



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
(304) 926-0450
(304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

September 25, 2012

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-3305655, issued to ANTERO RESOURCES APPALACHIAN CORPORATION, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Please be advised that form WR-35, well operators report of well work, is to be submitted to this office within 90 days of completion of drilling, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.

James Martin
Chief

Operator's Well No: CAYNOR UNIT 2H
Farm Name: BENNETT, ROBERT AND PATRIC
API Well Number: 47-3305655
Permit Type: Horizontal 6A Well
Date Issued: 09/25/2012

Promoting a healthy environment.

05/24/2024



west virginia department of environmental protection

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PERMIT MODIFICATION APPROVAL

February 20, 2013

ANTERO RESOURCES APPALACHIAN CORPORATION
1625 17TH STREET, SUITE 300
DENVER, CO 80202

Re: Permit Modification Approval for API Number 3305655 , Well #: CAYNOR UNIT 2H
MODIFIED SURFACE HOLE LOCATION

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Natalie Paynter".

for

Gene Smith

Regulatory/Compliance Manager

Office of Oil and Gas

Promoting a healthy environment.

05/24/2024

PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
2. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the fill material shall be within plus or minus 2% of the optimum moisture content as determined by the standard proctor density test. Each lift must meet 95 % compaction of the optimum density based on results from the standard proctor density test of the actual soils used in specific engineered fill sites. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
3. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
4. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within twenty-five hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
5. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.

05/24/2024

API# 33-05655

WW - 6B
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: Antero Resources Appalachian Corporation 494488557 033 - Harrison Union West Milford
Operator ID County District Quadrangle

2) Operator's Well Number: Caynor Unit 2H Well Pad Name: Bennett Pad

3 Elevation, current ground: ~1240' Elevation, proposed post-construction: 1235'

4) Well Type: (a) Gas Oil
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: Depth- 7200' TVD, Anticipated Thickness- 60 feet, Associated Pressure- 3250#

7) Proposed Total Vertical Depth: 7200' TVD

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 16,700' MD

10) Approximate Fresh Water Strata Depths: 75', 155', 230', 450'

11) Method to Determine Fresh Water Depth: Offset well records

12) Approximate Saltwater Depths: 1480', 1580', 1720'

13) Approximate Coal Seam Depths: 104', 120', 149', 155', 165', 530', 1036', 1496'

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

15) Does land contain coal seams tributary or adjacent to, active 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 99 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): 18.98 acres

19) Area to be disturbed for well pad only, less access road (acres): 2.48 acres

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05/24/2024

WW - 6B
(1/12)

20)

CASING AND TUBING PROGRAM

TR, 7/1/12

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
Fresh Water	13-3/8"	New	J-55/H-40	54.5#/48#	510'	510' *see above	CTS, 708 Cu. Ft.
Coal	9-5/8"	New	J-55	36#	2470'	2470'	CTS, 1006 Cu Ft.
Intermediate							
Production	5-1/2"	New	P-110	20#	16700'	16700'	4199 Cu Ft.
Tubing	2-3/8"	New	N-80	4.7#		7300'	
Liners							

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	24"	0.438"	1530	Grout <i>Class A</i>	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 & Tail - H	H/POZ-1.44 & H-1.8
Tubing	2-3/8"	4.778"	0.19"	11200		
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

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05/24/2024

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, grout 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.

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Office of Oil & Gas
JUN 19 2012
WV Department of
Environmental Protection

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

**CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE**

Operator Name Antero Resources Appalachian Corporation OP Code 494488557

Watershed West Fork River Quadrangle West Milford

Elevation 1235' County Harrison District Union

Description of anticipated Pit Waste: Drilling and Flowback Fluids and Cuttings

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a synthetic liner be used in the pit? Yes . If so, what mil.? 60 mil

- Proposed Disposal Method For Treated Pit Wastes:
- Land Application
 - Underground Injection (UIC Permit Number _____)
 - Reuse (at API Number Future permitted well locations when applicable. API# will be provided on Form WR-34)
 - Off Site Disposal (Meadowfill Landfill Permit #SWF-1032-98)
 - Other (Explain _____)

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. Surface - Air/Freshwater, Intermediate - Dust/Sluff Foam, Production - Water Based Mud

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used? Please See Attachment

Will closed loop system be used? Yes

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Removed offsite and taken to landfill

-If left in pit and plan to solidify what medium will be used? Cement, lime, N/A

-Landfill or offsite name/permit number? Meadowfill Landfill (Permit #SWF-1032-88)

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature *Gerard G. Alberts*

Company Official (Typed Name) Gerard G. Alberts

Company Official Title Environmental & Regulatory Manager

Subscribed and sworn before me this 18th day of July, 20 12

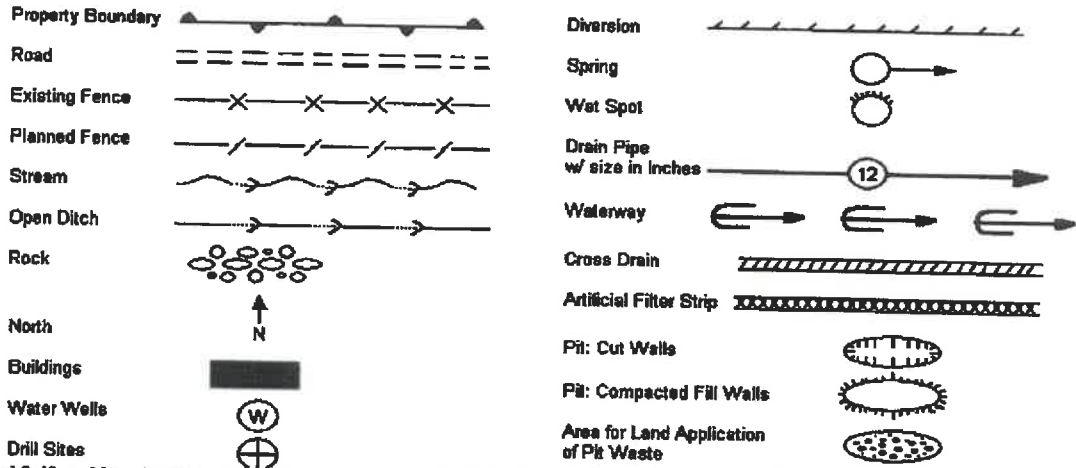
JUL 27 2012

Rachel Boucard Notary Public

My commission expires 04/26/2015

Rachel Boucard
Notary Public
State of Colorado
My Commission Expires 04/26/2015

05/24/2024



(New Pad 2.48 + New Access Rd A 1.71 + New Access Rd B 0.27 + Existing Access Rd 1.78 + Frac Pit 3.07 + Addtl Clearing 2.67 = 18.98)

Proposed Revegetation Treatment: Acres Disturbed 18.98 Prevegetation pH _____

Lime 2-3 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch 2-3 Tons/acre Hay or straw or Wood Fiber (will be used where needed)

Seed Mixtures

Seed Type	Area I (Temporary) lbs/acre	Seed Type	Area II (Permanent) lbs/acre
Meadow Mix	40	Meadow Mix	40
*Seeding will be as per the Bennett-Antero Surface Use Agreement		*Seeding will be as per the Bennett-Antero Surface Use Agreement	

Attach:
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: _____

Title: Oil & Gas Inspector Date: 26 July 12

Field Reviewed? Yes No

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JUL 27 2012
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05/24/2024



Well Site Safety Plan

Antero Resources

**Well Name: Canynor Unit 2H, Brutus Unit 2H,
McConkey Unit 1H, McConkey Unit 2H, Sutton Unit 1H,
Sutton Unit 2H, Bennett Unit 1H and Bennett Unit 2H**

Pad Location: BENNETT PAD
(Harrison County/Union District)

GPS Coordinates: Lat 39°12'13.2"/Long 80°28'27.2"

Driving Directions: From downtown West Milford head west on Co Route 36/Liberty St toward Mill St for 335ft. Turn right onto Mill St for 0.1 miles. Take the 2nd left onto W Virginia 270 W/Main St for 0.4 miles. Turn left onto US-19 S/Milford St for 2.8 miles. Turn right onto Isaacs Creek Rd for 1.0 miles. Continue onto Co Route 38/Industrial-Isaacs Creek Rd for 12 miles. Turn right to stay on Co Route 38/Industrial-Isaacs Creek Rd for 190ft. Continue onto Co Route 3216 for 0.5 miles. Turn right onto Stone Coal Rd for 0.4m. Total distance is 6.5 miles. Lease road will be on the right

PAJ 17 Jul 12

JUL 19 2012

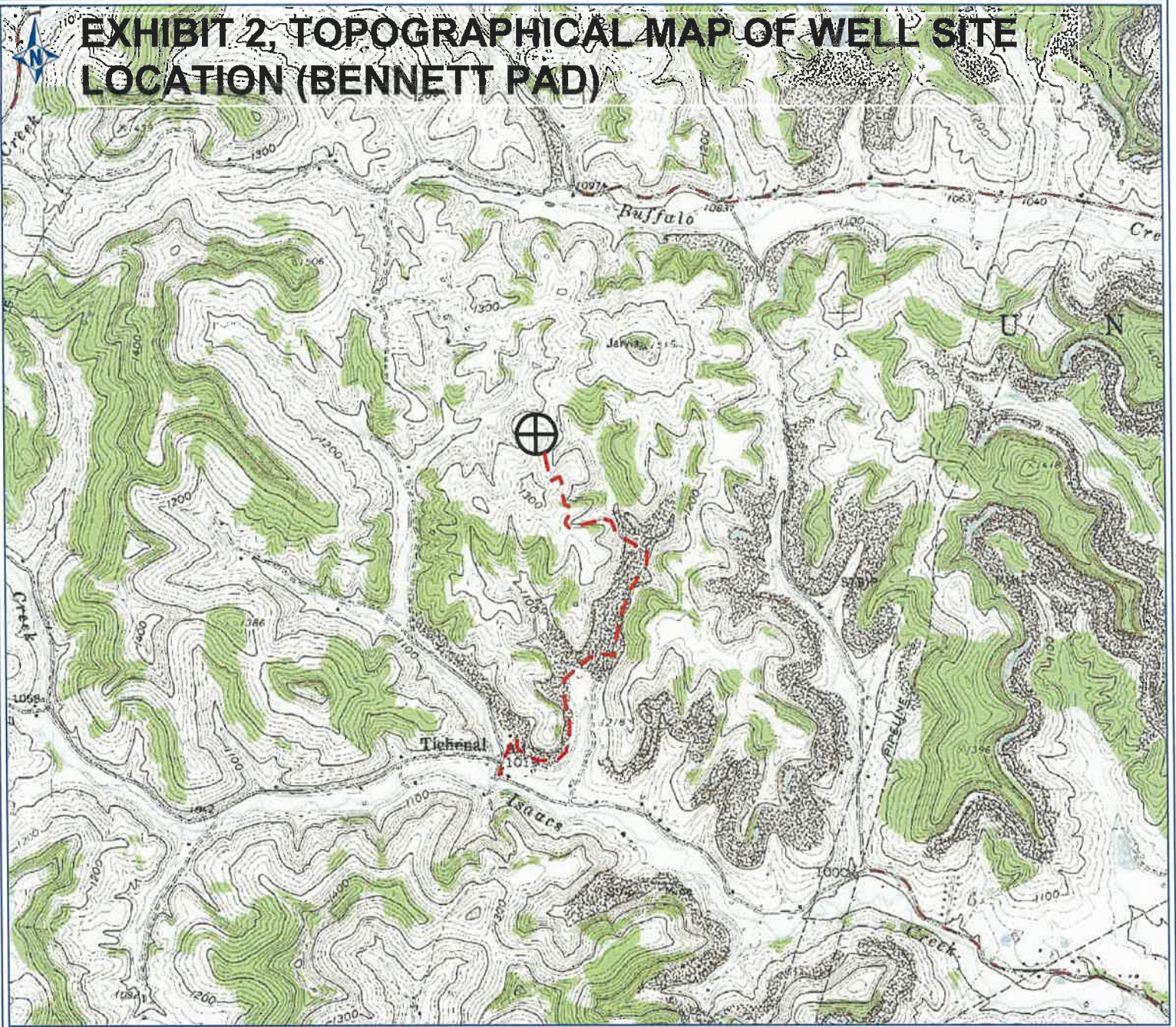
WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Environmental Protection

SSP Page 1

05/24/2024

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



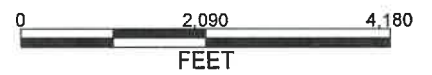
PETRA 6/8/2012 2:00:22 PM

Antero Resources Corporation

Appalachian Basin

Bennett Pad

Harrison County



REMARKS
 QUADRANGLE: WEST MILFORD
 WATERSHED: WEST FORK RIVER
 DISTRICT: UNION

JUL 10 2012 June 8, 2012

West Virginia Department of
 Environmental Protection

05/24/2024

Antero Resources
Well No. Caynor Unit 2H
Antero Resources
Appalachian Corporation

LEGEND

- ⊙ Proposed gas well
- ⊗ Found corner, as noted
- ⊙ County Route
- Creek or Drain
- Existing Road
- Surface Boundary (approx.)
- Interior surface tracts (approx.)
- Existing Fenceline

Tax Map 383 Parcels

Par	Owner	BK/Pg	Acres
1 25	Robert & Patricia Bennett	1024/1083	26.08
15 47	James Wickenhofer, et ux	970/241	18.50

Tax Map 384 Parcels

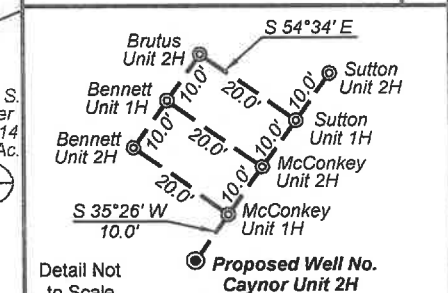
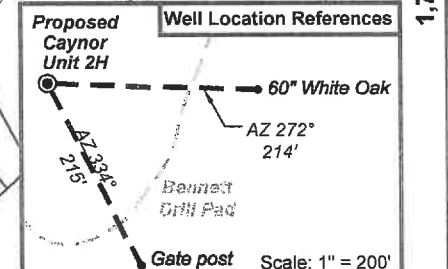
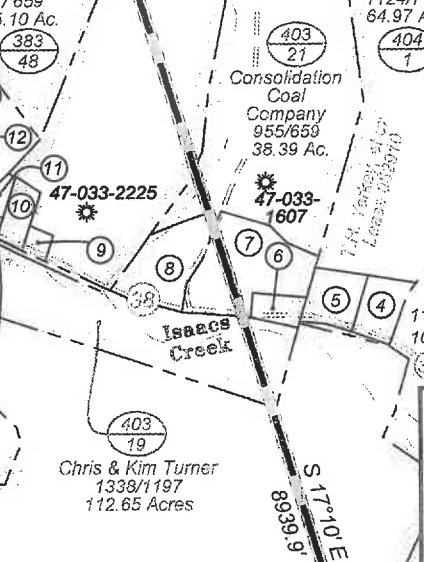
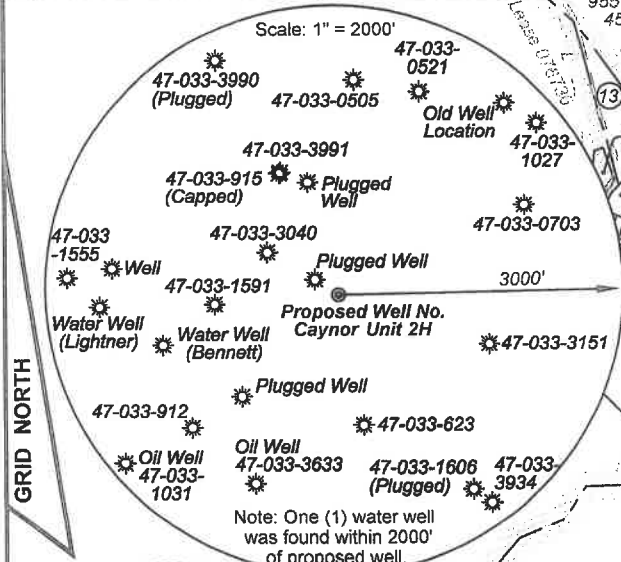
2 17	Consolidation Coal Company	955/659	6.97
3 18			

Tax Map 404 Parcels

4 2.1	James E. & Evelyn A. Titus	1332/807	1.63
5 2			
14 40.3	Veronica M. Cunningham	1430/1193	13.84

Tax Map 403 Parcels

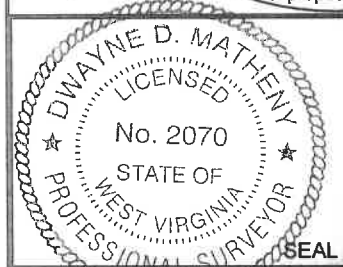
6 20	Velma D. Rowh-Mills	W121/436	1.00
7 19.1	David Gaines	1227/134	5.56
8 19.2	Russ & Charlotte Ward	1219/441	3.49
9 17	Caynor RL / Margaret Hughes	218/57	0.40
10 34	Mary A. Wright	1307/666	1.03
11 15	Mary A. Wright	1307/666	0.56
12 13.2	Ashley & James Hettfing	1418/80	0.46
13 14	Consolidation Coal Company	955/669	3.07



Bottom Hole 7.5' Spot

	Bearing	Distance
L1	S 82°22' E	1558.1'
L2	N 87°14' E	1289.9'
L3	N 45°58' E	1430.1'
L4	N 11°06' W	1370.8'
L5	S 59°02' W	968.4'

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Caynor Unit 2H Top Hole coordinates are
 N: 257,735.31' Latitude: 39°12'12.68"
 E: 1,723,827.29' Longitude: 80°28'28.40"
 Bottom Hole coordinates are
 N: 248,695.43' Latitude: 39°10'43.53"
 E: 1,725,635.83' Longitude: 80°28'04.19"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,339,503.727m N: 4,336,758.880m
 E: 545,384.565m E: 545,981.420m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.

Dwayne D. Matheny, P.S. 2070

Denotes Location of Well on United States Topographic Maps



FILE NO: 64-36-U-11
 DRAWING NO: 64-11 Caynor Unit 2H
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: November 13 2012
 OPERATOR'S WELL NO. Caynor Unit 2H
 API WELL NO
 47 - 033 - 15155
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: 1235' WATERSHED: West Fork River QUADRANGLE: West Milford 63.2
 DISTRICT: Union George McConkey, et ux COUNTY: Harrison 59.5;
 SURFACE OWNER: Robert & Patricia Bennett E.A. Washburn; J.H. Sommerville, et ux; 013952; 052917 ACREAGE: 26.08 123.54;
 ROYALTY OWNER: Wilma Floy Post, et al; Orië & Maggie Bennett; R.L. Caynor, et ux LEASE NO: 52913; 052935; 052938 ACREAGE: 102.100; 26; DV011650; 013948 129.52;
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) TVD 7,200'
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: MD 16,700'

WELL OPERATOR: Antero Resources Appalachian Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

Antero Resources
Well No. Caynor Unit 2H
Antero Resources
Appalachian Corporation

LEGEND

- ⊙ Proposed gas well
- ⊛ Found corner, as noted
- Ⓢ County Route
- - - Creek or Drain
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- - - Interior surface tracts (approx.)
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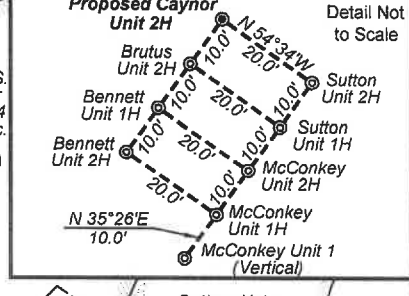
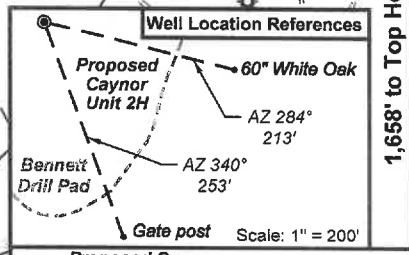
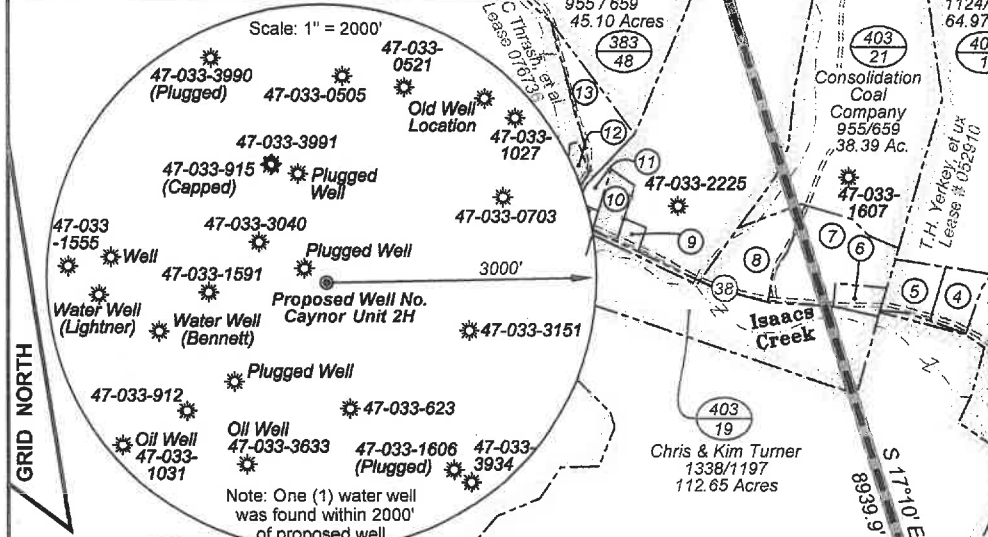
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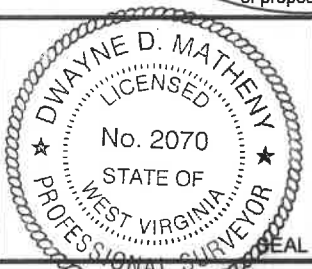
Tax Map 403 Parcels

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12 13.2	Ashley & James Hetfing	1418/80	0.46
13 14	Consolidation Coal Company	955/669	3.07



Bearing	Distance
L1 S 84°01' E	1559.7'
L2 N 85°18' E	1299.7'
L3 N 44°54' E	1466.1'
L4 N 10°29' W	1413.0'
L5 S 57°03' W	997.6'

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Caynor Unit 2H Top Hole coordinates are
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Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.



I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Department of Environmental Protection.

Dwayne D. Matheny
Dwayne D. Matheny, P.S. 2070

FILE NO: 64-36-U-11
DRAWING NO: 64-11 Caynor Unit 2H
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: June 6 2012
OPERATOR'S WELL NO. Caynor Unit 2H
API WELL NO. 47-033-0565
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: 1235' WATERSHED: West Fork River QUADRANGLE: West Milford 63.2
DISTRICT: Union George McConkey, et ux COUNTY: Harrison 05/24/2024
SURFACE OWNER: Robert & Patricia Bennett E.A. Washburn; J.H. Sommerville, et ux; 013952; 052917 ACREAGE: 26.08 123.54;
ROYALTY OWNER: Wilma Floy Post, et al; Orië & Maggie Bennett; R.L. Caynor, et ux LEASE NO: 52913; 052935; 052938 ACREAGE: 103; 100; 26; 129.52;
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY)
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: TVD 7,200' MD 16,700'

WELL OPERATOR: Antero Resources Appalachian Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1625 17th Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, lessor, etc.	Grantee, lessee, etc.	Royalty	Book/Page
<u>Wilma Floy Post & Harry W. Post, et al Lease</u>			
Wilma Floy Post & Harry W. Post, her husband, et al	W.B. Berry	1/8	1134/0187
Charles Criss	W.B. Berry	1/8	1134/0183
Chesapeake	Antero Resources Appalachian Corp.	Letter Agreement	1456/0376
<u>Lease #052913</u>			
Orie & Maggie Bennett, his wife	Reserve Gas Company	Flat Rate	0179/0469
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068
<u>Lease #052935</u>			
J.H. Sommerville, et ux	Reserve Gas Company	Flat Rate	0228/0306
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068
<u>Lease #DV011650</u>			
R.L. & Ida Caynor, his wife	Reserve Gas Company	Flat Rate	0234/0206
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068
<u>Lease #052938</u>			
Menzie E. & Cora M. Courtney, his wife	Reserve Gas Company	Flat Rate	0234/0204
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068
<u>Lease #013952</u>			
T.H. & S.A. Smith, his wife	Hope Natural Gas Company	Flat Rate	0175/0157
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068
<u>Lease #052917</u>			
G.P. & A.M. McConkey, his wife	Reserve Gas Company	Flat Rate	0179/0481
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068

****CONTINUED ON NEXT PAGE****

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Environmental Protection

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**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
(CONTINUED FROM 1ST PAGE)			
Lease #013948			
E.A. Washburn & Laverna Washburn, his wife	Hope Natural Gas Company	Flat Rate	0175/0160
Dominion E&P, Inc.	Antero Resources Appalachian Corp.	Assignment	1423/1068

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Antero Resources Appalachian Corporation
 By: Kevin Kilstrom
 Its: Vice President of Production

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33-05655



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

June 14, 2012

West Virginia Department of Environmental Protection
Chief, Office of Oil and Gas
Attn: Mr. James Martin
601 57th Street SE
Charleston, WV 25304

RE: Caynor Unit 2H
Quadrangle: West Milford
Harrison County/Union District, West Virginia

Mr. Martin:

Antero Resources Appalachian Corporation (Antero) is submitting the following application for a new well work permit for the Caynor Unit 2H horizontal shallow well. As an authorized representative, I certify that Antero has the right to extract, produce or market the oil or gas for all leases through which the Caynor Unit 2H horizontal lateral will drill through including any and all roads crossed under as identified on the attached survey plat.

Sincerely,

Kenneth Vaughn
Landman

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE CERTIFICATION

Date of Notice Certification: 06/14/2012

API No. 47- 033 -

Operator's Well No. Caynor Unit 2H

Well Pad Name: Bennett Pad

Notice has been given:

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State:	<u>West Virginia</u>	UTM NAD 83	Easting:	<u>545386.439m</u>
County:	<u>Harrison</u>		Northing:	<u>4339517.225m</u>
District:	<u>Union</u>	Public Road Access:		<u>CR 38</u>
Quadrangle:	<u>West Milford</u>	Generally used farm name:		<u>Bennett, Robert J. & Patricia</u>
Watershed:	<u>West Fork River</u>			

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED <small>**Not applicable, Plat Survey was done prior to Implementation of WV Code 22-6A</small></p> <p><input checked="" type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 40px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p>OOG OFFICE USE ONLY</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p> <p><input checked="" type="checkbox"/> RECEIVED</p>
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Required Attachments:

The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

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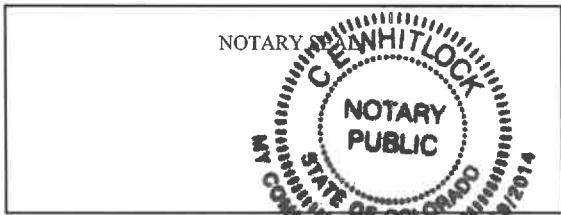
05/24/2024

WW-6AC
(1/12)

Certification of Notice is hereby given:

THEREFORE, I Kevin Kilstrom, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Antero Resources Appalachian Corporation</u>	Address:	<u>1625 17th Street</u>
By:	<u>Kevin Kilstrom</u>		<u>Denver, CO 80202</u>
Its:	<u>Vice President of Production</u>	Facsimile:	<u>(303) 357-7315</u>
Telephone:	<u>(303) 357-7310</u>	Email:	<u></u>



Subscribed and sworn before me this 14 day of June, 2012
C. Whitlock Notary Public
 My Commission Expires 1/18/2014

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

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STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 06/14/2012 **Date Permit Application Filed:** 06/14/2012

Notice of:

- PERMIT FOR ANY WELL WORK CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE REGISTERED MAIL METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b), no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner.

Notice is hereby provided to:

SURFACE OWNER(s)
Name: Robert J. & Patricia Bennett ✓
Address: Rural Route 1 Box 273
Lost Creek, WV 26385
Name: _____
Address: _____

SURFACE OWNER(s) (Road and/or Other Disturbance)
Name: PLEASE SEE ATTACHMENT
Address: _____
Name: _____
Address: _____

SURFACE OWNER(s) (Impoundments/Pits)
Name: PLEASE SEE ATTACHMENT
Address: _____

COAL OWNER OR LESSEE
Name: PLEASE SEE ATTACHMENT
Address: _____

COAL OPERATOR
Name: PLEASE SEE ATTACHMENT
Address: _____

WATER PURVEYOR(s)
Name: NONE IDENTIFIED WITHIN 1500 FEET
Address: _____

OPERATOR OF ANY NATURAL GAS STORAGE FIELD
Name: _____
Address: _____

*Please attach additional forms if necessary

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Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

This Notice Shall Include:

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall also include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Water Well Testing:

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well.

Water Testing Laboratories:

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments.

Well Location Restrictions

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No wellpad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such

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factors, if necessary.

Written Comment:

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas
Department of Environmental Protection
601 57th St. SE
Charleston, WV 25304
(304) 926-0450

Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

Time Limits and Methods for Filing Comments.

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

Comment Requirements

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

Permit Denial or Condition

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

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Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

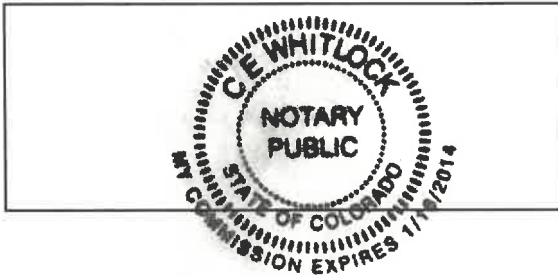
Notice is hereby given by:

Well Operator: Antero Resources Appalachian Corporation
Telephone: 303-357-7310
Email: amihalcin@anteroresources.com

Address: 1625 17th Street
Denver, CO 80202
Facsimile: 303-357-7315

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



Subscribed and sworn before me this 14 day of June, 2012.
C.E. Whitlock Notary Public
My Commission Expires 1/18/2014

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JUN 19 2012
WV Department of
Environmental Protection

WW-6A Notice of Application Attachment:**Surface Owner(s) (Road and/or Other Disturbance):**

Owner: Ashley B. & James B. Heffinger ✓
Address: Rural Route 1 Box 269
 Lost Creek, WV 26385

Owner: Mary A. Wright ✓
Address: Rural Route 3 Box 545
 Lost Creek, WV 26385

Owner: Consolidation Coal Company
 c/o Leatherwood, Inc., CNX Center
 Attn: Don Puglio ✓
Address: 1000 Consol Energy Dr.
 Canonsburg, PA 15317

Owner: Consol Coal Company
 c/o Leatherwood, Inc., CNX Center
 Attn: Don Puglio ✓
Address: 1000 Consol Energy Dr.
 Canonsburg, PA 15317

Coal Owners:

Owner: Robert J. & Patricia Bennett ✓
Address: Rural Route 1 Box 273
 Lost Creek, WV 26385

Owner: I.L. Morris & Mike Ross, Inc.
 c/o Bowles, Rice, McDavis, Graff & Love, PLLC
 Attn: Marc Monteleone ✓
Address: P.O. Box 1386
 600 Quarrier Street
 Charleston, WV 25325

Owner: James M. Sutton ✓
 c/o Tetrick Mineral Properties
 Attn: Denise Harris ✓
Address: 92 16th Street, 2nd Floor
 Wheeling, WV 26003

Owner: Charleston National Bank ✓
 c/o JP Morgan Chase Bank, NA
 Attn: Sheldon F. Thompson ✓
Address: 420 Throckmorton #200
 Fort Worth, TX 76102

Surface Owner(s) (Impoundments/Pits):

Owner: Robert J. & Patricia Bennett ✓
Address: Rural Route 1 Box 273
 Lost Creek, WV 26385

Owner: Consolidation Coal Company
 c/o Leatherwood, Inc., CNX Center
 Attn: Don Puglio ✓
Address: 1000 Consol Energy Dr.
 Canonsburg, PA 15317

Owner: Consolidation Coal Company
 c/o Leatherwood, Inc., CNX Center
 Attn: Don Puglio ✓
Address: 1000 Consol Energy Dr.
 Canonsburg, PA 15317

Operator: Gregory & Poole Coal Company ✓
Address: 1101 Union Building
 Charleston, WV 26426

Operator: R & L Coal Corporation ✓
Address: P.O. Box 144
 Delbarton, WV 25670

Operator: Bitner Fuel Company ✓
Address: Route 1
 Bloomingdale, OH 43910

Operator: Byron Construction Company ✓
Address: P.O. Box 421
 Lost Creek, WV 26385

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Owner: Willis G. Tetrick, Mawell Y Sutton,
Union National Bank, JP Morgan Chase Bank, NA
Address: Attn: Sheldon F. Thompson ✓
420 Throckmorton #200
Fort Worth, TX 76102

Owner: Guy Corporation ✓
Address: 609 W. Main Street
Clarksburg, WV 26301

Owner: Guy Corporation
c/o Tetrick Mineral Properties
Address: Attn: Denise Harris ✓
92 16th Street, 2nd Floor
Wheeling, WV 26003

Owner: Willis G. Tetrick
Address: Attn: Denise Harris ✓
92 16th Street, 2nd Floor
Wheeling, WV 26003

Operator: S & M Construction Company ✓
Address: 10504 Lucasville Road
Manassas, VA 20112

Operator: S & M Construction Company ✓
Address: 5400D Big Tyler Road
Charleston, WV 25313

(Note: On survey plat, 1 water well is identified but it is located greater than 1500' from the subject well pad location)

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Office of Oil & Gas
JUN 19 2012
WV Department of
Environmental Protection

05/24/2024

**STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF INTENT TO DRILL**

Pursuant to W. Va. Code § 22-6A-16(b), the Notice of Intent to Drill is only required if the notice requirements of W. Va. Code § 22-6A-10(a) have NOT been met or if the Notice of Intent to Drill requirement has NOT been waived in writing by the surface owner.

Notice Time Requirement: Notice shall be provided at least **TEN (10)** days prior to filing a permit application.
Date of Notice: 01/23/2012 **Date Permit Application Filed:** 06/14/2012

Delivery method pursuant to West Virginia Code § 22-6A-16(b)

HAND DELIVERY CERTIFIED MAIL RETURN RECEIPT REQUESTED

Pursuant to W. Va. Code § 22-6A-16(b), at least ten days prior to filing a permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner notice of its intent to enter upon the surface owner's land for the purpose of drilling a horizontal well: *Provided*, That notice given pursuant to subsection (a), section ten of this article satisfies the requirements of this subsection as of the date the notice was provided to the surface owner: *Provided, however*, That the notice requirements of this subsection may be waived in writing by the surface owner. The notice, if required, shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative.

Notice is hereby provided to the SURFACE OWNER(s):

Name: Robert J. & Patricia Bennett
Address: Rural Route 1 Box 273
Lost Creek, WV 26385

Name: _____
Address: _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(b), notice is hereby given that the undersigned well operator has an intent to enter upon the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia UTM NAD 83 Easting: 545386.439m
County: Harrison Northing: 4339517.225m
District: Union Public Road Access: CR 38
Quadrangle: West Milford Generally used farm name: Bennett, Robert J. & Patricia
Watershed: West Fork River

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(b), this notice shall include the name, address, telephone number, and if available, facsimile number and electronic mail address of the operator and the operator's authorized representative. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

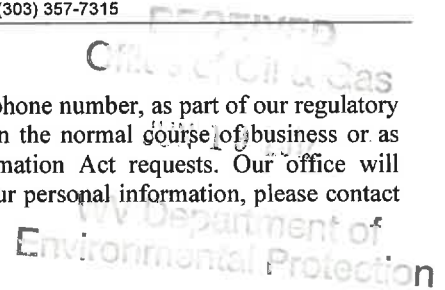
Notice is hereby given by:

Well Operator: Antero Resources Appalachian Corporation
Address: 1625 17th Street
Denver, CO 80202
Telephone: (303) 357-7310
Email: amihalcin@anteroresources.com
Facsimile: (303) 357-7315

Authorized Representative: Ashlie Mihalcin
Address: 1625 17th Street
Denver, CO 80202
Telephone: (303) 357-6412
Email: amihalcin@anteroresources.com
Facsimile: (303) 357-7315

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.



05/24/2024

33-05655

WW-6A5
(1/12)

Operator Well No. Caynor Unit 2H

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF PLANNED OPERATION

Notice Time Requirement: notice shall be provided no later than the **filing date of permit application.**

Date of Notice: 06/14/2012 **Date Permit Application Filed:** 06/14/2012

Delivery method pursuant to West Virginia Code § 22-6A-16(c)

CERTIFIED MAIL **HAND**
RETURN RECEIPT REQUESTED **DELIVERY**

Pursuant to W. Va. Code § 22-6A-16(c), no later than the date for filing the permit application, an operator shall, by certified mail return receipt requested or hand delivery, give the surface owner whose land will be used for the drilling of a horizontal well notice of the planned operation. The notice required by this subsection shall include: (1) A copy of this code section; (2) The information required to be provided by subsection (b), section ten of this article to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. (d) The notices required by this section shall be given to the surface owner at the address listed in the records of the sheriff at the time of notice.

Notice is hereby provided to the SURFACE OWNER(s)
(at the address listed in the records of the sheriff at the time of notice):

Name: Robert J. & Patricia Bennett **Name:** _____
Address: Rural Route 1 Box 273 **Address:** _____
Lost Creek, WV 26385 _____

Notice is hereby given:

Pursuant to West Virginia Code § 22-6A-16(c), notice is hereby given that the undersigned well operator has developed a planned operation on the surface owner's land for the purpose of drilling a horizontal well on the tract of land as follows:

State: West Virginia **UTM NAD 83** **Easting:** 545386.439m
County: Harrison **Northing:** 4339517.225m
District: Union **Public Road Access:** CR 38
Quadrangle: West Millford **Generally used farm name:** Bennett, Robert J. & Patricia
Watershed: West Fork River

This Notice Shall Include:

Pursuant to West Virginia Code § 22-6A-16(c), this notice shall include: (1) A copy of this code section; (2) The information required to be provided by W. Va. Code § 22-6A-10(b) to a surface owner whose land will be used in conjunction with the drilling of a horizontal well; and (3) A proposed surface use and compensation agreement containing an offer of compensation for damages to the surface affected by oil and gas operations to the extent the damages are compensable under article six-b of this chapter. Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57th Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting www.dep.wv.gov/oil-and-gas/pages/default.aspx.

Well Operator: Antero Resources Appalachian Corporation **Address:** 1625 17th Street
Telephone: (303) 357-7310 Denver, CO 80202
Email: amihalcin@anteroresources.com **Facsimile:** (303) 357-7315

Oil and Gas Privacy Notice:

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

Office of Oil and Gas
JUN 19 2012
WV Department of
Environmental Protection

05/24/2024

**CERTIFICATION OF AGREEMENT WITH WVDOH
to fulfill WV Code 22, Article 6A, Section 20**

**OIL AND GAS ROAD
STATEWIDE BONDING AGREEMENT**

THIS AGREEMENT, executed in duplicate, made and entered into this 28 day of February, 2012, by and between the **WEST VIRGINIA DEPARTMENT OF TRANSPORTATION, DIVISION OF HIGHWAYS**, hereinafter called "DEPARTMENT," and Antero Resources Appalachia Corporation, a DELAWARE company, hereinafter called "COMPANY."

WITNESSETH:

WHEREAS, Company has horizontal gas well drilling operations in certain areas of West Virginia; and

WHEREAS, the Department believes that the frequent and repetitive use of certain sections of highways in the State by Company, its contractors, agents, independent contractors or suppliers of drilling materials or drilling equipment, and employees contributes to increased wear and tear to public roads in the state road system in the State, including local roads ("State Owned Roads"); and,

WHEREAS, the Department and Company have entered into this Agreement to satisfy the requirements of the Department's policy entitled "Oil & Gas Road Policy" dated January 3, 2012, as issued by Paul A. Maitox, Jr., Secretary of Transportation / Commissioner of Highways, and any subsequent related policies, hereinafter called "Policy", a copy of which is made a part of this Bonding Agreement and is identified as Attachment 1.

NOW, THEREFORE, for and in consideration of the mutual agreements hereinafter set forth, the parties agree as follows:

I. For purposes of this Bonding Agreement, "Project Transportation Usage" of the Company shall be understood to mean use of one or more State Owned Roads for the delivery and removal of drilling materials and drilling equipment at the site or location of one or more of Company's horizontal gas well pad locations. To the extent reasonably practical, prior to commencing use of a State Owned Road for Project Transportation Usage after January 1, 2011, the Company shall submit to the Department a section or sections of current official WVDOH County Highway maps identifying the exact location of the proposed project and the State Owned Roads that the Company will utilize for the Project Transportation Usage.

II. Company and Department shall within 14 days of the Company's submittal, agree to a list of these sections of State Owned Roads, hereinafter called "Project Roads List", to be utilized for each of Company's projects, identified by route number and milepost; at a time to be mutually agreed to by the parties prior to initial commencement of Project Transportation Usage of a particular State Owned Road on a Project Roads List, the Company and Department will jointly review the condition of the roads and bridges on the Project Roads List. The Department will document the road type and surface condition and general right-of-way width of each section of road on the Project Road List. Either party may supplement this documentation with photographs, video or other evidence of the present condition of the road surface, shoulders, ditches, culverts, bridges or other structures or appurtenances of roads on the Project Road List, as well as approaches to the roads, utility facilities located within or along the right-of-way, or any other condition, including third-party activities, that may affect the duties and responsibilities of the parties under this Agreement. A copy of any such documentation must be made and provided to the other party within ten business days after the joint review of the roads on the Project Roads List.

III. Department shall issue a Project Agreement or Project Permit, as appropriate, to Company to use State Owned Roads and may include any minor or major improvements required of Company prior to, during or after Project with the assignment of responsibilities of

WVDOH
2012

both parties prior to, during and after the operator has completed well fracturing..

IV. In the Project Agreement/Project Permit, the Department shall not require the use of State Owned Roads other than the roads proposed by Company unless the Department has safety concerns as to the Company's proposed roads. A failure to agree on roads that may otherwise be lawfully used for a particular Project Transportation Usage shall result in the designation of the State Owned Roads proposed by Company, with milepost determinations as designated by Department. This Agreement shall only cover portions of State Owned Roads designated on the Project Roads List.

V. For the duration of Company's Project Transportation Usage of the Stated Owned Roads on the Project Roads List, whether by the Company, its contractors (while working on behalf of Company), agents, independent contractors or suppliers of drilling materials or drilling equipment, or employees, the Company agrees to pay for all reasonable maintenance and repair costs incurred by the Department to repair areas of the State Owned Roads included in the Project Roads List that were directly damaged by Company's Project Transportation Usage, as determined to be reasonably necessary and appropriate by the Department. The Department shall keep a record of all labor performed by Department employees and contractors for such maintenance and repairs and shall send an invoice for the same to Company.

VI. Company shall be responsible for the cost of all maintenance and repairs reasonably necessary to put the existing roadways, bridges and appurtenances on the Project Roads List utilized for the Project Transportation Usage in the condition that existed immediately prior to the Project Transportation Usage. Company shall not be required to pay for maintenance or repairs to put any areas of such roadways, bridges and appurtenances on the Project Roads List in a condition better than the condition that existed immediately prior to the Project Transportation Usage. Company shall also not be required to pay for maintenance or repairs to any areas of these roadways, bridges or appurtenances on the Project Roads List that are not actually utilized for the Project Transportation Usage or for damage not caused by Project Transportation Usage.

VII. Company shall notify the Department in writing of Company's final completion of Project Transportation Usage for particular roadways, bridges and appurtenances on the Project Roads List. Within fourteen days after its receipt of written notification of the completion of the Project Transportation Usage for all roads on a Project Roads List, the Department will review the condition of the roadways, bridges and appurtenances on the Project Roads List actually utilized for the Project Transportation Usage and advise Company of any final repairs reasonably necessary to leave these roads, bridges and appurtenances in a condition reasonably deemed by Department to be equal to their condition prior to commencement of Project Transportation Usage; and, upon completion of all such final repairs by or on behalf of Company and acceptance by Department, the Company shall be released from all further liability for maintenance or repairs to roads, bridges, or appurtenances on said Project Roads List. Any maintenance or repair work under the Project Agreement/Project Permit for roads, bridges or appurtenances on the Project Roads List may be performed by a contractor directly chosen by the Company as approved by the Department, the Department's workforce, or a private contractor hired by the Department through the public bid process in accordance with state law, all of which work shall be subject to the standards and specifications of the Department.

VIII. In order to ensure performance of Company's performance and payment obligations under this Bonding Agreement, the Company shall post a corporate surety bond, hereinafter called "Master Bond", with the Department named as the beneficiary, which form of bond shall be subject to the consent of the Department, not to be unreasonably withheld. The amount and form of the bond shall be in accordance with the Policy as set forth above. However, the amount of the Master Bond does not limit the amount of claims that may be made by the Department against the Company under this Bonding Agreement. The Company shall provide the Master Bond to the Department within one (1) month after the execution of this Bonding Agreement. The Master Bond shall secure the good faith performance of all payment obligations of Company under the terms of this Bonding Agreement respecting the roads, bridges and appurtenances on the Project Roads List for each Project Transportation Usage undertaken by the Company, and shall remain in effect until termination of this Agreement. Company shall not be obligated to provide any other bonds, sureties, or other guarantees of performance to the Department for Company's use of State Owned Roads, except as required in this Agreement.

05/24/2024

IX. Company shall maintain Commercial General Liability Insurance in the amount of two million dollars, with a minimum coverage of one million dollars per occurrence, for personal injury or death to persons, or for property damage, resulting from Company's Project Transportation Usage and shall present evidence of such insurance to Department upon request.

X. Company's usage of State Owned Roads under the Project Agreement/Project Permit shall comply with all applicable Federal, State and local laws and regulations including, but not limited to, to the extent applicable, the National Environmental Policy Act, Section 404 of the Clean Water Act, Section 106 of the National Historic Preservation Act, Rare, Threatened and Endangered Species Act, Section 401 Water Quality Certification, and hazardous waste requirements. Further, upon reasonable written request of Department, Company shall furnish Department with acceptable documentation of such compliance which is in the possession of the Company.

XI. Company shall defend, indemnify and hold Department harmless from and against any and all losses, damage, and liability, and from all claims for damages on account of or by reason of bodily injury, including death, which may be sustained, or claimed to be sustained, by any person or persons, including employees of Department, and from and against any and all claims, losses or liabilities for damages to property, arising out of the negligent or willful acts or omissions of Company, its agents, independent contractors and suppliers of drilling materials or drilling equipment, employees and contractors, in the performance of all Project Transportation Usage activities undertaken pursuant to this Agreement (collectively, "claims"). The Company shall not be responsible to indemnify, defend or hold harmless Department for any claims caused by the negligent or willful acts or omissions of the Department or its agents, employees and contractors or third parties not performing work at the direction of Company or delivering drilling equipment or drilling materials, including water, for use by or for company.

XII. If a provision of this Agreement is or becomes illegal, invalid or unenforceable in any jurisdiction, that shall not affect the validity or enforceability of any other provision of this Agreement; or the validity or enforceability in other jurisdictions of that or any other provision of this Agreement.

XIII. Department shall give Company a minimum of thirty days written notice of default under the terms of this Bonding Agreement and the opportunity to cure this default during such thirty-day period. If a default is not cured to the satisfaction of Department, or provision acceptable to Department is not made for a cure, Department may then elect to terminate this Bonding Agreement in whole or in part, and may in addition exercise its rights under the Master Bond or seek any other lawful relief available. Company may terminate this Bonding Agreement upon thirty days written notice to Department for any reason. In the event Company terminates this Agreement for any reason, it shall be liable for the repair and maintenance costs set forth above for prior Project Transportation Usage.

XIV. Nothing herein shall be construed to mean that Company shall have any jurisdiction or control over any public roads in the state road system.

XV. Company, its contractors, agents, employees and suppliers shall at all times be subject to applicable provisions of state and federal law, including without limitation laws requiring operation of vehicles in accordance with legal size and weight restrictions and posted weight limits. Oversize/overweight permits for vehicle or loads not otherwise conforming with law must be obtained in accordance with law; Department agrees to work in good faith with Company to review and grant (where authorized by law) such permits in a timely manner upon request by Company.

XVI. This Bonding Agreement shall be construed and enforced in accordance with the laws of the State of West Virginia, as they may be amended.

XVII. This Bonding Agreement shall be binding upon the successors and assigns of each party hereto.

Office of CLEAS
JUN 19 2012
Department of
Environment & Forestry

IN WITNESS WHEREOF, the parties hereto have caused this Bonding Agreement to be executed by their duly authorized officers effective as of the date first above written.

WEST VIRGINIA DEPARTMENT OF
TRANSPORTATION,
DIVISION OF HIGHWAYS

Doreen Baria
Witness

By: Maingz Murphy
State Highway Engineer

AUSTIN RESOURCES APPALACHIAN CORPORATION

Rachel Bouchard
Witness

By: A. Schupp
Title: VP ACCOUNTING AND ADMINISTRATION

(To be executed in duplicate)

APPROVED AS TO FORM THIS
8th DAY OF Mar, 2012

Jill Miller
ATTORNEY LEGAL DIVISION
WEST VIRGINIA DEPARTMENT
OF HIGHWAYS

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JUN 19 2012
WV Department of
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Form WW-9 Additives Attachment**SURFACE INTERVAL**

1. Fresh Water
2. Soap –Foamer AC
3. Air

INTERMEDIATE INTERVAL***STIFF FOAM RECIPE:***

- 1) 1 ppb Soda Ash / Sodium Carbonate-Alkalinity Control Agent
- 2) 1 ppb Conqor 404 (11.76 ppg) / Corrosion Inhibitor
- 3) 4 ppb KLA-Gard (9.17 ppg) / Amine Acid Complex-Shale Stabilizer
- 4) 1ppb Mil Pac R / Sodium Carboxymethylcellulose-Filtration Control Agent
- 5) 12 ppb KCL / Potassium Chloride-inorganic Salt
- 6) Fresh Water 80 bbls
- 7) Air

PRODUCTION INTERVAL

1. Alpha 1655
Salt Inhibitor
2. Mil-Carb
Calcium Carbonate
3. Cottonseed Hulls
Cellulose-Cottonseed Pellets – LCM
4. Mil-Seal
Vegetable, Cotton & Cellulose-Based Fiber Blend – LCM
5. Clay-Trol
Amine Acid Complex – Shale Stabilizer
6. Xan-Plex
Viscosifier For Water Based Muds
7. Mil-Pac (All Grades)
Sodium Carboxymethylcellulose – Filtration Control Agent
8. New Drill
Anionic Polyacrylamide Copolymer Emulsion – Shale Stabilizer
9. Caustic Soda
Sodium Hydroxide – Alkalinity Control
10. Mil-Lime
Calcium Hydroxide – Lime
11. LD-9
Polyether Polyol – Drilling Fluid Defoamer
12. Mil Mica
Hydro-Biotite Mica – LCM

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13. Escaid 110
Drilling Fluid Solvent – Aliphatic Hydrocarbon
14. Ligco
Highly Oxidized Leonardite – Filtration Control Agent
15. Super Sweep
Polypropylene – Hole Cleaning Agent
16. Sulfatrol K
Drilling Fluid Additive – Sulfonated Asphalt Residuum
17. Sodium Chloride, Anhydrous
Inorganic Salt
18. D-D
Drilling Detergent – Surfactant
19. Terra-Rate
Organic Surfactant Blend
20. W.O. Defoam
Alcohol-Based Defoamer
21. Perma-Lose HT
Fluid Loss Reducer For Water-Based Muds
22. Xan-Plex D
Polysaccharide Polymer – Drilling Fluid Viscosifier
23. Walnut Shells
Ground Cellulosic Material – Ground Walnut Shells – LCM
24. Mil-Graphite
Natural Graphite – LCM
25. Mil Bar
Barite – Weighting Agent
26. X-Cide 102
Biocide
27. Soda Ash
Sodium Carbonate – Alkalinity Control Agent
28. Clay Trol
Amine Acid complex – Shale Stabilizer
29. Sulfatrol
Sulfonated Asphalt – Shale Control Additive
30. Xanvis
Viscosifier For Water-Based Muds
31. Milstarch
Starch – Fluid Loss Reducer For Water Based Muds
32. Mil-Lube
Drilling Fluid Lubricant

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WV Department of
Environmental Protection

05/24/2024

**List of Anticipated Additives Used for Fracturing or
Stimulating Well**

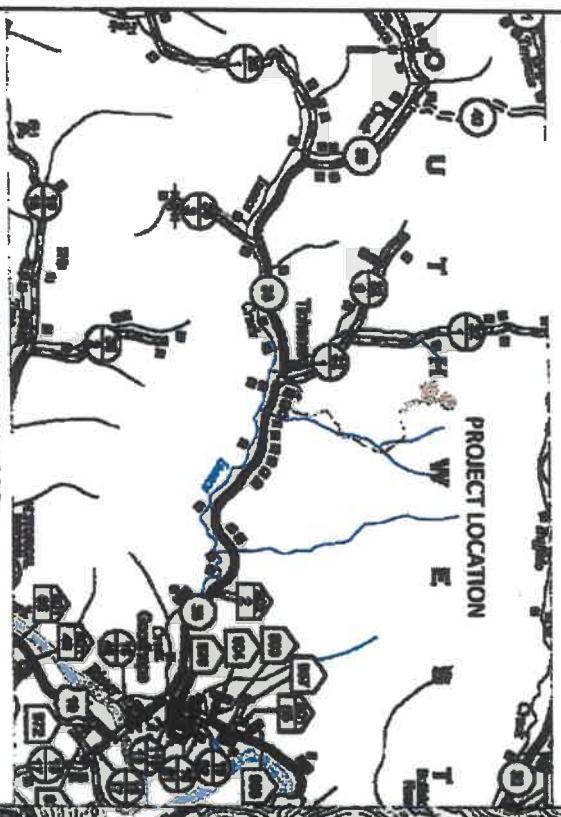
Additives	Chemical Abstract Service Number (CAS #)
Fresh Water	7732-18-5
2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1
Ammonium Persulfate	7727-54-0
Anionic copolymer	proprietary
Anionic polymer	proprietary
BTEX Free Hydrotreated Heavy Naphtha	64742-48-9
Cellulase enzyme	(Proprietary)
Demulsifier Base	(Proprietary)
Ethoxylated alcohol blend	Mixture
Ethoxylated Nonylphenol	68412-54-4
Ethoxylated oleylamine	26635-93-8
Ethylene Glycol	107-21-1
Glycol Ethers	111-76-2
guar gum	9000-30-0
Hydrogen Chloride	7647-01-0
Hydrotreated light distillates, non-aromatic, BTEX free	64742-47-8
Isopropyl alcohol	67-63-0
liquid, 2,2-dibromo-3-nitrilopropionamide	10222-01-2
Microparticle	proprietary
Petroleum Distillates (BTEX Below Detect)	64742-47-8
Polyacrylamide	57-55-6
Propargyl Alcohol	107-19-7
Propylene Glycol	57-55-6
Quartz	14808-60-7
Silica, crystalline quartz	7631-86-9
Sodium Chloride	7647-14-5
Sodium Hydroxide	1310-73-2
Sugar	57-50-1
Surfactant	68439-51-0
Suspending agent (solid)	14808-60-7
Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7

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 JUL 19 2012
 WV Department of
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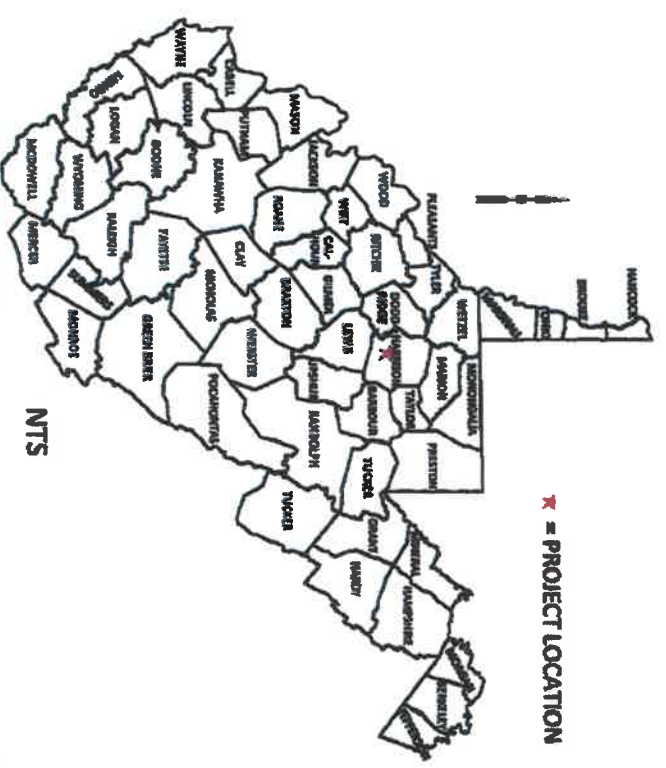
05/24/2024



TWO WORKING DAYS PRIOR TO EXCAVATION, THE CONTRACTOR MUST CONTACT THE WV ONE CALL SYSTEM, INC., 1-800-245-4848



LOCATION MAP
SCALE 1" = 1 MILE



X = PROJECT LOCATION

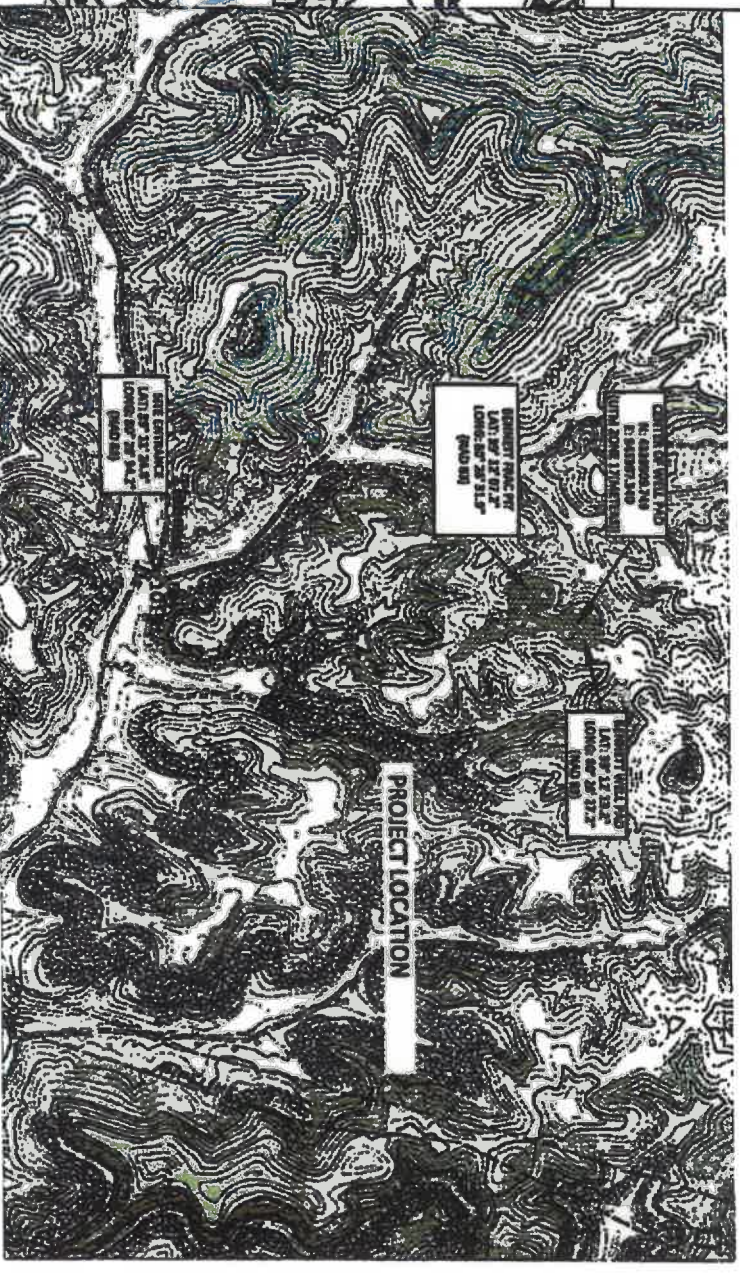
BENNETT WELL PAD SITE UNION DISTRICT, HARRISON COUNTY, WV JULY 2012

PLANS PREPARED BY:

BOORD BENCHEK & ASSOCIATES, INC.
ENGINEERING, SURVEYING, CONSTRUCTION AND MINING SERVICES

SOUTHPOINTE, VA 15317 PHONE: 724-746-1055

SHEET	TITLE SHEET
1	NOTES & CONSTRUCTION SEQUENCE
2	PRE-CONSTRUCTION SITE CONDITIONS
3	SITE OVERVIEW
4	E&S CONTROL LAYOUT
5-16	E&S CONTROL & SITE PLAN
17-28	WELL PAD CROSS SECTIONS
29-30	FRAC PIT CROSS SECTIONS
31-33	ACCESS ROAD CROSS SECTIONS
34-36	ACCESS ROAD PROFILES
37-38	STREAM CROSSING CROSS SECTIONS
39	DETAILS
40-43	VOLUME REPORT / DETAIL
44	EVACUATION ROUTE / PREVAILING WINDS
45-46	RECLAMATION PLAN
47-50	



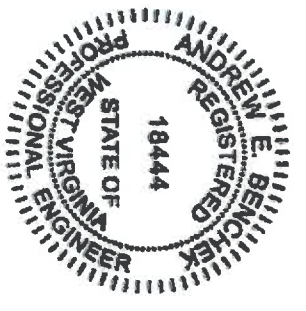
WEST MILFORD QUAD
SCALE 1" = 2000'

DATE	NOTE:
APRIL 20, 2012	DESIGN
JULY 16, 2012	ADDENDUM #1

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

AS-BUILT CERTIFICATION

THIS AS-BUILT CERTIFIES THAT THE GAS WELL DRILLING PAD AND FRAC PIT WAS CONSTRUCTED IN REASONABLE CLOSE CONFORMANCE WITH THE DESIGN DRAWINGS. IT IS RECOMMENDED THE GAS WELL DRILLING PAD AND FRAC PIT BE INCLUDED IN THE EXISTING COMPREHENSIVE MAINTENANCE AND INSPECTION PROGRAM FOR GAS WELL DRILLING PADS AND FRAC PIT OR THAT A COMPREHENSIVE MAINTENANCE AND INSPECTION PROGRAM BE DEVELOPED TO MONITOR THE PADS AND PIT'S CONDITIONS TO INSURE THE CONTINUED SAFE OPERATION.



ANDREW BENCHEK
PE

7-16-12
DATE

Antero Resources Contact Information

John Kowczak
Mobile: (817) 368-1553
Email: jkowczak@anteroresources.com

Dusty Woods
Mobile: (817) 771-1436

El Waggoner
Work: (304) 622-3842
Mobile: (304) 476-9770
Email: ewaggoner@anteroresources.com

Michael Ash
Mobile: (304) 380-6181
Email: masha@anteroresources.com

APPROVED
WVDEP 00G
SAV 9/21/12

ANDREW BENCHEK
PE

DATE



7/21/12

STANDARD CONSTRUCTION NOTES:

1. The Construction Drawings present the proposed lines, grades, and appurtenances to accomplish the intent of the Scope of Work.
2. The Construction Drawings show the construction lines, grades, depths and dimensions on which estimated quantities are based. The construction lines, grades, depths and dimensions are subject to variation necessary to obtain subgrade and/or final grade satisfactory to the Engineer. The Engineer reserves the right to increase or diminish construction lines, grades, depths and dimensions as necessary and according to site conditions.
3. All work performed and all material furnished shall conform to the lines, grades, cross sections, dimensions, and material requirements in reasonable close conformance with the Construction Drawings.
4. The Contractor shall provide all reasonable facilities and furnish the Engineer, the information, assistance, and samples required by the Engineer for proper monitoring and testing of material and workmanship. The Contractor shall have on the project at all times, a competent superintendent capable of reading and understanding the Construction Documents and thoroughly experienced in Impoundment pond construction and who shall receive information from the Engineer.
5. Clearing shall be completed in accordance with Section 201 of the WVDOH Specifications. Clearing is defined as the removal of trees, brush, down timber, rotten wood, rubbish, and other vegetation, and objectionable materials at or above original ground elevation not designed to be retained. Clearing also included removal of fences, post, signs, and demolition or removal of other obstructions interfering with the proposed work.
6. Grubbing shall be completed in accordance with Section 201 of the WVDOH Specifications. Removal of all stumps and roots within the cleared area unless otherwise approved by the Engineer. Grubbing is defined as the removal from below the original ground elevation of stumps, roots, stubs, brush, organic materials and debris as well as concrete and brick, and other obstruction interfering with the proposed work.
7. Strip topsoil to whatever depth it may occur from areas to be excavated, filled, or graded and stockpile at a location approved for use in finish grading. The topsoil shall not be used as backfill. Strip topsoil to full depth encountered in areas indicated to be graded in a manner to prevent intermingling with underlying subsoil or waste materials. Stockpile sufficient topsoil material to facilitate seeding and landscaping. Stockpile away from edge of excavations without intermingling with subsoil. Grade and shape stockpiles to drain surface water. Protect soil stockpiles using erosions and sediment measures as directed by the Engineer or project manager.
8. DO NOT deposit or bury on the site debris resulting from the clearing and grubbing without written permission from the Engineer or project manager.
9. All earthwork shall be in accordance with WVDOH Standard Specifications, Section 207, unless otherwise specified or altered by the additional specifications herein.
10. Subsequent to the removal of the topsoil, and prior to fill placement, exposed surface should be compacted and/or proof rolled until a relatively unyielding surface is achieved.
11. Suitable soil materials are as those complying with WVDOH Standard Specifications, Section 207.
12. On-site material for use as fill shall consist of excavated soil from other portions of the site. The Contractor shall use the on-site soil judiciously to facilitate the construction schedule including the use of the most readily compactable soil fill. Topsoil shall not be utilized as engineered fill. Excavated material containing rock, stone or masonry debris smaller than six inches in its largest dimension, may be mixed with suitable material and utilized except in the impoundment pond core.
13. Excavated material containing rock, stone or masonry debris larger than two inches in its largest dimension may NOT be mixed with suitable material and utilized in the impoundment pond core.
14. No material greater than six inches in its largest dimensions may be utilized inside filling operations.
15. Imported fill shall be free of all hazardous substances. Certification of compliance and, if requested, test results substantiating compliance shall be furnished to the Engineer by the Contractor not less than one week prior to its intended use. The size of rock lifts shall not exceed thirty-six (36) inches. The rock shall not be greater in any dimension than thirty-six (36) inches. Rock is defined as follows:
 - a. General excavation - Any material that cannot be excavated with a single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rated at not less than 71,000 lb (Caterpillar D9N or equivalent), and occupying an original volume of at least 2 cubic yards or more.
 16. Prevent surface water and subsurface water from flowing into excavations and flooding the work. Remove water from excavations to prevent softening of foundation soils and creating soil changes detrimental to the stability of subgrades. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from the site. Convey water removed from excavations to collection locations or to runoff areas. During periods of inclement weather, temporary slope drains may be utilized as necessary.
 17. Stockpile excavated materials classified as satisfactory soil material where directed, shape the stockpiles for proper drainage.
 18. Notify the engineer if unsuitable soil materials encountered excavate unsuitable soil materials encountered that extend below the required elevations, to the additional depth directed by the Engineer.
 19. Fill shall be placed in horizontal lifts of maximum loose depth of 12 inches. Compactor for mass earthwork shall be minimum five ton static drum weight vibratory roller or five ton static drum weight sheeps footed compactor as appropriate for the type of soil material at the site or other compactor approved by the Engineer. The impoundment pond core of the embankment shall be compacted using a sheeps foot compactor to provide integration of lifts. The fill material placed shall be compacted to 95% of the maximum proctor density of the fill material's optimum moisture content. Contractor will guarantee 95% compaction.
 20. In areas to receive fill and at the final cut subgrade, proof roll and compact the exposed ground surface following clearing and grubbing and any required excavation with a minimum of four passes of and approved compactor and obtain at least the density required for a suitable impoundment pond foundation. Proof rolling shall be under the observation of the engineer as described herein. Immediately following the completion of excavation to proposed subgrades in cut areas, proof rolling shall be performed as specified. Any areas which deflect, rut or pump under the loaded dump truck shall be undercut and replaced with compacted fill material or stone base course as directed by the Engineer. Proof rolling shall be done with one pass of a fully loaded tandem dump truck equal to or exceeding 50,000lb or other construction equipment if approved by the Engineer. Proof rolling methods shall be as follows:
 - a. After the subgrade has been completed the subgrade shall then be proof rolled. The coverage areas and methods will be identified by the Engineer.
 - b. The equipment shall be operated at a speed that the Engineer can comfortably and slowly walk along side the equipment;
 - c. If it becomes necessary to take corrective action, such as but not limited to underdrain installation, undercut and backfill of an unsuitable material, and aeration of excessively wet material in areas that have been proof rolled. These areas shall be proof rolled again following the completion of the necessary corrections.
 21. Photographic Documentation is required during all phases of construction.
 - The site after clearing and grubbing operations are completed
 - The key construction
 - Daily photos of fill and cut operations
 22. Before any as-built can be considered certifiable, a complete construction schedule detailing site conditions project areas worked, approximate depth of fill placed and weather conditions will be provided to the design engineer.
 23. Prior to the installation of the impervious liner, the design engineer will be contacted to perform a grade verification survey for the as-built. Any variance in grade will be at the engineer's discretion as to the effect on the impoundment.
 24. This design to be used in conjunction with the acknowledgement of all regulatory agencies and obtained pertinent permits per current regulations. These plans do not indicated that all pertinent permits have been obtained.
 25. Contractor to relocate overhead/underground utility line, as required for clearance.
 26. Contractor may widen access road due to steep slopes if deemed necessary.
 27. Proposed rock construction entrance to be built such that runoff from proposed access will not sheet on to public highway.
 28. Contractor to chip all brush and unmarketable timber and stumps and place in designated piles.
 29. Chip piles to be removed from site by contractor.
 30. See sheet #40 for pipe crossing installation and sheet #41 for compost filter sock.
 31. See sheet #42 for super silt fence and sheet #43 for seeding and mulching



STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES:

1. Stockpile heights must not exceed 30 feet. Stockpile slopes must be 2:1 or flatter.
2. The operator shall assure that the approved erosion and sediment control plan is properly implemented. Seeding and Mulching to be in accordance with WVDOH Standard Specifications unless specified otherwise by the construction engineer, or unless specified otherwise by the company representative.
3. Until the site achieves final stabilization, the operator shall assure that the best management practices are implemented, inspected, operated, and maintained. The operator will maintain written inspection logs. All maintenance work, including cleaning, repair, replacement, regrading, and stabilization shall be performed immediately upon discovery of deficiency.
4. Erosion and sediment BMP's must be constructed, stabilized, and functional before site disturbance begins within the tributary areas of those BMP's.
5. After final site stabilization has been achieved, temporary erosion and sediment BMP's controls shall be removed. Areas disturbed during removal of the BMP's must be stabilized immediately.
6. An area shall be considered to have achieved full stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics to resist sliding and other movements.
7. At least three (3) days before starting any earth disturbance activity, all contractors involved in these activities shall notify Miss Utility of West Virginia at 1-800-245-4848 for buried utility locations.
8. In a timely manner after earth disturbance activities cease, the operator shall stabilize any areas disturbed by the activities. During non-germinating periods, mulch must be applied at the specified rates. Disturbed areas which are not at finished grade and which will be re-distributed within 1 year must be stabilized in accordance with the permanent vegetative stabilization specifications.
9. At stream crossings, 10' buffer areas should be maintained. On buffers, clearing, sod disturbances, excavations, and equipment traffic should be minimized. Activities such as stacking logs, burning cleared brush, discharging of rainwater from trenches, welding pipe sections, refueling and maintaining equipment should be accomplished outside the buffers.
10. Mulch or erosion control blankets must be installed on all slopes 3:1 or steeper.
11. Sediment removed from BMP's shall be disposed of in landscaped areas outside of steep slopes, wetlands, floodplain, or drainage swales and immediately stabilized, or placed in topsoil stockpiles.
12. Sediment and materials removed from the pad sumps shall be pumped to on site holding/storage tanks and subsequently removed from the site by an approved commercial vendor.

CONSTRUCTION SEQUENCE FOR BENNETT

- 1) Install rock construction entrance at beginning of proposed access road.
- 3) Regravel existing access road and replace existing structures as necessary and install additional structures as necessary. Install sumps and pipe outlet protection where necessary.
- 4) Install 18" compost filter sock #1 - #15, 24" compost filter sock #1, 32" compost filter sock #1 - #5, and super silt fence #1 - #6.
- 5) Clear and grub and remove topsoil from proposed access road A from station 0+00 to edge of well pad and place in topsoil pile #1, chip pile #1, and timber pile #1.
- 6) Construct proposed access road A from station 0+00 to edge of well pad.
- 7) Install roadside channel #1 along with pipe crossing #1 - #4 with outlet protection.
- 8) Place geo-textile material on access road A sub-grade from station 0+00 to edge of well pad.
- 9) Place clean stone (no fines) on access road A sub-grade from station 0+00 to edge of well pad.
- 10) Re-spread topsoil over access road A slopes from station 0+00 to edge of well pad.
- 11) Seed and mulch all disturbed areas along access A road including access road slopes from station 0+00 to edge of well pad within 7 days of completion.
- 12) Install 18" compost filter sock #16 - #20, 24" compost filter sock #2 - #4, 32" compost filter sock #6 - #8, and super silt fence #6 - #14.
- 13) Clear and grub and remove topsoil from proposed well pad area and place in topsoil pile #2, chip pile #2, and timber pile #2.
- 14) Construct proposed well pad along with well pad channel #1 with rock spreader.
- 15) Seed and mulch all disturbed areas along well pad including well pad slopes within 7 days of completion.
- 16) Drill wells.
- 17) Install super silt fence #15- #25
- 18) Clear and grub and remove topsoil from proposed access road B and frac pit and place in topsoil pile #3, chip pile #3, and timber pile #3.
- 19) Construct proposed access road B from station 0+00 to edge of frac pit.
- 20) Install roadside channel #2 along with pipe crossing #4 and discharge channel #1.
- 21) Place geo-textile material on access road B sub-grade from station 0+00 to edge of frac pit.
- 22) Place clean stone (no fines) on access road B sub-grade from station 0+00 to edge of frac pit.
- 23) Re-spread topsoil over access road B slopes from station 0+00 to edge of frac pit.
- 24) Seed and mulch all disturbed areas along access B road including access road slopes from station 0+00 to edge of frac pit within 7 days of completion.
- 25) Construct proposed frac pit.
- 26) Seed and mulch all disturbed areas along frac pit within 7 days of completion.
- 27) Keep all erosion and sedimentation controls in place until there is 70% growth over the entire site.

* Contractor may deviate from the construction sequence if the designer deems it appropriate and all of the E&S controls have been installed through out the entire site. (e.g. Borrow from well pad to finish building access road.)

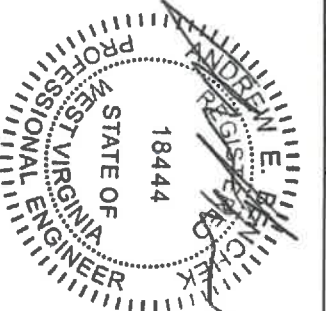
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 Engineering, Surveying, Construction,
 and Mining Services
 Southpointe, PA 15317 Phone: 724-746-1055

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 FOR: ANTERO RESOURCES

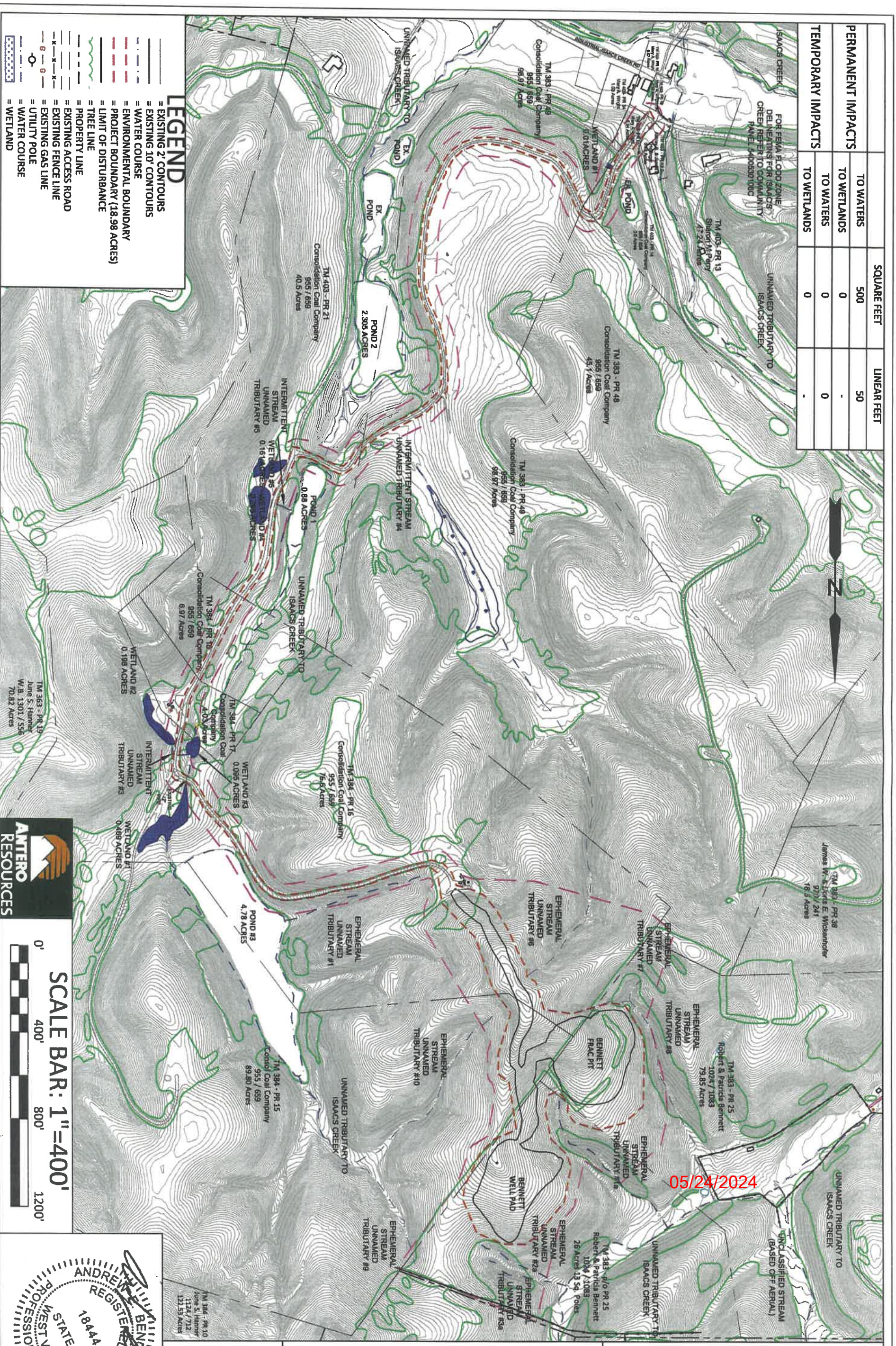
NOTES & CONSTRUCTION SEQUENCE

DATE: 7/2012
 BENNETT WELL PAD
 SITE

UNION DISTRICT,
 HARRISON COUNTY,
 WV



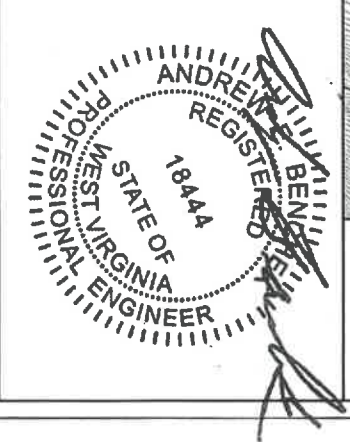
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	TO WATERS	TO WETLANDS	TO WATERS	TO WETLANDS
	500	0	50	0
TEMPORARY IMPACTS	0	0	0	0



- LEGEND**
- = EXISTING 2' CONTOURS
 - - - = EXISTING 10' CONTOURS
 - = WATER COURSE
 - - - = ENVIRONMENTAL BOUNDARY
 - - - = PROJECT BOUNDARY (18.98 ACRES)
 - - - = LIMIT OF DISTURBANCE
 - = TREE LINE
 - - - = PROPERTY LINE
 - - - = EXISTING ACCESS ROAD
 - - - = EXISTING FENCE LINE
 - - - = EXISTING GAS LINE
 - = UTILITY POLE
 - = WATER COURSE
 - = WETLAND



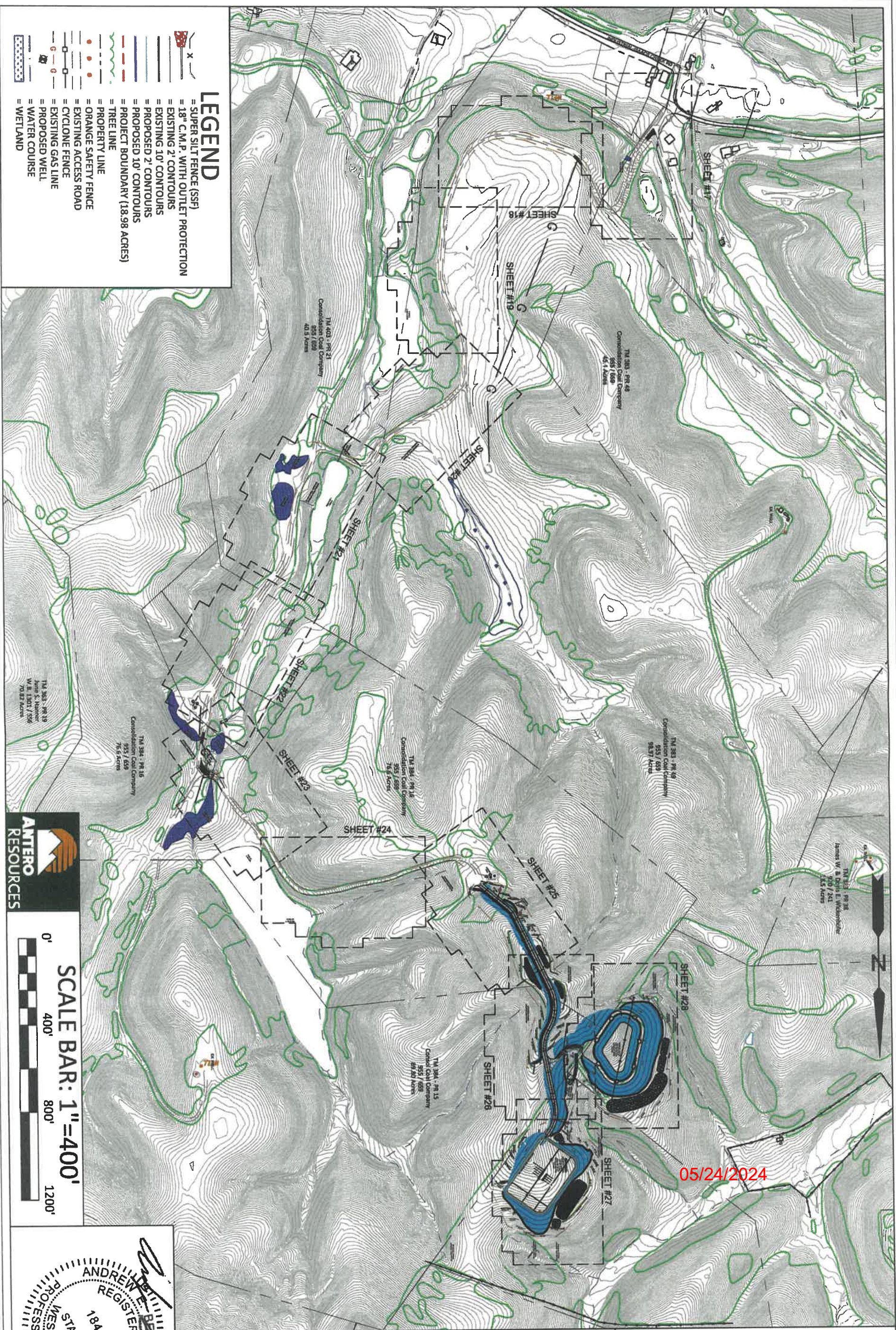
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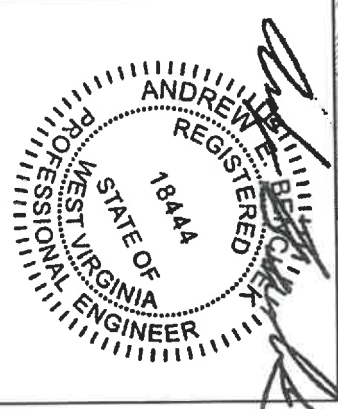
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 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

PRE-CONSTRUCTION SITE CONDITIONS
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- LEGEND**
- = SUPER SILT FENCE (SSF)
 - = 18" C.M.P. WITH OUTLET PROTECTION
 - = EXISTING 2' CONTOURS
 - = EXISTING 10' CONTOURS
 - = PROPOSED 2' CONTOURS
 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = CYCLONE FENCE
 - = EXISTING GAS LINE
 - = PROPOSED WELL
 - = WATER COURSE
 - = WETLAND



UNION DISTRICT,
HARRISON COUNTY,
WV

BENNETT WELL PAD
SITE

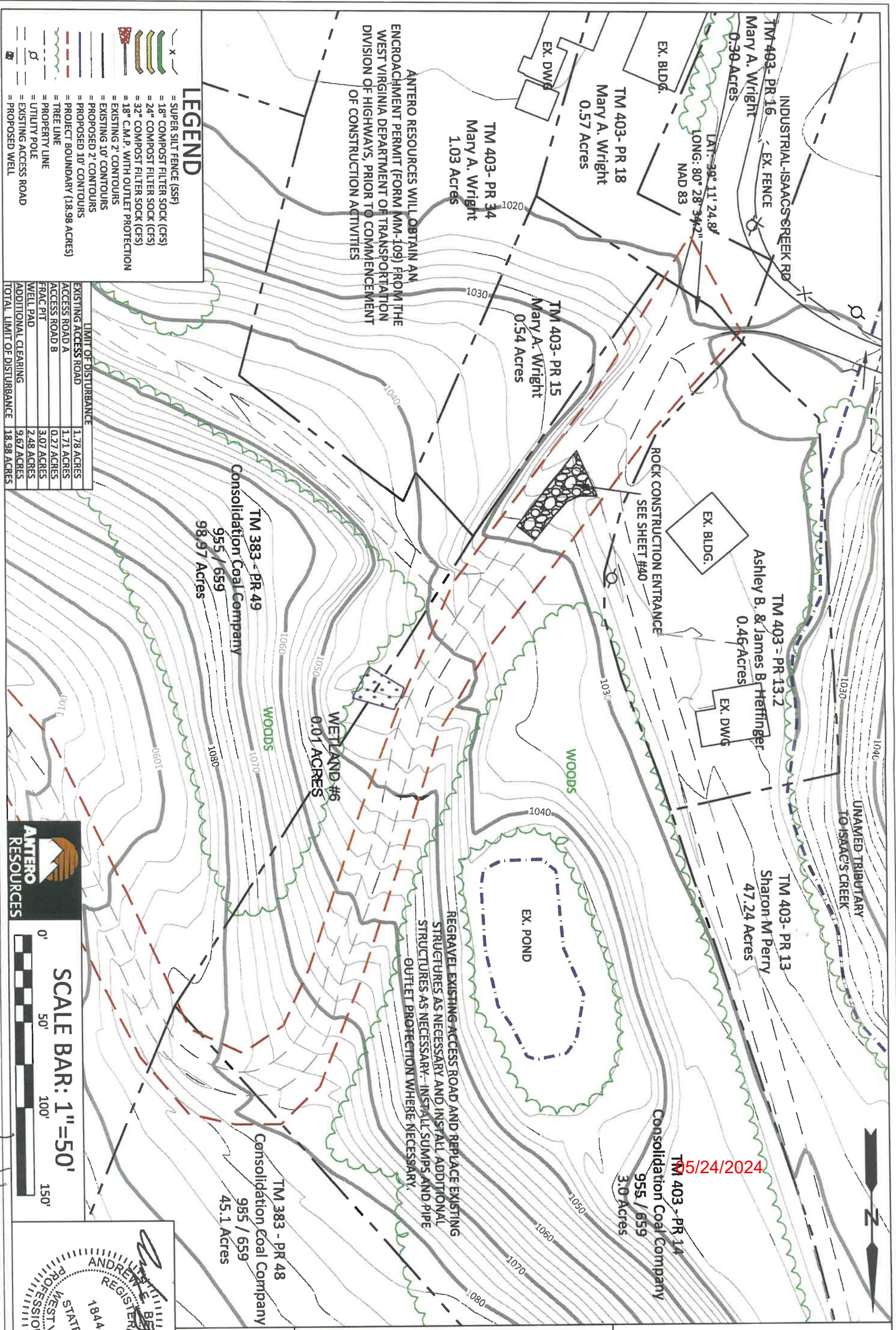
DATE: 7/2012

SITE OVERVIEW

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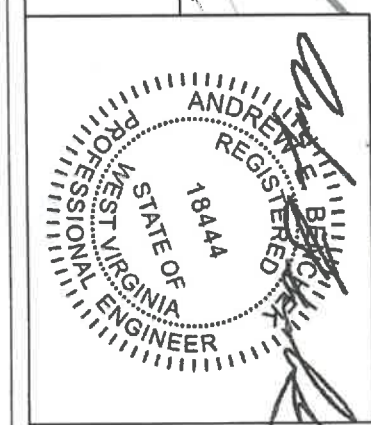
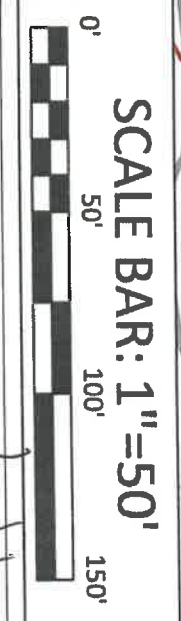


LEGEND

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- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = UTILITY POLE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	0.27 ACRES
ACCESS ROAD B	3.07 ACRES
FRAC PIT	2.48 ACRES
WELL PAD	9.67 ACRES
ADDITIONAL CLEARING	18.98 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

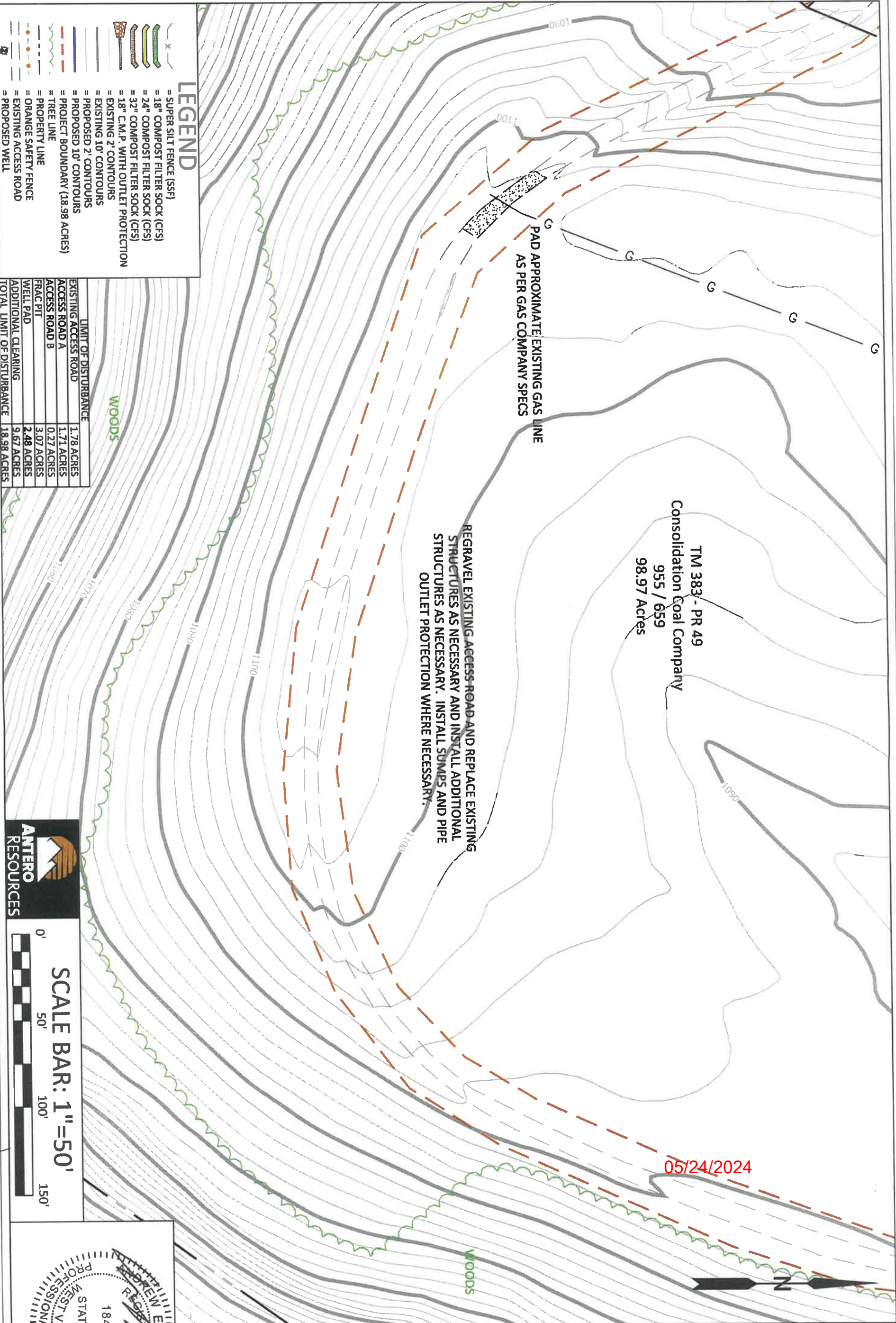
E&S CONTROL LAYOUT

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 FOR: ANTERO RESOURCES

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 and Mining Services
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05/24/2024



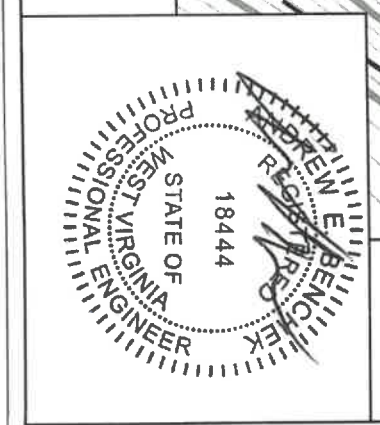
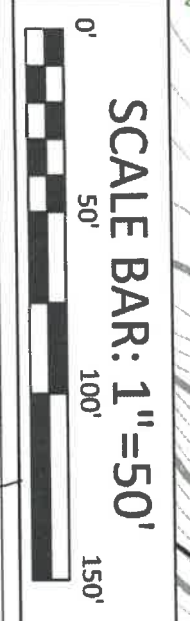
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- = PROPOSED 10' CONTOURS
- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

WOODS

WOODS



DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

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SHEET #6

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Southpointe, PA 15317 Phone: 724-746-1055

Handwritten signature



05/24/2024

REGRAVEL EXISTING ACCESS ROAD AND REPLACE EXISTING STRUCTURES AS NECESSARY. INSTALL ADDITIONAL OUTLET PROTECTION WHERE NECESSARY.

TM 383 - PR 49
Consolidation Coal Company
98.97 Acres

TM 403 - PR 21
Consolidation Coal Company
95.5 / 659
40.5 Acres

POND 2
2.305 ACRES

WOODS

WOODS

LEGEND

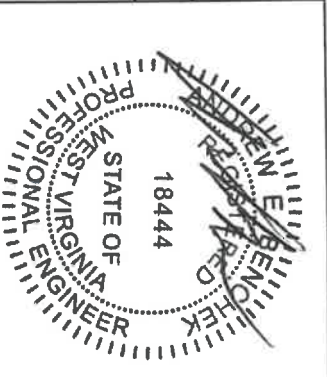
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- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



TR 05/24/2024



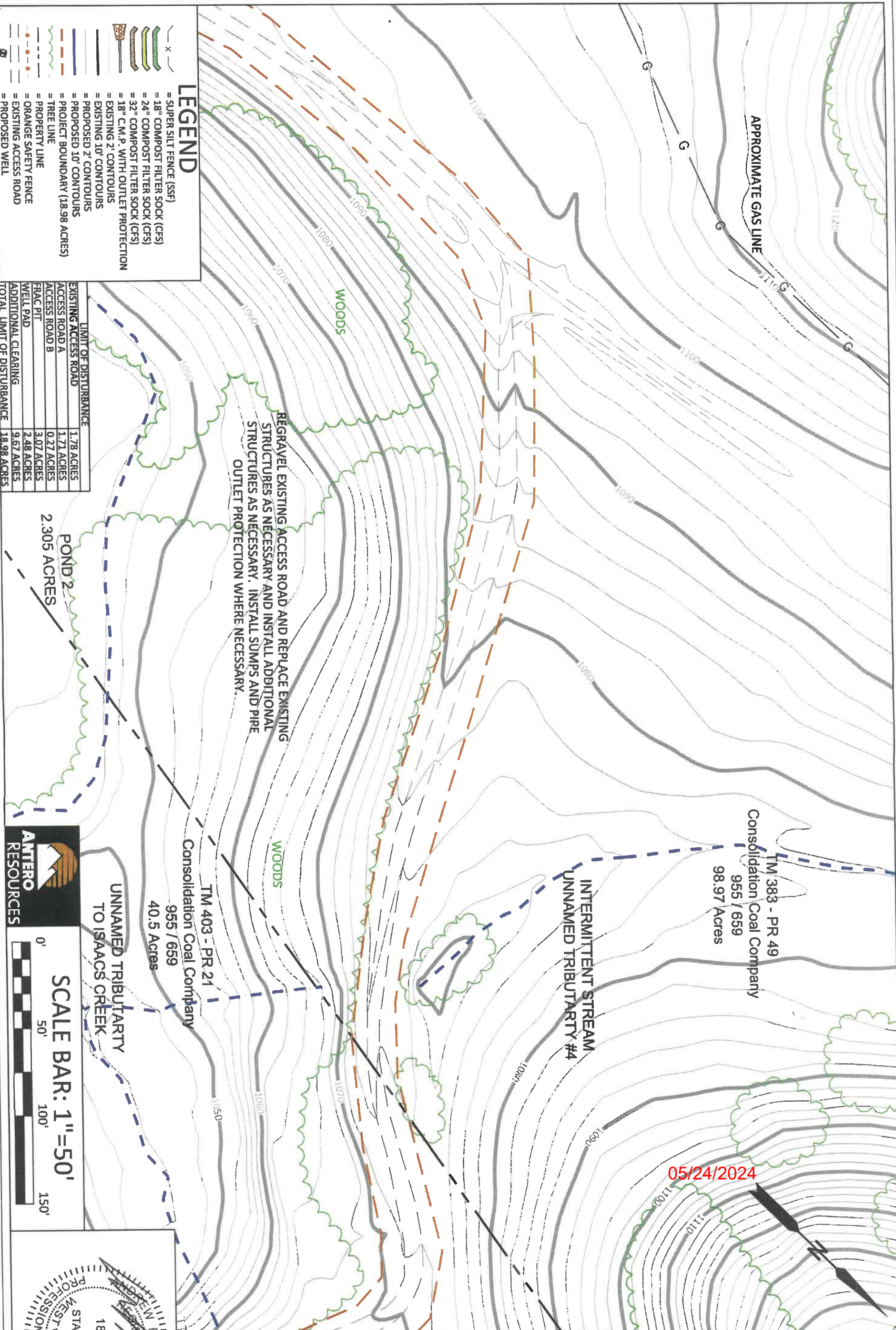
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FOR: ANTERO RESOURCES

DATE: 7/2012
BENNETT WELL PAD
SITE
UNION DISTRICT,
HARRISON COUNTY,
WV

BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction,
and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055



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 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
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ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

POND 2
2.305 ACRES

REGRAVEL EXISTING ACCESS ROAD AND REPLACE EXISTING STRUCTURES AS NECESSARY. INSTALL ADDITIONAL OUTLET PROTECTION WHERE NECESSARY.



UNNAMED TRIBUTARY TO ISAACS CREEK

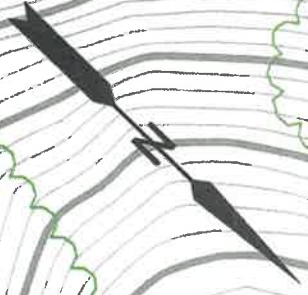
Consolidation Coal Company
TM 403 - PR 21
955 / 659
40.5 Acres

Consolidation Coal Company
TM 383 - PR 49
955 / 659
98.97 Acres

INTERMITTENT STREAM UNNAMED TRIBUTARY #4



05/24/2024



UNION DISTRICT,
HARRISON COUNTY,
WV
BENNETT WELL PAD
SITE
DATE: 7/2012

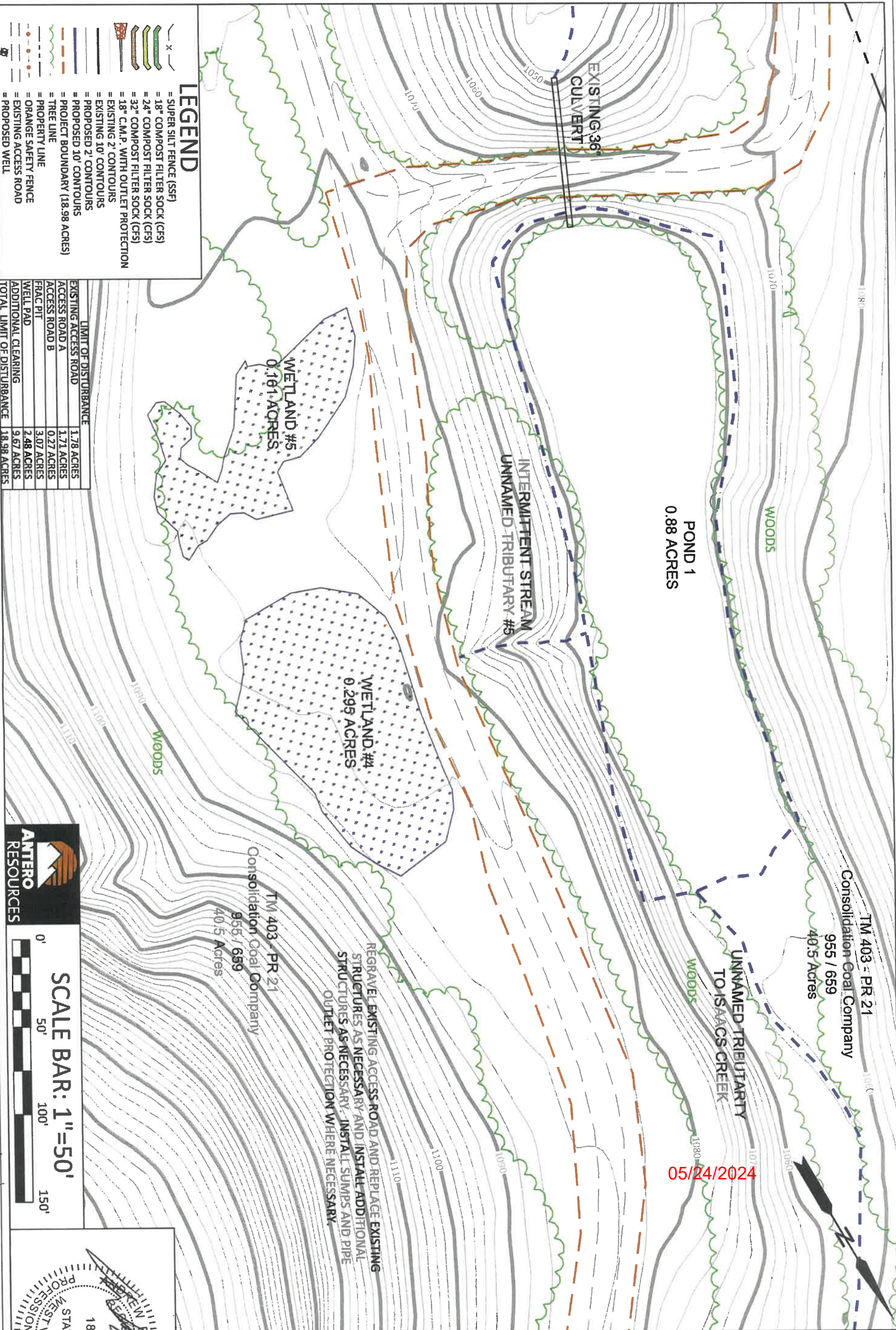
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Handwritten signature/initials



LEGEND

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- = EXISTING 10' CONTOURS
- = PROPOSED 10' CONTOURS
- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



WETLAND #5
0.161 ACRES

WETLAND #4
0.295 ACRES

POND 1
0.88 ACRES

REGRAVEL EXISTING ACCESS ROAD AND REPLACE EXISTING STRUCTURES AS NECESSARY AND INSTALL ADDITIONAL STRUCTURES AS NECESSARY. INSTALL SUMPS AND PIPE OUTLET PROTECTION WHERE NECESSARY.

05/24/2024

E&S CONTROL LAYOUT

DATE: 7/2012
BENNETT WELL PAD SITE
UNION DISTRICT, HARRISON COUNTY, WV

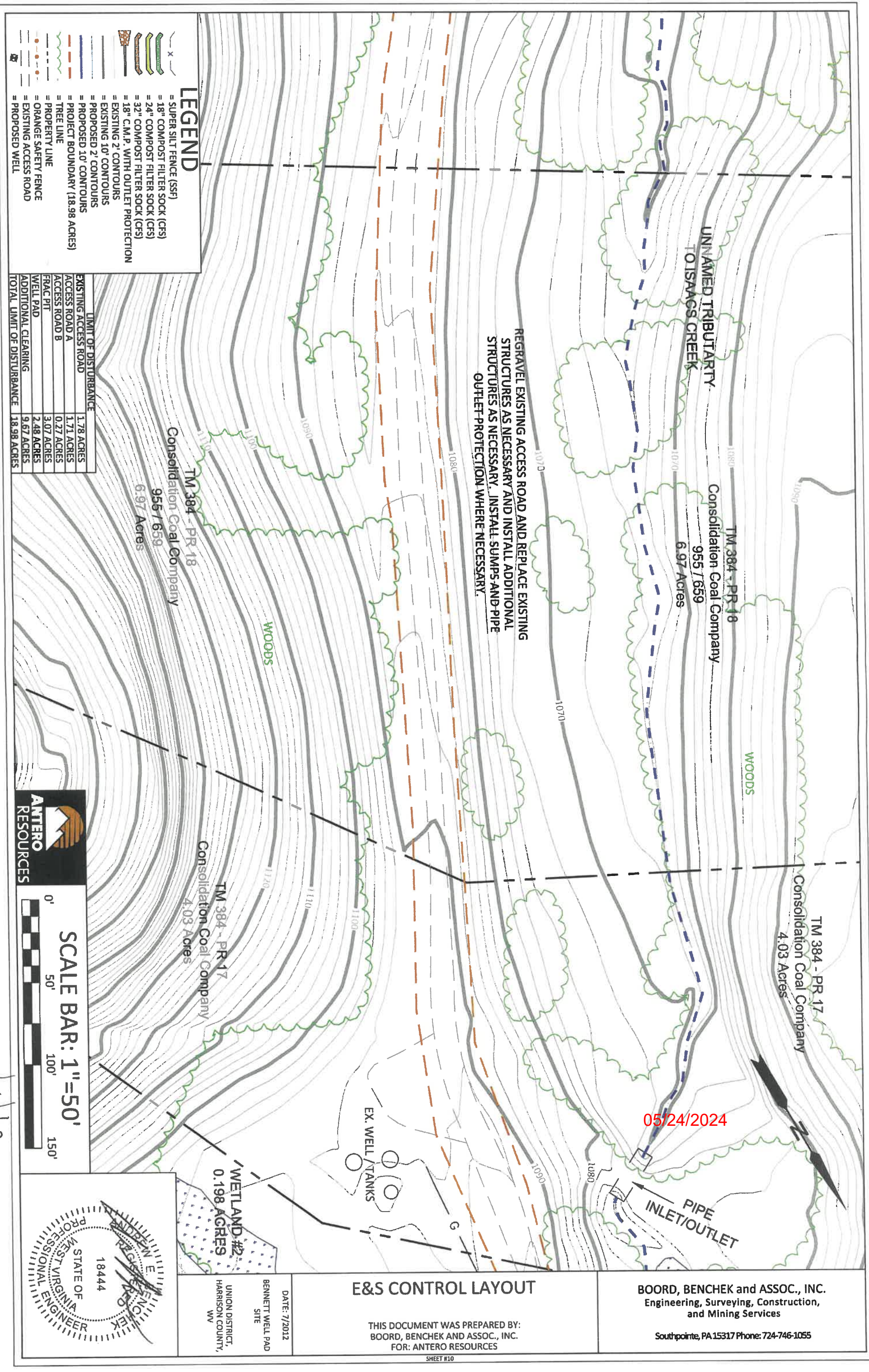
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FOR: ANTERO RESOURCES

SHEET #9

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 Engineering, Surveying, Construction,
 and Mining Services

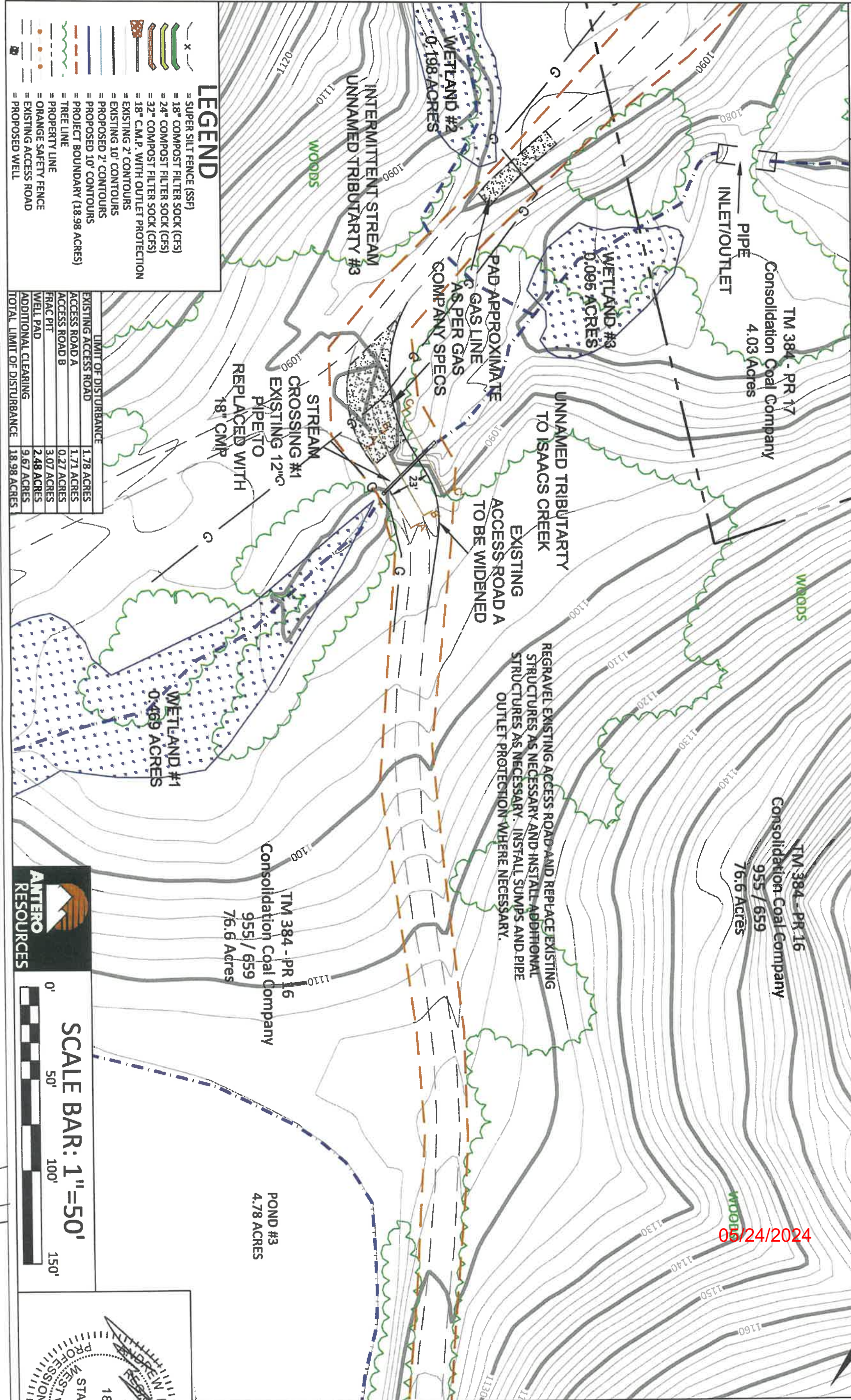
Southpoints, PA 15317 Phone: 724-746-1055

DATE: 7/2012
 BENNETT WELL PAD
 SITE

UNION DISTRICT,
 HARRISON COUNTY,
 WV

rad 06/11/12

	SQUARE FEET	LINEAR FEET
PERMANENT IMPACTS	TO WATERS	500
	TO WETLANDS	0
TEMPORARY IMPACTS	TO WATERS	0
	TO WETLANDS	0



- ### LEGEND
- = SUPER SILT FENCE (SSF)
 - = 18" COMPOST FILTER SOCK (CFS)
 - = 24" COMPOST FILTER SOCK (CFS)
 - = 32" COMPOST FILTER SOCK (CFS)
 - = 18" C.M.P. WITH OUTLET PROTECTION
 - = EXISTING 2' CONTOURS
 - = PROPOSED 2' CONTOURS
 - = EXISTING 10' CONTOURS
 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



TAJ 2012

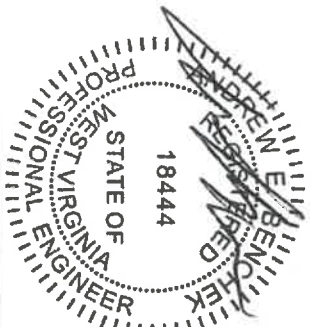
05/24/2024

E&S CONTROL LAYOUT

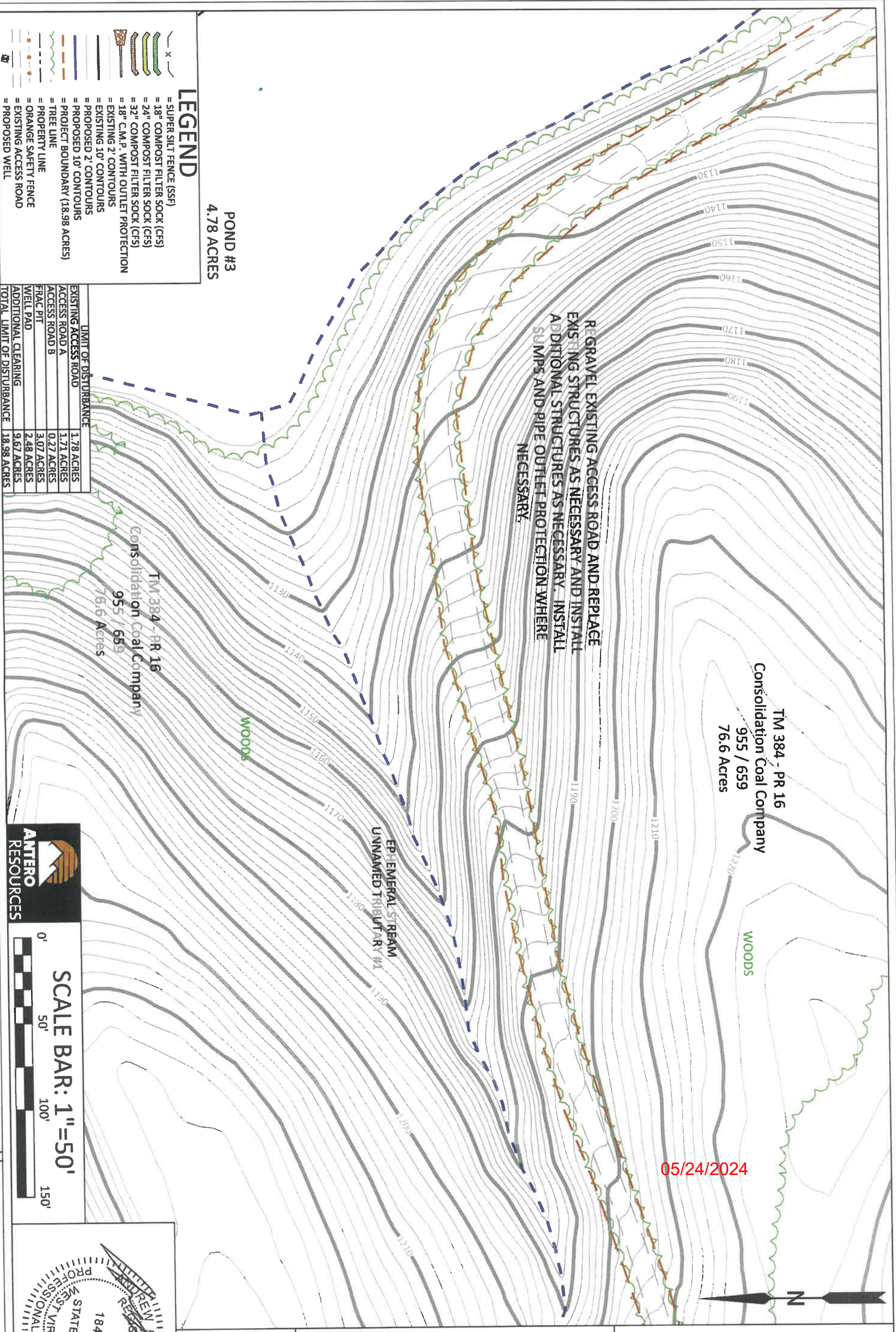
THIS DOCUMENT WAS PREPARED BY:
 BOORD, BENCHEK AND ASSOC., INC.
 FOR: ANTERO RESOURCES

BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
 and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055



DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV



POND #3
4.78 ACRES

- LEGEND**
- = SUPER SILT FENCE (SSF)
 - = 18" COMPOST FILTER SOCK (CFS)
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 - = EXISTING 10' CONTOURS
 - = PROPOSED 10' CONTOURS
 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

REGRAVEL EXISTING ACCESS ROAD AND REPLACE EXISTING STRUCTURES AS NECESSARY AND INSTALL ADDITIONAL STRUCTURES AS NECESSARY. INSTALL SUMPS AND PIPE OUTLET PROTECTION WHERE NECESSARY.

TM 384 - PR 16
Consolidation Coal Company
955 / 659
76.6 Acres

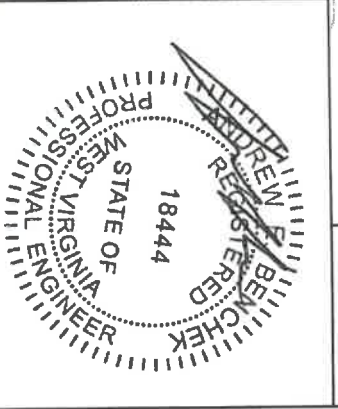
TM 384 - PR 16
Consolidation Coal Company
955 / 659
76.6 Acres

EPHEMERAL STREAM
UNNAMED TRIBUTARY #1

WOODS

WOODS

05/24/2024



DATE: 7/2012
BENNETT WELL PAD
SITE
UNION DISTRICT,
HARRISON COUNTY,
WV

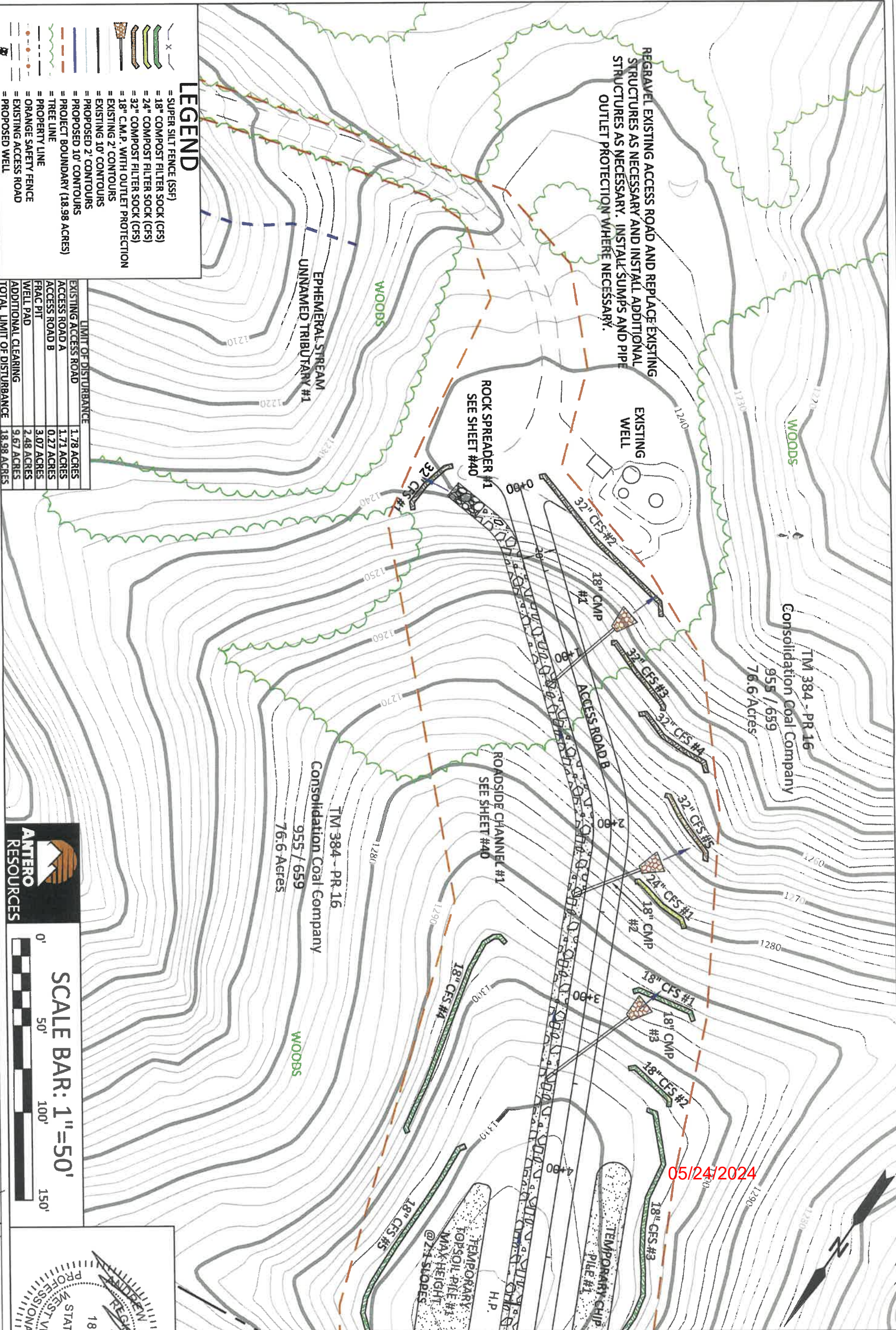
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Southpointe, PA 15317 Phone: 724-746-1055

TAD 2006/12



- LEGEND**
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 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



E&S CONTROL LAYOUT

DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

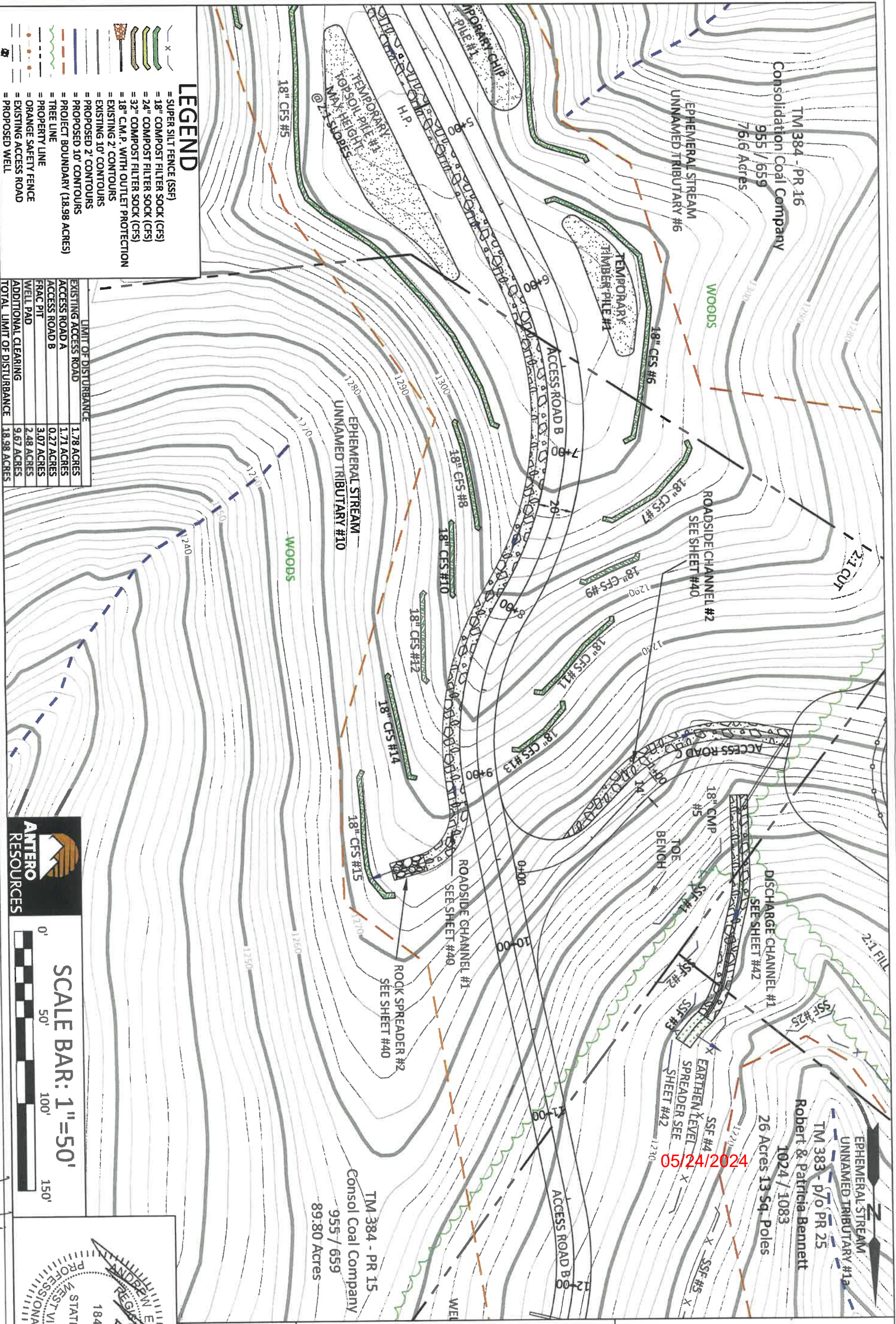
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 FOR: ANTERO RESOURCES

SHEET #13

BOORD, BENCHEK and ASSOC., INC.
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TR 260112



- ### LEGEND
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 - = 24" COMPOST FILTER SOCK (CFS)
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 - = EXISTING 10' CONTOURS
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 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.71 ACRES
ACCESS ROAD A	0.27 ACRES
ACCESS ROAD B	3.07 ACRES
FRAC PIT	2.48 ACRES
WELL PAD	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



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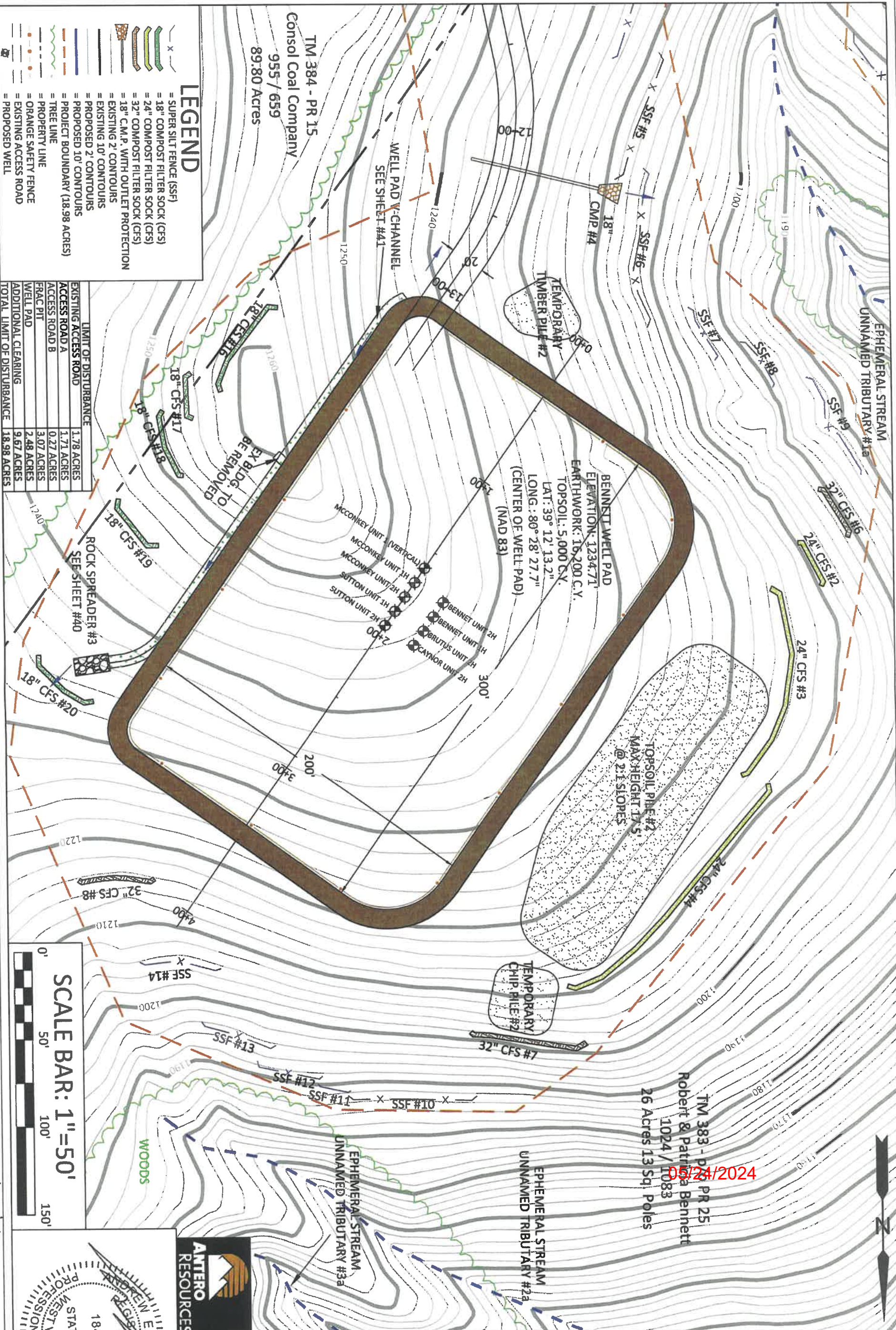
TM 384 - PR 15
 Consol Coal Company
 955 / 659
 89.80 Acres

Robert & Patricia Bennett
 TM 383 - p/o PR 25
 1024 / 1083
 26 Acres 13 Sq. Poles

05/24/2024

DATE: 7/2012

BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV



LEGEND

- X = SUPER SILT FENCE (SSF)
- = 18" COMPOST FILTER SOCK (CFS)
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- = PROPOSED 10' CONTOURS
- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



TAJ av Jul 12

05/24/2024

TM 383 - p PR 25
Robert & Patricia Bennett
1024 / 1083
26 Acres 13 Sq. Poles



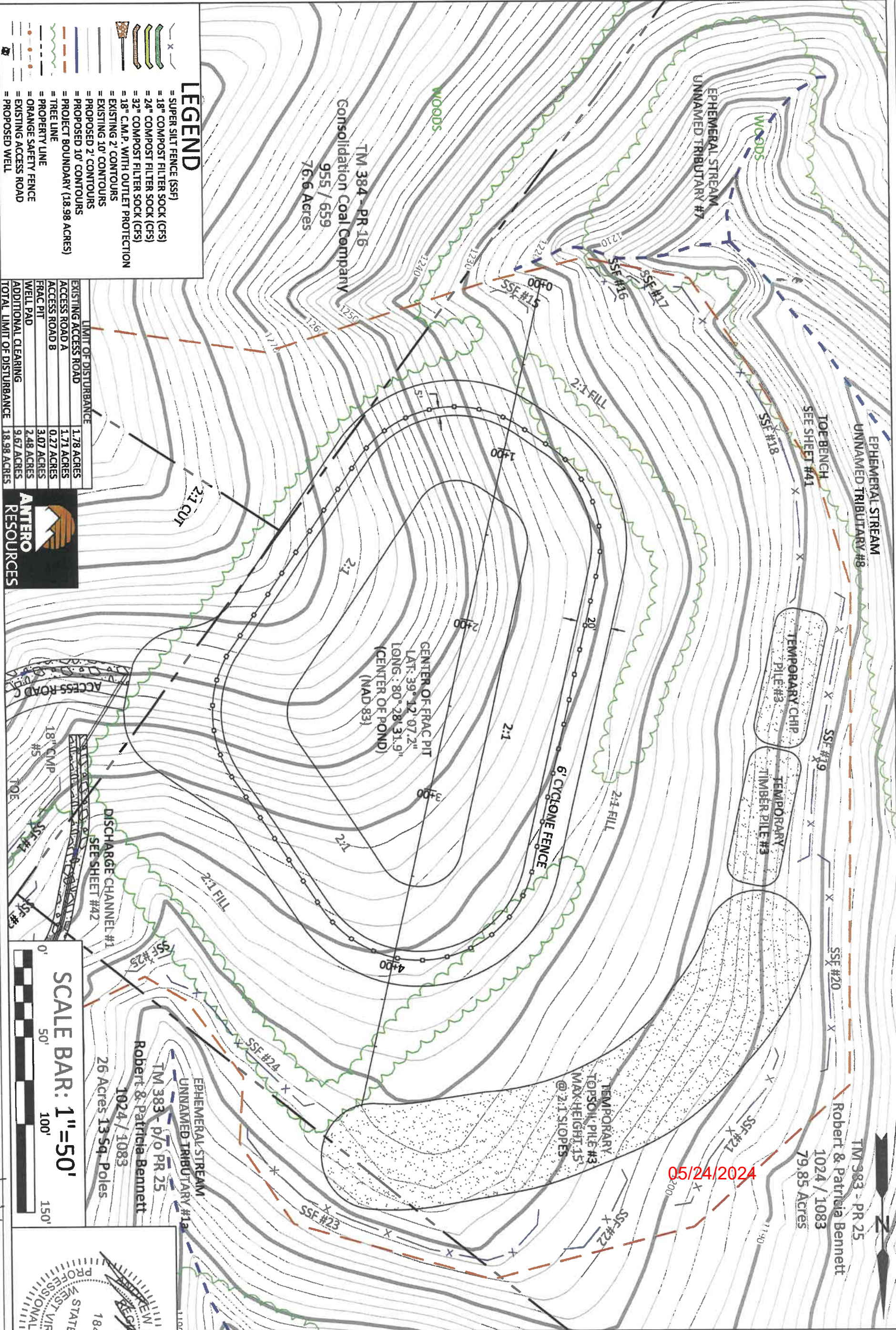
UNION DISTRICT,
HARRISON COUNTY,
WV

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FOR: ANTERO RESOURCES

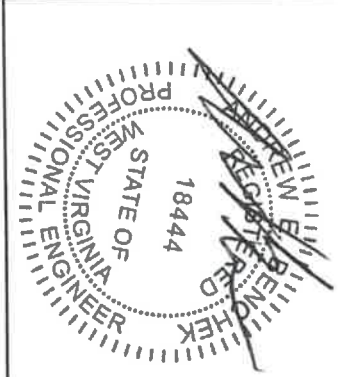
BOORD, BENCHEK and ASSOC., INC.
Engineering, Surveying, Construction,
and Mining Services

Southpoints, PA 15317 Phone: 724-746-1055



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 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



E&S CONTROL LAYOUT

DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT, HARRISON COUNTY, WV

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SHEET #16

BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction, and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055

05/24/2024

TM 30 Jul 12

ACCESS ROAD		ACCESS ROAD	
TAX MAP PARCEL ROAD LENGTH	TYPE	TAX MAP PARCEL ROAD LENGTH	TYPE
403-18	28'	384-18	422'
403-14	360'	384-17	247'
403-21	1,108'	384-16	1,878'
383-49	2,396'	384-16	640'
383-48	49'	384-15	648'
		384-25	241'
			NEW ROAD CONSTRUCTION
			NEW ROAD CONSTRUCTION

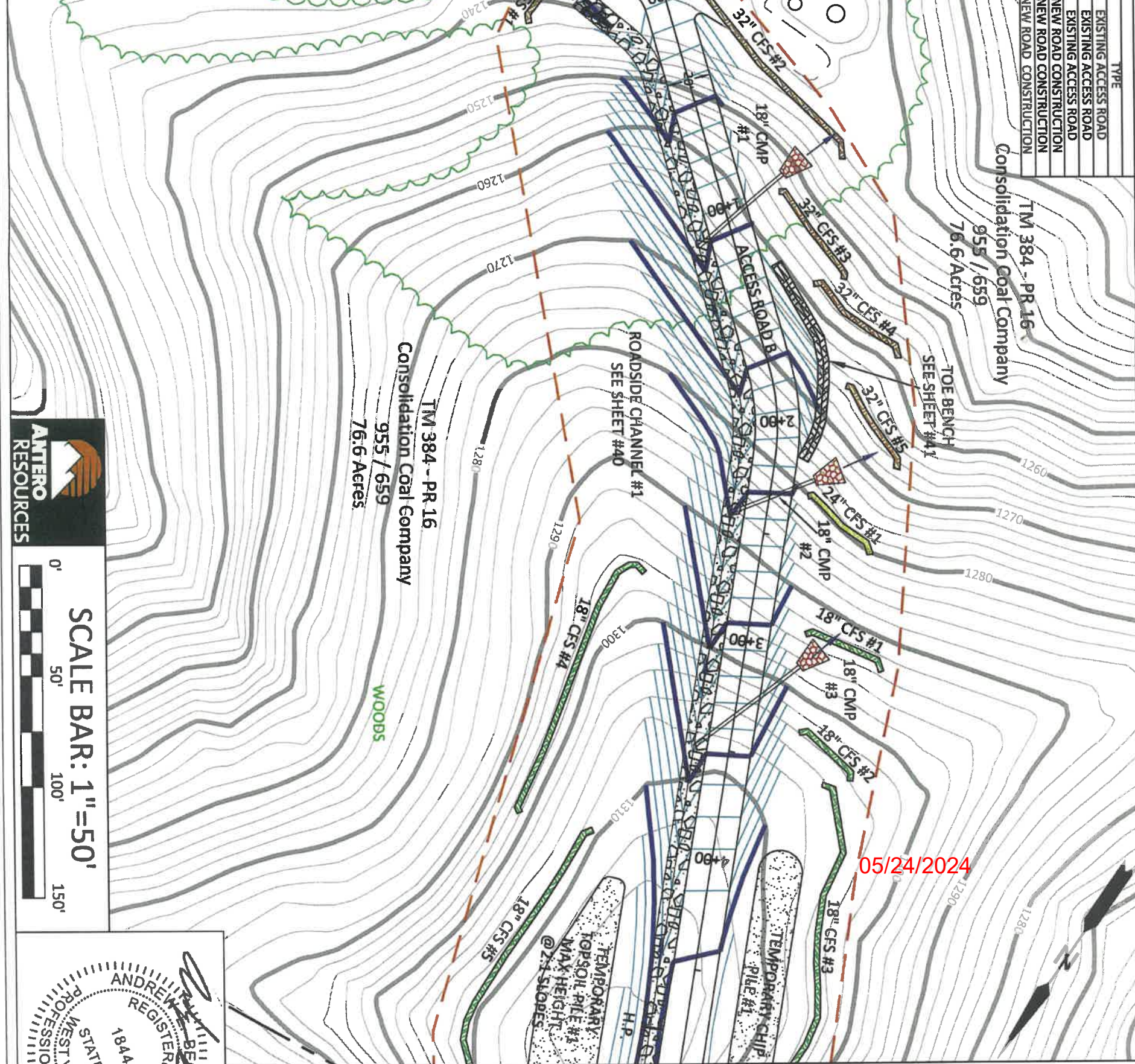
REGRAVEL EXISTING ACCESS ROAD AND REPLACE EXISTING STRUCTURES AS NECESSARY AND INSTALL ADDITIONAL STRUCTURES AS NECESSARY. INSTALL SUMPS AND PIPE OUTLET PROTECTION WHERE NECESSARY.

LEGEND

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- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



ANDREW BENNETT
REGISTERED PROFESSIONAL ENGINEER
STATE OF WEST VIRGINIA
1844

UNION DISTRICT,
HARRISON COUNTY,
WV

E&S CONTROL & SITE PLAN

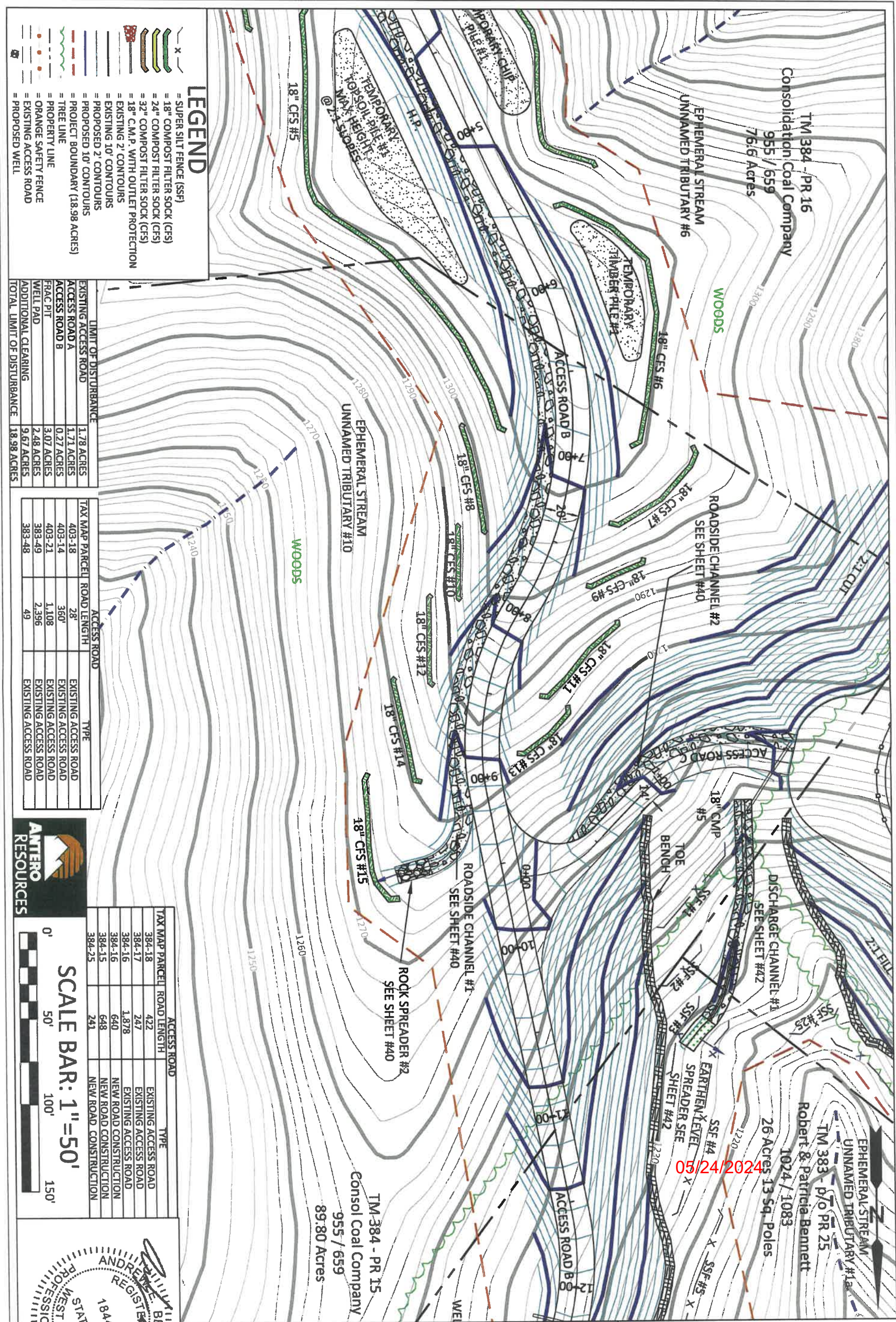
DATE: 7/2012
BENNETT WELL PAD SITE

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SHEET #25

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Engineering, Surveying, Construction,
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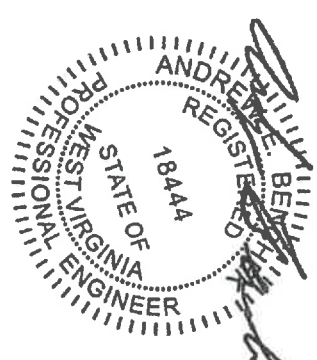
- LEGEND**
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 - = PROPOSED 10' CONTOURS
 - = PROJECT BOUNDARY (18.98 ACRES)
 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ACCESS ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

TAX MAP PARCEL	ROAD LENGTH	TYPE
403-18	28'	EXISTING ACCESS ROAD
403-14	360'	EXISTING ACCESS ROAD
403-21	1,108'	EXISTING ACCESS ROAD
383-49	2,396'	EXISTING ACCESS ROAD
383-48	49'	EXISTING ACCESS ROAD

TAX MAP PARCEL	ROAD LENGTH	TYPE
384-18	422'	EXISTING ACCESS ROAD
384-17	247'	EXISTING ACCESS ROAD
384-16	1,878'	EXISTING ACCESS ROAD
384-15	640'	NEW ROAD CONSTRUCTION
384-15	648'	NEW ROAD CONSTRUCTION
384-25	241'	NEW ROAD CONSTRUCTION



DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

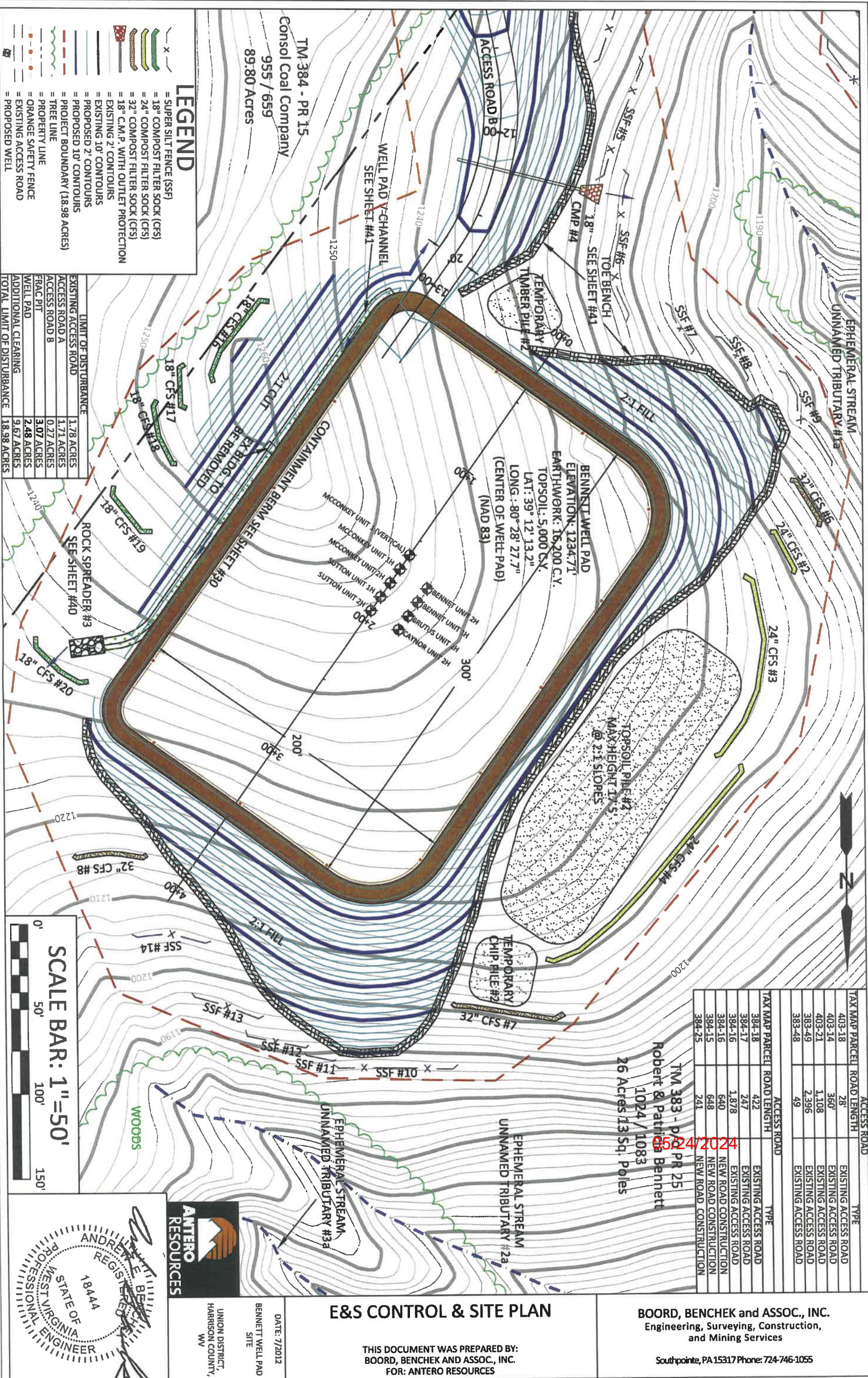
E&S CONTROL & SITE PLAN

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 FOR: ANTERO RESOURCES

SHEET #26

BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
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Southpointe, PA15317 Phone: 724-746-1055



LEGEND

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- = PROJECT BOUNDARY (18.98 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
ACCESS ROAD B	3.07 ACRES
FAC PIT	2.48 ACRES
WELL PAD	9.67 ACRES
ADDITIONAL CLEARING	18.98 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

TAX MAP PARCEL	ROAD LENGTH	TYPE
403-18	28'	EXISTING ACCESS ROAD
403-14	360'	EXISTING ACCESS ROAD
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ACCESS ROAD		TYPE
384-18	422'	EXISTING ACCESS ROAD
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TM 383 - p PR 25
 Robert & Patricia Bennett
 1024 / 1083
 26 Acres 13 Sq. Poles

05/24/2024

E&S CONTROL & SITE PLAN

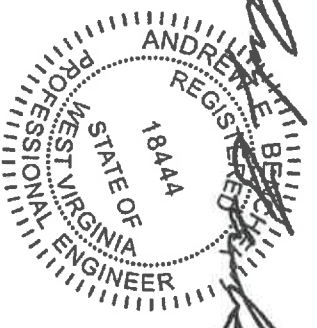
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 Engineering, Surveying, Construction,
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Southpointe, PA 15317 Phone: 724-746-1055



DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV



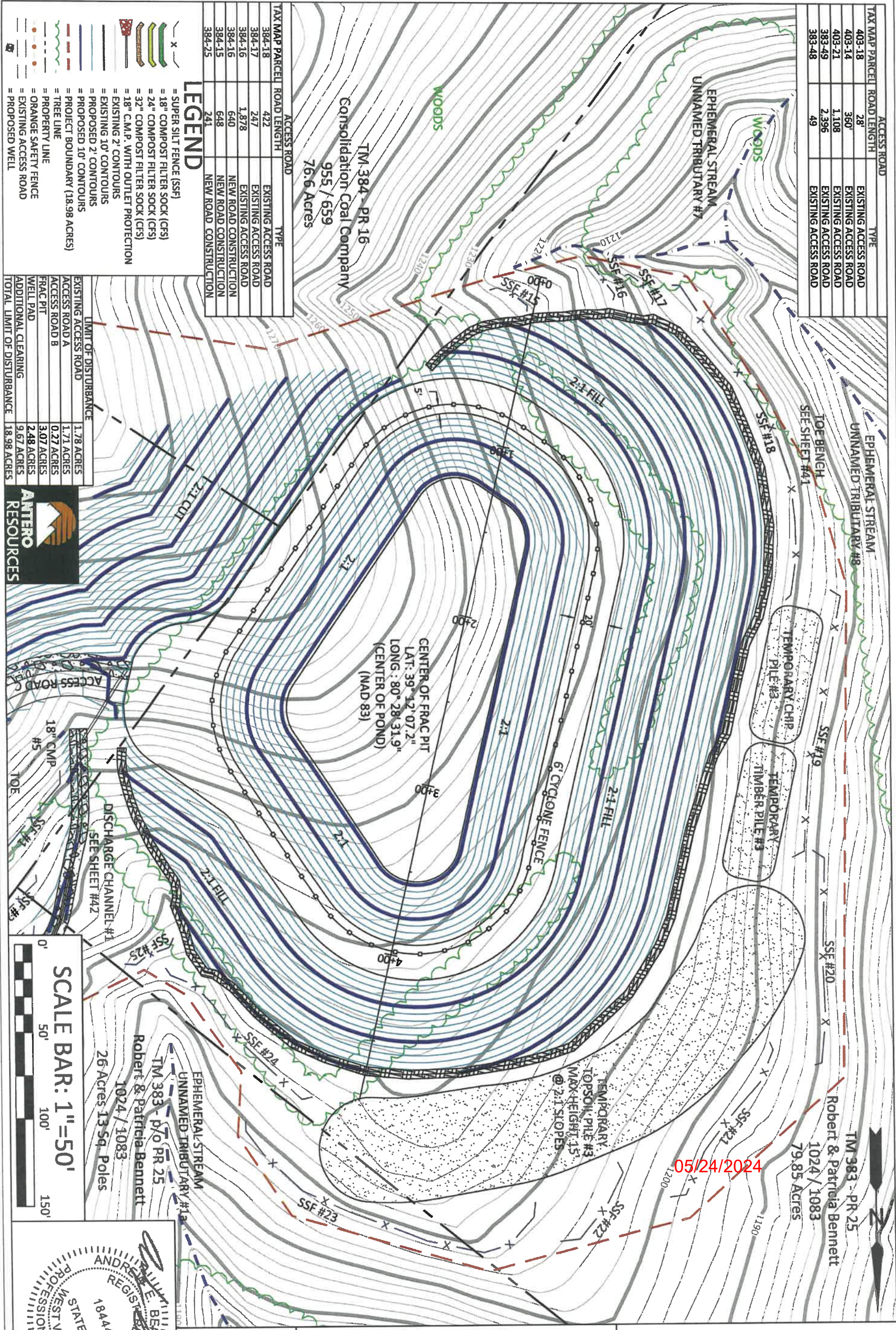
TAX MAP PARCEL	ROAD LENGTH	TYPE
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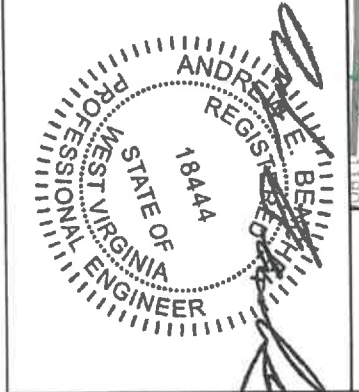
LEGEND

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- = EXISTING ACCESS ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE	ACRES
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



05/24/2024



DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT, HARRISON COUNTY, WV

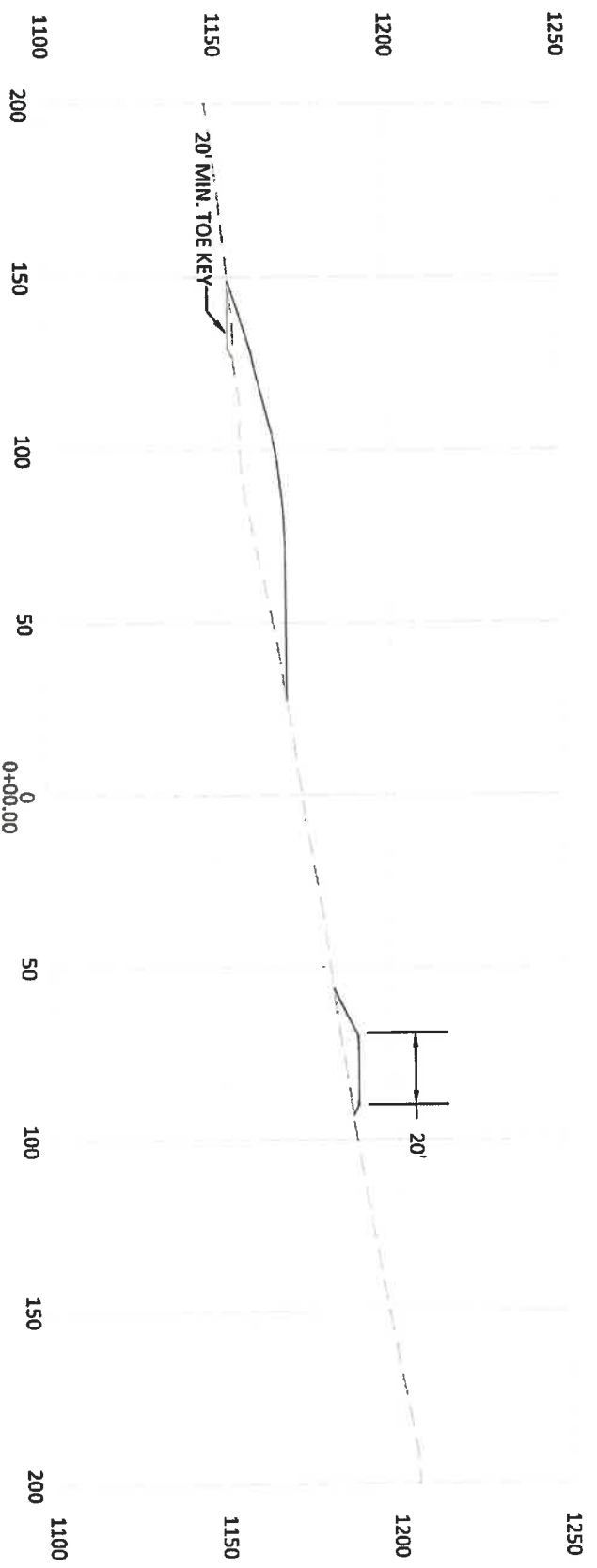
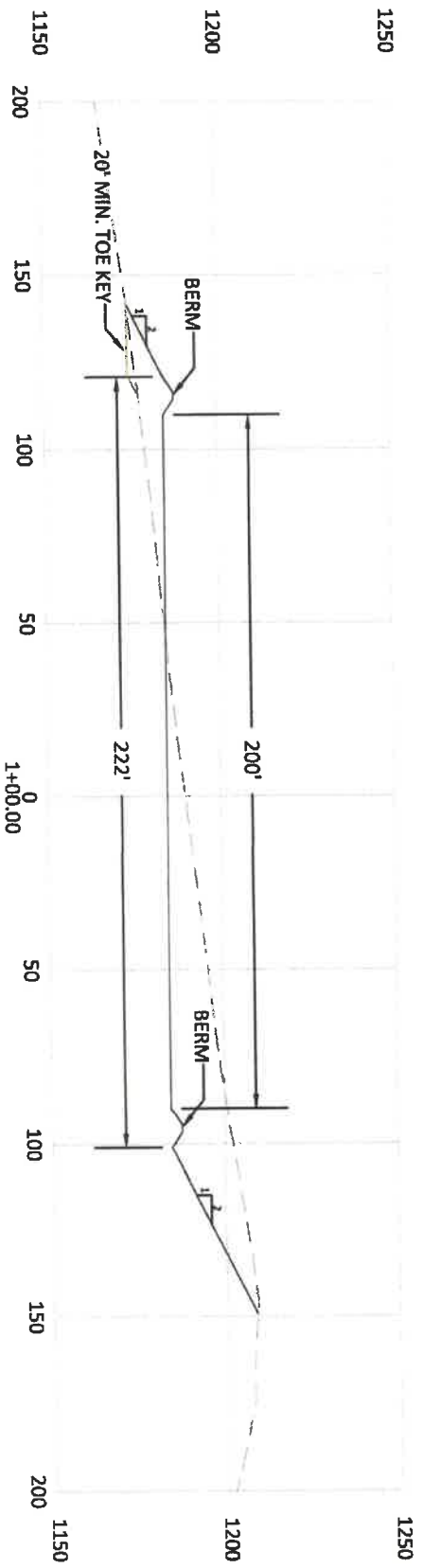
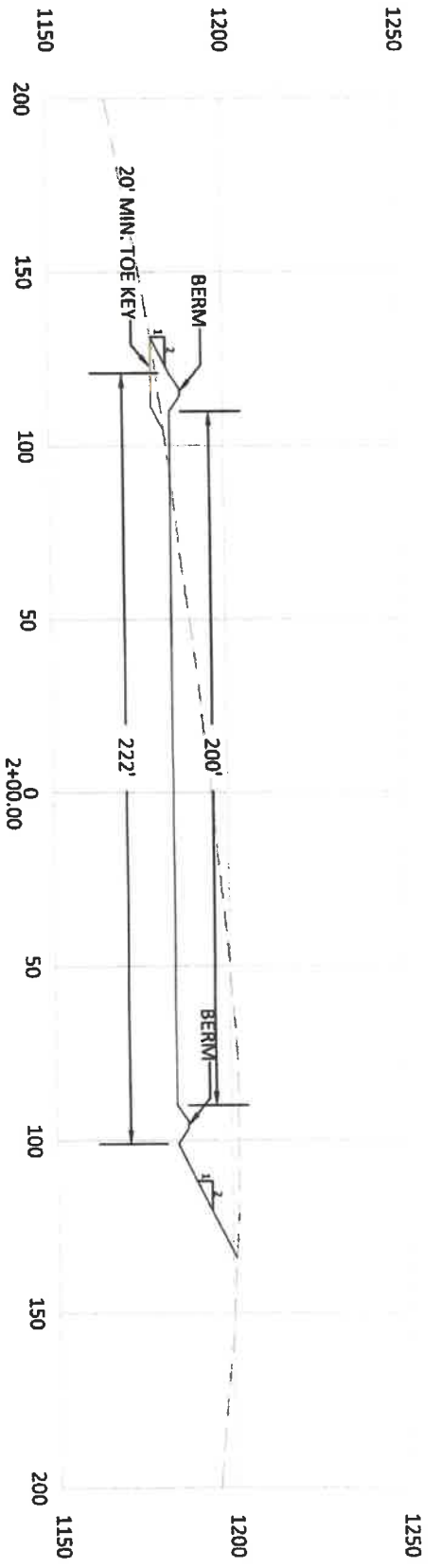
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 Engineering, Surveying, Construction, and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055

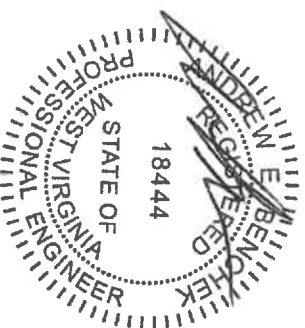
WELL PAD CROSS-SECTIONS



EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'



05/24/2024



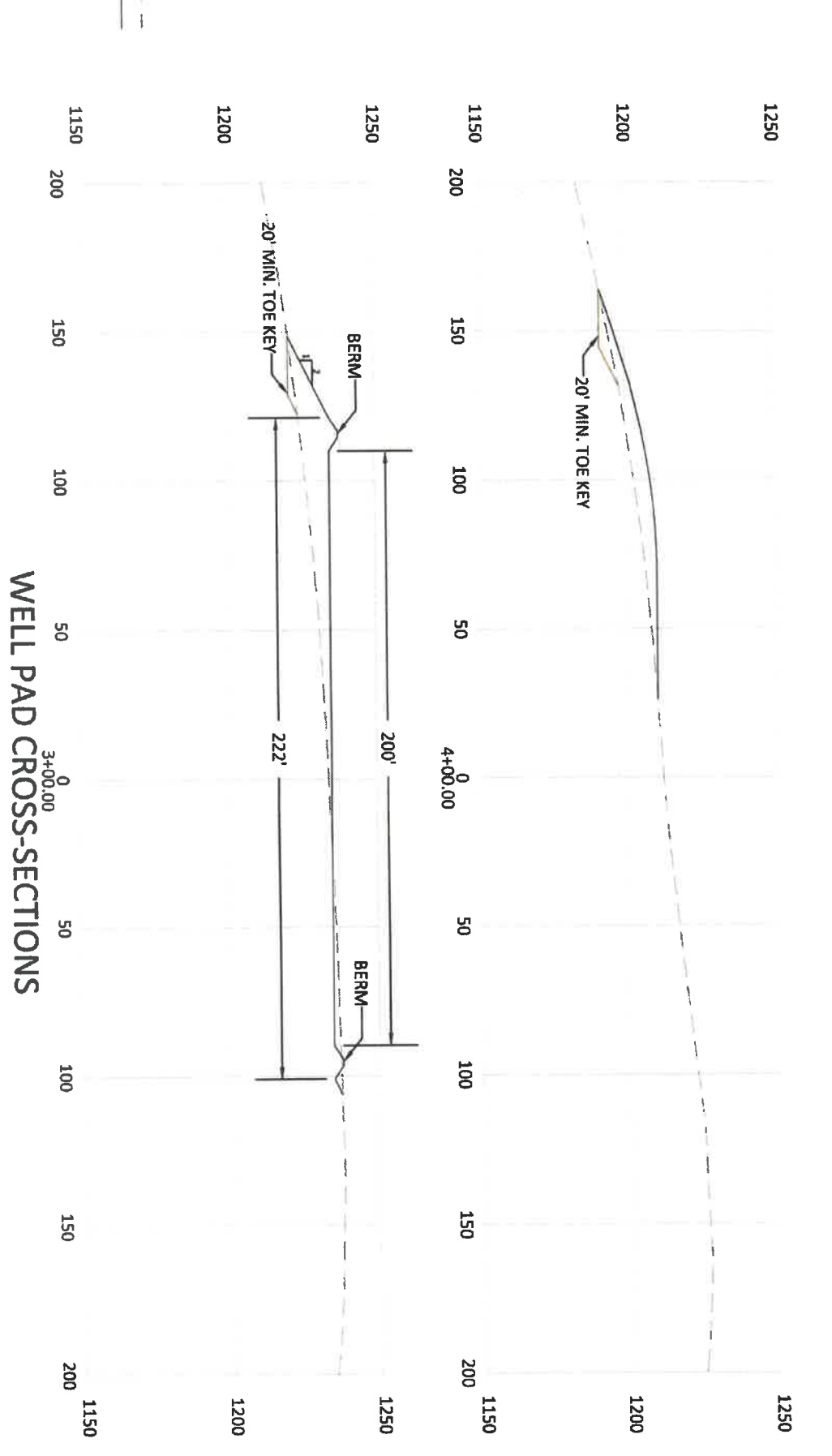
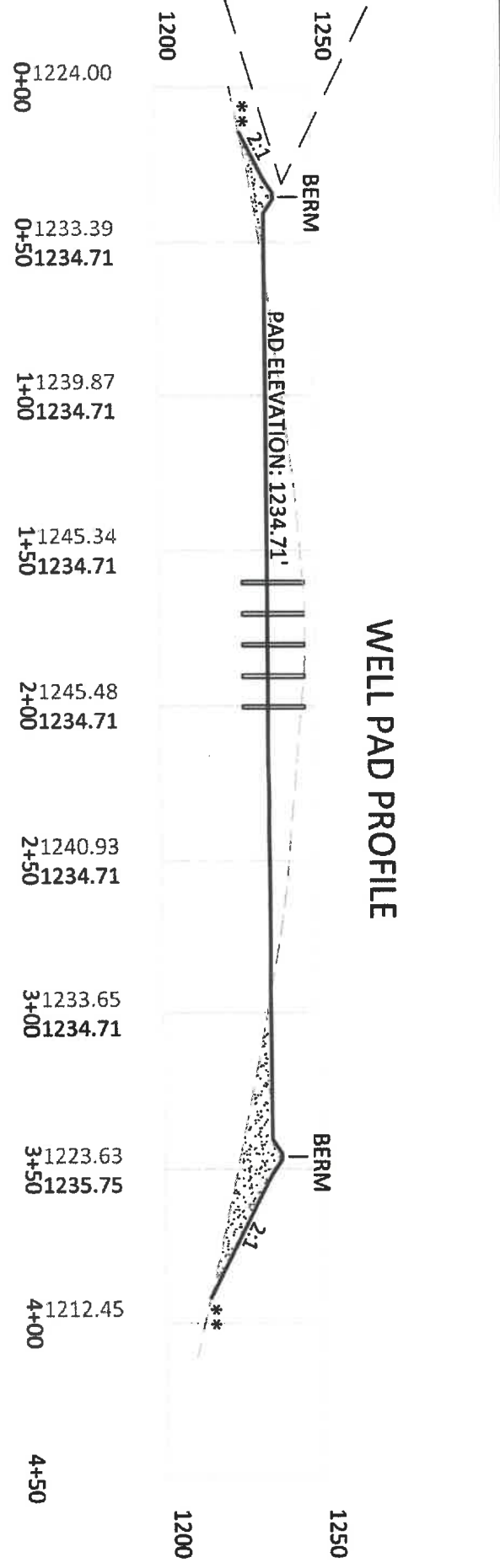
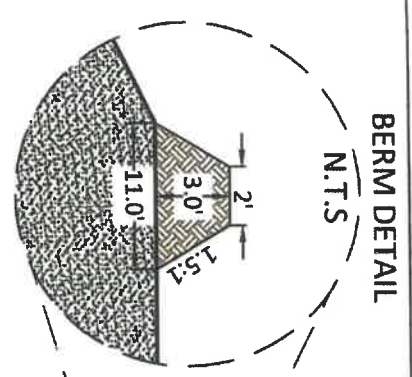
DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

WELL PAD CROSS-SECTIONS

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BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
 and Mining Services

Southpointe, PA 15317 Phone: 724-746-1055



WELL PAD CROSS-SECTIONS

EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'

1. NOTE: ALL FILL SLOPES AND BERMS ARE TO BE COMPACTED TO 95% STANDARD PROCTOR.
2. NOTE: SEE DETAIL SHEET #40 FOR TOE BENCH/BONDING BENCH DETAIL.
3. ALL FILL AREAS SHALL BE "KEYED IN" AND COMPACTED IN 12" LIFTS WITH A VIBRATING SHEEPSFOOT ROLLER OR COMPACTOR TO 95% COMPACTION
4. ROCK PLACED IN FILL AREAS IS TO BE 12" IN DIAMETER AND SMALLER.
5. NO ORGANIC MATERIAL TO BE PLACED IN FILL AREAS

05/24/2024



DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

WELL PAD CROSS-SECTIONS

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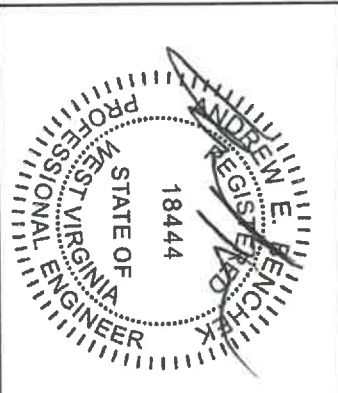
FRAC PIT CROSS-SECTIONS



EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'



05/24/2024

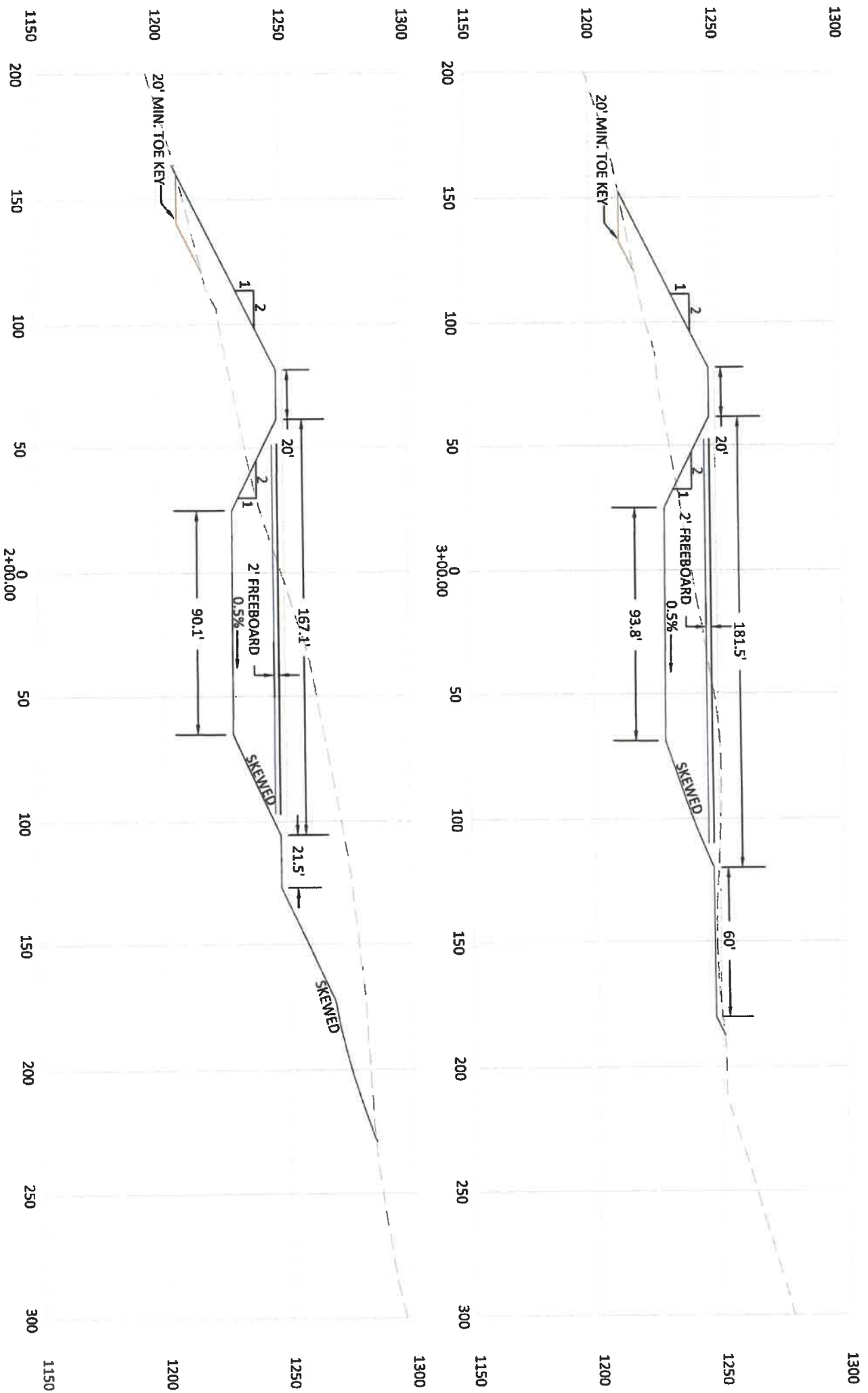


DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

**FRAC PIT
 CROSS-SECTIONS**
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 FOR: ANTERO RESOURCES

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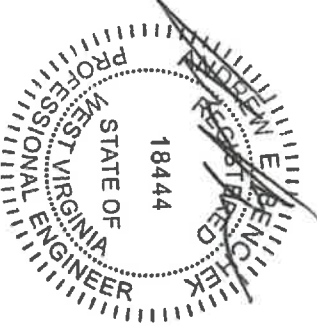
FRAC PIT CROSS-SECTIONS



05/24/2024



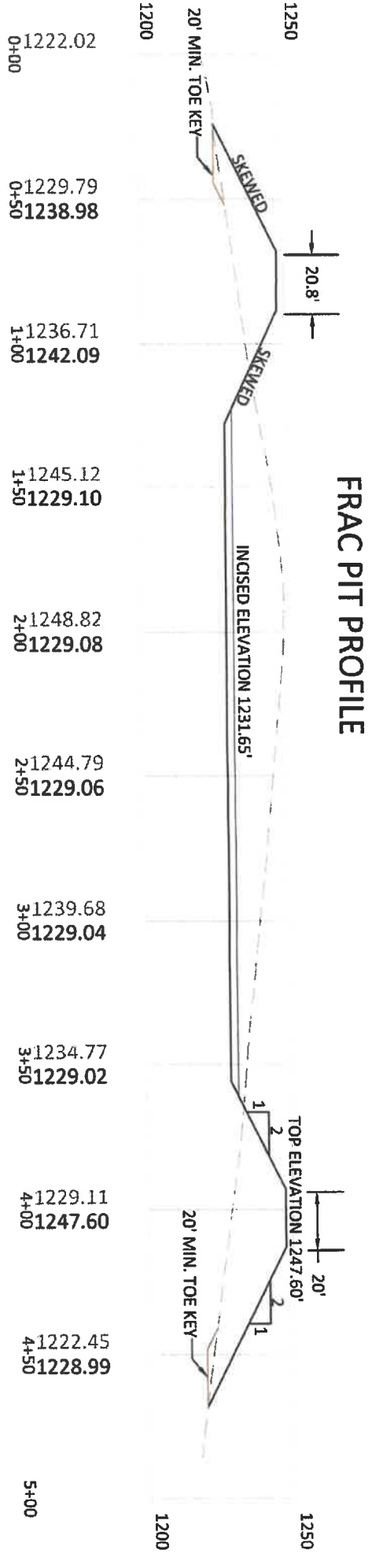
EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'



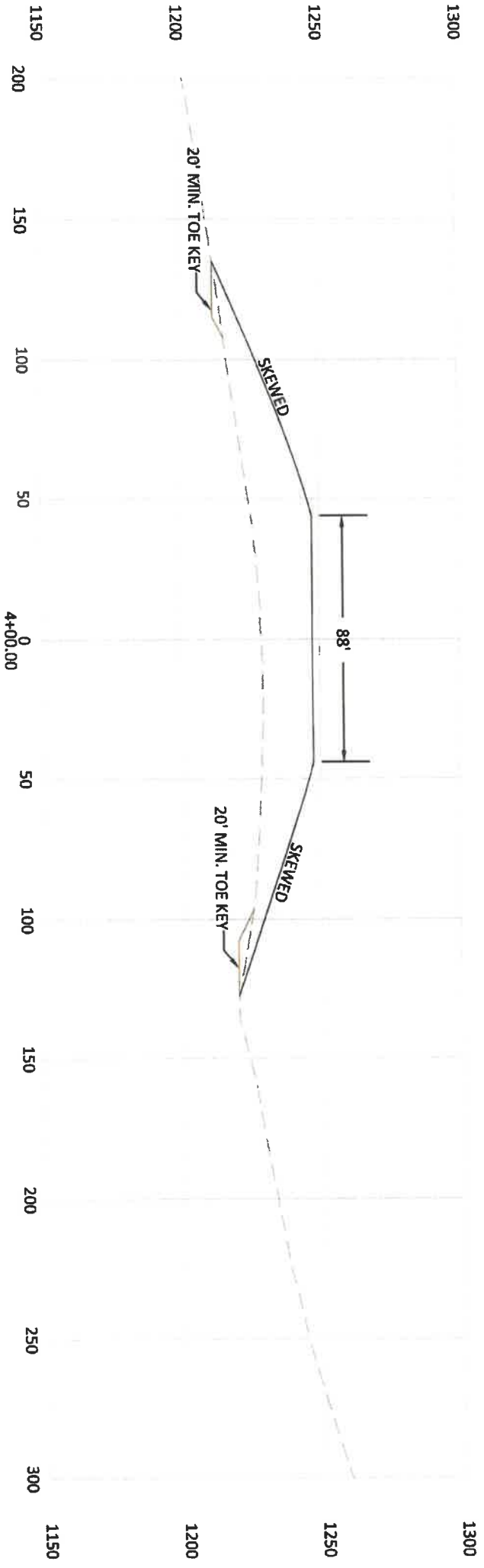
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1. NOTE: ALL FILL SLOPES AND BERMS ARE TO BE COMPACTED TO 95% STANDARD PROCTOR.
2. NOTE: SEE DETAIL SHEET #40 FOR TOE BENCH/BONDING BENCH DETAIL.
3. ALL FILL AREAS SHALL BE "KEYED IN" AND COMPACTED IN 12" LIFTS WITH A VIBRATING SHEEPSFOOT ROLLER OR COMPACTOR TO 95% COMPACTION
4. ROCK PLACED IN FILL AREAS IS TO BE 12" IN DIAMETER AND SMALLER.
5. NO ORGANIC MATERIAL TO BE PLACED IN FILL AREAS

EXISTING GRADE
PROPOSED GRADE
VERTICAL SCALE 1" = 50'
HORIZONTAL SCALE 1" = 50'

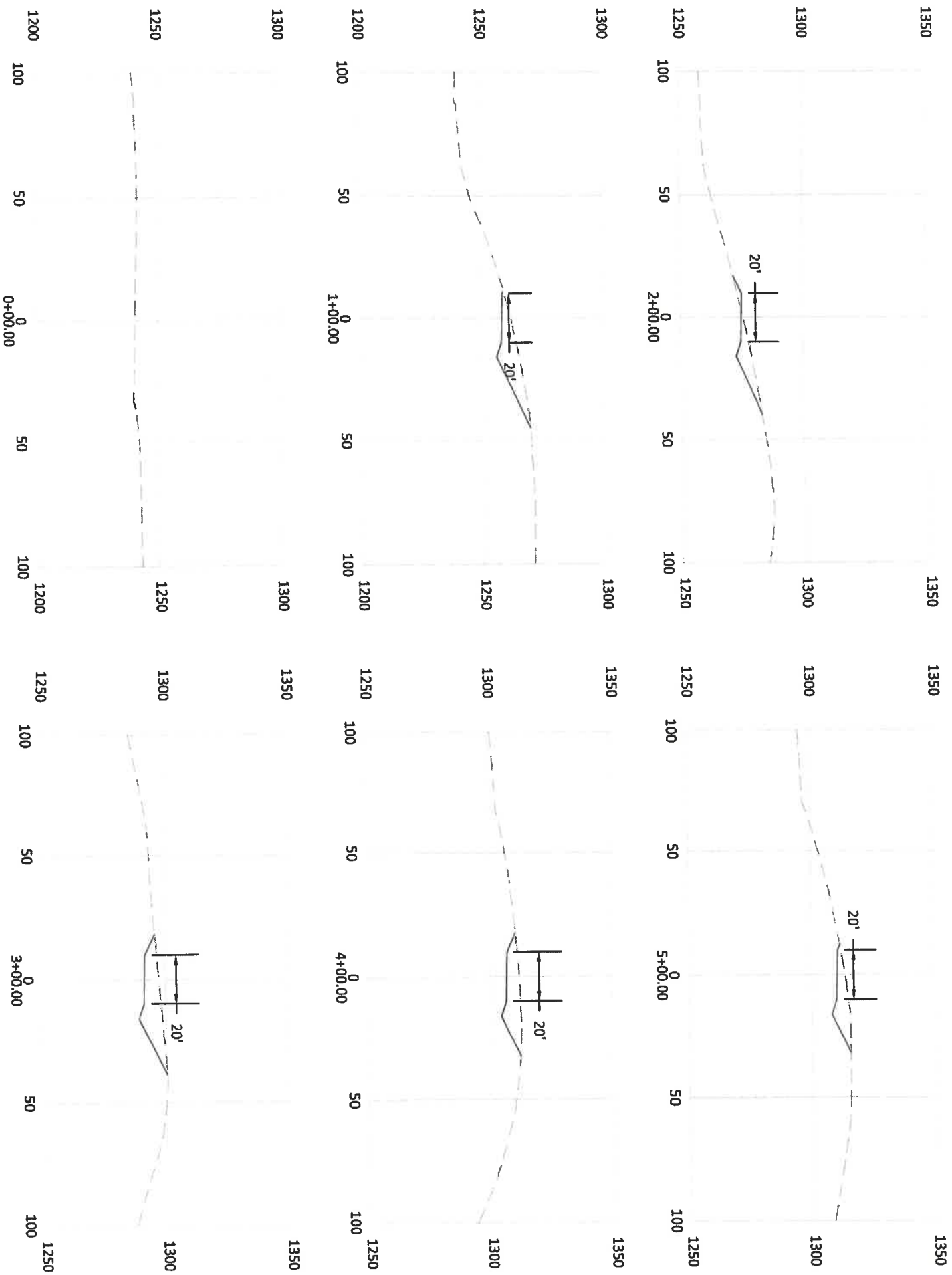


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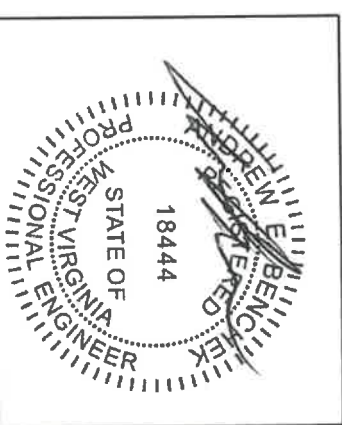
ACCESS ROAD A CROSS-SECTIONS



05/24/2024



EXISTING GRADE
PROPOSED GRADE
VERTICAL SCALE 1" = 50'
HORIZONTAL SCALE 1" = 50'



DATE: 7/2012
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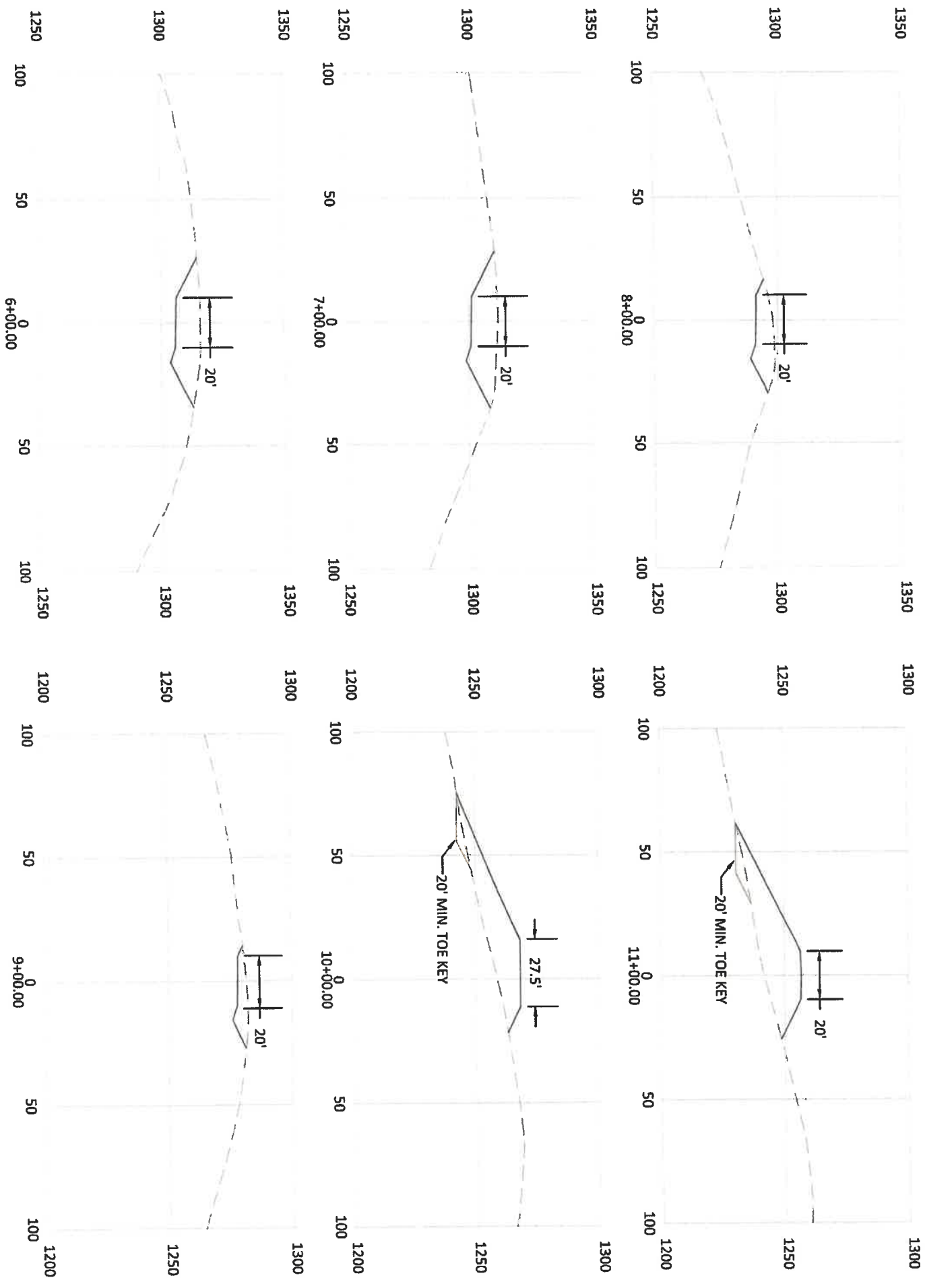
ACCESS ROAD CROSS-SECTIONS

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ACCESS ROAD A CROSS-SECTIONS



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PROPOSED GRADE
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HORIZONTAL SCALE 1" = 50'



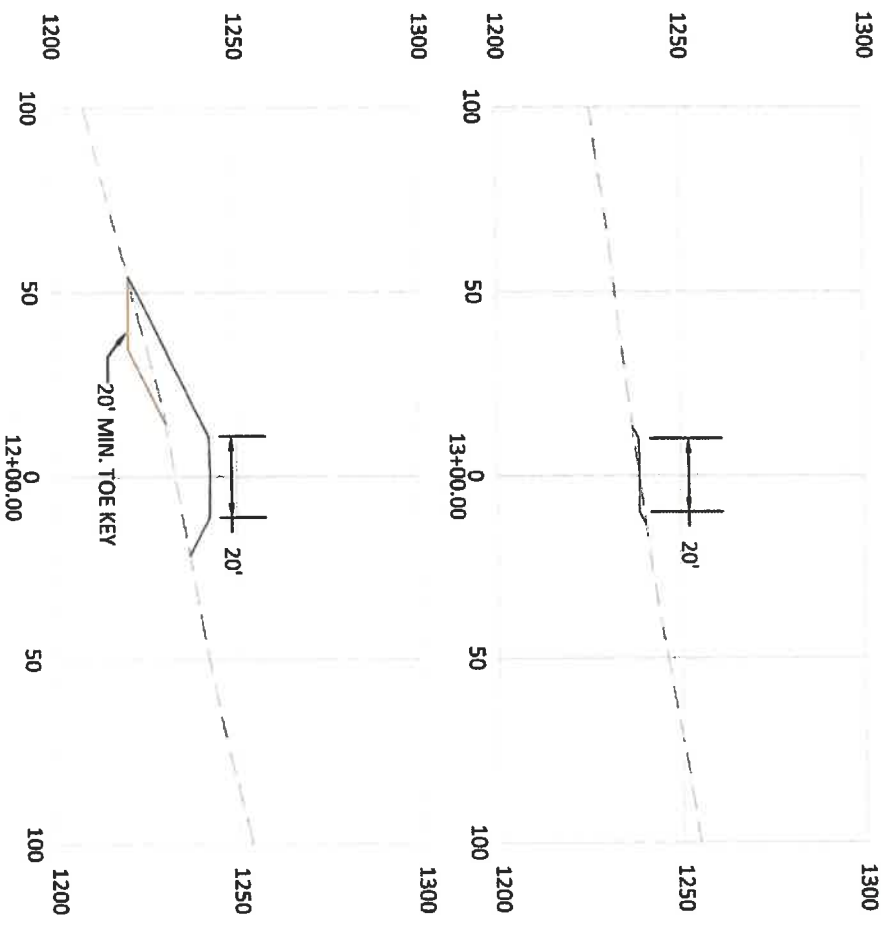
DATE: 7/2012
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ACCESS ROAD CROSS-SECTIONS

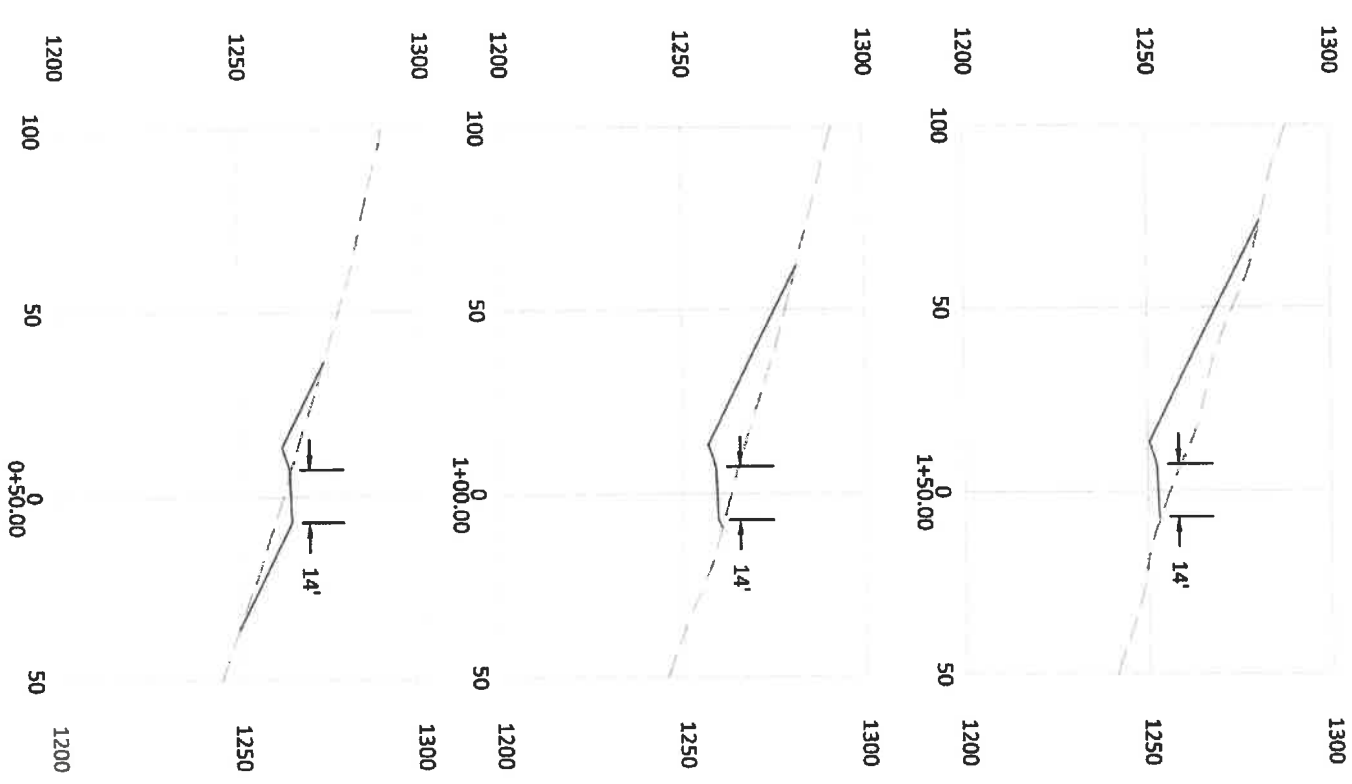
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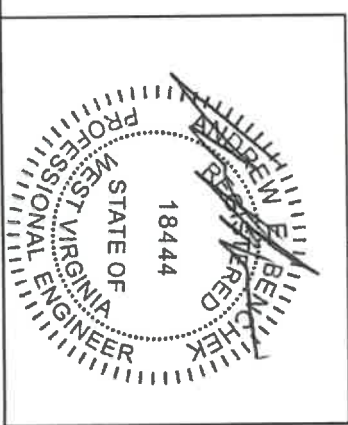
ACCESS ROAD B CROSS-SECTIONS



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EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'



ACCESS ROAD CROSS-SECTIONS

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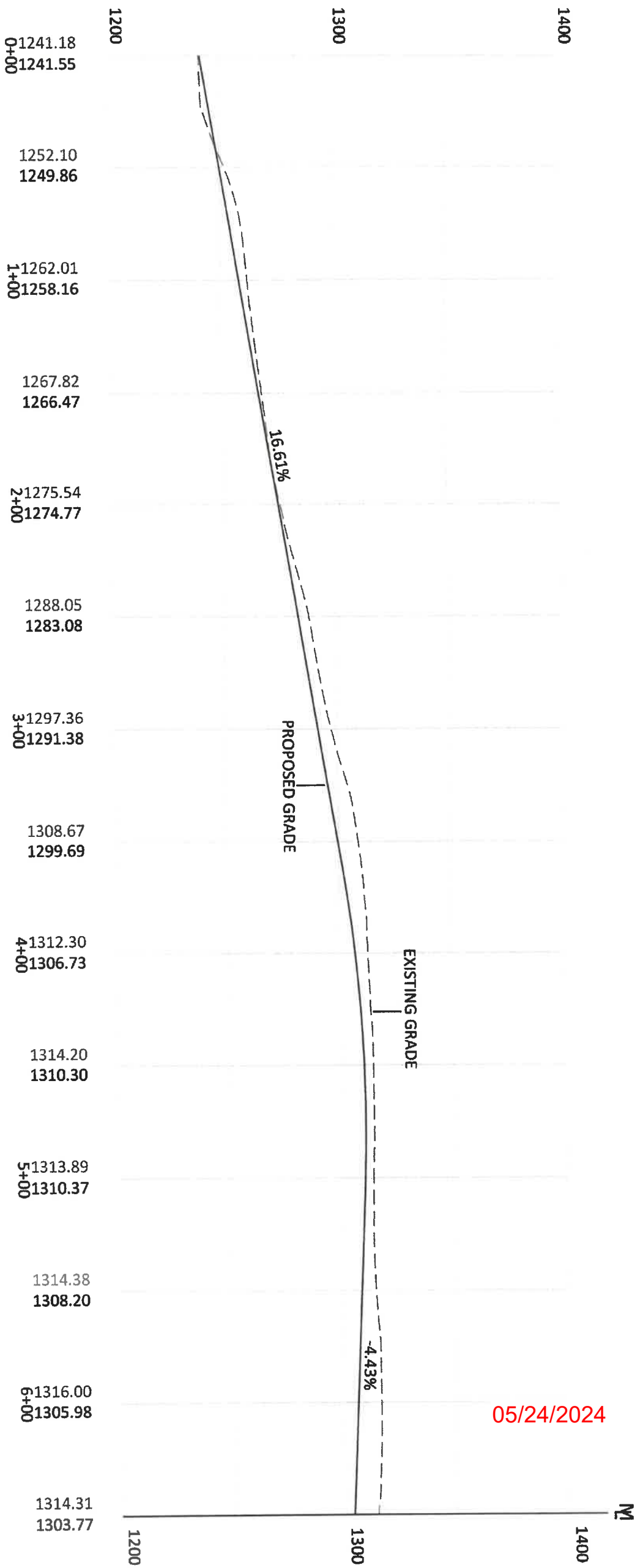
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ACCESS ROAD A PROFILE

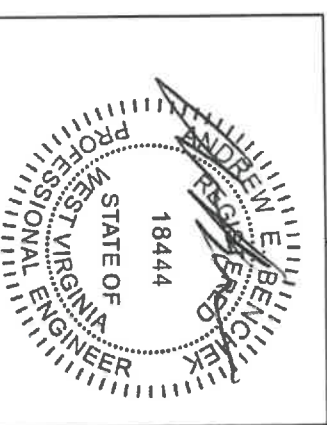
SCALE 1" = 50'



EXISTING GRADE
 PROPOSED GRADE
 VERTICAL SCALE 1" = 50'
 HORIZONTAL SCALE 1" = 50'

1. NOTE: ALL FILL SLOPES AND BERMS ARE TO BE COMPACTED TO 95% STANDARD PROCTOR.
2. NOTE: SEE DETAIL SHEET #40 FOR TOE BENCH/BONDING BENCH DETAIL.
3. ALL FILL AREAS SHALL BE "KEYED IN" AND COMPACTED IN 12" LIFTS WITH A VIBRATING SHEEPSFOOT ROLLER OR COMPACTOR TO 95% COMPACTION
4. ROCK PLACED IN FILL AREAS IS TO BE 12" IN DIAMETER AND SMALLER.
5. NO ORGANIC MATERIAL TO BE PLACED IN FILL AREAS

05/24/2024



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ACCESS ROAD PROFILE

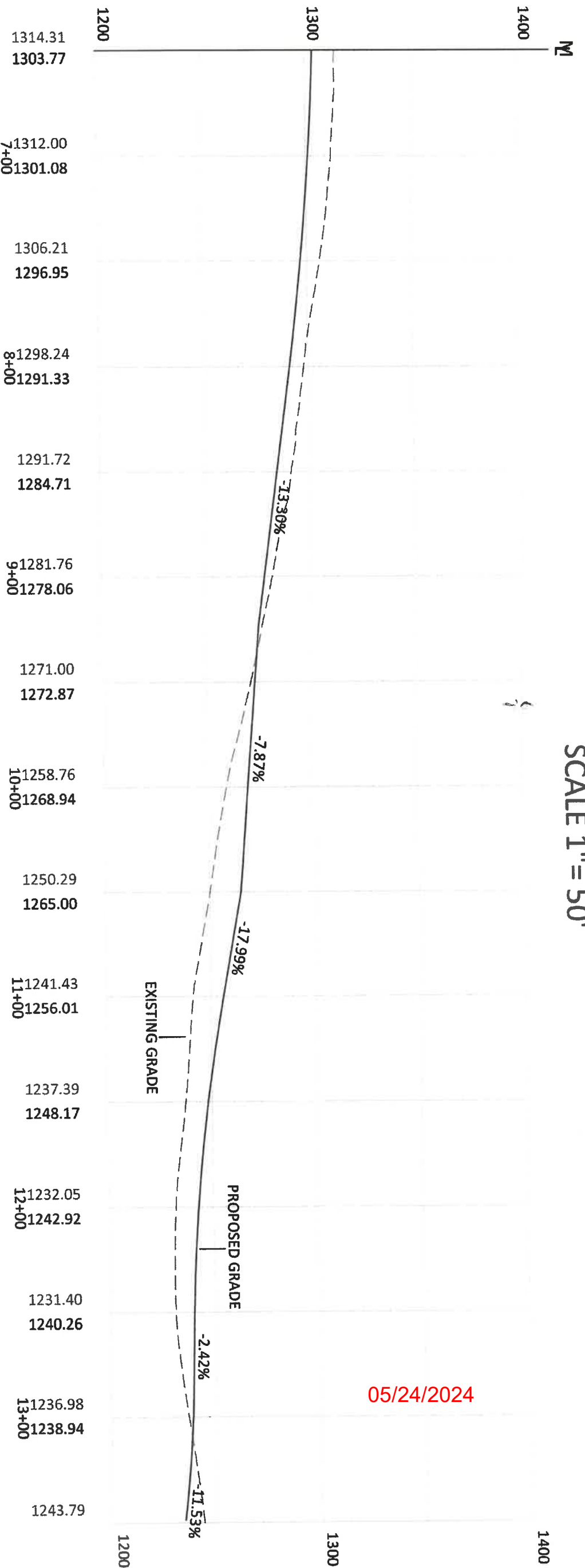
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ACCESS ROAD A PROFILE

SCALE 1" = 50'

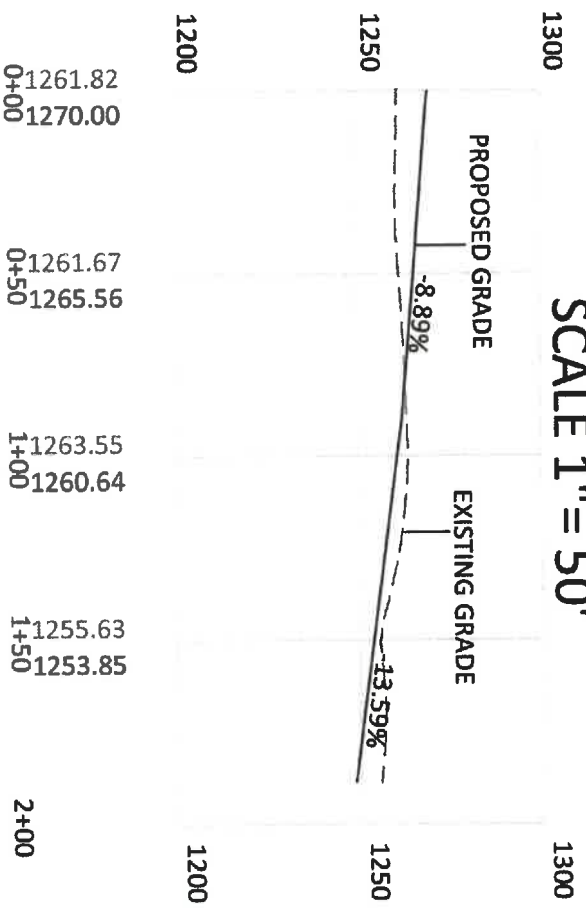


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- ROCK PLACED IN FILL AREAS IS TO BE 12" IN DIAMETER AND SMALLER.
- NO ORGANIC MATERIAL TO BE PLACED IN FILL AREAS

ACCESS ROAD B PROFILE

SCALE 1" = 50'



EXISTING GRADE
PROPOSED GRADE
VERTICAL SCALE 1" = 50'
HORIZONTAL SCALE 1" = 50'



DATE: 7/2012
BENNETT WELL PAD SITE
UNION DISTRICT,
HARRISON COUNTY,
WV

ACCESS ROAD PROFILE

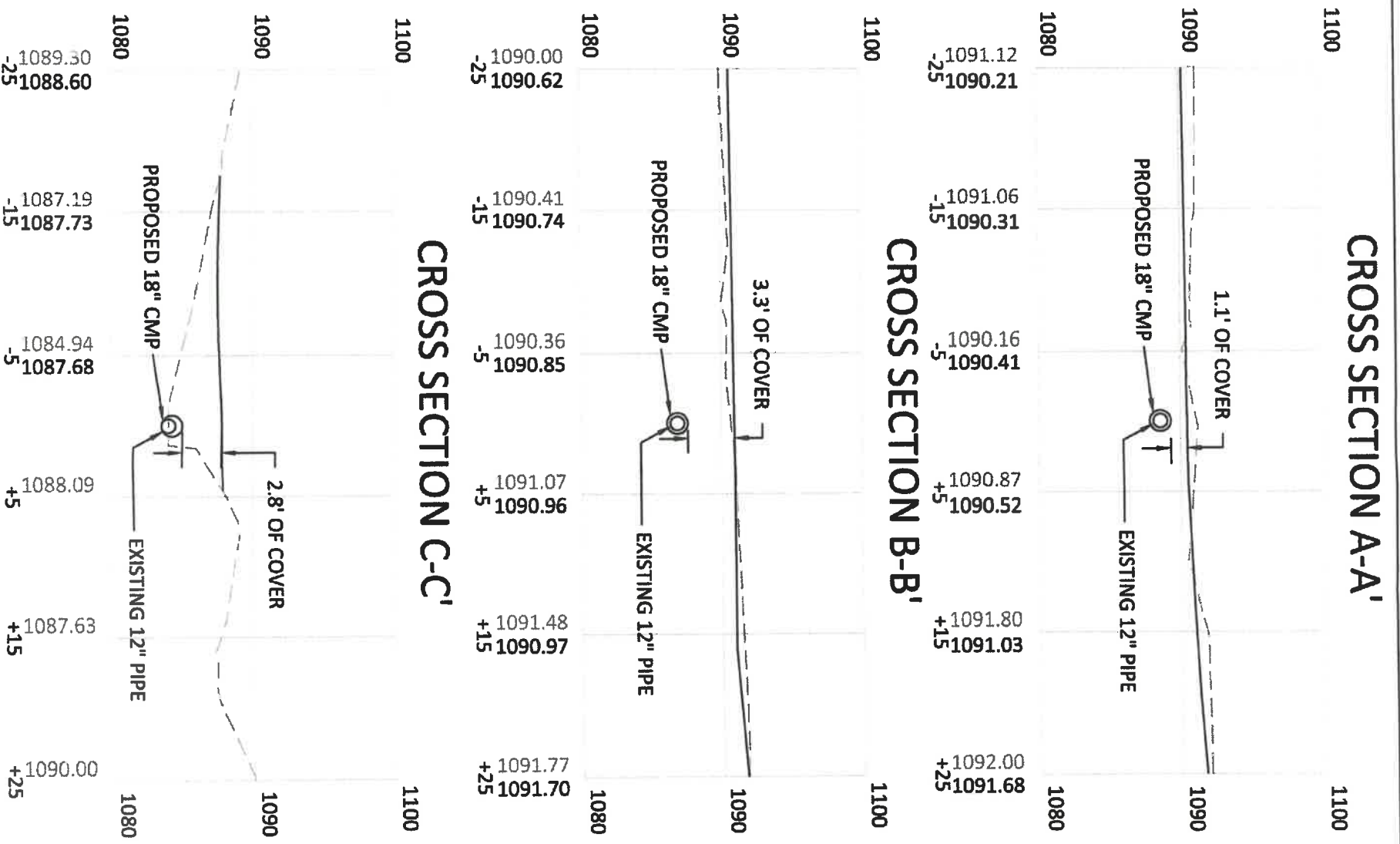
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1. PIPES TO BE INSTALLED 6" BELOW STREAM BED
2. EXISTING 12" PIPE TO BE REPLACE WITH 18" CMP



05/24/2024

PROPOSED GRADE =
 EXISTING GRADE =
 VERTICAL SCALE 1" = 10'
 HORIZONTAL SCALE 1" = 10'



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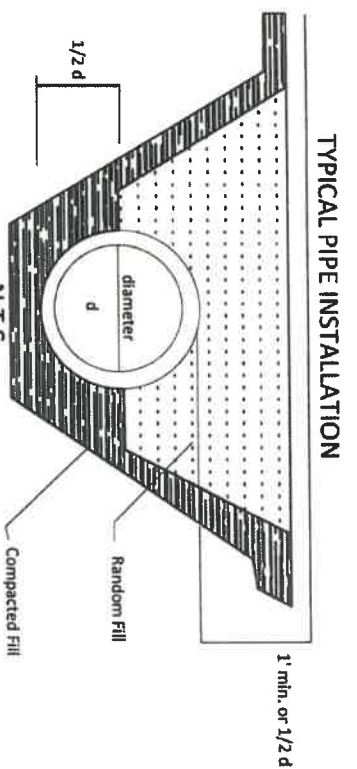
STREAM CROSSING CROSS SECTIONS

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SHEET #39

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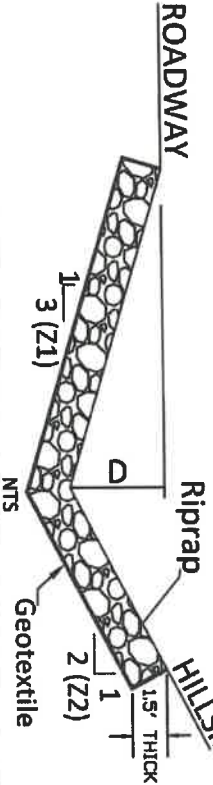
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CROSSING STATION	ACCESS RD. STATION	LENGTH (FT.)	d (FT.)	TYPE C.M.P.	(MIN) PIPE %	OUTLET PROTECTION (R-5)
PIPE CROSSING #1	1+10	50	1.5'	C.M.P.	2	R-5
PIPE CROSSING #2	2+45	40	1.5'	C.M.P.	2	R-5
PIPE CROSSING #3	3+50	60	1.5'	C.M.P.	2	R-5
PIPE CROSSING #4	12+20	75	1.5'	C.M.P.	2	R-5
*PIPE CROSSING #5	1+80	55	1.5'	C.M.P.	2	-

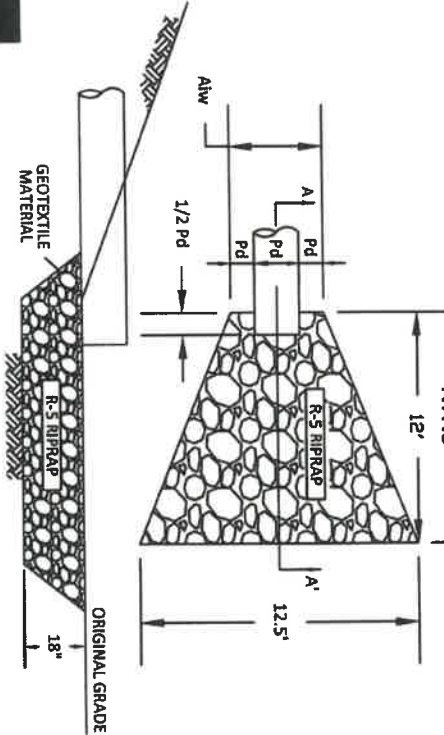
*ACCESS ROAD A
*ACCESS ROAD B

ROADSIDE V-DITCH

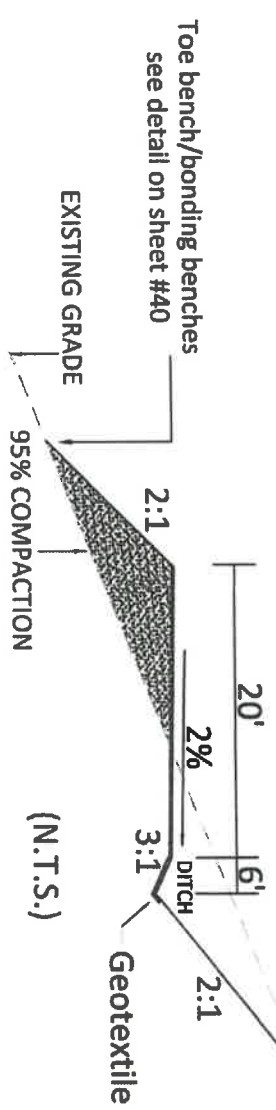


CHANNEL NO.	LENGTH (FT.)	DEPTH D (FT.)	Z1 (FT.)	Z2 (FT.)	LINING*
ROADSIDE V-DITCH #1	872	2	3	2	18" THICK R-5 RIPRAP
ROADSIDE V-DITCH #2	150	2	3	2	18" THICK R-5 RIPRAP

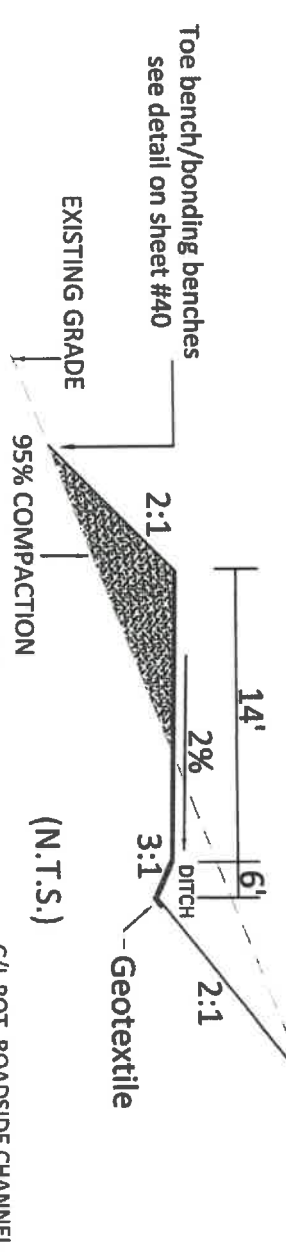
TYPICAL OUTLET PROTECTION DETAIL



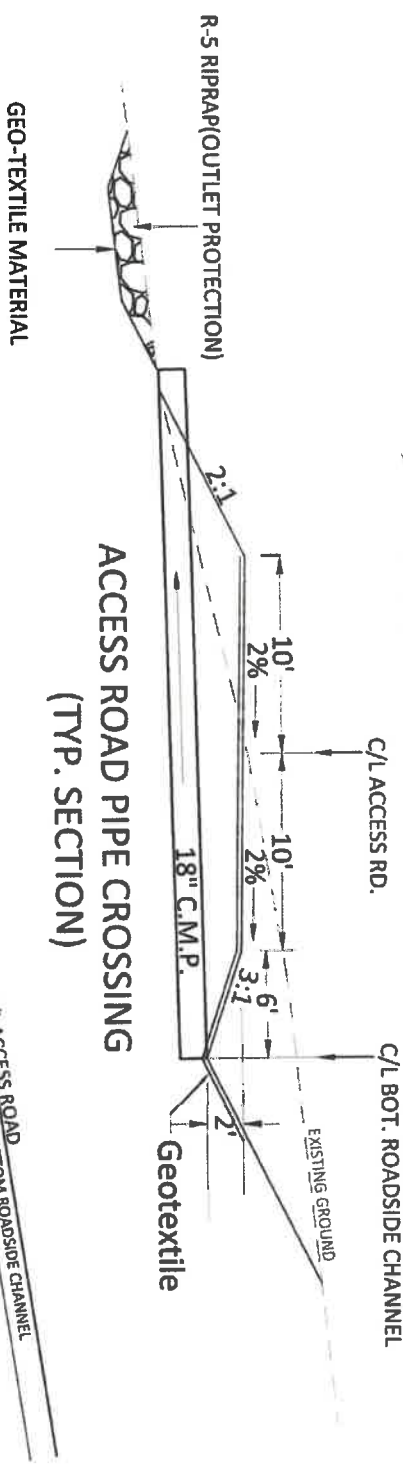
TYPICAL ACCESS ROAD SECTION
INSLOPED RD.



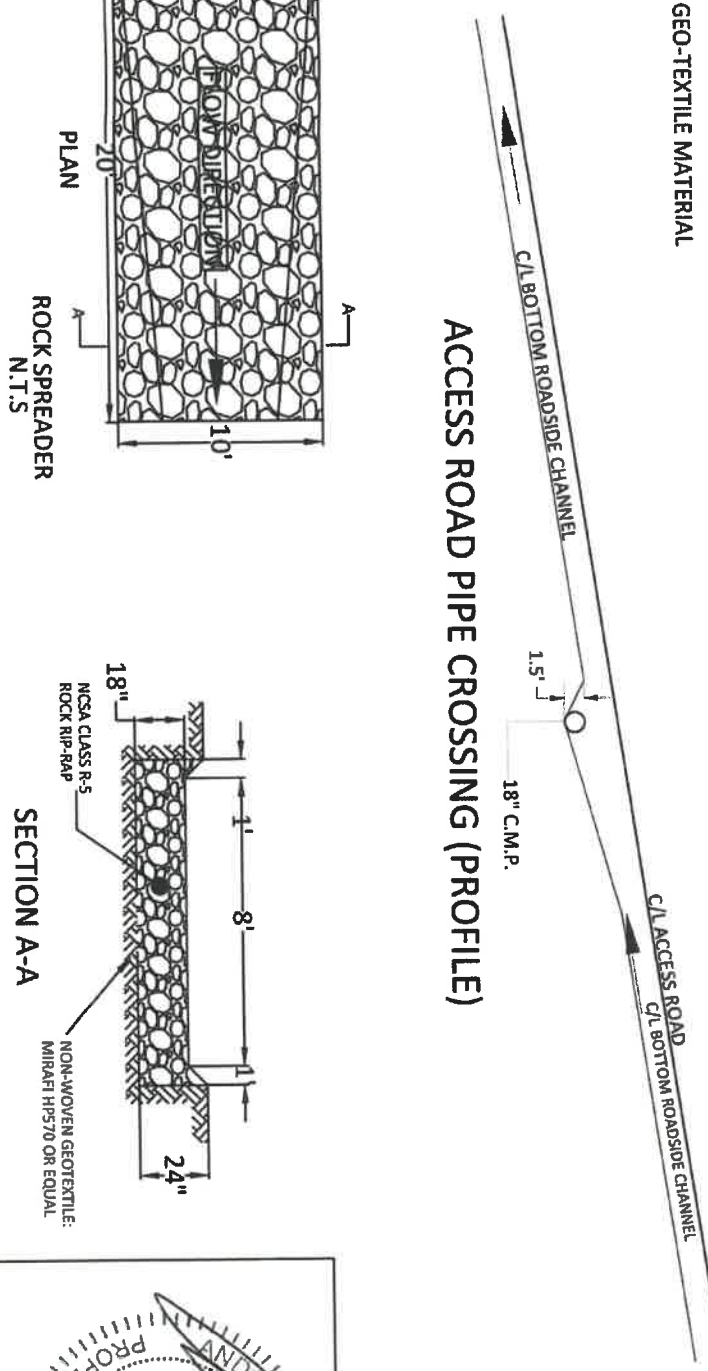
TYPICAL ACCESS ROAD SECTION
INSLOPED RD.



ACCESS ROAD PIPE CROSSING
(TYP. SECTION)



ACCESS ROAD PIPE CROSSING (PROFILE)



05/24/2024

DETAIL SHEET

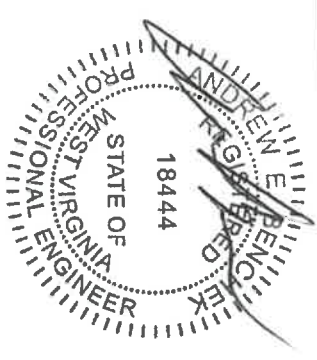
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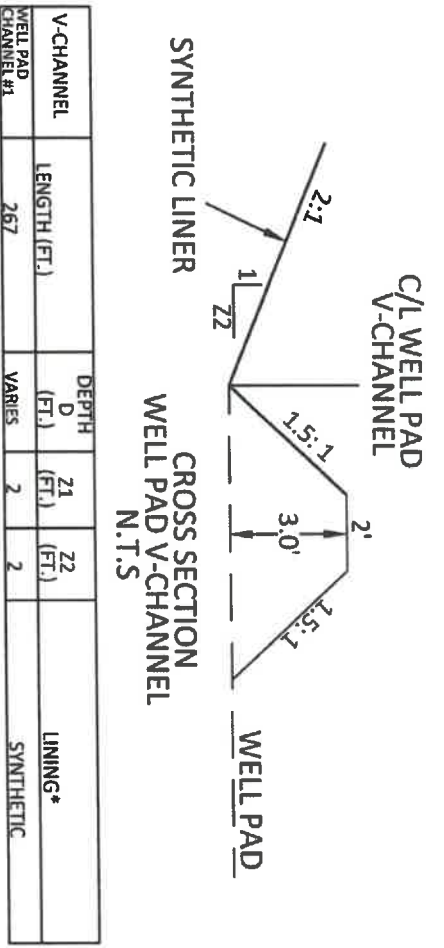
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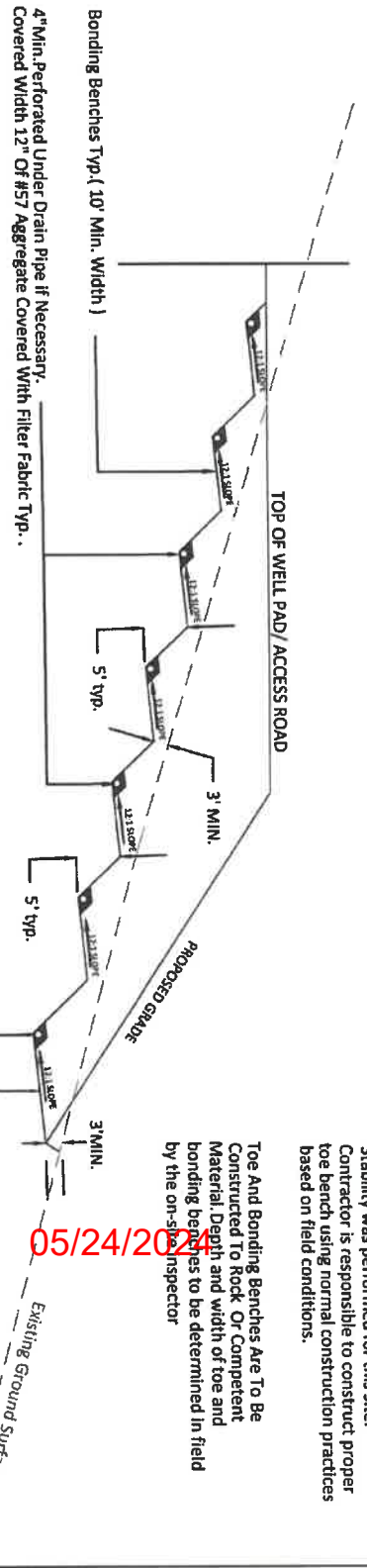
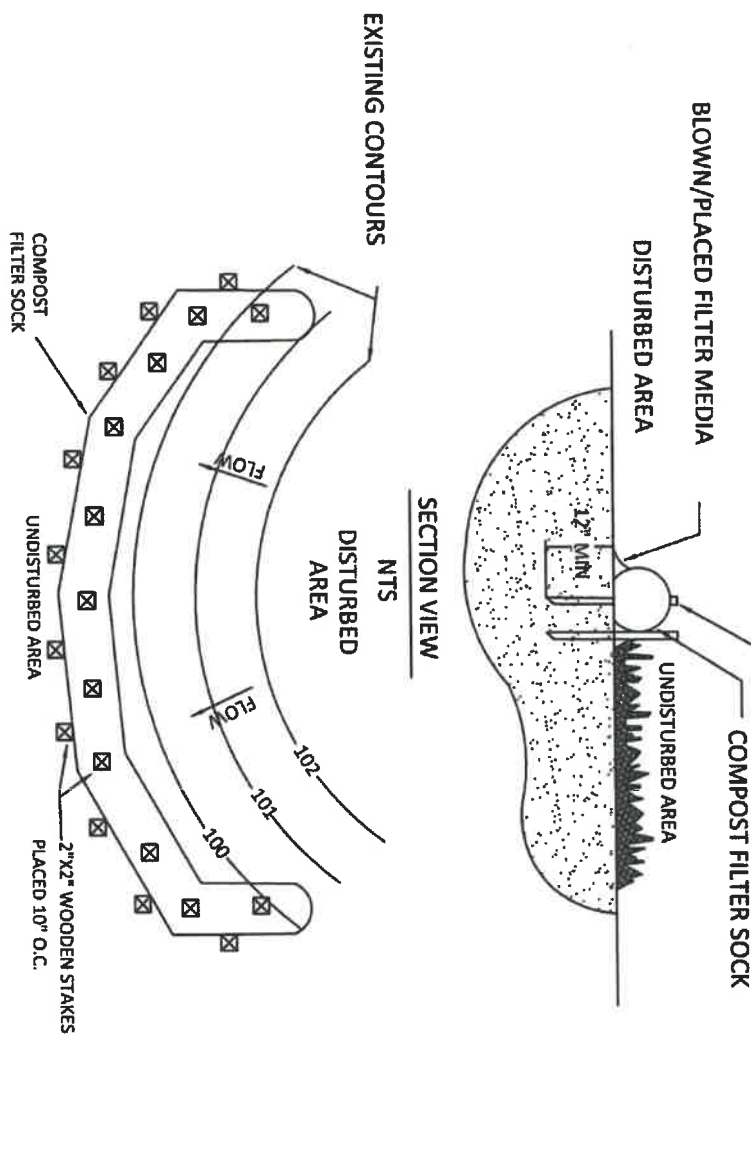
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BENNETT WELLS PAD
SITE
UNION DISTRICT,
HARRISON COUNTY,
WV





COMPOST FILTER SOCK

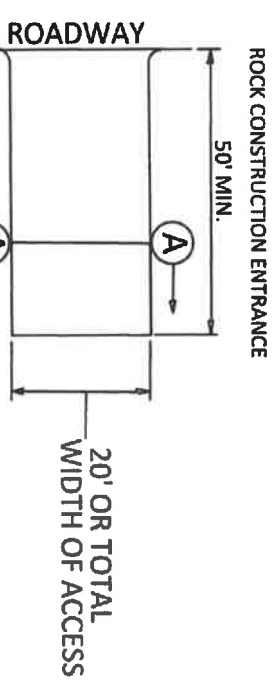
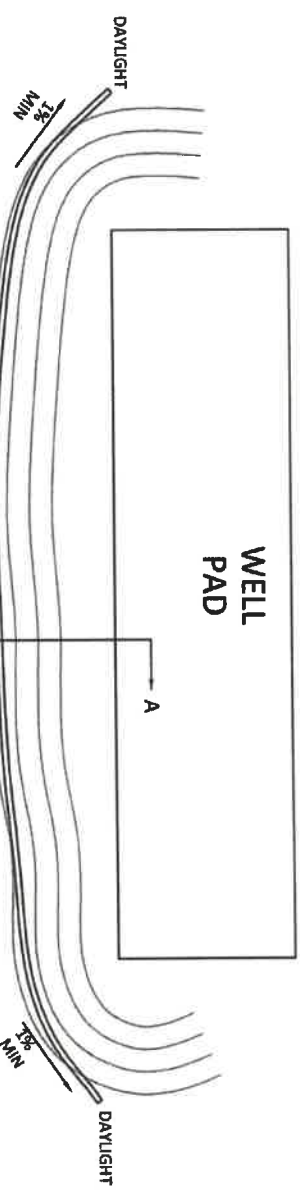


NOTE: No Geotechnical Analysis or Slope Stability was performed for this site. Contractor is responsible to construct proper toe bench using normal construction practices based on field conditions.

The And Bonding Benches Are To Be Constructed To Rock Or Competent Material Depth and width of toe and bonding benches to be determined in field by the on-site inspector

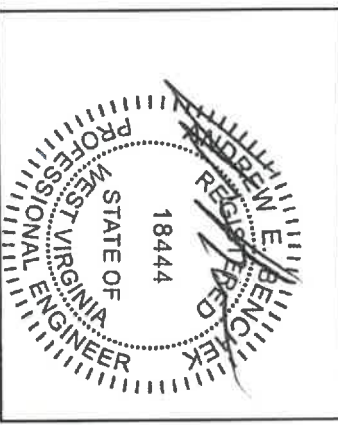
05/24/2012

WELL PAD FILL SLOPES (PLAN VIEW)



Compost shall meet the following standards:

Organic Matter Content	80%-100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5-8.0
Moisture Content	35% - 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS Maximum



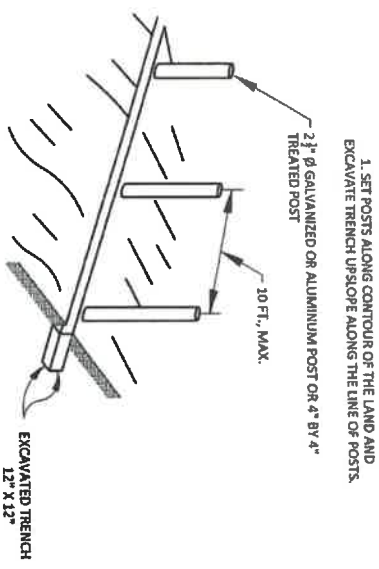
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UNION DISTRICT, HARRISON COUNTY, WV

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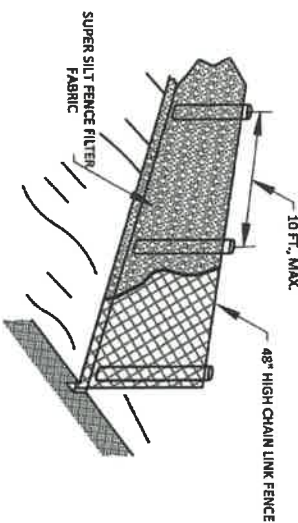
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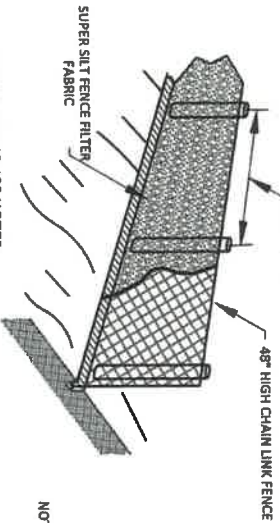
SUPER SILT FENCE



1. SET POSTS ALONG CONTOUR OF THE LAND AND EXCAVATE TRENCH UPSLOPE ALONG THE LINE OF POSTS. 2 1/2" Ø GALVANIZED OR ALUMINUM POST OR 4" BY 4" TREATED POST. 10 FT., MAX. EXCAVATED TRENCH 12" X 12"



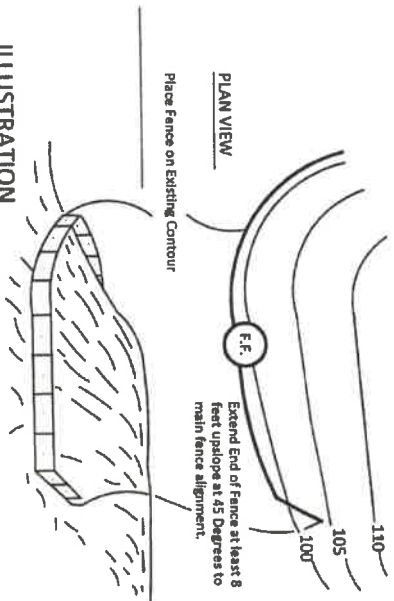
2. ATTACH THE CHAIN LINK FENCE AND FILTER FABRIC TO THE FENCE POSTS AND EXTEND THEM 12", MIN., INTO THE DITCH. 10 FT., MAX. 48" HIGH CHAIN LINK FENCE SUPER SILT FENCE FILTER FABRIC



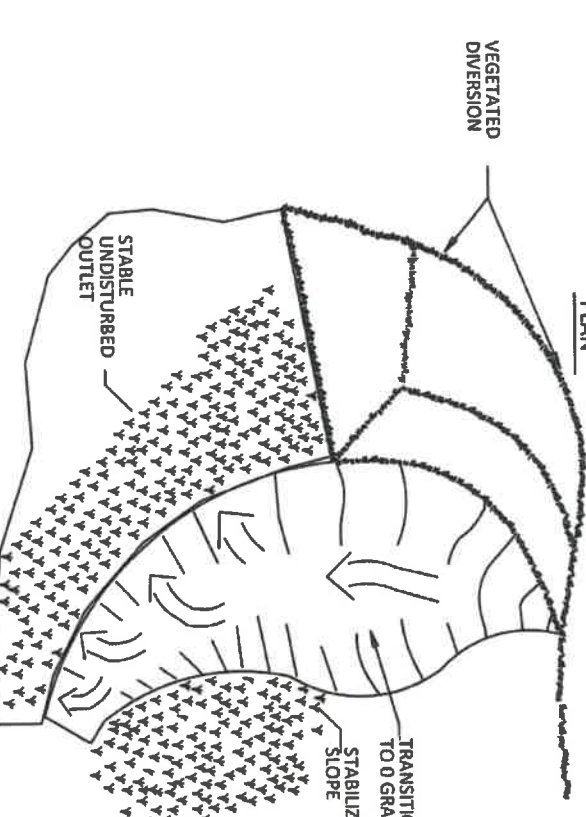
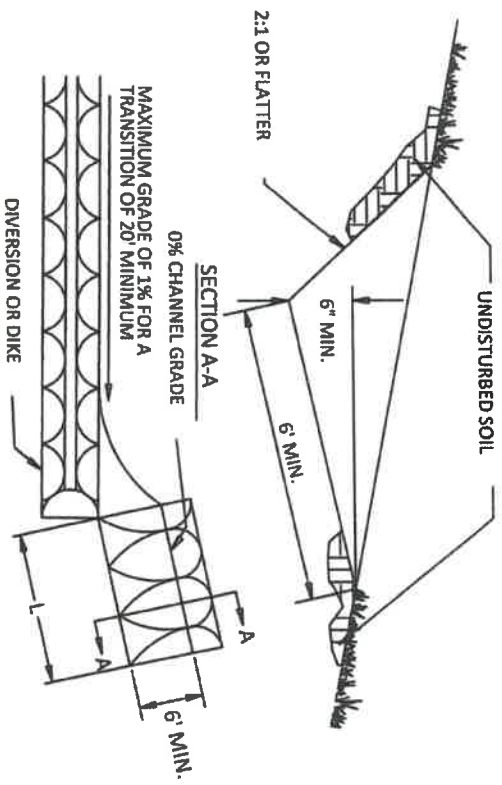
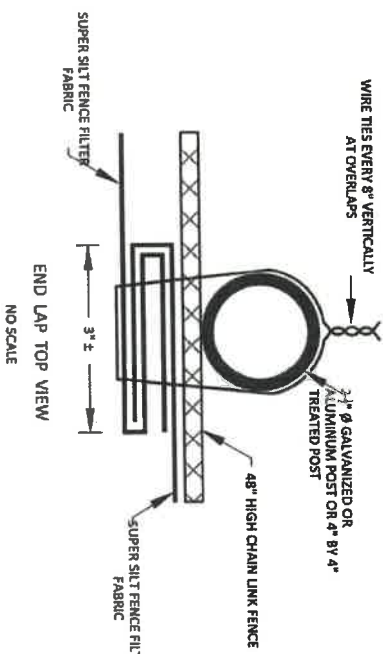
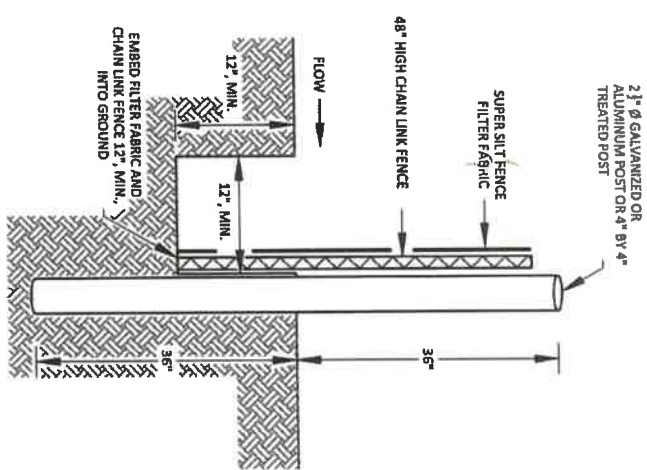
3. BACKFILL AND COMPACT THE TRENCH WITH EXCAVATED SOILS. 10 FT., MAX. 48" HIGH CHAIN LINK FENCE SUPER SILT FENCE FILTER FABRIC NOT TO SCALE

- SUPER SILT FENCE NOTES:**
1. SUPER SILT FENCE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 608 OF THE WOOD SPECIFICATIONS. CHAIN LINK FENCE SHALL BE FASTENED TO THE POSTS WITH WIRE TIES OR STAPLES. POSTS NEED NOT BE SET IN CONCRETE.
 2. THE FILTER FABRIC SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH TIES EVERY 24" AT THE TOP AND MID SECTION.
 3. FABRIC AND FENCE SHALL BE EMBEDDED 12" MINIMUM INTO THE GROUND.
 4. FABRIC AND FENCE SHALL BE FASTENED TO THE CHAIN LINK FENCE WITH WIRE TIES OR STAPLES.
 5. A 6" MINIMUM OVERLAP SHALL BE PROVIDED WHERE TWO SECTIONS OF FABRIC MEET. THE OVERLAP OF FABRIC SHALL BE FOLDED TOGETHER AND ATTACHED TO THE CHAIN LINK FENCE.
 6. 4" BY 4" PRESSURE TREATED POSTS MAY BE SUBSTITUTED FOR METAL FENCE POSTS WITH THE APPROVAL OF THE ENGINEER.
 7. 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.

SILT FENCE ALIGNMENT

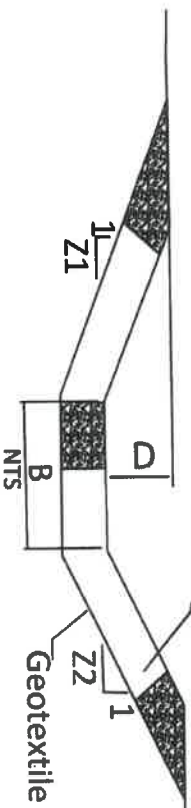


ILLUSTRATION



ISOMETRIC VIEW - (Not to Scale)
EARTHEN LEVEL SPREADER

Discharge Channel



CHANNEL DISCHARGE CHANNEL #1	LENGTH (FT.)	BOTTOM WIDTH (FT.)	DEPTH (FT.)	Z1 (FT.)	Z2 (FT.)	LINING*
131		2	2	2	2	18" THICK R-5 RIPRAP

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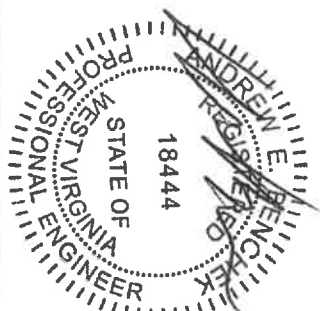
DETAIL SHEET

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3.5 Maintenance and Inspection Procedures

Until the site is stabilized, all erosion and sediment control BMP's must be maintained properly. All preventative and corrective maintenance work, including clean-out, repair, replacement, regrading, re-seeding, re-mulching and re-netting must be performed immediately. If erosion and sedimentation control BMP's fail to perform as expected, replacement BMP's, or modifications to those installed will be requisite. The following inspection and maintenance practices will be used to maintain erosion and sediment controls on site during activities.

All erosion and sediment control measures will be in place and inspected at the end of the workday. Erosion and sediment control measures will also be inspected after each storm event. The contractor shall repair any deficiencies within 24 hours.

All maintenance and inspection of sediment control facilities shall conform to DEP rules and regulations.

Sediment must be removed when it accumulates 1/2 the above ground height of the filter fabric fence/filter sock. Repair all undercutting of erosion of the toe anchor immediately with compacted backfill materials. Adhere to the manufacturer's recommendations for replacing filter fabric fence due to weathering.

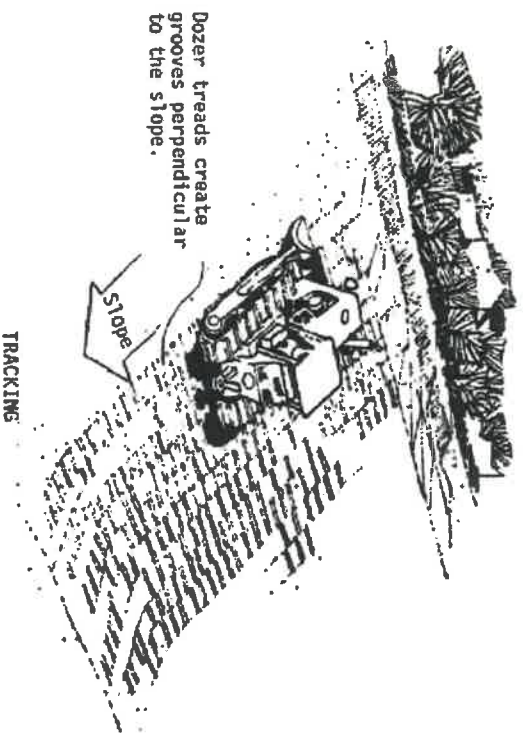
Re-vegetated areas shall be inspected for bare spots, washouts, and healthy growth during the construction. Identified bare spots and wash outs shall be repaired immediately.

Rock construction entrance thickness shall be maintained to the specified dimensions by adding rock. A stockpile of material will be maintained on site for this purpose.

Inlets and storm sewer systems shall be protected from sediment during construction. Inlets shall be inspected after each storm event and cleaned anytime there is evidence that the system is not working.

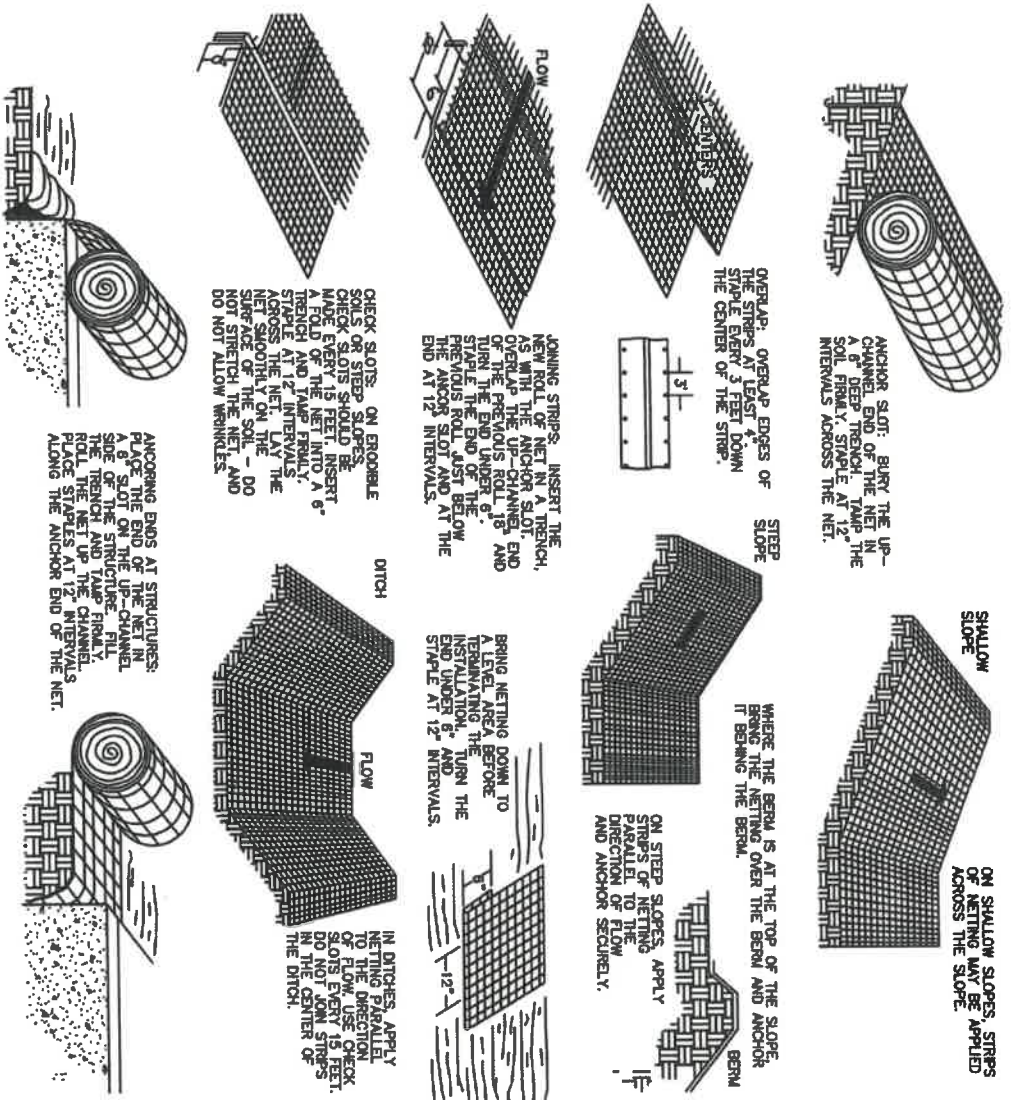
Sediment removed from the fences, and any other control device shall be mixed with the other soil on the construction site and stabilized by seeding and mulching.

All sediment control measure shall remain in place until the disturbed areas are stabilized and the vegetative ground cover has achieved a uniform 70% growth. Any area not achieving a 70% vegetative cover shall be re-seeded and mulched within 24 hours of detection.



Dozer treads create grooves perpendicular to the slope.

EROSION CONTROL BLANKETING



NOTES:
 1. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL CONSTRUCTED OR DISTURBED SLOPES 3:1 OR GREATER
 2. STAPLE PATTERN PER MANUFACTURERS SPECIFICATION

SEEDING CHART

TEMPORARY SEED CHART			
PLANT NAME	APPLICATION RATE (lb/acre)	LIMING RATE (T./acre)	MULCHING RATE (T./acre)
ANNUAL RYEGRASS	40	2	2.5
PERMANENT SEED CHART			
PLANT NAME	APPLICATION RATE (lb/acre)	LIMING RATE (T./acre)	MULCHING RATE (T./acre)
FOX TAIL / GRASSY	40		
PLANT NAME	30	3	2.5
PLANT NAME	20		

*OR AS RECOMMENDED BY A LOCAL RECOGNIZED SEED SUPPLIER APPROVED BY THE OWNER'S REPRESENTATIVE

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DETAIL SHEET

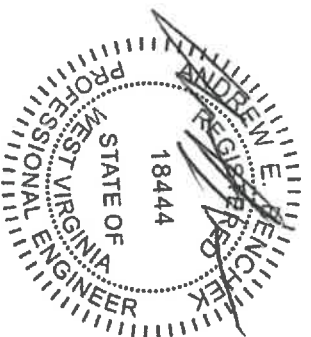
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DATE: 7/2012

BENNETT WELL PAD
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 WV



FRAC PIT REPORT

TOP OF DAM ELEVATION - 1247.6'
 BOTTOM OF DAM ELEVATION - 1228.6'
 CUT AND FILL SLOPE RATIO - 2:1
 INTERIOR SLOPE SLOPE RATIO - 2:1
 TOTAL CUT - 33,600 C.Y.
 TOTAL FILL - 28,400 C.Y.
 TOPSOIL - 5,200 C.Y.

FRAC PIT STAGE STORAGE TABLE

ELEVATION (FEET)	AREA (SQ. FT.)	AVERAGE AREA (SQ. FT.)	STORAGE VOLUME		
			ELEVATION CHANGE (FEET)	TOTAL (CU. FT.)	GALLONS
1228.6	0	9,967	1	0	0
1229.6	19,733	20,452	1	12,239	91,556
1230.6	21,170	21,780	1	32,743	244,936
1231.6	22,390	23,000	1	54,542	408,005
1232.6	23,610	24,242	1	77,558	580,174
1233.6	24,873	25,505	1	101,809	761,584
1234.6	26,136	26,790	1	127,320	952,421
1235.6	27,443	28,097	1	154,117	1,152,874
1236.6	28,750	29,425	1	182,225	1,363,134
1237.6	30,100	30,797	1	211,668	1,583,384
1238.6	31,494	32,419	1	242,472	1,813,845
1239.6	32,888	33,607	1	274,662	2,054,613
1240.6	34,325	35,044	1	308,263	2,305,967
1241.6	35,763	36,504	1	343,300	2,569,065
1242.6	37,244	37,985	1	379,800	2,841,098
1243.6	38,725	39,487	1	417,785	3,125,251
1244.6	40,249	41,077	1	457,283	3,420,713
1245.6	41,905	42,863	1	498,348	3,727,903
1246.6	43,821	44,366	1	541,175	4,048,267
1247.6	44,910		1	582,587	4,358,054
					103,763

ACCESS ROAD A

LENGTH - 1349'
 CUT - 9,800 C.Y.
 FILL - 6,800 C.Y.
 TOPSOIL - 3,000 C.Y.

ACCESS ROAD B

LENGTH - 181'
 CUT - 1,500 C.Y.
 FILL - 800 C.Y.
 TOPSOIL - 700 C.Y.

WELL PAD REPORT

PAD ELEVATION - 1234.71
 CUT AND FILL SLOPE RATIO - 2:1
 CUT - 16,200 C.Y.
 FILL - 11,200 C.Y.
 TOPSOIL - 5,000 C.Y.

MATERIAL	QUANTITY
GEO-TEXTILE MATERIAL	5,733 sq. ft.
ORANGE SAFETY FENCE	905'
6" CYCLONE FENCE	838'
EROSION CONTROL MATTING	5 ACRES
18" C.M.P.	300'
TOE BENCH/KEY	2,291'

STAKING GUIDE

	Yellow Ribbons used to indicate Top of Case (TC) Call to be determined at time of submittal. Slope determined by site design.
	Yellow and Orange Ribbons used to indicate Center at Top of Final Paved/Fin.
	Orange Ribbons used to indicate Top of Fills (TF) Fill to be determined at time of submittal. Slope determined by site design.
	Pink Ribbons used to indicate Survey Control Location.
	Pink & Black Stripes Ribbons used to indicate Vertical Curve (VC) at Pad/Proposed center or edge.
	Pink & Black Stripes Ribbons used to indicate Vertical Fill (VF) at Pad/Proposed center or edge.
	Blue & White Stripes Ribbons used to indicate Vertical Fill to be determined at time of submittal.
	Blue & White Stripes Ribbons used to indicate existing land/obstruction limits.
	Orange & Black Stripes Ribbons used to indicate Vertical Curve (VC) at Centerline or edge of access road.
	Orange & Black Stripes Ribbons used to indicate Vertical Fill (VF) at centerline or edge of access road.
	Pink & White Stripes Ribbons used to indicate Bridge and Sediment Control Structures.
	5th Fence (SF) Redefined Filter Fence (RFF) Slope Slope (SSP) Filter Stock (FS).
	Orange & White Stripes Ribbons used to indicate Topsoil Stockpile Location.
	Blue Ribbons used to indicate Centerline (CL) which Blue Ribbons used to indicate Bottom (BT) of Sediment Traps.

SUPER SILT FENCE

SSF #	Length	SSF #	Length	Filter Sock	Filter Sock Length	Filter Sock	Filter Sock Length	Filter Sock	Filter Sock Length	TOTAL
SSF #1	28'	SSF #14	52'	CFS #1	39'	CFS #1	42'	CFS #1	42'	78'
SSF #2	28'	SSF #15	121'	CFS #2	111'	CFS #2	37'	CFS #15	85'	85'
SSF #3	25'	SSF #16	81'	CFS #3	52'	CFS #3	223'	CFS #16	65'	65'
SSF #4	205'	SSF #17	95'	CFS #4	56'	CFS #4	171'	CFS #17	32'	32'
SSF #5	136'	SSF #18	36'	CFS #5	43'	CFS #5	292'	CFS #18	44'	44'
SSF #6	131'	SSF #19	34'	CFS #6	36'	CFS #6	180'	CFS #19	41'	41'
SSF #7	113'	SSF #20	67'	CFS #7	70'	CFS #7	75'	CFS #20	47'	47'
SSF #8	64'	SSF #21	76'	CFS #8	46'	CFS #8	78'			
SSF #9	210'	SSF #22	20'			CFS #9	41'			
SSF #10	116'	SSF #23	32'			CFS #10	46'			
SSF #11	34'	SSF #24	47'			CFS #11	68'			
SSF #12	67'	SSF #25	48'			CFS #12	51'			
SSF #13	38'					CFS #13	41'			
TOTAL			1,904'	TOTAL	453'	TOTAL	367'	TOTAL		1,701'

VOLUME REPORT / DETAIL

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 BOORD, BENCHEK AND ASSOC., INC.
 FOR: ANTERO RESOURCES

BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
 and Mining Services

Southpoints, PA 15317 Phone: 724-746-1055

DATE: 7/2012

BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV





Industrial-Isaacs Creek Road

WV NORTH NAD 83
LAT: 39° 11' 24.9"
LON: 80° 28' 34.9"

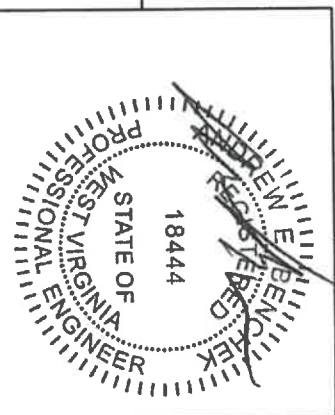
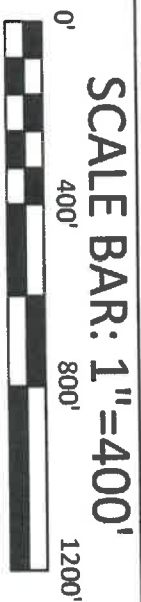


EVACUATION ROUTE

EMERGENCY PULL OFF /
GATHERING AREA
WV NORTH NAD 83
LAT: 39° 11' 59.7"
LON: 80° 28' 23.96"

SITE PAD

05/24/2024



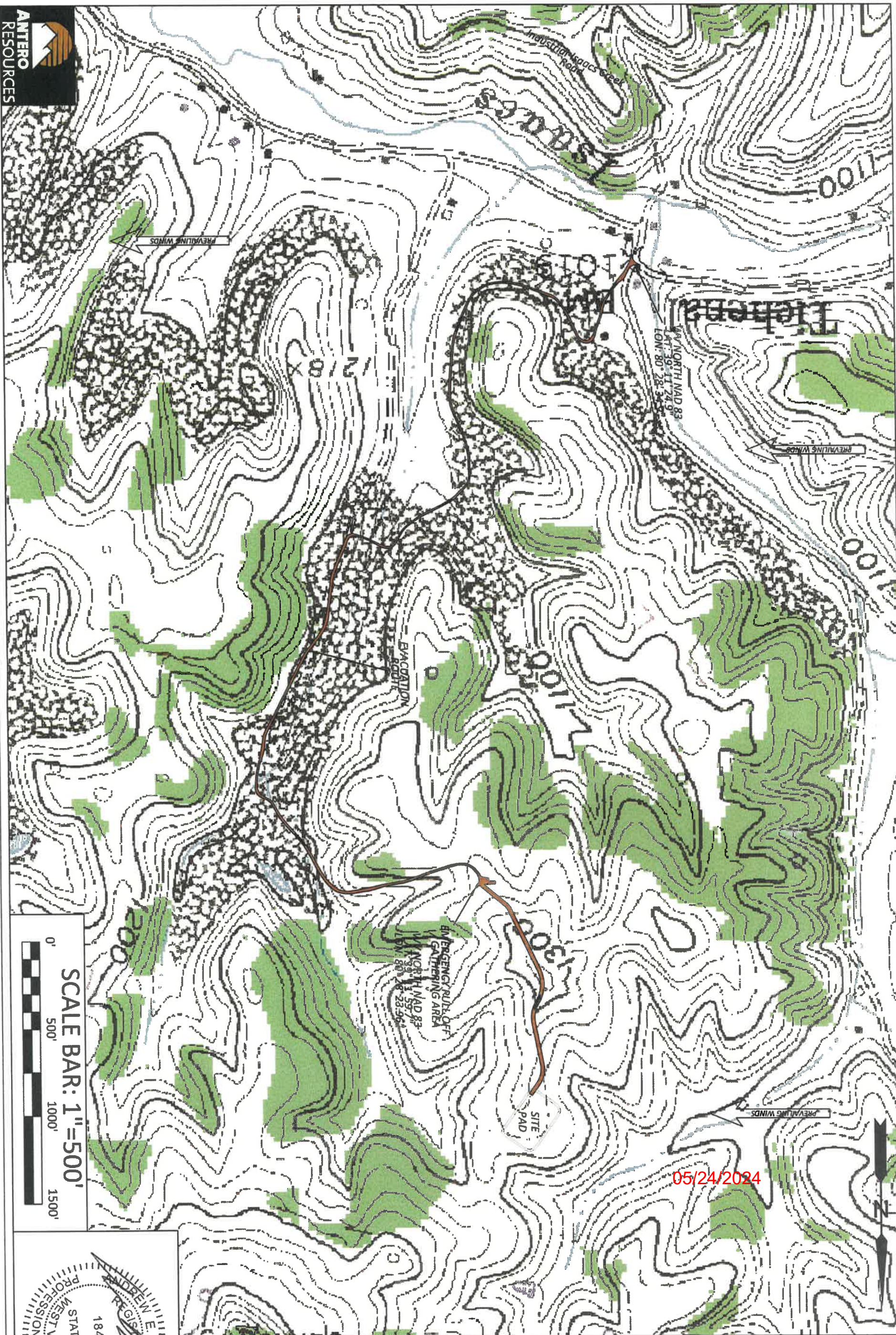
UNION DISTRICT,
HARRISON COUNTY,
WV
BENNETT WELL PAD
SITE
DATE: 7/2012

EVACUATION ROUTE / PREVAILING WINDS

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W/ NORTH NAD 83
AT 39° 11' 24.9"
LON: 80° 28' 35.5"

EVACUATION ROUTE

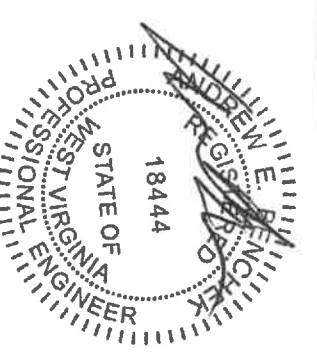
W/ NORTH NAD 83
AT 38° 11' 57.7"
LON: 80° 28' 23.56"

SITE PAD

05/24/2024



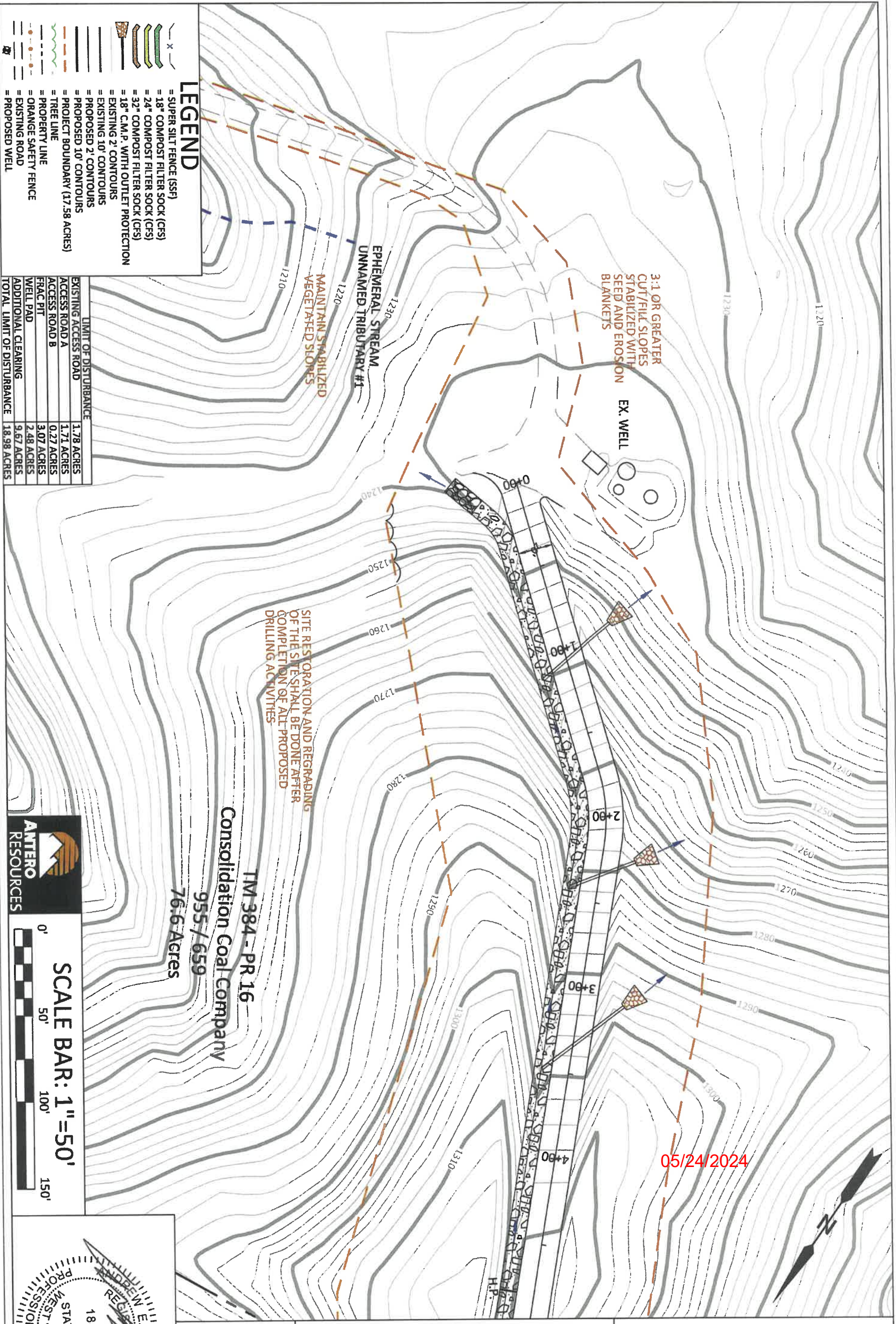
SCALE BAR: 1"=500'



DATE: 7/2012
BENNETT WELL PAD
SITE
UNION DISTRICT,
HARRISON COUNTY,
WV

**EVACUATION ROUTE /
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Engineering, Surveying, Construction,
and Mining Services
Southpointe, PA 15317 Phone: 724-746-1055



LEGEND

- = SUPER SILT FENCE (SSF)
- = 18" COMPOST FILTER SOCK (CFS)
- = 24" COMPOST FILTER SOCK (CFS)
- = 32" COMPOST FILTER SOCK (CFS)
- = 18" C.M.P. WITH OUTLET PROTECTION
- = EXISTING 10' CONTOURS
- = PROPOSED 10' CONTOURS
- = EXISTING 2' CONTOURS
- = PROPOSED 2' CONTOURS
- = PROJECT BOUNDARY (17.58 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ROAD
- = PROPOSED WELL

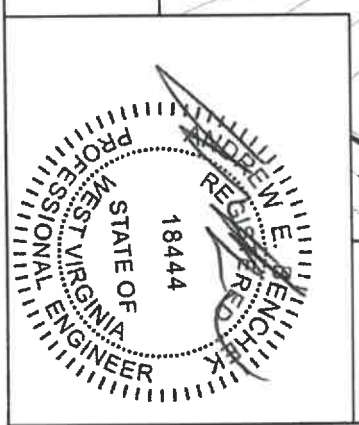
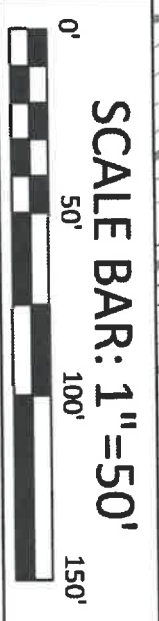
LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

SITE RESTORATION AND REGRADING OF THE SITE SHALL BE DONE AFTER COMPLETION OF ALL PROPOSED DRILLING ACTIVITIES.

TM-384 - PR 16
 Consolidation Coal Company
 955 / 659
 76.6 Acres

05/24/2024



DATE: 7/2012
 BENNETT WELL PAD SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV

RECLAMATION PLAN

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 FOR: ANTERO RESOURCES

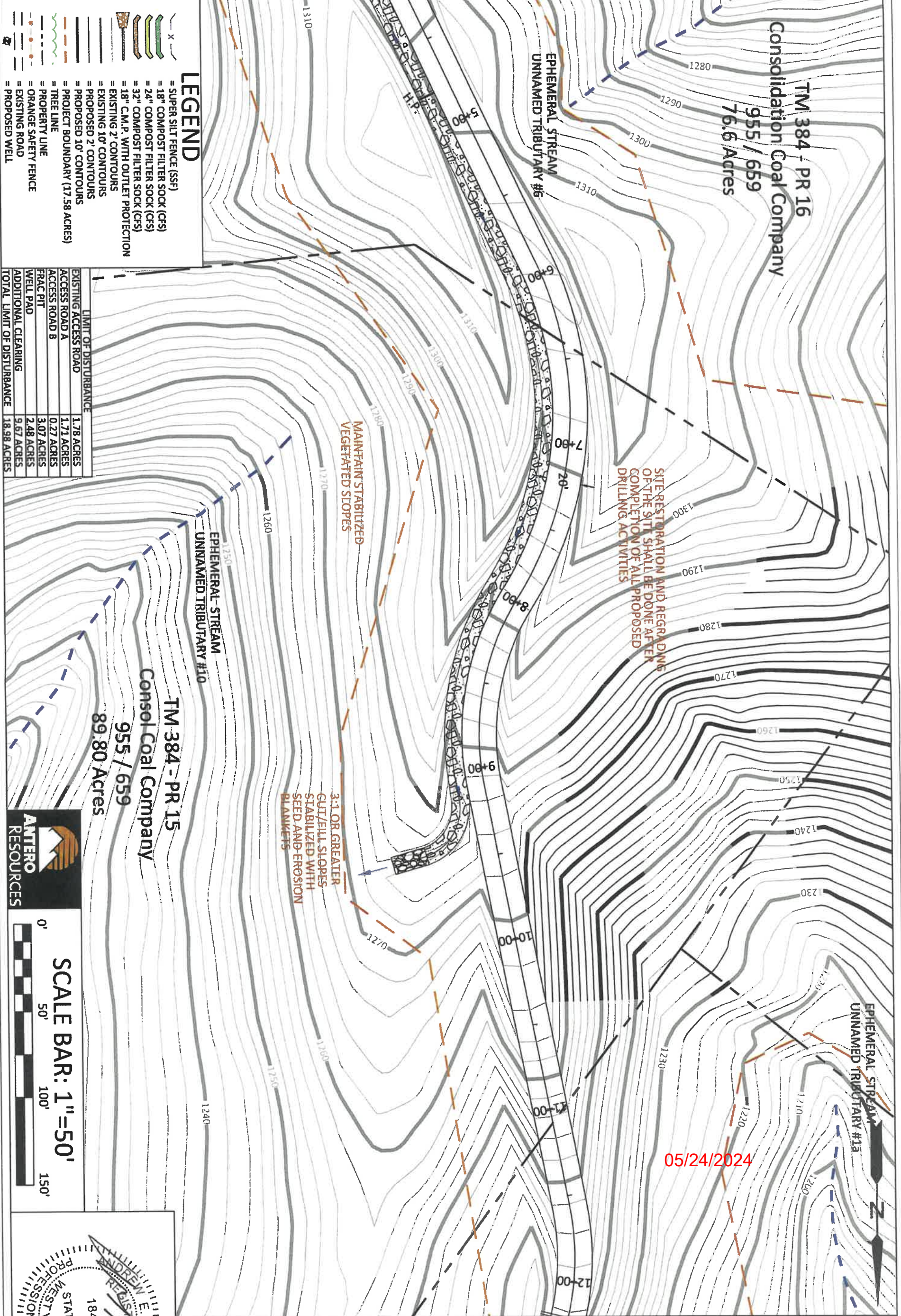
BOORD, BENCHEK and ASSOC., INC.
 Engineering, Surveying, Construction,
 and Mining Services

Southpoints, PA 15317 Phone: 724-746-1055

TM 384 - PR 16
 Consolidation Coal Company
 955 / 659
 76.6 Acres

TM 384 - PR 15
 Consol Coal Company
 955 / 659
 89.80 Acres

05/24/2024

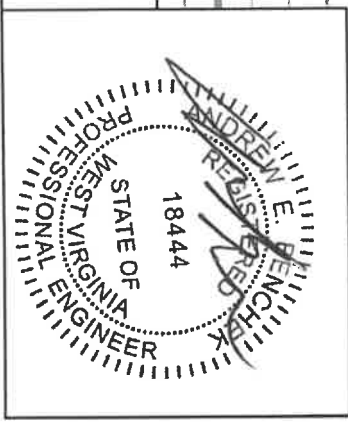


LEGEND

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- = PROJECT BOUNDARY (17.58 ACRES)
- = TREE LINE
- = PROPERTY LINE
- = ORANGE SAFETY FENCE
- = EXISTING ROAD
- = PROPOSED WELL

LIMIT OF DISTURBANCE

EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
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TOTAL LIMIT OF DISTURBANCE	18.98 ACRES



RECLAMATION PLAN

UNION DISTRICT,
 HARRISON COUNTY,
 WV

BENNETT WELL PAD
 SITE

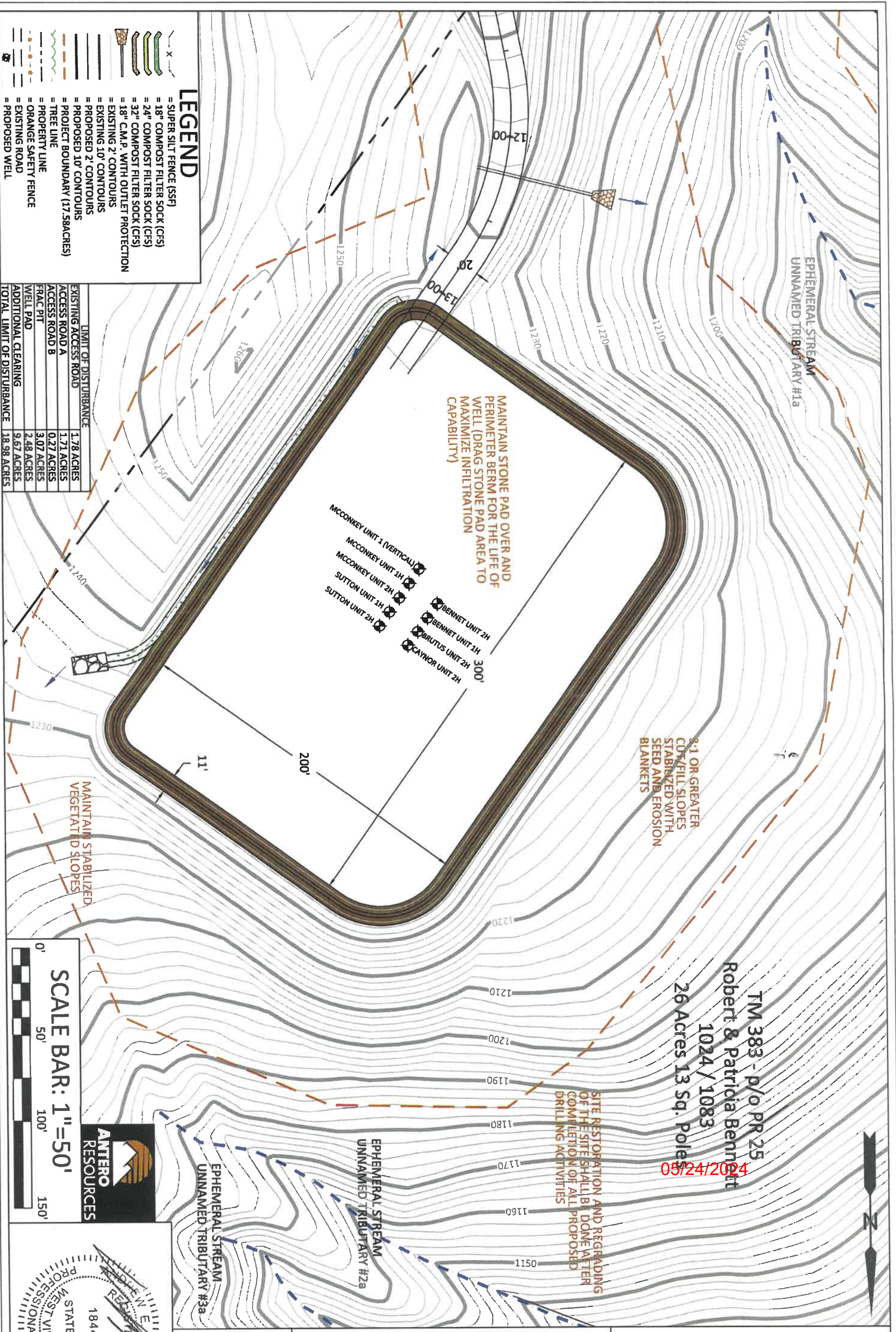
DATE: 7/2012

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SHEET #48

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- LEGEND**
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 - = PROPOSED 10' CONTOURS
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 - = TREE LINE
 - = PROPERTY LINE
 - = ORANGE SAFETY FENCE
 - = EXISTING ROAD
 - = PROPOSED WELL

LIMIT OF DISTURBANCE	
EXISTING ACCESS ROAD	1.78 ACRES
ACCESS ROAD A	1.71 ACRES
ACCESS ROAD B	0.27 ACRES
FRAC PIT	3.07 ACRES
WELL PAD	2.48 ACRES
ADDITIONAL CLEARING	9.67 ACRES
TOTAL LIMIT OF DISTURBANCE	18.98 ACRES

MAINTAIN STONE PAD OVER AND PERIMETER BERM FOR THE LIFE OF WELL (DRAG STONE PAD AREA TO MAXIMIZE INFILTRATION CAPABILITY)

3:1 OR GREATER CD-FILL SLOPES STABILIZED WITH SEED AND EROSION BLANKETS

MAINTAIN STABILIZED VEGETATED SLOPES

SITE RESTORATION AND REGRADING OF THE SITE SHALL BE DONE AFTER COMPLETION OF ALL PROPOSED DRILLING ACTIVITIES

TM 383 - p/o PR 25
 Robert & Patricia Bennett
 1024 / 1083
 26 Acres 13 Sq. Pole
 05/24/2024



RECLAMATION PLAN

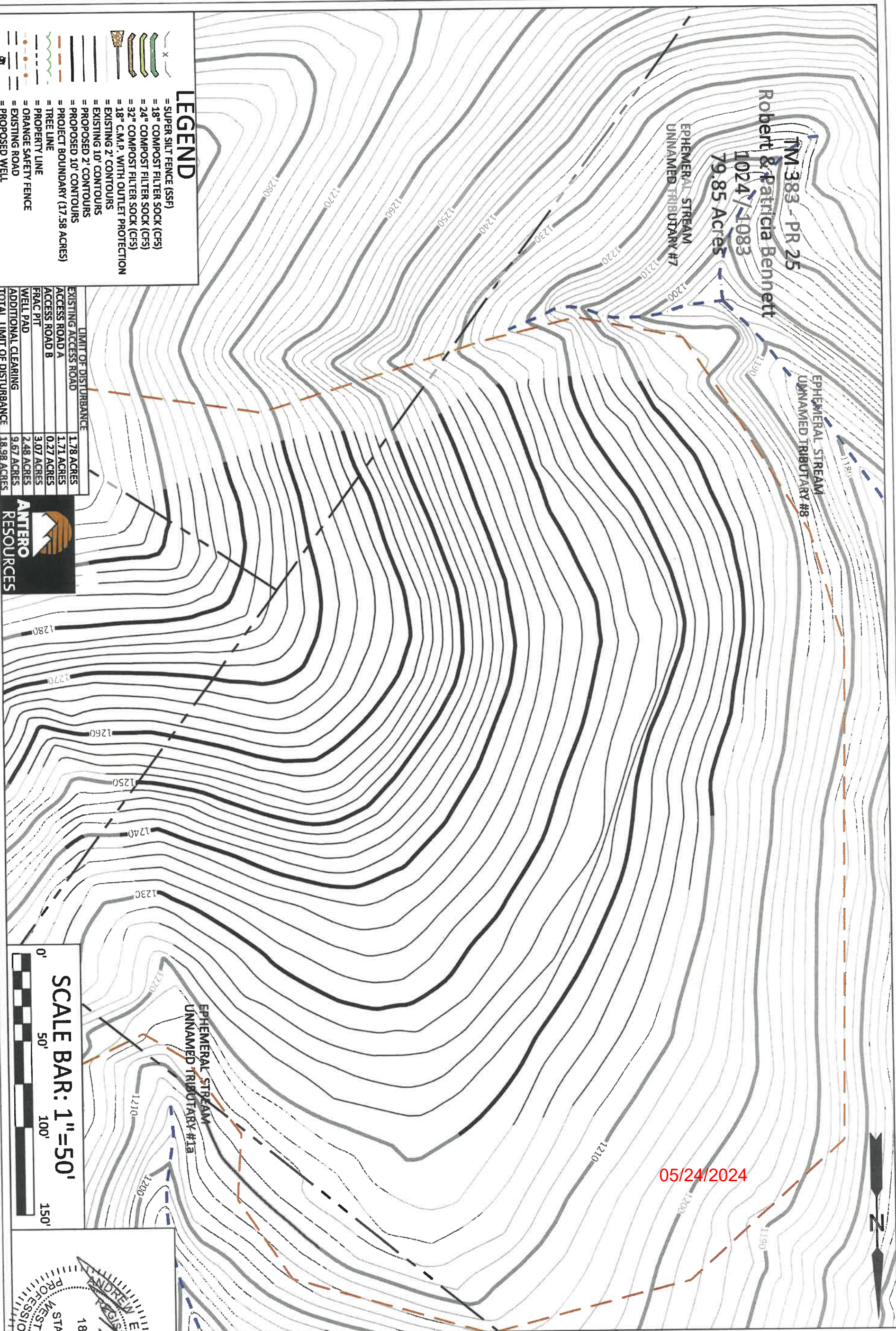
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Southpointe, PA 15317 Phone: 724-746-1055

DATE: 7/2012

BENNETT WELL PAD
 SITE
 UNION DISTRICT,
 HARRISON COUNTY,
 WV



Robert & Patricia Bennett
 1024/1083
 79.85 Acres

EPHEMERAL STREAM
 UNNAMED TRIBUTARY #7

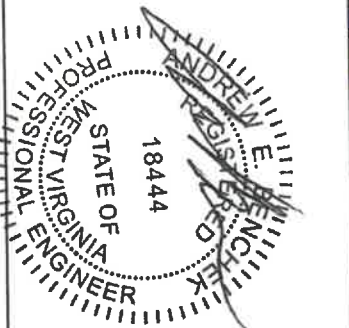
EPHEMERAL STREAM
 UNNAMED TRIBUTARY #8

EPHEMERAL STREAM
 UNNAMED TRIBUTARY #11A

05/24/2024

- LEGEND**
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DATE: 7/2012
 BENNETT WELL PAD
 SITE
 UNION DISTRICT,
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 WV

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