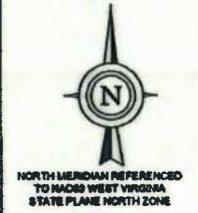
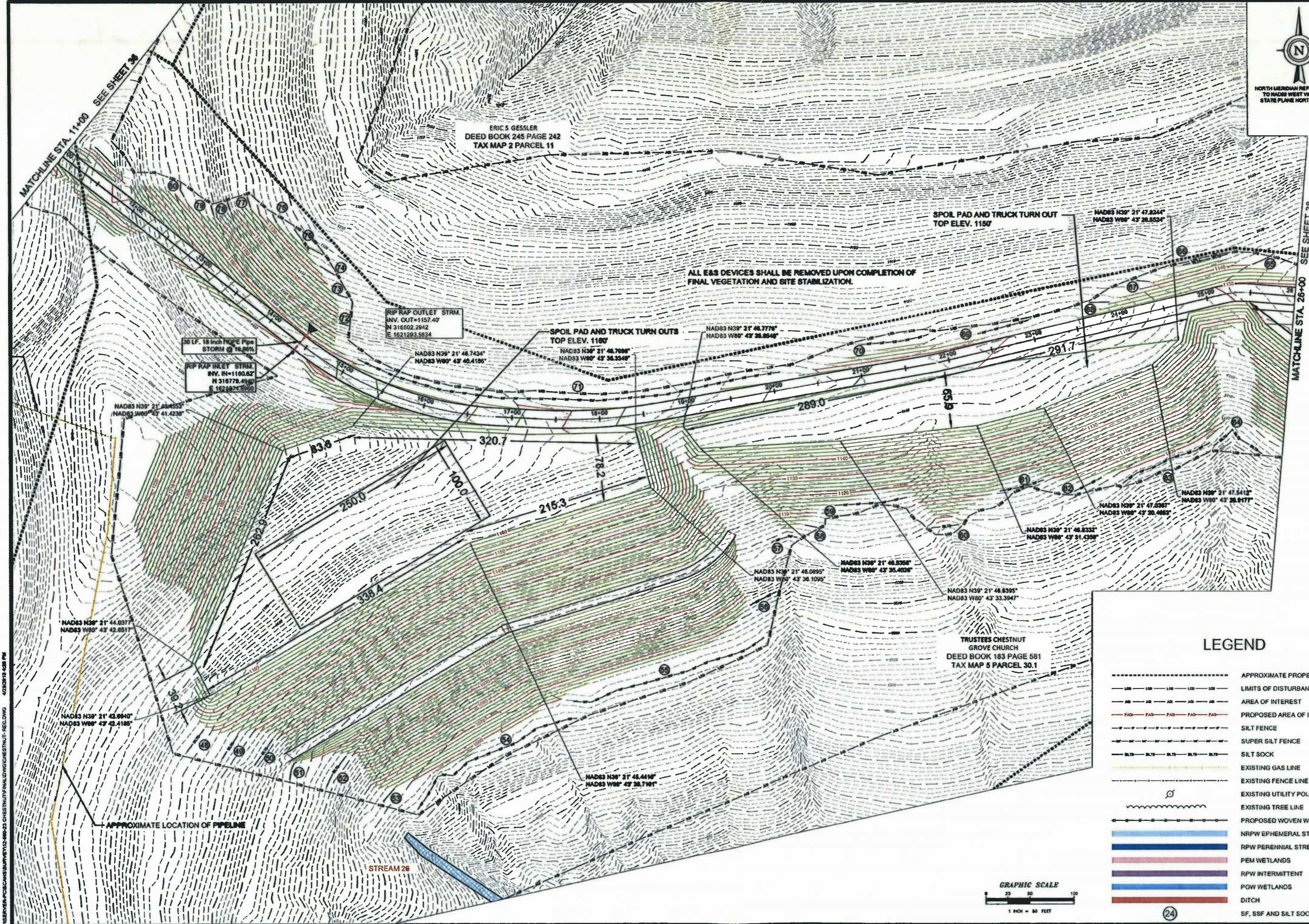
	APPROXIMATE PROPERTY LINE
	LIMITS OF DISTURBANCE
	AREA OF INTEREST
	PROPOSED AREA OF INTEREST
	SILT FENCE
	SUPER SILT FENCE
	SILT SOCK
	EXISTING GAS LINE
	EXISTING FENCE LINE
	EXISTING UTILITY POLE
	EXISTING TREE LINE
	PROPOSED WOVEN WIRE FENCE
	NRPW EPHEMERAL STREAM
	RPW PERENNIAL STREAM
	PEM WETLANDS
	RPW INTERMITTENT
	POW WETLANDS
	DITCH
	SF, SSF AND SILT SOCK INDICATOR



- NOTES:
- THIS SITE IS NOT WITHIN THE 100 YEAR FLOOD PER FIRM PANEL 54017C0130C, DODDRIDGE COUNTY, WV.
 - ALL PROPOSED SLOPES ARE 2:1 EXCEPT WHERE NOTED
 - ALL TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON AERIAL PHOTOGRAPHY PROVIDED BY BLUE MOUNTAIN AERIAL MAPPING WITH A FLIGHT DATE OF 3-22-12.
 - FILL OVER 50 VERTICAL FEET ON A SPOIL PAD REQUIRES A 10' BENCH.
 - ALL FILL SLOPES SHALL BE TOE KEYED PER THE DETAIL SHOWN ON THE DETAIL SHEETS.
 - POSITIVE FLOW FROM PAD TO SUMPS SHALL BE MAINTAINED. SEDIMENT AND MATERIALS REMOVED FROM THE PAD SUMPS SHALL BE PUMPED TO AN ON-SITE HOLDING/STORAGE TANK AND SUBSEQUENTLY BE REMOVED FROM SITE BY AN APPROVED COMMERCIAL VENDOR.
 - ALL ENVIRONMENTAL DELINEATIONS PROVIDED BY ALLSTAR ECOLOGY.

NO.	REVISION	DATE	BY

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NORTH MERIDIAN REFERENCED TO NAD83 WEST VIRGINIA STATE PLANE NORTH ZONE

DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	37	38

WB
White Brothers Consulting, LLC
ENGINEERING AND SURVEYING
447 CALL ROAD, SUITE 210
CHARLESTON, WV 25312
(304) 550-9484
www.white-brothers.com

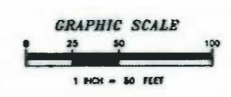


THIS DOCUMENT PREPARED FOR ANTERO RESOURCES APPALACHIAN CORP

FINAL DESIGN
RECLAMATION PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

LEGEND

- APPROXIMATE PROPERTY LINE
- LIMITS OF DISTURBANCE
- AREA OF INTEREST
- PROPOSED AREA OF INTEREST
- SILT FENCE
- SUPER SILT FENCE
- SILT SOCK
- EXISTING GAS LINE
- EXISTING FENCE LINE
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- RPW INTERMITTENT
- POW WETLANDS
- DITCH
- SF, SSF AND SILT SOCK INDICATOR



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NO.	REVISION	DATE	BY

24

LEGEND

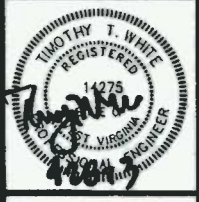
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DATE SUBMITTED	SHEET NO.	TOTAL SHEETS
4-28-2013	38	38

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FINAL DESIGN
RECLAMATION PLAN
CHESTNUT DRILL PAD
GRANT DISTRICT
DODDRIDGE COUNTY, WV

NO.	DATE	BY	REVISION

ALL GAS DEVICES SHALL BE REMOVED UPON COMPLETION OF FINAL VEGETATION AND SITE STABILIZATION.

ERIC S GESSLER
DEED BOOK 245 PAGE 242
TAX MAP 2 PARCEL 11

CHESTNUT DRILL PAD
ELEVATION 1115.0'
CENTER OF PAD LOCATION
NAD83 LAT. 39°21'47.8537"
NAD83 LONG. 80°43'16.2343"

SPOIL PAD AND TRUCK TURN OUT
TOP ELEV. 1150'

INSTALL ROCK
CHECK DAMS (TYP.)
SEE DETAIL

INSTALL 280 LF
DIVERSION DITCH

INSTALL PAD BERM
BREACH, (TYP.) SEE
DETAIL.

INSTALL 190 LF
DIVERSION DITCH

SPOIL AND TOPSOIL STORAGE PAD
TOP ELEV. 1150'

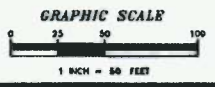
INSTALL 350 LF
DIVERSION DITCH

INSTALL PAD BERM
BREACH, (TYP.) SEE
DETAIL.

TRUSTEES CHESTNUT
GROVE CHURCH
DEED BOOK 183 PAGE 581
TAX MAP 5 PARCEL 30

NO
CONSTRUCTION
ACTIVITY
PERMITTED
WITHIN
THIS
BOUNDARY

MATCHLINE STA. 26+00
SEE SHEET 37



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