



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

Friday, March 14, 2025
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

HG ENERGY II APPALACHIA, LLC
5260 DUPONT ROAD

PARKERSBURG, WV 26101

Re: Permit Modification Approval for Van Wie 1221 N-9H
47-041-05768-00-00

Adding an access road

HG ENERGY II APPALACHIA, LLC

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.

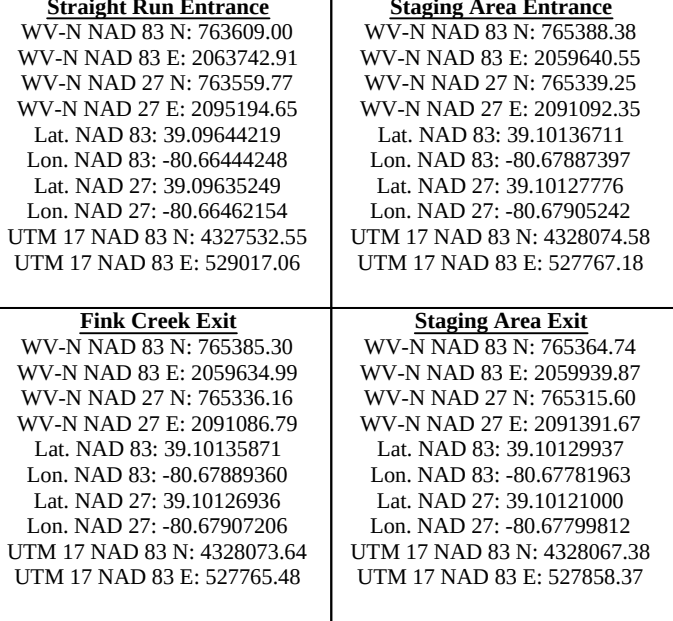
If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

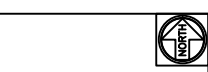
Operator's Well Number: Van Wie 1221 N-9H
Farm Name: HG Energy II Appalachia, LLC
U.S. WELL NUMBER: 47-041-05768-00-00
Horizontal 6A New Drill
Date Modification Issued: 3/14/2025

Promoting a healthy environment.

03/14/2025



consist of (2) 10,000 bbl (76' diameter)
secondary containment 12,000 bbl
) for processed water

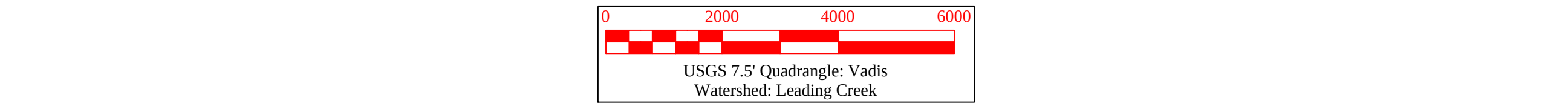


S-HI	S-HI
D 83 N: 763052.14	WV-N NAD 83 N: 763061.98
D 83 E: 2062633.11	WV-N NAD 83 E: 2062644.43
D 27 N: 763002.93	WV-N NAD 27 N: 763012.77
D 27 E: 2049404.85	WV-N NAD 27 E: 2049406.17
D 83 N: 763049.246	Lon. NAD 83: 39.09495126
D 83 E: -80.66835948	Lon. NAD 83: -80.66831947
D 27 N: 760948.638	Lon. NAD 27: 39.09486159
D 27 E: -80.66853842	Lon. NAD 27: -80.66849841
D 83 (m): N: 4327362.87	UTM 17 NAD 83 (m): 4327365.87
D 83 (m): E: 252678.96	UTM 17 NAD 83 (m): 252682.41
S-HI	S-HI
D 83 N: 762940.37	WV-N NAD 83 N: 762950.44
D 83 E: 2062649.37	WV-N NAD 83 E: 2062649.69
D 27 N: 763091.40	WV-N NAD 27 N: 763091.24
D 27 E: 2039857.11	WV-N NAD 27 E: 2039864.44
D 83 N: 39.09462039	Lon. NAD 83: 39.09464729
D 83 E: -80.66916322	Lon. NAD 83: -80.66912321
D 27 N: 39.09453072	Lon. NAD 27: 39.09453765
D 27 E: -80.66932413	Lon. NAD 27: -80.66930213
D 83 (m): N: 4327328.88	UTM 17 NAD 83 (m): 4327331.88
D 83 (m): E: 252609.57	UTM 17 NAD 83 (m): 252613.02



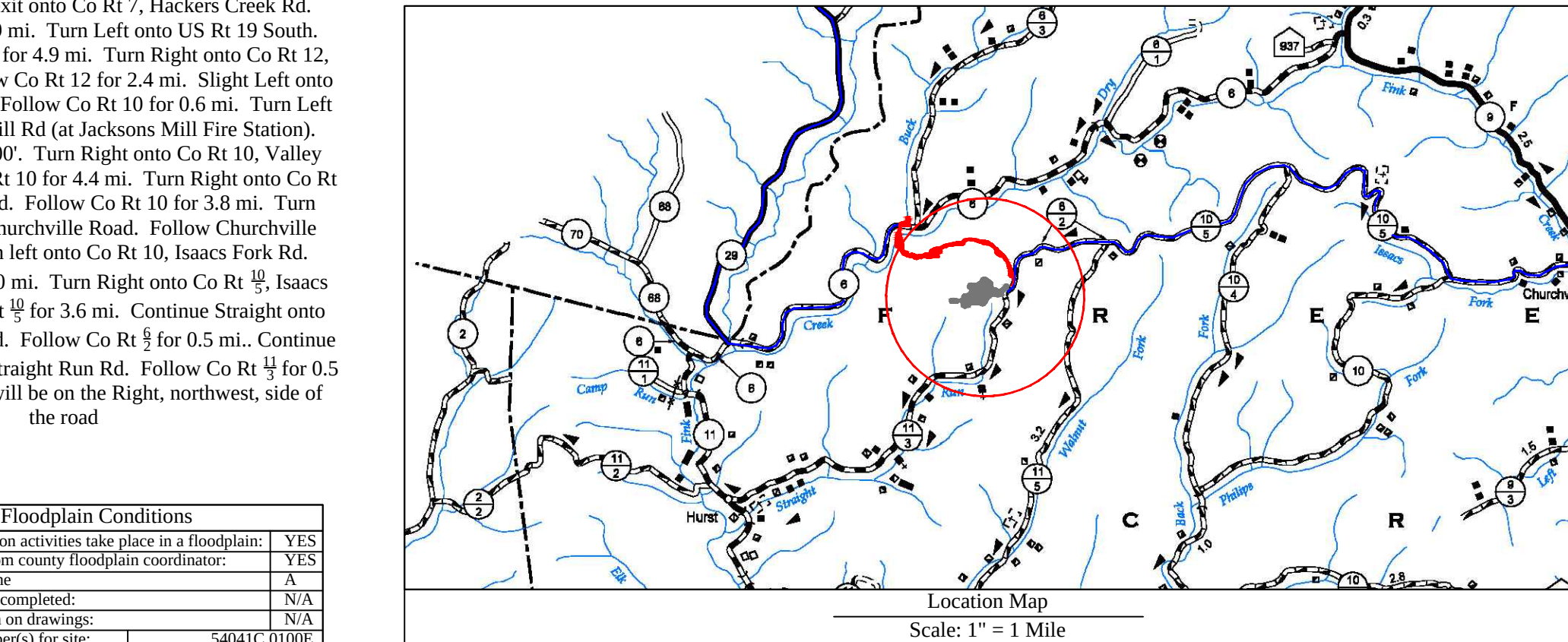
From I-79 North, turn left at the end of Follow Co Rt 10, Follow US Rt 10, Jackson Mill Rd, Co Rt 10, Old Mo Co Rt 10, Follow Co Rt 10, Chapel Rd. Follow 10, Freemans Co Right onto Co road for 0.2 mi. Follow Co Rt 10, Fork Rd. Follow Co Rt 5, Straight onto Co Rt 10, Straight onto Co mi. The site enters

Site Design, Construction Plan, &
Erosion and Sediment Control Plans
HG Energy LLC
Lewis County
Freemans Creek District
Latitude 39.09467556°
Longitude -80.66867393°
Leading Creek Watershed

[illegible]

Approach Routes:

ane Lew, WV. Take Exit 99 and turn
right onto Rt 7, Hackers Creek Rd.
0.1 mi. Turn Left onto US Rt 19 South.
0.9 for 4.9 mi. Turn Right onto Co Rt 12
0.1 mi. Follow Co Rt 12 for 2 mi. Slight Left onto
0.1 mi. Follow Co Rt 10 for 0.6 mi. Turn Left
0.1 mi. Rd (at Jacksons Mill Fire Station).
0.0. Turn Right onto Co Rt 10, Valley
0.1 mi. Follow Co Rt 10 for 3.8 mi. Turn
0.1 mi. Follow Churchville Road. Follow Churchville
0.1 mi. left onto Co Rd 10, Isaacs Fork Rd.
0.1 mi. Turn Right onto Co Rt $\frac{1}{2}$, Isaacs
0.1 mi. for 3.6 mi. Continue Straight onto
0.1 mi. Follow Co Rt $\frac{1}{2}$ for 0.5 mi. Continue
0.1 mi. Straight Run Rd. Follow Co Rt $\frac{1}{2}$ for 0.5
0.1 mi. will be on the Right, northwest, side of
0.1 mi. the road



1221 Site
Emergency Number: 304-269-8241
Freemans Creek District, Lewis County, WV
Watershed: Leading Creek Watershed
Site 911 Address:

Property Owner Information - 1221 Well Site							
Freemans Creek District - Lewis County							
Owner	TM - Parcel	Well Pad	AST Pad	Access Road	Stockpiles	Add. Clearing	Total Disturbed
HG Energy II Appalachia, LLC	2D-31	0.00	0.00	0.00	0.03	0.10	0.13
HG Energy II Appalachia, LLC	2D-3	4.94	0.75	0.14	2.65	5.49	13.97
Anthony & Dawn Van Wie	2D-29	4.56	1.59	0.67	0.00	2.48	9.30
	Site Totals (Ac)	9.50	2.34	0.81	2.68	8.07	23.40

Property Owner Information - 1221 Fink Creek Access							
Freemans Creek District - Lewis County							
Owner	TM - Parcel	Staging Area	Access Road	Topsoil/Grass	Add. Clearing	Total	
20-34-48	1	0.23	0.24	1.15			
& Sheila Gum	20-34-4	0.00	5.32	1.37	7.47		
& Sheila Gum	2C-7	0.00	3.31	0.47	3.81		
	Site Totals (Ac)	1.09	8.86	2.08	12.47		

Fink Creek Access Road			
Surface Owner	TM - Parcel	Road Length	Type
Alice Keely et al	2D-48	286.52'	New Access Road Construction
James II & Sheila Gum	2D-34	3,108.37'	New Access Road Construction
James II & Sheila Gum	2C-7	2,555.68'	New Access Road Construction

Disturbed Area - Fink Creek Rd	
Staging Area Construction	1.09 Ac
New Access Road Construction	8.86 Ac
Topsoil / Excess Material	2.08 Ac
Additional Clearing	12.47 Ac
Total Disturbed Area	24.50 Ac
Additional Information	
Total Wooded Acres Disturbed	22.50 Ac
Total Linear Feet of Access Road	5,950.57

1221 Well Site Quantities - Well Site							
Description	Cut (CY)	Fill (CY)	Spill (CY)	Borrow (CY)	Max. Slope	Length of Slope	Est Topsoil (CY)
Well Pad	127,216.61	75,685.35	51,531.56	-	N/A	N/A	15,000.00
AST Pad	146.27	263.30	-	26,160.93	N/A	N/A	3,800.00
Well Pad Access Road	39.40	7,064.50	-	7,025.10	13:64%	156.48'	-
AST Pad Access Road	3.04	1,730.01	-	1,726.97	14:55%	169.46'	-
Landowner Access Road							
Excess Material Stockpiles							
Totals	127,425.12	136,456.68	51,531.56	26,160.93	N/A	N/A	-
	Total Spill (CY) =	-9,031.56			(Excess Spill Capacity)		

1221 Fink Creek Access Quantities						
Description	Cut (CY)	Fill (CY)	Spill (CY)	Borrow (CY)	Max. Slope	Length of Slope
Bypass Access Road	22,252.02	18,886.63	3,365.39	-	-20.38	78.83
Staging Area	2,420.28	819.95	1,500.00	-	N/A	N/A
Staging Area East Access	0.00	216.65	N/A	29.32	N/A	N/A
Staging Area West Access	2.21	6.93	-	4.72	N/A	N/A
Staging Area Stockpile	0.00	3,000.00	-	3,000.00	N/A	N/A
Bypass Access Road Stockpiles	0.00	19,000.00	-	19,000.00	N/A	N/A
Totals	24,674.84	41,743.16	4,865.72	22,034.04		
	Total Spill (CY)	= -17,168.32 (Excess Stockpile Capacity)				

Ephemeral Stream Impact (Linear Feet) - Fink Creek Access Road					
Stream and Impact Cause	Culvert (LF)	Inlet/Outlet Structures Fill (LF)	Slope Fill (LF)	Const. Disturb. to LOD (LF)	Total Impact (LF)
Watercourse FE (Access Road)	-	10.00	86.60	12.43	109.03
Watercourse FA (Access Road)	-	12.21	45.95	5.00	63.16
				Total Stream Impacts	172.19

human or domestic animals.

0 SF used for poultry or dairy

ing trout stream.

er supply.

Design Certification

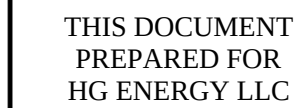
struction notes and reference diagrams attached hereto have been prepared in
West Virginia Code of State Rules, Division of Environmental Protection, Office of
08

and/or Reference Diagrams included in this design constitutes a complete set of plans.
Plans is necessary to construct the site in accordance with the design.

field  Date: 02-04-2025

L.C.

Date 02-04-2025



Kelly Surveying
P.O. Box 254
Dalley, WV 26225
(304) 338-6084

Cover Sheet

1221 Fink Creek Access

Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 1 of 32

Schedule of Quantities

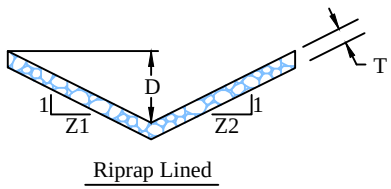
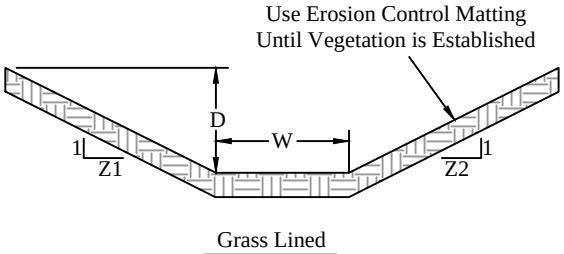
Fink Access Road Pipe Schedule					
Pipe Crossing	Station	Length (ft)	Diameter (ft)	Type	Slope (%)
1	3+62	35	1.5	HDPE	2
2	7+26	35	1.5	HDPE	2
3	9+36	35	1.5	HDPE	2
4	12+37	30	1.5	HDPE	2
5	15+63	35	1.5	HDPE	2
6	18+68	35	1.5	HDPE	2
7	24+93	38	1.5	HDPE	2
8	28+25	40	1.5	HDPE	2
9	34+05	45	1.5	HDPE	2
10	39+30	30	1.5	HDPE	2
11	41+30	35	1.5	HDPE	2
12	46+00	35	1.5	HDPE	2
13	50+39	30	1.5	HDPE	2
14	51+95	32	1.5	HDPE	2
15	53+50	40	1.5	HDPE	2
16	56+83	45	1.5	HDPE	2
17	46+98	80	1.5	HDPE	2
18	51+27	55	1.5	HDPE	2
19	0+14	60	1.5	HDPE	2
20	0+10	80	1.5	HDPE	2

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

18" Filter Sock			1875	Belted Silt Retention Fence			1757	Super Silt Fence			3918		
FS18 #1	19	FS18 #22	74	BSRF #1	27	BSRF #17	31	SSF #1	34	SSF #23	63	SSF #45	120
FS18 #2	25	FS18 #23	60	BSRF #2	30	BSRF #18	35	SSF #2	36	SSF #24	67	SSF #46	56
FS18 #3	45	FS18 #24	29	BSRF #3	49	BSRF #19	129	SSF #3	27	SSF #25	52	SSF #47	42
FS18 #4	35	FS18 #25	21	BSRF #4	39	BSRF #20	216	SSF #4	52	SSF #26	51	SSF #48	45
FS18 #5	50	FS18 #26	55	BSRF #5	55	BSRF #21	41	SSF #5	57	SSF #27	43	SSF #49	37
FS18 #6	63	FS18 #27	92	BSRF #6	68	BSRF #22	37	SSF #6	137	SSF #28	35	SSF #50	56
FS18 #7	45	FS18 #28	27	BSRF #7	50	BSRF #23	42	SSF #7	77	SSF #29	27	SSF #51	46
FS18 #8	36	FS18 #29	28	BSRF #8	37	BSRF #24	35	SSF #8	104	SSF #30	33	SSF #52	72
FS18 #9	26	FS18 #30	31	BSRF #9	31	BSRF #25	26	SSF #9	216	SSF #31	34	SSF #53	156
FS18 #10	41	FS18 #31	22	BSRF #10	46	BSRF #26	69	SSF #10	39	SSF #32	32	SSF #54	46
FS18 #11	69	FS18 #32	31	BSRF #11	127	BSRF #27	58	SSF #11	52	SSF #33	36	SSF #55	55
FS18 #12	71	FS18 #33	47	BSRF #12	54	BSRF #28	58	SSF #12	58	SSF #34	33	SSF #56	54
FS18 #13	65	FS18 #34	61	BSRF #13	41	BSRF #29	48	SSF #13	41	SSF #35	98	SSF #57	52
FS18 #14	56	FS18 #35	59	BSRF #14	68	BSRF #30	50	SSF #14	39	SSF #36	57	SSF #58	76
FS18 #15	26	FS18 #36	56	BSRF #15	48	BSRF #31	29	SSF #15	83	SSF #37	33	SSF #59	52
FS18 #16	54	FS18 #37	56	BSRF #16	58	BSRF #32	25	SSF #16	60	SSF #38	63	SSF #60	29
FS18 #17	22	FS18 #38	79					SSF #17	61	SSF #39	82	SSF #61	54
FS18 #18	42	FS18 #39	34					SSF #18	88	SSF #40	30	SSF #62	36
FS18 #19	30	FS18 #40	39					SSF #19	121	SSF #41	30	SSF #63	58
FS18 #20	31	FS18 #41	52					SSF #20	58	SSF #42	38	SSF #64	71
FS18 #21	23	FS18 #42	48					SSF #21	64	SSF #43	47	SSF #65	75
								SSF #22	38	SSF #44	32	SSF #66	72



Rock Lined Channel						
Channel ID	Min Depth (D) (ft)	Width (W) (ft)	z1	z2	T (ft)	Riprap Size D50 (in)
Sump A Outlet	2	4	2	2	1	R4
Sump B Outlet	2	4	2	2	1	R4
Sump C Outlet	2	4	2	2	1	R4
Bench 1 Outlet	2	0	2	2	0.75	R3
AST Drain A	2	0	2	2	1	R4
AST Drain B	2	0	2	2	1	R4
AST Drain C	2	0	2	2	1	R4

Toe Keys	
Toe Key	Toe Key Length (ft)
A	383
B	2037
C	237
D	287
E	255
F	430
G	137
H	340
J	183
K	313
L	1394
M	306
N	470
O	87

Surface Areas			
Area Name	Area (Ac.)	Area (SF)	Area (SY)
Well Pad	5.62	244,841	27,205
Well Pad Access Road	0.40	17,596	1,956
AST Pad	1.05	45,567	5,063
AST Pad Access Road	0.14	6,306	701

Earthwork & Capacity Reports

The earthwork quantities provided are an estimate for consideration. The quantities shown are calculated using a 1:1 Cut / Swell & Shrink factor. The quantities shown may be greater or less than actually excavated. The engineer is not responsible for variances from the estimated quantities and does not certify to their accuracy.

<u>Well Pad Report</u> Top of pad elevation: 1251.77 Cut Slope: 50.00% 2.00:1 Fill Slope: 50.00% 2.00:1 Pad Earthwork Volumes Total cut : 3,434,856.5 C.F., 127,216.91 C.Y. Total fill: 2,043,504.5 C.F., 75,685.35 C.Y.	<u>Stockpile #1 Pad Report</u> Cut Slope: 50.00% 2.00:1 Fill Slope: 50.00% 2.00:1 Pad Earthwork Volumes Total cut : 0.0 C.F., 0.00 C.Y. Total fill: 216,002.9 C.F., 8,000.11 C.Y.
<u>AST Pad Report</u> Top of pad elevation: 1229.00 Cut Slope: 50.00% 2.00:1 Fill Slope: 50.00% 2.00:1 Pad Earthwork Volumes Total cut : 3,849.3 C.F., 142.57 C.Y. Total fill: 710,194.6 C.F., 26,303.50 C.Y.	<u>Stockpile #2 Pad Report</u> Cut Slope: 50.00% 2.00:1 26.57° Fill Slope: 50.00% 2.00:1 26.57° Pad Earthwork Volumes Total cut : 35.1 C.F., 1.30 C.Y. Total fill: 135,399.7 C.F., 5,014.80 C.Y.
<u>Well Pad Access Road Report</u> Processing 0+00.000 to 5+08.218 Total Cut : 991.983 C.F., 36,740 C.Y. Total Fill: 144042.971 C.F., 5334.925 C.Y.	<u>Stockpile #3 Pad Report</u> Cut Slope: 50.00% 2.00:1 26.57° Fill Slope: 50.00% 2.00:1 26.57° Pad Earthwork Volumes Total cut : 0.0 C.F., 0.00 C.Y. Total fill: 22,588.2 C.F., 836.60 C.Y.
<u>AST Access Road Report</u> Processing 0+00.000 to 2+47.299 Total Cut : 81.956 C.F., 3.035 C.Y. Total Fill: 46710.155 C.F., 1730.006 C.Y.	<u>Stockpile #4 Pad Report</u> Cut Slope: 50.00% 2.00:1 26.57° Fill Slope: 50.00% 2.00:1 26.57° Pad Earthwork Volumes Total cut : 1.2 C.F., 0.05 C.Y. Total fill: 243,167.5 C.F., 9,006.20 C.Y.
	<u>Stockpile #5 Pad Report</u> Cut Slope: 50.00% 2.00:1 26.57° Fill Slope: 50.00% 2.00:1 26.57° Pad Earthwork Volumes Total cut : 0.0 C.F., 0.00 C.Y. Total fill: 121,529.5 C.F., 4,501.09 C.Y.

1221 Fink Bypass Access Road Report

Processing 0+00.00 to 58+33.53
Total Cut : 600804.45 C.F., 22252.02 C.Y.
Total Fill: 509939.04 C.F., 18886.63 C.Y.

Staging Area Pad Report

Cut Slope: 50.00% 2.00:1
Fill Slope: 50.00% 2.00:1

Pad Earthwork Volumes
Total cut : 62,647.5 C.F., 2,320.28 C.Y.
Total fill: 22,138.6 C.F., 819.95 C.Y.

Staging Area East Access Road Report

Processing 0+00.00 to 0+72.40
Total Cut : 8.81 C.F., 0.33 C.Y.
Total Fill: 800.61 C.F., 29.65 C.Y.

Staging Area West Access Road Report

Processing 0+00.00 to 0+44.64
Total Cut : 59.78 C.F., 2.21 C.Y.
Total Fill: 187.21 C.F., 6.93 C.Y.

Staging Area Stockpile Pad Report

Cut Slope: 50.00% 2.00:1
Fill Slope: 50.00% 2.00:1

Pad Earthwork Volumes
Total cut : 0.0 C.F., 0.00 C.Y.
Total fill: 81,002.5 C.F., 3,000.09 C.Y.

Stockpile #1 Report

Cut Slope: 50.00% 2.00:1
Fill Slope: 50.00% 2.00:1

Pad Earthwork Volumes
Total cut : 0.0 C.F., 0.00 C.Y.
Total fill: 215,999.4 C.F., 8,000.00 C.Y.

Stockpile #2 Report

Cut Slope: 50.00% 2.00:1
Fill Slope: 50.00% 2.00:1

Pad Earthwork Volumes
Total cut : 0.0 C.F., 0.00 C.Y.
Total fill: 162,000.2 C.F., 6,000.01 C.Y.

Stockpile #3 Report

Cut Slope: 50.00% 2.00:1
Fill Slope: 50.00% 2.00:1

Pad Earthwork Volumes
Total cut : 0.5 C.F., 0.02 C.Y.
Total fill: 135,003.2 C.F., 5,000.12 C.Y.

03/14/2025

Revision
Design

Date
02-04-2025



THIS DOCUMENT
PREPARED FOR
HG ENERGY LLC



Schedule of Quantities
1221 Well Site
Freemans Creek District
Lewis County, WV



Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet V1 of V1

1. WORK INCLUDED, BUT NOT LIMITED TO: EXCAVATE, GRADE, CUT, INSTALL OR ANY ACTIVITY ASSOCIATED WITH THE GRADING, EXCAVATION, CUTTING OR INSTALLATION OF EARTH MATERIAL TO DEVELOP A SITE ACCEPTABLE TO PERFORM WITHOUT DETRIMENTAL IMPACTS TO THE ENVIRONMENT AND OPERATE/FUNCTION SAFELY AS A WELL DRILL PAD OR ASSOCIATED FRESH WATER IMPOUNDMENT OR ANY ASSOCIATED FACILITY OR MAINTENANCE OF SUCH FACILITIES. ALL THE NOTES SHALL APPLY TO WORK ASSOCIATED WITH ACTIVITIES RELATED TO THE OIL AND GAS INDUSTRY, AS SHOWN ON THE PROJECT PLAN SET AND WITHIN THE WELL SITE BOUNDARIES, SPECIFIED THEREOF AND HEREIN, WHICH SHALL INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING: EXCAVATION AND SITE PREPARATION, INCLUDING INSTALLATION OF E&S CONTROLS, INSTALLATION OF SUBSURFACE DRAINAGE FEATURES, GRADING TO ESTABLISH SUBGRADES, AND FINAL GRADES, PAVEMENTS, GRAVEL SURFACES, AND GRASSED AREAS. EXCAVATION, FILLING AND BACKFILLING AND COMPACTION. DEWATERING OR ADDITION OF WATER AS REQUIRED. ADDITIONAL WORK AS SPECIFIED BY THE OWNER PLACING OF TOPSOIL AND FINISH GRADING. 2. PROJECT CONDITION: a. INCLEMENT WEATHER: WHEN FILL OPERATIONS ARE CEASED DUE TO WEATHER (RAIN, FREEZING, SNOW, ETC.), CONSTRUCTION SHALL NOT BE RESUMED UNTIL THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE HAS VERIFIED SOIL STRENGTH HAS NOT BEEN ADVERSELY AFFECTED. IF SOIL STRENGTH HAS BEEN DECREASED, THE AFFECTED PORTION OF FILL SHALL BE RESCARIFIED, MOISTENED, OR DRIED AS REQUIRED AND RECOMPACTED TO THE SPECIFIED DENSITY. b. UTILITIES: PRIOR TO ANY EXCAVATION THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES WHICH MAY BE IN THE AREA. SHOULD UNCHARTED, INCORRECTLY CHARTED, UNMARKED IN FIELD, OR INCORRECTLY MARKED IN THE FIELD, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING EXCAVATION, CONTRACTOR SHALL CONSULT UTILITY OWNER IMMEDIATELY FOR DIRECTIONS. CONTRACTOR SHALL COOPERATE WITH OWNER AND UTILITY COMPANIES IN KEEPING RESPECTIVE SERVICES AND FACILITIES IN OPERATION, AND SHALL REPAIR OR ARRANGE FOR REPAIR, DAMAGED UTILITIES TO SATISFACTION OF UTILITY OWNER. c. DRAINAGE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DRAINAGE OF THE SITE DURING CONSTRUCTION OF THE PROJECT. WATER SHALL NOT BE ALLOWED TO ACCUMULATE IN ANY OF THE EXCAVATED AREAS. STORM OR GROUND WATER COLLECTING ON SITE DURING CONSTRUCTION SHALL BE REMOVED BY PUMPING, DITCHING, OR OTHER SUITABLE MEANS. d. COORDINATION: THE CONTRACTOR SHALL COORDINATE THE WORK WITH THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE BY NOTIFYING THE INSPECTOR OF SCHEDULED WORK IN ADVANCE. THE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES WHOSE WORK WILL BE AFFECTED ON THE SITE. 3. DEFINITIONS: a. GEOTECHNICAL ENGINEER: A LICENSED INDEPENDENT GEOTECHNICAL ENGINEER AND TEST LABORATORY APPROVED BY THE OWNER WORKING WITH THE DESIGN ENGINEER TO ENSURE THAT EARTHWORK AND THE PROJECT PLAN SET REFLECTS THE AVAILABLE ONSITE MATERIAL. THAT THE AVAILABLE ONSITE MATERIAL AND COMMERCIAL MATERIAL IS TESTED TO MEET OR EXCEED THE SPECIFICATIONS FOR DENSITY AND MOISTURE CONTENT AND THE PARTICLE SIZE IS MAINTAINED OR APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. THE GEOTECHNICAL ENGINEER SHALL PREPARE A REPORT OF THEIR FINDINGS AND RECOMMENDATIONS, IT IS THE CONTRACTORS RESPONSIBILITY TO READ THE GEOTECHNICAL REPORT BEFORE BIDDING THE PROJECT, THE GEOTECHNICAL REPORT AND THE RECOMMENDATIONS PROVIDED SHALL GOVERN ALL ENGINEERED FILL OR CONTROLLED FILLS THE GEOTECHNICAL ENGINEER SHALL ATTEND THE PRE-CONSTRUCTION CONFERENCE ENGINEERED FILL, CONTROLLED FILL: CONTROLLED FILL IS DEFINED AS MATERIAL REQUIRED IN ALL AREAS ON WHICH FINAL GRADE IS NOT PLACED ON ORIGINAL OR EXCAVATED SOIL. MATERIAL SHALL BE PLACED OR MAXIMUM LOOSE LIFT THICKNESS 15 INCHES COMPACTED TO 12 INCHES. b. ROCK: FOR THE PURPOSES OF CLASSIFIED EXCAVATION, ROCK SHALL BE DEFINED AS MATERIAL THAT CANNOT BE DISLODGED BY A CATERPILLAR MODEL NO. D-8N, HEAVY DUTY TRACK-TYPE TRACTOR, OR OF EQUALLY RATED AT NOT LESS THAN 285 HP FLYWHEEL POWER AND EQUIPPED WITH A SINGLE SHANK HYDRAULIC RIPPER, CAPABLE OF EXERTING NOT LESS THAN 45,000 LBS BREAKOUT FORCE. THIS DEFINITION OF ROCK DOES NOT INCLUDE MATERIALS SUCH AS HARDPAN, LOOSE ROCK, OR OTHER MATERIALS THAT CAN BE REMOVED BY MEANS OTHER THAN DRILLING AND BLASTING, BUT WHICH FOR REASONS OF ECONOMY IN EXCAVATING THE CONTRACTOR CHOOSES TO REMOVE BY DRILLING AND BLASTING. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE ROCK AND IF BLASTING IS REQUIRED FOR THIS PROJECT. IF THE CONTRACTOR DETERMINES THAT BLASTING IS NECESSARY OR FOR REASONS OF ECONOMY DETERMINES TO BLAST THE MATERIAL, THE CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, TREES AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY BLASTING OPERATIONS. c. UNSUITABLE MATERIAL: UNSUITABLE MATERIAL SHALL BE DEFINED AS MATERIAL THAT EXHIBITS EXCESSIVE PUMPING OR THAT DOES NOT MEET DENSITY REQUIREMENTS, THE MATERIAL CAN NOT MEET THE COMPACTION REQUIREMENTS OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE d. SATISFACTORY MATERIALS: MATERIALS ARE SATISFACTORY AS FILL MATERIAL WHEN THEY CAN MEET THE STANDARD PROCTOR FOR THE MATERIAL CLASSIFICATION IN THE GEOTECHNICAL REPORT, CLASS A, CLASS B, CLASS C, USED AS PER THE GEOTECHNICAL REPORT, (THE MOST DURABLE MATERIAL FOUND ON THE PROJECT SHALL BE PLACED IN THE TOE KEY AREAS, WORKING UPWARDS TO FINISHED GRADE WITH THE LOWER CLASS MATERIAL) MEET THE DENSITY REQUIREMENT, SATISFACTORY MATERIAL SHALL BE ABLE TO COMPACT TO 95 PERCENT OF THE STANDARD PROCTOR PER ASTM D 698 SHALL BE WITHIN +/-4 PERCENT POINTS OF OPTIMUM MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698, BE THE CORRECT PARTICLE SIZE PER THE PROJECT PLAN SET OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. e. UNSATISFACTORY MATERIALS: INCLUDE THOSE MATERIALS CONTAINING ROOTS AND OTHER ORGANIC MATTER, TRASH, DEBRIS, FROZEN MATERIALS, EXCESSIVELY WET MATERIAL, MATERIAL THAT EXCEEDS THE PARTICLE SIZE OR MATERIAL DETERMINE UNSATISFACTORY BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. f. DEGREE OF COMPACTION: IS A PERCENTAGE OF THE MAXIMUM DENSITY OBTAINED BY THE TEST PROCEDURE PRESENTED IN ASTM D 698, AS A PERCENT OF LABORATORY MAXIMUM DENSITY, OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE g. OPTIMUM MOISTURE: MAXIMUM DENSITY CURVE FOR EACH TYPE OF SOIL USED FOR ENGINEERED CONTROLLED FILL. h. TOPSOIL: MATERIAL OBTAINED FROM EXCAVATIONS, SUITABLE FOR TOP SOILS SHALL CONSIST OF FRIABLE CLAY LOAM, FREE FROM ROOTS, STONES, OTHER UNDESIRABLE MATERIAL AND SHALL BE CAPABLE OF SUPPORTING A GOOD GROWTH OF GRASS. i. SOIL BEARING CAPACITY: SOIL UNDERNEATH ALL FOOTINGS AND STRUCTURES SHALL HAVE A MINIMUM BEARING CAPACITY OF 2000 POUNDS PER SQUARE FOOT. AS DETERMINED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. 4. TEST BORINGS: A SUBSURFACE INVESTIGATION HAS BEEN MADE AT THE SITE OF THE PROJECT IN ORDER TO ASCERTAIN CHARACTER OF MATERIALS TO BE EXCAVATED. THIS INFORMATION IS PROVIDED FOR GENERAL INFORMATION ONLY. ATTENTION IS DIRECTED TO THE FACT THAT THESE LOGS INDICATE MATERIALS ENCOUNTERED AT BORING LOCATIONS ONLY. NOTHING IN THE PLANS OR SPECIFICATIONS SHALL BE TAKEN AS A GUARANTEE THAT MATERIALS OTHER THAN THOSE DISCLOSED BY BORINGS WILL BE ENCOUNTERED OR THAT PROPORTIONS OF VARIOUS MATERIALS WILL NOT VARY FROM THOSE INDICATED. IF THE CONTRACTOR HAS ANY QUESTIONS OR DESIRES ADDITIONAL INFORMATION IT IS HIS RESPONSIBILITY TO ACQUIRE THIS INFORMATION AT HIS OWN EXPENSE. ALL EXCAVATION FOR PROJECT IS TO BE CONSIDERED AS BID AND NO ALLOWANCES WILL BE MADE FOR ROCK ENCOUNTERED OR REMOVAL AND REPLACEMENT OF UNSUITABLE MATERIAL. 5. CONSTRUCTION: a. CONSERVATION OF TOPSOIL: TOPSOIL SHALL BE REMOVED AS REQUIRED WITHOUT CONTAMINATION WITH SUBSOIL AND STOCKPILED AT CONVENIENT AREAS FOR LATER APPLICATION OR AT LOCATIONS SPECIFIED IN THE PROJECT PLAN SET. ANY SURPLUS OF TOPSOIL FROM EXCAVATIONS AND GRADING SHALL BE STOCKPILED IN A LOCATION APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE b. PLACING TOPSOIL: ON AREAS TO RECEIVE TOPSOIL, THE COMPACTED AREA SHALL BE SCARIFIED TO A 2 INCH DEPTH FOR BONDING OF TOPSOIL WITH SUBSOIL. TOPSOIL THEN SHALL BE SPREAD EVENLY AND GRADED TO THE ELEVATIONS AND SLOPES SHOWN. TOPSOIL SHALL NOT BE SPREAD WHEN FROZEN OR EXCESSIVELY WET OR DRY OR EXCEED FOUR (4) INCHES IN DEPTH ON SLOPES STEEPER THAN THREE TO ONE (3:1) c. EXCAVATION: EXCAVATION SHALL BE FOR THOSE ITEMS SPECIFICALLY INDICATED IN THE PROJECT PLAN SET, AFTER TOPSOIL REMOVAL HAS BEEN COMPLETED, EXCAVATION OF EVERY DESCRIPTION, REGARDLESS OF MATERIAL ENCOUNTERED, WITHIN THE GRADING LIMITS OF THE PROJECT SHALL BE PERFORMED TO REASONABLE CONFORMANCE TO THE LINES AND GRADES INDICATED IN THE PROJECT PLAN SET. SATISFACTORY EXCAVATED MATERIAL SHALL BE TRANSPORTED TO AND PLACED IN FILL AREAS WITHIN THE LIMITS OF THE WORK. UNSATISFACTORY MATERIAL SOFT OR OTHERWISE UNSATISFACTORY MATERIAL SHALL BE REPLACED WITH SATISFACTORY MATERIAL EXCAVATED MATERIAL OR OTHER APPROVED MATERIALS. ALL UNSUITABLE MATERIAL INCLUDING ANY SOIL WHICH IS DISTURBED BY THE CONTRACTOR'S OPERATIONS AND SURPLUS MATERIAL SHALL BE REGRADED SEEDED AND MULCHED EXCAVATION AND FILLING SHALL BE PERFORMED IN A MANNER AND SEQUENCE THAT WILL PROVIDE DRAINAGE AT ALL TIMES. EXCAVATIONS SHALL BE KEPT FREE FROM WATER WHILE CONSTRUCTION THEREIN IS IN PROGRESS. IF THE CONTRACTOR FAILS TO PROVIDE ADEQUATE DRAINAGE AND THE MATERIAL BECOMES SOFT OR OTHERWISE UNSUITABLE AS A RESULT, SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SATISFACTORY ON SITE MATERIAL OR BORROW MATERIAL FROM APPROVED LOCATIONS, OR SHALL BE DRIED AND RECOMPACTED AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE d. DITCHES, GUTTERS, AND CHANNEL CHANGES: DITCHES, GUTTERS, AND CHANNEL CHANGES OR ANY SIMILAR CONSTRUCTED CONVEYANCE SHALL BE CUT ACCURATELY TO THE CROSS SECTIONS AND GRADES INDICATED. ALL ROOTS, STUMPS, ROCK, AND FOREIGN MATTER IN THE SIDES AND BOTTOM OF DITCHES, GUTTERS, AND CHANNEL CHANGES SHALL BE TRIMMED AND DRESSED OR REMOVED TO CONFORM TO THE SLOPE, GRADE, AND SHAPE OF THE SECTION INDICATED. CARE SHALL BE TAKEN TO EXCAVATE DITCHES AND GUTTERS TO THE GRADES INDICATED. EXCESSIVE DITCH AND GUTTER EXCAVATION SHALL BE BACKFILLED TO GRADE EITHER WITH COMPACTED TO SPECIFIED DENSITIES MATERIAL OR WITH SUITABLE STONE OR AGGREGATE TO FORM AN ADEQUATE CONVEYANCE STRUCTURE AS DIRECTED. ALL DITCHES AND GUTTERS EXCAVATED SHALL BE MAINTAINED UNTIL FINAL ACCEPTANCE OF THE WORK. SATISFACTORY MATERIAL EXCAVATED FROM DITCHES AND CHANNEL CHANGES SHALL BE PLACED IN FILL AREAS OR AREAS APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE UNSUITABLE AND EXCESS MATERIAL SHALL BE DISPOSED OF IN DESIGNATED WASTE AREAS OR AS DIRECTED THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE e. STABILITY OF EXCAVATIONS: MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN A MANNER SUCH THAT THE EXCAVATION PROVIDES SAFETY OF PERSONNEL, CFR 29 PART 1926 SUBPART P PROTECTION OF WORK, AND COMPLIANCE WITH REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES. f. PREPARATION OF GROUND SURFACE FOR FILL: ALL VEGETATION SUCH AS ROOTS, BRUSH, HEAVY SODS, HEAVY GROWTH OF GRASS, AND ALL DECAYED VEGETATIVE MATTER, RUBBISH, AND OTHER UNSATISFACTORY MATERIAL WITHIN THE AREA UPON WHICH FILL IS TO BE PLACED, SHALL BE STRIPPED OR OTHERWISE REMOVED BEFORE THE FILL IS STARTED. IN NO CASE WILL UNSATISFACTORY MATERIAL REMAIN IN OR UNDER THE FILL AREA. THE AREAS SHALL THEN BE EXCAVATED TO DURABLE MATERIAL CAPABLE OF ACCEPTING SUPPORTING THE FILL. THE DEPTH SHALL BE AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE ALL AREAS TO RECEIVE FILL SHALL BE COMPACTED WITH VIBRATORY ROLLERS, PNEUMATIC ROLLERS, SHEEPSFOOT ROLLERS OR OTHER MECHANICAL MEANS ACCEPTABLE TO THE GEOTECHNICAL ENGINEER OR SITE INSPECTOR. GROUND SURFACES ON WHICH FILL IS TO BE PLACED SHALL BE PLOWED, STEPPED, BENCHED, OR BROKEN UP, AS DIRECTED, IN SUCH MANNER THAT THE FILL MATERIAL WILL BOND WITH THE EXISTING SURFACE. PREPARED SURFACES ON WHICH COMPACTED FILL IS TO BE PLACED SHALL BE WETTED OR DRIED AS MAY BE REQUIRED TO OBTAIN THE SPECIFIED MOISTURE CONTENT AND DENSITY. BEFORE ANY AREA CAN RECEIVE FILL IT MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE g. FILLS AND EMBANKMENTS: FILLS AND EMBANKMENTS SHALL BE CONSTRUCTED AT THE LOCATIONS AND TO LINES AND GRADES INDICATED. THE COMPLETED FILL SHALL CONFORM TO THE PROJECT PLAN SET. APPROVED MATERIAL OBTAINED DURING EXCAVATION MAY BE USED IN FORMING REQUIRED FILL. FILL SHALL BE CONSTRUCTED WITH SATISFACTORY MATERIAL AND SHALL BE FREE FROM ROOTS, OTHER ORGANIC MATERIAL. NO FROZEN MATERIAL WILL BE PERMITTED IN THE FILL. ALL FILL MATERIAL SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE h. COMPACTION: EACH LAYER OF THE FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY ASTM D 698. MOISTURE CONTENT SHALL BE WITHIN +/-4 PERCENT POINTS OF OPTIMUM MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698. i. FINISHED GRADE : ALL AREAS COVERED BY THE PROJECT PLAN SET, INCLUDING EXCAVATED AND FILLED SECTIONS AND ADJACENT TRANSITION AREAS, SHALL BE UNIFORMLY SMOOTH-GRADED. THE FINISHED SURFACE SHALL BE REASONABLY SMOOTH, COMPACTED, AND FREE FROM IRREGULAR SURFACE CHANGES. THE DEGREE OF FINISH SHALL BE WITHIN THE TOLERANCES LISTED IN THE PROJECT PLAN SET EXCEPT AS APPROVED BY THE THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE DITCHES AND GUTTERS SHALL BE FINISHED TO PERMIT ADEQUATE DRAINAGE AND WITHIN THE TOLERANCES LISTED IN THE PROJECT PLAN SET LOW AREAS RESULTING FROM REMOVAL OF UNSUITABLE MATERIAL OR FROM EXCAVATION OF ROCK SHALL BE BROUGHT UP TO REQUIRED GRADE WITH SATISFACTORY MATERIALS, AND THE ENTIRE AREA SHALL BE SHAPED TO LINE, GRADE, AND CROSS SECTION AND SHALL BE COMPACTED AS SPECIFIED j. PROTECTION SITE PRESERVATION: THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE OF THE WORK SHALL MAINTAIN GRADE OR REPAIR ALL AREAS TO THE LINES, GRADES, AND CROSS SECTIONS SHOWN IN THE PROJECT PLAN SET AND PROTECT FROM TRAFFIC, WIND, WATER EROSION, WASHOUTS, SETTLEMENT, SUBSIDENCE, OR OTHER MISHAPS WHICH MAY OCCUR, REPAIR ANY SLIDES, AND ANY SETTLEMENT OR WASHING AWAY THAT MAY OCCUR FROM ANY CAUSE, PRIOR TO THE ACCEPTANCE, k. TESTING: THE CONTRACTOR SHALL GIVE THE OWNER OR HIS REPRESENTATIVE AT LEAST 48 HOURS NOTICE PRIOR TO OPENING ANY NEW SOIL EXCAVATION AND/OR BARROW AREAS TO BE USED IN EMBANKMENT/FILL CONSTRUCTION. SAID NOTICE IS REQUIRED TO GIVE THE OWNER ADEQUATE TIME TO OBTAIN SOIL SAMPLES FOR MOISTURE DENSITY TESTING (COMPACTION TEST) TO MONITOR FILL PLACEMENT. IF REQUIRED, THE CONTRACTOR SHALL SUPPLY THE NECESSARY EQUIPMENT AND OPERATOR TO OBTAIN THE SOIL SAMPLES. TEST SHALL BE MADE BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE h. TESTING FREQUENCY: A MINIMUM OF ONE MOISTURE-DENSITY TEST SHALL BE PERFORMED FOR EACH CLASSIFICATION OF FILL MATERIAL, A MINIMUM OF ONE TEST PER LIFT OR PER 1000 SQUARE FEET OR FRACTION THEREOF IS REQUIRED FOR FILL MATERIAL OR AS DETERMINED BY THE GEOTECHNICAL ENGINEER. i. VISUAL INSPECTION: UPON COMPLETION OF AND DURING THE INSTALLATION OF ANY PRODUCT OR MATERIAL OR ALL EARTH WORK OPERATIONS, CUTTING, FILLING ETC. THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE SHALL VISUALLY INSPECT ALL MATERIALS AND EXCAVATIONS. THE VISUAL INSPECTION SHALL BE CONDUCTED TO ASSURE THAT THE DATA OBTAINED FROM THE TEST RESULTS AND THE PROJECT PLAN SET ARE REPRESENTATIVE OF THE SITE CONDITIONS. 6 PARTICLE SIZE USED IN FILL AREAS: THE MATERIAL SHALL BE PLACED IN SUCCESSIVE HORIZONTAL LAYERS OF 15 INCHES IN LOOSE DEPTH, 12 INCHES COMPACTED FOR THE FULL WIDTH OF THE CROSS SECTION AND SHALL BE COMPACTED AS SPECIFIED. EACH LAYER SHALL BE COMPACTED AND TESTED BEFORE THE OVERLAYING LIFT IS PLACED. MOISTURE CONTENT OF THE FILL OR BACKFILL MATERIAL SHALL BE ADJUSTED BY WETTING OR AERATING AS NECESSARY TO PROVIDE THE MOISTURE CONTENT SPECIFIED, OR AS DETERMINED BY GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC INSPECTOR. a. CONSTRUCTION OF FRESH WATER IMPOUNDMENTS: CONSTRUCT THE EMBANKMENT USING MAXIMUM PARTICLE SIZES (IN ANY DIMENSION) AS IN TOP 36 INCHES: 3 INCHES (IN ANY DIMENSION). 36 TO 48 INCHES: 6 INCHES (IN ANY DIMENSION). IN THE DEPTH BELOW 24 INCHES: NOT TO EXCEED 12 INCHES (IN ANY DIMENSION), THE ENTIRE LIFT SHALL NOT BE CONSTRUCTED WITH 12 INCH MATERIAL OR THE COMPACTED THICKNESS OF THE LAYER BEING PLACED, WHICHEVER IS LESS, THE 12 INCH MATERIAL SHALL BE MIXED WITH SMALLER PARTICLES TO PRODUCE A UNIFORM VOID FREE LIFT SPREAD ALL MATERIAL SO THAT THE LARGER PARTICLES ARE SEPARATED FROM EACH OTHER TO MINIMIZE VOIDS BETWEEN THEM DURING COMPACTION. COMPACT AROUND THESE ROCKS IN ACCORDANCE WITH THE COMPACTION REQUIREMENTS. EXCEPTING THAT LARGER MATERIAL, LESS THAN 18 INCHES IN ANY DIMENSIONS CAN BE USED IN THE TOE KEY AREA TO A POINT MEASURED ON THE LOWEST POINT OF THE SLOPE 24 INCHES BELOW ORIGINAL GROUND. IN AREAS THAT EXCEED 12 INCH LIFT THICKNESS, PROOF ROLLING MAY BE USED TO SATISFY THE COMPACTION REQUIREMENTS ALL MATERIAL WILL BE AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. b. CONSTRUCTION OF THE WELL DRILL PAD OR FACILITY PAD: CONSTRUCT THE PAD BASE USING MAXIMUM PARTICLE SIZES (IN ANY DIMENSION) AS IN TOP 48 INCHES: 3 INCHES (IN ANY DIMENSION). 48 INCHES AND BELOW : 6 TO 12 INCHES (IN ANY DIMENSION). IN THE DEPTH BELOW 48 INCHES: NOT TO EXCEED 12 INCHES (IN ANY DIMENSION), THE ENTIRE LIFT SHALL NOT BE CONSTRUCTED WITH 12 INCH MATERIAL OR THE COMPACTED THICKNESS OF THE LAYER BEING PLACED, WHICHEVER IS LESS, THE 12 INCH MATERIAL SHALL BE MIXED WITH SMALLER PARTICLES TO PRODUCE A UNIFORM VOID FREE LIFT SPREAD ALL MATERIAL SO THAT THE LARGER PARTICLES ARE SEPARATED FROM EACH OTHER TO MINIMIZE VOIDS BETWEEN THEM DURING COMPACTION. COMPACT AROUND THESE ROCKS IN ACCORDANCE WITH THE COMPACTION REQUIREMENTS. EXCEPTING THAT LARGER MATERIAL, LESS THAN 18 INCHES IN ANY DIMENSION CAN BE USED IN THE TOE KEY AREA TO A POINT MEASURED ON THE LOWEST POINT OF THE SLOPE 24 INCHES BELOW ORIGINAL GROUND. IN AREAS THAT EXCEED 12 INCH LIFT THICKNESS, PROOF ROLLING MAY BE USED TO SATISFY THE COMPACTION REQUIREMENTS ALL MATERIAL WILL BE AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. c. ENGINEERED ADDITIONAL FILL AREAS: 3 TO 12 INCHES OR SMALLER EXCEPTING THAT LARGER MATERIAL, LESS THAN 18 INCHES IN ANY DIMENSION CAN BE USED IN THE TOE KEY AREA TO A POINT MEASURED ON THE LOWEST POINT OF THE SLOPE 24 INCHES BELOW ORIGINAL GROUND. WHEN AND WHERE APPROVED BY THE ENGINEER, LARGER ROCKS (NOT TO EXCEED 18 INCHES IN ANY DIMENSION) MAY BE PLACED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE. COMPACT AROUND THESE ROCKS TO A FIRMNESS EQUAL TO THAT OF THE SUPPORTING SOIL. IN AREAS THAT EXCEED 12 INCH LIFT THICKNESS, PROOF ROLLING MAY BE USED TO SATISFY THE COMPACTION REQUIREMENTS 7. PROOF ROLLING: IMMEDIATELY FOLLOWING THE COMPLETION OF EARTH WORK OR COMPLETION OF THE LIFT IN THE AREA TO BE PROOF ROLLED AND ONLY FOR THE LIFT THAT THE GEOTECHNICAL ENGINEER OR KELLY SURVEYING PLLC HAVE GRANTED A WAIVER ON THE MATERIAL PARTICLE SIZE FOLLOWING A VISUAL INSPECTION, CONTRACTOR SHALL DEMONSTRATE THE FINISHED LIFT DOES NOT CONTAIN PREVIOUSLY UNIDENTIFIED SOFT AREAS, OBSERVING THE SURFACE FOR DISPLACEMENT OR DEFORMATION. THE COVERAGE AREAS AND METHODS SHALL BE AS DIRECTED BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE THE LIFT SHALL THEN BE PROOF ROLLED. PROOF ROLLING SHALL BE DONE WITH ONE PASS OF A FULLY LOADED TANDEM DUMP TRUCK EQUAL TO OR EXCEEDING 50,000 LBS OR EQUALLY SIZED APPROVED CONSTRUCTION EQUIPMENT THE EQUIPMENT SHALL BE OPERATED AT A SPEED THAT THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE OR THE KELLY SURVEYING PLLC REPRESENTATIVE CAN COMFORTABLY AND SLOWLY WALK ALONG SIDE THE EQUIPMENT; ANY AREAS WHICH DEFLECT, RUT OR PUMP UNDER THE LOADED DUMP TRUCK SHALL BE UNDERCUT AND REPLACED WITH COMPACTED FILL MATERIAL OR OR SMALLER MATERIAL WORKED UNTIL A RELATIVELY UNYIELDING SURFACE IS ACHIEVED	1221 Well Site Fink Creek Access HG Energy LLC Exhibit A: As-Built Modification		Revision	Design	Date	02-04-2025			THIS DOCUMENT PREPARED FOR HG ENERGY LLC		Construction and Earth Work General Notes	1221 Well Site Freemans Creek District Lewis County, WV	Date: 02/04/2025 Scale: As Shown Designed By: ZS File No. Sheet N3 of N4
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1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification



Revision
Design

Date
02-04-2025

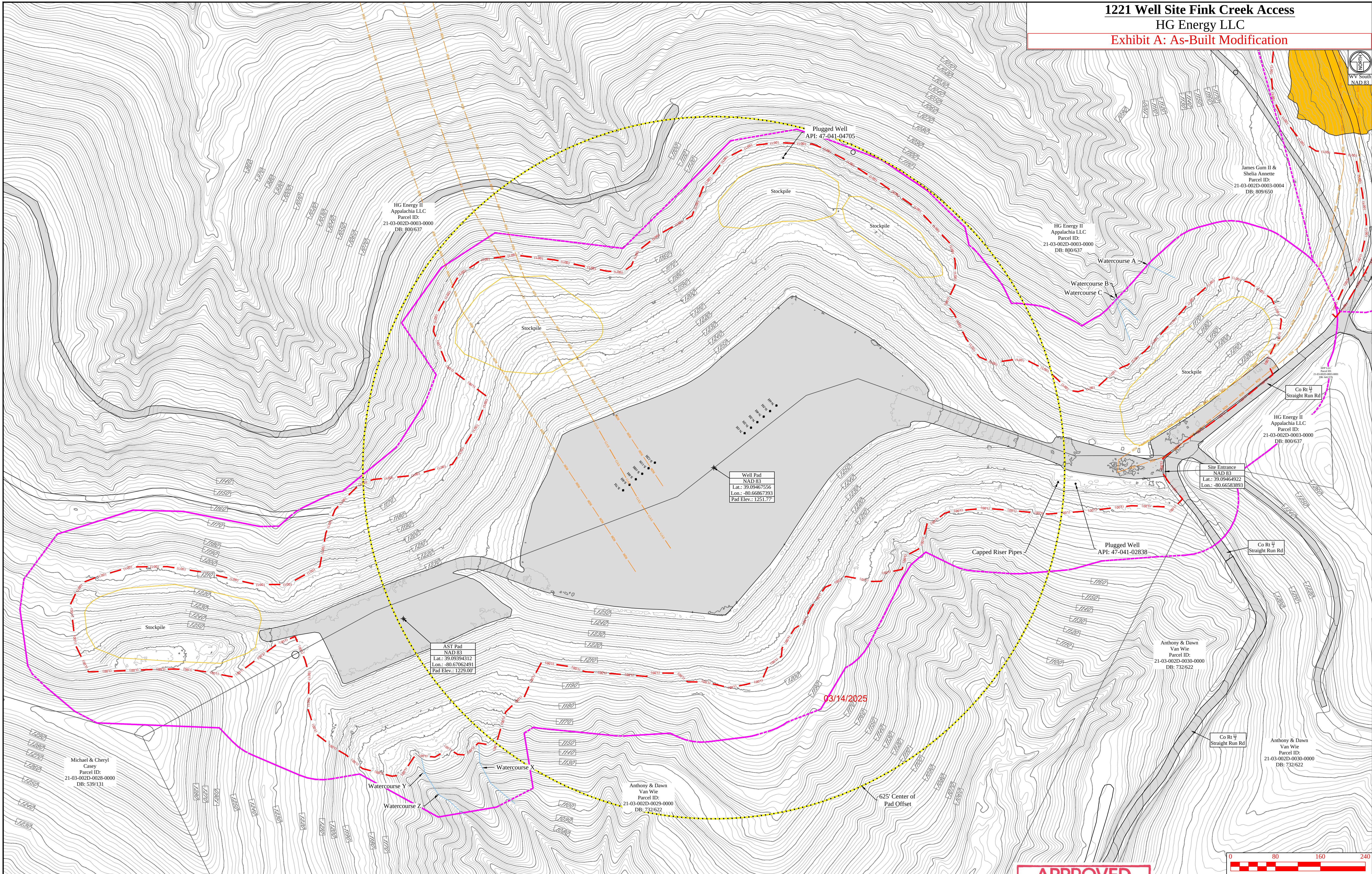


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Pre-Construction Site Conditions
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 2 of 32

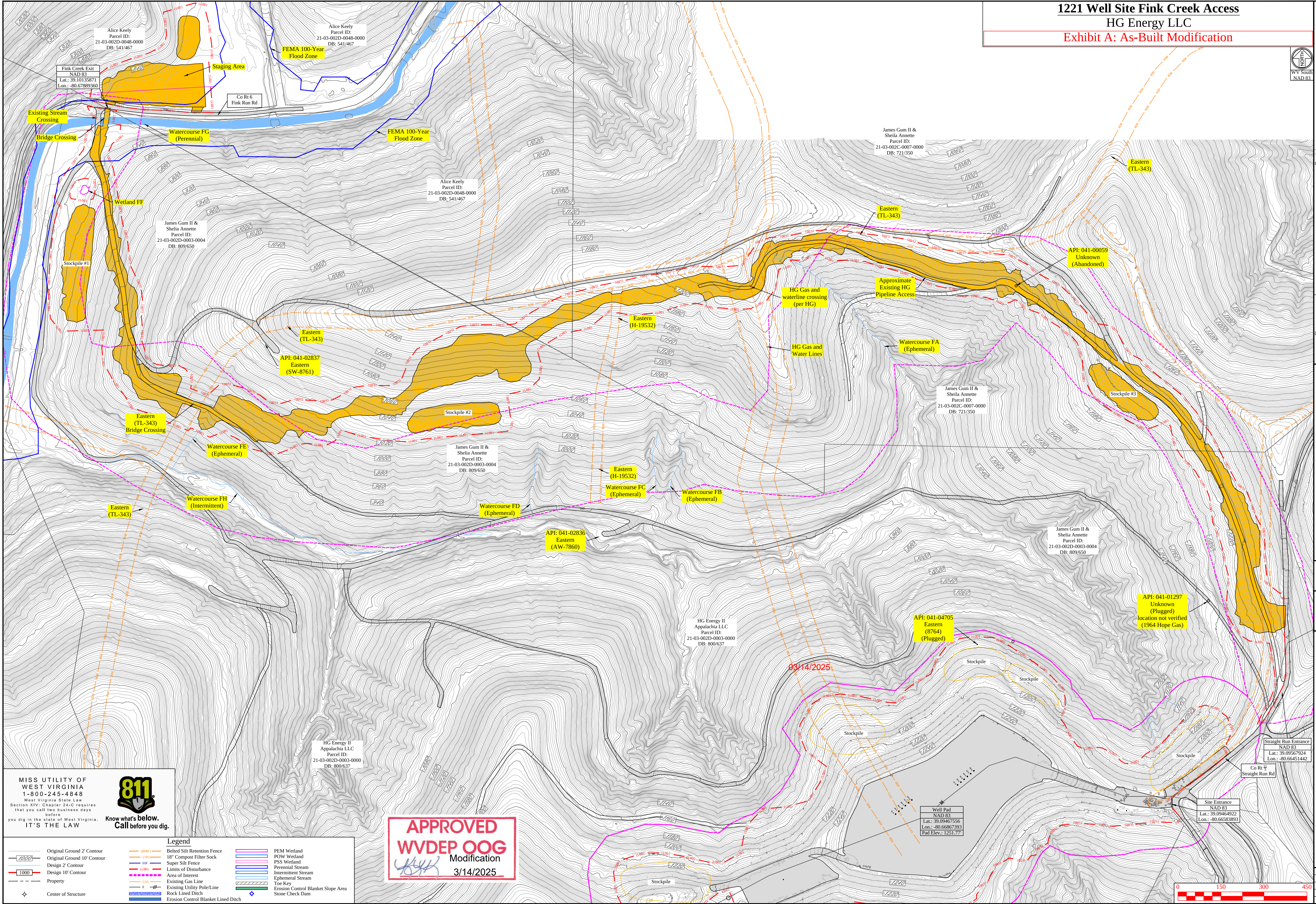


Legend	
	Original Ground 2' Contour
	Original Ground 10' Contour
	Design 2' Contour
	Design 10' Contour
	Property
	Center of Structure
	Belted Silt Retention Fence
	18' Compust Filter Sock
	Super Silt Fence
	Limits of Disturbance
	Area of Interest
	Existing Gas Line
	Existing Utility Pole/Line
	Rock Lined Ditch
	Erosion Control Blanket Lined Ditch
	PEM Wetland
	PDW Wetland
	PSS Wetland
	Perennial Stream
	Intermittent Stream
	Ephemeral Stream
	Toe Key
	Erosion Control Blanket Slope Area
	Stone Check Dam

APPROVED
WVDEP OOG
Modification
3/14/2025

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





1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



Revision	Date	Design
	02-04-2025	



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Pre-Construction Site Conditions - Bypass Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 3 of 32

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Legend		
Belted Silt Retention Fence		PEM Wetland
18" Compost Filter Sock		POW Wetland
Super Silt Fence		PSS Wetland
Limits of Disturbance		Perennial Stream
Area of Interest		Intermittent Stream
Existing Gas Line		Ephemeral Stream
Existing Utility Pole/Line		Toe Key
Rock Lined Ditch		Erosion Control Blanket Slope Area
Erosion Control Blanket Lined Ditch		Stone Check Dam

APPROVED
WVDEP OOG
Modification
3/14/2025



1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



Legend

- Center of Structure
- Property Line
- Limits of Disturbance
- Area of Interest

- PEM Wetland
- POW Wetland
- PSS Wetland
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream

Soil Key

- Cu Chargrin silt loam, 0 to 3 percent slopes, occasionally flooded
- GuD Gilpin-Upshur silt loams, 15 to 25 percent slopes
- GuE Gilpin-Upshur silt loams, 25 to 35 percent slopes
- GwF3 Gilpin-Upshur silt loams, 35 to 70 percent slopes, severely eroded
- Ha Hackers silt loam, 0 to 3 percent slopes, rarely flooded
- Su Sensenbrough silt loam, 0 to 3 percent slopes, occasionally flooded
- VaD Vandalia silt loam, 15 to 25 percent slopes
- VaE Vandalia silt loam, 25 to 35 percent slopes

APPROVED
WVDEP OOG
Modification
3/14/2025



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Revision	Date
Design	02-04-2025



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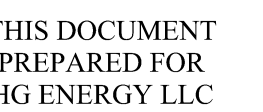
Site Soil Map
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 4 of 32

Exhibit A: As-Built Modification



02-04-2025



Freemalls Creek District
Lewis County, WV

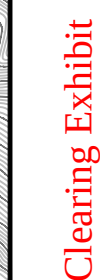
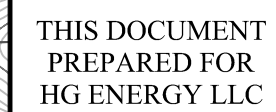
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Exhibit A: As-Built Modification



Date 02-04-2025



1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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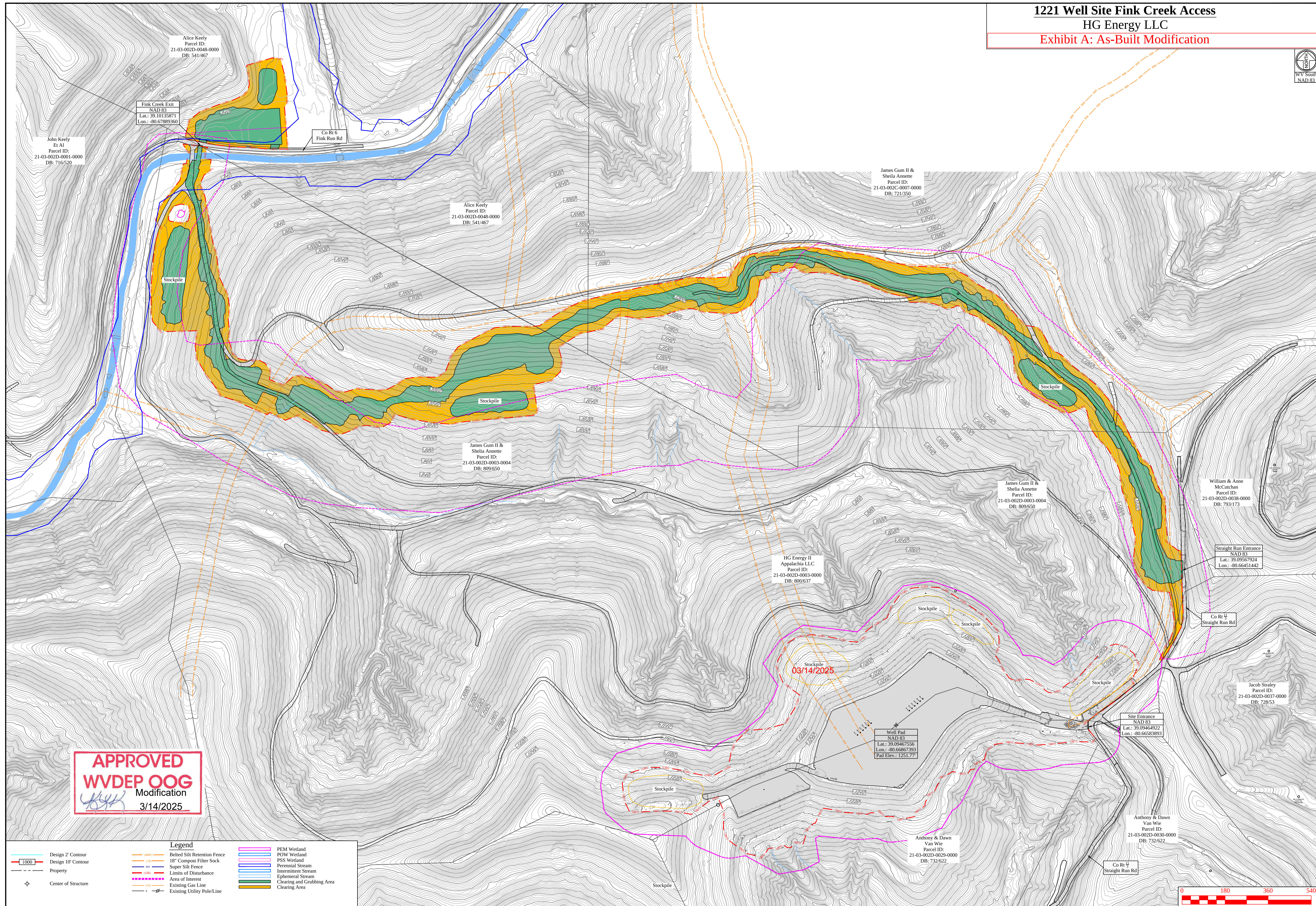


Exhibit A: As-Built Modification



02-04-2025

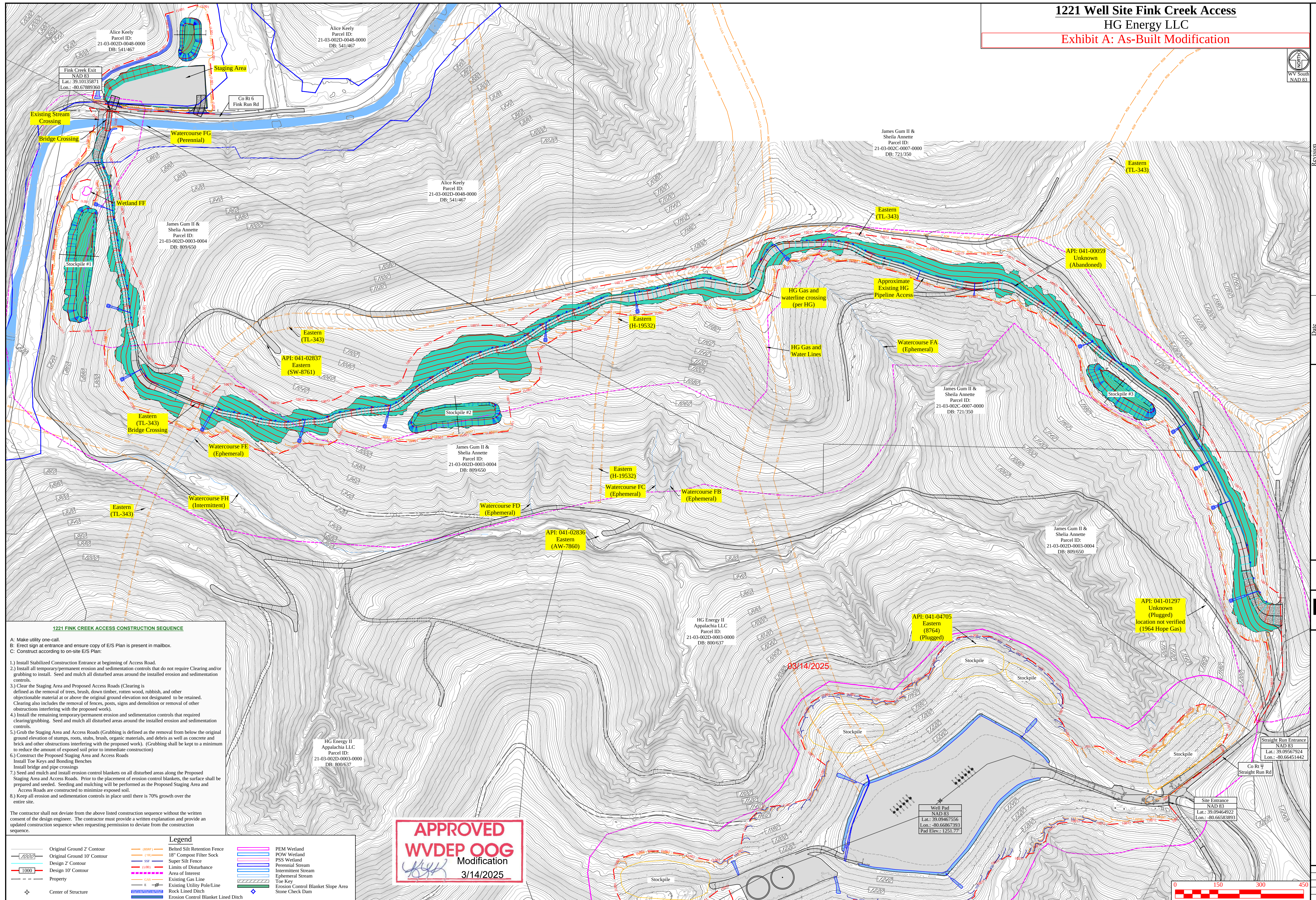
Kelly Surveying
P.O. Box 254
Dallies, WV 26239

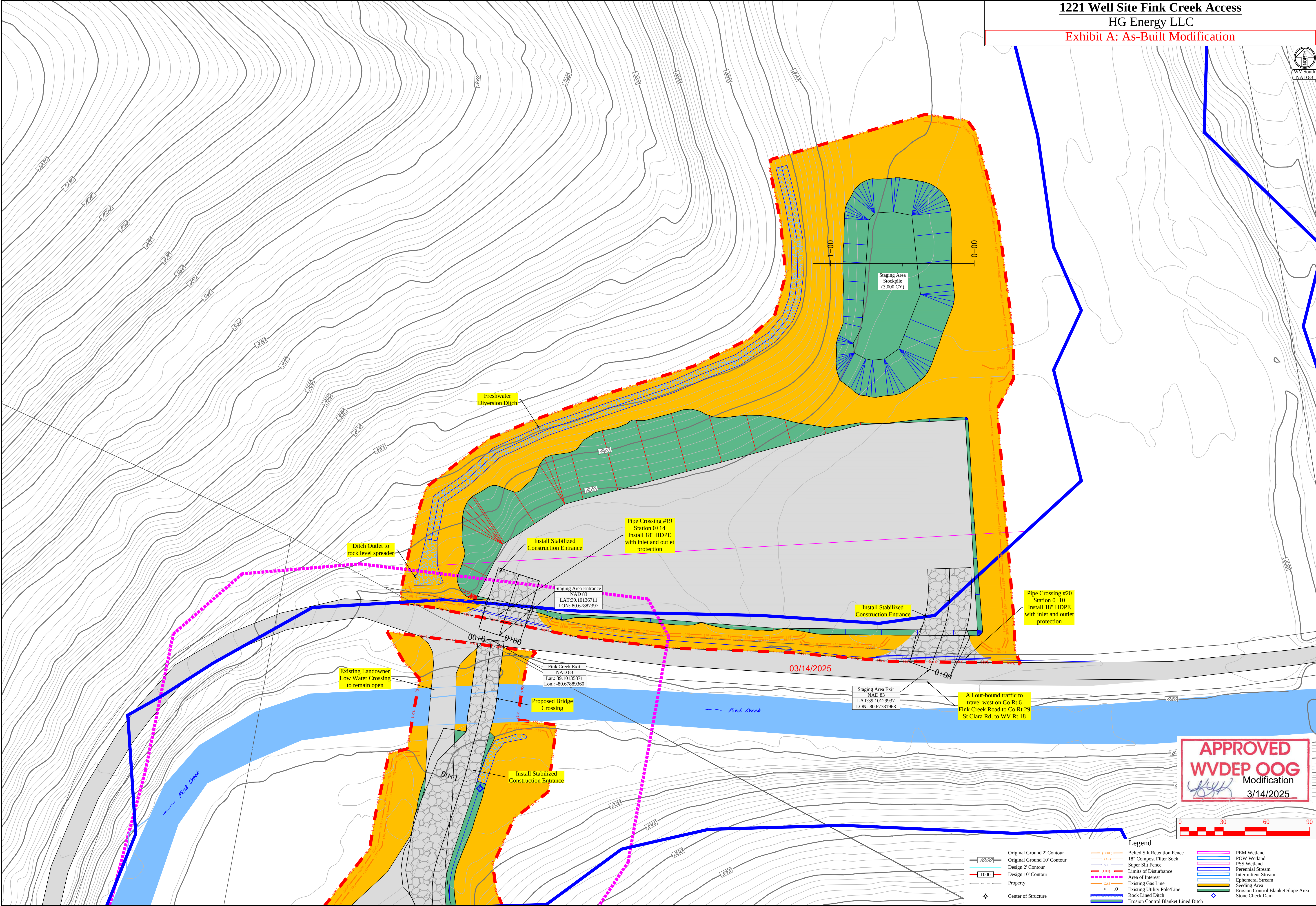
Overall Plan View - Bypass Access Road

1221 Well Site

Freemans Creek District
Lewis County, WV

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Revision

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P.O. Box 254
Dallman, WV 26039
304-338-0965

Erosion and Sediment Control Plan

1221 Fink Creek Access

Freemans Creek District
Lewis County, WV

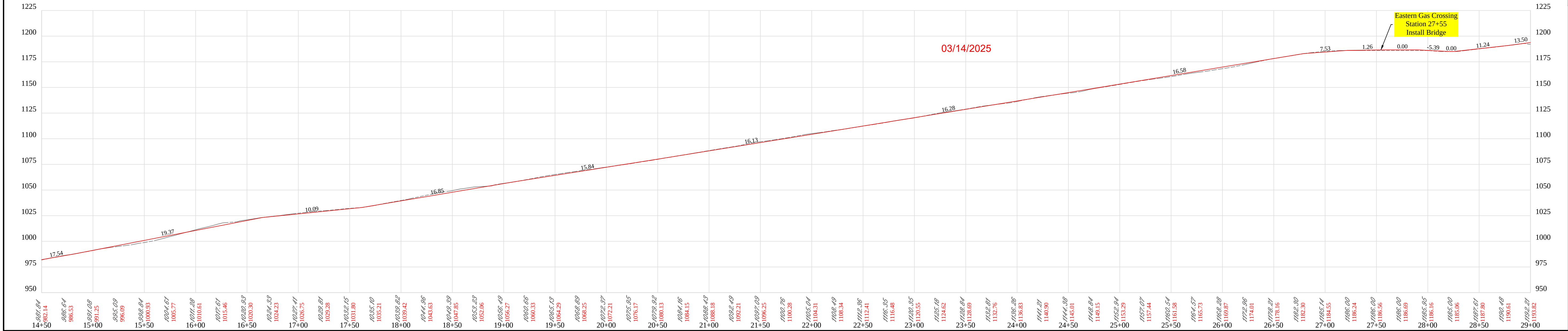
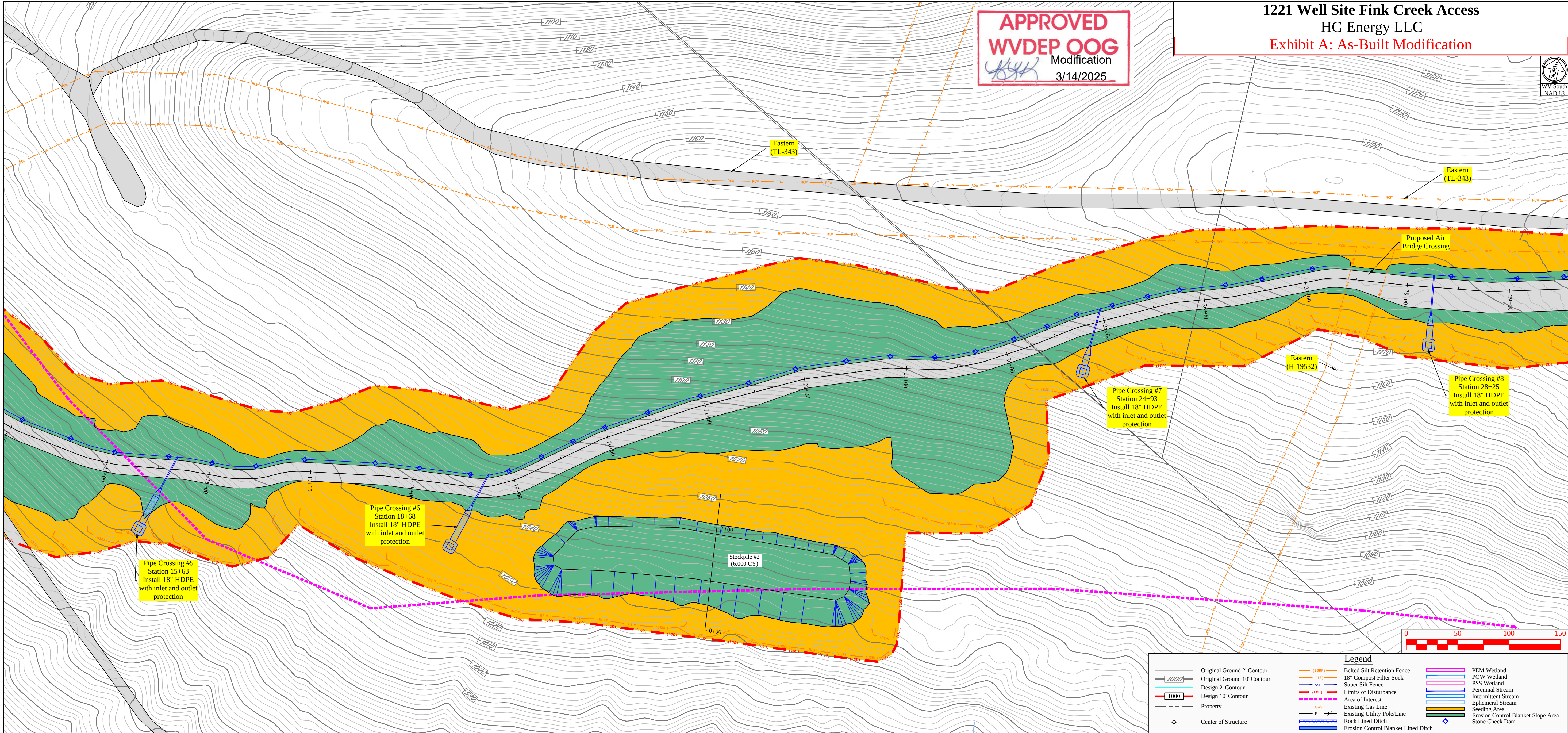
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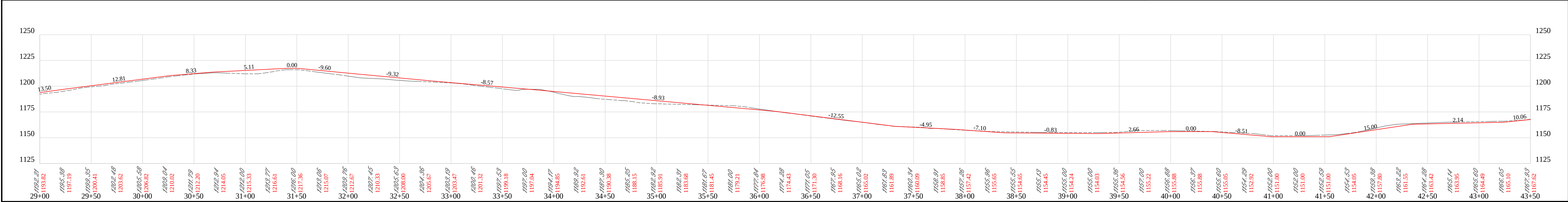
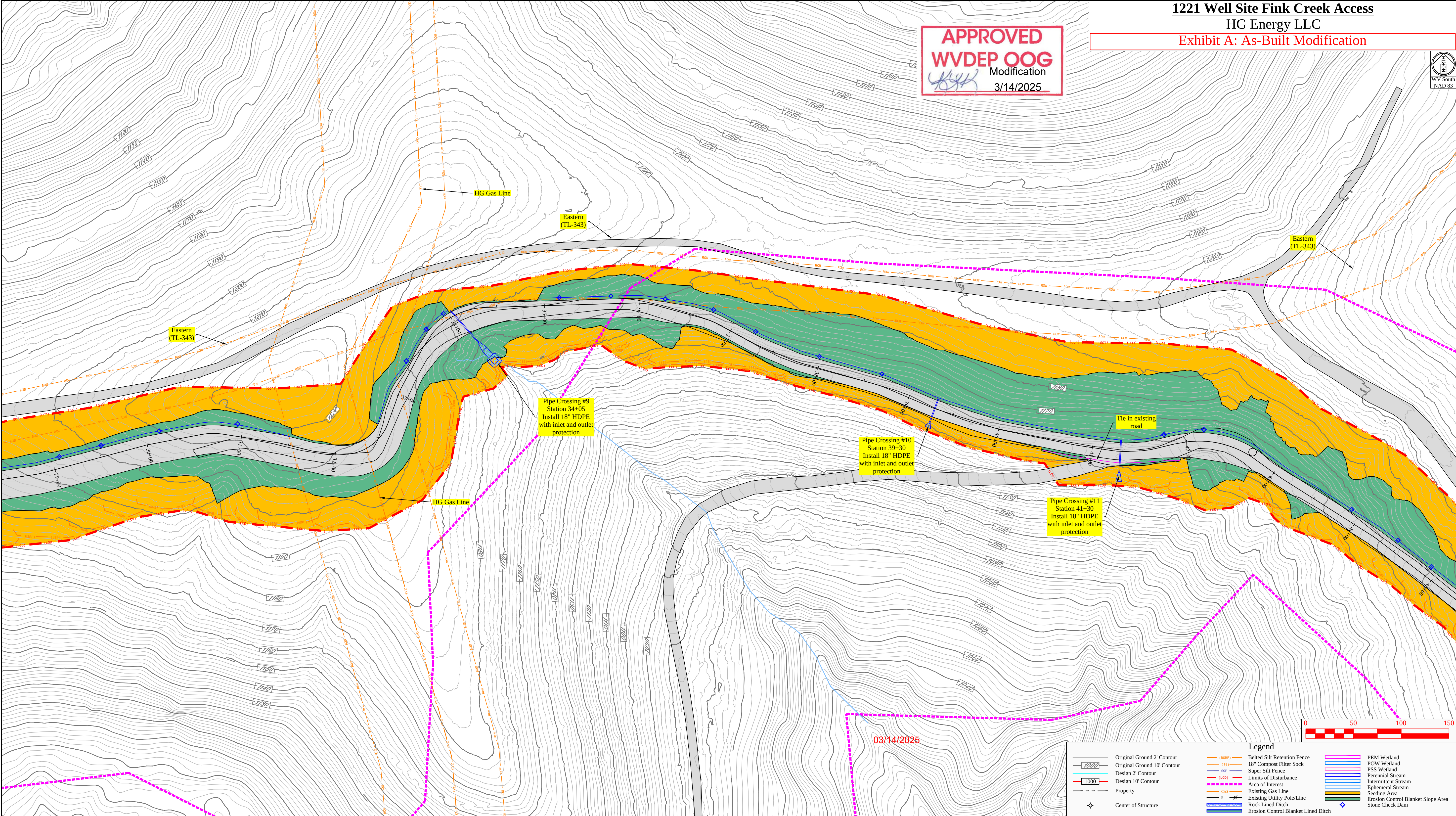
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Kelly Surveying
P.O. Box 254
Delmar, WV 26299
304-338-0985

Erosion and Sediment Control Plan
1221 Fink Creek Access
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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WVDEP OOG
Modification
3/14/2025

1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



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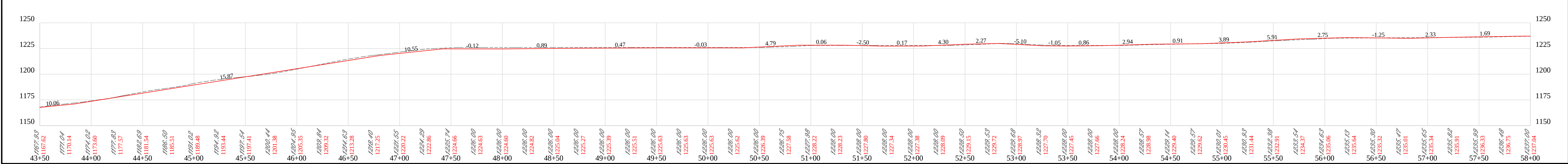
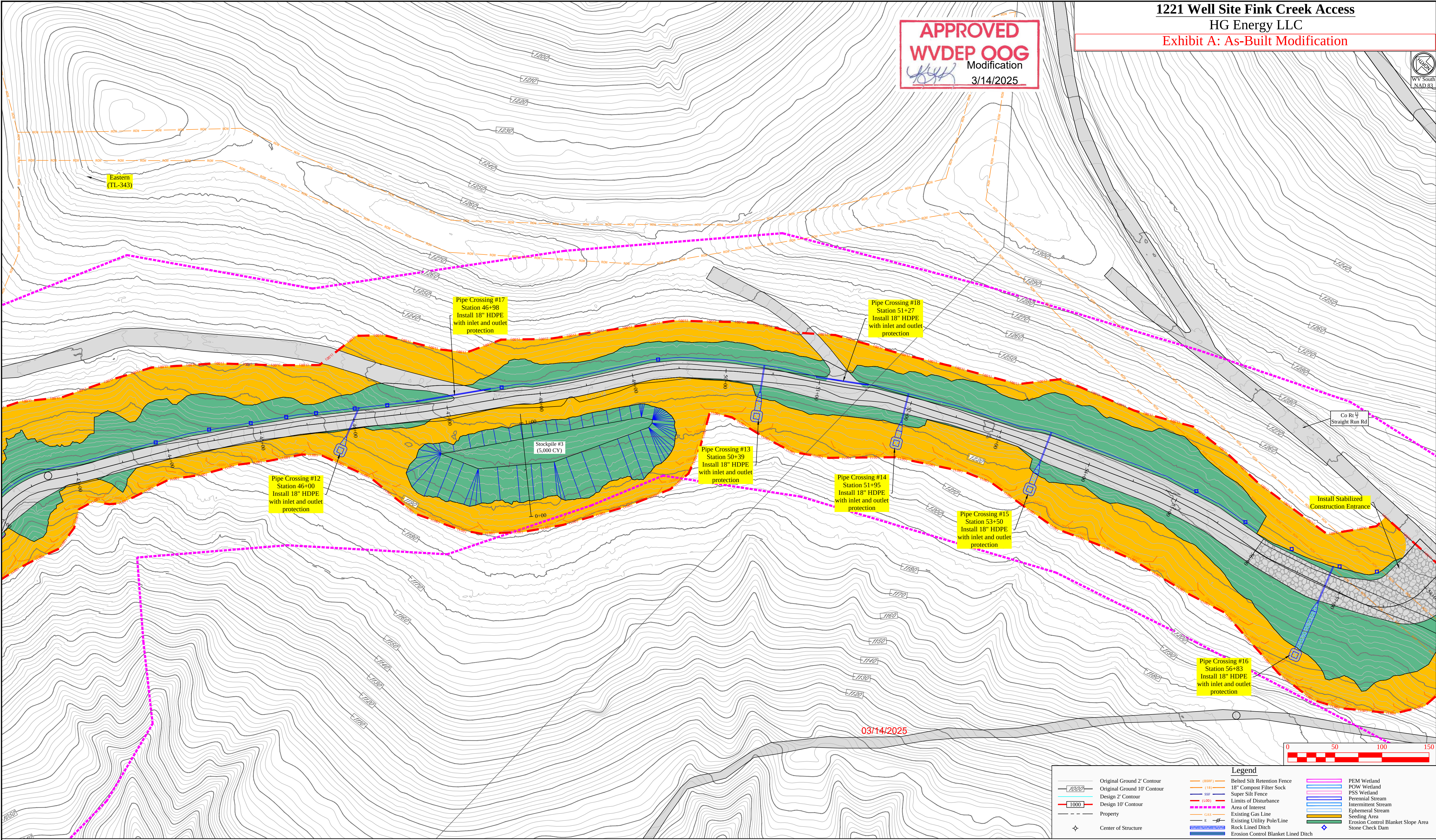


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Erosion and Sediment Control Plan
1221 Fink Creek Access
Freemans Creek District
Lewis County, WV

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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



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Erosion and Sediment Control Plan
1221 Fink Creek Access
Freemans Creek District
Lewis County, WV

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APPROVED WVDEP OOG Modification
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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification

03/14/2025

Legend

- Original Ground 2' Contour
- Original Ground 10' Contour
- Design 2' Contour
- Design 10' Contour
- Property
- Center of Structure
- Belted Silt Retention Fence
- 18" Compost Filter Sock
- Super Silt Fence
- Limits of Disturbance
- Area of Interest
- Existing Gas Line
- Existing Utility Pole/Line
- Rock Lined Ditch
- Erosion Control Blanket Lined Ditch
- PEM Wetland
- POW Wetland
- PSS Wetland
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream
- Seeding Area
- Erosion Control Blanket Slope Area
- Stone Check Dam

WV South
NAD 83

02-04-2025



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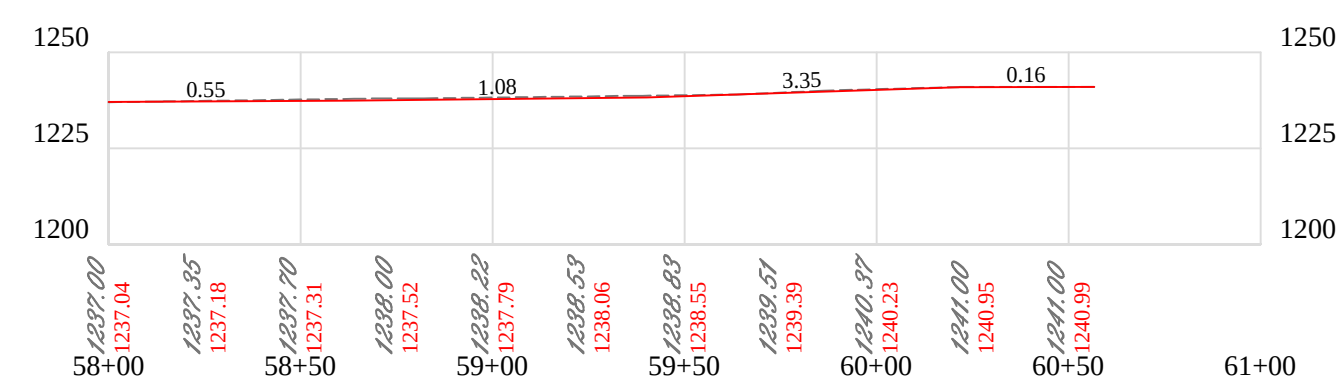


Erosion and Sediment Control Plan

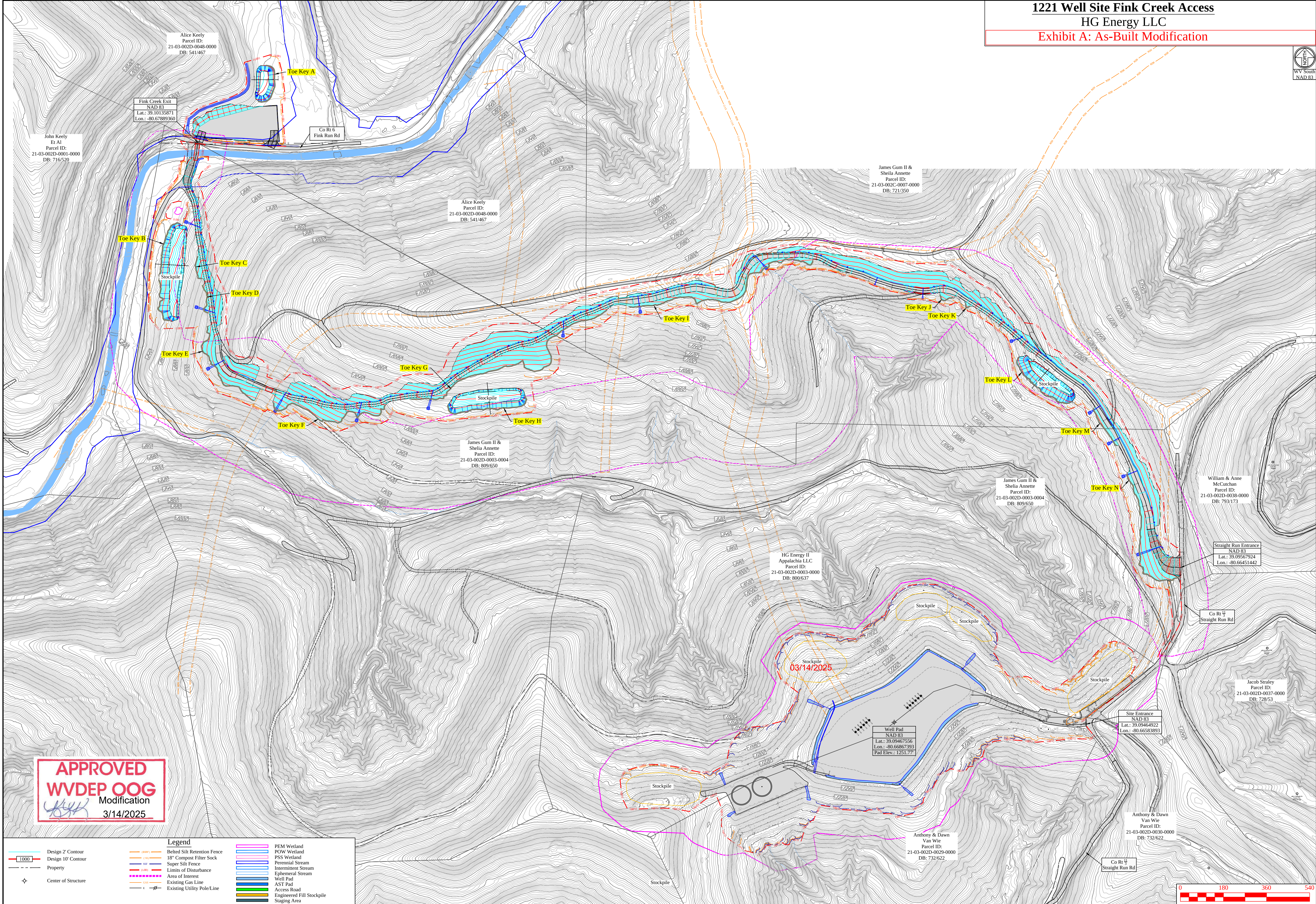
1221 Fink Creek Access

Freemans Creek District
Lewis County, WV

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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



APPROVED
WVDEP OOG
Modification
3/14/2025

Legend

- | | | | |
|---------------------------|----------------------------|-----------------------|---------------------------|
| Design 2' Contour | Design 10' Contour | Property | Center of Structure |
| 18" Composite Filter Sock | Super Silt Fence | Limits of Disturbance | Area of Interest |
| Existing Gas Line | Existing Utility Pole/Line | PEM Wetland | POW Wetland |
| PSS Wetland | Perennial Stream | Intermittent Stream | Ephemeral Stream |
| Well Pad | AST Pad | Access Road | Engineered Fill Stockpile |
| Staging Area | | | |

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Toe Key Exhibit
1221 Well Site
Freemans Creek District
Lewis County, WV

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Exhibit A: As-Built Modification



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1221 Well Site
Freemans Creek District
Lewis County, WV

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 Sheet 16 of 32

1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



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Design

Date
02-04-2025

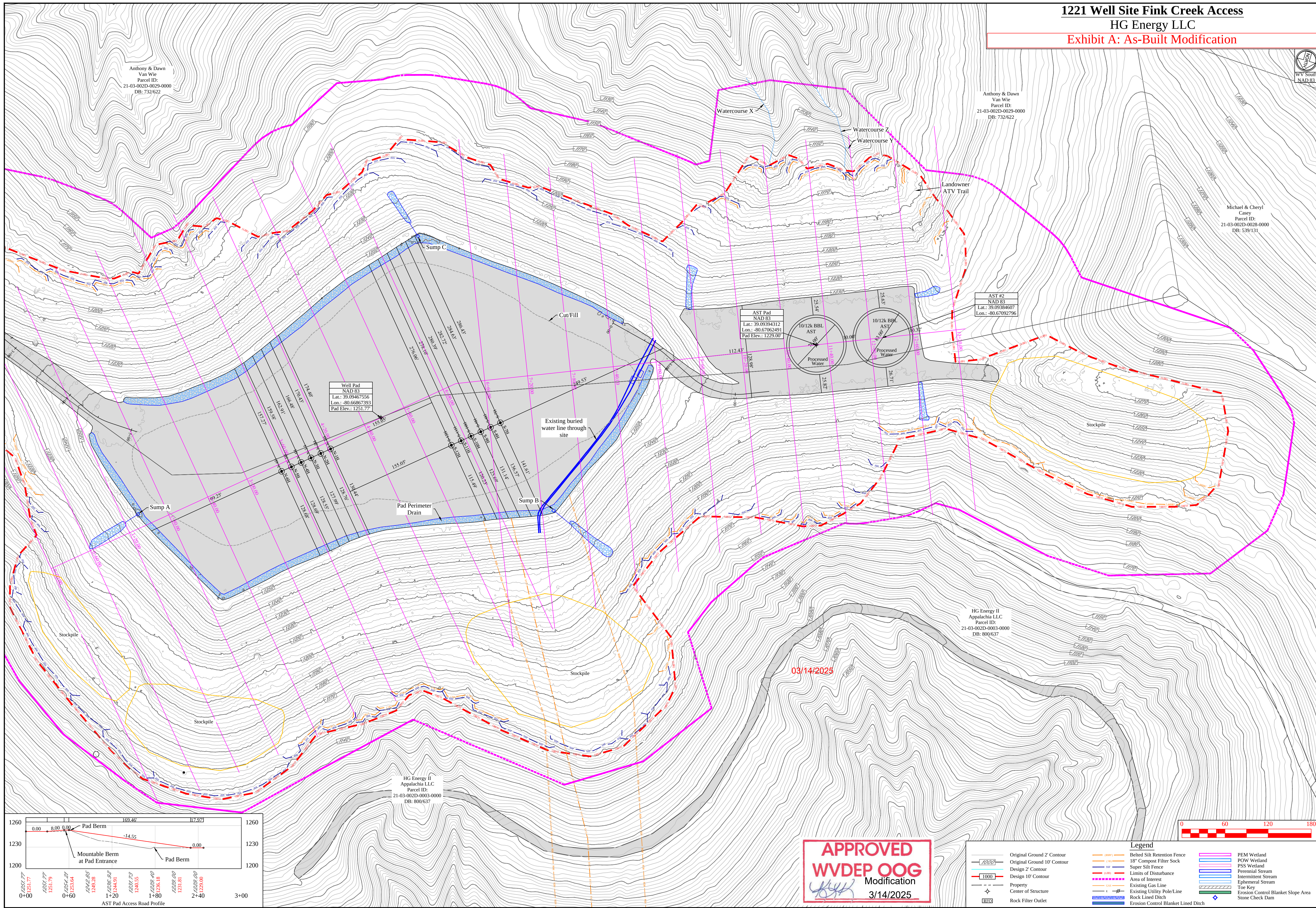


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Site Plan
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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Designed By: ZS
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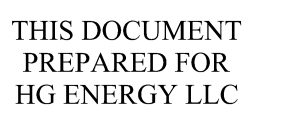


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Exhibit A: As-Built Modification



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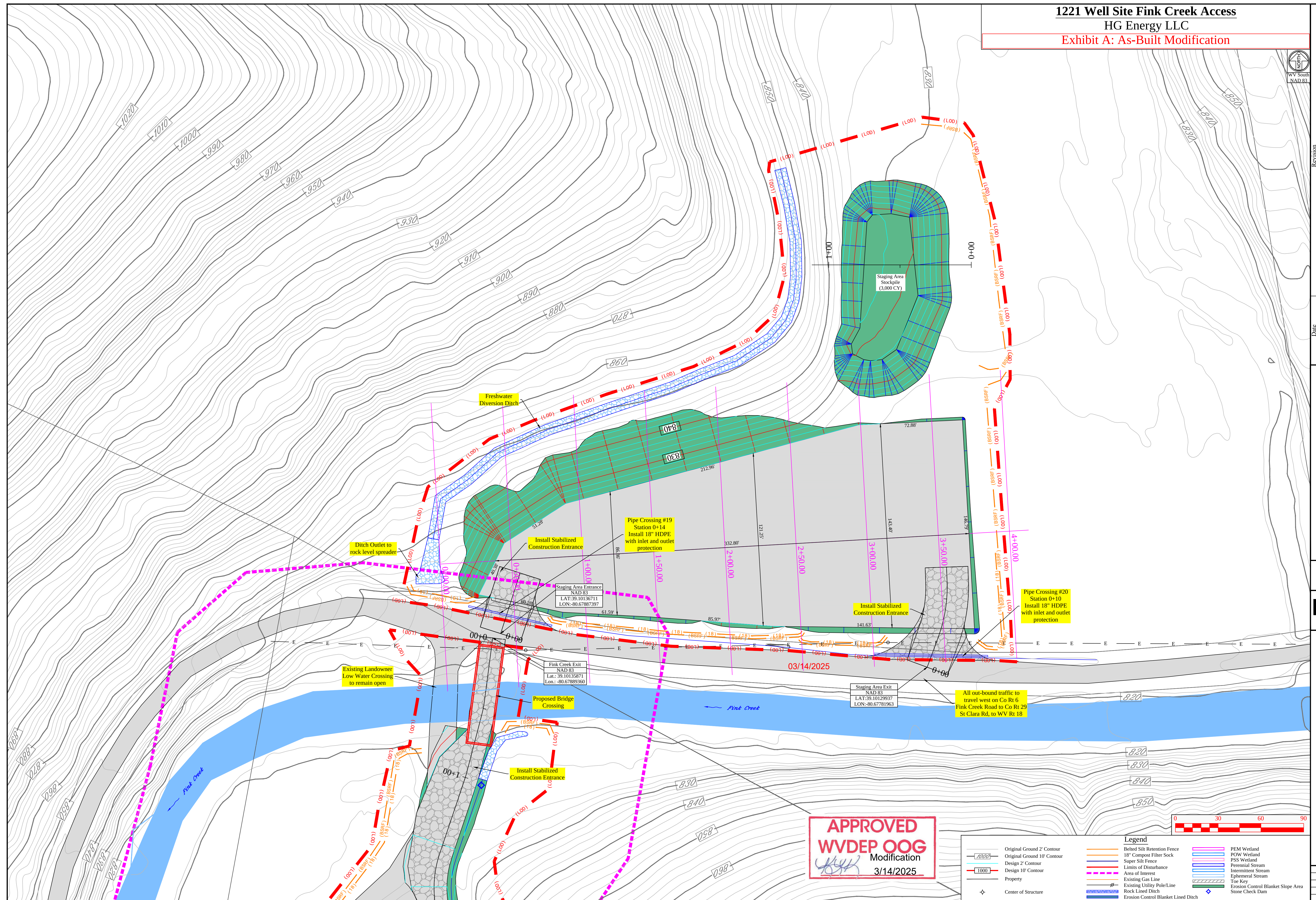


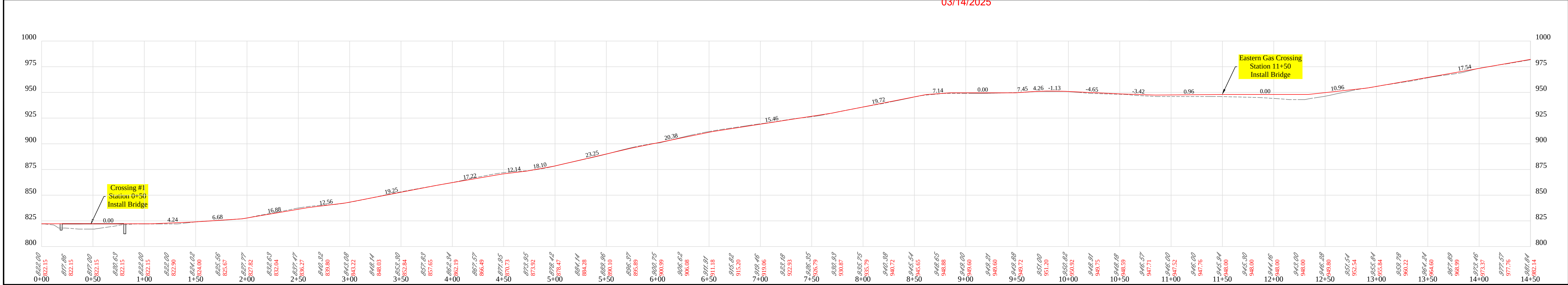
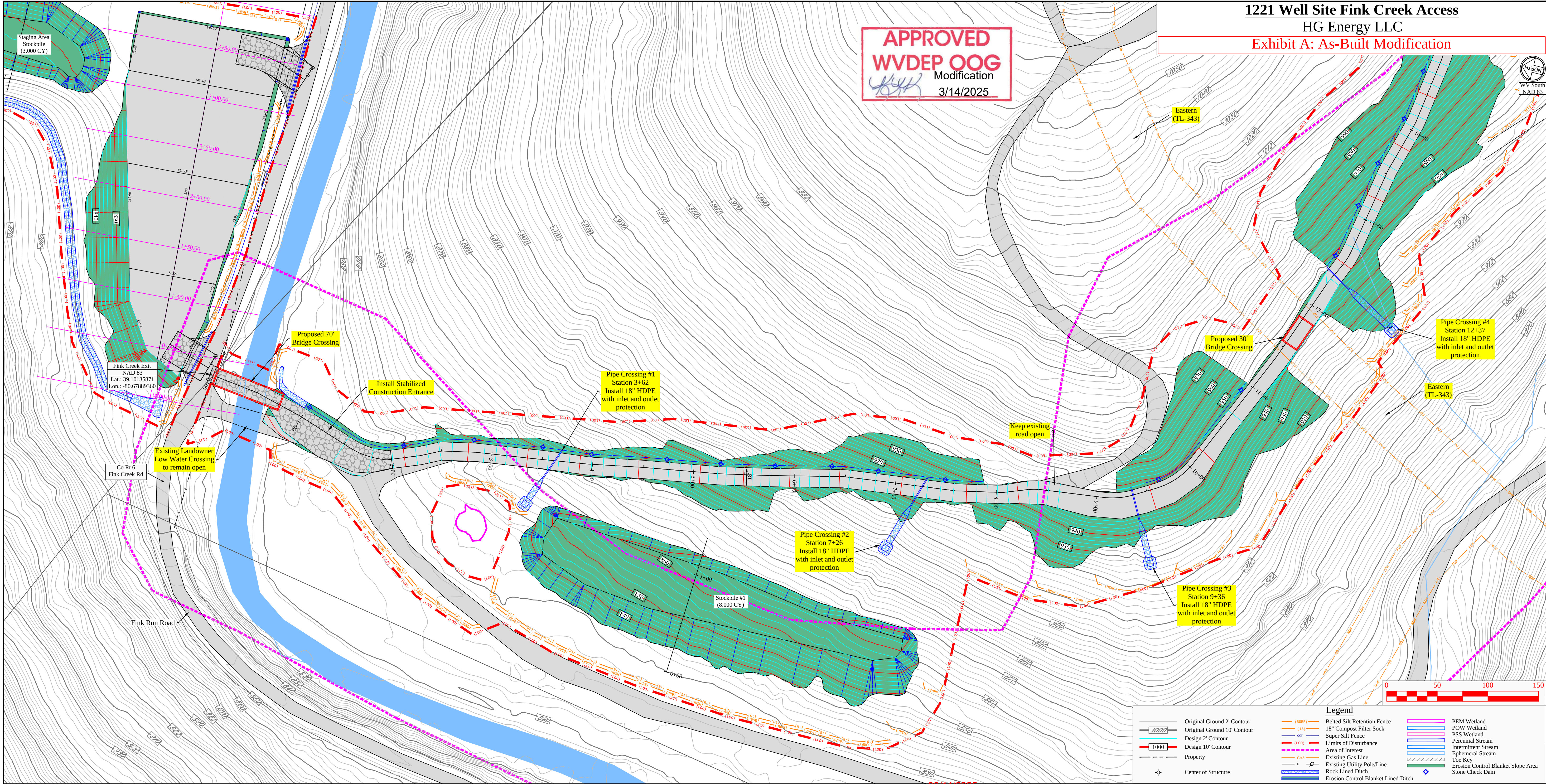
Site Plan - Fink Creek Existing Access

1221 Fink Creek Access

Freemans Creek District
Lewis County, WV

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Design

Date
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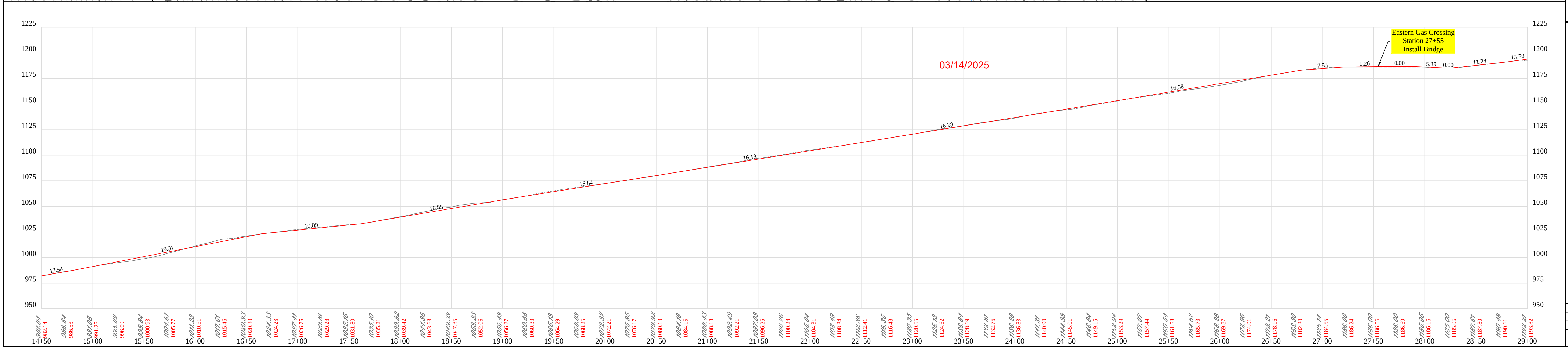
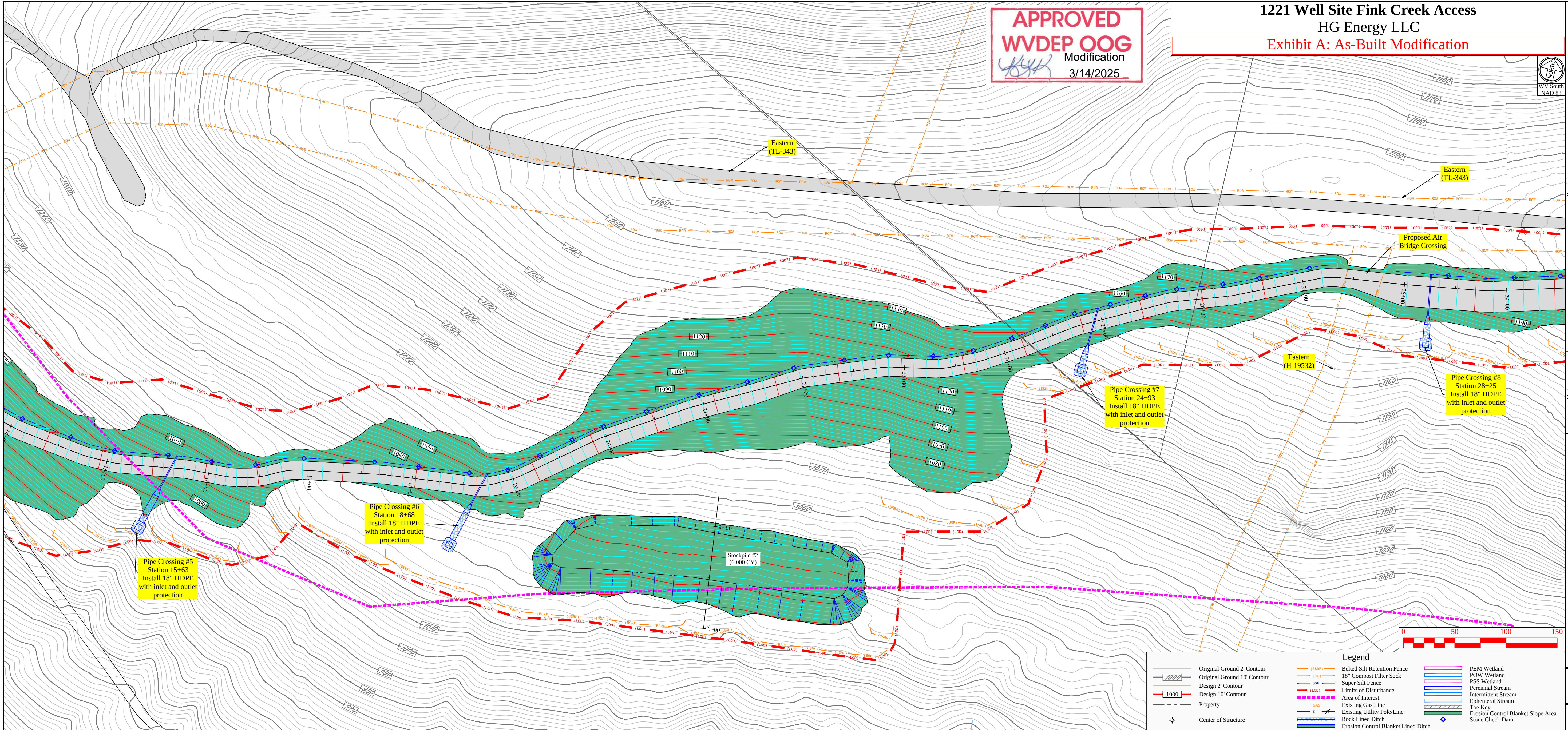
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Kelly Surveying
150 West 25th
Martinsburg, WV 26159
(304) 338-0965

Site Plan - Fink Creek Access Road

1221 Well Site
Freemans Creek District
Lewis County, WV

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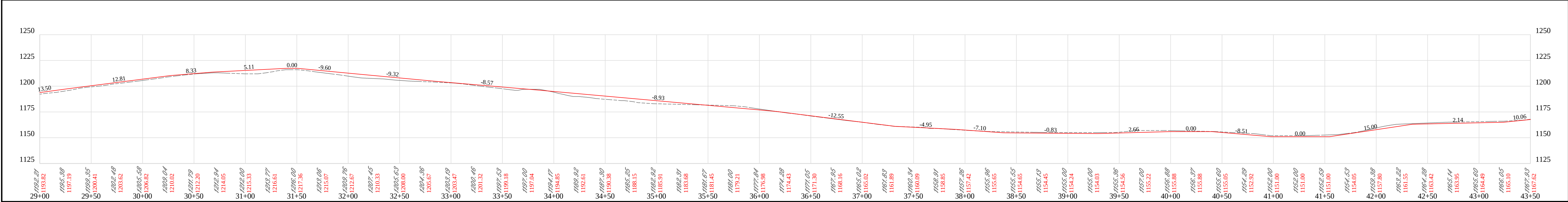
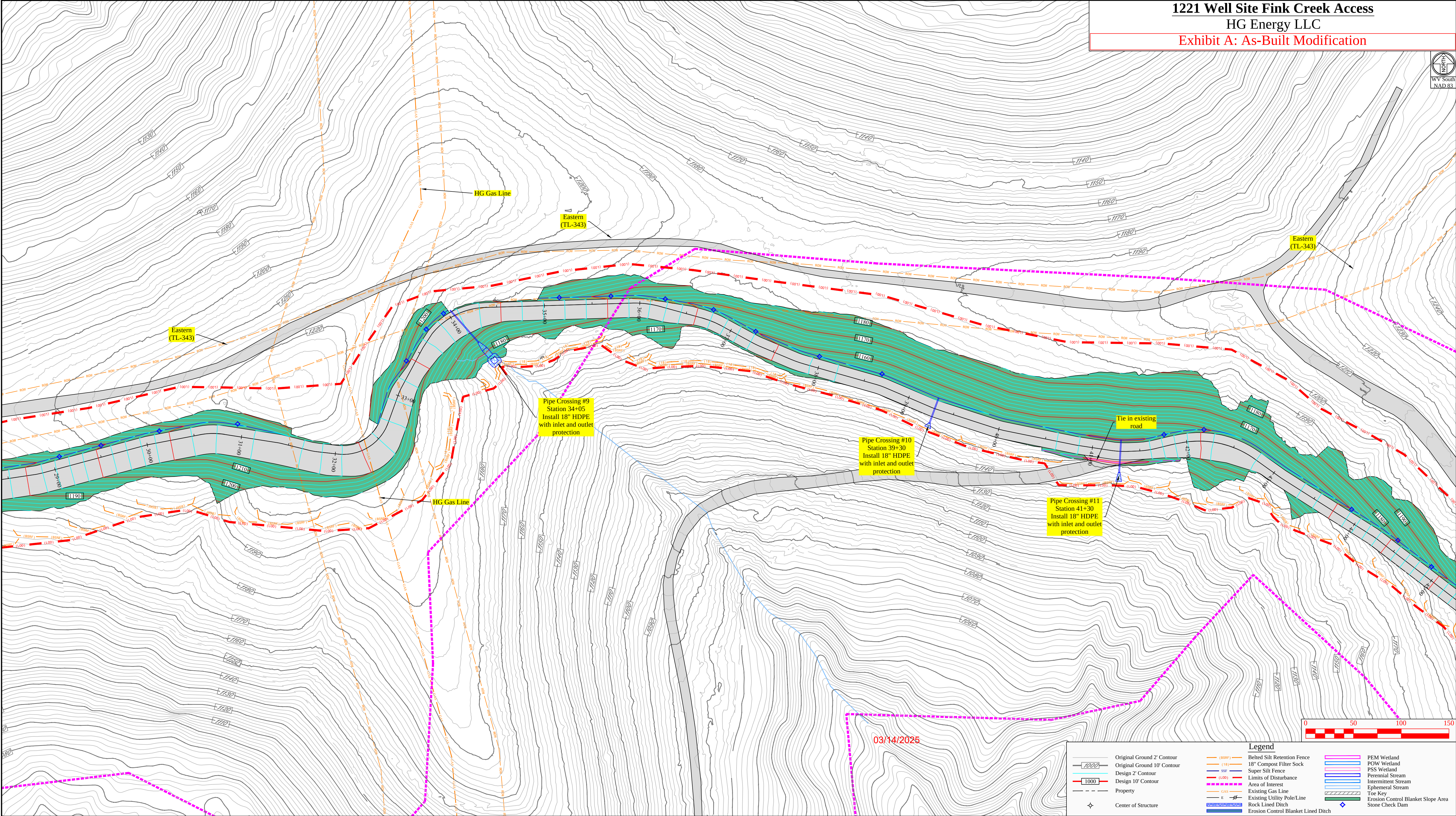
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Delmar, WV 26299
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Site Plan - Fink Creek Access Road

1221 Well Site
Freemans Creek District
Lewis County, WV

Date:	02/04/2025
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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



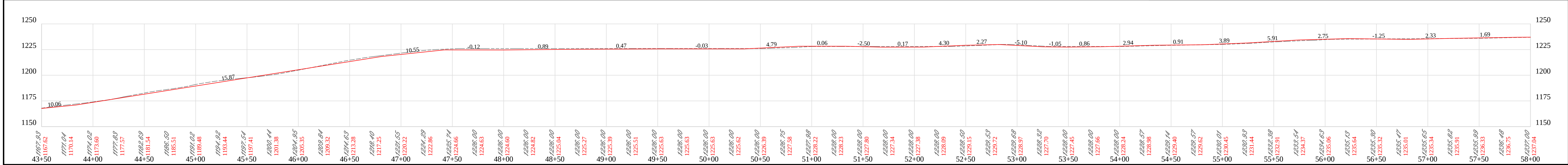
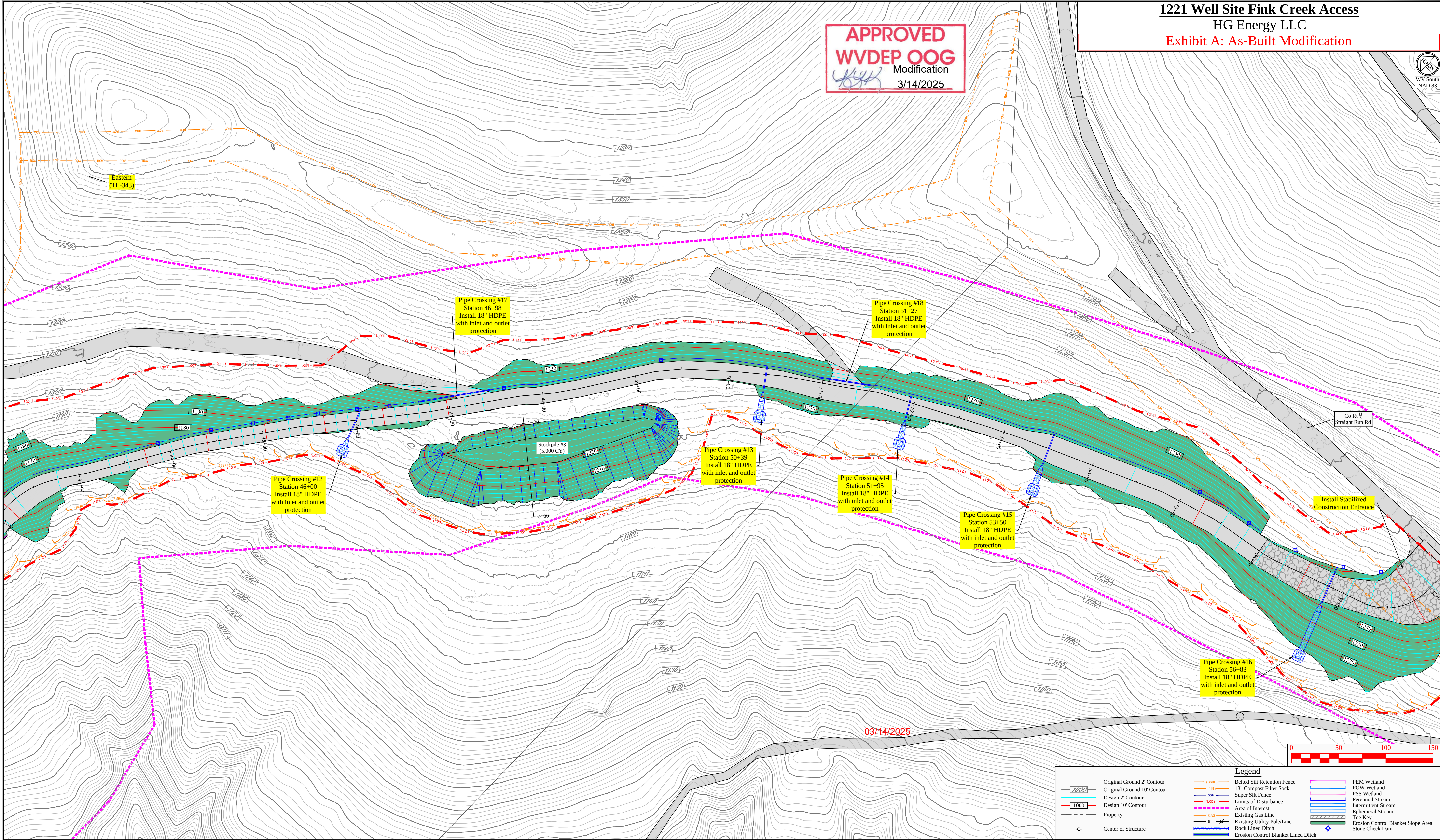
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Site Plan - Fink Creek Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV
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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification

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Site Plan - Fink Creek Access Road

1221 Well Site

Freemans Creek District
Lewis County, WV

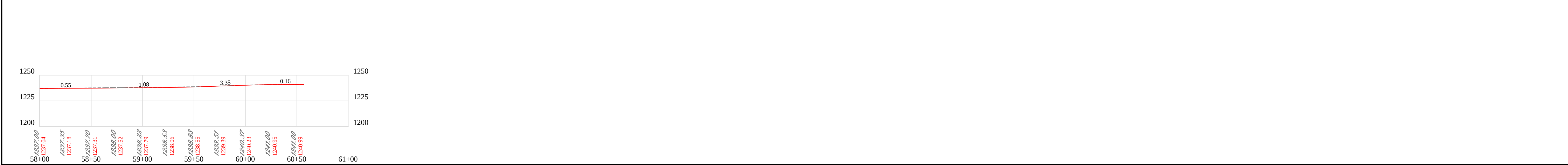
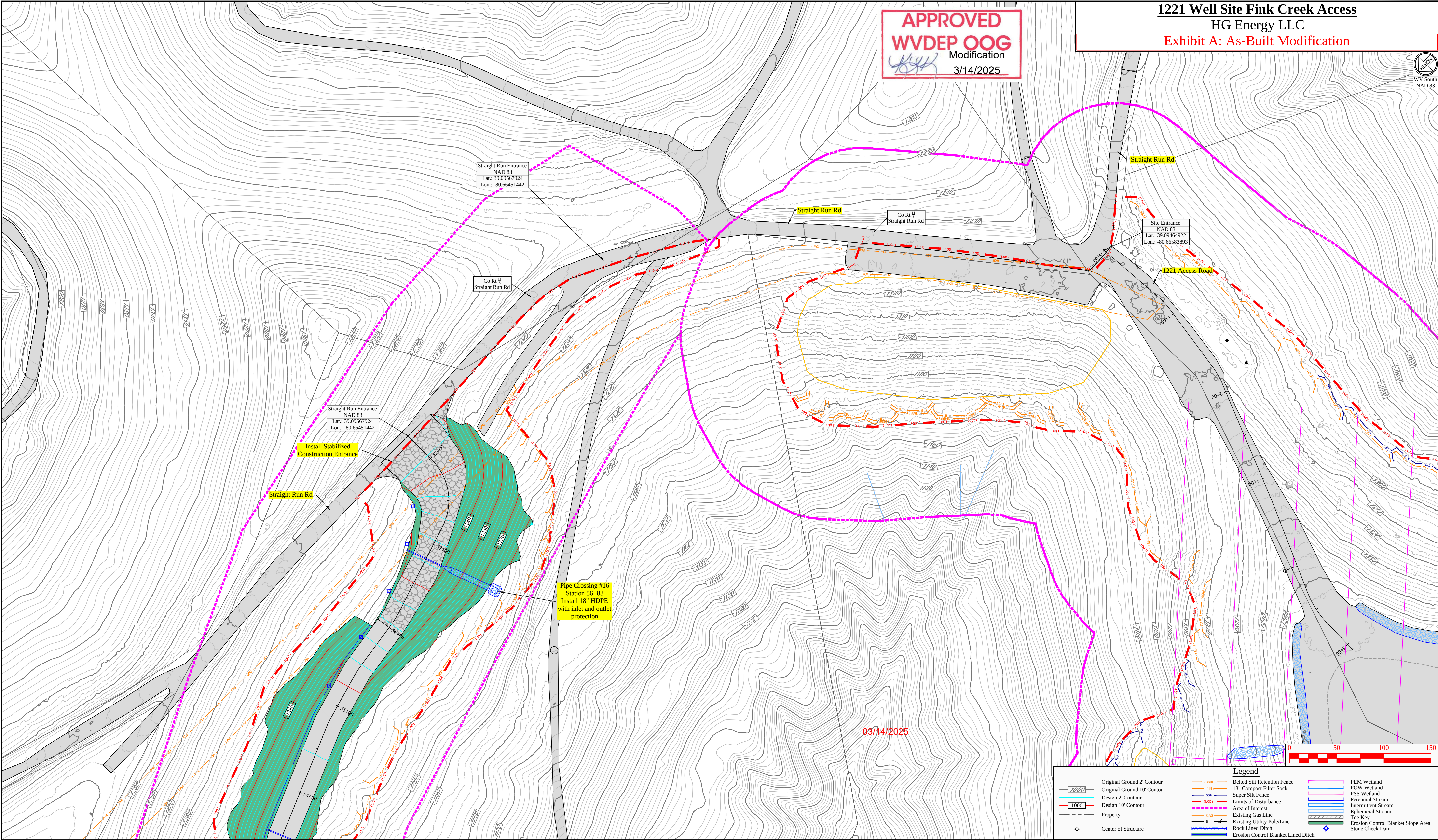
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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification

WV South
NAD 83

Revision
Design

Date
02-04-2025



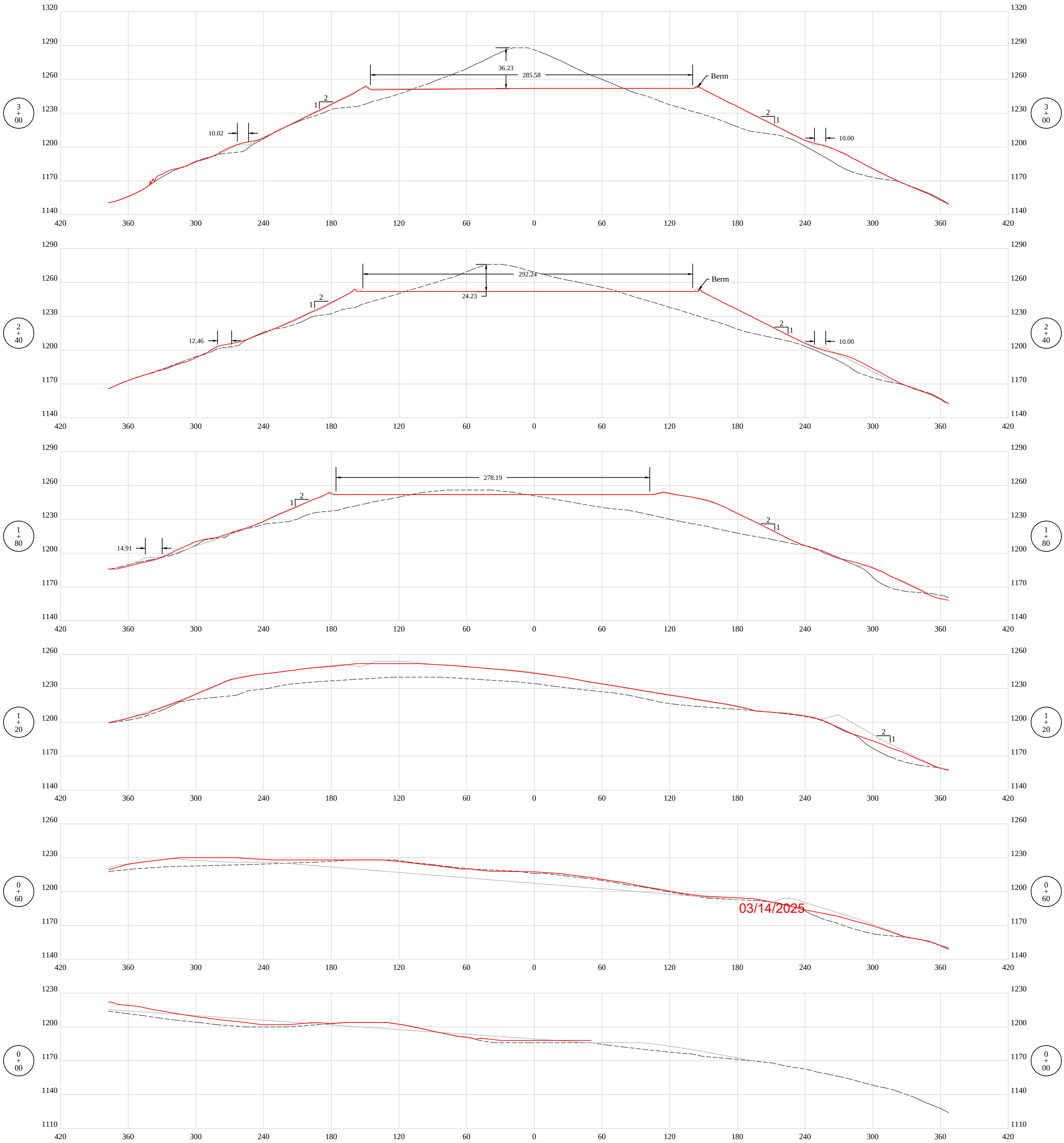
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Site Plan - Fink Creek Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

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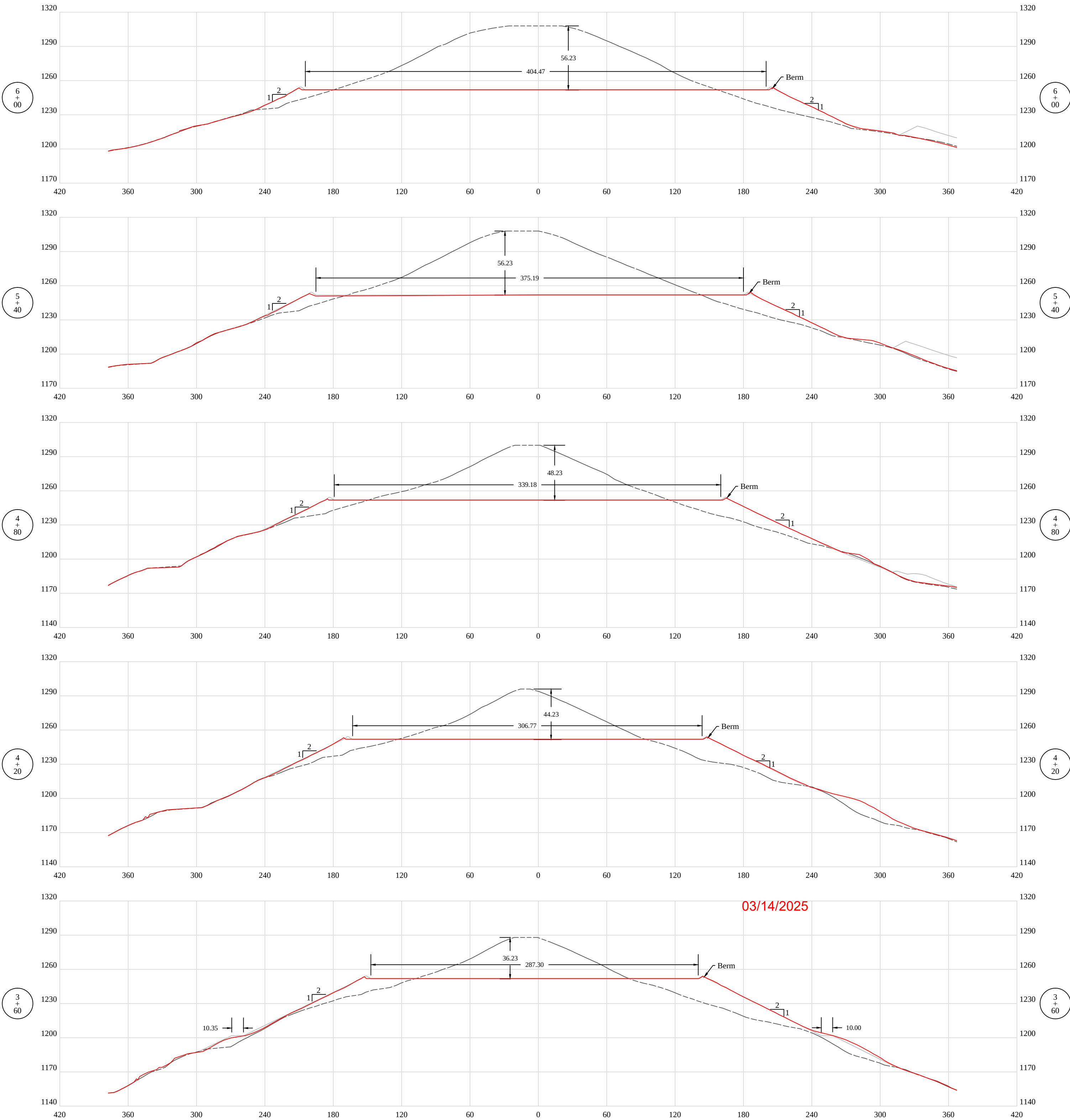
Cross Sections - Well Pad
1221 Well Site
Freemans Creek District
Lewis County, WV

Legend

Design
Original Ground
As-Built



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Modification
3/14/2025



Legend

- Design
- Original Ground
- As-Built



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Cross Sections - Well Pad
1221 Well Site
Freemans Creek District
Lewis County, WV

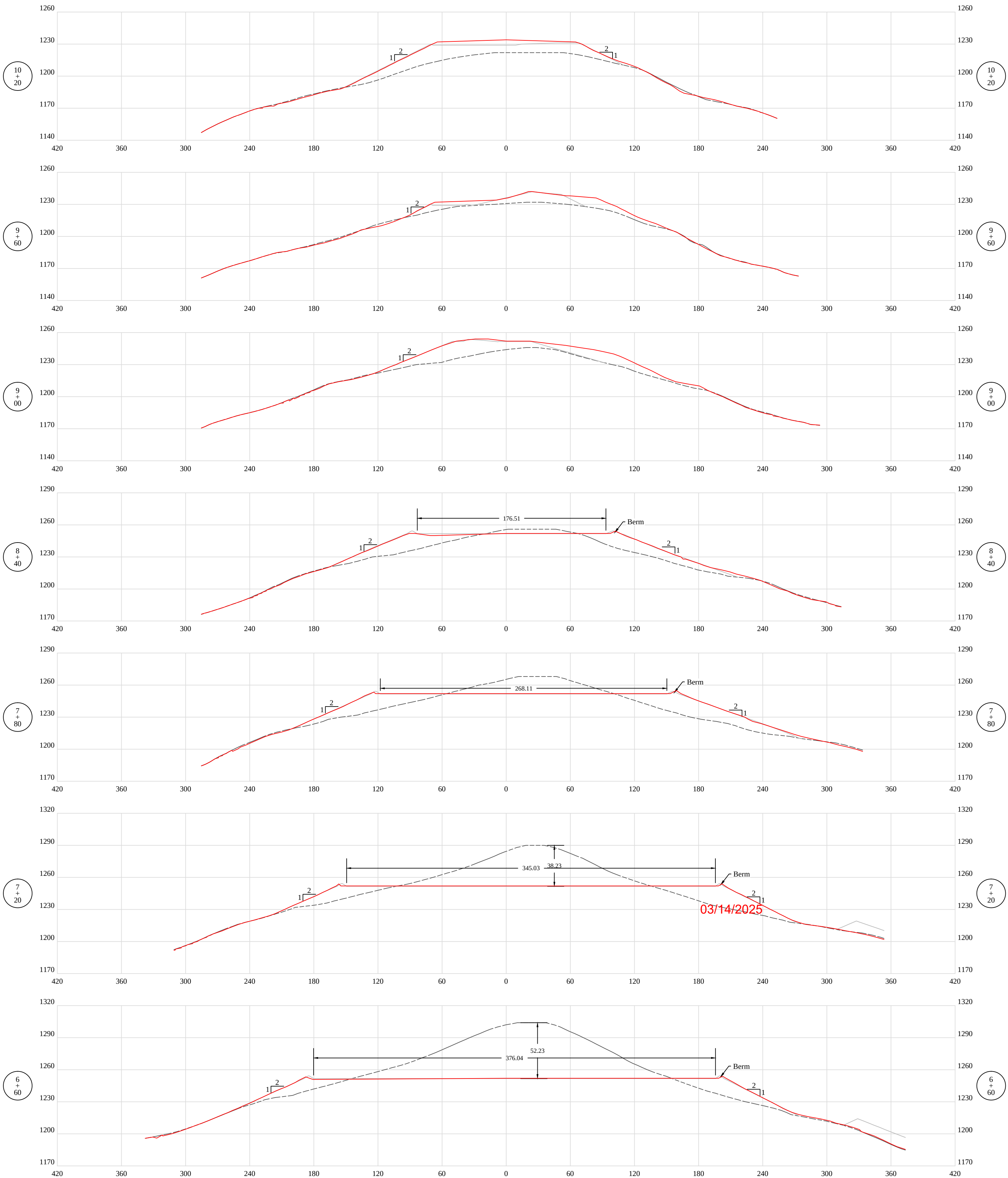
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1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

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Modification
3/14/2025



Legend

- Design
- Original Ground
- As-Built



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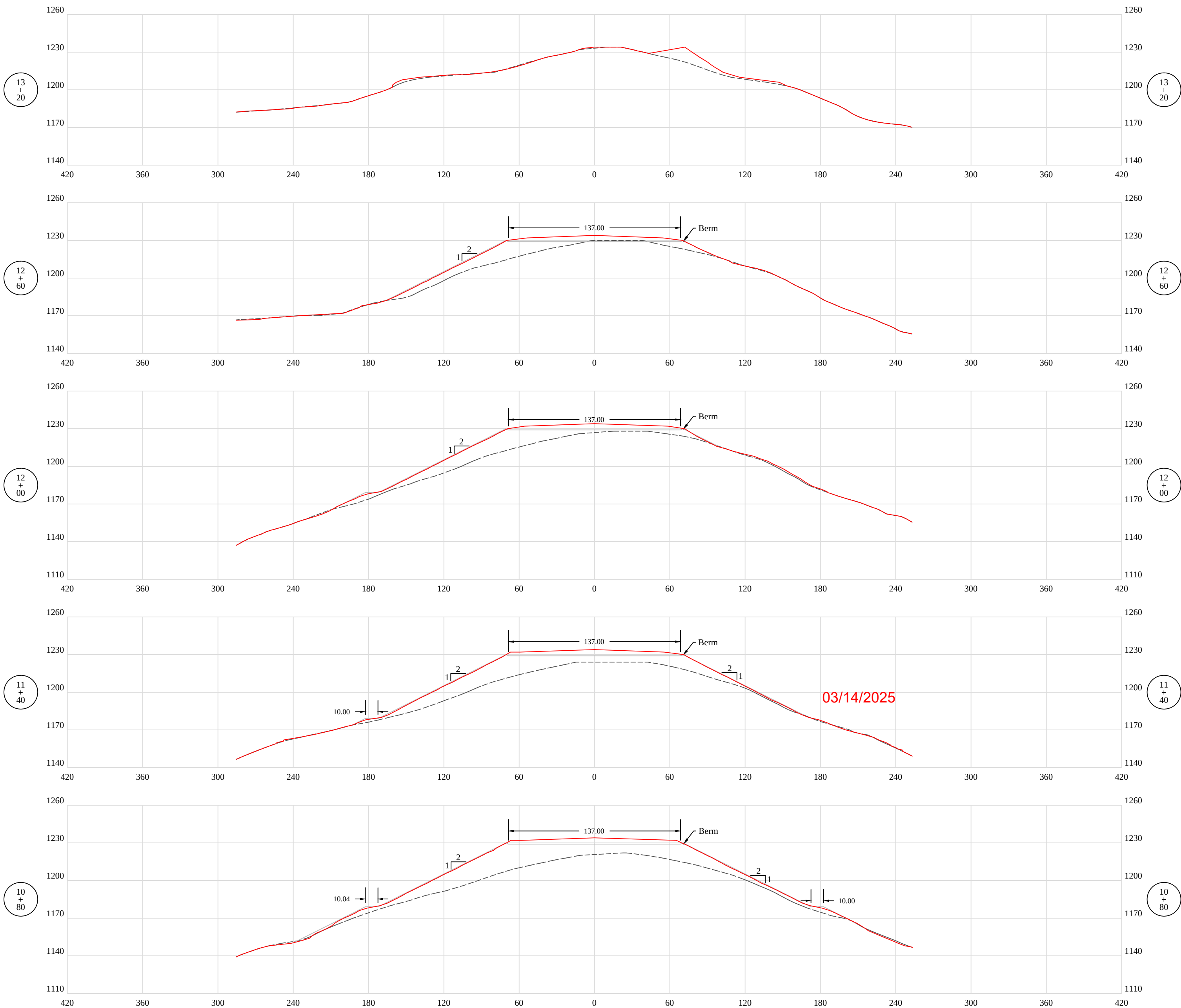
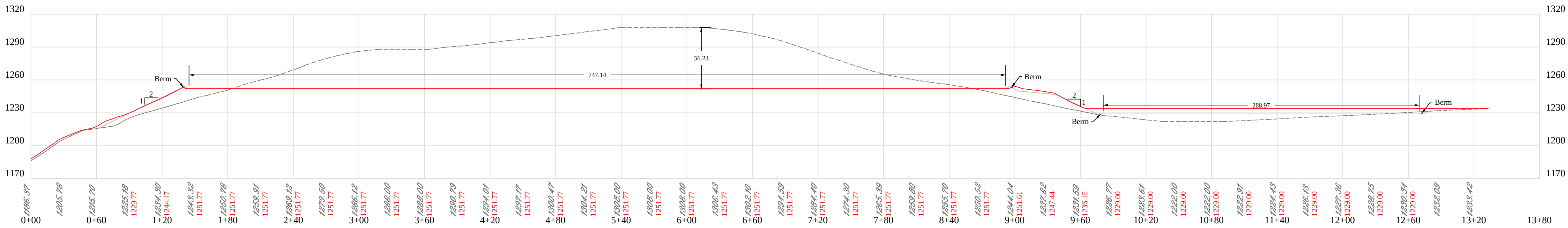
Cross Sections - Well Pad
1221 Well Site
Freemans Creek District
Lewis County, WV

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1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification



Legend

- Design
- Original Ground
- As-Built

Revision

Design

Date

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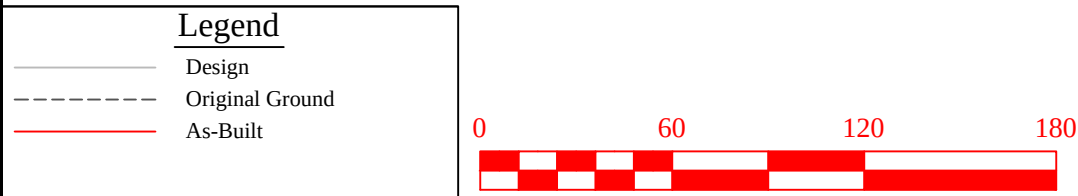
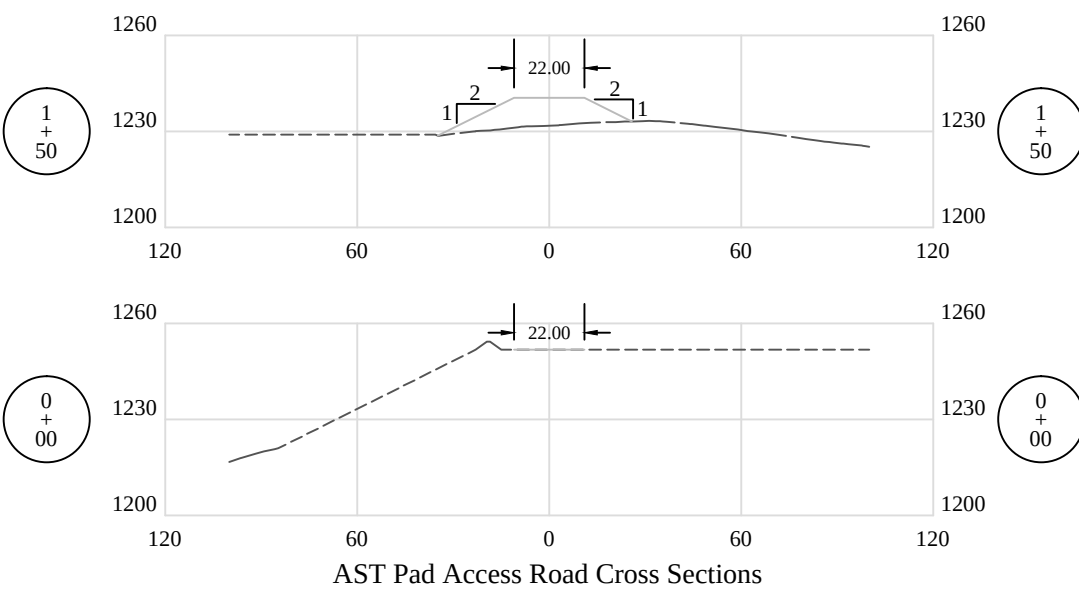
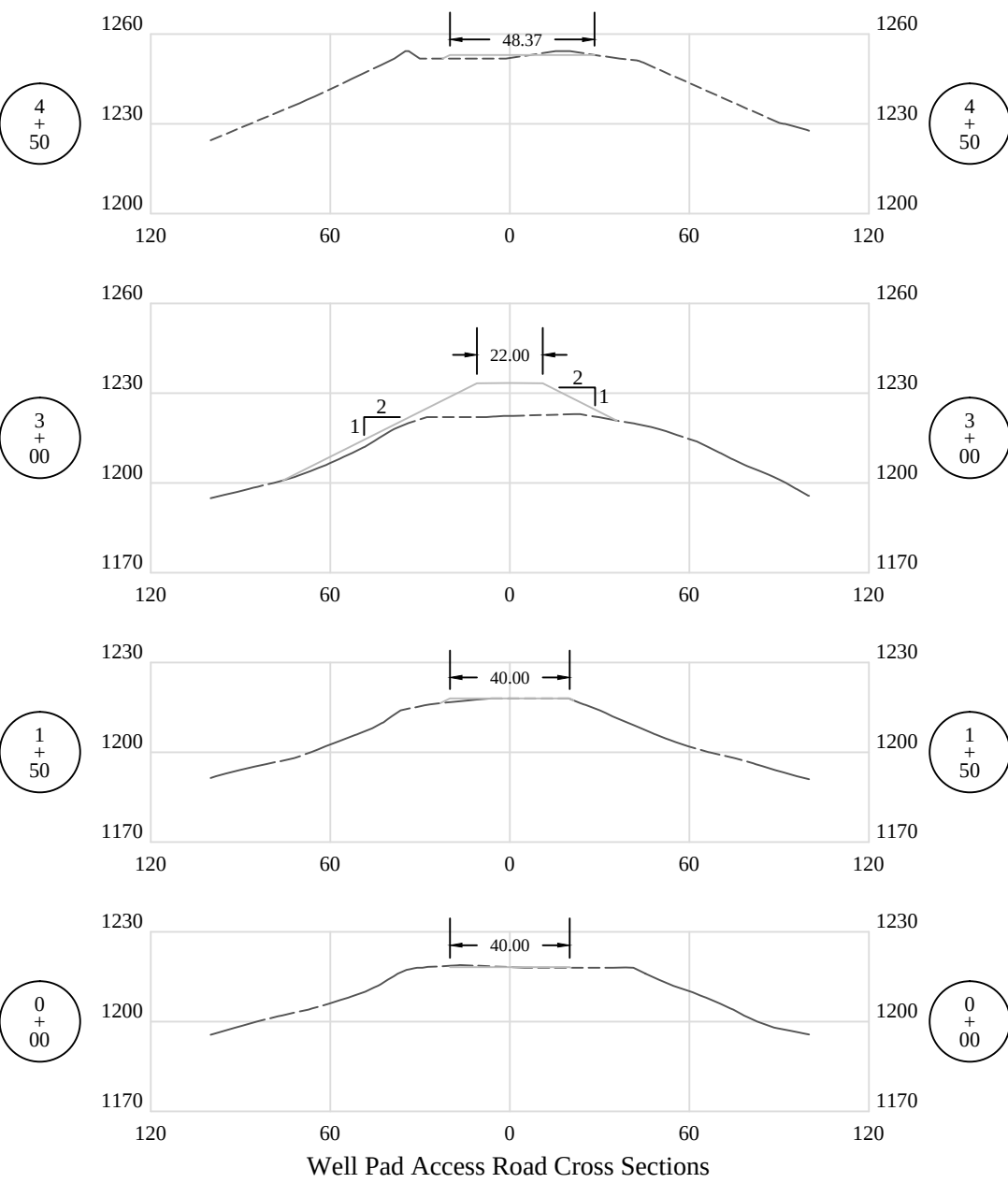
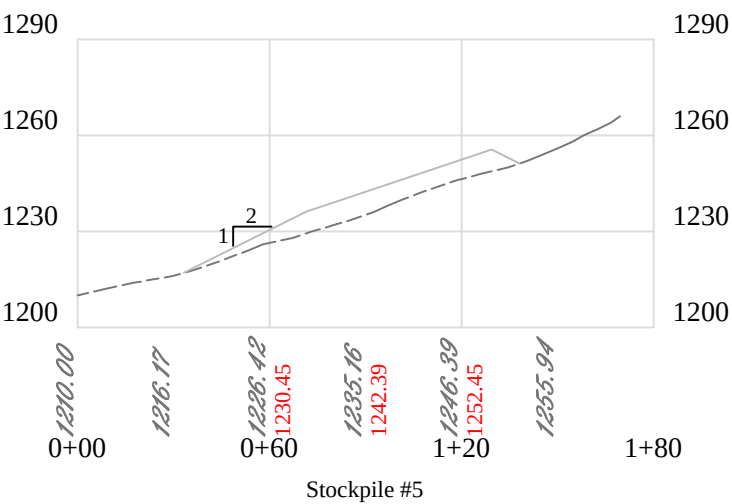
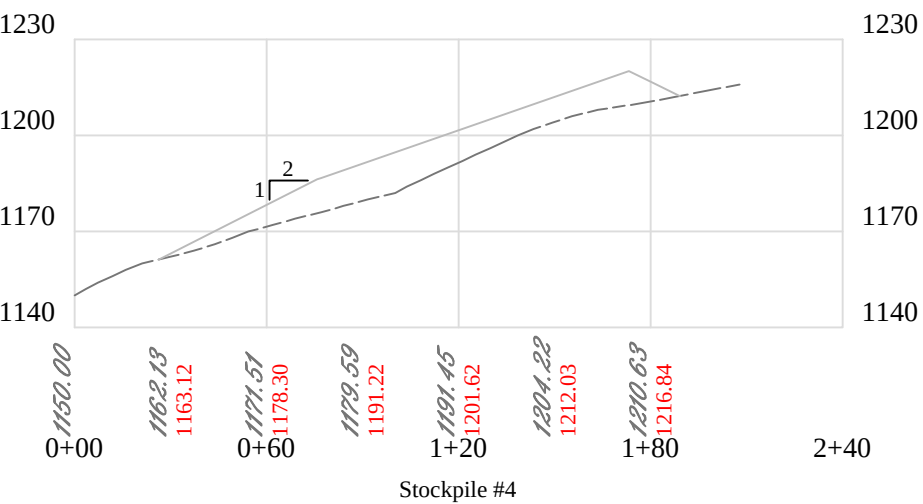
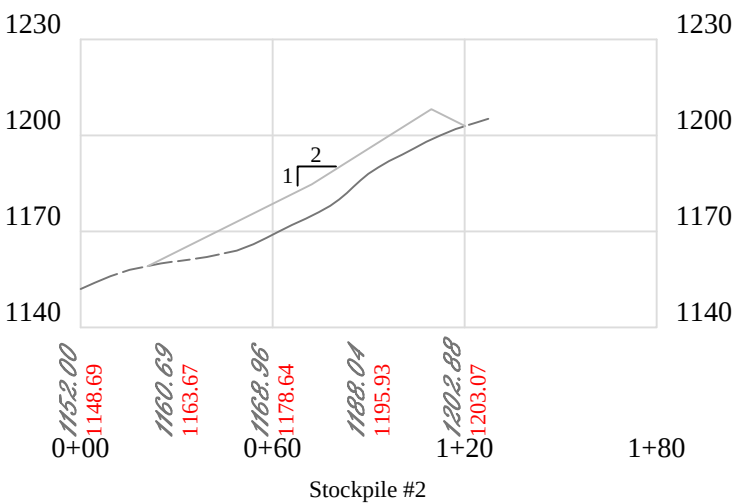
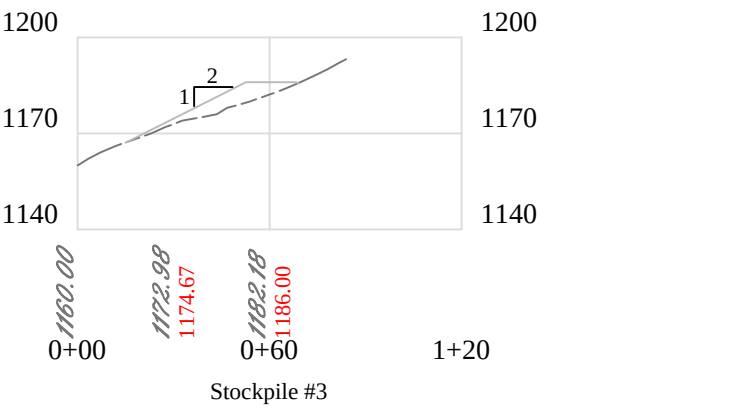
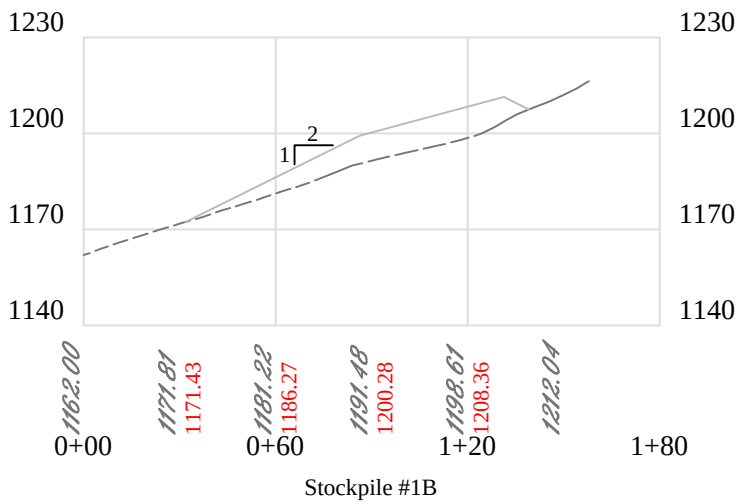
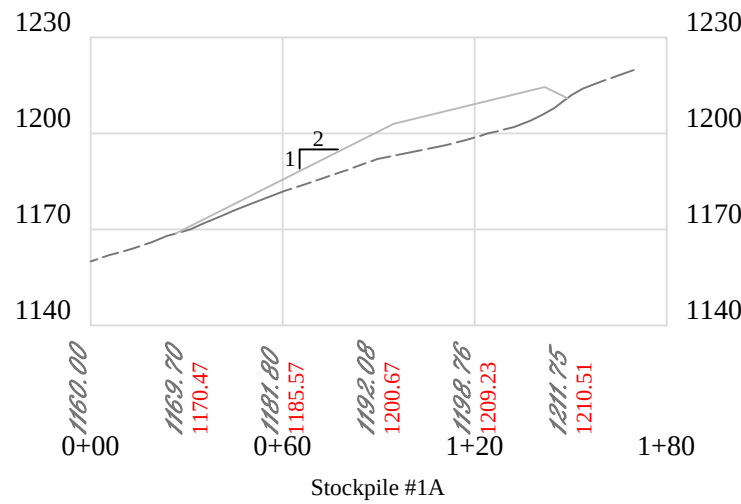
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Cross Sections - Well Pad
1221 Well Site
Freemans Creek District
Lewis County, WV

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Modification
3/14/2025

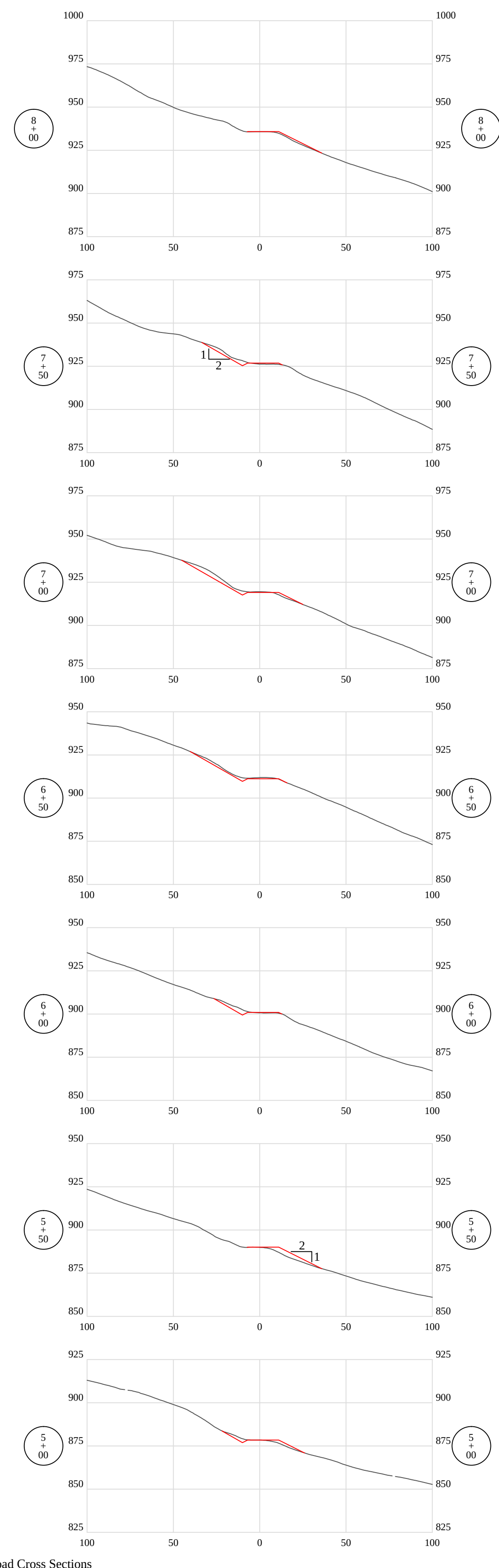
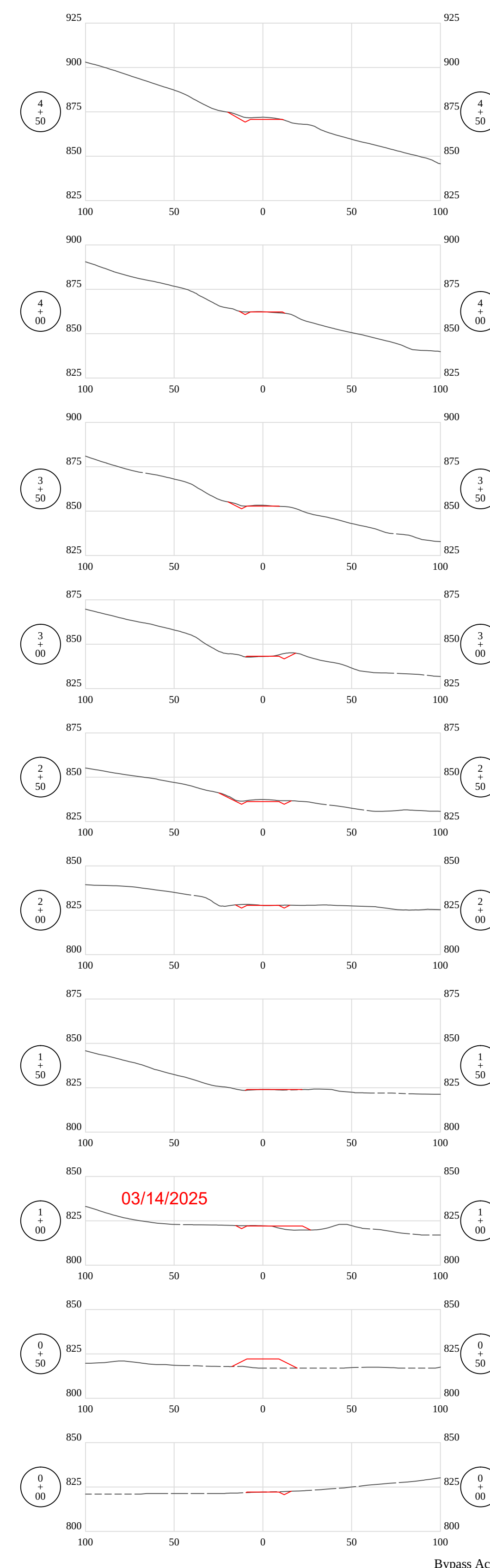
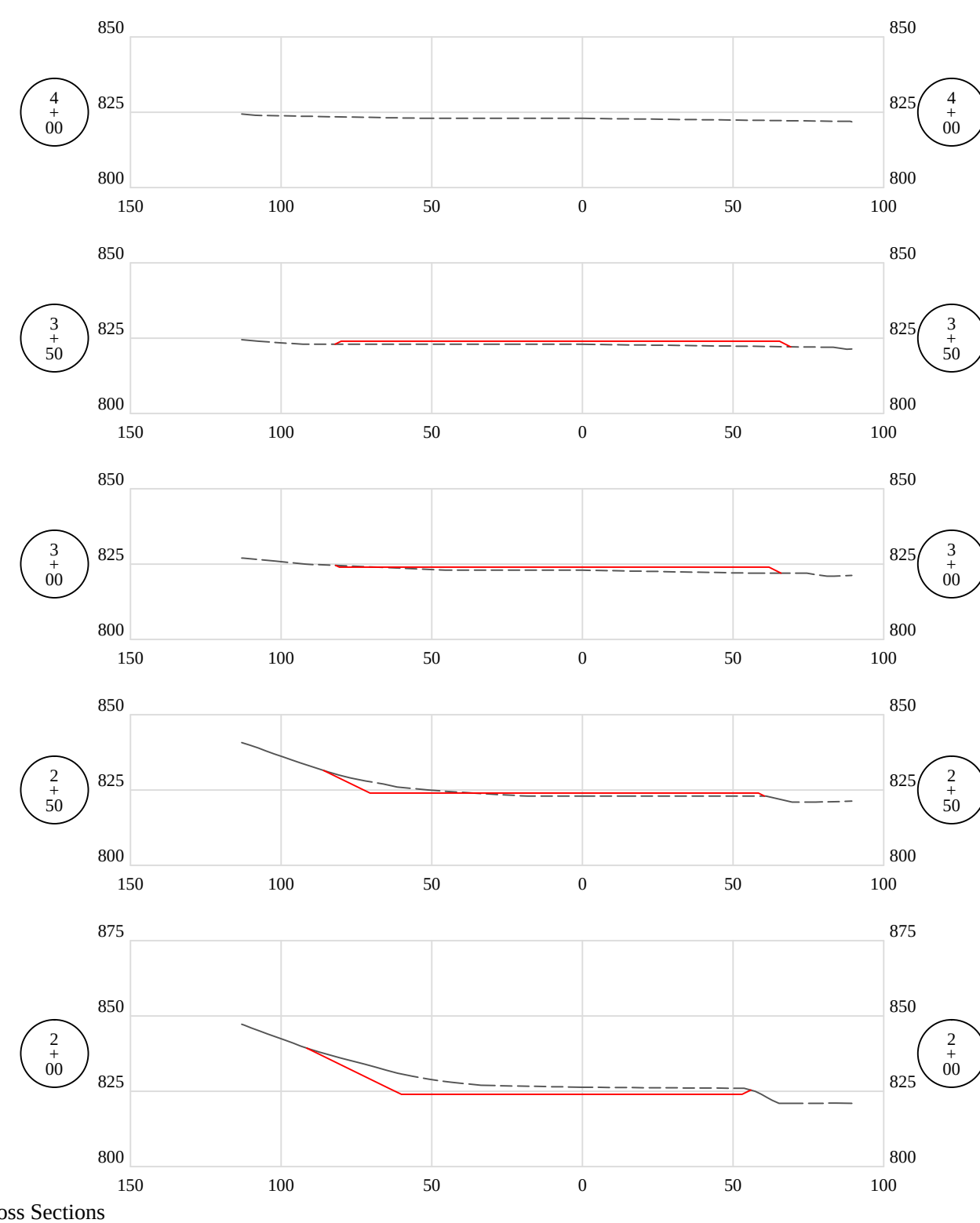
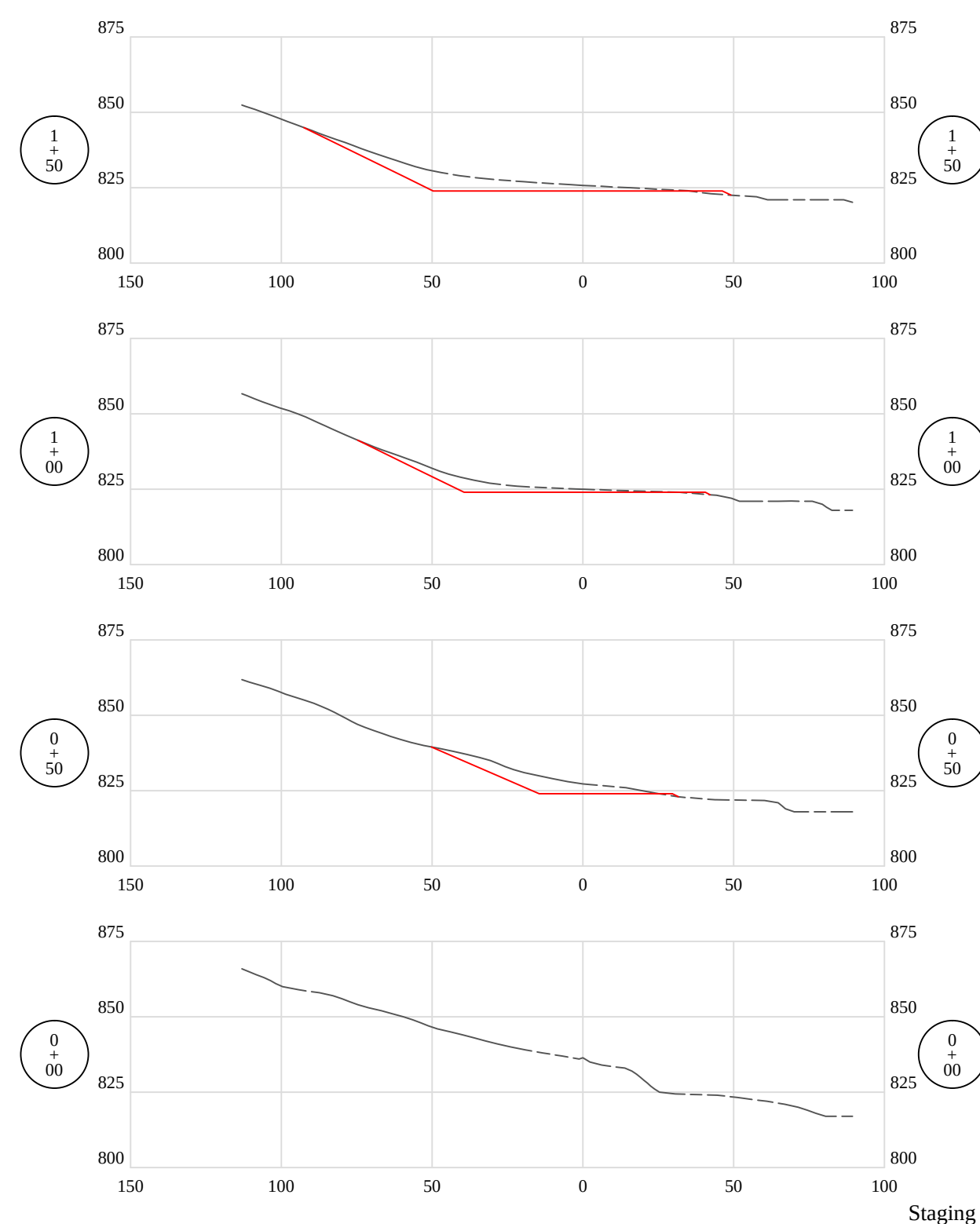
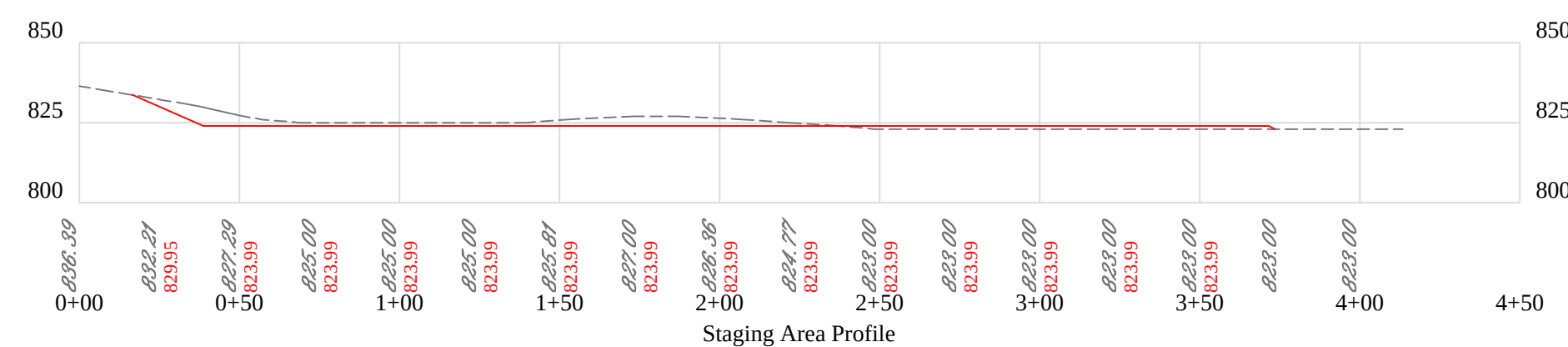
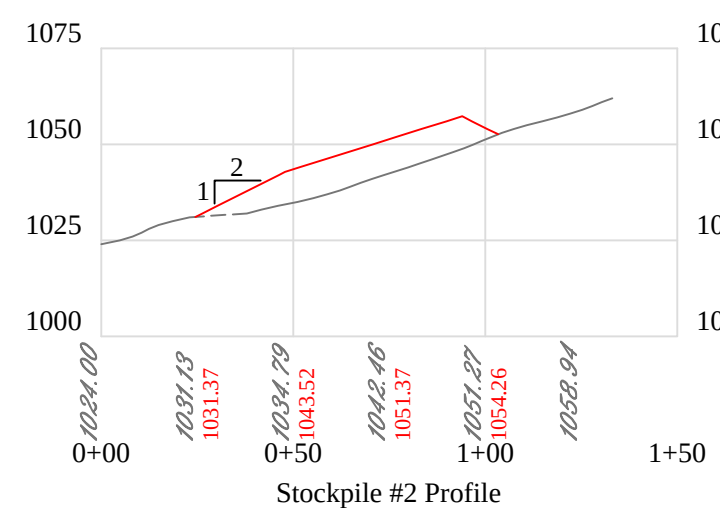
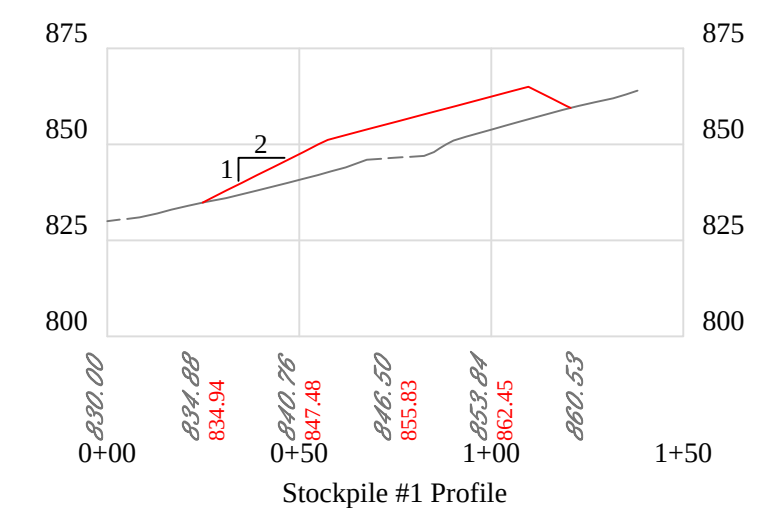
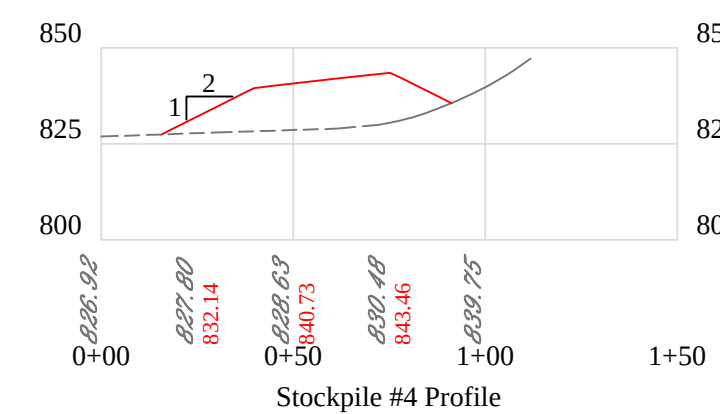
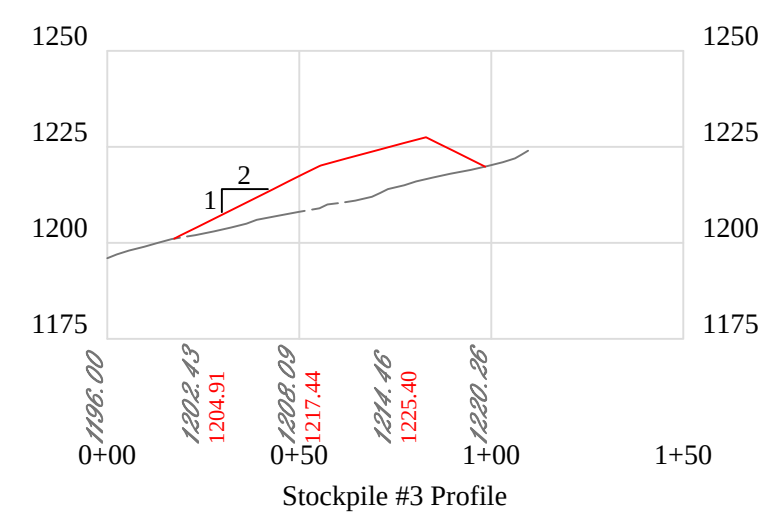
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Date	02-04-2025
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Kelly Surveying P.O. Box 254 Dunbar, WV 26029 (304)338-0965	
Cross Sections - Access Road 1221 Well Site Freemans Creek District Lewis County, WV	
Date:	02/04/2025
Scale:	As Shown
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1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

Date	Revision
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Cross Sections - Staging Area

1221 Well Site

Freemans Creek District
Lewis County, WV

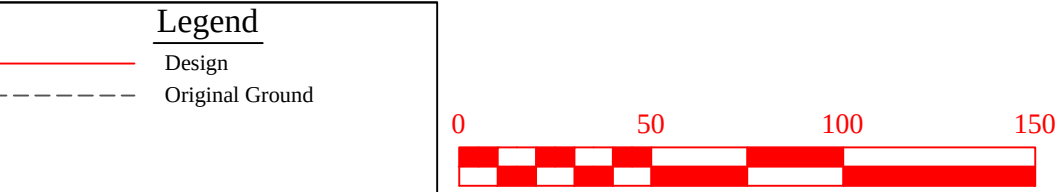
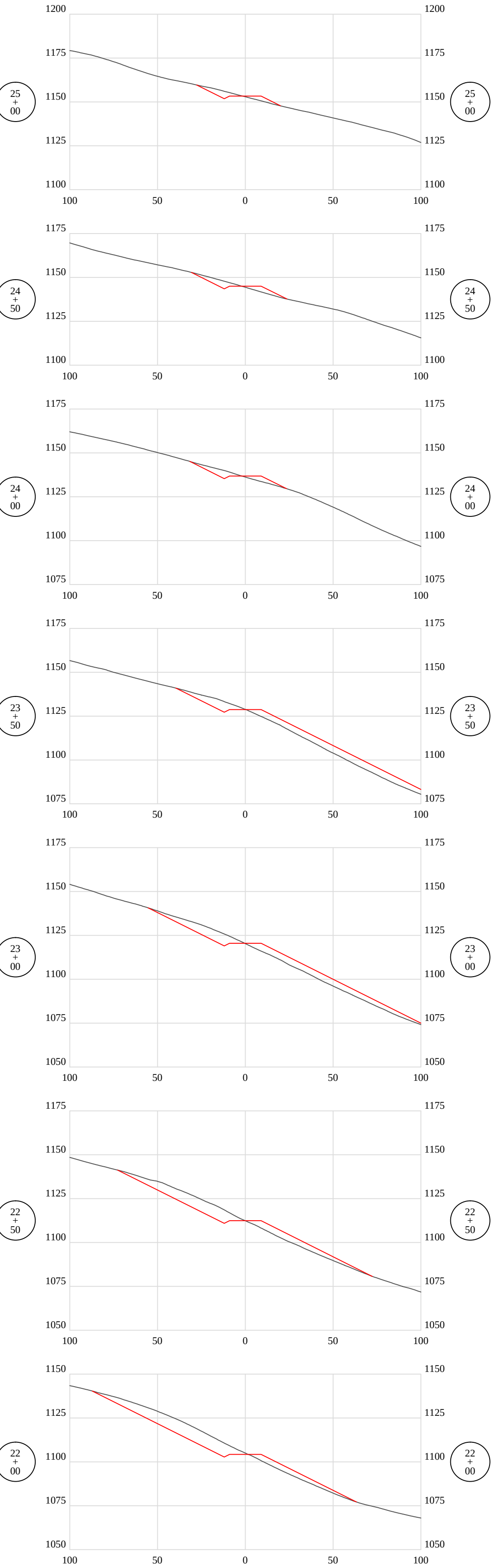
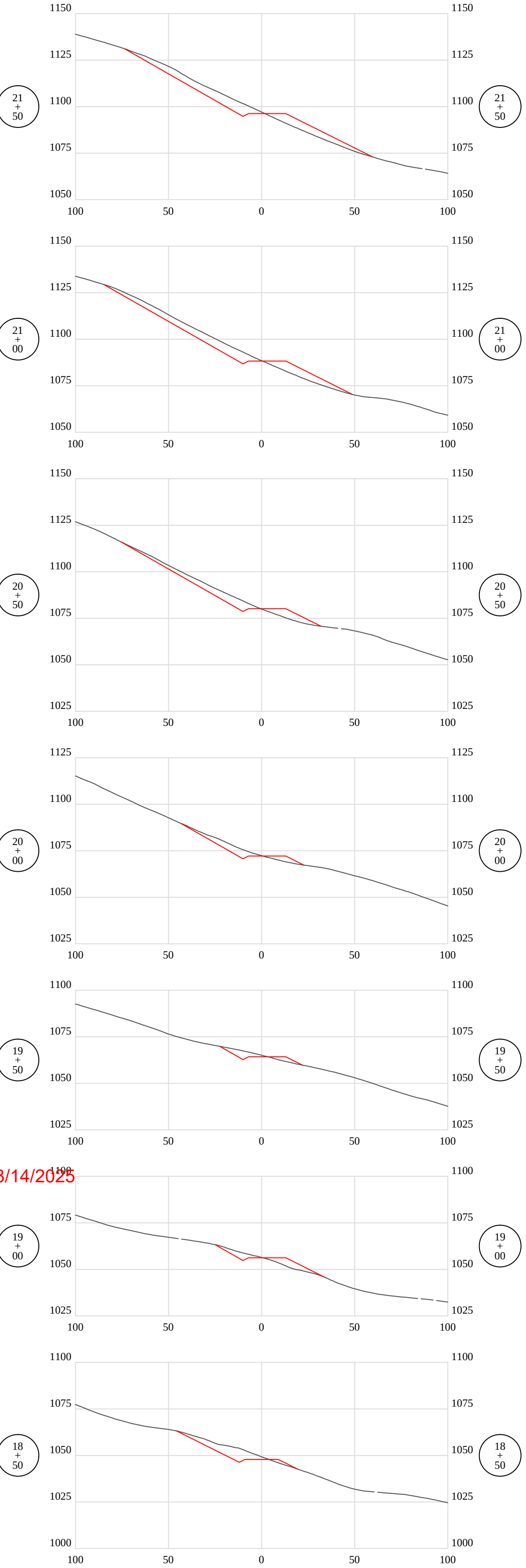
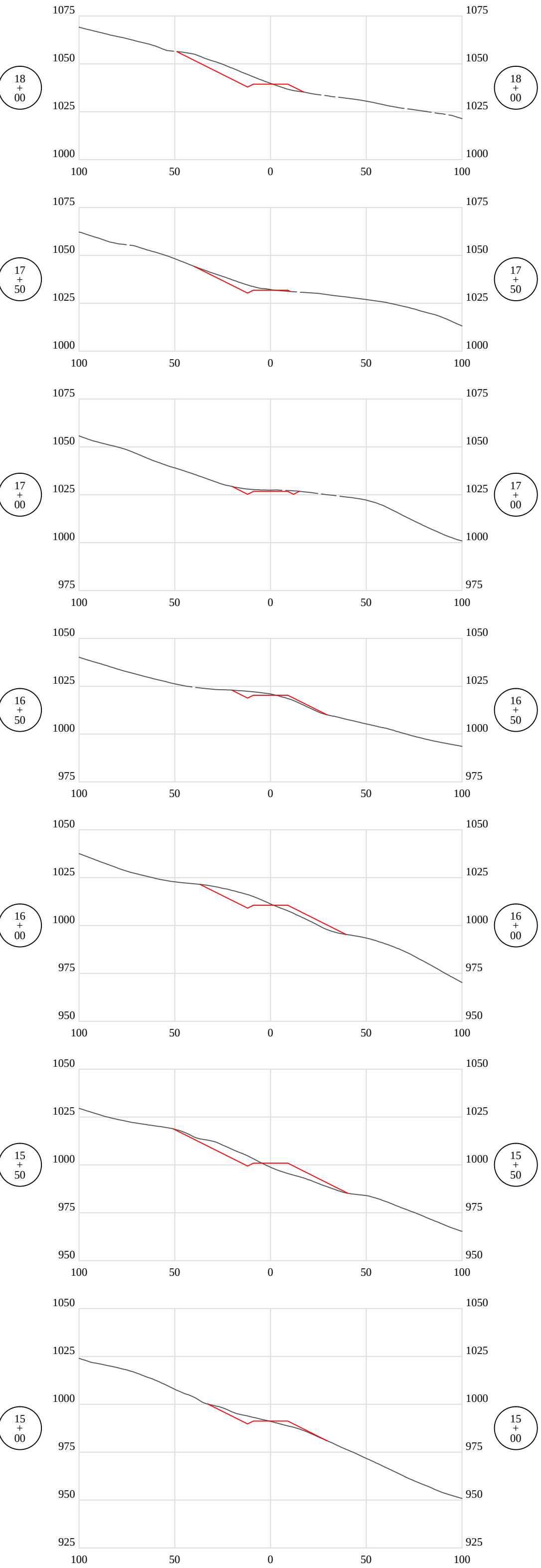
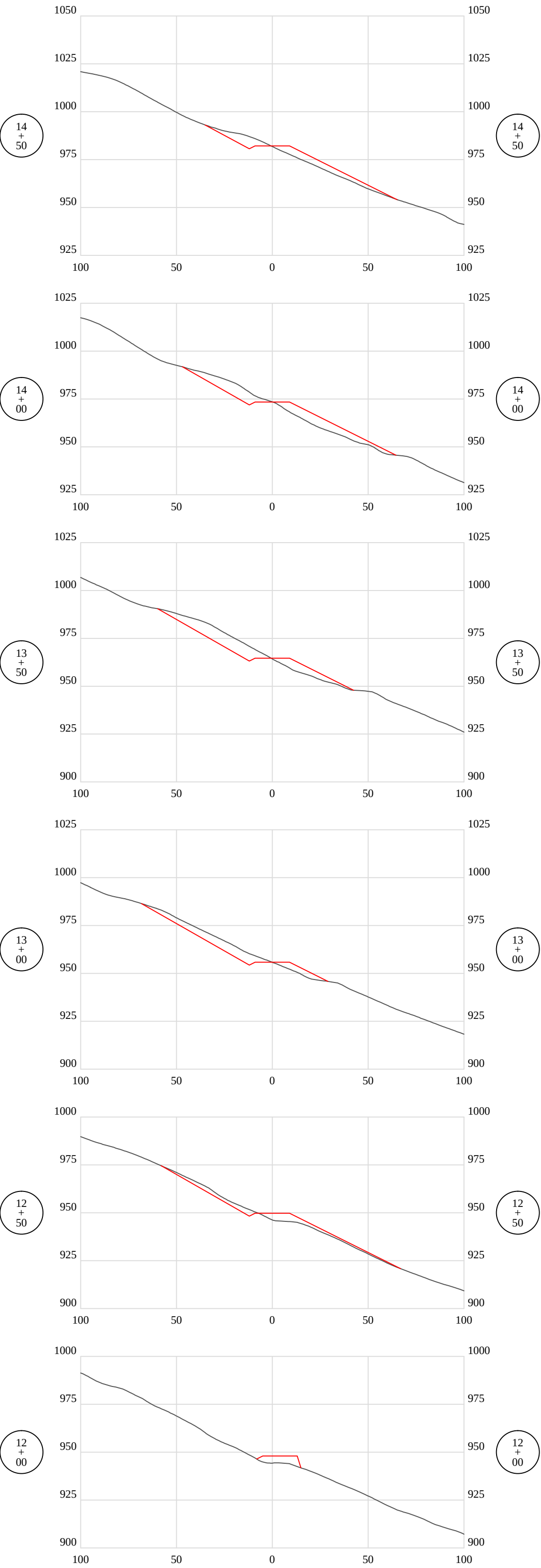
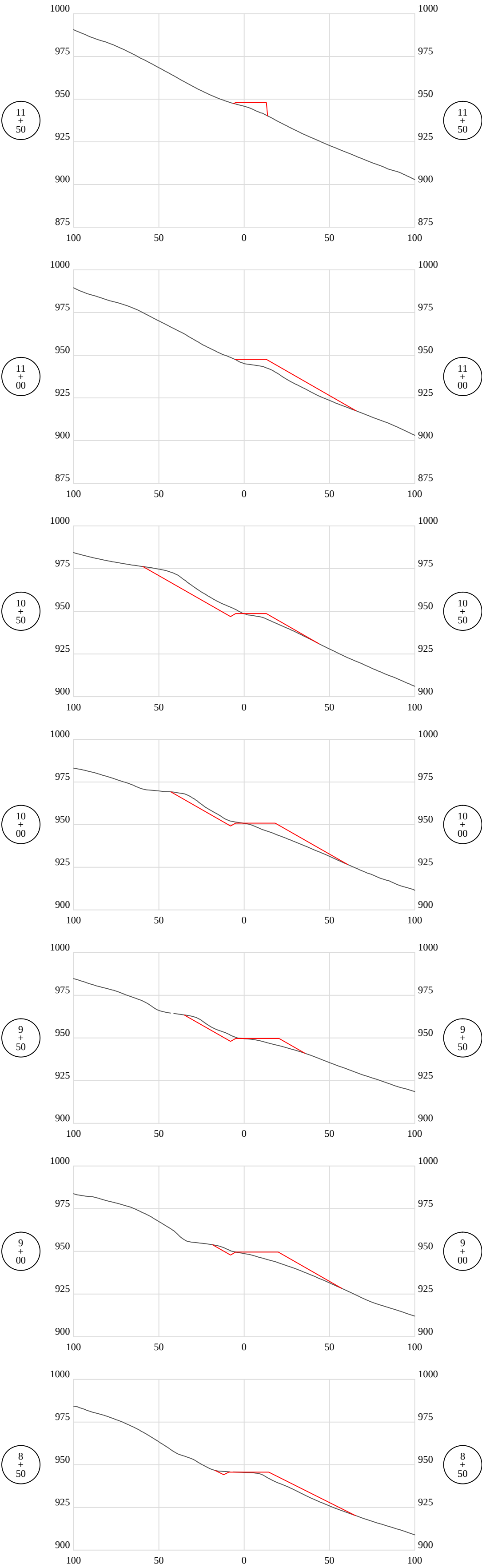
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1221 Well Site Fink Creek Access

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Exhibit A: As-Built Modification



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Cross Sections - Bypass Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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Modification
3/14/2025

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

Revision
Design

Date
02-04-2025

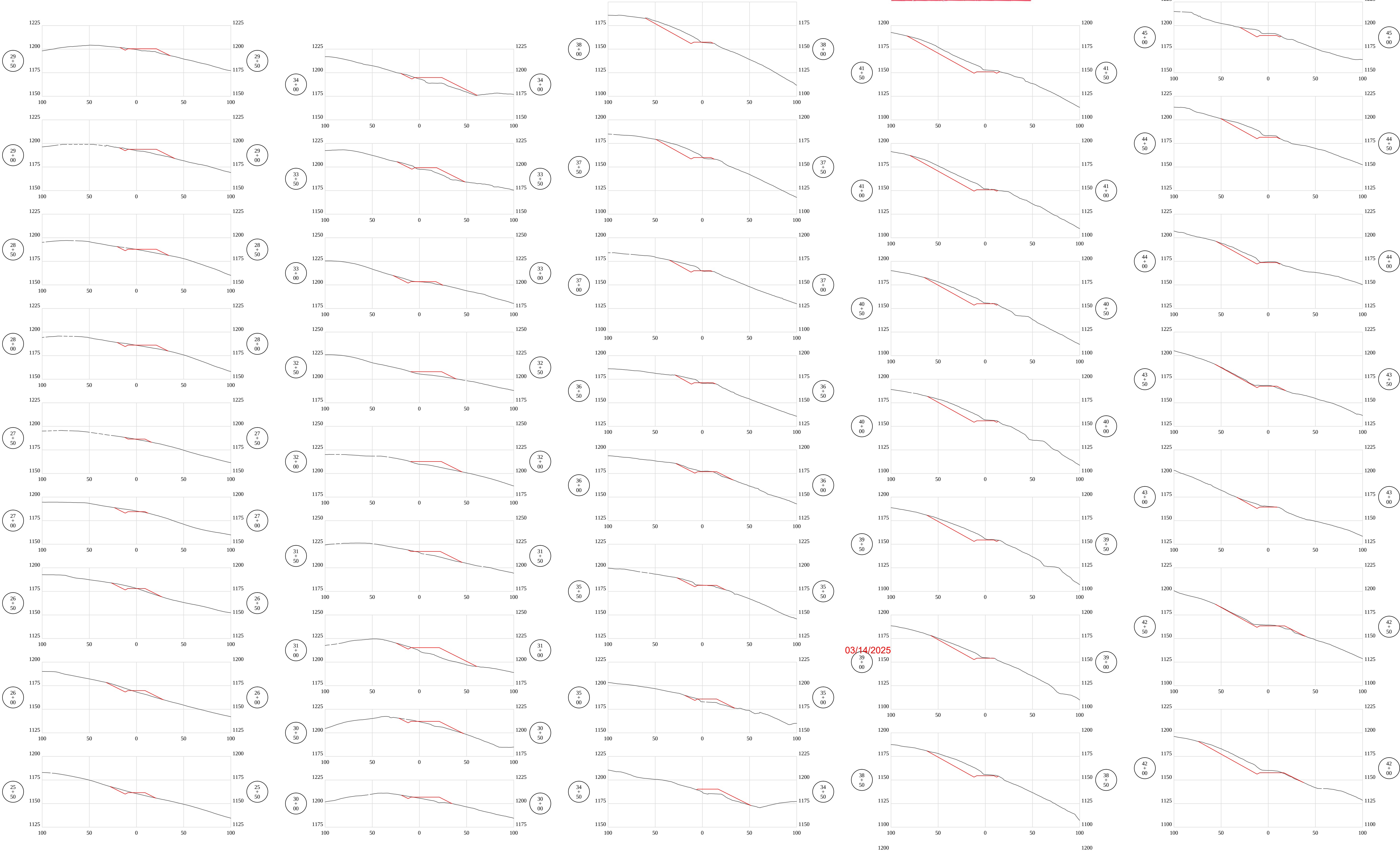


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HG ENERGY LLC

Kelly Surveying
P.O. Box 254
Delmar, WV 26039
(304)338-0965

Cross Sections - Bypass Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 31 of 32



Legend
Design
Original Ground

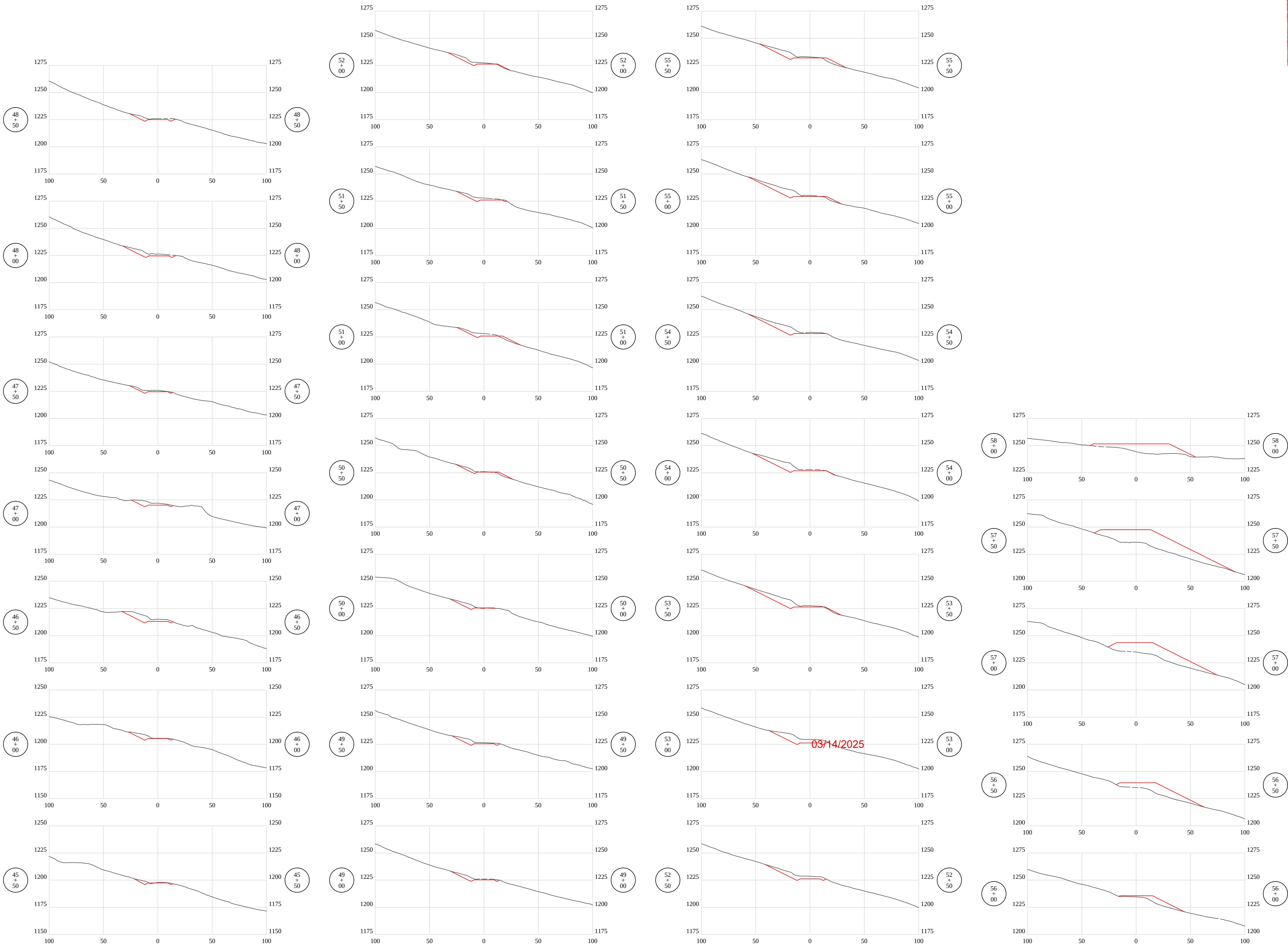


1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

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WVDEP OOG
Modification
3/14/2025



Legend
Design
Original Ground

Revision
Design
Date
02-04-2025



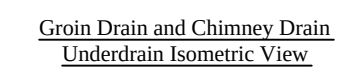
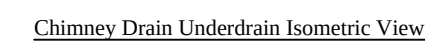
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Cross Sections - Bypass Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
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Sheet 32 of 32

Exhibit A: As-Built Modification



Scale: NTS



Notes:

The Toe Key outlets can be field adjusted depending on the material horizon. The toe key outlet locations are conceptual as shown on the plan with the intent of providing a location that shall guarantee positive drainage away from the Toe Key without impacting environmental or similar resources.

Fill to be Class A Material at 98% Compaction of
ASTM D 698 or as approved by the site
Geotechnical Engineer



Scale: NTS



Kelly Surveying
P.O. Box 254
Dailey, WV 26259
(304)338-6985

Typical Geotechnical Details

1221 Well Site

Freemans Creek District
Lewis County, WV

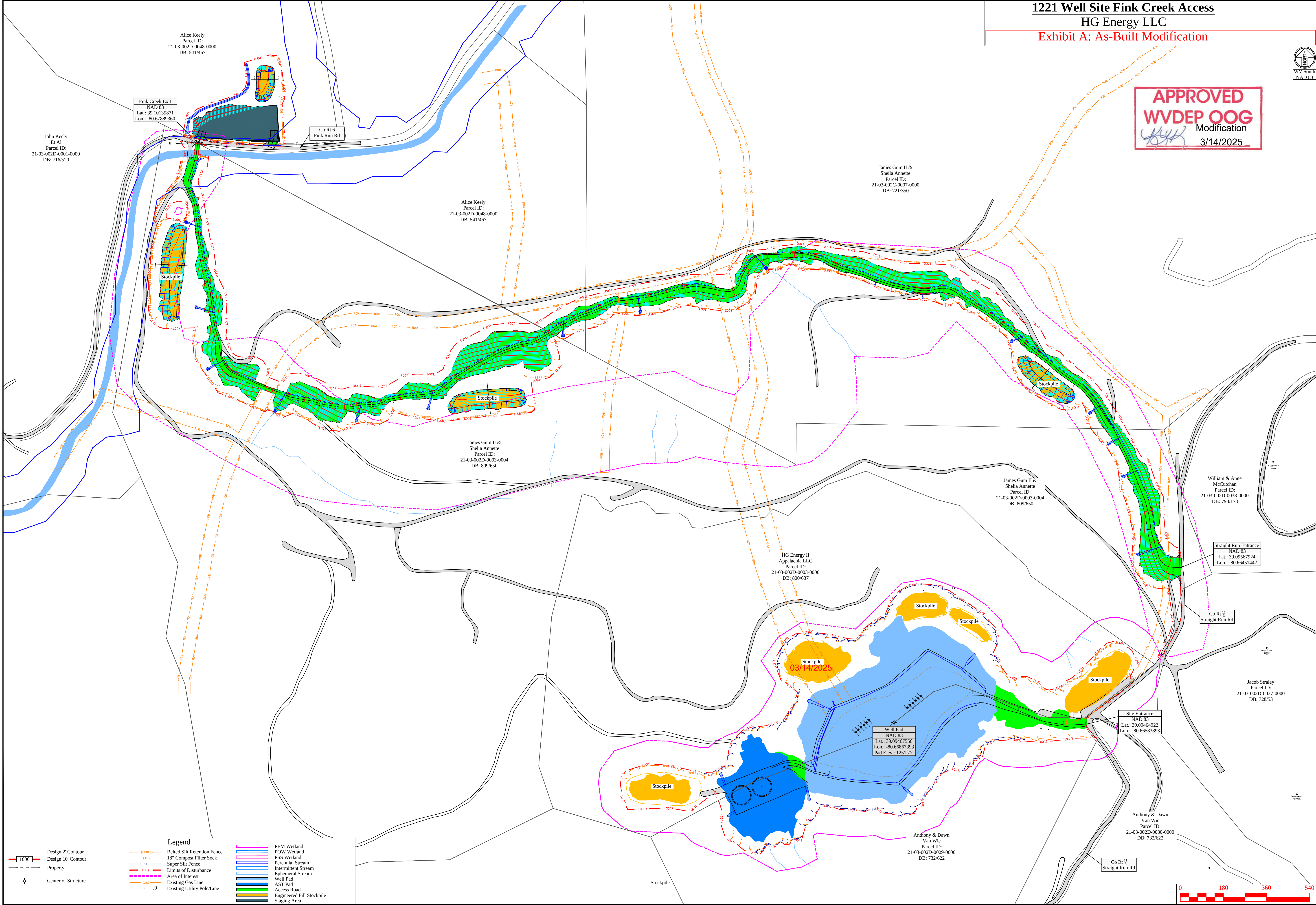
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Scale: As Shown
Designed By: ZS
File No.
Sheet G2 of G2

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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



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Modification
3/14/2025

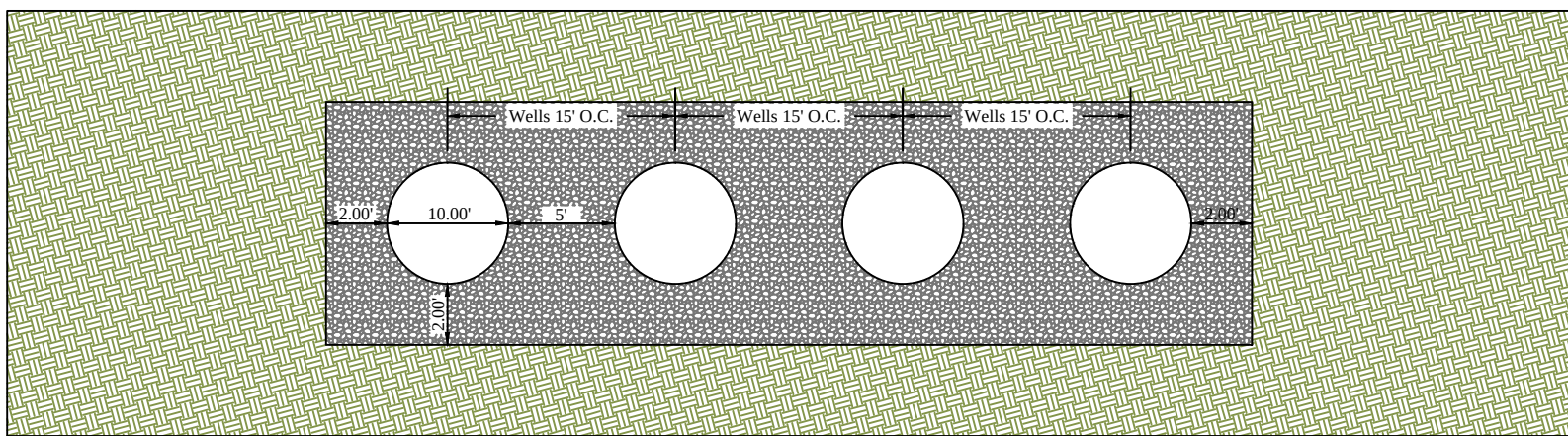


Revision	Date
Design	02-04-2025

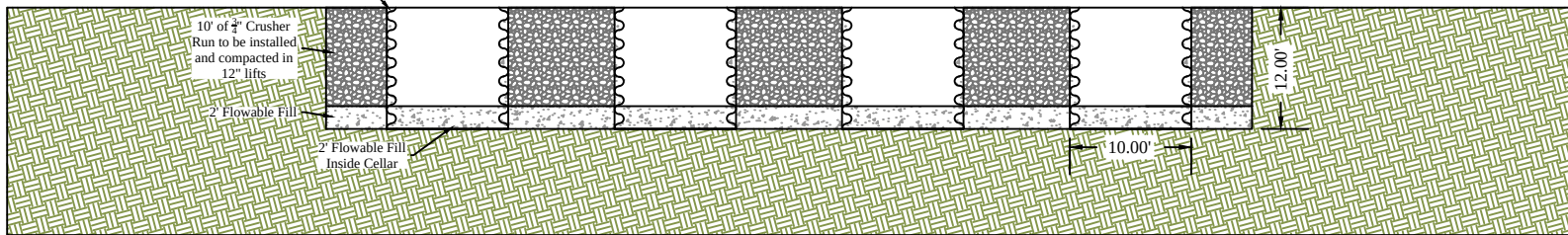
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Landowner Exhibit
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet L1 of L1



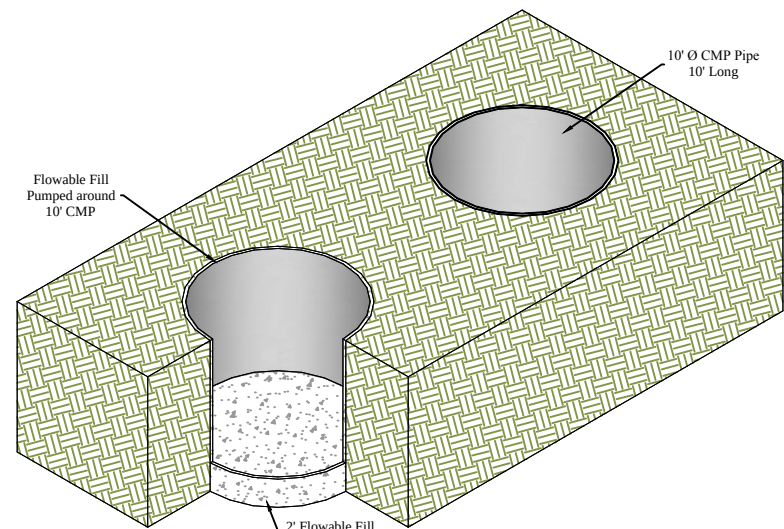
Trench Cellar Plan View



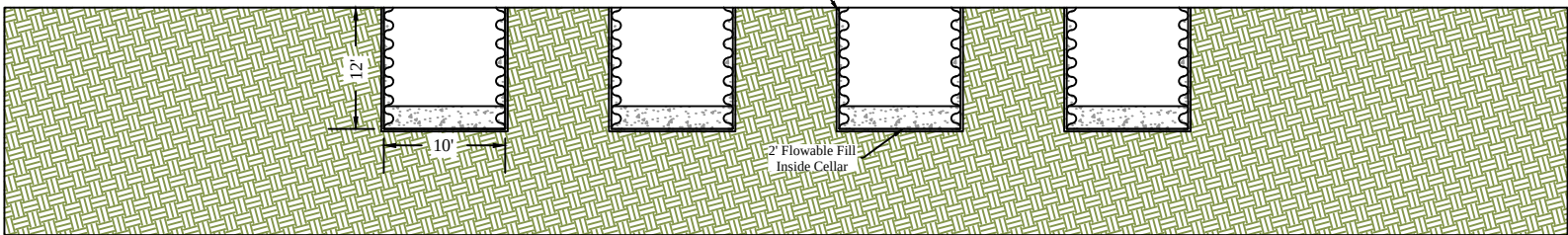
Trench Cellar Section View

M1 Typical Trenched Cellar Detail
Scale: NTS

Note:
All stone placed on the pad and around the cellars shall be compacted.



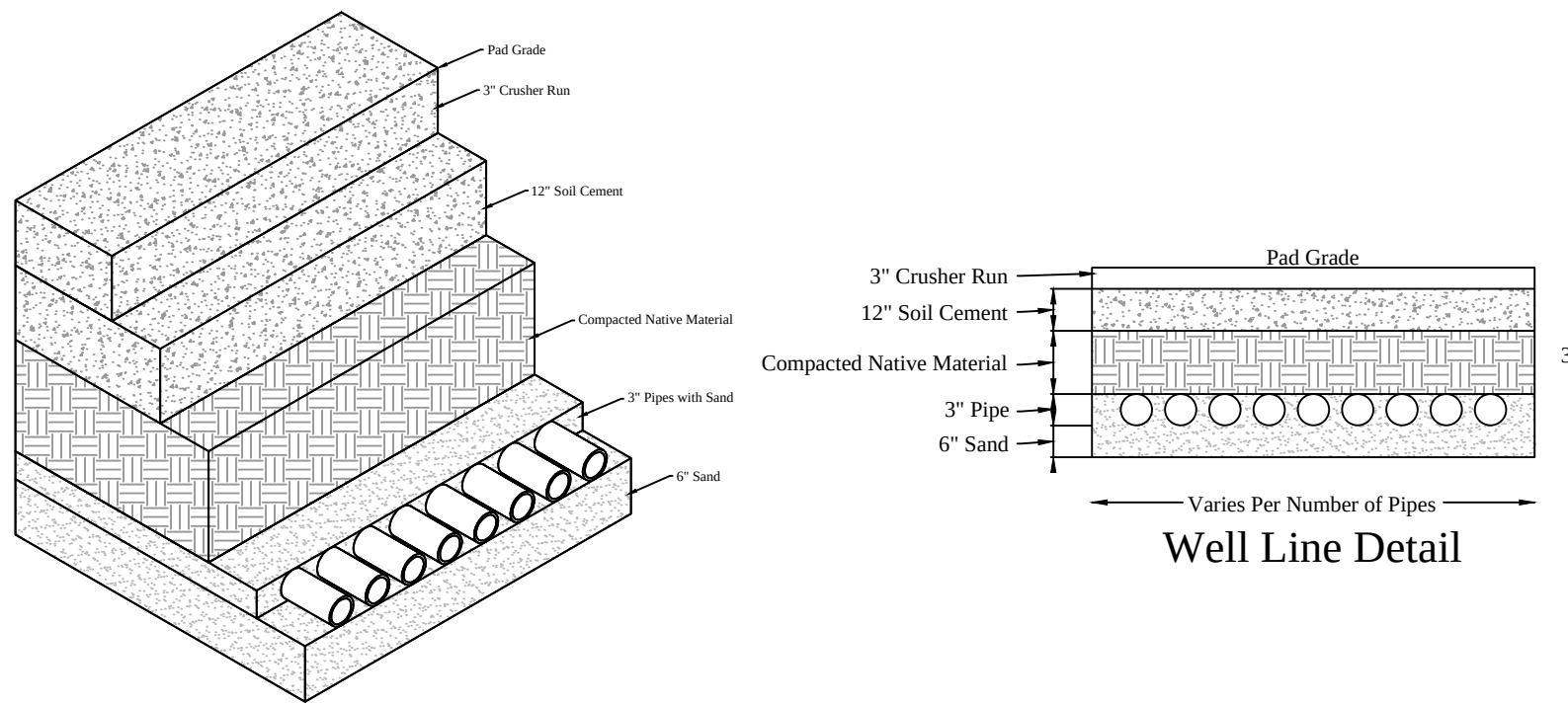
Auger Cellar Plan View



Auger Cellar Section View

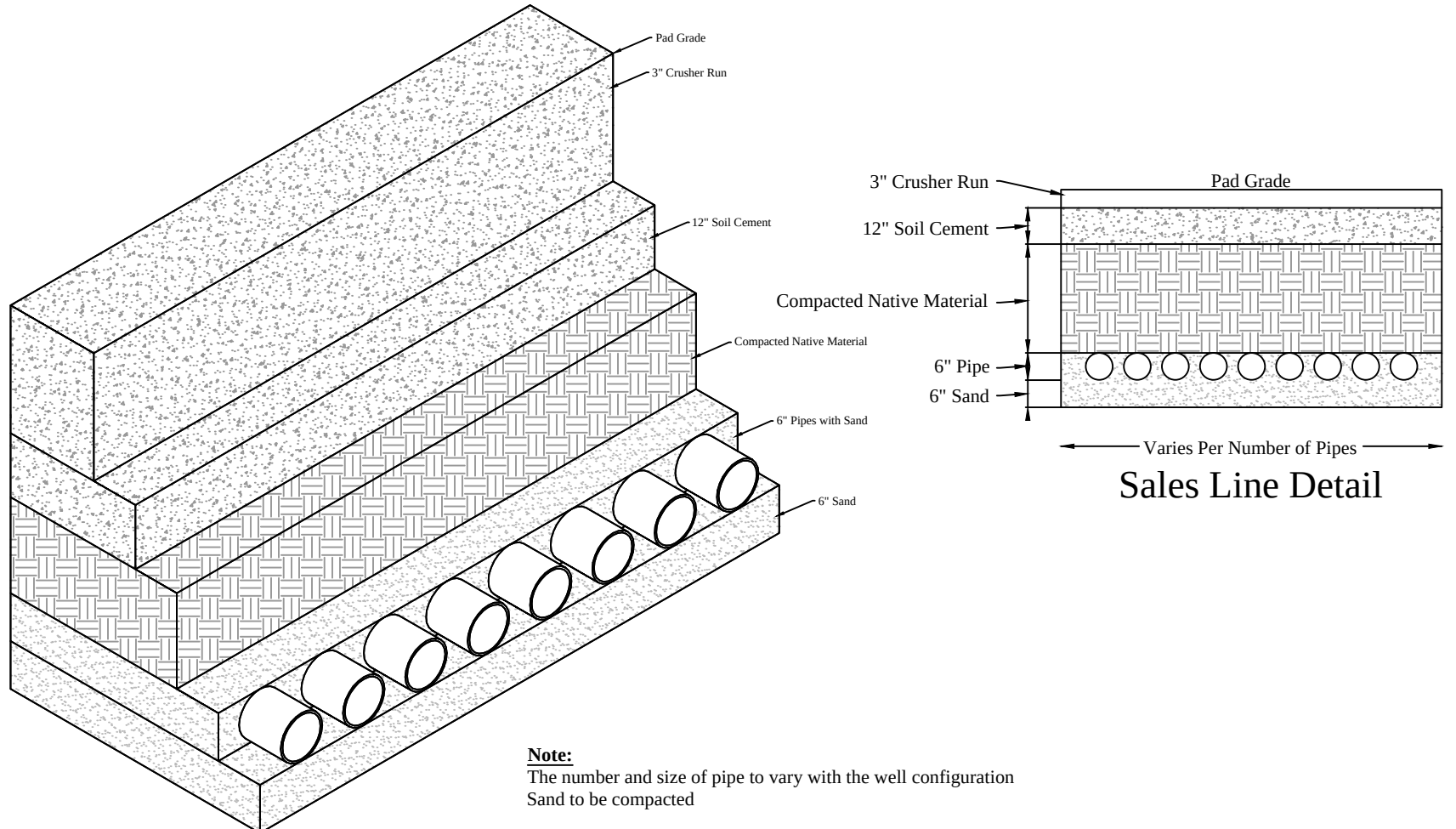
M2 Typical Augered Cellar Detail
Scale: NTS

Note:
All stone placed on the pad and around the cellars shall be compacted.



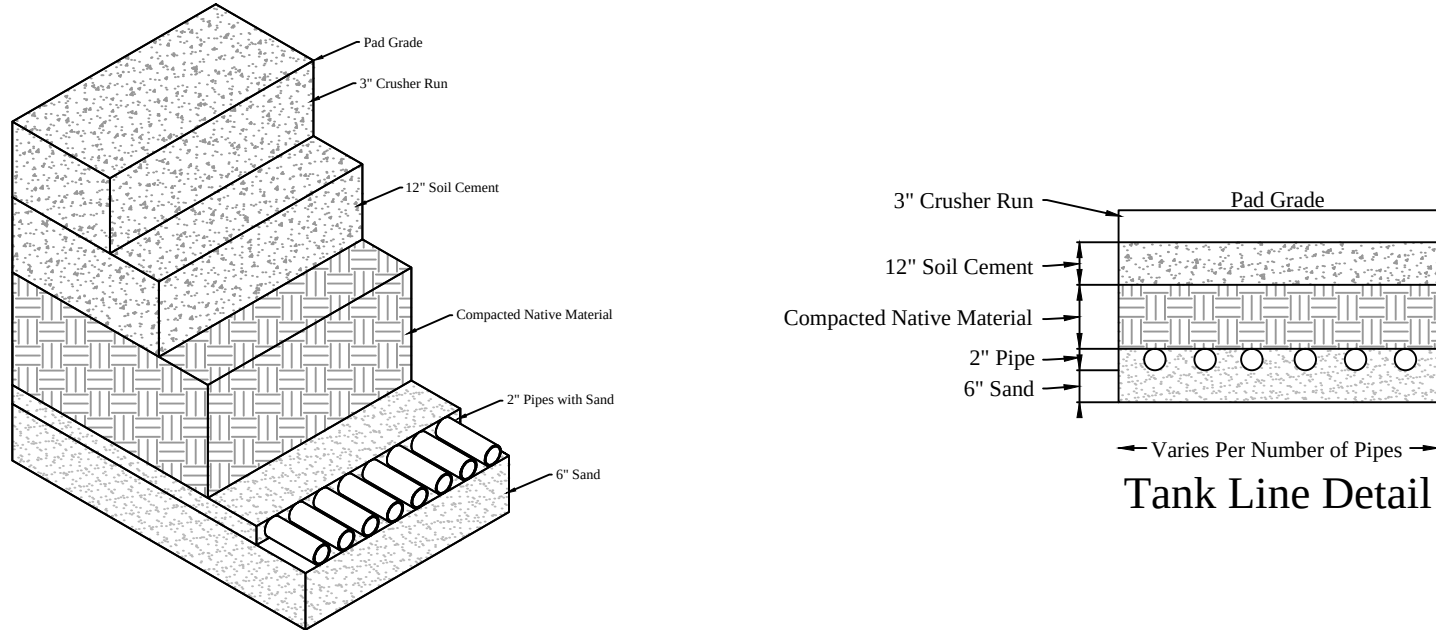
Note:
The number and size of pipe to vary with the well configuration
Sand to be compacted

M3 Typical Well Line Detail
Scale: NTS



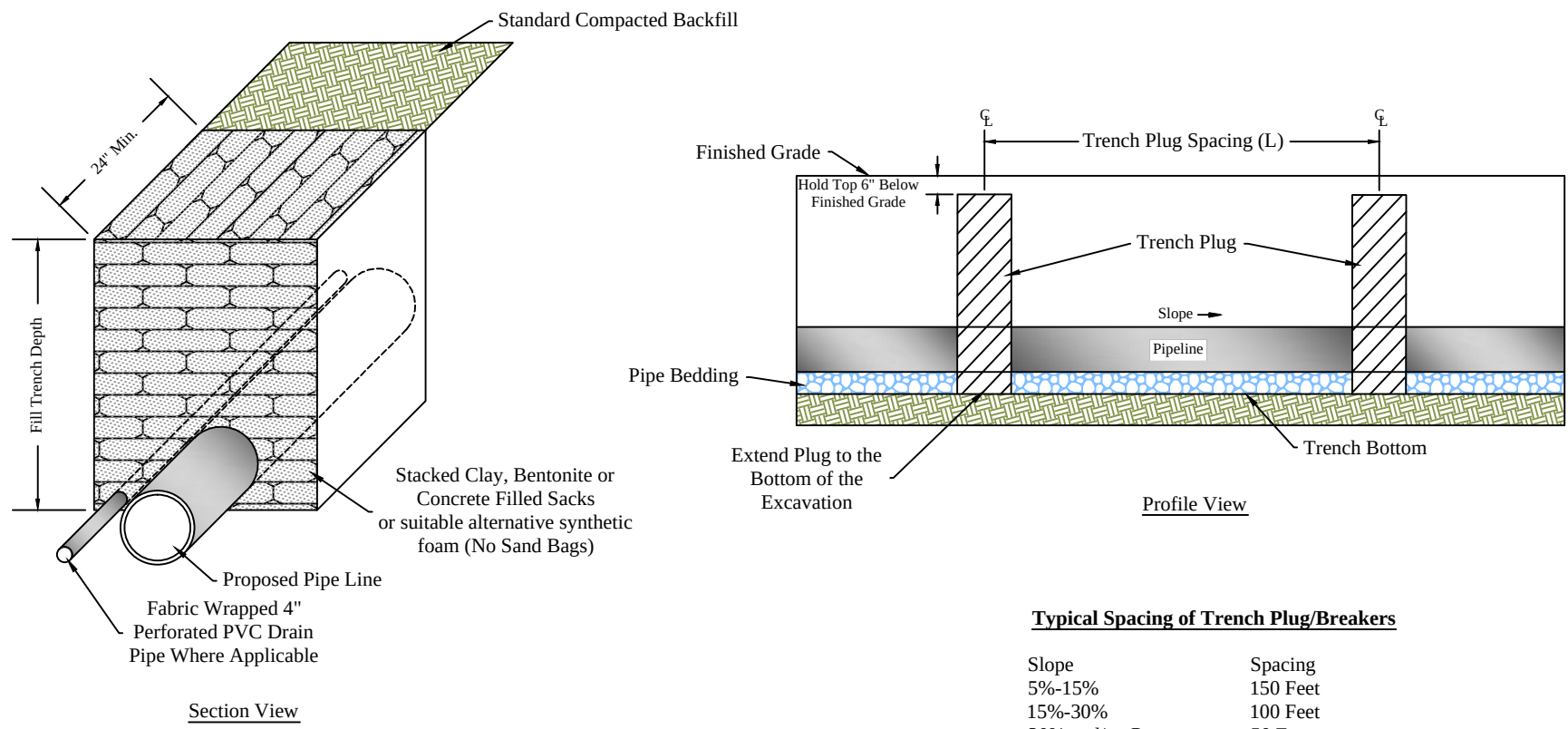
Note:
The number and size of pipe to vary with the well configuration
Sand to be compacted

M4 Typical Sales Line Detail
Scale: NTS



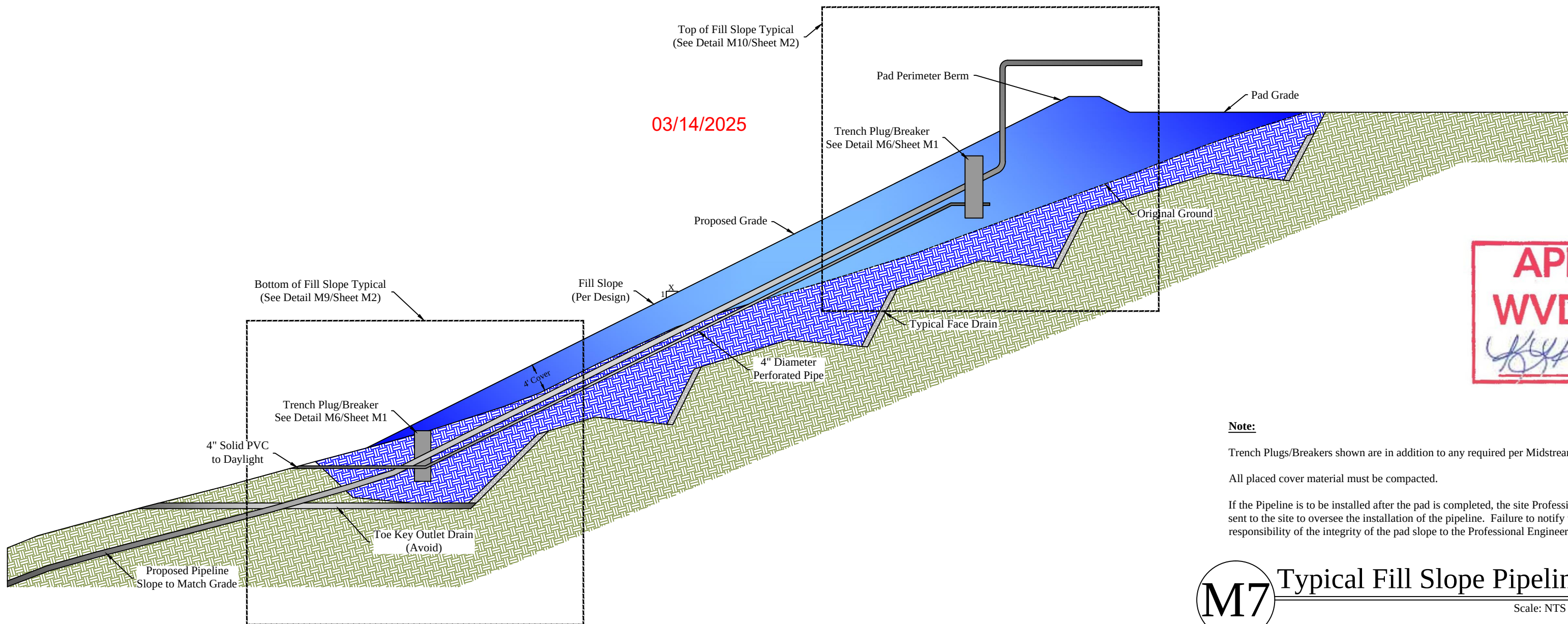
Note:
The number and size of pipe to vary with the well configuration
Sand to be compacted

M5 Typical Tank Line Detail
Scale: NTS



Typical Spacing of Trench Plug/Breakers	
Slope	Spacing
5%-15%	150 Feet
15%-30%	100 Feet
30% and/or Greater	50 Feet

M6 Typical Impervious Trench Plug/Breaker
Scale: NTS



Note:
Trench Plugs/Breakers shown are in addition to any required per Midstream Plans/Details for the Proposed Pipeline.
All placed cover material must be compacted.

If the Pipeline is to be installed after the pad is completed, the site Professional Engineer must be contacted and an inspector sent to the site to oversee the installation of the pipeline. Failure to notify the site Professional Engineer will transfer the responsibility of the integrity of the pad slope to the Professional Engineer who designed the pipeline.

M7 Typical Fill Slope Pipeline Installation Section
Scale: NTS

Revision
Design

Date
02-04-2025



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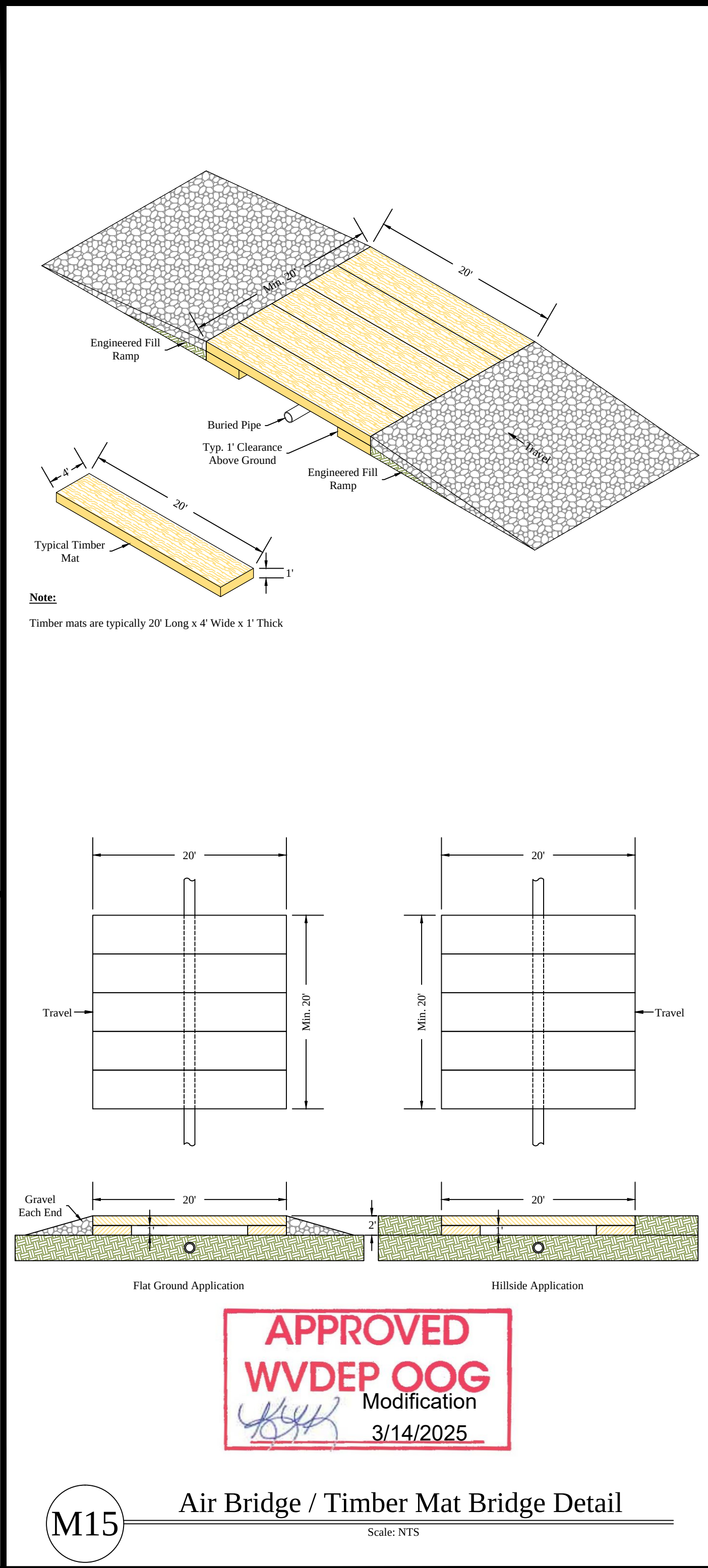
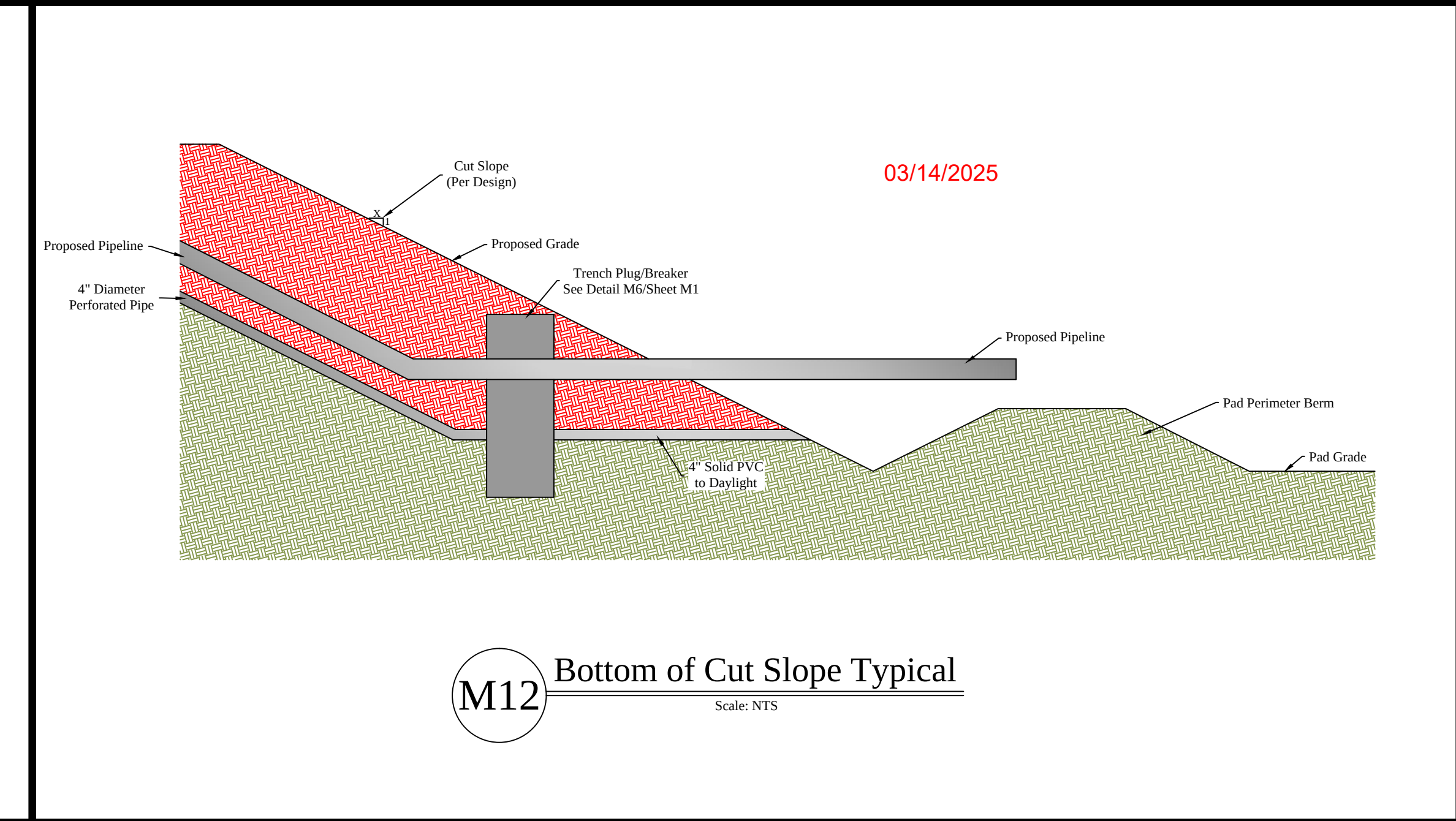
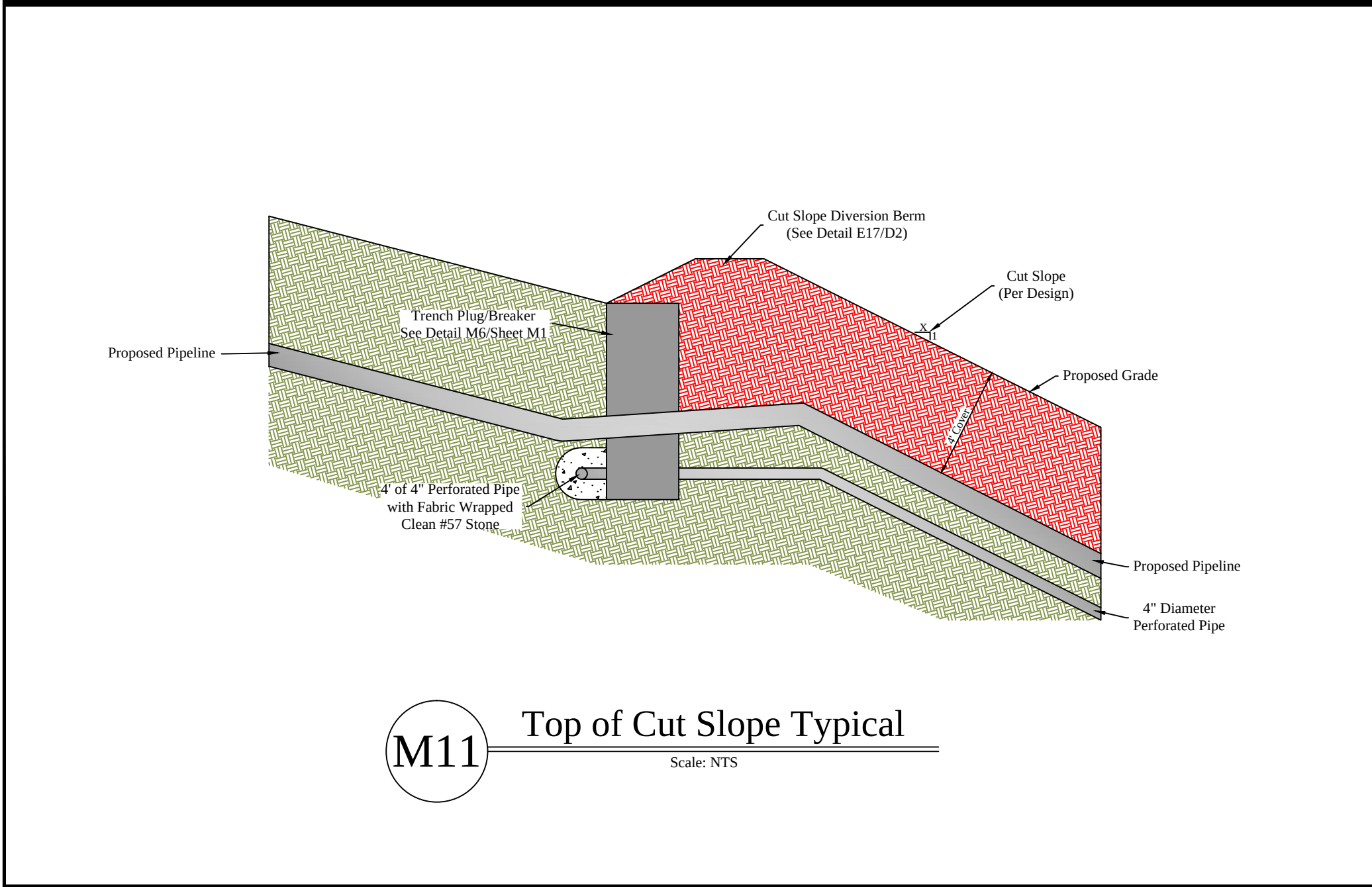
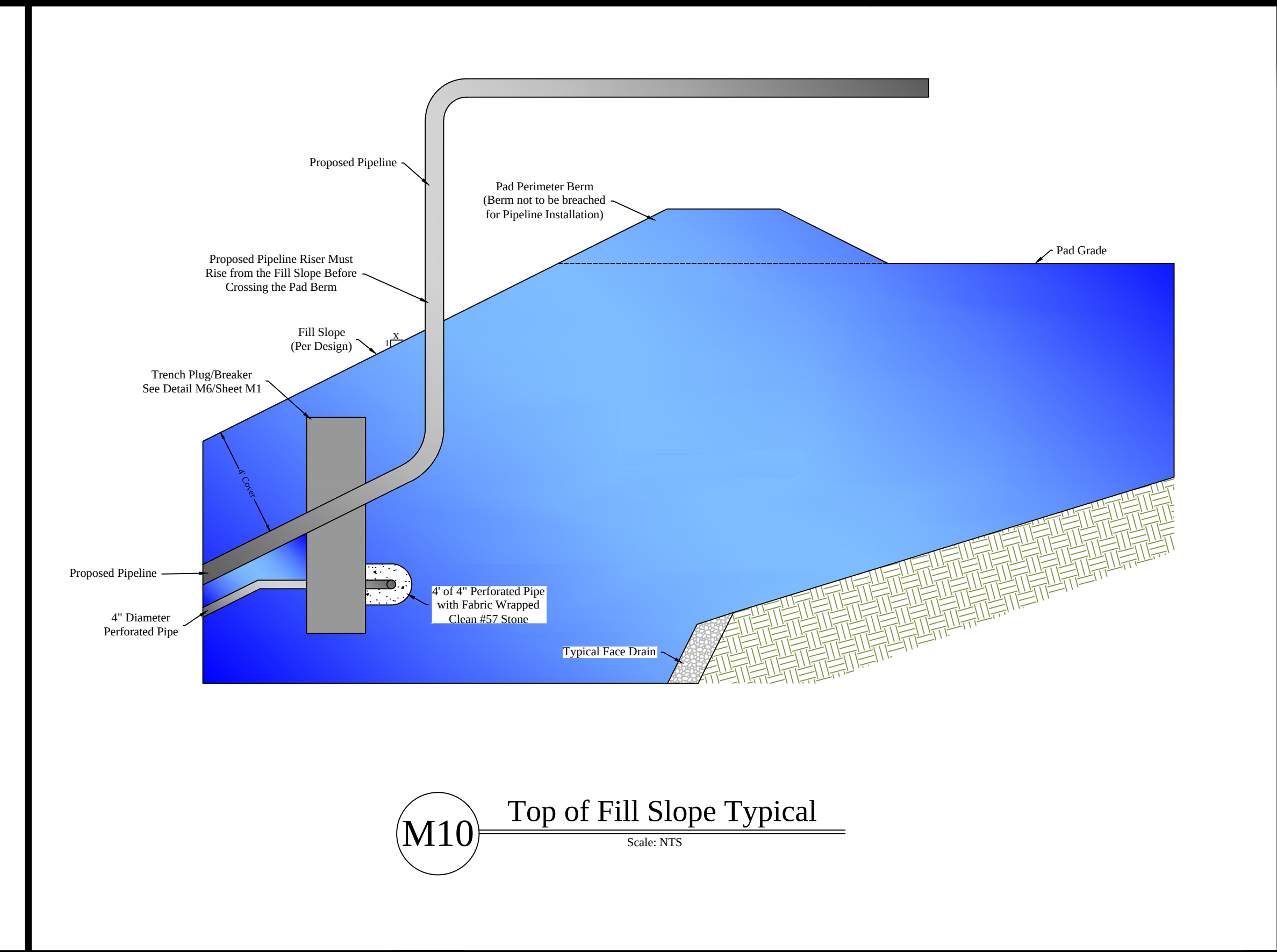
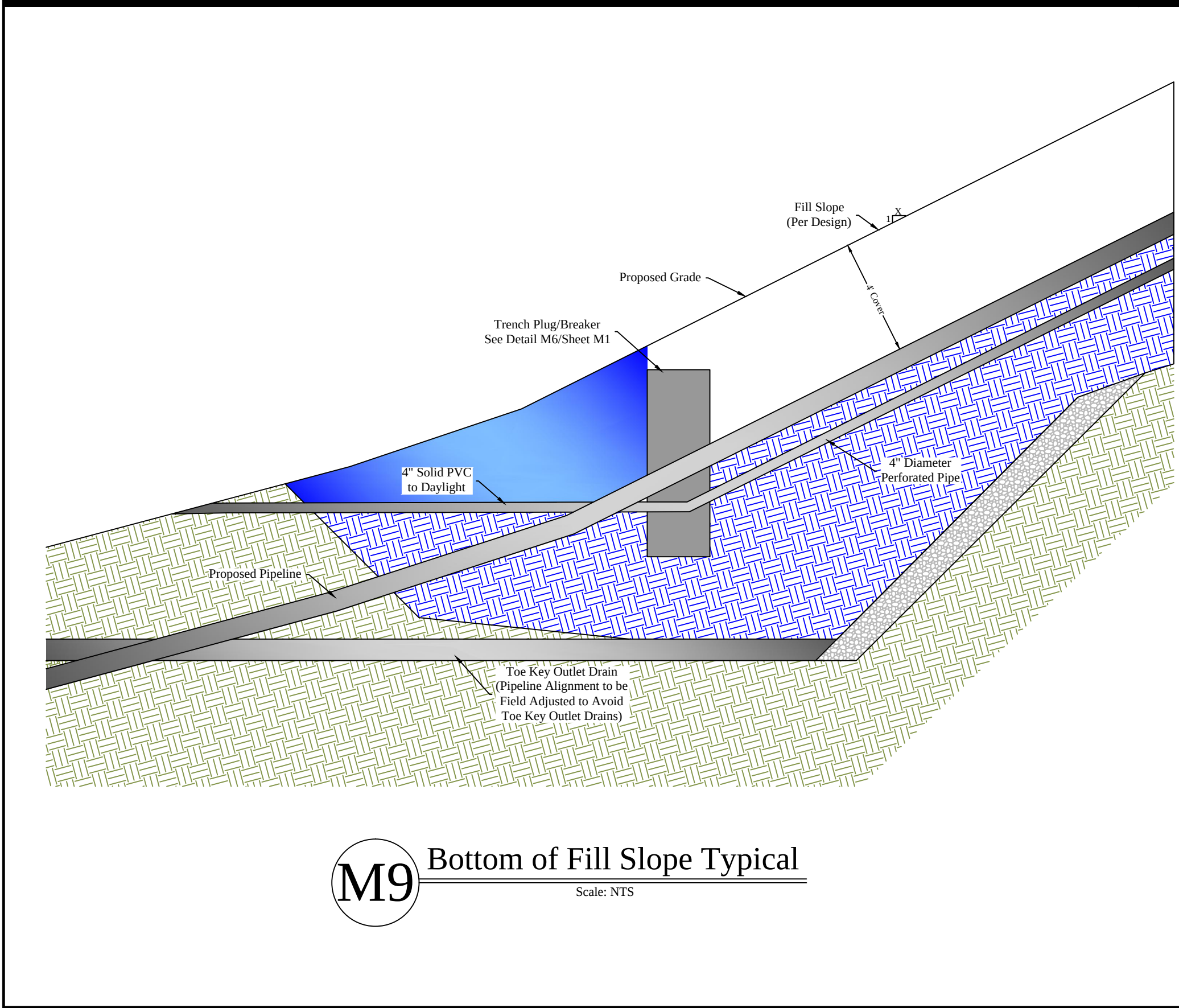
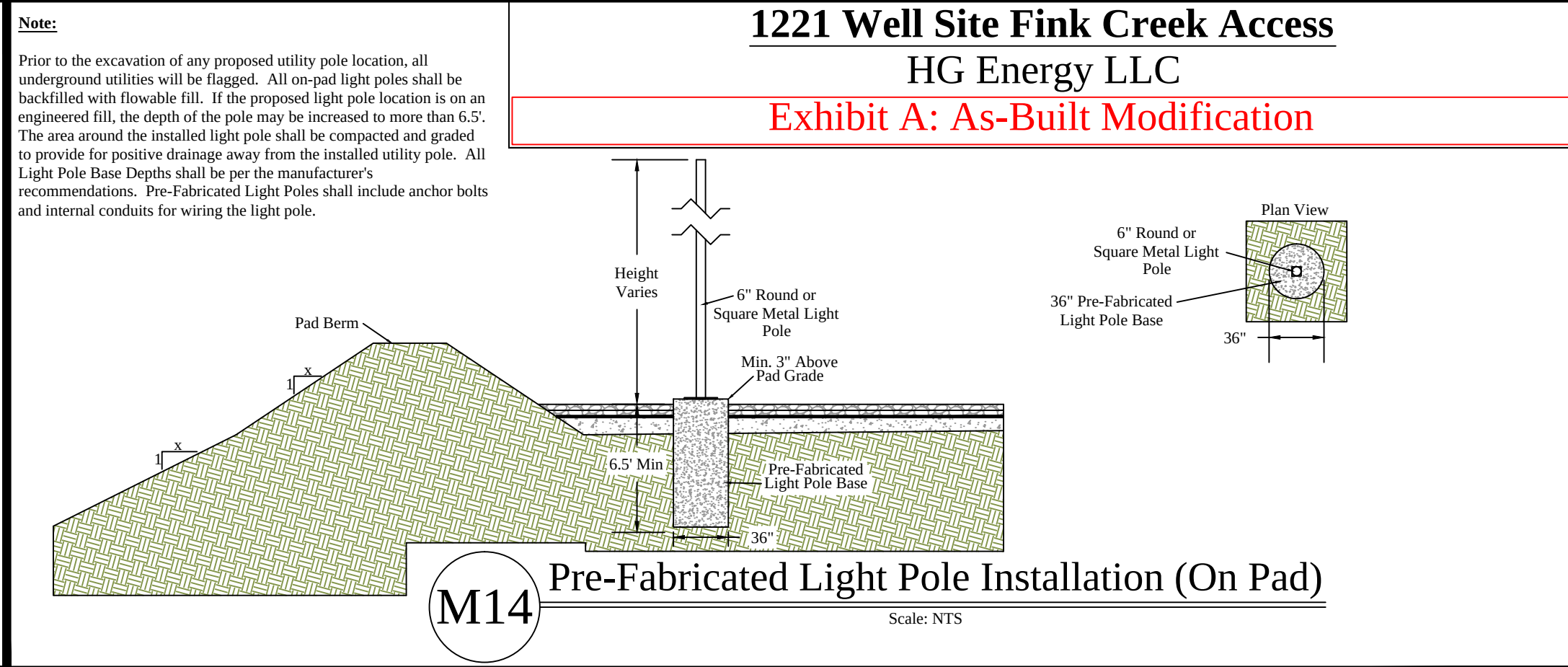
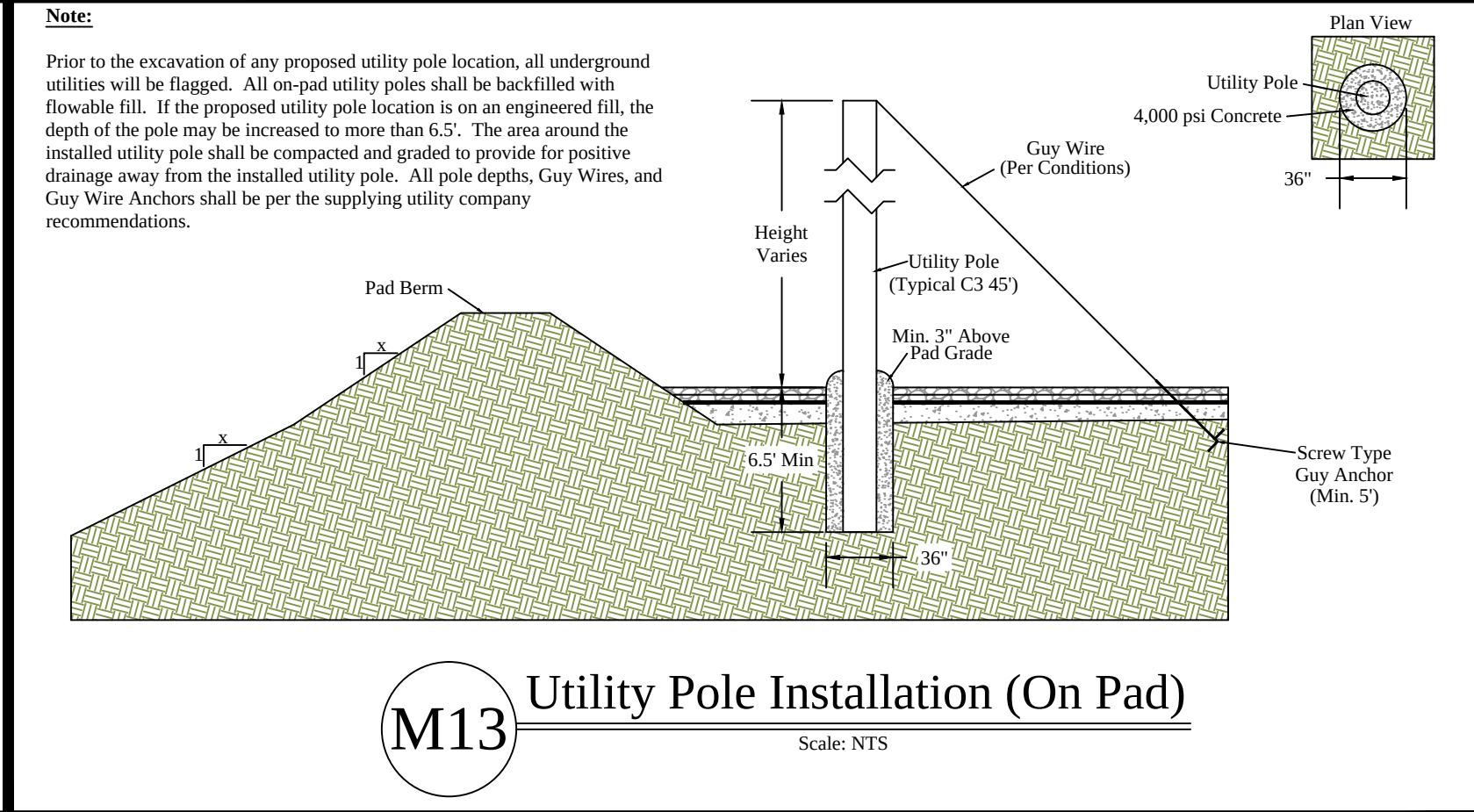
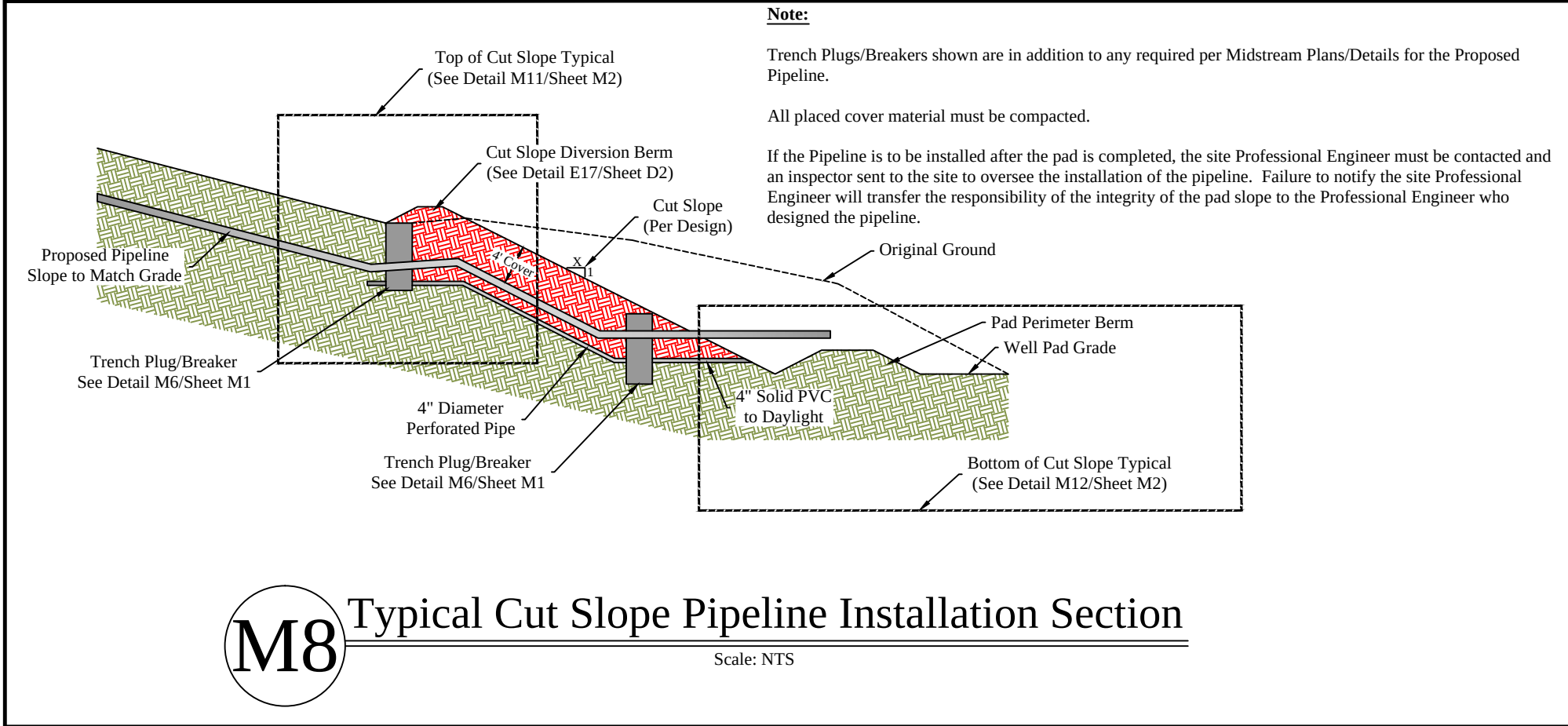


Typical Midstream Production Details

1221 Well Site

Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
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Sheet M1 of M2



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(304) 338-0965

Typical Midstream Production Details

1221 Well Site

Freemans Creek District
Lewis County, WV

Date: 02/04/2025

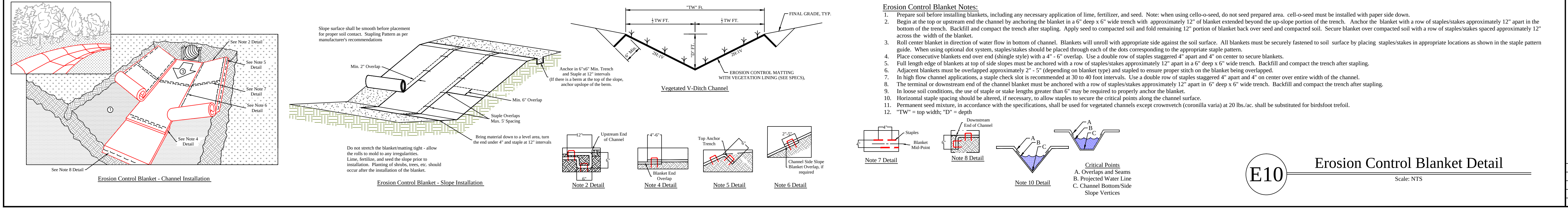
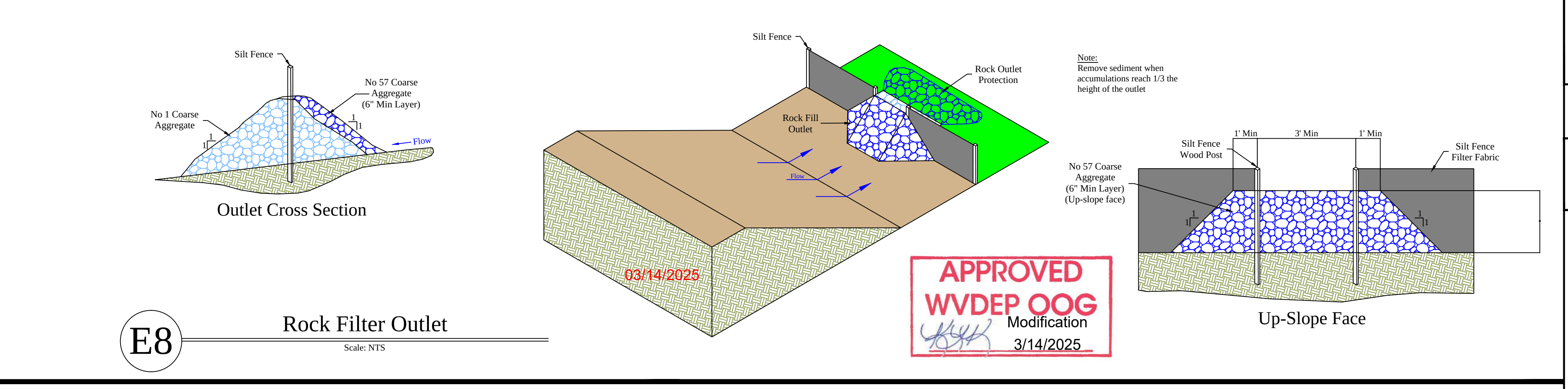
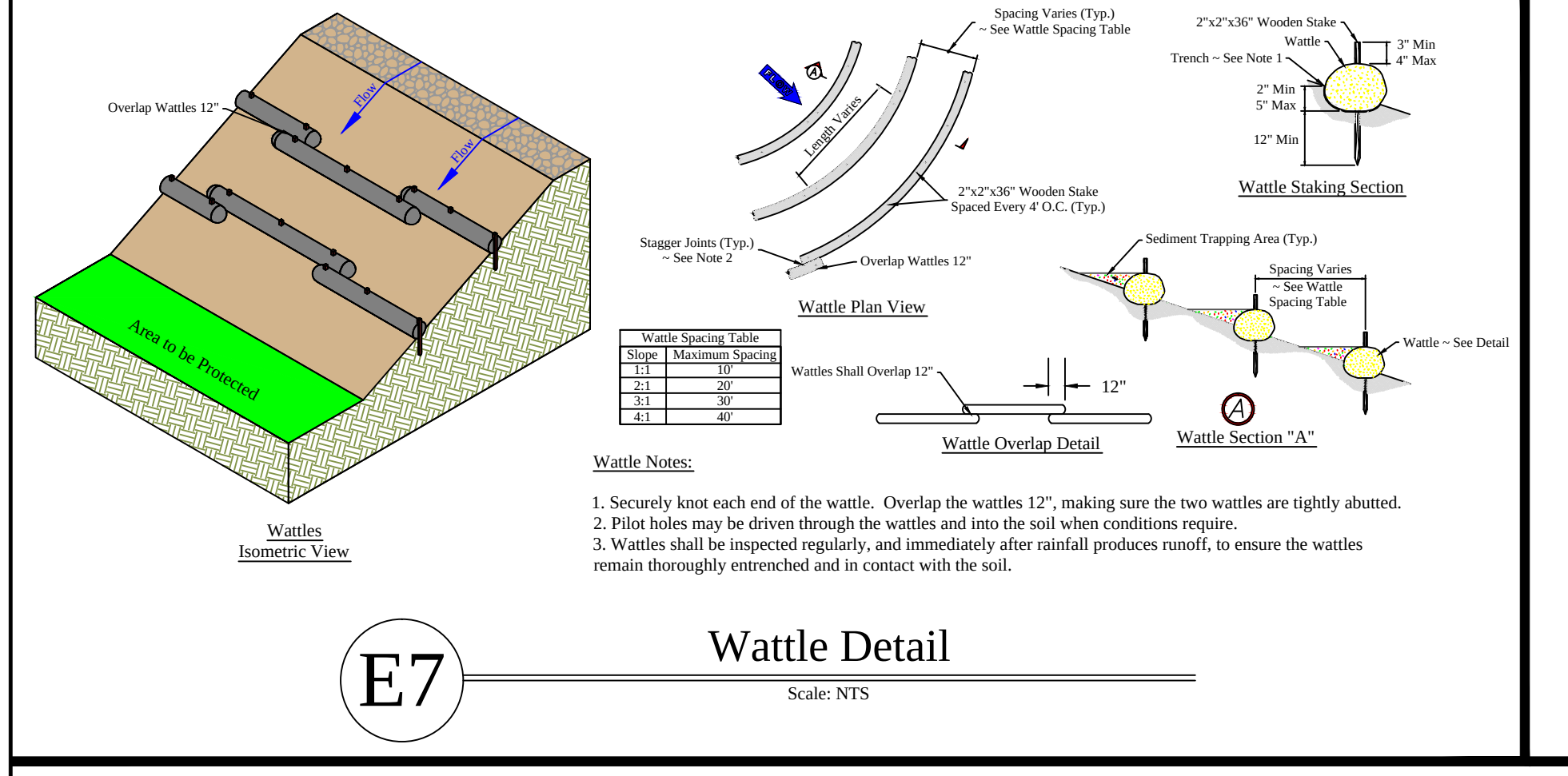
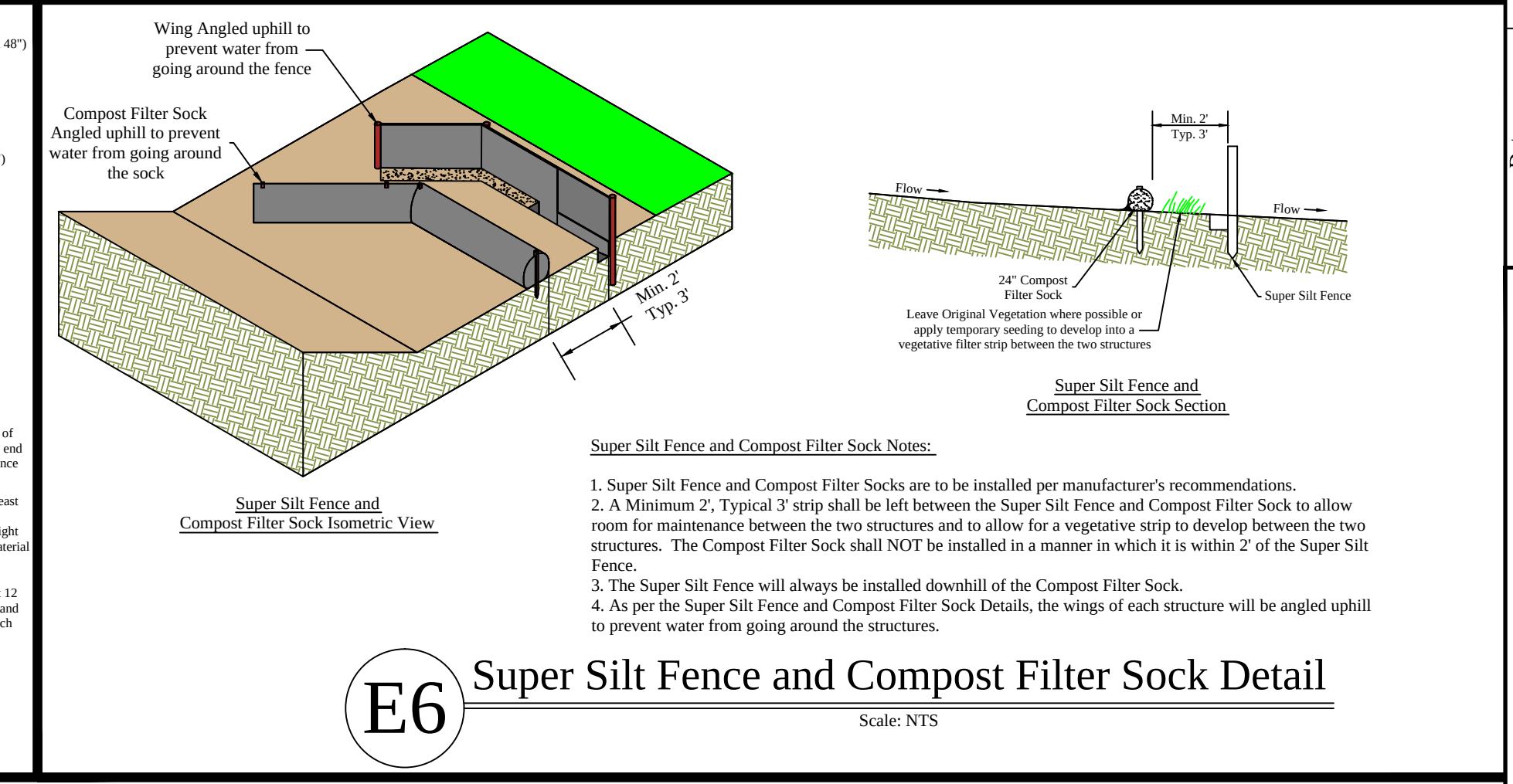
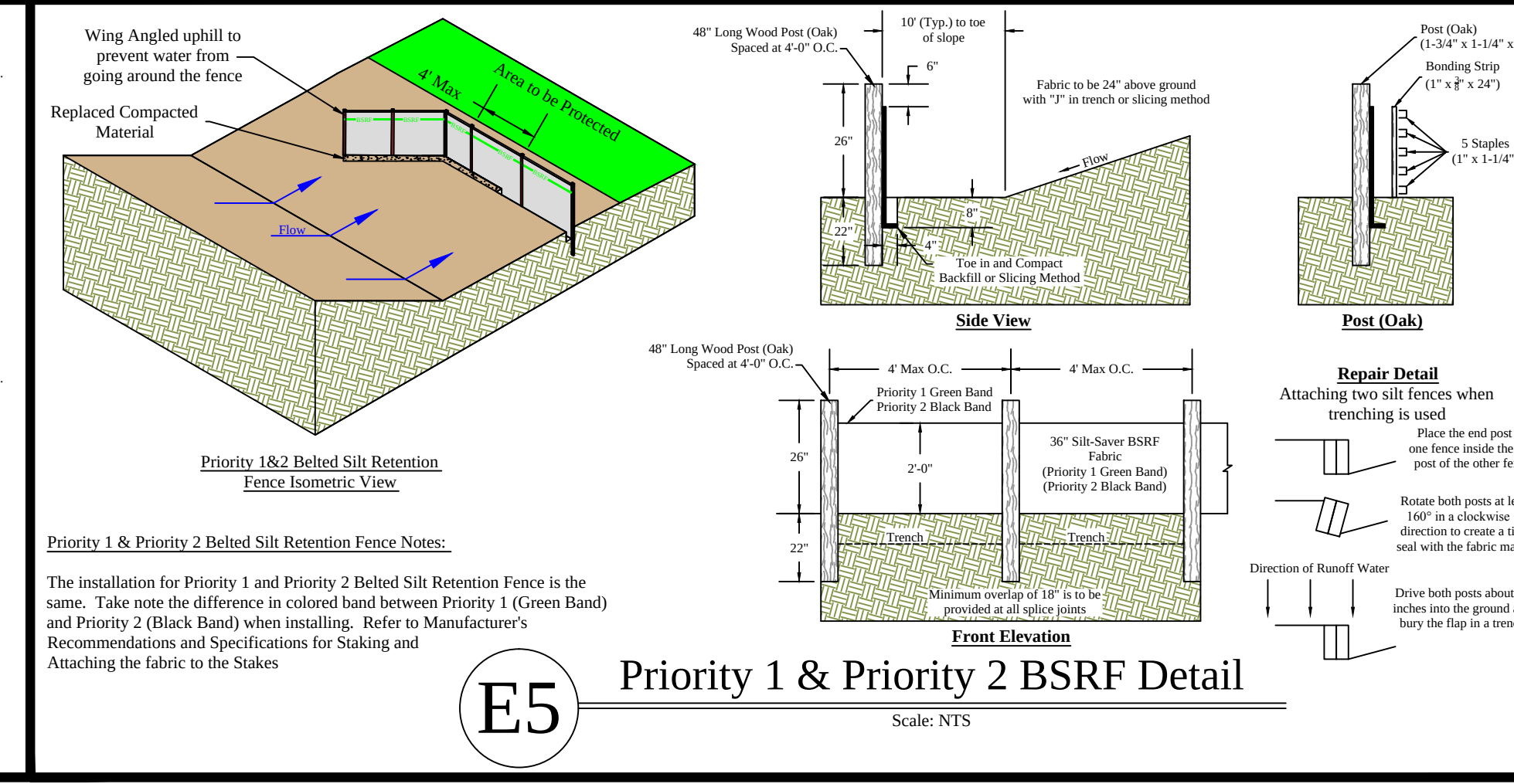
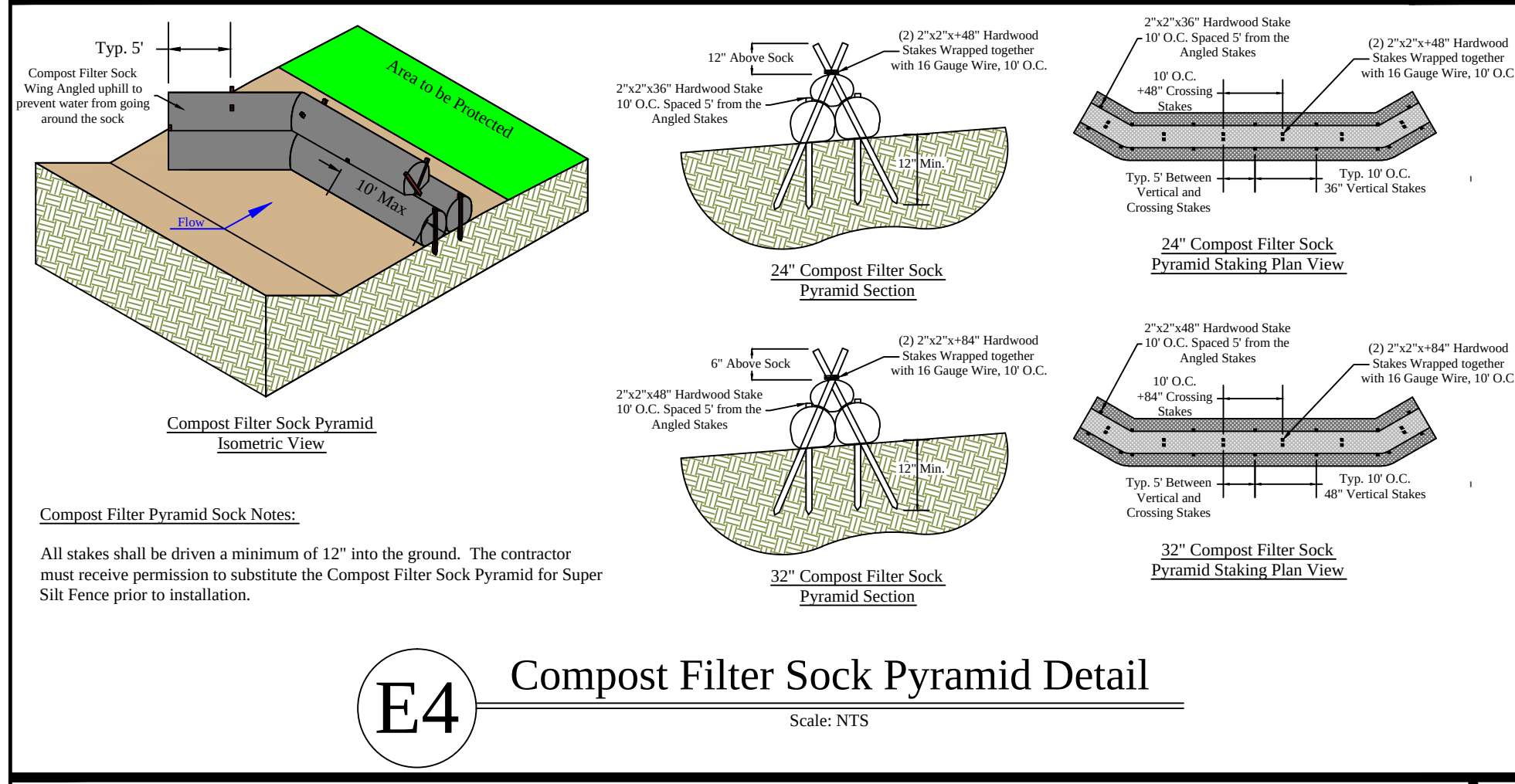
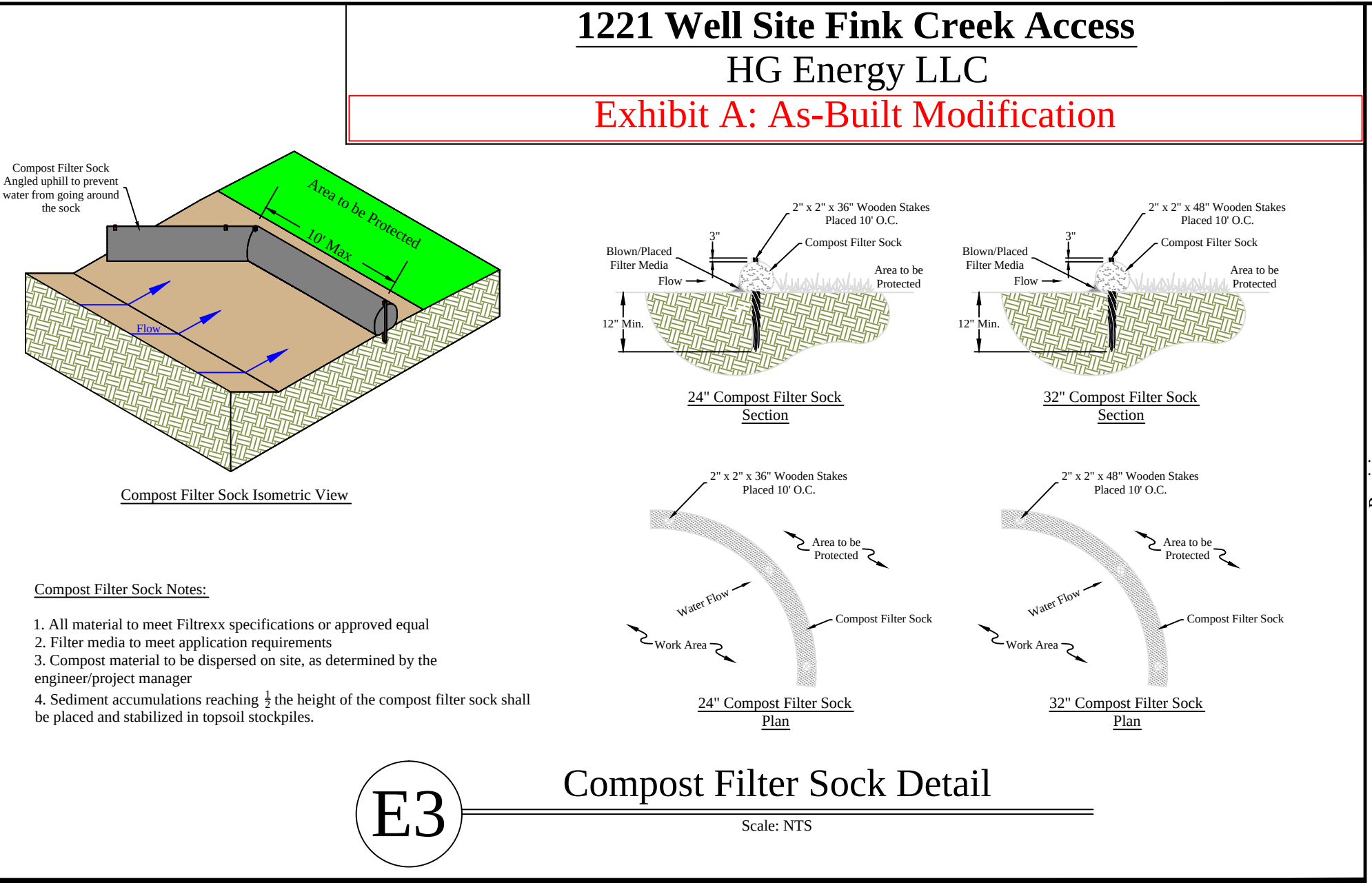
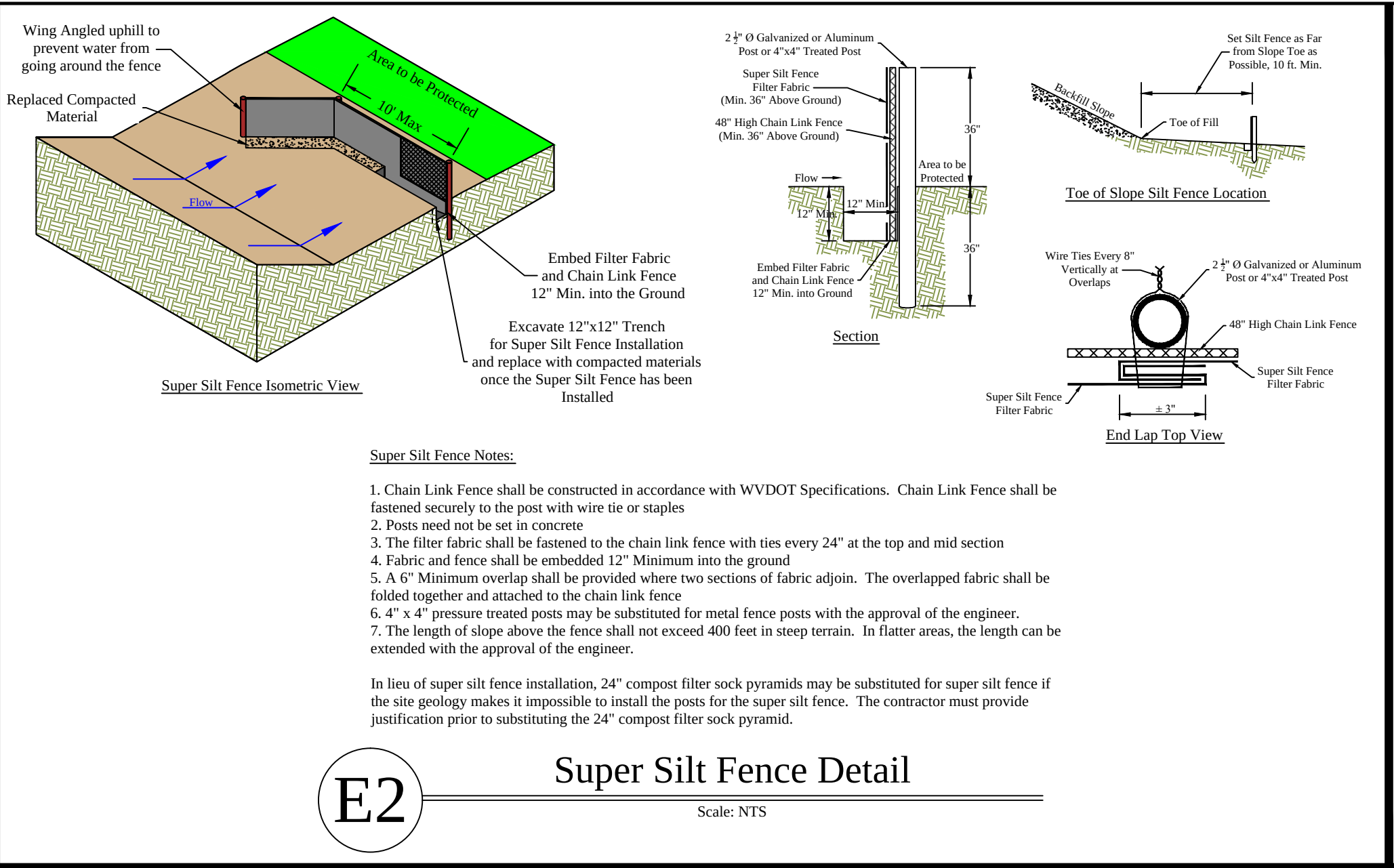
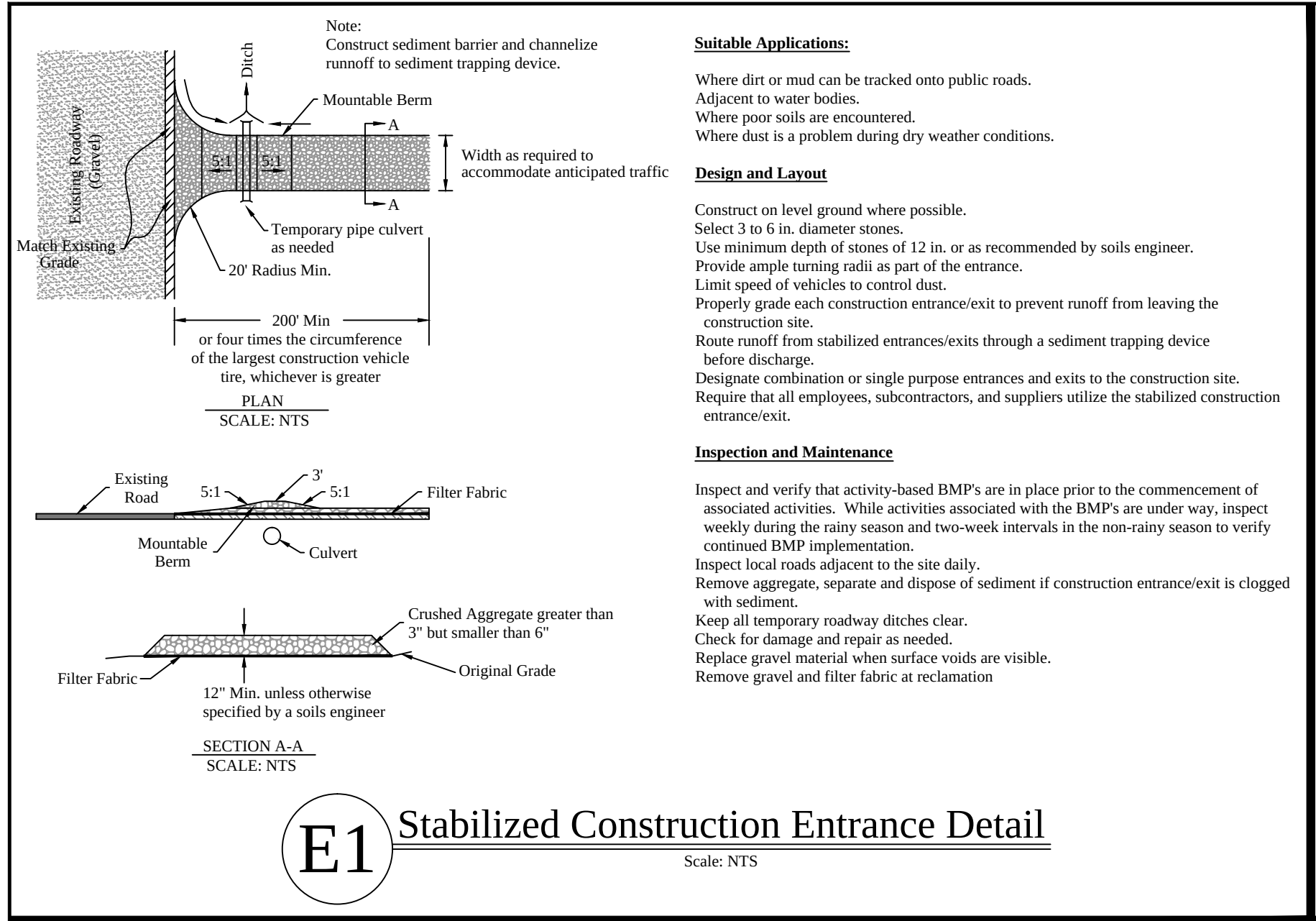
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Sheet M2 of M2

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Date
02-04-2025

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P.O. Box 254
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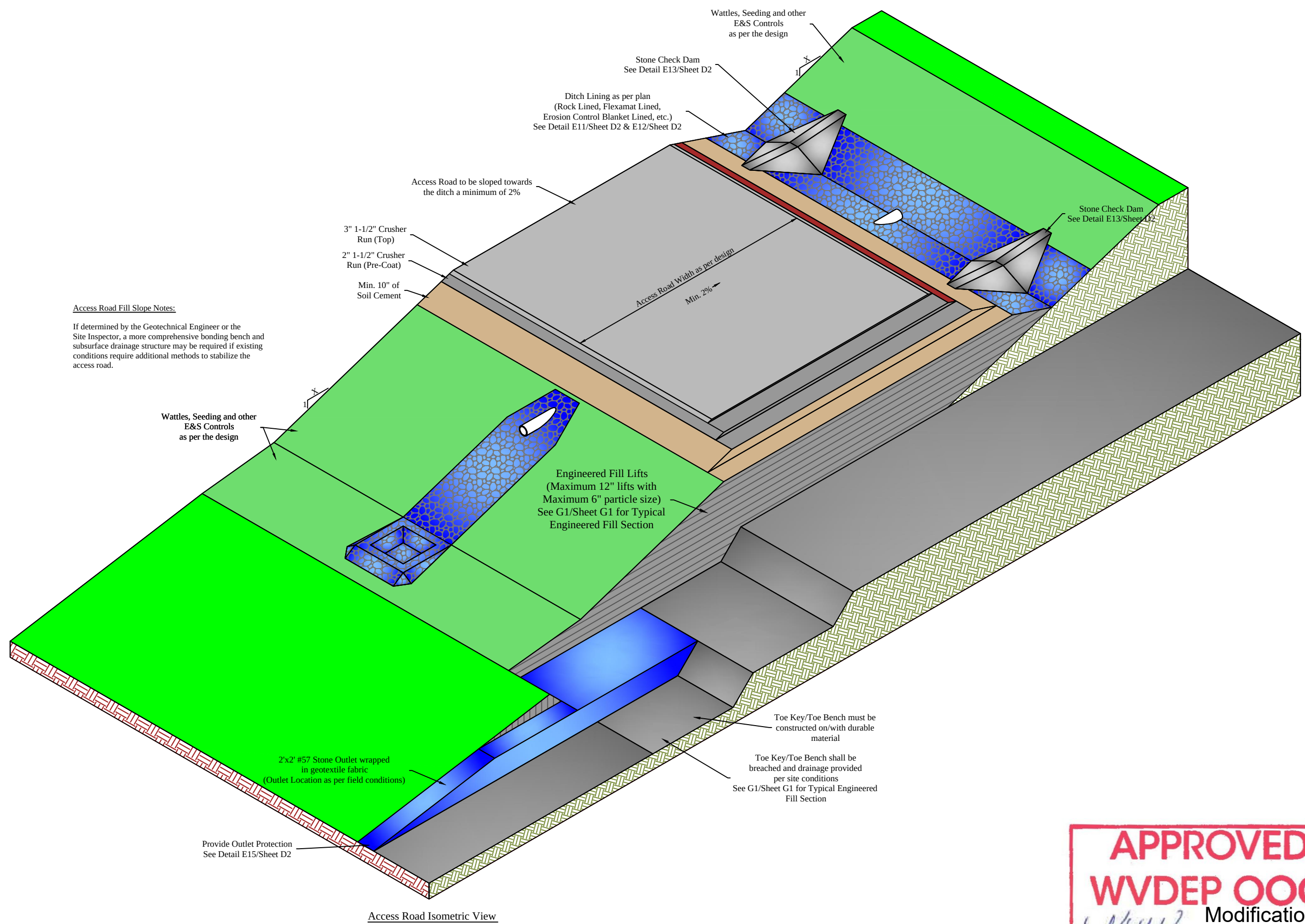
Erosion and Sediment Control Details
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet D1 of D2

1221 Well Site Fink Creek Access

HG Energy LLC

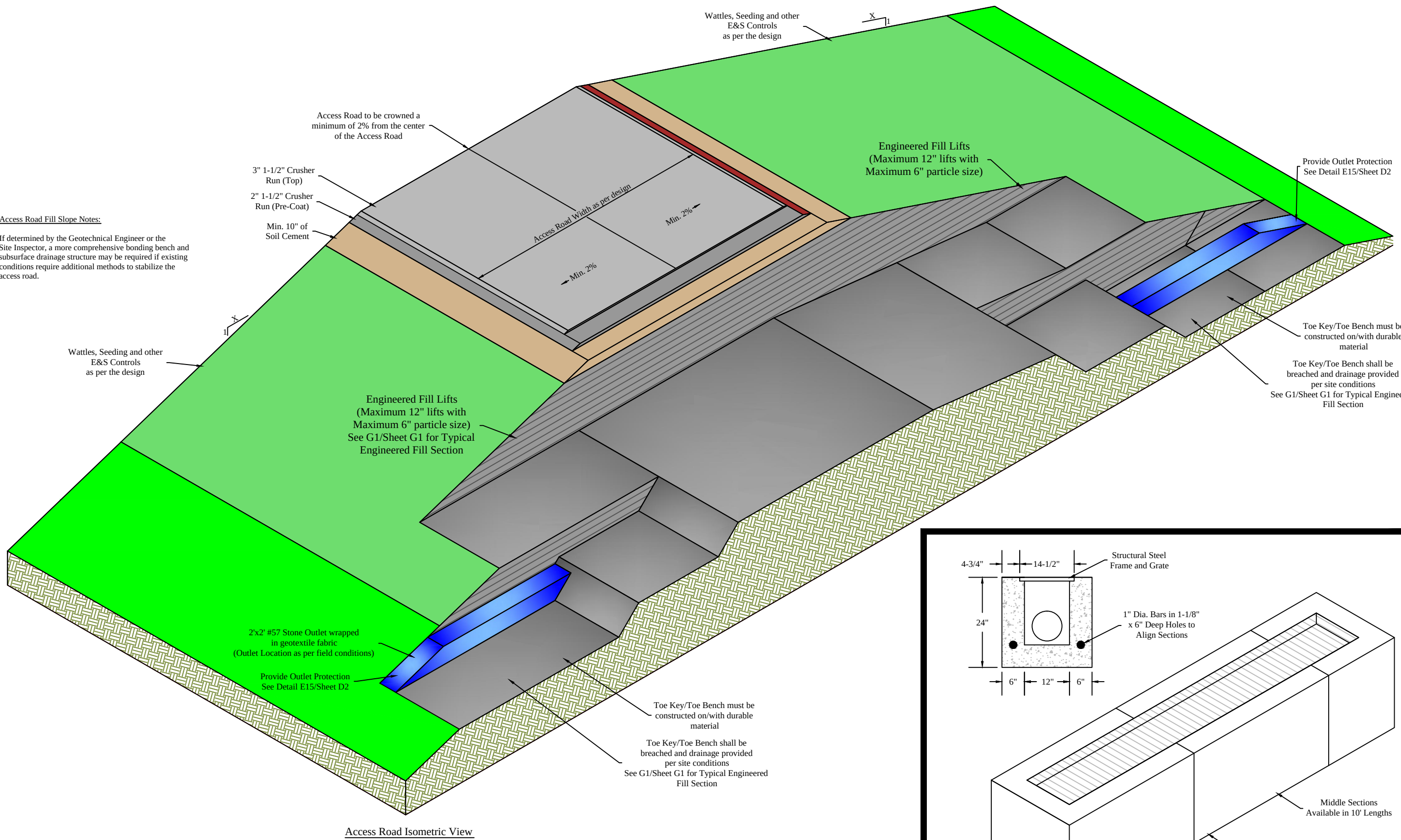
Exhibit A: As-Built Modification



R1 Typical Access Road Cut Section Details

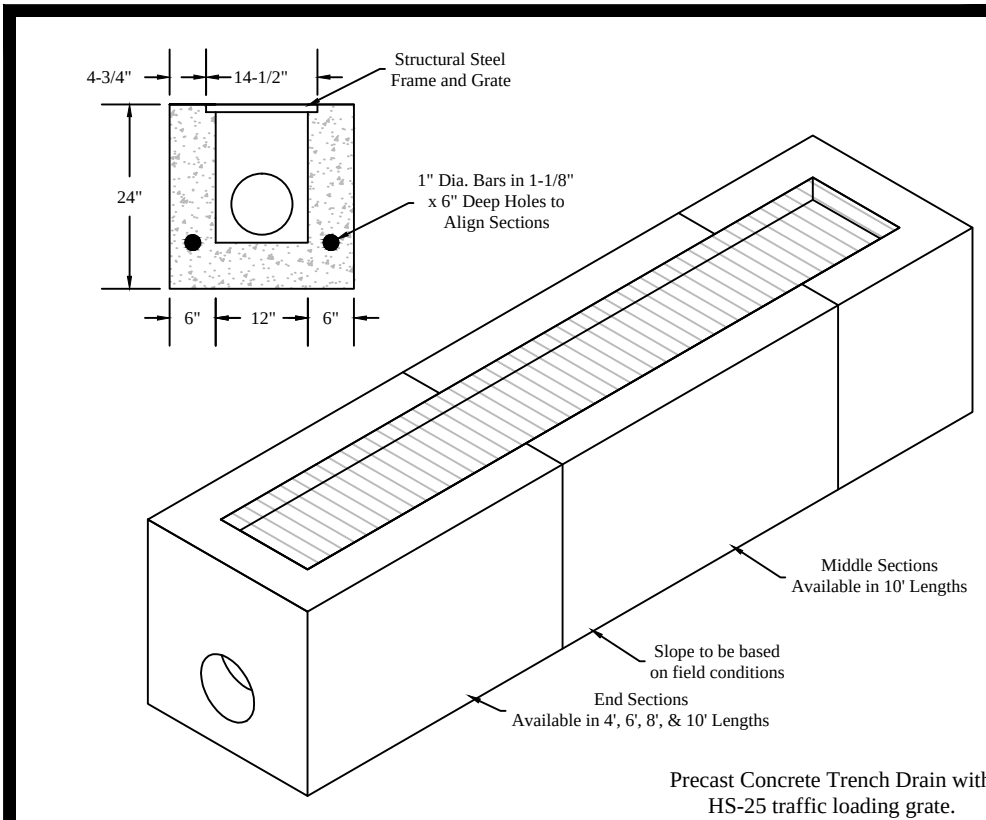
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3/14/2025



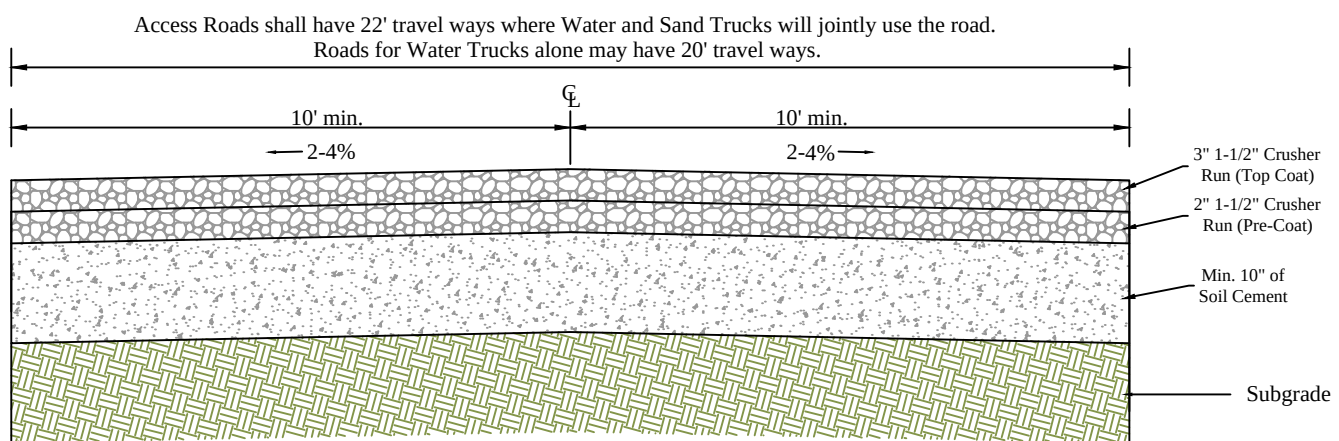
R2 Typical Access Road Fill Section Details

Scale: NTS



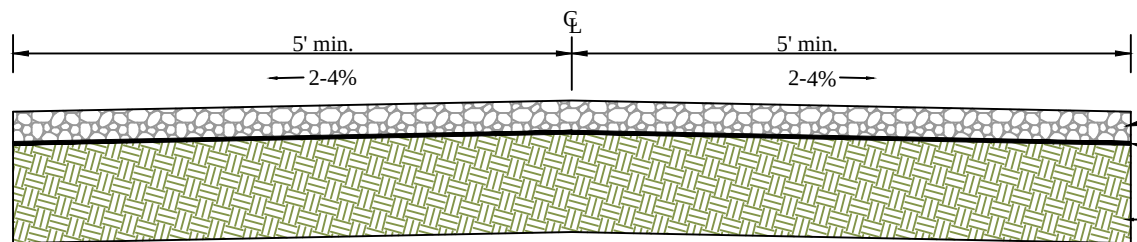
R8 Trench Grate Detail

Scale: NTS



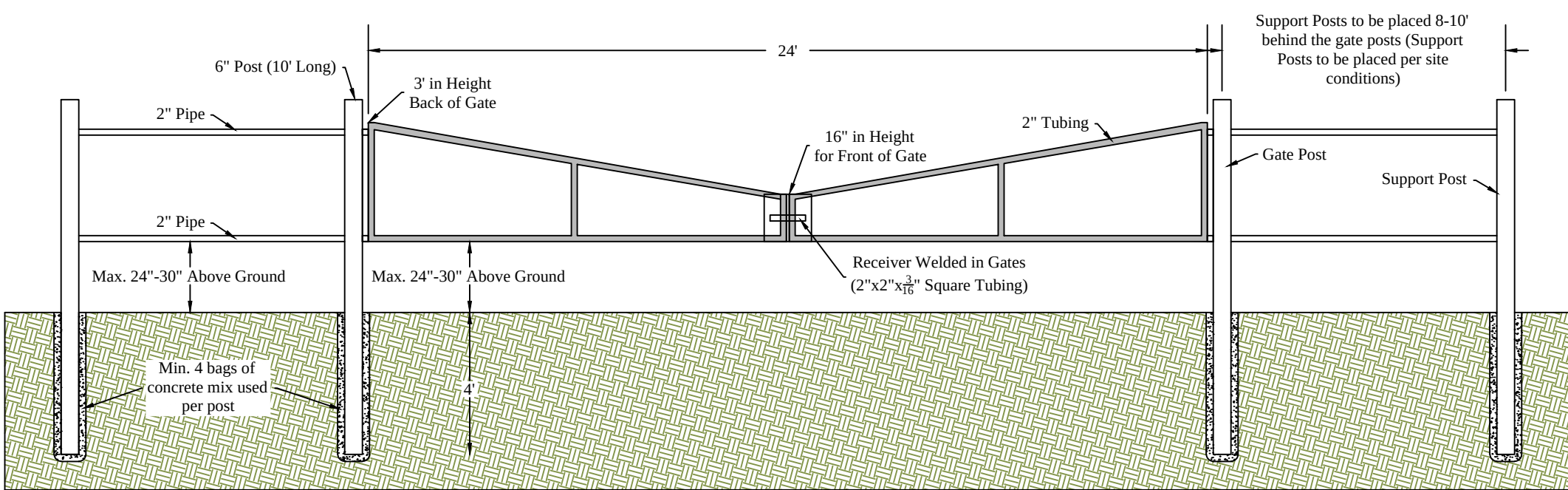
R3 Typical Access Road Surfacing Details

Scale: NTS



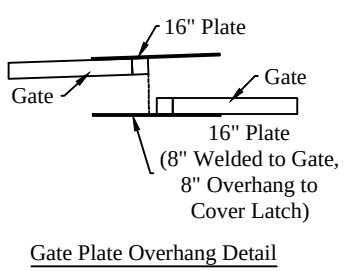
R4 Temporary/Adjacent Access Road Surfacing Details

Scale: NTS



R5 Access Road Gate Detail

Scale: NTS



Gate Specification and Installation

- Prior to any excavation or installation, a "One Call" must be performed
- Gates shall be constructed of Two Inch (2") square tubing
 - Gate posts shall be constructed of Six Inch (6") Steel Pipe, Ten Feet (10') in length
 - Gates are to be Twelve Feet (12') in length each with at least 1 upright brace between the front and rear uprights
 - Two (2) posts will be used to hang gates and an additional Two (2) posts shall be used as supports, approximately 8-10' behind the gate posts
 - Two Inch (2") pipe may be used as bracing between gate posts to secure posts and keep ATV's from going around the gate
 - Gate posts should be installed Four Feet (4') in the ground with a minimum of four (4) bags of concrete mix used per post
 - Gates will have a Sixteen Inch (16") steel plate welded at closure points to secure locks. The plate shall be mounted so that Eight Inches (8") of the plate is welded to the gate and Eight Inches (8") is left to overhang to overlap the other gate
 - The receiver for the latch on the gate needs to be constructed using 2"x2"x 1/8" tubing to allow space for the latch
 - The bottom of the gates shall be between 24"-30" max. above the road surface to prevent ATV's from driving under the gates
 - Gates shall be painted safety yellow and signs shall be provided to attach to the gates
 - A spacing of 1" between the gates needs to be maintained for the latch to fit and operate properly
 - Fabricators shall have freedom to design their hinges to allow adjustability as the gates require precise installation for the latch system to work properly. A typical design is available from HG Energy LLC
 - Proper function of the gates must be verified before leaving the site

CONSTRUCTION STAKING GUIDE & STANDARD RIBBON COLOR SCHEME

03/14/2025

	Yellow Ribbon: Yellow Ribbon used to indicate top of Cuts (C) Cut to be determined at time of stakeout Slope determined by site design		Blue & White Stripe Ribbon: Blue & White Stripe Ribbon used to indicate Limits of Disturbance (LOD) and Clearing Limits
	Yellow & Orange Ribbon: Yellow and Orange Ribbon used to indicate Grade at Top of Pad/Pond/Pit		Orange & Black Stripe Ribbon: Orange & Black Stripe Ribbon used to indicate Vertical Cut (VC) at Centerline or edge of access road Orange & Black Stripe Ribbon used to indicate Vertical Fill (VF) at centerline or edge of access road
	Orange Ribbon: Orange Ribbon used to indicate toes of Fills (F) Fill to be determined at time of stakeout Slope determined by site design		Pink & White Stripe Ribbon: Pink & White Stripe Ribbon used to indicate Erosion and Sediment Control Structures Silt Fence (SF) Reinforced Filter Fence (RFF) Super Silt Fence (SSF) Filter Sock (FS)
	Pink Ribbon: Pink Ribbon used to indicate Top Hole Location Pink Ribbon used to indicate Survey Control Location		Orange & White Stripe Ribbon: Orange & White Stripe Ribbon used to indicate Topsoil Stockpile Locations / Engineered Fill Stockpiles
	Pink & Black Stripe Ribbon: Pink & Black Stripe Ribbon used to indicate Vertical Cut (VC) at Pad/Pond/Pit corner or edge Pink & Black Stripe Ribbon used to indicate Vertical Fill (VF) at Pad/Pond/Pit corner or edge Vertical Cut/Vertical Fill to be determined at time of stakeout		Blue Ribbon: Blue Ribbon used to indicate Centerline (CL) Ditch Blue Ribbon used to indicate Bottom (BTM) Sediment Traps

R6 Construction Staking Guide

Scale: NTS

Revision
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02-04-2025

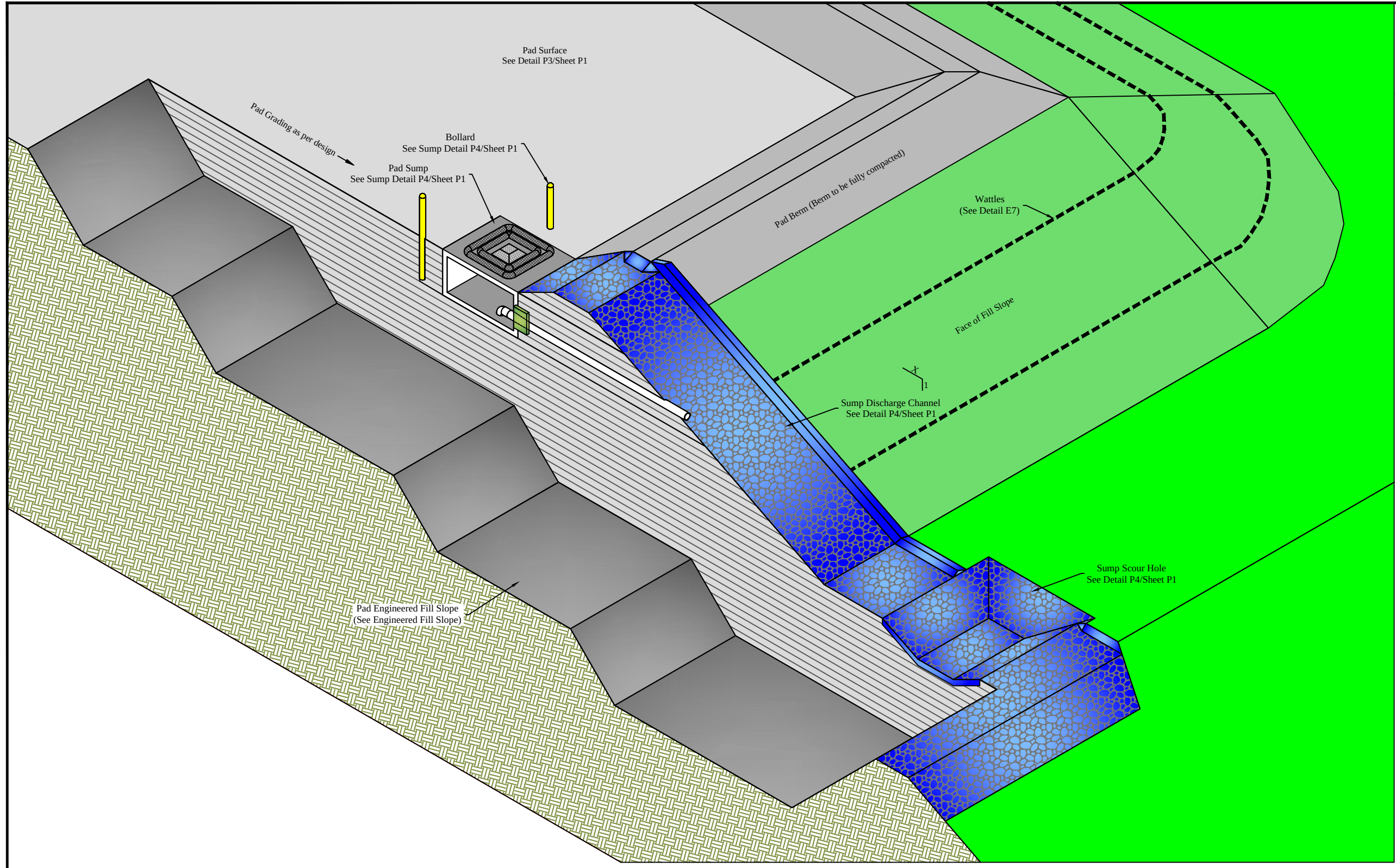


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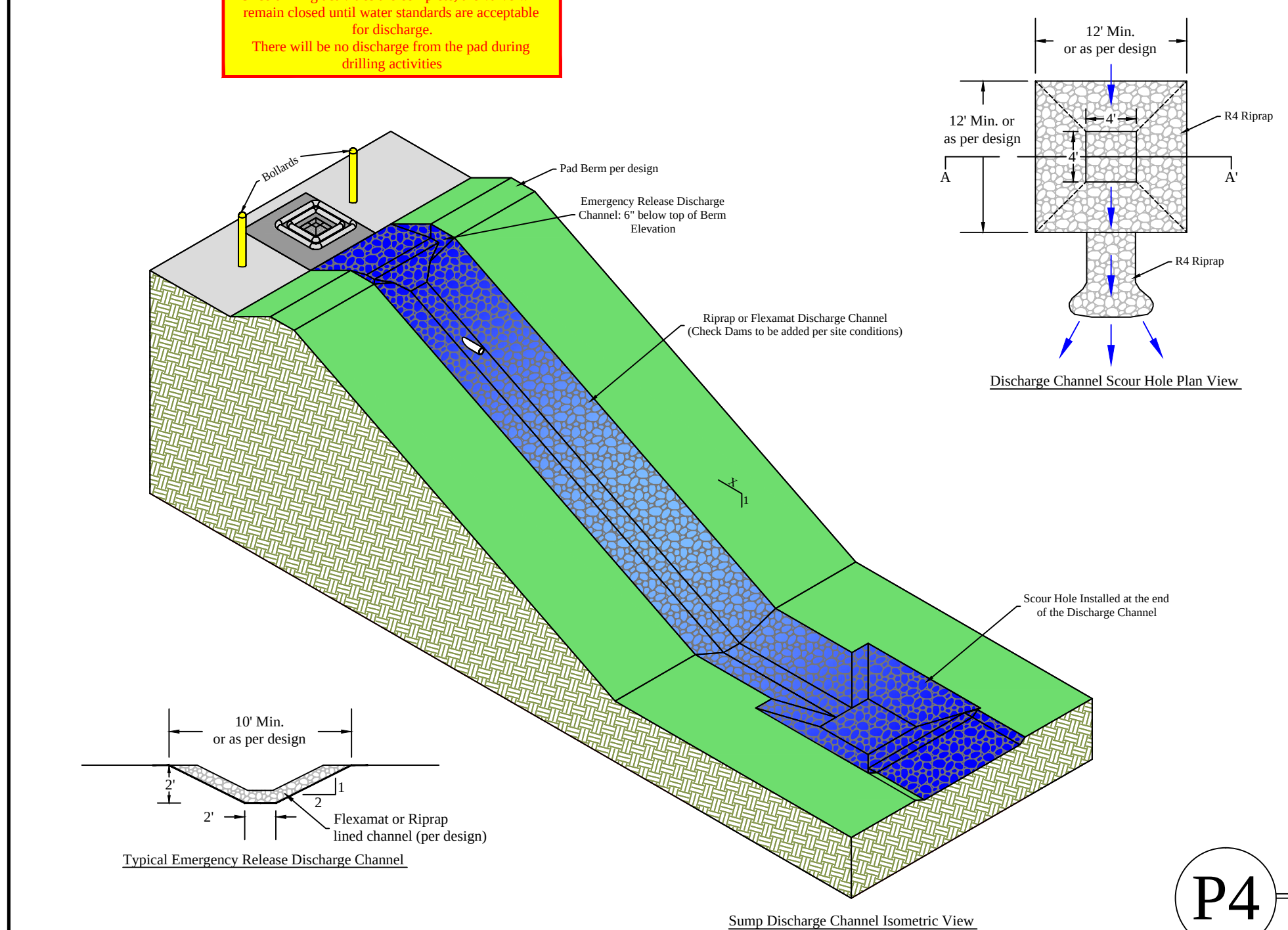
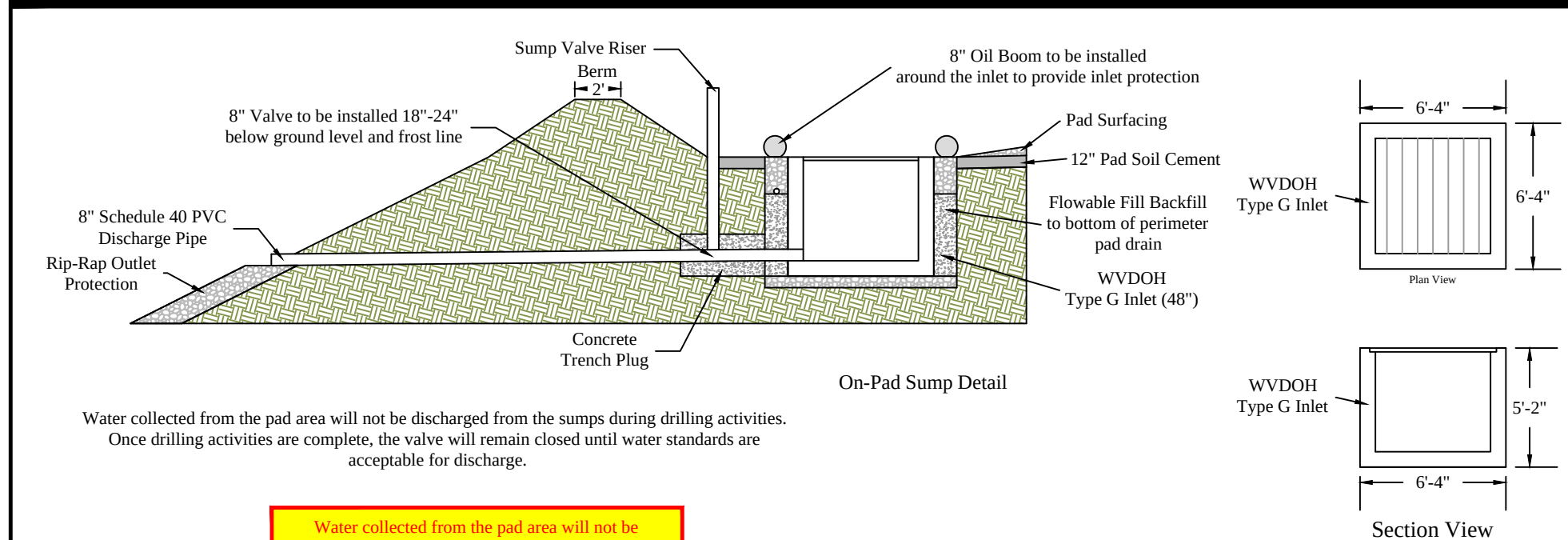


Typical Access Road Details
1221 Well Site
Freemans Creek District
Lewis County, WV

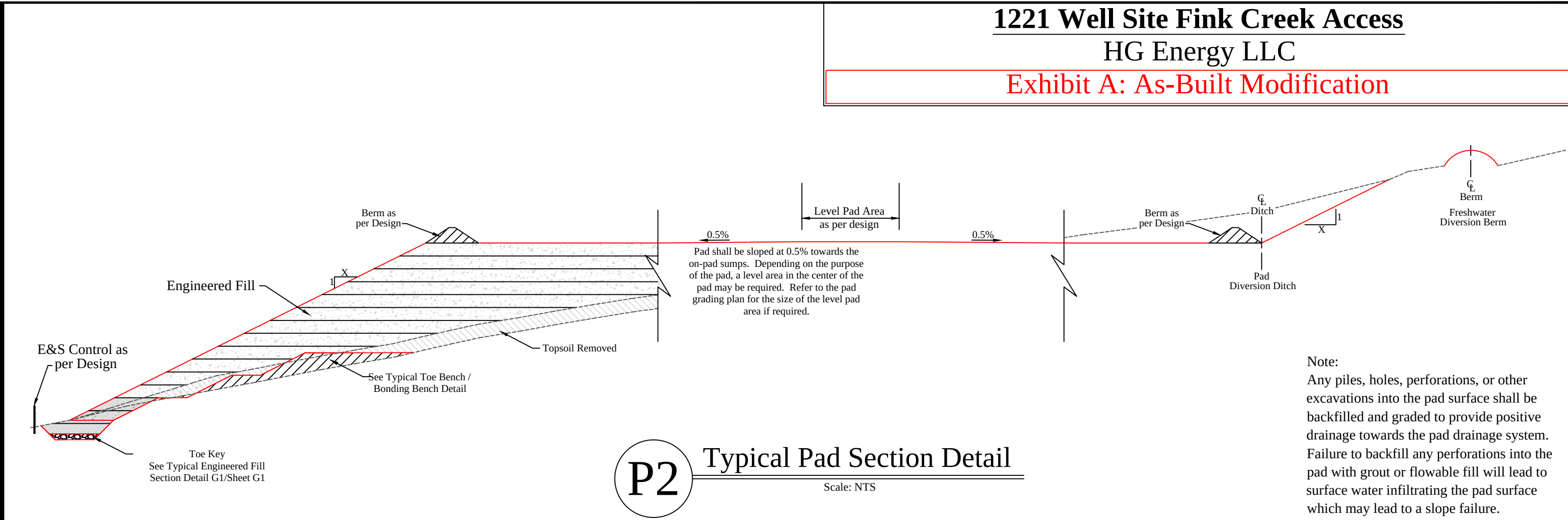
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Sheet R1 of R1



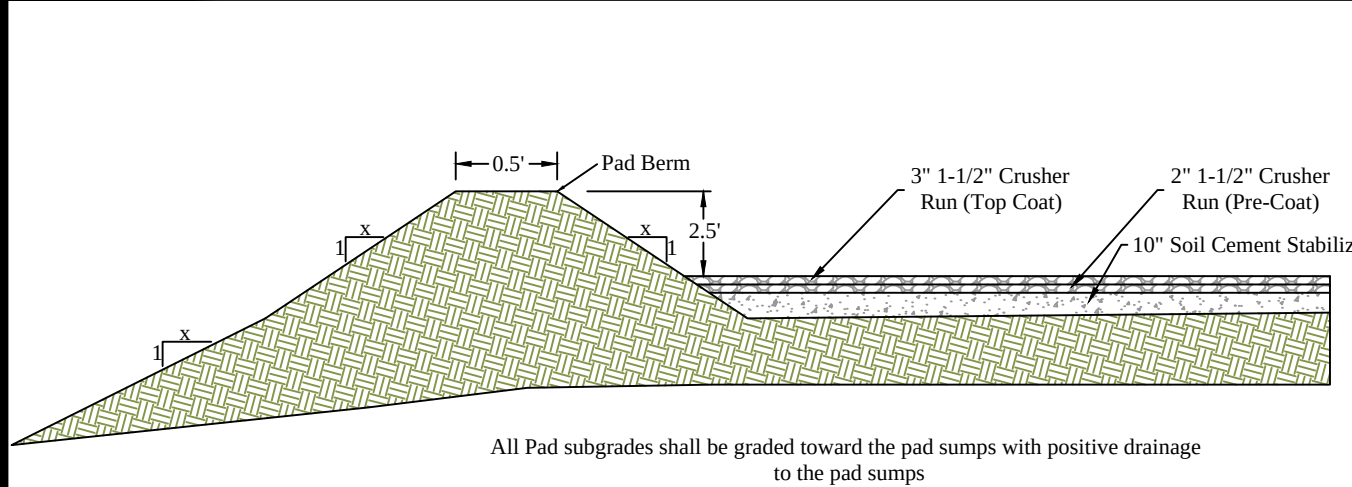
P1 Typical Pad Isometric View Detail
Scale: NTS



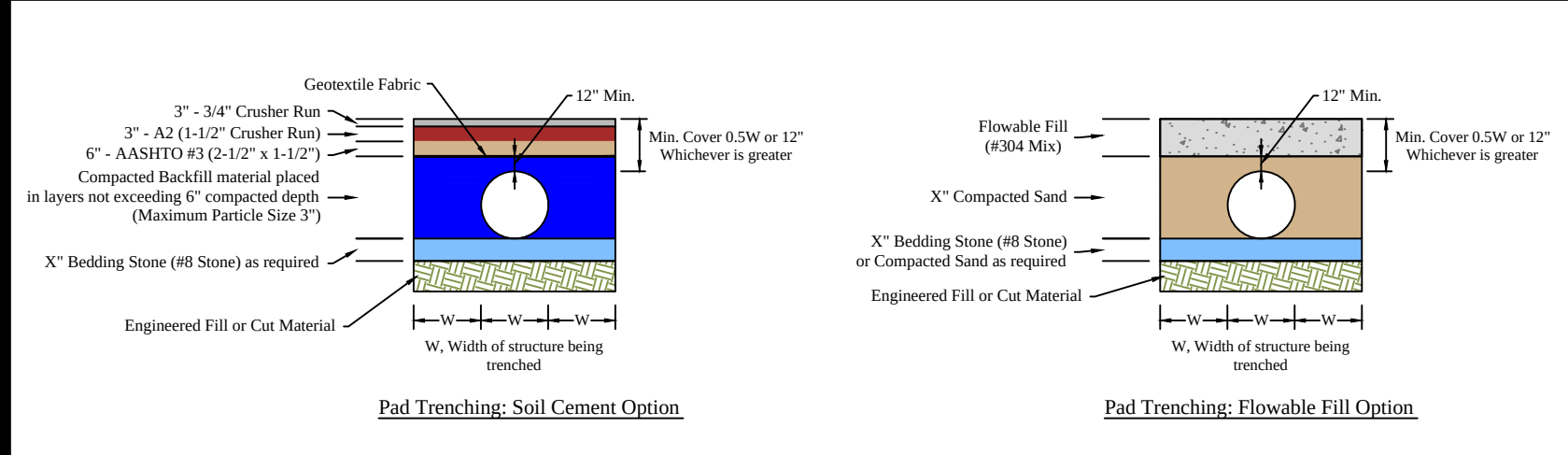
P4 On-Pad Sump Detail
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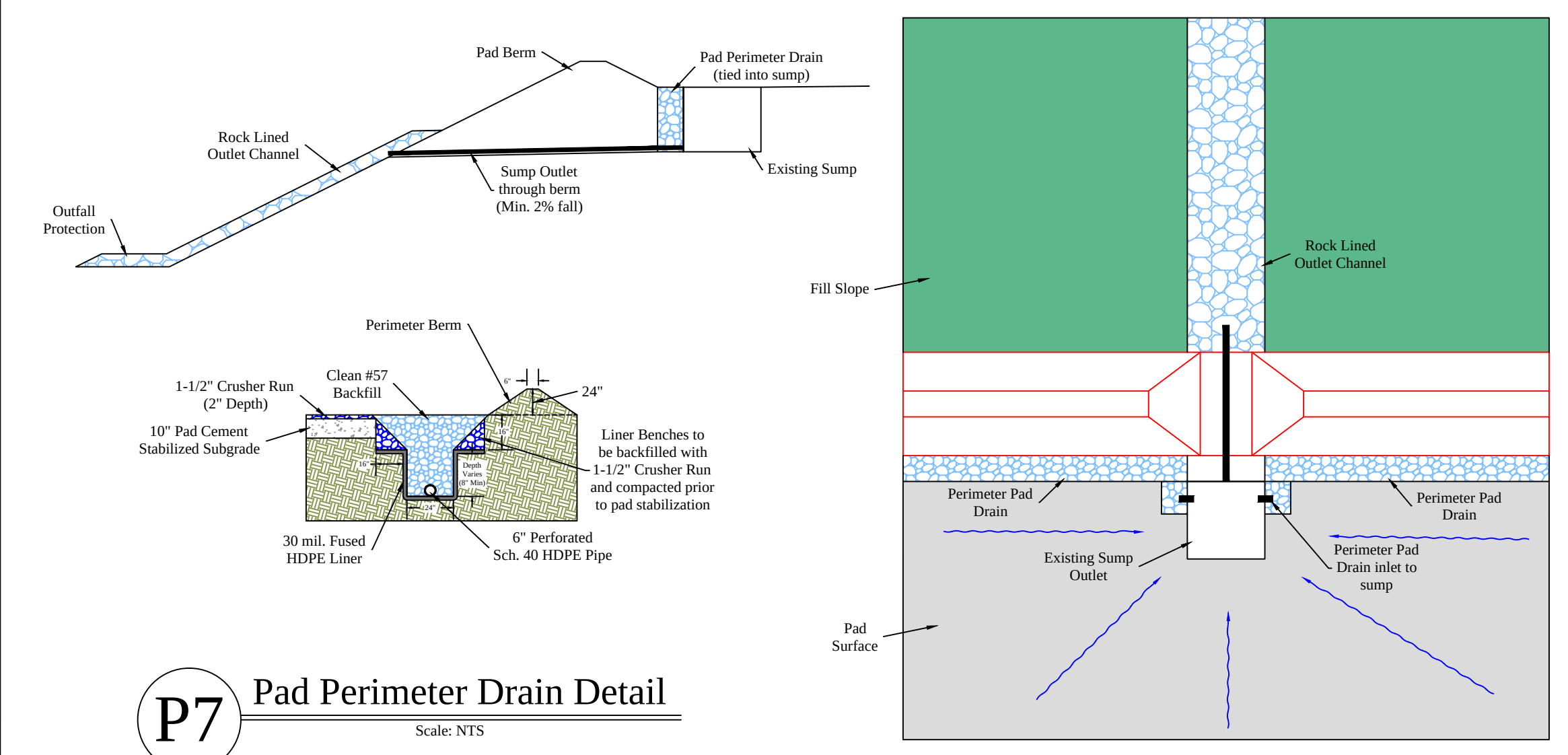
P2 Typical Pad Section Detail
Scale: NTS



P3 Pad Surfacing Detail
Scale: NTS



P6 Typical Pad Trenching Detail
Scale: NTS



P7 Pad Perimeter Drain Detail
Scale: NTS

03/14/2025

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Typical Pad Details	
1221 Well Site	
Freemans Creek District	
Lewis County, WV	
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