

west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary www.dep.wv.gov

Monday, July 10, 2023 PERMIT MODIFICATION APPROVAL Horizontal 6A / New Drill

ANTERO RESOURCES CORPORATION 1615 WYNKOOP STREET

DENVER, CO 80202

Re: Permit Modification Approval for ECKLEBERRY 1H

47-103-03492-00-00

Slide repair, changed LOD

ANTERO RESOURCES CORPORATION

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.

If there are any questions, please feel free to contact me at (304) 926-0450.

James A. Martin

Chief

Operator's Well Number: ECKLEBERRY 1H

Farm Name: JAMES ALLEN SELL

U.S. WELL NUMBER: 47-103-03492-00-00

Horizontal 6A New Drill
Date Modification Issued: 7/10/2023

LOCATION COORDINATES:
ACCESS ROAD "A" ENTRANCE
LATITUDE: 39.554902 LONGITUDE: -80.730989 (NAD 83)
LATITUDE: 39.554822 LONGITUDE: -80.73108 (NAD 27) N 4378392.15 E 523111.11 (UTM ZONE 17 METERS)

ACCES ROAD "B" ENTRANCE
LATITUDE: 39.557532 LONGITUDE: -80.734287 (NAD 83)
LATITUDE: 39.557452 LONGITUDE: -80.734465 (NAD 27)
MAGGRESS.19 E 522826.91 (UTM ZONE 17 METERS)

CENTER OF TANK
LATITUDE: 39.556180 LONGITUDE: -80.730417 (NAD 83)
LATITUDE: 39.556080 LONGITUDE: -80.730596 (NAD 27)
N 4378531.91 E 523159.83 (UTM ZONE 17 METERS)

LATITUDE: 39.556880 LONGITUDE: -80.731075 (NAD 83)
LATITUDE: 39.556780 LONGITUDE: -80.731254 (NAD 27) 4378611.65 E 523103.06 (UTM ZONE 17 METERS)

APPROVED WVDEP OOG Modification

FURBEE WELL PAD & WATER CONTAINMENT PAD AS-BUILT EROSION & SEDIMENT CONTROL IMPROVEMENT PLANS

GREEN DISTRICT. WETZEL COUNTY, WV LITTLE MUSRINGUM-MIDDLE ISLAND WATERSHED

PORTER FALLS & PINE GROVE USGS 7.5 QUAD MAP(S)

B' ENTRANCE

'A' ENTRANCE

GENERAL DESCRIPTION:
THE SLIDE REPAIR IS BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS.

MISS UTILITY STATEMENT:
ANTERO RESOURCES CORPORATION WILL NOTIFY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF
UTILITIES PRIOR TO THIS PROJECT DESIGN. IN ADDITION, MISS UTILITY WILL BE CONTACTED BY THE
CONTRACTOR PRIOR TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ANTERO RESOURCES CORPORATION HAS OBTAINED AN ENCROACHMENT PERMIT (FORM MM-109) FROM THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS, PRIOR TO COMMENCEMENT OF

FLOODPLAIN NOTES:

THE SITE IS LOCATED WITHIN FEMA FLOOD ZONE "X" PER FEMA FLOOD MAP #54103C0190C.

GEOTECHNICAL NOTES:
GEOTECHNICAL CONSULTATION WILL TAKE PLACE DURING SLIP REPAIR CONSTRUCTION AS NECESSARY.

ENVIRONMENTAL NOTES:
STREAM AND WETLAND DELINEATIONS WERE PERFORMED IN SEPTEMBER, 2019 BY ENVIRONMENTAL
SOLUTIONS & INNOVATIONS, INC. TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST SOLUTIONS & INMOVATIONS, INC. TO REVIEW THE SITE FOR WATERS AND WEILANDS THAT ARE MOST LIKELY WITHIN THE REGULATORY PURVIEW OF THE U.S. ARMY CORPS OF ENGINEERS (USACE) AND/OR THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE SEPTEMBER 25, 2019 FIGURE 2 MAP WAS PREPARED BY ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC. AND SUMMARIZES THE RESULTS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, REPRESENT A JURISDICTIONAL DETERMINATION OF THE LANDWARD LIMITS OF WATERS AND WETLANDS WHICH MAY BE REGULATED BY THE USACE OR THE WVDEP.

PROJECT CONTACTS:

OPERATOR: ANTERO RESOURCES CORPORATION 535 WHITE OAKS BLVD. BRIDGEPORT, WY 28330 PHONE: (304) 842-4100 FAX: (304) 842-4102

ELI WAGONER — ENVIRONMENTAL ENGINEER & REGULATORY MANAGER

OFFICE: (304) 842-4068 CELL: (304) 476-9770

JON McEVERS - SVP OPERATIONS OFFICE: (303) 357-8799

AARON KUNZLER - CONSTRUCTION MANAGER CELL: (304) 842-4191

ROBERT EDDY - UTILITY COORDINATOR

MANAGER/ENGINEER OFFICE: (888) 662-4185 CELL: (540) 686-6747

ENVIRONMENTAL:
ENVIRONMENTAL SOLUTIONS & INNOVATIONS, INC.
VALERIE CLARKSTON - ECOLOGIST OFFICE: (304) 760-5803 CELL: (513) 382-09257

GEOTECHNICAL:

- ALL BP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AFTER EACH RUNOFF EVENT IN EXCESS OF 0.5" AND ON A BIWEEKLY BASIS.
- THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOUN AS POSSIBLE AFTER COMPLETION. ESTABLISHMENT OF FINAL STABILIZATION MUST BE INITIATED NO LATER THAN 7 DAYS AFTER REACHING FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL-DISTURBING ACTIVITIES ARE COMPLETED, AND THAT EITHER A PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70% OF GREATER HAS BEEN ESTABLISHED OR THAT THE SURFACE HAS BEEN STABILIZED BY HARD COVER SUCH AS PAVEMENT OR BUILDINGS. IT SHOULD BE NOTED THAT THE 70% REQUIREMENT REFERS TO THE TOTAL AREA VEGETATED AND NOT JUST A PERCENT OF THE SITE.
- ALL PERMANENT SEDIMENT CONTROL MEASURES CAN BE REMOVED AFTER THE SITE IS PERMANENTLY STABILIZED AND APPROVAL IS RECEIVED FROM THE WYDEP.
- 4. ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND
- 5. THE AS-BUILT INFORMATION SHOWN HEREON REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DISTURBED AREA AS OF MAY 24, 2023. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
- THE EXISTING CONTAINMENT BERM AROUND THE WELL PAD SHALL BE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS
- THE EXISTING EGRESSES TO THE WELL PAD SHALL HAVE THE MOUNTABLE BERMS REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL FLUIDS PRIOR TO DRILLING OPERATIONS.

REPRODUCTION NOTE

THESE PLANS WERE CREATED TO BE PLOTTED ON 22"X34" (ANSI D)

THESE PLANS WERE CREATED FOR COLOR PLOTTING AND ANY REPRODUCTIONS IN GRAY SCALE OR COLOR MAY RESULT IN A LOSS OF INFORMATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES.

CELL: (304) 719-5199

DAVID PATSY - LAND AGENT CELL: (304) 476-6090

ENGINEER/SURVEYOR:

NAVITUS ENGINEERING, INC. CYRUS S. KUMP, PE - PROJECT

ROBERT WIRKS - DESIGN MANAGER OFFICE: (304) 842-4100 CELL: (304) 627-7405 PENNSYLVANIA SOIL & ROCK, INC. CHRISTOPHER W. SAMIOS - PROJECT ENGINEER (412) 372-4000 CELL: (412) 589-0662

*- SITE

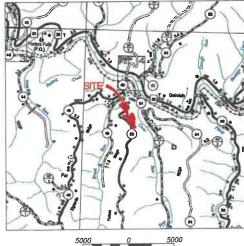
WEST VIRGINIA COUNTY MAP

(NOT TO SCALE)

AS-BUILT CERTIFICATIONS:
THE DRAWINGS, CONSTRUCTION NOTES, AND
REFERENCE DIAGRAMS ATTACHED HERETO HAVE
BEEN PREPARED IN ACCORDANCE WITH THE
WEST VIRGINIA CODE OF STATE RULES, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OU

WVDOH COUNTY ROAD MAP

WELL PAD/ WATER CONTAINMENT PAD



SCALE: 1" = 5000"

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

3 - LECEND
4 - OVERALL PLAN SHEET INDEX
5-6 - ACCESS ROAD, WELL PAD, & WATER CONTAINMENT PAD AS-BUILT PLAN
7 - ACCESS ROAD AS-BUILT PROFILES
8 - WELL PAD, WATER CONTAINMENT PAD & STOCKPILE AS-BUILT SECTIONS
9 - STOCKPILE AREA AS-BUILT SECTIONS
10-12 - CONSTRUCTION DETAILS

FURBEE LIMITS OF DISTI	IRBANCE A	REA(AC)	
Total Site	Permitted	Modification	Tota
Access Road "A"	1.79	0.00	1.79
Access Road "B"	3.15	0.00	3.15
Well Pad & Water Containment Pad	13.86	0.00	13.8
Excess/Topsoil Material Stockpiles	11.29	3.10	14.3
Total Affected Area	30.09	3.10	33.1
Total Wooded Acres Disturbed	0.00	2.61	2.61
Impacts to Antero Resor	urces Corp.	TM 17-1	- 0
Access Road "A"	1.79	0.00	1.79
Access Road "B"	3.11	0.00	3.11
Well Pad & Water Containment Pad	3.64	0.00	3.64
Excess/Topsoil Material Stockpiles	0.57	0.66	1.23
Total Affected Area	9.11	0.66	9.77
Total Wooded Acres Disturbed	0.00	0.46	0.46
Impacts to Antero Resou	rces Corp.	TM 17-12	
Access Road "B"	0.04	0.00	0.04
Well Pad & Water Containment Pad	10.22	0.00	10.2
Excess/Topsoil Material Stockpiles	10.72	2.12	12.8
Total Affected Area	20.98	2.12	23.1
Total Wooded Acres Disturbed	0.00	2.01	2.0
impacts to Donald L. I	Mason TM 1	3-69.1	
Excess/Topsoil Material Stockpiles	0.00	0.32	0.33
Total Affected Area	0.00	0.32	0.3
Total Wooded Acres Disturbed	0.00	0.14	0.1

Wetland and Impact Cause	Fill (SF)	Total impact (SF)	Total Impact
Wetland 05 (Slide)	983	983	0.023
Wetland 024 (Stide)	375	375	0.009

Stream and impact Cause	Permanent Impacts		Total	Temp Impacts		1
	Culvert (Fill (LF)	Inlets/Outlets Structures (LF)	Permanent Impact (LF)	Cofferdam/ E&S Controls (LF)	Distance To	Total Temp Impact (LF)
Stream 09 (Slide)	0	0	0	0	298	298
Stream 10 (Slide)	0	0	0	0	27	27
Stream 11 (Stide)	0	0	0	0	60	60

Permanent Impacts		nent Impacts	Temp. In		npacts	
Stream and Impact Cause	Culvert / Fill (LF)	inlets/Outlets Structures (L.F)	Total Permanent impact (LF)	Cofferdam/ E&S Controls (LF)	Distance To L.O.D. (LF)	Total Temp. Impact (LF)
Ditch 01 (Slide)	0	0	0	0	72	72

	Wall Name:	WW North	NAO 27 Lat & Long	ZONE 17	NAD 33 Lat & Long
- 1			Permi	ed Location	
- 1	Eckleberry	N 387463.73	LAT 39-33-26 2103	N 4378664 95	LAT 39-33-26 4990
- 1	UNIT 2H	E 1652791 57	LONG -80-43-53 2884	E 523084.16	LONG -80-43-52,6555
- 1	Ecksberry	N 387449.25	LAT 39-33-26 0677	N 4378680.56	LAT 39-33-26.3564
- 1	UNIT 1H	E 1652795.48	LONG -80-43-53.2460	E 523085.43	LONG -80-43-52.8031
- 1	Reader	N 387434.77	LAT 39-33-25.9251	N 4378656 17	LAT 39-33-26.2138
- 1	UNIY 2H	E 1652799.39	LONG -80-43-53,1935	E 523086 69	LONG -80-43-52.5508
- 1	Reader	N 387420.28	LAT 39-33-25 7825	N 4378651.78	LAT 39-33-26.0712
- 1	UNIT 18	E 1652803 30	LONG -80-43-53.1411	E 523087.95	LONG -80-43-52.4982
- 1	Lenny	N 387405.80	LAT 39-33-25,6400	N 4378647.38	LAT 39-33-25.9286
- 11	UNIT 2R	E 1652807 20	LONG -80-43-53.0887	E 523089.22	LONG -80-43-52.4458
- 1	Lenny	N 387391 32	LAT 39-33-25.4974	N 4378642 99	LAT 39-33-25.7860
- 1	UNIT 18	E 1652811.11	LONG -80-43-53.0363	E 523090.48	LONG -80-43-52.3934
- 1	Viewer	N 387226.55	LAT 39-33-23 8812	N 4378593 25	LAT 38-33-24.1699
- 1	UNIT 1H	E 1652894.21	LONG -80-43-51.9485	E 523116.63	LONG -80-43-51.3037
- 1	Viewer	N 387214 84	LAT 39-33-23.7657	N 4378589.70	LAT 39-33-24.0544
- 1	UNIT 2H	E 1652903.46	LONG -80-43-51.8265	E 523119 51	LONG -80-43-51.1836
- 1	Gauss	N 387203.02	LAT 39-33-23 6502	N 4378586.14	LAT 39-33-23.9389
- 11	UNIT 1H	E 1652912.70	LONG -80-43-51.7084	E 523122 39	LONG -80-43-51,0636
- 1	Gauss	N 387191.21	LAT 39-33-23.5347	N 4378582.59	LAT 39-33-23.8234
- 1	LIMIT 2H	E 1652921 94	LONG -80-43-51.5883	E 523125.26	LONG -80-43-50.9435
- 1	Maker	N 387179:39	LAT 39-33-23.4191	N 4378579.04	LAT 39-33-23.7079
	UNIT 1H	E 1652931.18	LONG -80-43-51.4663	E 523128 14	LONG -80-43-50.8235
	Makar	N 387167.56	LAT 39-33-23 3038	N 4378575.49	LAT 39-33-23.5923
	UNIT 2H	E 1652940.42	LONG -80-43-51.3462	E 523131.01	LONG -80-43-50.7034
- 1	Furber	N 387270.70	LAT 39-33-24 2985	N 4378605.99	LAT 39-33-24.5871
	UNIT SH	E 1652761.06	LONG -80-43-53.6542	E 523075 84	LONG -80-43-53.0114
	Wall Pad E	levation	1,212.0		

IMPACTS SHOWN BELOW WERE PERMITTED PREVIOUSLY UNDER THE FURBEE WELL PAD DESIGN

FURBEE WETLAND IMP	ACT (SQUA	RE FEET)	
Wetland and Impact Cause	Fill (SF)	Total Impact (SF)	Total impact (AC)
Wetland 02 (Stockpile "A")	137	137	0.00
Wetland 03 (Well Pad & Water Containment Pad)	1.669	1,669	0.04

	Perma	nent impacts	Temp: Impacts	Total Impact	
Stream and Impact Cause	Culvert / E锁 (LF)	Inlets/Outlets Structures (LF)		(LF)	
Stream 12 (Well Pad & Water Containment Pad)	33	0	15	48	

NG ER ENGIN ENERGY



THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

PAD

FURBEE

& WATER CONTAINMENT P SHEET COVER

8 WELL



DATE: 04/18/2022 SCALE: AS SHOWN SHEET 1 OF 12

CONSTRUCTION AND E&S CONTROL NOTES

- CONSTRUCTION NOTES:

 1. THE CONTRACTOR IS TO VERHY FIELD CONDITIONS PRIOR TO AND DURING CONSTRUCTION AND WILL NOTHY NAVITUS ENGINEERING AT (888) 682-4185 IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THAT APPROVED PLAN. ANY WORK PERFORMED BY THE CONTRACTOR AFTER THE FINDIN OF SUCH DISCREPANCIES SHALL BE DONE AT THE CONTRACTOR AFTER THE FINDIN OF SUCH DISCREPANCIES SHALL BE DONE AT THE CONTRACTOR STISK.
- 2. METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS HEREIN SHALL CONFORM TO THE CURRENT COUNTY CONSTRUCTION STANDARDS AND SPECIFICATIONS AND/OR CURRENT WY DEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PEACTICE MANUAL STANDARDS AND SECIFICATIONS. SHOULD A CONFLICT BETWEEN THE DESIGN, SPECIFICATIONS, AND PLANS OCCUR. THE MOST STRINGENT REQUIREMENT WILL APPLY. THE APPROVAL OF THESE PLANS IN NO WAY RELEVES THE DEVELOPER OR HIS AGENT OF THE RESPONSIBILITIES CONTAINED IN THE WY DEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT FRACTICE MANUAL.
- AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE. ALSO, A REPRESENTATIVE OF THE DEVELOPER MUST BE
- 4. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING MUD FROM TRUCKS AND/OR OTHER EQUIPMENT PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT THE STREETS ARE MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITION AT ALL TIMES. CONTRACTOR SHALL ADHERE TO TRAFFIC CONTROL MEASURES AS OUTLINED WITHIN THE APPROVED MM 109 PERMIT.
- 5. THE LOCATION OF EXISTING UTILITIES SHOWN IN THESE PLANS ARE FROM FIELD LOCATIONS AND/OR GIS DATA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERFY THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES AS NEEDED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE ENGINEER OF ANY CONFLICTS ARISING FROM HIS EXISTING UTILITY VERIFICATION AND THE PROPOSED CONSTRUCTION.
- 6. THE CONTRACTOR SHALL PROVIDE NOTIFICATION TO THE APPROPRIATE UTILITY COMPANY PRIOR TO CONSTRUCTION OF WATER AND/OR GAS PIPELINES. INFORMATION SHOULD ALSO BE OBTAINED FROM THE APPROPRIATE AUTHORITY CONCERNING PERMITS, CUT SHEETS, AND CONNECTIONS TO EXISTING LINES.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGES TO THE EXISTING STRRETS AND UTILITIES WHICH OCCURS AS A RESULT OF HIS CONSTRUCTION PROJECT WITHIN OR CONTIGUOUS WITH THE EXISTING RIGHT-OF-WAY.
- 8. WHEN GRADING IS PROPOSED WITHIN EASEMENTS OF UTILITIES, LETTERS OF PERMISSION FROM ALL INVOLVED COMPANIES MUST BE OBTAINED PRIOR TO GRADING AND/OR SITE DEVELOPMENT.
- 9. THE DEVELOPER WILL HE RESPONSIBLE FOR THE RELOCATION OF ANY UTILITIE WHICH IS REQUIRED AS A RESULT OF HIS PROJECT. THE RELOCATION SHOULD DONE PRIOR TO CONSTRUCTION.
- 10. THESE PLANS IDENTIFY THE LOCATION OF ALL KNOWN GRAVESITES. GRAVESITES SHOWN ON THIS PLAN WILL BE PROTECTED IN ACCORDANCE WITH STATE LAW. IN THE EVENT GRAVESITES ARE DISCOVERED DURING CONSTRUCTION, THE OWNER AND ENGINEER MUST BE NOTIFIED DUMEDIATELY.
- 11. THE CONTRACTOR(S) SHALL NOTIFY OPERATORS WHO MAINTAIN UNDERGROUND UTILITY LINES IN THE ARRA OF PROPOSED EXCAVATING OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NOT WORE THAN TEN (10) WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION.
- 12. CONTRACTOR TO CONTACT OPERATOR AND ENGINEER IF GROUNDWATER IS
- 13. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE
- 14. THE CONTRACTOR IS RESPONSIBLE FOR ALL FILL MATERIAL PLACEMENT REQUIRED DURING THE CONSTRUCTION OF THIS PROJECT. ALL MATERIAL TESTS SHALL BE CONDUCTED BY THE ON-SITE INSPECTOR. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER CERTIFYING THE CONSTRUCTED FACILITY. FAILURE TO CONDUCT THE DESIGN TESTS AND/OR RECESSARY REPAIRS TO DEFICIENT AREAS AS A RESULT OF THE DENSITY TESTING SHALL BE CAUSE FOR NON-ACCEPTANCE OF THE CONSTRUCTED FACILITY.
- 15. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SITE IN ACCORDANCE WITH THE DESIGN PLANS AND CONSTRUCTION DOCUMENTS AND THE SCOPE OF WORK SHALL CONFORM WITH THE GRADES, BERMS, DEPTHS, DIMENSIONS, ETC. SHOWN
- 16. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, INCLUDING THE 1970 OSHA ACT. PRECAUTION FOR THE PROTECTION OF PERSONS, INCLUDING EMPLOYEES AND PROPERTY, SHALL ALWAYS BE EXERCISED BY THE CONTRACTOR, INITIATION, MAINTENANCE, AND SUPERVISION OF ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING ALL REQUIREMENTS PER CFR 1.146, SHALL ALSO BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- 17. CONSTRUCTION ACTIVITIES SHALL BE RESTRICTED TO THE AREAS SHOWN ON THE CONSTRUCTION ANY ACTIVITIES PERFORMED OUTSIDE OF THE LILITS OF DISTURBANCE, UNLESS OTHERWISE AUTHORIZED BY ANTERO RESOURCES CORPORATION, MODIFICATION PLAN MUST BE SUBMITTED TO TWO WYDEP FOR ANY ACTIVITIES PERFORMED OUTSIDE OF THE LILITS OF DISTURBANCE
- 18. PRESERVATION OF HENCHMARKS, PROPERTY CORNERS, REFERENCE POINTS, STAKES AND OTHER SURVEY REFERENCE MONUMENTS OR MARKERS IS THE RESPONSIBILITY OF THE CONTRACTOR IN CASES OF WILLPUL OR CARELESS DESTRUCTION THE CONTRACTOR SHALL HE REQUIRED TO REPLACE OR RESTORE SAID MONUMENT OR MARKER, RESETTING OF MARKERS SHALL HE PREPORUMED BY A PROFESSIONAL SURVEYOR AS APPROVED BY ANTERO RESOURCES CORPORATION.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE CLEARANCE FROM ALL ELECTRIC LINES, IF ANY, IN ACCORDANCE WITH NATIONAL ELECTRICAL SAFETY CODE.
- 20. THE CONTRACTOR SHALL MINIMIZE ALL CLEARING AND DISTURBANCE TO THE ENVIRONMENT TO THE MAXIMUM EXTENT POSSIBLE. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE.
- 21. ANY DIGITAL FILES PROVIDED TO THE CONTRACTOR BY NAVITUS ENGINEERING, INC.
 ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE
 CONSTRUCTION OF THE SITE SHALL MEET ALL DESIGN PARAMETERS OF THE WYDEP
 APPROVED NAVITUS ENGINEERING, INC. DESIGN PLANS. NAVITUS ENGREERING, INC.
 WILL NOT HE HELD LIABLE FOR THE CONTRACTOR USING THE DIGITAL FILES TO WAIVER FROM THE APPROVED DESIGN PLANS.
- 22. ANY CONSTRUCTION ISSUES OR QUESTIONS SHALL BE BROUGHT TO THE ENGINEER DIMEDIATELY. THE CONSTRUCTION INSPECTOR SHALL BE CONTACTED AND MUST RELAY THESE ISSUES OR QUESTIONS TO THE ENGINEER FOR RESOLUTION. TEMPORARY STABILIZATION SHALL BE APPLIED AS NECESSARY.
- 23. ALL EXISTING AND DESIGNED CULVERTS AND CULVERT SUMPS SHALL BE CLEANED AND CLEARED OF DEBRIS DURING THE COURSE OF CONSTRUCTION. ANY EXCESS EROSION DUE TO THE PLUGGING OF A CULVERT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

EROSION AND SEDIMENT CONTROL NARRATIVE:
PROJECT DESCRIPTION. THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A GAS WELL DRILLING PAD AND
WATER CONTAINMENT PAD TO AD IN THE DEVELOPMENT OF RIDIVIDUAL GAS WELLS. THE ACCESS ROAD
ENTRANCE TO THE PROPOSED SITE IS LOCATED ON THE RAST SIDE OF CO. RT. 50, 0.65 MILES SOUTH OF
THE INTERSECTION OF CO. RT. 46 & CO. RT. 50 IN GREEN DISTRICT, WEST VIRGINIA. THE
TOTAL APPROXIMATE LAND DISTURBANCE ASSOCIATED WITH THIS PROJECT IS 33.19 ACRES.

EXISTING SITE CONDITIONS: THE EXISTING SITE IS APPROXIMATELY 11.9% WOODED. THE TOPOGRAPHY RANGES FROM MODERATE TO STEEP TERRAIN (2% TO 70% SLOPES). PRESENT ON SITE ARE ACCESS ROADS, OVERREAD UTLITIES, EXISTING WATERLINE, EXISTING STRUCTURES, AND STREAMS ARE LOCATED ONSITE. ITLE SITE IS LOCATED ON A RIDGE AND DRAINS TO LITTLE MUSRINGUM—MIDDLE ISLAND WATERSHED. NO

ADJACENT PROPERTY: THE SITE IS BORDERED BY FORESTED LANDS ON ALL SIDES.

CRITICAL AREAS: THE AREA(S) SHOWN ALONG THE FIELD DELINEATED STREAMS, WETLANDS, AND PONDS, AS SHOWN ON THE PLANS, ARE DESIGNATED AS CRITICAL AREA(S), IF PRESENT, ALL SLOPES AND FONDS, AS SHOWN ON THE PLANS, ARE DESIGNATED AS CRITICAL AREA(S), IF PRESENT, ALL SLOPES AND STEEPER, DITCHES, AND OTHER CONTROLS SHALL BE CONSIDERED CRITICAL EROSION AREAS. THESE AREAS SHALL BE MONITORED AND MAINTAINED DAILY DURING CONSTRUCTION AND AFTER EACH RAINFALL OF 0.5 INCHES OR DEPARTED COLUMNS OF THE SOURCE OF THE STATE OF THE SOURCE OF THE S MONITORED AND MAINTAINED DAILY DURING CONSTRUCTION AND AFTER EACH RAINFALL OF 0.5 INCHES OR GREATER. COMPOST FILTER SOCKS ARE TO BE USED TO PROTECT THESE FIELD DELINEARED AREA(S) FROM SEDIMENT LEAVING THE SITE. ADDITIONALLY, ORANGE SAFETY FENCE IS RECOMMENDED TO BE INSTALLED ABOVE/AROUND THESE AREA(S), TO SERVE AS A PHYSICAL BARBER, ENSURING THE AREA(S) ARE NOT DISTURBED. THE LOCAL GOVERNING AUTHORITY WILL HAVE THE AUTHORITY TO RECOMMEND THE PLACEMENT OF ADDITIONAL EROSION CONTROL MEASURES IN THESE AREAS IF IT BECOMES EVIDENT DURING CONSTRUCTION THAT THE ONES IN PLACE ARE NOT FUNCTIONING SUFFICIENTLY.

SOILS: GEOTECHNICAL CONSULTATION WILL TAKE PLACE DURING SLIP REPAIR CONSTRUCTION AS NECESSARY.

OFF SITE AREAS: THERE ARE NO BORROW AREA(S) OR EXPORT STOCKPILE AREA(S) OUTSIDE OF THE PROPOSED LIMITS OF DISTURBANCE FOR THIS PROJECT.

EROSION AND SEDIMENT CONTROL MEASURES: UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL

- TRUCTURAL PRACTICES:
 INSTALL ORANGE SAFETY FENCE TO ENSURE NO DISTURBANCE TO THE DELINEATED AREA(S).
 INSTALL TEMPORARY CONSTRUCTION ENTRANCE.
 INSTALL COMPOST FILTER SOCKS AND/OR SILT FENCE AS SHOWN ON THE PLANS TO REMOVE SEDIMENT FROM RUNOFF. SELECTIVELY REMOVE TREES REQUIRED TO INSTALL COMPOST FILTER SOCK IN WOODED AREAS. CLEARING AND GRUBBING SHALL BE KEPT AT A MUNIQUE TO INSTALL && CONTROLS.
 FILL SLOPE SURFACE SHALL BE LEFT IN A ROUGHENED CONDITION TO REDUCE BROON. CONTRACTOR SHALL REDURECT RUNOFF AWAY FROM THE FILL SLOPE BY INSTALLING EARTHEN DIVERSION BERMS AND DIVERTING THE RUNOFF TO SEDIMENT TRAPPING DEVICES.
 INSTALL, PUTTYPHES DITCH RELIEF CULYBERS, AND OUTLET PROTECTION (RIP—RAP APRONS) AS SHOWN
- INSTALL V-DITCHES, DITCH RELIEF CULVERTS, AND OUTLET PROTECTION (RIP-RAP APRONS) AS SHOWN ON THE PLANS.

DEVICES LISTED ABOVE ARE CONSIDERED MINIMUM EROSION AND SEDIMENT CONTROLS. ADDITIONAL CONTROL MEASURES MAY BE NECESSARY DUE TO CONTRACTOR PHASING OR OTHER UNFORESEEN CONDITIONS. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BMP'S TO MINIMUME THE POTENTIAL FOR EROSION AND SEDIMENT FOLLUTION. ALL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE CURRENT WEST VIRGINIA EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL ALL RUNOFF FROM DISTURBED AREAS SHALL PASS THROUGH A SEDIMENT FILTERING DEVICE LOCATED BLOW THE DISTURBED AREA AT NO TIME WILL UNFILTERED SEDIMENT LADEN RUNOFF BE ALLOWED TO LEAVE THE SITE AND ENTER STATE WATERS.

PERMANENT STABILIZATION: ALL AREAS LEFT UNCOVERED BY EITHER BUILDINGS OR PAVEMENT SHALL BE STABILIZED WITH PERMANENT SEEDING DIMEDIATELY FOLLOWING FINISH GRADING AND WITHIN SEVEN (7) DAYS. AT NO TIME SHALL LAND LAY DORMANT LONGER THAN TWENTY-ONE (21) DAYS.

MAINTENANCE PROGRAM: ALL BMPS INCLUDING EROSION AND SEDIMENT CONTROLS SHALL BE INSPECTED AT A MINDAUM ONCE EVERY SEVEN-CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.25 INCHES PER 24-HOUR PERIOD, UNTIL THERE IS A UNIFORM, PERENNIAL 70 PERCENT VEGETATIVE COVERAGE ESTABLISHED, UNLESS SUCH INSPECTIONS ARE NOT PRACTICABLE WITHIN 24 HOURS, IN WHICH CASE THAT FACT SHALL BE NOTED IN THE INSPECTION REPORT. ANY REQUIRED REPAIRS OR MAINTENANCE SHALL BE MADE WITHIN 24 HOURS; IF REPAIR IS NOT PRACTICABLE WITHIN 24 HOURS, IT SHALL BE NOTED IN THE INSPECTION REPORT.

TRAPPED SEDIMENT IS TO BE REMOVED AS REQUIRED TO MAINTAIN 50% TRAP AND/OR SOCK EFFICIENCY AND DISPOSED OF AS ENGINEERED FILL ON THE STOCKPILES.

INLETS AND OUTLETS OF DITCH RELIEF CULVERTS SHALL BE CHECKED REGULARLY FOR SEDIMENT INLEIS AND QUILLEIS OF DITCH RELIEF COLVER'S SHALL DE CHECKED REGULARLI FOR SEDIMENT BUILD-UP. IF THE INLET AND/OR OUTLET IS CLOGGED BY 50% OR GREATER, IT SHALL BE REMOVED AND CLEANED OR REPLACED IMMEDIATELY.

SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALLE RETURNED TO THE CONSTRUCT SITE MAMEDIATELY AND DISPOSED IN THE MATHEN PROPERTY AND DISPOSED IN THE MATHEN, SHOVELED OR SWEPT INTO ANY ROADSIDE DITCHAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED OR SWEPT INTO ANY ROADSIDE DITCH CULVERT OR SURFACE WATER.

ANY DISTURBED AREAS ALONG THE ACCESS ROAD SHALL BE STABILIZED AS CONSTRUCTION PROCEEDS, PRIOR TO CONTINUING FURTHER ACCESS ROAD CONSTRUCTION, WITH EITHER ROCK STABILIZATION OR SEEDING AND MULCHING METHODS.

SUPER SILT FENCE CAN BE USED IN PLACE OF ANY COMPOST FILTER SOCK.

NOTE: THE WV DEP RETAINS THE RIGHT TO ADD AND/OR MODIFY THESE EROSION AND SEDIMENT CONTROL MEASURES DURING THE CONSTRUCTION PROCESS, WITHIN REASON, TO ENSURE ADEQUATE PROTECTION TO THE PUBLIC AND THE ENVIRONMENT.

SEEDING (SOIL STABILIZATION):
1. CONTRACTOR SHALL APPLY SEED AND STABILIZATION IN ACCORDANCE WITH THE WV DEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL, BASED UPON SITE SPECIFIC SOIL CHARACTERISTICS.

HARAULENISIUS. HEREVER SEEDING IS TO BE APPLIED TO STEEP SLOPES (≥ 3H:1V), SEED MIXTURES SHOULD BE ELECTED THAT ARE APPROPRIATE FOR STEEP SLOPES.

DUST CONTROL: 1 TEMPORARY SEEDING SHALL BE APPLIED TO ALL DISTURBED AREAS SUBJECT TO LITTLE OR NO

TEMPURRAY SHALL BE REFLECT TO ALL THE STANDARD WITH WATER UNTIL THE CONSTRUCTION TRAFFIC. ALL HAUL ROADS AND OTHER HEAVY TRAFFIC ROUTES SHALL BE SPRINKLED WITH WATER UNTIL THE SURFACE IS WET AND REPEATED AS NEEDED TO CONTROL DUST.

CONSTRUCTION SEQUENCE:
THE DEVELOPMENT OF THIS SITE SHALL BE CONSISTENT WITH THE FOLLOWING GENERAL
SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL IMPLEMENT, MAINTAIN, AND OPERATE ALL
PROPOSED EROSION AND SEDIMENT CONTROL MEASURES TO EFFECTIVELY MITIGATE THE HAZARD
OF ACCELERATED EROSION AND SEDIMENTATION TO ACCEPTABLE LEVELS. MINOR DEVIATIONS FROM THIS SEQUENCE SHALL BE EXECUTED BY THE PROJECT'S SUPERINTENDENT AS NEEDED TO ELIMINATE ANY POTENTIAL EROSIVE CONDITION THAT MAY ARRISE FOR THE DURANTON OF THE PROJECT. THE WY DEP SHALL BE NOTIFIED OF ANY AND ALL SUCH DEVIATIONS FROM THE

- STAKE THE LIMITS OF CONSTRUCTION AND MARK/FLAG ALL IDENTIFIED WETLANDS, STREAM UTILITIES, AND OTHER AREAS OF CONCERN FOR CONSTRUCTION ACTIVITIES. INSTALL SIGNS DESIGNATE THE AREAS AND ORANGE SAFETY FENCE TO IDENTIFY IMPORTANT PROJECT BUTES SUCH AS APPROVED ACCESS ROADS, NO REFUELING ZONES, WETLANDS/STREAM DS, ETC.
- A PRE-CONSTRUCTION CONFERENCE WITH THE CONTRACTOR AND THE APPROPRIATE EROSION AND SEDIMENT CONTROL INSPECTOR 48 HOURS PRIOR TO BEGINNING WORK TO REVIEW THE CONSTRUCTION DRAWINGS AND PROVIDE ANY REQUESTED GUIDANCE.
- CONSTRUCT THE ROCK CONSTRUCTION ENTRANCE OR UPGRADE & MAINTAIN EXISTING ROCK CONSTRUCTION ENTRANCE. ALL VEHICLES ENTERING AND EXITING THE SITE SHALL DO SO VI THE ROCK CONSTRUCTION ENTRANCE.
- 4. CONSTRUCT ALL BMP'S AS SOON AS CLEARING AND GRUBBING OPERATIONS ALLOW. ONCE INSTALLED, THE AREA ENCOMPASSING THE BMP'S OUTSIDE OF THE GRADING LIMITS SHALL BE SEEDED AND MULCHED IMMEDIATELY.
- 5. IF APPLICABLE, CONVEY UPSLOPE DRAINAGE AROUND THE SLIDE REPAIR AREA(S) BY CONSTRUCTING ALL DIVERSION BERM(S) AND/OR COMPOST FILTER SOCK DIVERSION(S) AS SHOWN ON THE PLANS.
- 6. CLEAR AND GRUB THE SITE. ALL WOODY MATERIAL, BRUSH, TREES, STUMPS, LARGE ROOTS, BOULDERS, AND DEBRIS SHALL BE CLEARED FROM THE SITE AREA AND KEPT TO THE MINIMUM NECESSARY FOR PROPER CONSTRUCTION, INCLUDING THE INSTALLATION OF NECESSARY SEDIMENT CONTROLS, TREES, BRUSH, AND STUMPS SHALL BE CUT AND/OR GRUBBED AND BURNED (AS PER WY FOREST FIRE LAWS), REMOVED FROM SITE, OR DISPOSED OF BY OTHER METHODS APPROVED BY WY DEP.
- 7. IF APPLICABLE, INSTALL ALL WETLAND OR STREAM CROSSINGS AS SHOWN ON THE PLANS.
- 8. AS NECESSARY, STRIP THE TOPSOIL FROM THE SLIDE REPAIR AREA(S). TOPSOIL STRIPPING SHALL BE KEPT TO A MINIMUM NECESSARY TO CONSTRUCT THE SLIDE REPAIR PRIOR TO PLACING ANY FILL, THE EXPOSED SUBGRADE SHALL BE COMPACTED AND PROOF ROLLED TO PRODUCE A STABLE AND UNYTEUDING SITE. ALL STRIPPED TOPSOIL SHALL BE STOCKPILED IN AREAS SHOWN IN THE PLANS, OR RE-SPERAD AT AN APPROXIMATE DEPTH OF 2-4 INCHES ON ALL PROPOSED 2:1 OF FLATTER SLOPES, AND IMMEDIATELY STABLIZED. ADDITIONAL BMP MEASURES SHALL BE CONSTRUCTED AROUND TOPSOIL STOCKPILES, IF NECESSARY.
- 9. CONSTRUCT THE SLDE REPAIR AREA(S). ALL FILL AREAS, INCLUDING EXCESS MATERIAL STOCKPILES, SHALL BE "KEYED IN" AND COMPACTED IN HORIZONTAL LIFTS WITH A MAXIMUM LOOSE LIFT THICKNESS OF 12" AND MAXIMUM PARTICLE SIZE AS OUTLINED IN THE GEOTECHNICAL REPORT. ALL FILL SHALL BE COMPACTED BY A VIBRATING SHEEPSFOOT ROLLER TO 95% PER THE STANDARD PROCTOR TEST (ASTM-D689). MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D689) RESULTS. IT IS ALSO RECOMMENDED THAT EACH LIFT BE PROOF ROLLED WITH A LOADED HAUL TRUCK WHERE APPLICABLE IF NECESSARY, DITCH RELIEF CULVERTS SHALL BE INSTALLED AT A GRADE OF 1-9% TO MINMIZE OUTLET VELOCITIES TO THE EXTENT POSSIBLE. INSTALL OUTLET PROTECTION ONCE DITCH RELIEF CULVERTS ARE INSTALLED, AS SHOWN ON PLANS.

 LIMMEDIATELY STABILIZE THE OUTER AREAS AND SIDE SLOPES AS SPECIFIED WITH PERMANENT SSEDIEG OF THE SLIDE REPAIRE AREAS SANCESS MATERIAL SHALL BE STOCKPIED (F IMMEDIATELY STABILIZE THE OUTER ARRAS AND SIDE SLOPES AS SPECIFIED WITH PERMANENT SEEDING OF THE SLIDE REPAIR AREA(S), EXCESS MATERIAL SHALL BE STOCKPILED REPAIR AREA(S), EXCESS MATERIAL SHALL BE STOCKPILE ARRAS SHOWN IN THE PLANS AND DOMEDIATELY STABILIZED. TOPSOIL SHALL BE STRIPPED FROM ALL STOCKPILE ARRAS PRIOR TO CONSTRUCTION OF STOCKPILES. AFTER STOCKPILES ARE CONSTRUCTED, DOPSOIL SI TO BE REAPPLIED AT A DEPTH OF 2"-4". SLOPES SHALL BE TRACKED BY ARMADINATION OF TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. ALL DITCH LINES SHALL BE CLEANED PRIOR TO INSTALLATION OF LINED PROTECTION. APPLY SEED AND MULCH TO ALL DISTURBED ARRAS. THIS SHALL INCLUDE ALL ARRAS THAT WILL NOT BE SUBJECT TO REQULAR TRAFFIC ACTIVITY (TO BE STABILIZED WITH STONE), OR ANY DISTURBED ARRAS THAT WILL NOT BE RE-DISTURBED BEFORE SITE RECLAMATION BEGINS. IT IS RECOMMENDED THAT THE CONTRACTOR PRIORITIZE COMPLETING ANY IMPROVEMENTS TO THE SITE ENTRANCE AND LEASE ROAD PRIOR TO THE SLIDE REPAIR.
- 10. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CRASED, BUT IN NO CASE MORE THAN SEVEN DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CRASED, WHERE THE INITIATION OF STABILIZATION MEASURES BY THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CRASES IS PRECLUDED BY SNOW COVER, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS CONDITIONS ALLOW, WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 14 DAYS FROM THEM ACTIVITIES CRASED, (E.G., THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY HALTED IS LESS THAN 14 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED AS THE SITE WITHIN THE SEVENTH DAY AFTER CONSTRUCTION ACTIVITYES HAVE TEMPORARILY CRASED, (E.G. THE TOTAL TIME PERIOD THAT DAY AFTER CONSTRUCTION ACTIVITYES HAVE TEMPORARILY CRASED. AREAS WHERE THE SEED HAS FAILED TO GERMINATE ADEQUATELY (UNIFORM PERENNIAL VEGETATION CORREST WITH A DENSITY OF 70%) WITHIN 30 DAYS AFTER SEEDING AND MULCHING MUST BE RESEEDED DEMEDIATELY, OR AS SOON AS WEATHER CONDITIONS ALLOW.
- 11. ALL BMP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DISTURBANCE ARE COMPLETE AND PERMANENTLY STABILIZED. MAINTENANCE MUST INCLUDE INSPECTION OF ALL EROSION AND SEDIMENT CONTROLS AT A MINIMUM ONCE EVERY SEVEN—CALENDAR DAYS AND AFTER ANY STORM EVENT GREATER THAN 0.25 INCHES PER
- EROSION AND SEDIMENT CONTROLS CAN BE REMOVED AFTER THERE IS A UNIFORM, PERENNIAL TO PERCENT VEGETATIVE COVERAGE ESTABLISHED.
- 13. ANY AREAS DISTURBED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND

CONSTRUCTION STANDARDS:
THE DESIGN. CONSTRUCTION, AND REMOVAL OF FILL FOR OIL AND GAS SITES MUST BE ACCOMPLISHED IN SUCH A MANNER AS TO PROTECT THE HEALTH AND SAFETY OF THE PEOPLE, THE NATURAL RESOURCES, AND ENVIRONMENT OF THE STATE. THE SITE SHALL BE DESIGNED, CONSTRUCTED, AND MAINTAINED TO BE STRUCTURALLY SOUND AND REASONABLY PROTECTED FROM UNAUTHORIZED ACTS OF THIRD PARTIES.

- 1. ALL FILL AREAS SHOULD BE CLEARED OF TREES, STUMPS, AND ANY VEGETATION AND STRIPPED OF TOPSOIL/ORGANIC SOILS PRIOR TO THE START OF FILL PLACEMENT.
- ANY GROUNDWATER ENCOUNTERED DURING CONSTRUCTION SHALL BE DRAINED TO ANT DEMUNDINGER ENCOUNTERED DURING CONSTRUCTION SHALL BE DRAINED. THE OUTSIDE/DUBNISTERAM TOE OF THE SLOPE, CONSTRUCTED DRAIN SECTION SHALL BE AN EXCAVATED 2' x 2' TRENCH AND BACK FILLED WITH #57 STONE, COMPACTED BY HAND TAMPER, GEOTEXTILE FABRIC SHALL BE USED TO LINE TRENCH.
- SATISFACTORY MATERIALS FOR USE AS FILL FOR PAD AREAS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS GW, GP, GM, GC, SW, SP, SM, SC, ML, AND CL GROUPS.
- GENERALLY, UNSATISFACTORY MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS PT, CH, MH, OL, OH, AND ANY SOIL TOO WET TO FACILITATE COMPACTION. CH AND MH SOILS MAY BE USED SUBJECT TO APPROVAL OF THE
- 5. ALL FILL AREAS SHALL HE "KEYED IN" AND COMPACTED IN HORIZONTAL LIFTS WITH A MAXIMUM LOOSE LIFT THICKNESS OF 12" AND MAXIMUM PARTICLE SIZE AS OUTLINED IN THE CEOTECHNICAL REPORT. ALL FILL SHALL BE COMPACTED BY A VIBRATING SHEEPSFOOT ROLLER TO 95% PER THE STANDARD PROCTOR TEST (ASTM-D869). MOISTURE CONTENT WILL BE CONTROLLED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM-D698) RESULTS.
- ROCK LIFTS ARE NOT PROPOSED FOR THE CONSTRUCTION OF THIS SITE. HOWEVER, LARGER ROCK PARTICLES OR BOULDERS THAT ARE ENCOUNTERED DURING CONSTRUCTION NEED TO BE BROKEN DOWN TO A MANAGEABLE SIZE (MAXIMUM 3/3/xi*) THICK) TO BE PLACED AS FILL DURING PLACEMENT OF FILL CONTAINING LARGE SIZE ROCK PARTICLES, IT IS CRITICAL THAT NO VOID SPACES BE LEFT ENTEROF OF THE ROCKS. SMALLER ROCK FRAGENTS AND SOIL MUST BE WORKED INTO ANY OPENINGS BETWEEN THE BOULDERS AFTER THEY ARE PUT IN PLACE. ADDITIONAL GUIDANCE REGARDING ENCOUNTERED ROCK CAN BE FOUND IN THE GEOTECHNICAL REPORT.
- THE PLACEMENT OF ALL FILL MATERIAL SHALL BE FREE OF WOOD, STUMPS AND ROOTS, LARGE ROCKS AND BOULDERS, AND ANY OTHER NONCOMPACTABLE SOIL MATERIAL NO FILL SHALL CONTAIN OR BE PLACED ON FROZEN MATERIAL. THE FILL SHALL BE COMPACTED TO A MINIMUM OF VISIBLE NON-MOVEMENT, HOWEVER, THE COMPACTON EFFORT SHALL NOT EXCEED THE OPTIMUM MOISTURE LIMITS.
- ALL EXPOSED AREAS, NOT COVERED BY COMPACTED GRAVEL OR RIP-RAP SHALL BE LIMED, FERTILIZED, SEEDED AND MULCHED. PERMANENT VEGETATIVE GROUND COVER IN COMPLIANCE WITH THE WY DEP EROSION AND SEDIMENT CONTROL FIELD MANUAL MUST BE ESTABLISHED UPON THE COMPLETION OF CONSTRUCTION. SLOPES SHALL WITH A GRASSY VEGETATIVE COVER AND FREE OF BRUSH AND/OF
- IF STANDING WATER IS PRESENT ON SITE, CONTRACTOR TO CORRECT DRAINAGE ISSUE BY DIRECTING WATER TO PROPER EAS CONTROLS OR OUTLET WITH POSITIVE DRAINAGE. IF NECESSARY, CONTACT ENGINEER FOR GUIDANCE IN CORRECTING
- 10. ALL DRAINAGE DITCHES, DIVERSIONS, AND CULVERTS SHALL HAVE POSITIVE DRAINAGE AND OUTFALL INTO THE PROPER OUTLET PROTECTION OR LEVEL SPREADING DEVICE. SUPER SILT FENCE, OR APPROVED ALTERNATIVE, SHALL BE INSTALLED WITHIN 5 FEET OF THE OUTLET PROTECTION OR LEVEL SPREADING DEVICE TO PREVENT EROSION DOWNSTREAM. IF EROSION IS PRESENT DOWNSTREAM OF AN EROSION CONTROL DEVICE, CONTRACTOR TO INSTALL ADDITIONAL EROSION CONTROLS AND STABILIZATION TO PREVENT FURTHER EROSION.
- ALL DRAINAGE DITCHES AND DIVERSIONS THAT ARE ROCK LINED SHALL BE INSTALLED FER THE DETAILS ON THIS PLAN INCLUDING THE NECESSARY INSTALLATION OF ANY GEOTEXTILE FABRIC UNDERNEATH THE ROCK LINING.
- 12. IF THE EROSION CONTROL DEVICES SHOW EVIDENCE OF BEING INADEQUATE DUE TO CONSTRUCTION MEANS AND METHODS, THE CONTRACTOR IS TO INSTALL ADDITIONAL DRAINAGE DEVICES OR EROSION CONTROLS TO PREVENT FURTHER EROSION FROM OCCU
- 13. CONTRACTOR IS TO EXTEND ALL KEYWAY AND BONDING BENCH OUTLET DRAINS A MINIMUM OF ONE FOOT PAST THE FINISHED GRADE OF THE SLOPE AND INSTALL THE PROPER OUTLET PROTECTION PER THE DETAIL ON THESE PLANS. ALL OUTLET DRAINS ARE TO BE CLEARLY VISIBLE AND MARKED WITH YELLOW T-POSTS.
- ALL SLOPES SHALL BE TRACKED IN PER THE DETAILS ON THESE PLANS.
 CONTRACTOR SHALL REPEAT THIS METHOD ANY TIME AN AREA HAS BEEN DISTURBED PRIOR TO THAT AREA BEING STABILIZED.
- 15. ALL MANTENANCE OF EROSION AND SEDIMENT CONTROLS MUST BE PERFORMED IMMEDIATELY ONCE THE CONTRACTOR IS NOTIFIED OF THE DISCREPANCY. CONTRACTOR DEPRORM MANTENANCE OR IMMEDIATELY NOTIFY THE SUB-CONTRACTOR PERFORMING THE RES TASKS. ANY EROSION CONTROL MAINTENANCE THAT IS DEFEMBED TO BE AN ELEGRECHY SHALL BE PERFORMED IMMEDIATELY UPON THE CLIENT, ENGINEER, OR STATE'S REQUEST.
- 16. ALL LANDOWNER ACCESS ROADS AND EXISTING WELL ROADS THAT ARE BEING MAINTAINED SHALL BE KEPT OPEN DURING THE ENTIRE COURSE OF CONSTRUCTION TO PROVIDE CONTINUOUS ACCESS. IF CLOSURE IS NECESSARY, THE CONTRACTOR SHALL PROVIDE AN EQUIVALENT DETOUR ROUTE TO THE SATISFACTION OF THE LANDOWNER OR WELL OWNER.
- 17. ANY WATER INFILITRATING AROUND THE WELL PAD DEWATERING SYSTEM SHALL BE CORRECTED DIMEDIATELY TO PREVENT THE FAILURE OF THE SOILS AND DESIGN ASPECTS OF THE DEWATERING SYSTEM. ANY EXCESS EROSION OR SLOPE FAILURES DUE TO THE WATER INFILITRATION IN THE SUMP AREA SHALL BE THE SOLE ILITY OF THE CONTRACTOR.
- 16. ALL DITCH RELIEF AND STREAM CROSSING CULVERTS SHALL MEET ALL MANUFACTURER SPECIFICATIONS INCLIDING THE MINIMUM AND MAXIMUM COVER. IF MANUFACTURER SPECIFICATIONS CANNOT BE MET, CONTRACTOR SHALL CONSULT THE

- SITE CLEANUP & RECYCLE PROGRAM:

 1. GARBAGE, FUELS OR ANY SUBSTANCE HARMFUL TO HUMAN, AQUATIC OR FISH LIFE, WILL BE PREVENTED FROM ENTERING SPRINGS, STREAMS, PONDS, LAKES, WETLANDS OR ANY WATER COURSE OR WATER BODY.
- 2. OILS, FUELS, LUBRICANTS AND COOLANTS WILL BE PLACED IN SUITABLE CONTAINERS
- 3. ALL TRASH AND GARBAGE WILL BE COLLECTED AND DISPOSED PROPERLY.
- 4. ALL SEDIMENT REMOVED FROM SEDIMENT CAPTURING DEVICES SHALL BE PLACED ON THE TOPSOIL STOCKPILE, THEN SEEDED AND MULCHED, AS NECESSARY. ALIERNATIVELY, THE REMOVED SEDIMENT CAN BE TRANSPORTED TO A SITE WITH AN APPROVED PERMIT.
- 5. ALL POLLUTION AND EMERGENCY SPILLS SHALL BE IMMEDIATELY REPORTED TO ANTERO RESOURCES CORPORATION AND THE WYDEP OFFICE OF OIL AND GAS. (EMERGENCY #1-800-642-3074)

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REVISION REVISED PER SLIDE		
DATE 05-24-2023		



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FURBEE

WATER CONTAINMENT P
GREEN DISTRICT
COUNTY WEST VIRGINIA

8 PAD

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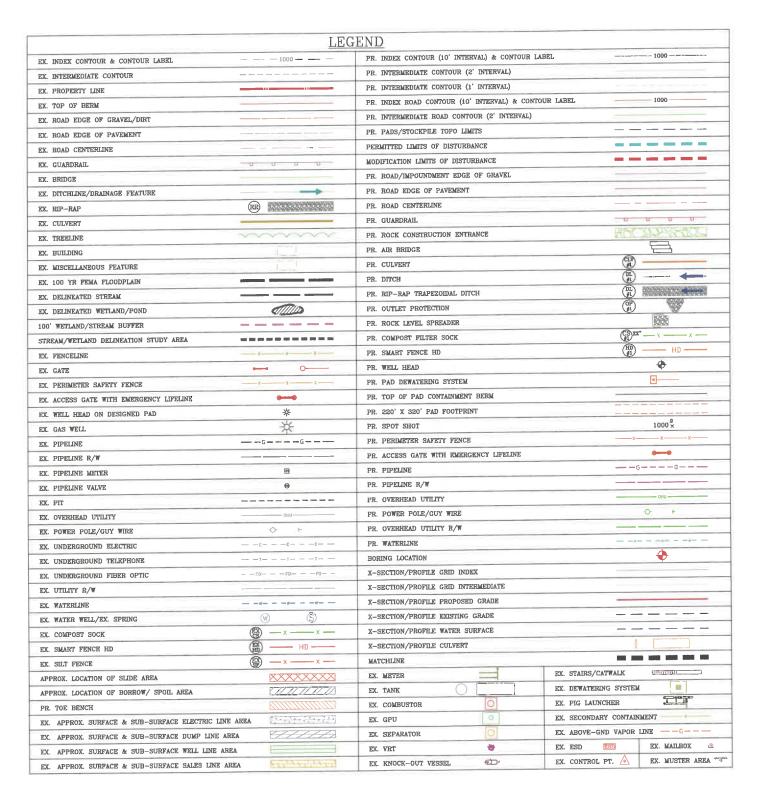


DATE: 04/18/2022

SCALE: N/A

SHEET 2 OF 12

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DATE	5-24-2023			

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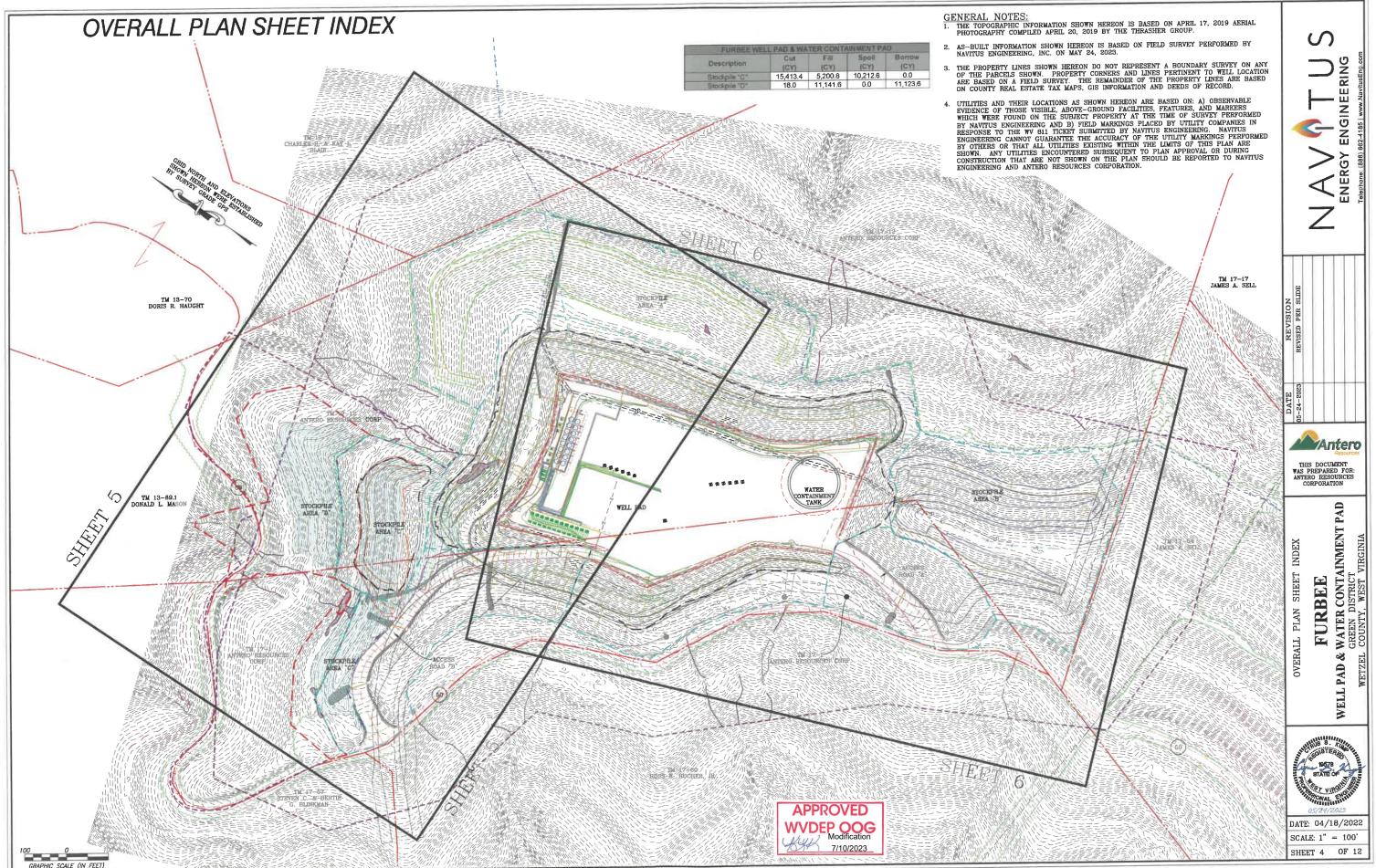
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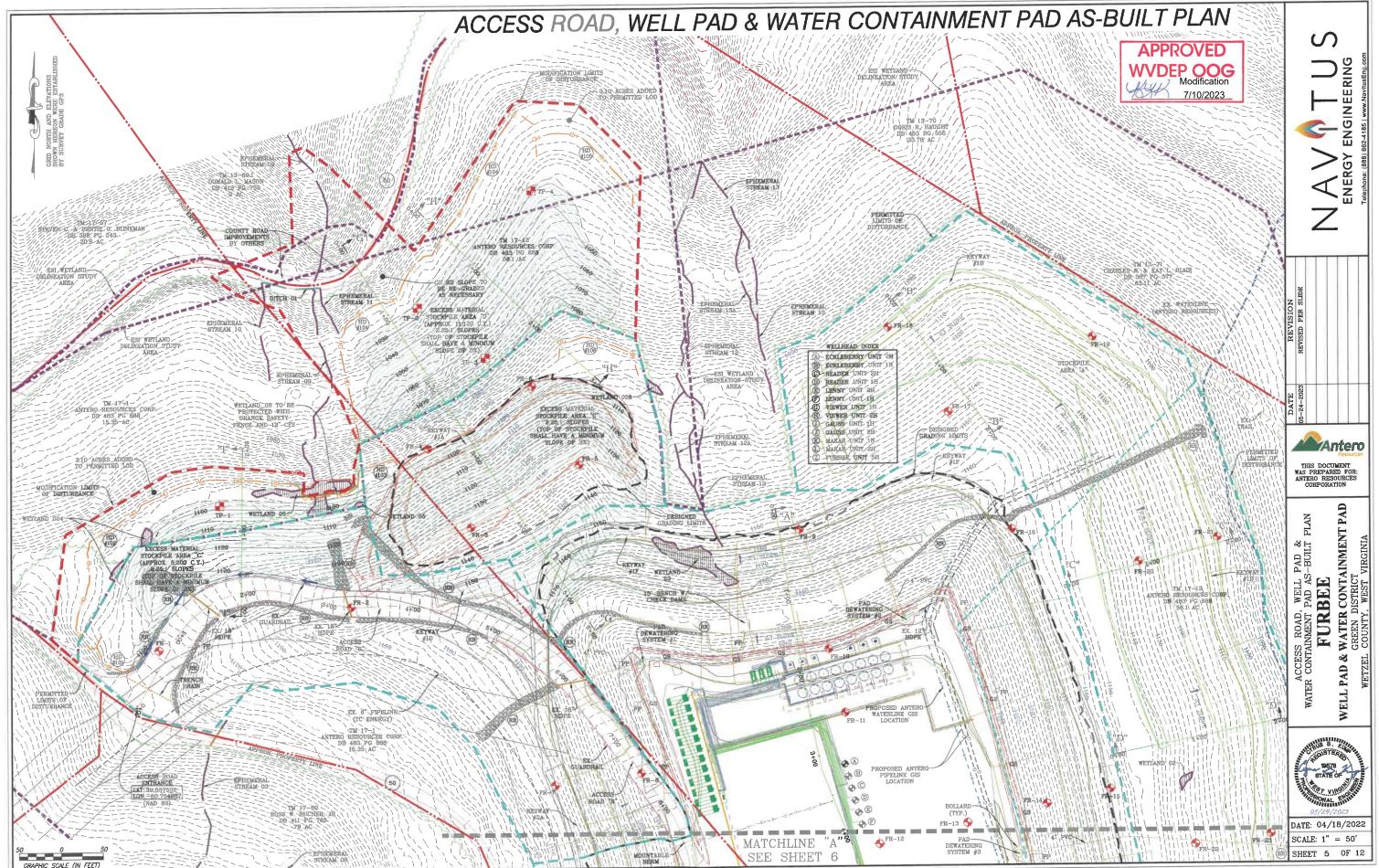


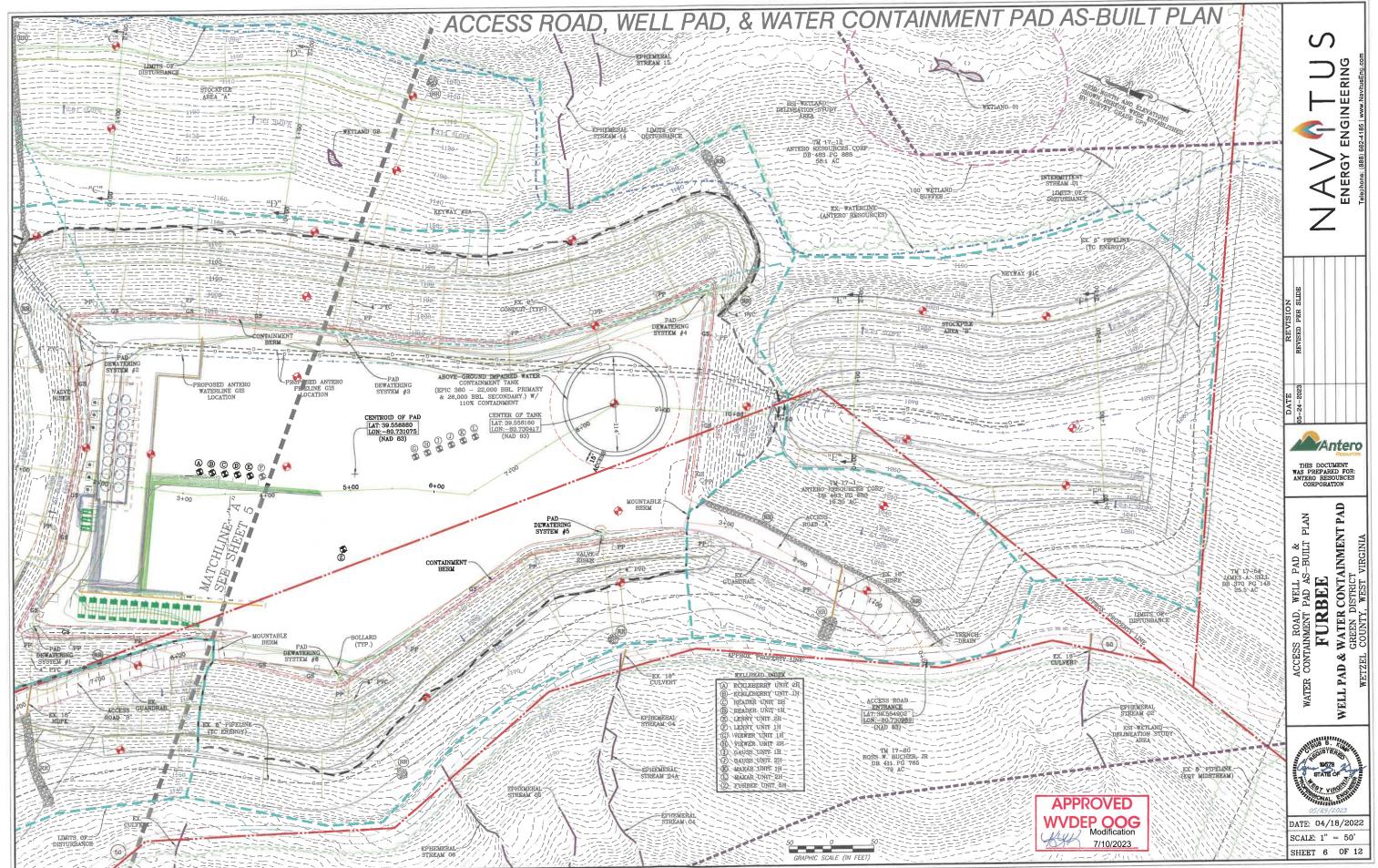
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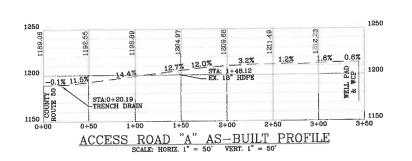
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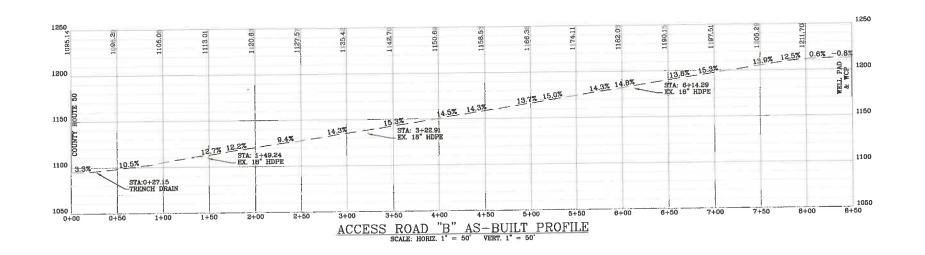






ACCESS ROAD AS-BUILT PROFILES









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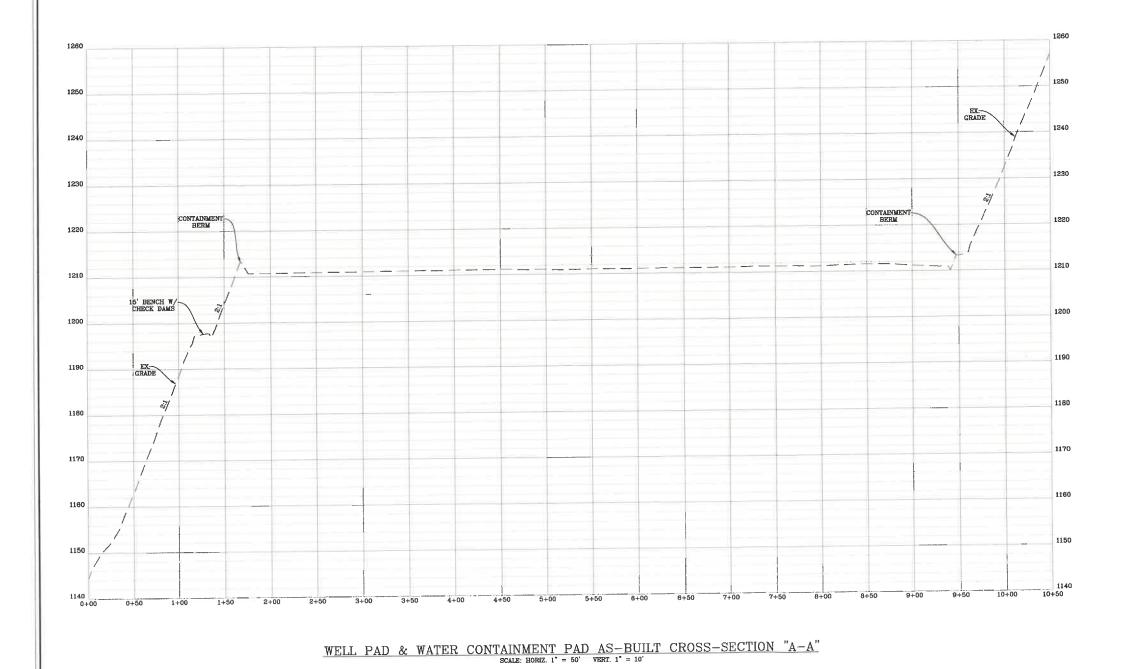
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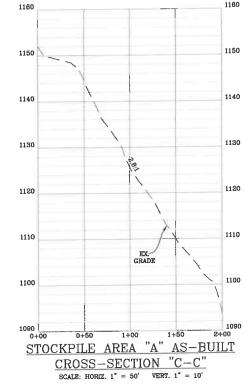


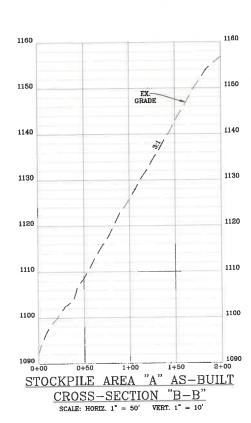


WELL PAD, WATER CONTAINMENT PAD & STOCKPILE AS-BUILT SECTIONS











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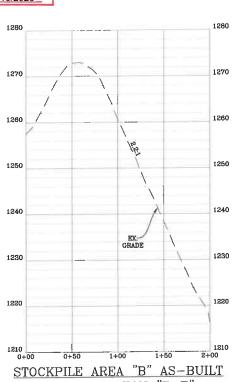
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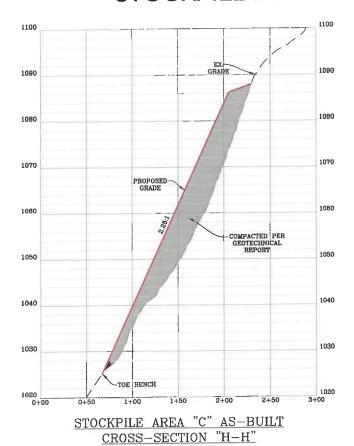
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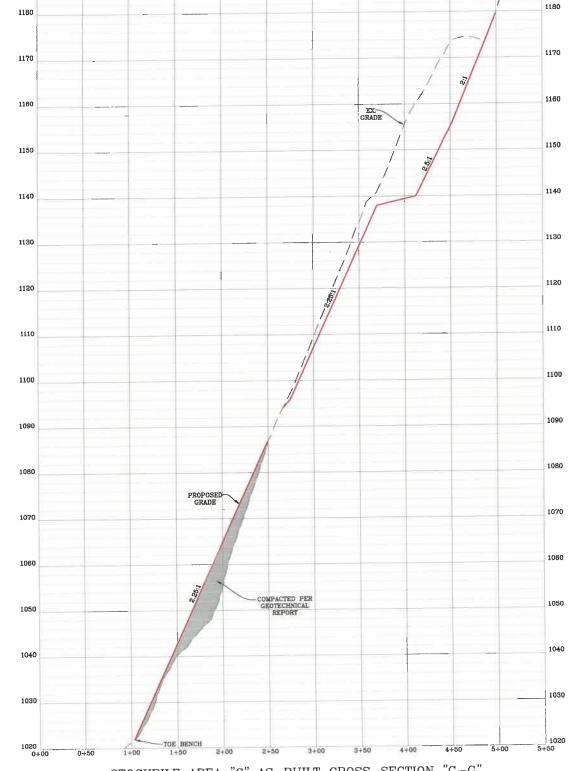
APPROVED WVDEP OOG Modification Modification 7/10/2023

STOCKPILE AREA AS-BUILT SECTIONS



CROSS-SECTION "E-E"
SCALE: HORIZ. 1" = 50' VERT. 1" = 10'





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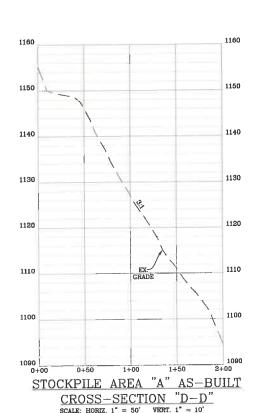
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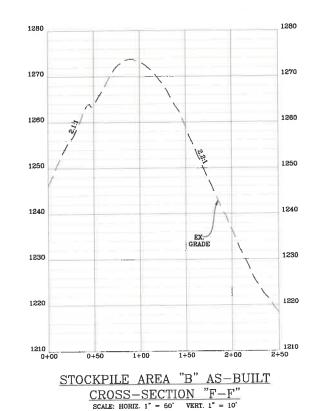
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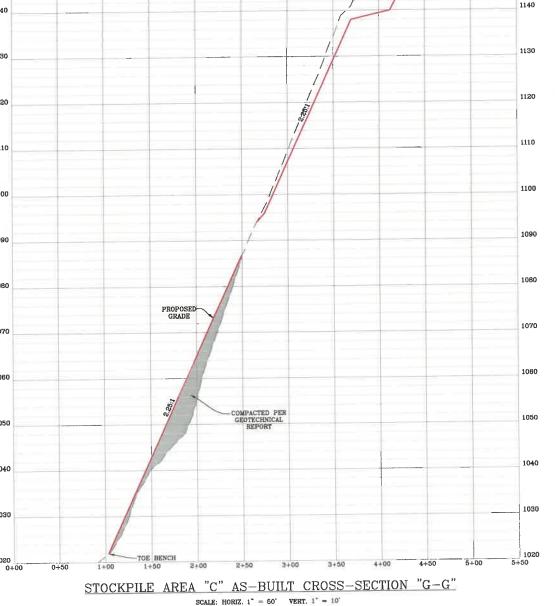
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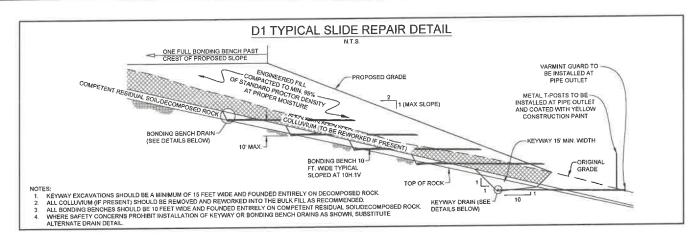
SCALE: AS SHOWN SHEET 9 OF 12

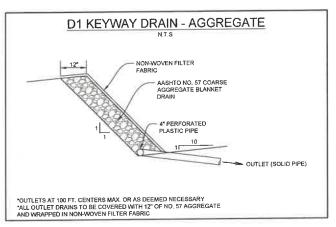
AREA AS-BUILT

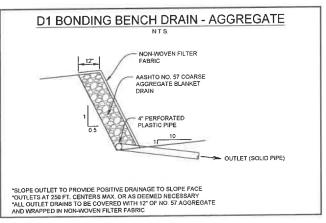


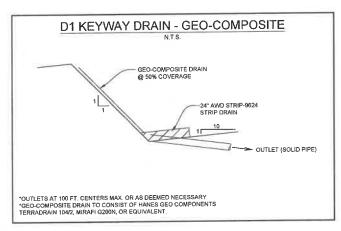


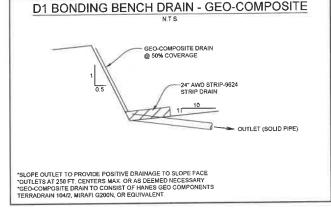


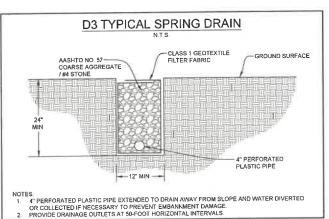




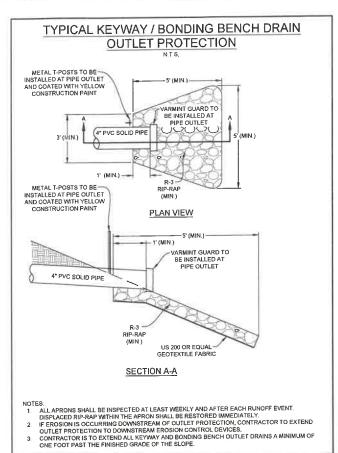


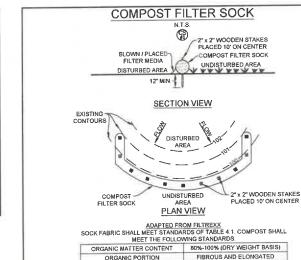












5.5-8.0 35%-55% 98% PASS THROUGH 1" SCREEN PARTICLE SIZE 5.0 dS MAXIMUM IOTES

1. COMPOST FILTER SOCK SHALL BE PLACED AT EXISTING LEVEL GRADE. BOTH ENDS OF THE SOCK SHALL BE EXTENDED AT LEAST 8" UP THE SLOPE OR TO A HEIGHT EQUAL TO THE EFFECTIVE SOCK HEIGHT. WHICK THE AREA OF THE AT 45" TO THE MAIN SOCK ALIGNMENT MAXIMUM SLOPE LENGTH ABOVE ANY WHICK SHALL NOT EXCEED MANUFACTURER'S MAXIMUM PERMISSIBLE SLOPE LENGTH.

2. TRAFFE SHALL NOT BE PERMITTED TO GROSS FILTER SOCKS.

3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/2 THE ABOVE GROUND HEIGHT OF THE SOCK AND DISPOSED IN THE MANNER DESCRIBED ESEMMENE IN THE PLAN.

4. SOCKS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

5. BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 8 MONTHS, PHOTODEGRADABLE SOCKS AFTER 1 YEAR POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDING.

- RECOMMENDATIONS

 8. UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

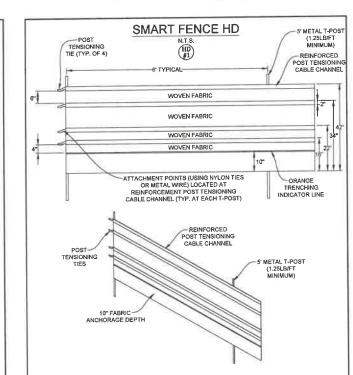
 7. IN THE EVENT THE GROUND IS FROZEN, 85 REBAR WITH SAFETY CAPS SHALL BE USED INSTEAD OF WOODEN STAKES TO ANCHOR THE FILTER SOCK. ONCE THE GROUND THAWS. THE REBAR ANCHORS SHALL BE REMOVED AND REPLACED WITH 2° x 2° WOODEN STAKES AND INSTALLED AS SHOWN IN THE DETAIL ABOVE.

GENERAL SITE EARTHWORK RECOMMENDATIONS

- ALL FILL AREAS SHOULD BE CLEARED OF TREES, STUMPS, AND VEGETATION AND STRIPPED OF TOPSOIL/ORGANIC SOILS PRIOR TO THE START OF FILL PLACEMENT.
- THE DISTRIBUTION AND GRADATION OF FILL MATERIALS SHALL BE SUCH THAT THE FILL WILL BE FREE OF LENSES, POCKETS, OR LAYERS OF MATERIALS DIFFERING SUBSTANTIALLY IN GRADATION FROM THE SURROUNDING MATERIALS WITHIN THE DESIGNATED FILL AREAS.
- 3 FILL SHALL BE PLACED AND SPREAD IN SUCCESSIVE AND APPROXIMATE HORIZONTAL LAYERS OF UNFORM THICKNESS BASED ON THE NOMINAL PARTICLE SIZE OF MATERIAL AND THE SIZE AND TYPE OF THE AVAILABLE COMPACTION EQUIPMENT. IN GENERAL, SOIL SHOULD BE PLACED IN NOMINAL 12 INCH MAXIMUM LOOSE LIFTS. LARGER ROCK INCORPORATED INTO THE FILL SHOULD TYPICAL BE LIMITED TO ZI INCHES THICK X 3 FEET X 3 FEET, WITH ALL VOID SPACE CHOKED WITH SMALLER PARTICLE SIZE MATERIAL.
- ADEQUATE COMPACTIVE EFFORT IS APPLIED BY UTILIZING THE PROPER COMPACTION EQUIPMENT FOR THE COMPOSITION OF THE FILL MATERIALS BEING PLACED, SEGMENTED, SHEEPSFOOT, AND/OR PADPOOT ROLLERS SHOULED WHEN PLACING PREDOMINATELY CLAYEY (COHESIVE) FILL MATERIALS. THESE TYPES OF ROLLERS ARE ALSO EFFECTIVE ON CLAYEY SHALES, CLAYSTONE, AND SOFTER SANDSTONE TO BREAK DOWN THE ROCK PARTICLES. SMOOTH POLIVI VIBRATORY ROLLERS SHOULD BE UTILIZED ON PREDOMINATELY GRANULAR FILL MATERIALS AND TO SEAL CLAYEY SOILS TO HELP PREVENT SURFACE WATER INFILTRATION AND/OR TO
- 5 ALL FILL MATERIALS SHALL BE COMPACTED BY A SUFFICIENT NUMBER OF COMPLETE TRIPS (I.E. PASSES) OF THE APPROPRIATE COMPACTION EQUIPMENT TO ATTAIN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM TEST DESIGNATION D698 (STANDARD PROCTOR), MAINTAIN THE MOISTURE CONTENT OF THE FILL MATERIALS AS SSARY TO ATTAIN THE DESIRED COMPACTION DENSITY
- UNDISTURBED AND/OR FILL MATERIALS PLACED WITHIN THE UPPER 12 INCHES OF FINAL GRADE UNUISTURGED ANDER FILE MORTHAGS POACH WITHIN THE MAXIMUM DRY DENSITY AS SHOULD BE COMPACTED TO ATTAIN A MINIMUM OF 10% OF THE MAXIMUM DRY DENSITY AS DETERMINED IN ACCORDANCE WITH ASTM TEST DESIGNATION D698 (STANDARD PROCTOR) AT AN IMPLACE MOISTURE WITHIN 3% OF THE MATERIAL'S OFFINIUM MOISTURE CONTENT. THE ENTIRE SUBGRADE SURFACE SHOULD BE THOROUGHLY SEALED USING A VIBRATORY SMOOTH DRUM
- TO VERIFY THE SPECIFIED DEGREE OF COMPACTION AND TO DETERMINE THE IN-PLACE MOISTURE CONTENT AS STATED ABOVE, IN-PLACE FIELD DENSITY TESTS SHOULD BE PERFORMED IN ACCORDANCE TO THE PROCEDURES OF ASTM D2922 (NUCLEAR DENSOMETER).
- 8. IN ADDITION TO IN-PLACE FIELD DENSITY TESTING, ACCEPTANCE SHOULD ALSO BE PREDICATED ON A VISUAL PERFORMANCE CRITERIA. OBVIOUS SURFACE RUTTING ANDIOR DEFLECTION THAT ARE JUDGED TO BE DETRIMENTAL TO THE OVERALL STABILITY OF THE FILL AREA SHOULD BE REMOYED, MOISTURE CONDITIONED AND RECOMPACTED, OR OTHERWISE ADDRESSED PRIOR TO
- WHERE PREDOMINATELY "ROCKY" FILL MATERIALS ARE PLACED OR WHERE REPRESENTATIVE NUCLEAR DENSOMETER TESTS CANNOT BE OBTAINED, A VISUAL NON-DEFLECTION CRITERIA SHOULD BE DEVELOPED IN CONJUNCTION WITH AN ADEQUATE NUMBER OF ROLLER PASSES FOR ACCEPTANCE.

NOTE:

 THE GEOTECHNICAL NOTES AND DETAILS SHOWN ON THIS SHEET ARE FOR THE GENERAL EARTHWORK AND SUBSURFACE DRAINAGE ASSOCIATED WITH THE CONSTRUCTION OF THIS SITE. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL INVESTIGATION REPORT FOR ADDITION GUIDANCE AND RECOMMENDATIONS.



SMART FENCE HD SHOULD BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE

SMART FENCE HD SHOULD BE PLACED AS CLUSE TO THE CONTOUR AS POSSIBLE.

ENDS SHALL BE EXTENDED UPHILL A MINIMUM OF 2' CHRITICAL FEET.

SMART FENCE HD SHALL BE EMBELDED A MINIMUM OF 10' INTO THE GROUND.

METAL POSTS AS SPECIFIED BY WY DOT CAN BE REPLACED BY PRESSURE-TREATED 4" x 4" POSTS.

ATTACHMENT NYLON TIES OR METAL WIRE FOR POSTS SHALL BE PLACED BELOW TENSIONING TIE

LOCATION WITHIN LOWER "O' OF REINFORCEMENT POST TENSIONING CABLE CHANNEL.

SMART FENCE HD SHOULD BE INSPECTED AT A MINIMUM ONCE EVERY 7 CALENDAR DAYS OR WITHIN 24

HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCHES OF RAIN PER 24 HOUR PERIOD. ANY

REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

SIETER SAURGE REPURPONMENTAL SMART FENCE HD INSTALLED WITH 1-POSTS ADD 01-12-2016

SOURCE ACF ENVIRONMENTAL SMART FENCE HD INSTALLED WITH T-POSTS ADS 01-12-2016





THIS DOCUMENT WAS PREPARED FOR: ANTERO RESOURCES CORPORATION

PAD

WATER CONTAINMENT GREEN DISTRICT FURBE So

PAD WELL]



DATE: 04/18/2022

SCALE: N/A SHEET 10 OF 12

REVEGETATION

WEST VIRGINIA EROSION AND SEDIMENT CONTROL FIELD MANUAL WEST VIRGINIA ENGINEARY SECTION OFFICE OF OIL AND GAS CHARLESTON, WVA. SECTION IV



TEMPORARY SEEDING:

a. GENERAL CONDITIONS WHERE PRACTICE APPLIES

GENERAL CONDITIONS WHERE PRACTICE APPLIES
WHERE EXPOSED SOIL SURFACES ARE NOT TO BE FINE-GRADED OR WORKED FOR PERIODS LONGER THAN 21 DAYS. TEMPORARY VEGETATIVE COVER WITH SEDIMENT CONTROLS MUST BE ESTABLISHED WHERE RUNOFF
WILL GO DIRECTLY INTO A STREAM. IMMEDIATELY UPON CONSTRUCTION OF THE SITE (SITE INCLUDES ROAD AND LOCATION), VEGETATION MUST BE ESTABLISHED ON ROAD BANK AND LOCATION SLOPES. A PERMANENT
VEGETATIVE COVER SHALL BE APPLIED TO AREAS THAT WILL BE LEFT UN-WORKED FOR A PERIOD OF MORE THAN SIX MONTHS

SEED MIXTURES AND PLANTING DATES
REFER TO TABLES IV-2 THROUGH IV-4 FOR RECOMMENDED DATES TO ESTABLISH VEGETATIVE COVER AND THE APPROVED LISTS OF TEMPORARY AND PERMANENT PLANT SPECIES AND PLANTING RATES. TABLE IV-3 GIVES
RECOMMENDED TYPES OF TEMPORARY VEGETATION, RATES OF APPLICATION, AND OPTIMUM SEEDING DATES. IN SITUATIONS WHERE ANOTHER COVER IS DESIRED, CONTACT THE LOCAL SOIL CONSERVATION DISTRICT FOR
SEEDING RECOMMENDATIONS.

SEED APPLICATION
APPLY SEED BY BROADCASTING, DRILLING, OR BY HYDROSEED ACCORDING TO THE RATES INDICATED IN TABLE IV.3. PERFORM ALL PLANTING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. NECESSARY SITE PREPARATION APPLY SEED BY BROADCASTING, DRILLING, OR BY HYDROSEED ACCORDING TO SEEDING. SEEDBED PREPARATION MAY NOT BE REQUIRED ON NEWLY DISTURBED AREAS SEED APPLICATION

ERMANENT SEEDING:

a. GENERAL

EGNERAL
PERMANENT VEGETATIVE COVER WILL BE ESTABLISHED WHERE NO FURTHER SOIL DISTURBANCE IS ANTICIPATED OR NEEDED. SOIL FERTILITY AND PHLEVEL SHOULD BE TESTED AND ADJUSTED ACCORDING TO SEED SPECIES PLANTED. PLANTING OF PERMANENT VEGETATIVE COVERS MUST BE PERFORMED ON ALL DISTURBED AREAS AFTER COMPLETION OF THE DRILLING PROCESS. ANY SITE THAT CONTAINS SIGNIFICANT AMOUNTS OF SPECIES PLANTED. PLANTING OF PERMANENT VEGETATION WHEN FEASIBLE. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS A GOOD BONDING TO THE SUB-LAYER CAN BE ACHIEVED. AFTER PROPER GRADING AND SEEDBED PREPARATION, THE VEGETATION WILL REESTABLISH GROUND COVER FOR THE CONTROL OF SURFACE WATER RUNOFF EROSION.
ALL REQUIRED SEEDBED PREPARATION AND LOOSENING OF SOIL BY IDISING OR DOZER TRACKING SHOULD BE PERFORMED JUST PRIOR TO SEEDING. IF SEEDBED PREPARATION IS NOT FEASIBLE, 50% MORE SEED SHALL BE ADDED TO THE RECOMMENDED RATES SHOWN IN TABLES IV-3 AND IV-4.
WHEN HYDROSEEDING, SEEDBED PREPARATION MAY NOT BE NECESSARY IF ADEQUATE SITE PREPARATION WAS PERFORMED. INCORPORATE THE APPROPRIATE AMOUNT OF LIME AND/OR FERTILIZER IN THE SLURRY MIX WHEN HYDROSEEDING.

WHEN HYDROSEEDING
WHEN HYDROSEDING, IRST IM THE LIME, FERTILIZER, AND HYDRO-MULCH IN THE RECOMMENDED AMOUNT OF WATER. MIX THE SEED AND INOCULANTS TOGETHER WITHIN ONE HOUR PRIOR TO PLANTING, AND ADD TO THE
WHEN HYDROSEEDING, IRST IM THE LIME, FERTILIZER, AND HYDRO-MULCH IN THE RECOMMENDED AMOUNT OF WATER. MIX THE SEED AND INOCULANTS TOGETHER WITHIN ONE HOUR FINE THE SEED AND INOCULANTS TOGETHER WITHIN ONE HOUR FINE THE SEED AND INCOME.
SURRY JUST BEFORE SEEDING. APPLY THE SURRY UNIFORMLY OVER THE PREPARED SITE. ASSURE THAT AGITATION IS CONTINUOUS THROUGHOUT THE SEEDING OPERATION AND THE MIX IS APPLIED WITHIN ONE HOUR

b. LIME AND FERTILIZER

- 1 LIME SHALL BE APPLIED TO ALL PERMANENT SEEDINGS. THE PH OF THE SOIL IS TO BE DETERMINED AND LIME APPLIED ACCORDINGLY. ONCE THE PH IS KNOWN, SELECT THE AMOUNT OF LIME TO BE APPLIED FROM TABLE
- 2. FERTILIZER SHALL BE APPLIED IN ALL PERMANENT SEEDINGS. APPLY THE EQUIVALENT FOR 500 LBS. MINIMUM 10-20-20 FERTILIZER PER ACRE OR USE THE AMOUNT OF FERTILIZER AND LIME RECOMMENDED BY A
- CERTIFIED SOIL TEST.

 3. APPLICATION: FOR BEST RESULTS AND MAXIMUM BENEFITS, THE LIME AND FERTILIZER ARE TO BE APPLIED AT THE TIME OF SEEDBED PREPARATION.

PERMANENT SEED MIXTURES
PLANNERS SHOULD TAKE INTO CONSIDERATION THE SPECIES MAKEUP OF THE EXISTING PASTURE AND THE LANDOWNER'S FUTURE PASTURE MANAGEMENT PLANS WHEN RECOMMENDING SEED MIXTURES. SELECTION: FROM TABLES IN-TABLES I

- OTES:

 1. ALL LEGUMES MUST BE PLANTED WITH THE PROPER INOCULANTS PRIOR TO SEEDING

 1. ALL LEGUMES MUST BE PLANTED WITH THE PROPER INOCULANTS PRIOR TO SEEDING

 2. LATHCO'FLATPEA IS POTENTIALLY POISONOUS TO SOME LIVESTOCK.

 3. ONLY ENDOPHYTE FREE VARIETIES OF TALL FESCUE SHOULD BE USED. TALL FESCUE AND CROWNVETCH ARE ALSO VERY INVASIVE SPECIES, NON-NATIVE TO WV.

 3. ONLY ENDOPHYTE FREE VARIETIES OF TALL FESCUE SHOULD BE USED. TALL FESCUE AND CROWNVETCH ARE ALSO VERY INVASIVE SPECIES, NON-NATIVE TO WV.

 4. FOR UNPREPARED SEEDIES OF SEEDING OUTSIDE THE OPTIMUM TIMEFRAMES, AND 50% MORE SEED TO THE SPECIFIED RATE. MIXTURES IN TABLE IV-4B ARE MORE WILDLIFE AND FARM FRIENDLY; THOSE LISTED IN BOLD ARE SUITABLE FOR USE IN SHADED WOODLAND SETTINGS. MIXTURES IN ITALIC ARE SUITABLE FOR USE IN FILTER STRIPS.

SECUING FOR WILDLIFE MABITAT.

CONSIDER THE USE OF THE NATIVE PLANTS OR LOCALLY ADAPTED PLANTS WHEN SELECTING COVER TYPES AND SPECIES FOR WILDLIFE HABITAT. WILDLIFE FRIENDLY SPECIES OR MIXES THAT HAVE MULTIPLE VALUES SHOULD BE CONSIDERED. SEE WILDLIFE FRIENDLY SPECIES/MIXTURES IN TABLE IV-4B. CONSIDER SELECTING NO OR LOW MAINTENANCE LONG-LIVED PLANTS ADAPTABLE TO SITES WHICH MAY BE DIFFICULT TO MAINTAIN WITH EQUIPMENT.

a GENERAL ORGANIC MULCHES

GENERAL ORGANIC MULCHES
THE APPLICATION OF STRAW, HAY, OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION. STRAW MADE FROM WHEAT OR OATS IS THE PREFERRED MULCH. THE USE OF HAY IS PERMISSIBLE, BUT NOT THE APPLICATION OF STRAW, HAY, OR OTHER SUITABLE MATERIALS TO THE SOIL SURFACE TO PREVENT EROSION. STRAW MADE FROM WHEAT OR OATS IS THE PREFERRED MULCH. THE USE OF HAY IS PERMISSIBLE, BUT NOT HER DISK OF SPREADING INVASIVE SPECIES. MULCH MUST BE APPLIED TO ALL TEMPORARY AND PERMANENT SEEDING ON ALL DISTURBED AREAS. DEPENDING ON SITE CONDITIONS, IN CRITICAL AREAS SUCH AS WATERWAYS OR STEEP SLOPES, ADDITIONAL OR SUBSTITUTE SOIL PROTECTIVE MEASURES MAY BE USED IF DEEMED NECESSARY. EXAMPLES INCLUDE JUTE MESH AND SOIL STABILIZATION BLANKETS OR EROSION STRAW AND SOIL STABILIZATION BLANKETS OR EROSION STRAW AND SOIL STABILIZATION STRAW AND

CONTROL MATTING
AREAS THAT HAVE BEEN TEMPORABILY OR PERMANENTLY SEEDED SHOULD BE MULCHED IMMEDIATELY FOLLOWING SEEDING MULCHES CONSERVE DESIRABLE SOIL PROPERTIES, REDUCE SOIL MOISTURE LOSS, PREVENT
CRUSTING AND SEALING OF THE SOIL SURFACE, AND PROVIDE A SUITABLE MICROCLIMATE FOR SEED GERMINATION.
CRUSTING AND SEALING OF THE SOIL SURFACE, AND PROVIDE A SUITABLE MICROCLIMATE FOR SEED GERMINATION.
AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON SHOULD BE MULCHED TO PROVIDE SOME PROTECTION TO THE SOIL SURFACE, AN ORGANIC MULCH, STRAW, OR HAY SHOULD BE USED AND THE AREA THEN
AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASONAL CONDITIONS PERMIT. DO NOT USE FIBER MULCH (CELLULOSE-HYDROSEED) ALONE FOR THIS PRACTICE; AT NORMAL APPLICATION RATES IT WILL NOT GIVE THE SOIL
SEEDED AS SOON AS WEATHER OR SEASONAL CONDITIONS PERMIT. DO NOT USE FIBER MULCH (CELLULOSE-HYDROSEED) ALONE FOR THIS PRACTICE; AT NORMAL APPLICATION RATES IT WILL NOT GIVE THE SOIL

SECEDEN SO OF OTHER TYPES OF MULCH OSE OWNER.

PROTECTION OF OTHER TYPES OF MULCH ON SCHOOL OF THE TOP OF (AS A SEPARATE OPERATION)

WOOD CELLULOSE FIBER MULCH DOES NOT ALONE PROVIDE SUFFICIENT PROTECTION ON HIGHLY ERODIBLE SOILS, OR DURING LESS THAN FAVORABLE GROWING CONDITIONS. FIBER MULCH SHOULD NOT BE USED NEWLY SEEDED AREAS. FIBER MULCH DOES NOT ALONE PROVIDE SUFFICIENT PROTECTION ON HIGHLY ERODIBLE SOILS, OR DURING LESS THAN FAVORABLE GROWING CONDITIONS. FIBER MULCH SHOULD NOT BE USED NEWLY SEEDED AREAS. FIBER MULCH SHOULD NOT BE USED NOT ALONE DURING THE DRY SUMMER MONTHS OR WHEN USED FOR LATE FALL MULCH COVER. USE STRAW MULCH DURING THE SEP RIVIDED AND FIBER MULCH MAY BE USED TO TACK (ANCHOR) THE STRAW MULCH. FIBER MULCH DURING THE SEP SUPPORT OF THE SEP

b. CHEMICAL MULCHES, SOIL BINDERS, AND TACKIFIERS
A WIDE RANGE OF SYNTHETIC SPRAY ON MATERIALS ARE MARKETED TO STABILIZE AND PROTECT THE SOIL SURFACE. THESE ARE MIXED WITH WATER AND SPRAYED OVER THE MULCH AND TO THE SOIL. THEY MAY BE USED
ALONE IN SOME CASES AS TEMPORARY STABILIZERS, OR IN CONJUNCTION WITH FIBER MULCH, STRAW, OR HAY.
WHEN USED ALONE, MOST CHEMICAL MULCHES DO NOT HAVE THE CAPABILITY TO INSULATE THE SOIL OR RETAIN SOIL MOISTURE THAT ORGANIC MULCHES HAVE.

c. SPECIFICATIONS FROM TABLE IV-8 SELECT THE TYPE OF MULCH AND RATE OF APPLICATION THAT WILL BEST SUIT THE CONDITIONS AT THE SITE.

I. ANCHORING
DEPENDING ON THE FIELD SITUATION, MULCH MAY NOT STAY IN PLACE BECAUSE OF WIND ACTION OR RAPID WATER RUNOFF. IN SUCH CASES, MULCH IS TO BE ANCHORED MECHANICALLY OR WITH MULCH NETTING
1. MECHANICAL ANCHORING
1. MECHANICAL ANCHORING
2. PRILY MULCH AND PULL MULCH ANCHORING TOOL OVER THE MULCH. WHEN A DISK IS USED, SET THE DISK STRAIGHT AND PULL ACROSS SLOPE MULCH MATERIAL SHOULD BE TUCKED INTO THE SOIL ABOUT 3".
2. MULCH NETTING
FOLLOW MANUFACTURER'S RECOMMENDATION WHEN POSITIONING AND STAPLING THE MULCH NETTING IN THE SOIL.

ANTERO'S PREFERRED SEED MIXTURE

HALL'S #1 PASTURE MIXTURE					
Species/Contains	Pure Seed	Gerns	Origin		
Bestfor Intermediate Ryegras	29.95%	90%	OR		
Climax Timothy	24.96%	90%	CAN		
Annual Ryegrass *	24.92%	90%	OR		
Medium Red Clover *	9.99%	90%	OR		
Potomac Orchardgrass	9.46%	90%	OR		
Other Crop Seeds:	0.01%		* Variety Not Stated		
inert Matter:	0.69%		AMS: 5143		
Weed Seeds:	0.02%		ANG: 3143		

Table IV-1

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

Table IV-2

Acceptable Fertilization Recommendation					
Species	N (Ibs/sk)	F205 (lbs/ac)	Example Roc (per sere)		
Cool Season Grass	40	80	400 lbs. 10-20-20		
CS Grass & Legume	30	60	300 (bs. 10-20-20		
Temporary Cover	40	40	200 lbs. 19-19-19		

Table IV-3

Species	Seeding Nate Dits/ecra)	Optimum Seeding Dates	Dreinage:	pH Range
Annual Ryegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Poorly	5.5 - 7.5
Field Bromegrass	40	3/1 - 6/15 or 8/15 - 9/15	Well - Mod. Well	50-70
Spring Oats	96	3/1 - 6/15	Well - Poorly	5.5 - 7.0
Sundangrass	40	5/15-8/15	Well - Poorly	5.5 - 7.5
Winter Rye	168	8/15-10/15	Well - Poorly	5.5 - 7.5
Winter Wheat	1.80	8/15-11/15	Well - Mod. Well	5.5 - 7.0
Japanese Millet	30	6/15 - 8/15	Well	4.5 - 7.0
Redtop	5	3/1-6/15	Well	4.0 - 7.5
Annual Ryegrass	26	3/1-6/15	Well - Poorly	5.5 - 7.5
Spring Oats	64	3/1 - 6/15	Well - Poorly	5.5 - 7.5

Table IV-4A

	Permanent Seed	ing Mixture	
Species/Mixture	Sending Rate (Its/som)	Soil Drainage preference	phi Range
Crownvetch /	10 - 15	Well - Mod. Well	5.0 - 7.5
Tall Fescue	30	Tron Tribut Tren	
Crownvetch/	10 - 15	Well - Mod Well	5.0 - 7.5
Perennial Ryegrass	20	Well mod wen	0.0 7.0
latpea or Perennial Pea /	20	Well - Mod. Well	4.0 - B.0
Tall Fescue	15	10011 - 111001. 111011	
Ladino Clover /	30		
Serecia Lespedeza /	25	Well - Mod. Well	4.5 - 7.5
Tall Fascus	2		
Tall Fescue /	40		
Ladino Clover /	3	Well - Mod. Well	5.0- 7.5
Redtop	3		
Crownvetch /	10		5,0 - 7,5
Tall Fescue /	20	Well - Mod. Well	
Redtop	3		
Tall Fescue /	40		
Birdsfoot Trefoil /	10	Well - Mod. Well	5.0 - 7.5
Redtop	3		
Serecia Lespedeza/	25		
Tall Fescue /	30	Well - Mod. Well	4.5 - 7.5
Redtop	3.		
Redtop /	30		5.0 - 7.5
Tall Fescue /	3	Well - Mod. Well	
Creeping Red	90		
Tall Fescue	50	Well - Poorly	45-7.5
Perennial Ryegrass /	10		
Tall Fescue /	15	Well - Poorly	5.8 - 8.0
Lathco Flatpea *	20		

* 'Lathco' Flatpea is potentially poisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate.

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

Table IV-48 Wildlife and Farm Friendly Seed Mixtures

Species/Mixture	Seeding Bate (Un/acce)	Soil Drainage preference	pH flange	
KY Bluegrass /	20			
Redtop /	3	Well - Mod. Well	5.5 - 7.5	
Ladino Clover or Birdsfoot Trefoil	2/10			
Timothy /	5	Well - Mod. Well	6.5 - 8.0	
Alfalfa	12	TTEIT - IVIOUT TTEIT		
Timothy /	5	Well - Poorly	5.5 - 7.5	
Birdsfoot Trefoil	8	wen room,	2.3 1.3	
Orchardgrass /	10			
Ladino Clover /	2	Well - Mod. Well	5.5 - 7.5	
Redtop	3			
Orchardgrass /	10	Well - Mod. Well	5.5 - 7.5	
Ladino Clover	2	Tren meet trans		
Orchardgrass /	20	Well - Mod. Well	5.5 - 7.5	
Pecennial Ryegrass	10	17217 111031 11103		
Creeping Red Fescue /	30	Well - Mod. Well	5.5 - 7.5	
Perennial Ryegrass	10			
Orchardgrass or KY Bluegrass	20	Well - Mod. Well	6.0 - 7.5	
Birdsfoot Trefoil /	10		5.5 - 7.9	
Redtop /	5	Well - Mod. Well		
Orchardgrass	20			
Lathco Flatpea */			5.5 - 7.5	
Perennial Ryegrass	20	Well - Mod. Well		
Lathco Flatpea */	30	Well - Mod. Well	5.5 - 7.5	
Orchardgrass	20	44611 - 1410d. 44611 3.3 - 7		

* 'Lathco' Flatpea is potentially paisonous to some livestock. All legumes should be planted with proper inoculants prior to seeding. For unprepared seedbeds or seeding outside the optimum timeframe, add 50% more seed to the specified rate.

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

Table IV-5

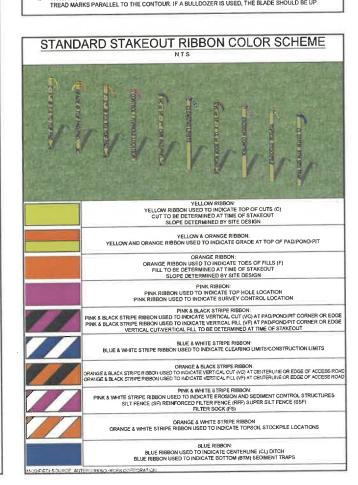
pit of Sell	Lime in Tons per Acre.	Fertilizer, Ubs. per Acre 110-20-20 or Equivalent
Above 6.0	2	500
5.0 to 6.0	1	500
Below 5.0	4	500

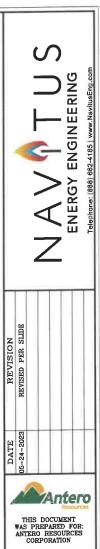
The pH can be determined with a portable pH testing kit or by sending the soil samples to a soil testing laboratory. When 4 tons of lime per acre are applied it must be incorporated into the soil by disking, nackblading or tracking up and down the slope

Table IV-6

Makedal	Minimum Bitts per unr	Coverage	tizenatis
Hay or Straw	2 to 3 Tons 100 to 150 bales	Cover 75% to 90% of Surface	Subject to wind blowing or washing unless tied down
Wood Fiber Pulp Fiber Wood - Cellulose Recirculated Paper		Cover all Disturbed Areas	For hydroseeding

SLOPE TRACKING -TRACKING DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE TRACKING SLOPES ARE DONE BY RUNNING TRACKED MACHINERY UP AND DOWN THE SLOPE, LEAVING TREAD MARKS PARALLEL TO THE CONTOUR. IF A BULLDOZER IS USED, THE BLADE SHOULD BE UP.





PAD WATER CONTAINMENT GREEN DISTRICT COUNTY, WEST VIRGINIA FURBE

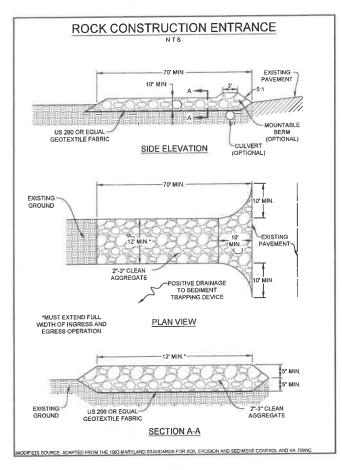
LEGEND

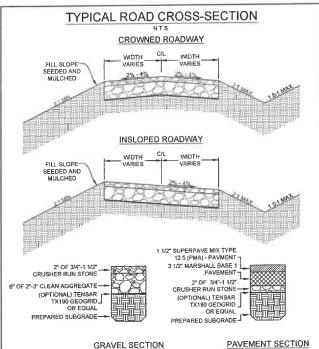
8 PAD ELL ₹

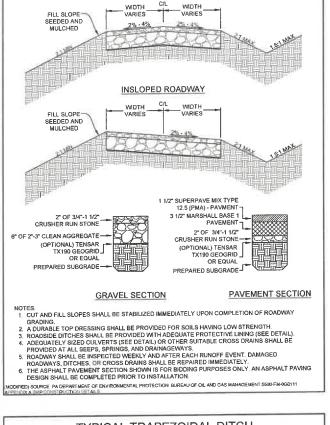


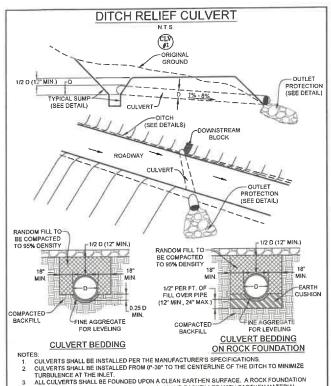
DATE: 04/18/2022 SCALE: N/A

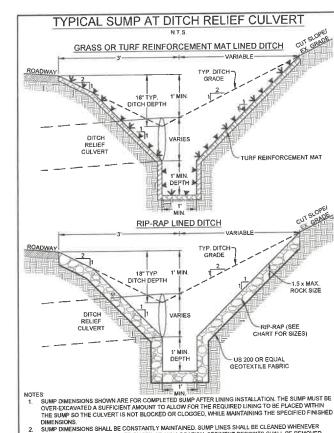
SHEET 11 OF 12











DIMENSIONS.
SUMP DIMENSIONS SHALL BE CONSTANTLY MAINTAINED. SUMP LINES SHALL BE CLEANED WHENEVER
TOTAL SUMP DEPTH IS REDUCED BY 25% AT ANY LOCATION. SEDIMENT DEPOSITS SHALL BE REMOVED
WITHIN 24 HOURS OF DISCOVERY OR AS SOON AS SOIL CONDITIONS PERMIT ACCESS TO SUMP WITHOUT

OUTLET PROTECTION RIP-RAP PLAN VIEW -6' MIN.-1.5' MIN. =EXTEND GEOTEXTILE FABRIC AND RIP-RAP 6" MI REINFORCEMEI MAT (TRM) GEOTEXTILE FABRIC -1.5 x MAX ROCK SIZE SECTION A-A TOE KEY NOTES:

1. MIN.

1. ARPA TO BE INSPECTED PRIOR TO FABRIC AND STONE PLACEMENT AND VERIFIED THAT FABRIC IS APPROPRIATELY TRENCHED PRIOR TO STONE PLACEMENT

2. ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN IN CHART. TERMINAL WIDTHS SHALL BE ADJUSTED AS INCESSARY TO MATCH RECEIVING CHANNELS.

3. ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIP-RAP WITHIN THE APRON SHALL BE RESTORED IMMEDIATELY.

4. EXTEND RIP-RAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DIAMETER OF PIPE ON BOTH SIDES

TO PREVENT SCOUR AROUND THE PIPE
TURF REINFORCEMENT MAT (TRIM) SHALL BE INSTALLED FROM OUTLET PROTECTION TO
DOWNSTREAM EROSION AND SEDIMENT CONTROL TO PREVENT SOIL RILLING.

IMODIFIED) SOURCE WEST VIRGINIA EROSION AND SECIMENT CONTROL SEST MANAGEMENT PRACTICE MANU

TYPICAL TRAPEZOIDAL DITCH (DL) GRASS OR TURF REINFORCEMENT MAT LINED DITCH VARIES--TURE REINFORCEMENT MAT RIP-RAP LINED DITCH TES.

ALL DITCH LINE PROTECTION SHALL BE INSTALLED AS RECOMMENDED IN THE WEST VIRGINIA EROSION AND SEDMENT CONTROL BEST MANAGEMENT PRACTICE (BMP) MANUAL DITCH LINE PROTECTION SHALL BE BASED ON THE FOLLOWING GRADES:

1.1. LESS THAN 3% - GRASS
1.2. 3%-9% - TUPR REINFORCEMENT MAT OR GRASS WITH ROLLED EROSION CONTROL PRODUCTS (R.E.C.P.).

1.3. GREATER THAN 9% - RIP-RAP, SEE CHART FOR SIZES.

TYPICAL OUTLET PROTECTION SHALL BE INSTALLED AT DOWNSTREAM END OF ALL DITCH LINES. SEE OUTLET PROTECTION DETAIL.

DITCH DIMERSIONS SUGMAN ADE EDG COLVOILETED DATAL ACCEPT LINES (USTALL AND ADE COLORIDOR).

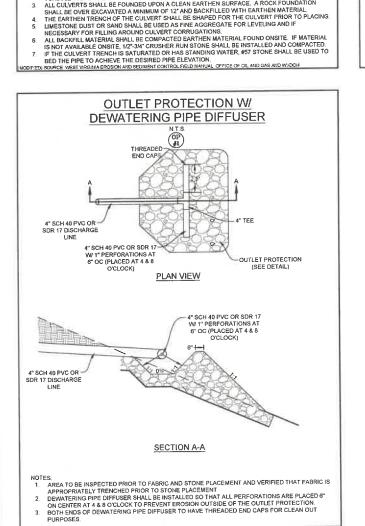
ET PROTECTION DE LAIL. DIMENSIONS SHOWN ARE FOR COMPLETED DITCH AFTER LINING INSTALLATION. THE DITCH MUST BE

DITCH DIMENSIONS SHOWN ARE FOR COMPLETED DITCH AFFEL LINING INSTALLATION. THE DITCH MUST COVER EXCAVATED A SUFFICIENT AMOUNT TO ALLOW FOR THE REQUIRED LINING TO SE PLACED WITHIN THE DITCH WHILE MAINTAINING THE SPECIFIED FINISHED DIMENSIONS. DITCH DIMENSIONS SHALL BE CONSTANTLY MAINTAINED DITCH LINES SHALL BE CLEANED WHENEVER TOTAL DITCH DEPTH IS REDUCED BY 25% AT ANY LOCATION SEDMENT OPEOSITS SHALL BE REMOVED. WITHIN 24 HOURS OF DISCOVERY OR AS SOLIC CONDITIONS PERMIT ACCESS TO DITCH WITHOUT DITCH WIT FURTHER DAMAGE.

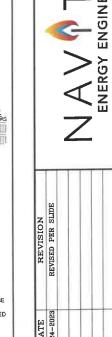
FURTHER DAMAGE.

DAMAGED LINING SHALL BE REPAIRED OR REPLACED WITHIN 48 HOURS OF DISCOVERY.

IF HIGH EROSIVE SOILS ARE ENCOUNTERED DURING CONSTRUCTION, THE ENGINEER SHOULD BE
CONTACTED FOR FURTHER EVALUATION.







ERING

Antero

THIS DOCUMENT
WAS PREPARED FOR:
ANTERO RESOURCES
CORPORATION

PAD WATER CONTAINMENT P.
GREEN DISTRICT
L COUNTY. WEST UTDOTATED

So WELL PAD



SCALE: N/A SHEET 12 OF 12

m MEvers 6/6/2

LOCATION COORDINATES: ACCESS RAID 'A' ENTRANCE LATTUDE: 59.544902 LONGITUDE: -60.73168 (NAD 27) N 4376362.15 E 52311.11 (UTM 20NE 17 METERS) CENTROID OF FAD LATITUDE: 30.566850 LOWRITUDE: -80.751075 (NAD 85) LATITUDE: 30.566780 LORRITUDE: -80.751254 (NAD 27) N 4578611.65 E 523153.06 (UTM ZORE 17 METERS) GENERAL DESCRIPTION: THE SUDE REPAR IS BEING CONSTRUCTED TO AID IN THE DEVELOPMENT OF INDIVIDUAL MARCELLUS SHALE GAS WELLS. MISS UTILITY STATEMENT: ANTERO RESOURCES CORPORATION WELL MOTEY MISS UTILITY OF WEST VIRGINIA FOR THE LOCATING OF UTILITIES PRIOR TO THE PROJECT DESIRE. IN ABOUTION, MISS UTILITY WILL BE CONTACTED BY THE CONTRACTOR FROM TO THE START OF CONSTRUCTION FOR THIS PROJECT.

ENTRANCE PERMIT:

PROJECT CONTACTS:

ELI WAGORER — ENVIRONMENTAL ERGRICHE & RECULATORY MANAGER OFFICE: (304) 842—4086 CELL: (304) 475—9770

AARON KUNSLER - CONSTRUCTION MANAGER CELL (304) 842-4191

FURBEE WELL PAD & WATER CONTAINMENT PAD

AS-BUILT EROSION & SEDIMENT CONTROL IMPROVEMENT PLANS

GREEN DISTRICT, WETZEL COUNTY, WY LITTLE MUSRINGUM-MIDDLE ISLAND WATERSHED

PORTER FALLS & PINE GROVE USGS 7.5 QUAD MAP(S) WELL PADY WATER SHEET INDEX:

1 — COVER SHEET

2 — NOTES

3 — DEGLETO

4 — OVERALL PLAN SHEET INDEX

5 — ACCESS ROAD, WELL PLAD, & WATER CONTAINMENT PAD AS-BUILT PLAN

7 — ACCESS ROAD, WELL PLAD, & WATER CONTAINMENT PAD AS-BUILT PLAN

6 — WELL PLAD WATER CONTAINMENT PAD & STOCKPEE AS-BUILT SECTIONS

9 — STOCKPEE AND ASSESSMENT SECTIONS

10-12 — CONSTRUCTION DETAILS

Referred and Impant Cases FIII (SF)

Colvert / Indical Collection (LP) Total Permanent Impact (LP)

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ten Little IMPACTS SHOWN CRASS WERE PERMITTED PREVIOUSLY UNDER THE PURBER WELL PAD DESIGN

NAC IS LAND LONG TOTAL PLAN LONG 481-43-82-8999 LAT N-35-78-2988

LONG 40-43-52 603 LONG 4849-52.55 LONO 4943-62.40 LAT 39-53-23-408

AT 19-55-05 7800

LONG 88-83-89 386 LAT 29-33-34, 1809

LDNS 48-43-81,3032 LAT 28-43-31-3144 CHIS 48-43-91,1438 AT 26-23-22 6369

LONG 48-43-41,0128 LAT 28-13-23-423-4 LONG 48-43-60-9136 LAT 28-23-23 7879

LAT 78-25-42-90.9923

LOVO 4043-80,7034 LAT 30-33-34,5671

pact (LP)	Δ - 24 - 24 - 24 - 24 - 24 - 24 - 24 - 24
63	Anterv
eal Temp. pact (UF)	THIS DOCUMENT WAS PREPARED FOR ANTERO RESOURCES CORPORATION
	PAD

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FURBEE
WATER CONTAINMENT P
GREEN DISTRICT
COUNTY WEST VIRGINIA

4 WELL PAD



DATE: 04/18/2022

SCALE: AS SHOWN SHEET 1 OF 12

ENVIRONMENTAL NOTES:
STEAM AND WETLAND DELINEATIONS WERE PERFORMED IN SEPTEMBER, 2849 BY SEVEROMENTAL
STEAM AND WETLAND DELINEATIONS WERE THE SITE FOR WATERS AND WETLANDS THAT ARE MOST
SOLUTIONS & BENUVATIONS, INC. TO REVIEW THE SITE FOR WATERS AND WETLANDS THAT ARE MOST
LIKELY WITHIN THE REQUILATIONS PURITIES OF THE VIS. ARMY CORES OF ENGINEERES (URACE) AND/OR
THE WEST VISIGINAD DEPARTMENT OF ENVIRONMENTAL PROTECTION (WVDEP). THE SEPTEMBER ES, ZOUTHORS & DEPOVATIONE, INC. AND SEDIMARKES
THE RESIDENS OF THE FIELD DELINEATION. THE MAP DOES NOT, IN ANY WAY, EXPRESENT A
JURISDICTIONAL DETERMINATION OF THE LANDWAYD LIMITS OF WATERS AND WETLANDS WHICH MAY BE
RESIDENTED BY THE USACE OR THE WEDEP. ROBERT EDDY - UTLLYY COORDINATUR CHIL: (304) 719-5199

FLOODPIAN NOTES:
THE STE IS LOCATED WITHIN PEMA FLOOD ZURE "X" PER FEMA FLOOD MAP #54109COHROC. GEOTECHNICAL NOTES:

DAVID PATSY - LAND AGENT

ENGINEER/SURVEYOR:
RAVITUS ENCINEERING, INC.
CYBUS E RIME, PE - PROJECT MANAGER/ENGINEER CETICE: (888) 862-4185 CELL: (640) 886-8747

ENVIRONMENTAL:
ENVIRONMENTAL SOLUTIONS & NINOVATIONS, INC.
VALENCE CLARESTON - ECOLOGIST
OFFICE: (304) 780-5809 CELL: (513) 382-09287

CELL (304) 842-4131 GEOTECHNICAL:
ROBERT WIRES - DESERN MANAGER
OFFICE (304) 842-4100 CELL (304) 527-7405 CHRESTOFIRE W. SAMOS - PROJECT ENGINEER
(412) 372-4000 CELL (412) 569-0862

- NOTES:

 1. ALL BIRP'S MUST REMAIN IN PLACE AND FUNCTIONAL UNTIL ALL AREAS WITHIN THE LIMIT OF DESTUREMENCE ARE COMPLETE AND PERMANENTLY STABLEZED, MAINTENANCE MUST INCLINE INOPECTION OF ALL EROSCON AND REDBRIGHT CONTROLS AFTER EACH RUNOWF EVENT IN EXCESS OF O.5 AND OW A STREEKLY MASS.
- 2. THE CONSTRUCTION SITE SHOULD BE STABILIZED AS SOON AS POSSIBLE AFTER COMPLETION.

 ESTABLISHMENT OF PURAL STABILIZATION MUST BE BITLATED NO LATER THAN 7 DAYS AFTER

 EXACUSED FIRST CRADE FROM STABILIZATION MEANS THAT ALL SOCK-DISTURBEDG ACTIVITIES ARE

 COMPLETED, AND THAT STITES A PERBANERY VEGETATIVE COVER WITH A DESSITY OF TOS OR

 GREATER HAS BEEN ESTABLISHED OR THAT THE BURYANE BAS BEEN STABILIZED BY HAND COVER

 SUCH AS PAYEMENT OR BUBLIDGES, IT SHOULD BE NOTED THAT THE TOX EQUIREMENT REPRING

 TO THE TOTAL AREA VEGETATED AND BOT JUST A PERCENT OF THE SITE.
- 3. ALL PERMANENT SEMMENT CONTROL MEASURES CAN HE REMOVED AFTER THE SITE IS PERMANENTLY STAFFIZED AND APPROVAL IS RECEIVED FROM THE WYDEP.
- 4. ANY AREAS DESTRUCTED BY REMOVAL OF CONTROLS SHALL BE REPAIRED, STABILIZED, AND
- THE AS-BURT DEPOSMATION SHOWN HEREOF REFLECTS FIELD DATA COLLECTED RELATING TO THE FINAL GRADING OF THE DESTURBED AREA AS OF MAY 24, 2023. NAVITUS ENGINEERING IS NOT RESPONSIBLE FOR ANY CHANGES MADE TO THE SITE AFTER THE ABOVE MENTIONED DATES.
- 8. THE EXISTING CONTAINMENT BERM AROUND THE VELL PAD SHALL HE REPAIRED AS NECESSARY TO ENSURE 100% CONTAINMENT OF ALL PLUMS PRIOR TO DEPLOYS OPERATIONS
- THE EXISTING EGRESSES TO THE WELL PAU SHALL BAVE THE MOUNTABLE BEEMS REPAIRED AS NECESSARY TO ENSURE 100% CONTABRAINT OF ALL FILIDS PRIOR TO DRILLING OPERATIONS.

REPRODUCTION NOTE

THESE PLANS WERE CREATED TO HE PLOTTED ON 22'X34" (ANSI D) PAPER. HALF SCALE DRAWINGS ARE ON 11'X17" (ANSI B) PAPER.

THESE PLANS WERE CREATED FOR COLOR PLOTTING AND ANY PRODUCTIONS IN GRAY SCALE OR COLOR MAY RESULT IN A LOSS OF RMATION AND SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES

* - SITE (NOT TO SCALE)

WEST VIRGINIA COUNTY MAP

AS - BUILT CERTIFICATIONS:
THE DRAWINGS, CONSTRUCTION NOTES, AND
REFERENCE DIAGRAMS ATTACHED HERSTU HAVE
REEM PREVAIRED HA CORGANICS WHIT THE
WEST VICIORA CODE OF STATE RULES, DIVISION
OF BRYDOMERICHAL PROTECTION, OFFICE OF OIL
AND CAS CRS 36-8.

WVDOH COUNTY ROAD MAP

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

PB(SF) Total Impact (AC) (SF) (AC) (ST 0.00

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