



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-4H
47-041-05763-00-00

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.

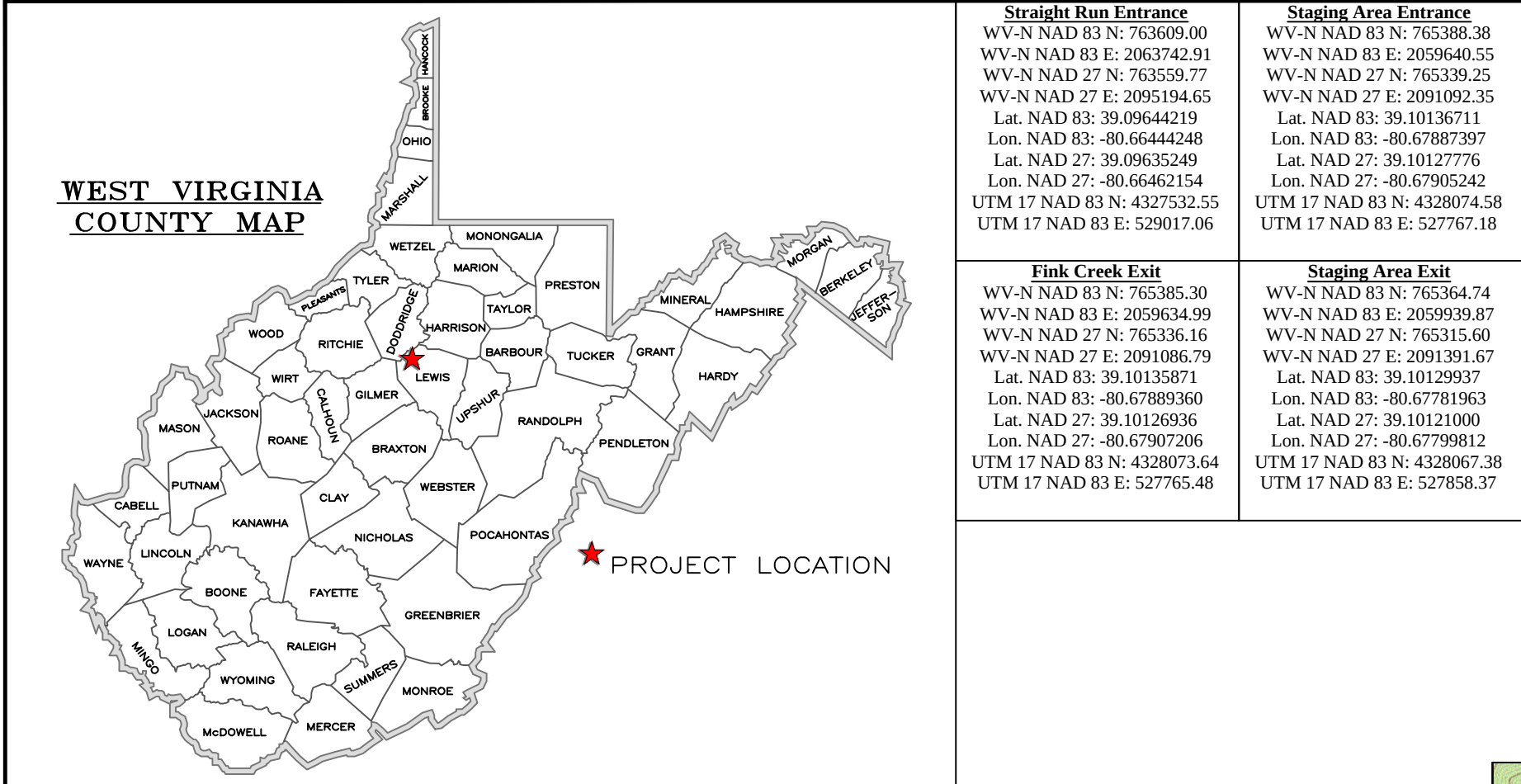
If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

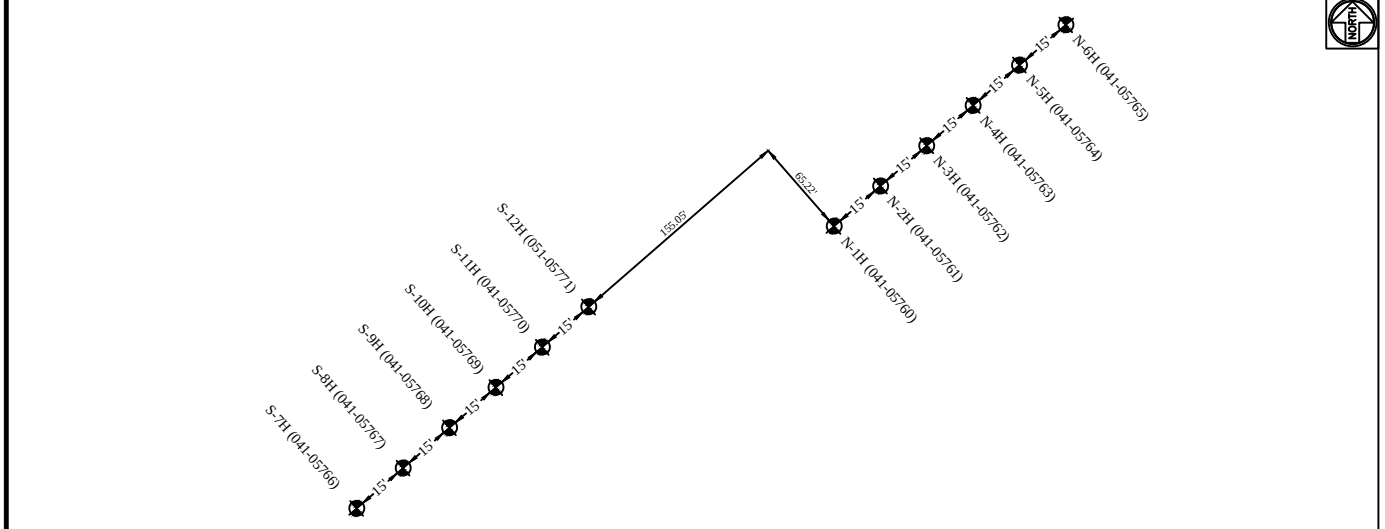
Operator's Well Number: Van Wie 1221 N-4H
Farm Name: HG Energy II Appalachia, LLC
U.S. WELL NUMBER: 47-041-05763-00-00
Horizontal 6A New Drill
Date Modification Issued: 3/14/2025

Promoting a healthy environment.

03/14/2025



Site Entrance WV-N NAD 83 N: 762954.49 WV-N NAD 83 E: 2063348.90 WV-N NAD 27 N: 762905.26 WV-N NAD 27 E: 2094800.64 Lat. NAD 83: 39.09464922 Lon. NAD 83: -80.66583893 Lat. NAD 27: 39.09455950 Lon. NAD 27: -80.66501796 UTM 17 NAD 83 N: 4327333.13 UTM 17 NAD 83 E: 528897.04	Center of Well Pad WV-N NAD 83 N: 762961.19 WV-N NAD 83 E: 2062544.18 WV-N NAD 27 N: 762973.41 WV-N NAD 27 E: 2094800.64 Lat. NAD 83: 39.09467556 Lon. NAD 83: -80.66867393 Lat. NAD 27: 39.09458589 Lon. NAD 27: -80.66805286 UTM 17 NAD 83 N: 4327335.16 UTM 17 NAD 83 E: 528651.86 Pad Elev.: 1251.77	Center of AST Pad WV-N NAD 83 N: 762962.43 WV-N NAD 83 E: 2061991.36 WV-N NAD 27 N: 762911.99 WV-N NAD 27 E: 2093995.92 Lat. NAD 83: 39.09394312 Lon. NAD 83: -80.67062491 Lat. NAD 27: 39.09385347 Lon. NAD 27: -80.67080378 UTM 17 NAD 83 N: 4327253.26 UTM 17 NAD 83 E: 528483.45 Pad Elev.: 1229.00	ASTs to consist of (2) 10,000 bbl (76" diameter) tanks with secondary containment 12,000 bbl (83" diameter) for processed water
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N-1H WV-N NAD 83 N: 762022.62 WV-N NAD 83 E: 2062599.14 WV-N NAD 27 N: 762973.41 WV-N NAD 27 E: 2094050.89 Lat. NAD 83: 39.09484365 Lon. NAD 83: -80.66847951 Lat. NAD 27: 39.09475397 Lon. NAD 27: -80.66863945 UTM 17 NAD 83 (m) N: 4327353.87 UTM 17 NAD 83 (m) E: 528668.61	N-2H WV-N NAD 83 N: 763032.46 WV-N NAD 83 E: 2062610.47 WV-N NAD 27 N: 762973.41 WV-N NAD 27 E: 2094062.21 Lat. NAD 83: 39.09487055 Lon. NAD 83: -80.66843950 Lat. NAD 27: 39.09478988 Lon. NAD 27: -80.66861844 UTM 17 NAD 83 (m) N: 4327356.87 UTM 17 NAD 83 (m) E: 528672.06	N-3H WV-N NAD 83 N: 763042.30 WV-N NAD 83 E: 2062621.79 WV-N NAD 27 N: 762983.09 WV-N NAD 27 E: 2094073.53 Lat. NAD 83: 39.09489745 Lon. NAD 83: -80.66839949 Lat. NAD 27: 39.09480778 Lon. NAD 27: -80.66857843 UTM 17 NAD 83 (m) N: 4327359.87 UTM 17 NAD 83 (m) E: 528675.51	N-4H WV-N NAD 83 N: 763052.14 WV-N NAD 83 E: 2062633.11 WV-N NAD 27 N: 763002.93 WV-N NAD 27 E: 2094084.85 Lat. NAD 83: 39.09492436 Lon. NAD 83: -80.66835948 Lat. NAD 27: 39.09483468 Lon. NAD 27: -80.6683842 UTM 17 NAD 83 (m) N: 4327362.87 UTM 17 NAD 83 (m) E: 528678.96	N-5H WV-N NAD 83 N: 763061.98 WV-N NAD 83 E: 2062644.43 WV-N NAD 27 N: 763012.77 WV-N NAD 27 E: 2094096.17 Lat. NAD 83: 39.09495126 Lon. NAD 83: -80.66831947 Lat. NAD 27: 39.09486159 Lon. NAD 27: -80.66849841 UTM 17 NAD 83 (m) N: 4327365.87 UTM 17 NAD 83 (m) E: 528682.41
N-6H WV-N NAD 83 N: 763071.82 WV-N NAD 83 E: 2062655.75 WV-N NAD 27 N: 763022.61 WV-N NAD 27 E: 2094107.49 Lat. NAD 83: 39.09487816 Lon. NAD 83: -80.66827946 Lat. NAD 27: 39.09488849 Lon. NAD 27: -80.66845840 UTM 17 NAD 83 (m) N: 4327368.86 UTM 17 NAD 83 (m) E: 528685.85	S-7H WV-N NAD 83 N: 762930.92 WV-N NAD 83 E: 2062382.73 WV-N NAD 27 N: 762871.72 WV-N NAD 27 E: 2093834.47 Lat. NAD 83: 39.09456558 Lon. NAD 83: -80.66924324 Lat. NAD 27: 39.09447691 Lon. NAD 27: -80.66942215 UTM 17 NAD 83 (m) N: 4327322.89 UTM 17 NAD 83 (m) E: 528602.68	S-8H WV-N NAD 83 N: 762930.76 WV-N NAD 83 E: 2062394.05 WV-N NAD 27 N: 762881.56 WV-N NAD 27 E: 2093845.79 Lat. NAD 83: 39.09455948 Lon. NAD 83: -80.66923323 Lat. NAD 27: 39.09450382 Lon. NAD 27: -80.66938214 UTM 17 NAD 83 (m) N: 4327325.88 UTM 17 NAD 83 (m) E: 528606.13	S-9H WV-N NAD 83 N: 762940.60 WV-N NAD 83 E: 2062405.37 WV-N NAD 27 N: 762891.40 WV-N NAD 27 E: 2093857.11 Lat. NAD 83: 39.09459348 Lon. NAD 83: -80.66916322 Lat. NAD 27: 39.09453072 Lon. NAD 27: -80.66934213 UTM 17 NAD 83 (m) N: 4327332.88 UTM 17 NAD 83 (m) E: 528609.57	S-10H WV-N NAD 83 N: 762950.44 WV-N NAD 83 E: 2062416.69 WV-N NAD 27 N: 762901.24 WV-N NAD 27 E: 2093868.44 Lat. NAD 83: 39.09464729 Lon. NAD 83: -80.66912321 Lat. NAD 27: 39.09457563 Lon. NAD 27: -80.66930213 UTM 17 NAD 83 (m) N: 4327331.88 UTM 17 NAD 83 (m) E: 528613.02
S-11H WV-N NAD 83 N: 762960.28 WV-N NAD 83 E: 2062428.01 WV-N NAD 27 N: 762911.08 WV-N NAD 27 E: 2093879.76 Lat. NAD 83: 39.09467420 Lon. NAD 83: -80.66908020 Lat. NAD 27: 39.09458453 Lon. NAD 27: -80.66925212 UTM 17 NAD 83 (m) N: 4327334.88 UTM 17 NAD 83 (m) E: 528616.47	S-12H WV-N NAD 83 N: 762970.12 WV-N NAD 83 E: 2062439.33 WV-N NAD 27 N: 762920.92 WV-N NAD 27 E: 2093891.08 Lat. NAD 83: 39.09470110 Lon. NAD 83: -80.66904319 Lat. NAD 27: 39.09461143 Lon. NAD 27: -80.66922211 UTM 17 NAD 83 (m) N: 4327337.88 UTM 17 NAD 83 (m) E: 528619.92			



Project Contacts

HG Energy LLC
Jared Stemple - Construction Manager
740-336-2477

Survey and Engineer
Kenneth Kelly
304-338-6985 Off.

John P. See
304-442-0220 Off.

Zackary Summerfield
304-338-6987 Off.

HG Energy, LLC
5260 Dupont Road
Parkersburg, WV 26101
PH: 304-420-1100
Fax: 304-863-3175

Environmental:
Wetland Delineations as provided by Palustris Environmental dated June 20, 2023

Topographic Information:
The topographic information shown herein is based on aerial photography by Blue Mountain Aerial Mapping, Burton, WV

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

Know what's below.
Call before you dig.

HG Energy LLC will obtain an Encroachment Permit (Form MM-109) from the WV Department of Transportation, Division of Highways, prior to the commencement of any construction activities

The WV Mines Website was consulted. Previous mining activities are not within the AOI.

WVDEP Website files show that there are active and/or abandoned gas wells within the AOI

Floodplain Conditions	
Do site construction activities take place in a floodplain:	YES
Permit needed from county floodplain coordinator:	YES
Flood Hazard Zone	A
HEC-RAS Study completed:	N/A
Floodplain shown on drawings:	N/A
FIRM Map Number(s) for site:	54041C 0100E
Acres of construction in floodplain:	0.67 Ac

1221 Well Site Fink Creek Access

Site Design, Construction Plan, & Erosion and Sediment Control Plans

HG Energy LLC

Lewis County

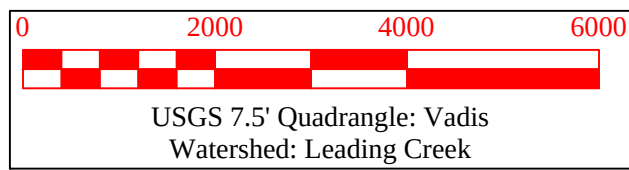
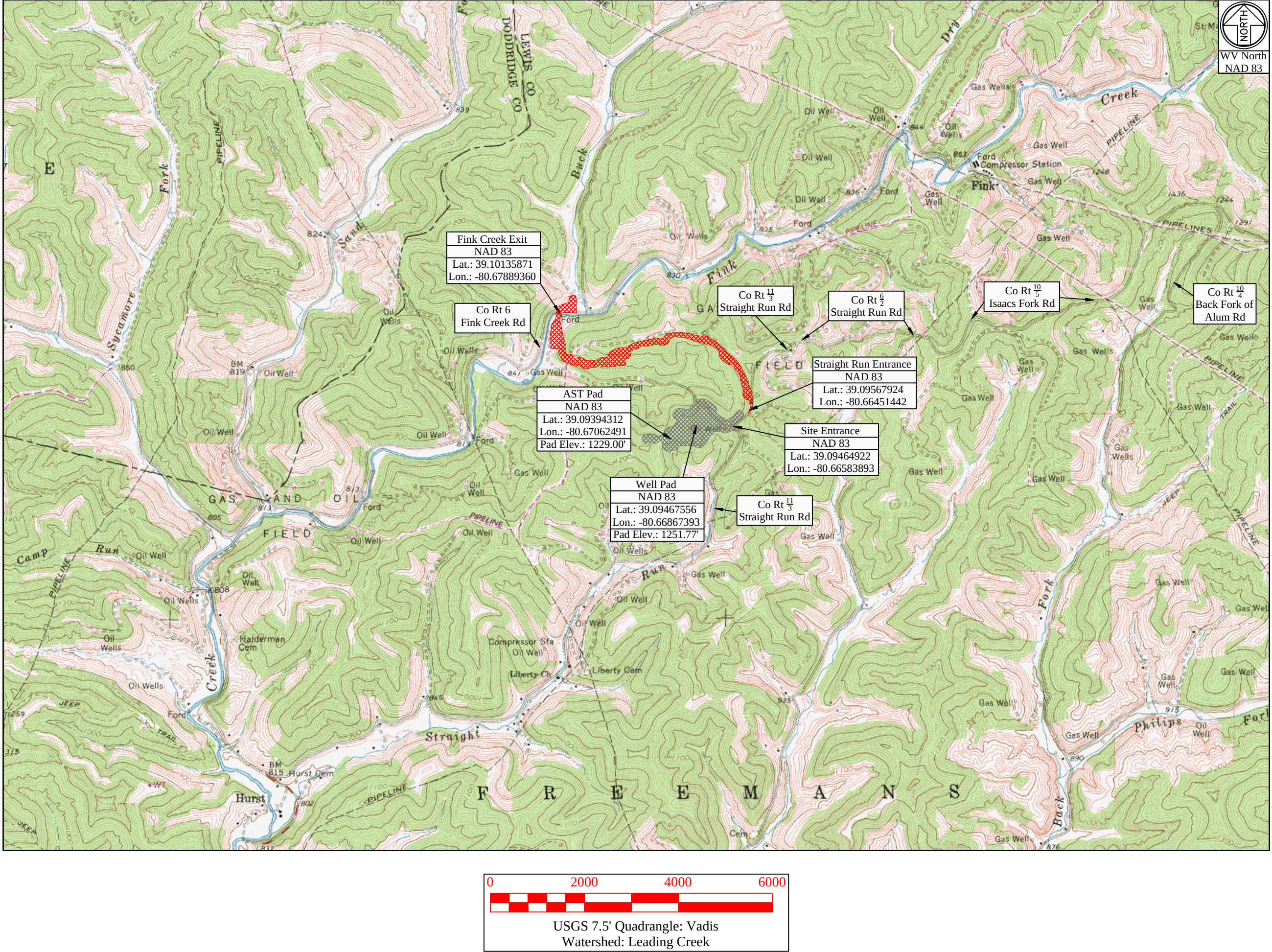
Freemans Creek District

Latitude 39.09467556°

Longitude -80.66867393°

Leading Creek Watershed

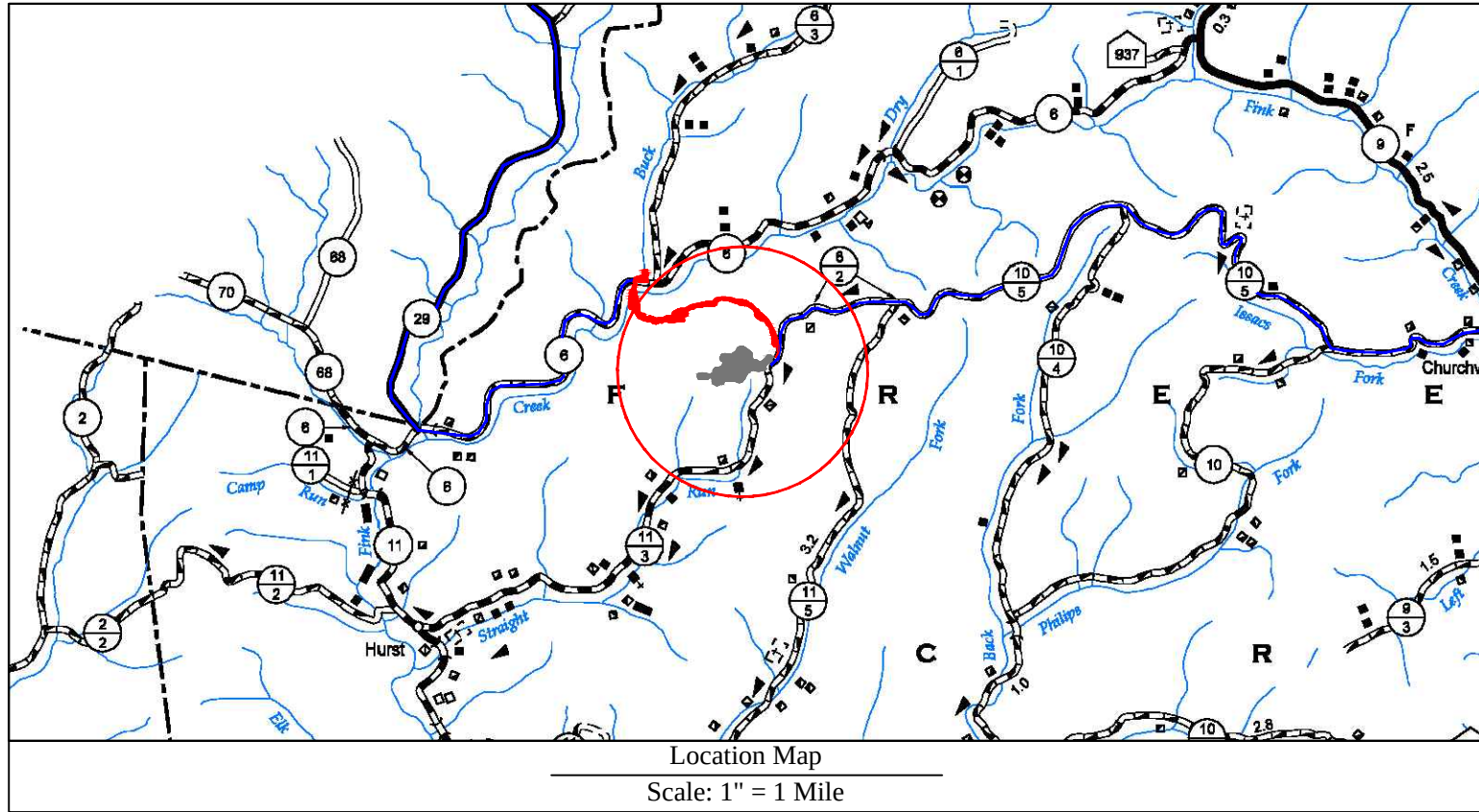
Exhibit A: As-Built Modification



03/14/2025

Approach Routes:

From I-79 North near Jane Lew, WV. Take Exit 99 and turn left at the end of the exit onto Co Rt 7, Hackers Creek Rd. Follow Co Rt 7 for 0.9 mi. Turn Left onto US Rt 19 South. Follow US Rt 19 South for 4.9 mi. Turn Right onto Co Rt 12, Jackson Mill Rd. Follow Co Rt 12 for 2.4 mi. Slight Left onto Co Rt 10, Old Mill Rd. Follow Co Rt 10 for 0.6 mi. Turn Left onto Co Rt 10, Old Mill Rd (at Jacksons Mill Fire Station). Follow Co Rt 10 for 500'. Turn Right onto Co Rt 10, Valley Chapel Rd. Follow Co Rt 10 for 4.4 mi. Turn Right onto Co Rt 10, Freemans Creek Rd. Follow Co Rt 10 for 3.8 mi. Turn Right onto Co Rt 9, Churchville Road. Follow Churchville road for 0.2 mi. Turn left onto Co Rt 10, Isaacs Fork Rd. Follow Co Rt 10 for 1.0 mi. Turn Right onto Co Rt 10, Isaacs Fork Rd. Follow Co Rt 10 for 3.6 mi. Continue Straight onto Co Rt 10, Straight Run Rd. Follow Co Rt 10 for 0.5 mi. Continue Straight onto Co Rt 10, Straight Run Rd. Follow Co Rt 10 for 0.5 mi. The site entrance will be on the Right, northwest, side of the road

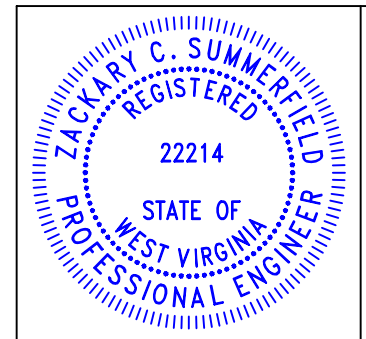


Well Location Restrictions

All Pad construction complies with the following restrictions.

- *250' from an existing well or developed spring used for human or domestic animals.
- *625' from an occupied dwelling or barn greater than 2,500 SF used for poultry or dairy measured from the center of the pad.
- *300' from the edge of disturbance to a naturally reproducing trout stream.
- *1,000' of a surface or ground water intake to a public water supply.

(Well Location Restrictions of WV Code 22-6A-12)



Design Certification

The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas, 25-CC-20.

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

Zackary C. Summerfield
RPE 22214
Kelly Surveying PLLC
CO# 034232-00

Date: 02-04-2025

Sheet	Description
1	Cover Sheet
V1	Schedule of Quantities
N1-N4	Site Notes
2-3	Pre-Construction Site Conditions
4-5	Site Soil Map
6	Clearing Exhibit
7-8	Overall Plan View
9-14	E&S Plan View
15	Toe Key Exhibit
16-23	Plan View
24-27	Cross Sections - Well Pad
28	Cross Sections - Well Pad Access Road
29	Cross Sections - Staging Area
30-32	Cross Sections - Access Road
G1-G2	Geotechnical Exhibit
L1	Landowner Disturbed Area Exhibit
S1	Site Reclamation
M1-M2	Production Exhibit
D1-D2	Erosion and Sediment Control Details
R1	Access Road Details
P1	Pad Details

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

HG Energy Contact Number: 304-420-1100

Property Owner Information - 1221 Well Site						
Freemans Creek District - Lewis County						
Owner	TM - Parcel	Well Pad	Access Road	Stockpiles	Add. Clearing	Total Disturbed
HG Energy II Appalachia, LLC	2D-3.1	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	13.97
Anthony & Dawn Van Wie	2D-29	4.56	1.59	0.67	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/Excess	Add. Clearing	Total Disturbed
Alice Keely et al	2D-48	1.09	0.23	0.24	1.19	2.75
James II & Sheila Gum	2D-3.4	0.00	5.32	1.37	7.47	14.16
James II & Sheila Gum	2C-7	0.00	3.31	0.47	3.81	7.59
Site Totals (Ac)	1.09	8.86	2.08	12.47	24.50	

Well Site Access Road			
Surface Owner	TM - Parcel	Road Length	Type
HG Energy II Appalachia, LLC	2D-3	111.47'	New Access Road Construction
Anthony & Dawn Van Wie	2D-29	644.05'	New Access Road Construction

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-3.4	3,108.37'	New Access Road Construction
James II & Sheila Gum	2C-7	2,555.68'	New Access Road Construction

Disturbed Area - Well Pad	
Well Pad Construction	9.50 Ac
AST Pad Construction	2.34 Ac
Access Road Construction	0.81 Ac
Spill/Excess Material	2.68 Ac
Additional Clearing	8.07 Ac
Total Disturbed Area	23.40 Ac
Additional Information	
Total Wooded Acres Disturbed	21.65 Ac
Total Linear Feet of Access Road	7,555.52'

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	127,216.91	75,685.35	51,531.56	-	N/A	15,000.00
AST Pad	142.57	26,303.50	-	26,160.93	N/A	3,800.00
Well Pad Access Road	39.80	7,064.90	-	7,025.10	13.45%	255.18
AST Pad Access Road	3.04	1,730.01	-	1,726.97	14.55%	169.46
Landowner Access Road	-	-	-	-	-	-
Excess Material Stockpiles	-	27,358.80	-	27,358.80	N/A	N/A
Totals	127,425.12	136,456.68	51,531.56	60,563.12	(Excess Spill Capacity)	
Total Spoil (CY) =	-	-	-9,031.56	-	-	-

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	2,320.28	819.95	1,500.33	-	N/A / N/A
Staging Area East Access	0.33	29.65	-	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	24,574.84	41,743.16	4,865.72	22,034.04	(Excess Stockpile Capacity)
Total Spoil (CY) =	-	-	-17,168.32	-	-

Ephemeral Stream Impact (Linear Feet) - Fink Creek Access Road					
Stream and Impact Cause	Culvert (LF)	Inter/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

Revision
As-Built

Date
02-04-2025

THIS DOCUMENT
PREPARED FOR
HG ENERGY LLC

P.O. Box 254
Dolley, WV 26039
304-338-6985

1221 Fink Creek Access
Freemans Creek District
Lewis County, WV

Cover Sheet

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

Schedule of Quantities

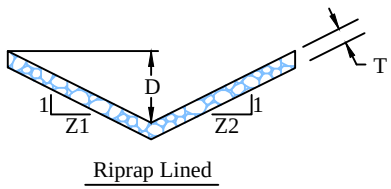
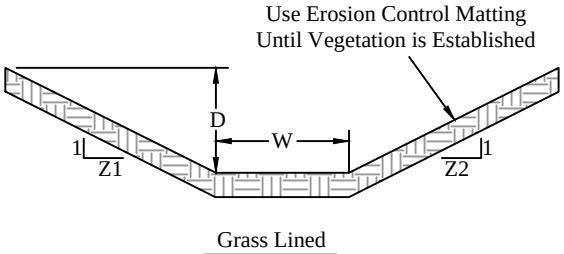
Fink Access Road Pipe Schedule					
Pipe Crossing	Station	Length (ft)	Diameter (ft)	Type	Slope (%)
1	3+62	35	1.5	HDPE	2
2	7+26	35	1.5	HDPE	2
3	9+36	35	1.5	HDPE	2
4	12+37	30	1.5	HDPE	2
5	15+63	35	1.5	HDPE	2
6	18+68	35	1.5	HDPE	2
7	24+93	38	1.5	HDPE	2
8	28+25	40	1.5	HDPE	2
9	34+05	45	1.5	HDPE	2
10	39+30	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. OBJECTIVES

VEGETATIVE COVER OF 70% OR GREATER WOULD GENERALLY MEET THIS REQUIREMENT. CONSIDERATIONS FOR THE IMPROVEMENT OF WATER QUALITY AND WILDLIFE HABITAT ARE INCORPORATED INTO THIS SECTION. WITH PRIOR AND DOCUMENTED APPROVAL, THESE STANDARDS MAY BE ADJUSTED AND MODIFIED TO MEET INDIVIDUAL SITE REQUIREMENTS.

1. WATER CONTROL

2. SEEDBED PREPARATION

THE SEEDBED MUST BE LOOSE AT THE TIME OF SEEDING. APPLICATIONS OF SEED ON HARD GROUND WILL RESULT IN A POOR STAND OF VEGETATION. THE SOIL SURFACE MUST BE LOOSENEED (MINIMUM OF 3 INCHES) BY DISKING ON THE CONTOUR, OR BY BULLDOZER TRACKING UP AND DOWN THE SLOPE. BACKBLADING IS ACCEPTABLE ON SLOPE SIZES SUCH AS THE BENCH OR ROAD BED. IF SEEDBEDS ARE PREPARED BY DISKING, 50% MORE SEED WILL BE ADDED TO THE RECOMMENDED RATES SHOWN IN TABLES 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813,

1. TEMPORARY SEEDING

WITH SEDIMENT CONTROLS MUST BE ESTABLISHED WHERE RUNOFF WILL GO DIRECTLY INTO A STREAM, IMMEDIATELY UPON CONSTRUCTION OF THE SITE (SITE INCLUDES ROADS AND LOCATION). VEGETATION MUST BE ESTABLISHED ON ROAD BANK AND LOCATION SLOPES. A PERMANENT VEGETATIVE COVER SHALL BE APPLIED TO ALL AREAS THAT WILL BE LEFT UNWORKED FOR A PERIOD OF MORE THAN 6 MONTHS.

PERMANENT PLANT SPECIES, AND PLANTING RATES. TABLE 3 GIVES RECOMMENDED TYPES OF TEMPORARY VEGETATION, RATES OF APPLICATION, AND OPTIMUM SEEDING DATES. IN SITUATIONS WHERE ANOTHER COVER IS DESIRED, CONTACT THE LOCAL SOIL CONSERVATION DISTRICT FOR SEEDING RECOMMENDATIONS.

APPLIED BY BROADCASTING, DRILLING, OR BY HYDROSEEDING ACCORDING TO THE RATES INDICATED IN TABLE 14-5. PERFORM ALL PLANTING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. NECESSARY SITE PREPARATION, ROUGHENING OF THE SOIL SURFACE, SHOULD BE PERFORMED JUST PRIOR TO SEEDING. SEEDBED PREPARATION MAY NOT BE REQUIRED ON NEWLY DISTURBED AREAS.

Species	N (lb/ac)	P2O5 (lb/ac)	K2O (lb/ac)	Example Rec. (per ac)
Cool Season Grass	40.00	80.00	80.00	400 lbs. 10-20-20
Cool Season Grass & Legume	30.00	60.00	60.00	300 lbs. 10-20-20
Temporary Cover	40.00	40.00	40.00	200 lbs. 19-19-19

Note: These rates should be increased by 50% if planted Apr 15 - Aug 1 and Oct 1 - Mar 1

A. GENERAL
PERMANENT VEGETATIVE COVER WILL BE ESTABLISHED WHERE NO FURTHER SOIL DISTURBANCE IS ANTICIPATED OR NEEDED. SOIL FERTILITY AND pH LEVEL SHOULD BE TESTED AND ADJUSTED ACCORDING TO THE SEED SPECIES PLANTED. PLANTING OF PERMANENT VEGETATIVE CROPS MUST BE PERFORMED ON ALL DISTURBED AREAS AFTER THE COMPLETION OF THE DRILLING PROCESS. ANY SITE THAT CONTAINS SIGNIFICANT AMOUNTS OF TOPSOIL SHALL HAVE THE TOPSOIL REMOVED AND STOCKPILED WHEN FEASIBLE. TOPSOIL SHOULD NOT BE ADDED TO SLOPES STEEPER THAN 2:1 UNLESS A GOOD BONDING TO THE SUB-LAYER CAN BE ACHIEVED. AFTER PROPER GRADING AND SEEDBED PREPARATION, THE VEGETATION WILL REESTABLISH GROUND COVER FOR THE CONTROL OF SURFACE WATER RUNOFF AND EROSION

ALL REQUIRED SEEDBED PREPARATION, LOOSENING OF SOIL BY DISKING OR DOZER TRACKING, SHOULD BE PERFORMED JUST PRIOR TO SEEDING. IF SEEDBED PREPARATION IS NOT FEASIBLE, 50% MORE SEED SHALL BE ADDED TO THE RECOMMENDED RATES SHOWN IN TABLES IV 3-4.

WHEN HYDROSEEDING, SEEDBED PREPARATIONS MAY NOT BE NECESSARY IF ADEQUATE SITE PREPARATION WAS PERFORMED. INCORPORATE THE APPROPRIATE AMOUNT OF LIME AND/OR FERTILIZER IN THE SLURRY MIX WHEN HYDROSEEDING. WHEN HYDROSEEDING, FIRST MIX THE LIME, FERTILIZER, AND HYDRO-MULCH IN THE RECOMMENDED AMOUNT OF WATER. MIX THE SEED AND INOCULANT TOGETHER WITHIN ONE HOUR PRIOR TO PLANTING, AND ADD THE SLURRY JUST BEFORE SEEDING. APPLY THE SLURRY UNIFORMLY OVER THE PREPARED SITE. ASSURE THAT AGITATION IS CONTINUOUS THROUGHOUT THE SEEDING OPERATION AND THAT THE MIX IS APPLIED WITHIN ONE HOUR OF INITIAL MIXING.

1. LIME SHALL BE APPLIED TO ALL PERMANENT SEEDINGS. THE pH OF THE SOIL IS TO BE DETERMINED AND LIME APPLIED ACCORDINGLY. ONCE THE pH IS KNOWN, SELECT THE AMOUNT OF LIME TO BE APPLIED FROM TABLE IV-5.
2. FERTILIZER SHALL BE APPLIED IN ALL PERMANENT SEEDINGS. APPLY THE EQUIVALENT OF 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.

PLANNERS SHOULD TAKE INTO CONSIDERATION THE SPECIES MAKEUP OF THE EXISTING PASTURE AND THE LANDOWNER'S FUTURE PASTURE MANAGEMENT PLANS WHEN RECOMMENDING SEED MIXTURES. SELECTION: FROM TABLES IV 4a AND b. PERMANENT SEEDING MIXTURES SHALL BE SUITABLE FOR ESTABLISHMENT IN WEST VIRGINIA.

1. ALL LEGUMES MUST BE PLANTED WITH THE PROPER INOCULANT 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 CROWNVEATCH ARE ALSO A VERY INVASIVE SPECIES NON-NATIVE TO WEST VIRGINIA.
4. FOR UNPREPARED SEEDBEDS OR SEEDING OUTSIDE THE OPTIMUM TIMEFRAMES, ADD 50% MORE SEED TO THE SPECIFIED RATE.

MIXTURES IN TABLE 4b ARE MORE WILDLIFE AND FARM-FRIENDLY; THOSE LISTED IN BOLD ARE SUITABLE FOR USE IN SHADED WOODLAND SETTINGS. MIXTURES IN ITALIC ARE SUITABLE FOR USE IN FILTER STRIPS.

CONSIDER THE USE OF 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.

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 POSSIBLE, BUT NOT ENCOURAGED DUE TO THE RISK SPREADING INVASIVE SPECIES. MULCH MUST BE APPLIED TO ALL TEMPORARY AND PERMANENT SEEDING ON ALL DISTURBED ARE DEPENDING ON SITE CONDITIONS, IN CRITICAL AREAS SUCH AS WATERWAYS, OR STEEP SLOPES, ADDITIONAL OR SUBSTITUTE SOIL PROTECTIVE MEASURES MAY BE USED IF DEEMED NECESSARY. EXAMPLES INCLUDE JUTE MESH AND SOIL STABILIZATION BLANKETS OR EROSION CONTROL MATTING.

AREAS THAT HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDING SHOULD BE MULCHED IMMEDIATELY FOLLOWING SEEDING. MULCHES CONSERVE DESIRABLE SOIL PROPERTIES, REDUCE SOIL MOISTURE LOSS, PREVENT CRUSTING AND SEALING OF THE SOIL SURFACE AND PROVIDE A SUITABLE MICROCLIMATE FOR SEED GERMINATION.

AREAS THAT CANNOT BE SEEDED BECAUSE OF THE SEASON SHOULD BE MULCHED TO PROVIDE SOME PROTECTION TO THE SOIL SURFACE. AN ORGANIC MULCH, STRAW OR HAY, SHOULD BE USED AND THE AREA THEN SEEDED AS SOON AS WEATHER OR SEASONAL CONDITIONS PERMIT. DO NOT USE FIBER MULCH (CELLULOSE-HYDROSEED) ALONE FOR THIS PRACTICE; AT NORMAL APPLICATION RATES IT WILL NOT GIVE THE SOIL PROTECTION OF OTHER TYPES OF MULCH.

WOOD CELLULOSE FIBER MULCH, IS USED IN HYDROSEEDING APPLICATIONS AND APPLIED AS PART OF THE SLURRY. IT CREATES BEST SEED-SOIL CONTACT WHEN APPLIED OVER TOP OF (AS A SEPARATE OPERATION) NEWLY SEEDED AREAS. FIBER MULCH DOES NOT ALONG PROVIDE SUFFICIENT PROTECTION ON HIGHLY ERODIBLE SOILS, OR DURING LESS THAN FAVORABLE GROWING CONDITIONS. FIBER MULCH SHOULD NOT BE USED ALONE DURING THE DRY SUMMER MONTHS OR WHEN USED FOR LATE FALL MULCH COVER. USE STRAW MULCH DURING THESE PERIODS, AND FIBER MULCH MAY BE USED TO TACK (ANCHOR) THE STRAW MULCH. FIBER MULCH IS WELL SUITED FOR STEEP SLOPES, CRITICAL AREAS, AND AREAS SUSCEPTIBLE TO WIND.

A WIDE RANGE OF SYNTHETIC, SPRAY-ON MATERIALS IS MARKETED TO STABILIZE AND PROTECT THE SOIL SURFACE. THESE ARE MIXED WITH WATER AND SPRAYED OVER THE MULCH AND THE SOIL. THEY MAY BE USED ALONE IN SOME CASES AS TEMPORARY STABILIZERS, OR IN CONJUNCTION WITH FIBER MULCH, STRAW OR HAY.

FROM TABLE IV-6 SELECT THE TYPE OF MULCH AND THE RATE OF APPLICATION THAT WILL BEST SUIT THE CONDITIONS AT THE SITE

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.

APPLY MULCH AND PULL ANCHORING TOOL OVER THE MULCH. WHEN A DISK IS USED, SET THE DISK STRAIGHT AND PULL ACROSS THE SLOPE. MULCH MATERIAL SHOULD BE TUCKED INTO THE SOIL ABOUT THREE INCHES.

FOLLOW MANUFACTURER'S RECOMMENDATIONS WHEN POSITIONING AND STAPLING THE MULCH NETTING IN THE SOIL.

pH of Soil	Lime in Tons per Acre	Fertilzier, Lbs Per Acre 10-20-20 or Equivalent
Above 6.0	2.00	500.00
5.0 to 6.0	3.00	500.00
Below 5.0	4.00	500.00

Material	Minimum Rates per Acre	Coverage	Remarks
Hay or Straw	2 to 3 Tons	Cover 75% to	Subject to Wind blowing
	100 to 150 Bales	90% of Surface	or washing unless tied down
Wood Fiber		Cover all	For Hydroseeding
Pulp Fiber	1,000 to 1,500 lbs	Disturbed Areas	03/14/2025
Wood-Cellulose			
Recirculated Paper			

Exhibit A: As-Built Modification

Species/Mixture	Seeding Rate (lbs/ac)	Soil Drainage Preference	pH Range
Crownvetch/	10 - 15	Well - Mod. Well	5.0 - 7.5
Tall Fescue	30		
Crownvetch/	10 - 15	Well - Mod. Well	5.0 - 7.5
Perennial Ryegrass	20		
Flatpea or Perennial Pea/	20	Well - Mod. Well	4.0 - 8.0
Tall Fescue	15		
Ladino Clover/	30	Well - Mod. Well	4.5 - 7.5
Serecia Lespedeza/	25		
Tall Fescue	2		
Tall Fescue/	40	Well - Mod. Well	5.0 - 7.5
Ladino Clover/	3		
Redtop	3		
Crownvetch/	10	Well - Mod. Well	5.0 - 7.5
Tall Fescue/	20		
Redtop	3		
Tall Fescue/	40	Well - Mod. Well	5.0 - 7.5
Birdsfoot Trefoil/	10		
Redtop	3		
Sericea Lespedeza/	25	Well - Mod. Well	4.5 - 7.5
Tall Fescue/	30		
Redtop	3		
Redtop/	30	Well - Mod. Well	5.0 - 7.5
Tall Fescue/	3		
Creeping Red	50		
Tall Fescue	50	Well - Poorly	4.5 - 7.5
Perennial Ryegrass/	10	Well - Poorly	5.0 - 8.0
Tall Fescue/	15		
Lathco Flatpea*	20		

Species/Mixture	Seeding Rate (lbs/ac)	Soil Drainage Preference	pH Range
KY Bluegrass/	20.00	Well - Mod. Well	5.5 - 7.5
Redtop/	3.00		
Ladino Clover or Birdsfoot Trefoil	2/10		
Timothy/	5	Well - Mod. Well	6.5 - 8.0
Alfalfa	12		
Timothy/	5	Well - Poorly	5.5 - 7.5
Birdsfoot Trefoil	8		
Orchardgrass/	10	<i>Well - Mod. Well</i>	5.5 - 7.5
Ladino Clover/	2		
Redtop	3		
Orchardgrass/	10	<i>Well - Mod. Well</i>	5.5 - 7.5
Ladino Clover	2		
Orchardgrass/	20	<i>Well - Mod. Well</i>	5.5 - 7.5
Perennial Ryegrass	10		
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	Well - Mod. Well	5.5 - 7.5
Redtop/	5		
Orchardgrass	20		
Lathco Flat Pea/	30	Well - Mod. Well	5.5 - 7.5
Perennial Ryegrass	20		
Lathco Flat Pea/	30	Well - Mod	5.5 - 7.5
Orchardgrass	20		

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

*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 timeframes, add 50% more seed to the specified rate



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

1221 Well Site

Freemans Creek District
Lewis County, WV

Date: 02/04/2025

Scale: As Shown

Designed By: ZS
File No.

Sheet N4 of N4

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification



Revision
Design

Date
02-04-2025

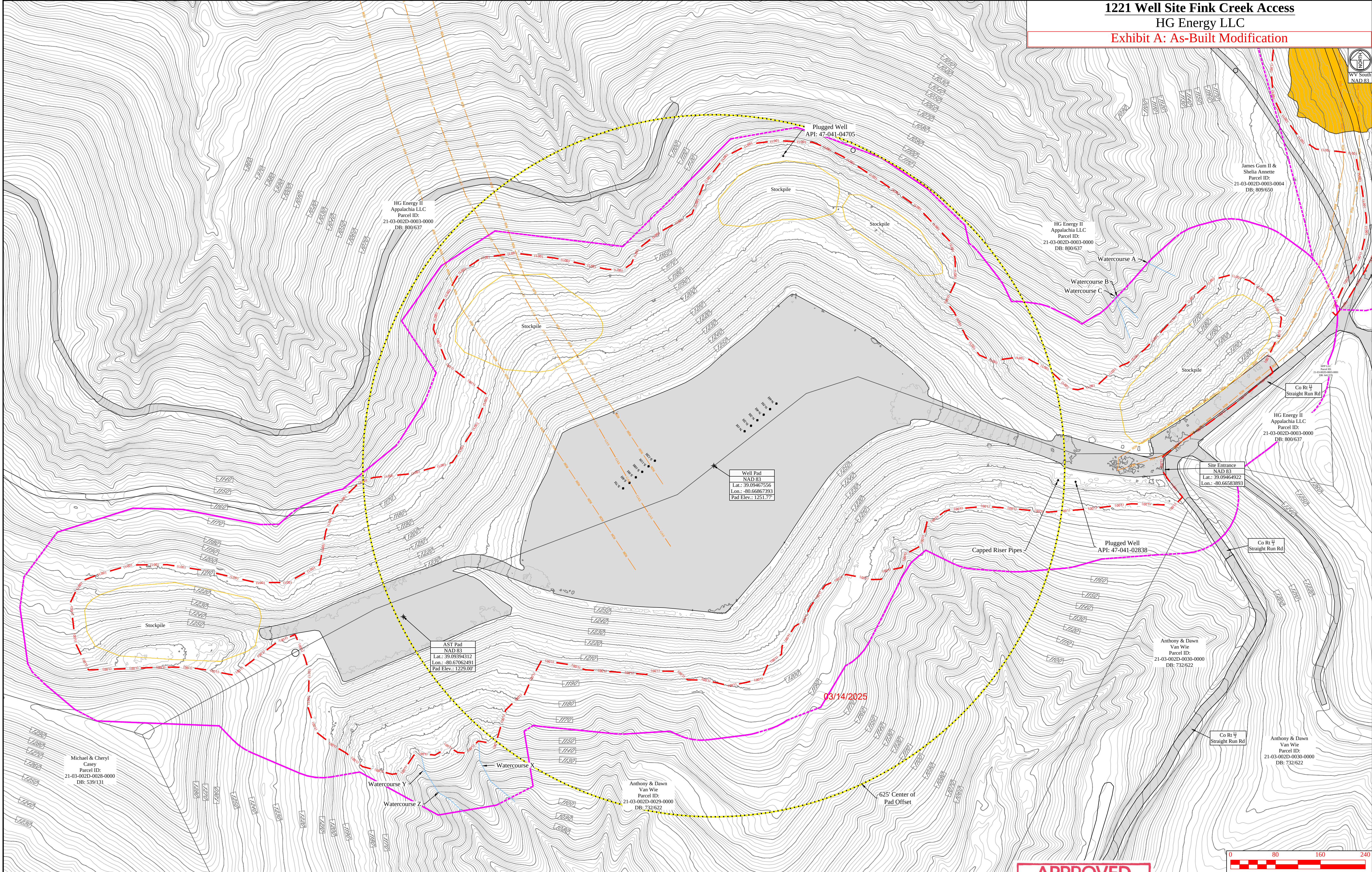


THIS DOCUMENT
PREPARED FOR
HG ENERGY LLC



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

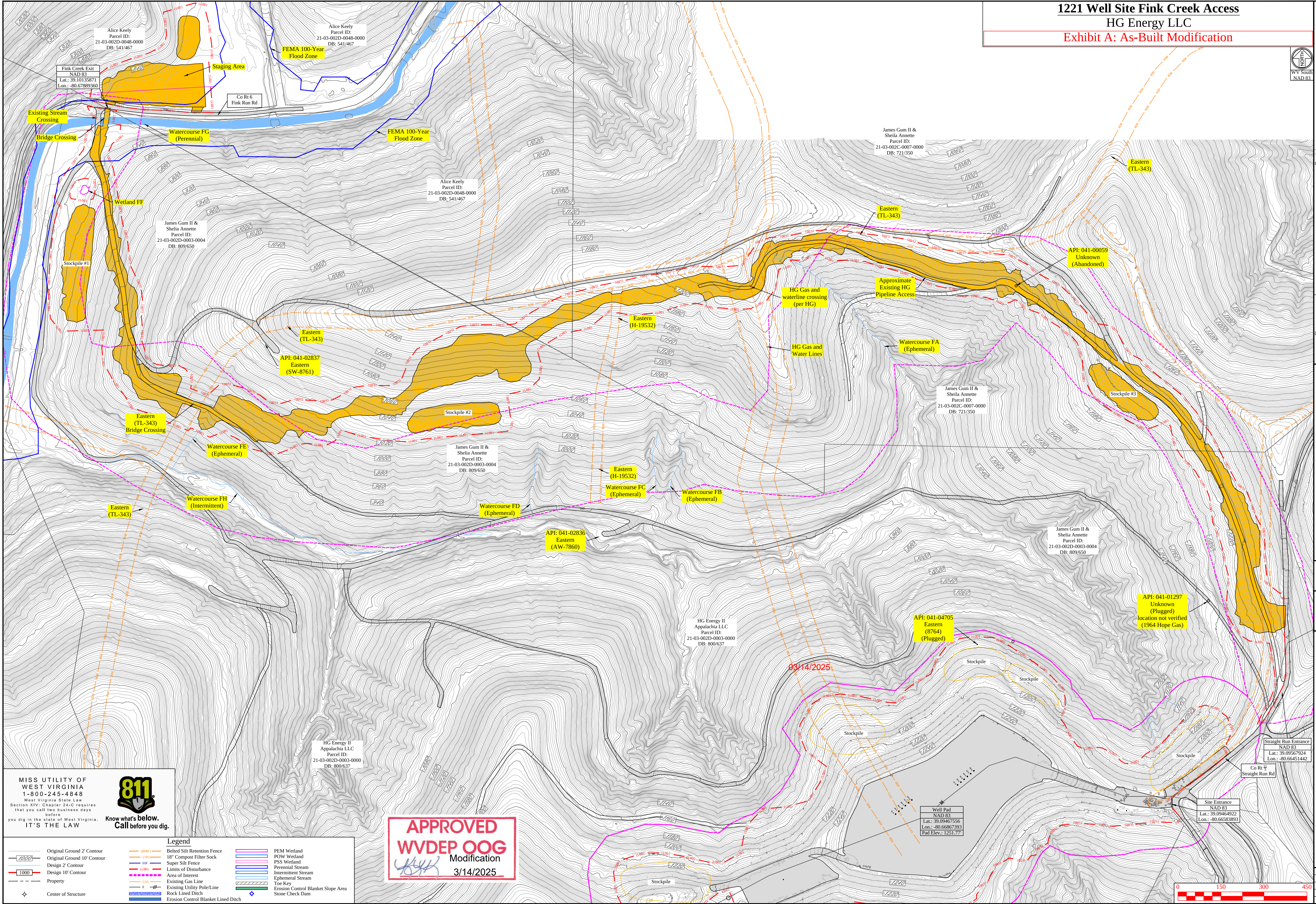


Legend			
	Original Ground 2' Contour		Belted Silt Retention Fence
	Original Ground 10' Contour		18' Composite Filter Sock
	Design 2' Contour		Super Silt Fence
	Design 10' Contour		Limits of Disturbance
	Property		Area of Interest
	Center of Structure		Existing Gas Line
			Existing Utility Pole/Line
			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

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



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

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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 Chargin 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

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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
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Sheet 4 of 32



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



Revision
Design

Date
02-04-2025



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Site Soil Map - Bypass Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
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File No.
Sheet 5 of 32

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3/14/2025

Legend

- Center of Structure
- Proposed Site
- Property Line
- Limits of Disturbance
- Area of Interest
- PEM Wetland
- POW Wetland
- PSS Wetland
- Perennial Stream
- Intermittent Stream
- Ephemeral Stream

Soil Key

- Cu Chargin 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 Sensabough 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

Well Pad
NAD 83
Lat.: 39.09467556
Lon.: -80.66867393
Pad Elev.: 1251.77'

Site Entrance
NAD 83
Lat.: 39.09464922
Lon.: -80.66863893

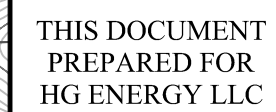
Straight Run Entrance
NAD 83
Lat.: 39.09567924
Lon.: -80.66451442



Exhibit A: As-Built Modification

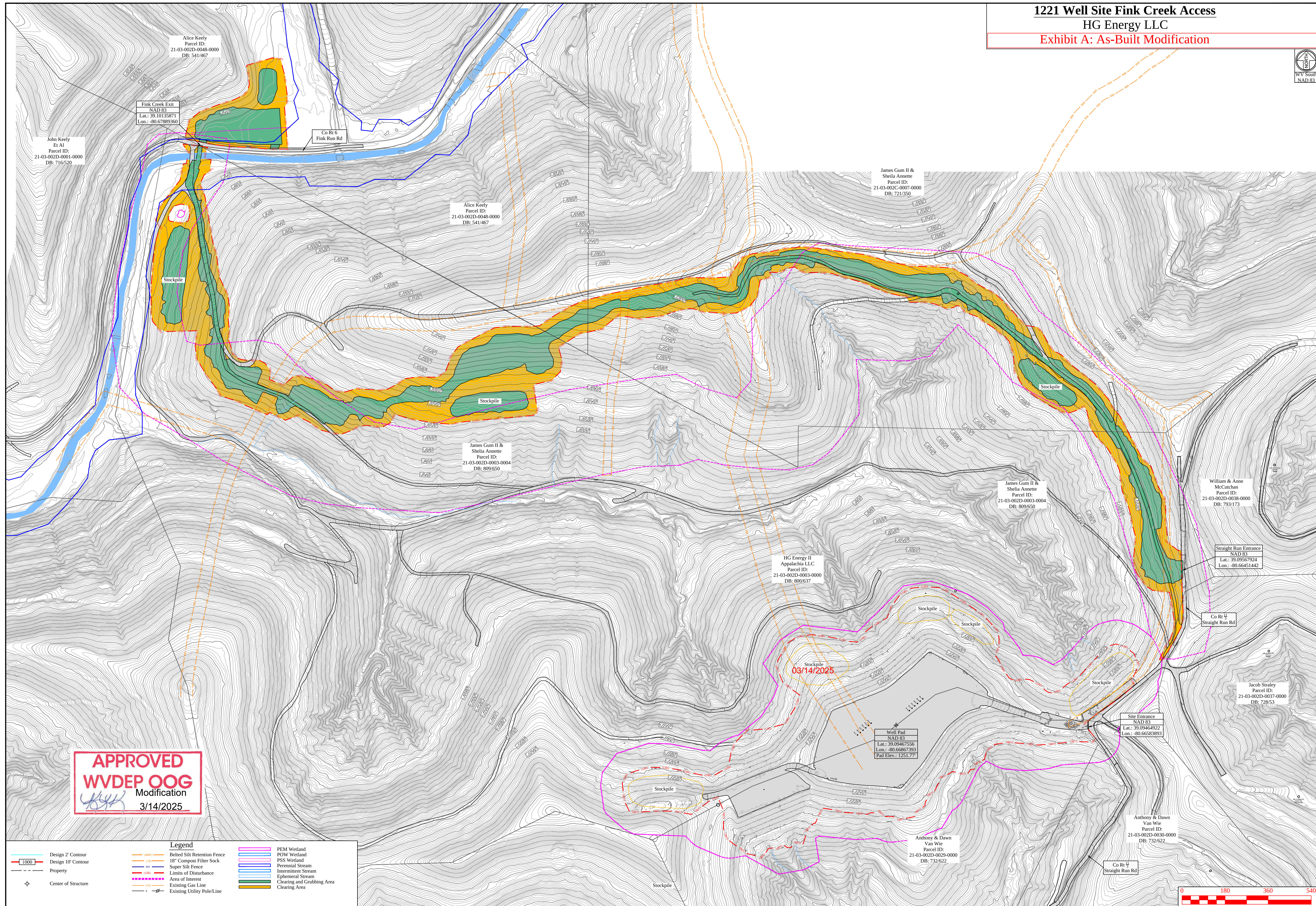


Date 02-04-2025



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

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 6 of 32



HG Energy LLC

WV South

SHP LLA
Parcel ID:
21-03-007D-00

Anthony & Dawn
Van Wie
Parcel ID:
21-03-002D-0030-0000
DB: 732/622

Anthony & Dawn
Van Wie
Parcel ID:
21-03-002D-0029-0000
DB: 732/622

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3/14/2025

03/14/2025

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

Overall Site Plan

1221 Well Site

Seemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 7 of 32

Exhibit A: As-Built Modification



02-04-2025

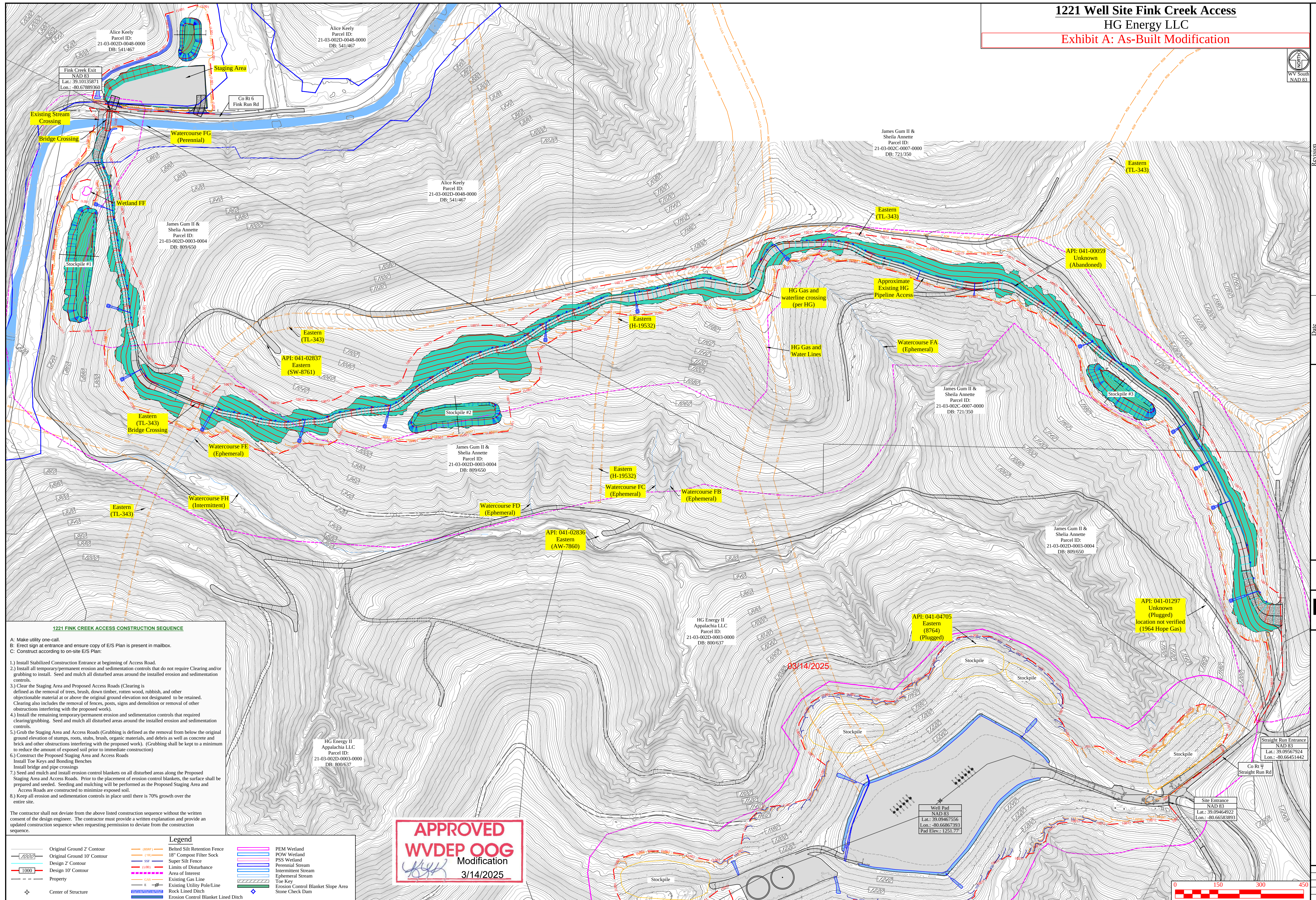
Kelly Surveying
P.O. Box 254
Dallies, WV 26219

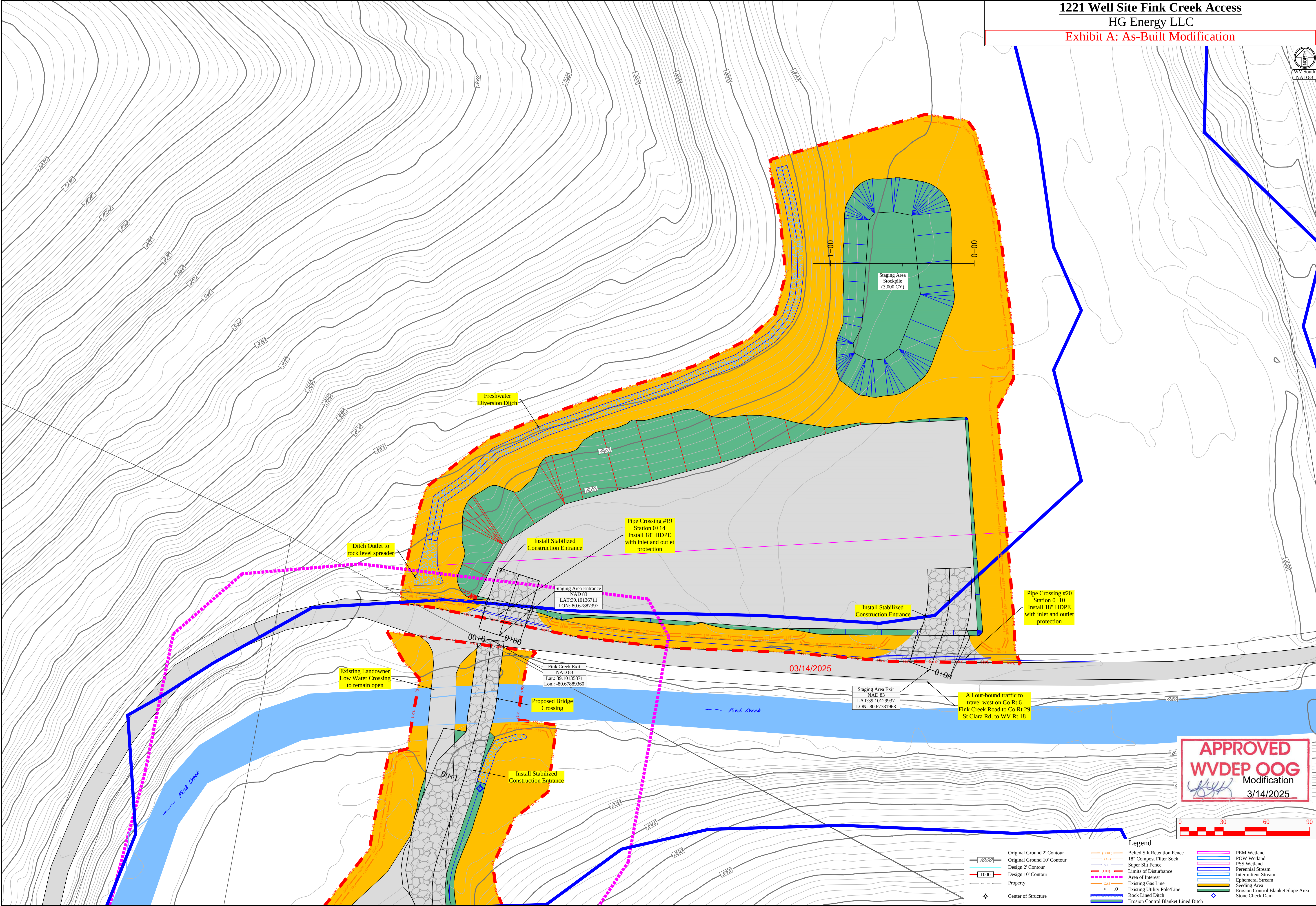
Overall Plan View - Bypass Access Road

1221 Well Site

Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 8 of 32





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



Revision	Date
Design	02-04-2025



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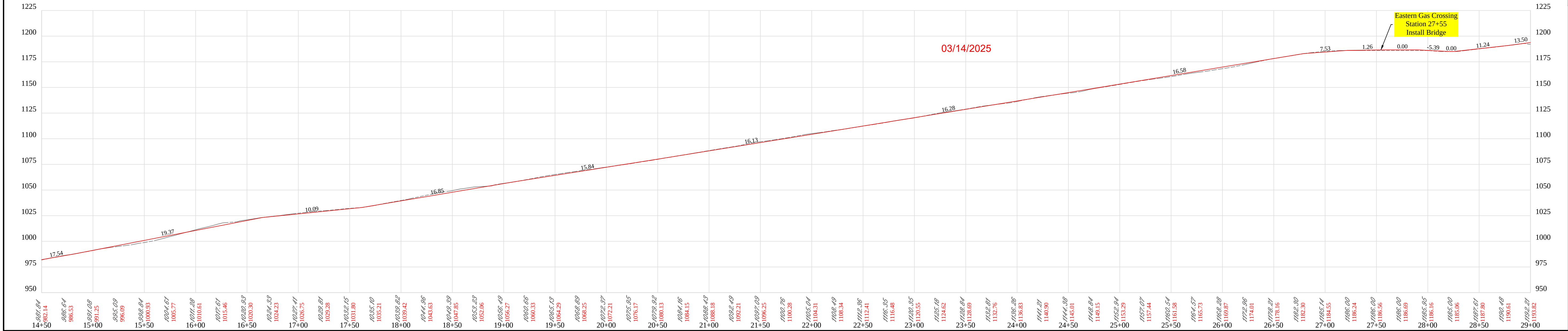
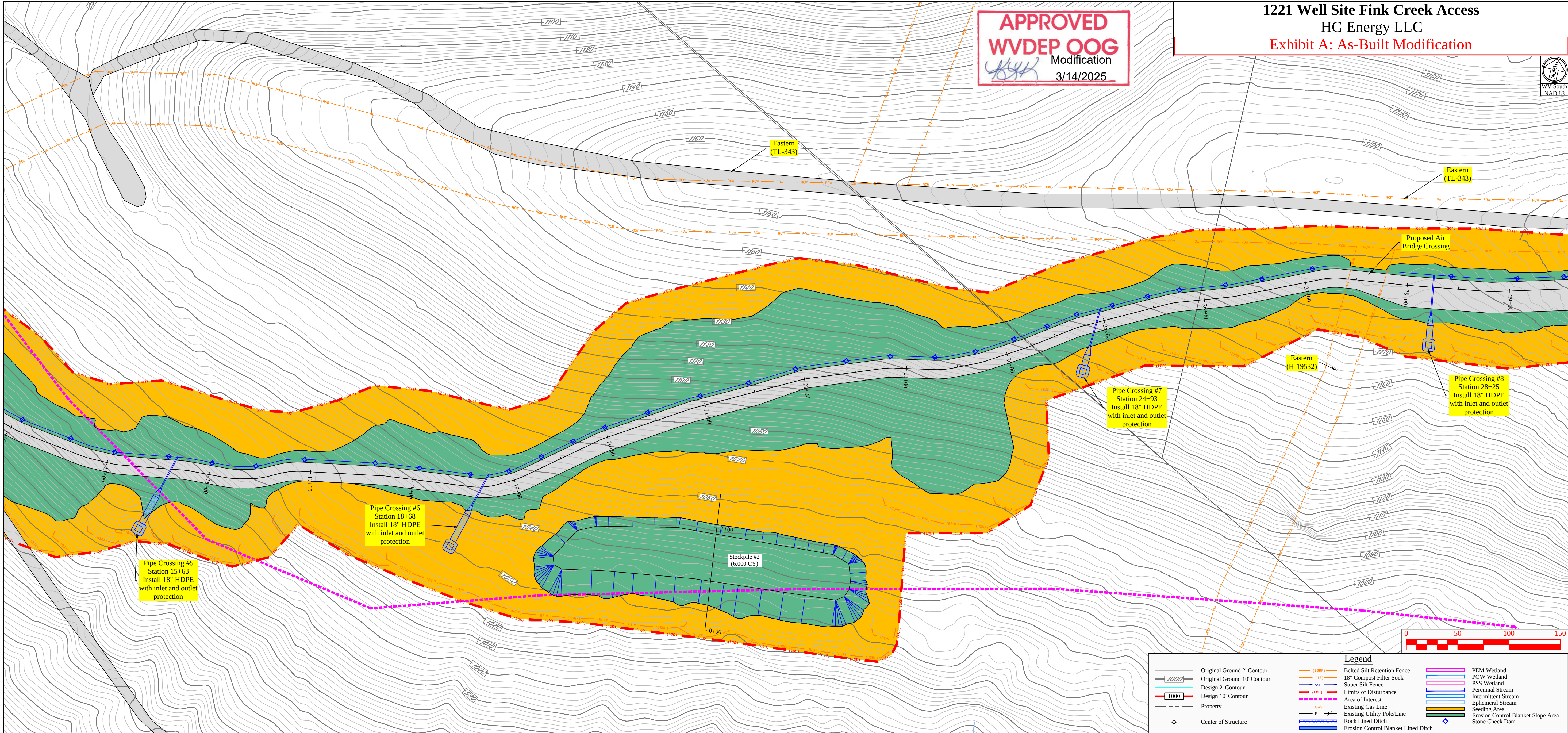
Erosion and Sediment Control Plan
1221 Fink Creek Access
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 9 of 32

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WVDEP OOG
Modification
3/14/2025



Legend			
	Original Ground 2' Contour		Belted Silt Retention Fence
	Original Ground 10' Contour		18" Compost Filter Sock
	Design 2' Contour		Super Silt Fence
	Design 10' Contour		Limits of Disturbance
	Property		Area of Interest
	Center of Structure		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



Revision	Design
Date	02-04-2025

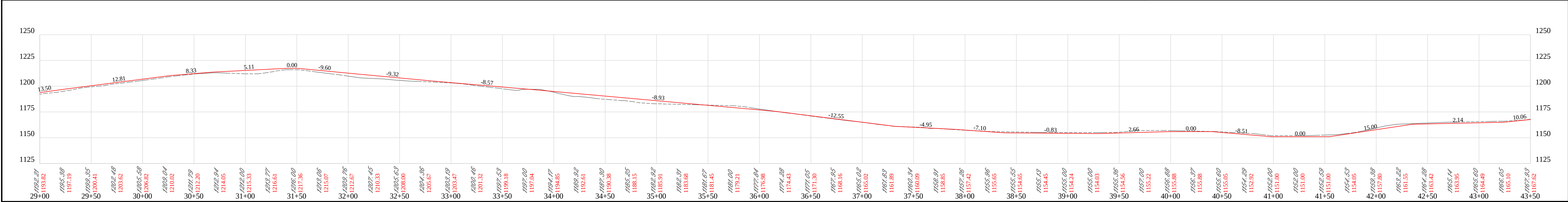
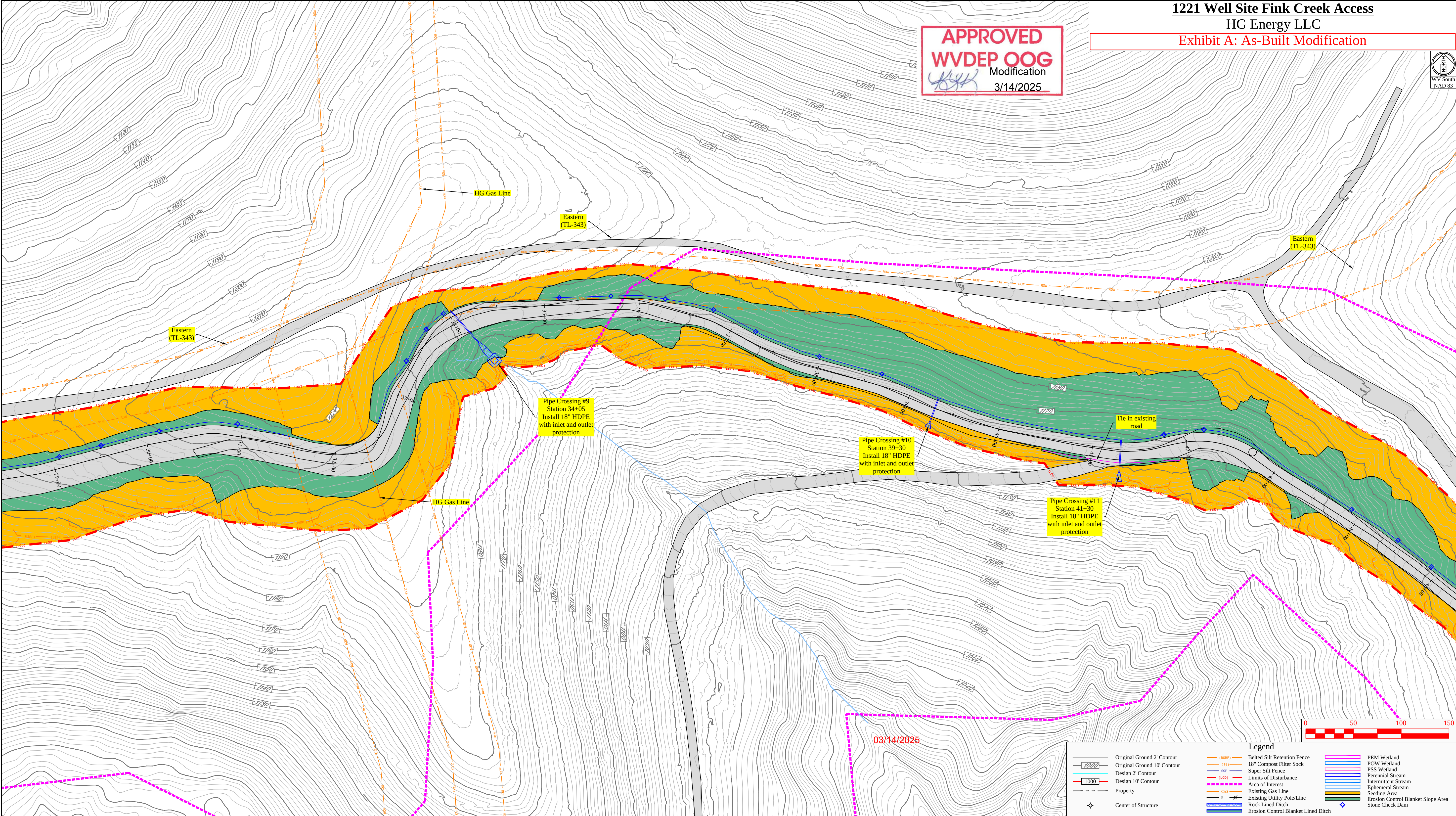
HG ENERGY LLC

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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
Scale: As Shown
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File No.
Sheet 11 of 32



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

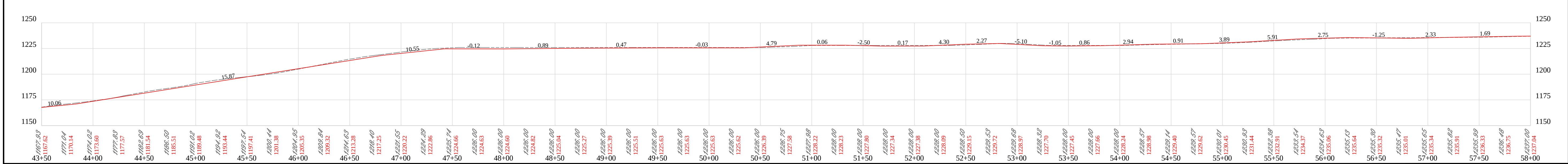
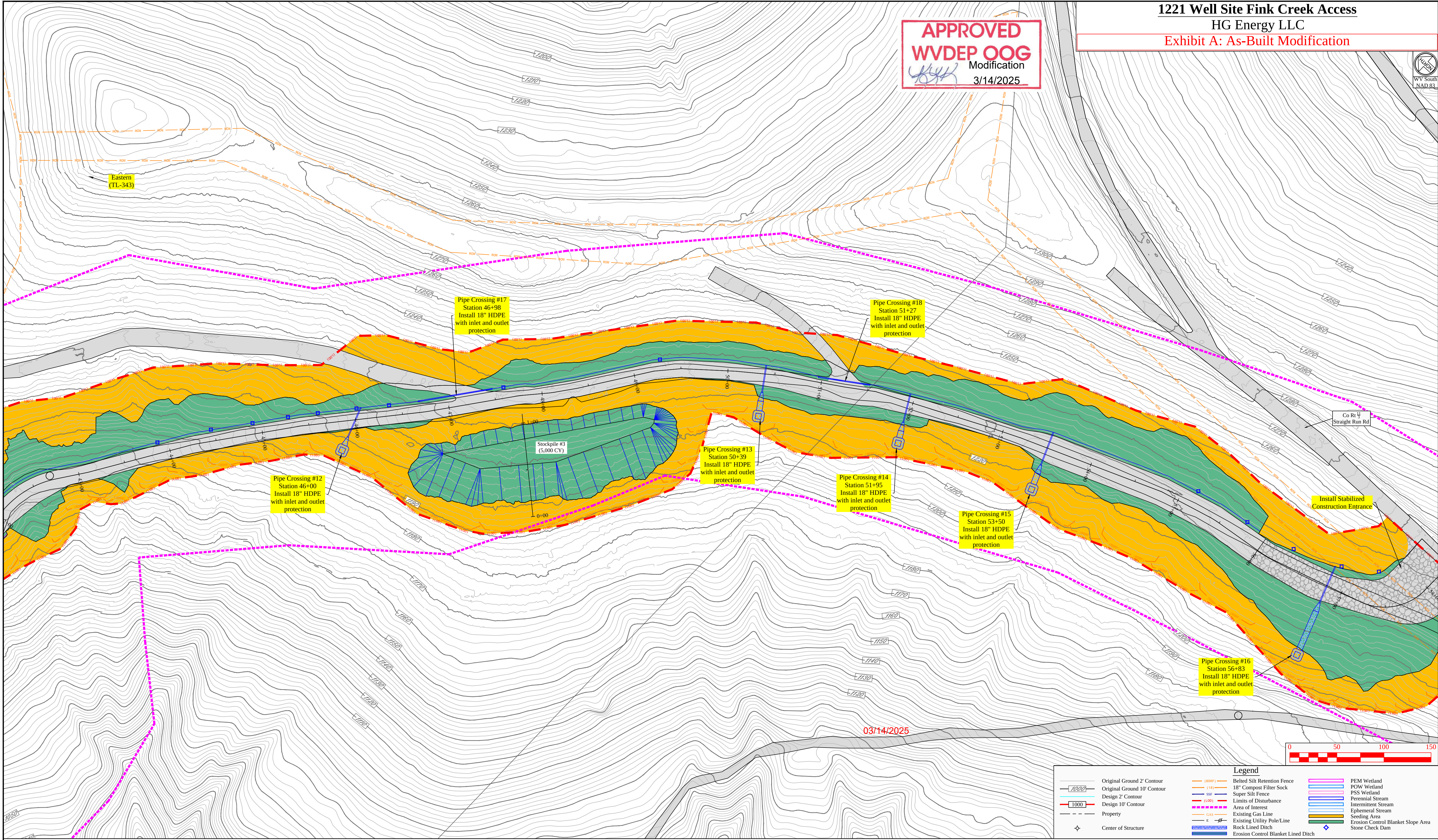


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Kelly S
Surveying
P.O. Box 254
Dunbar, WV 26029
304-338-0965

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

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 12 of 32



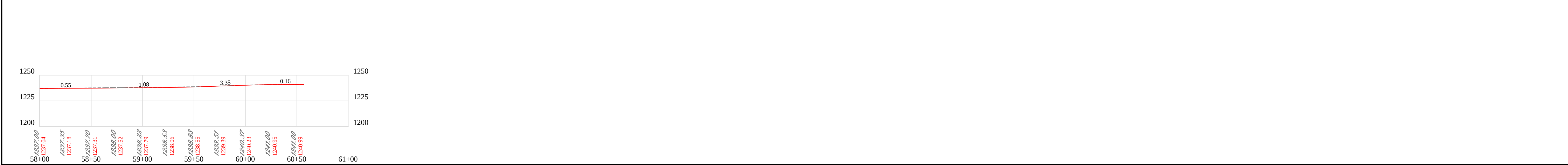
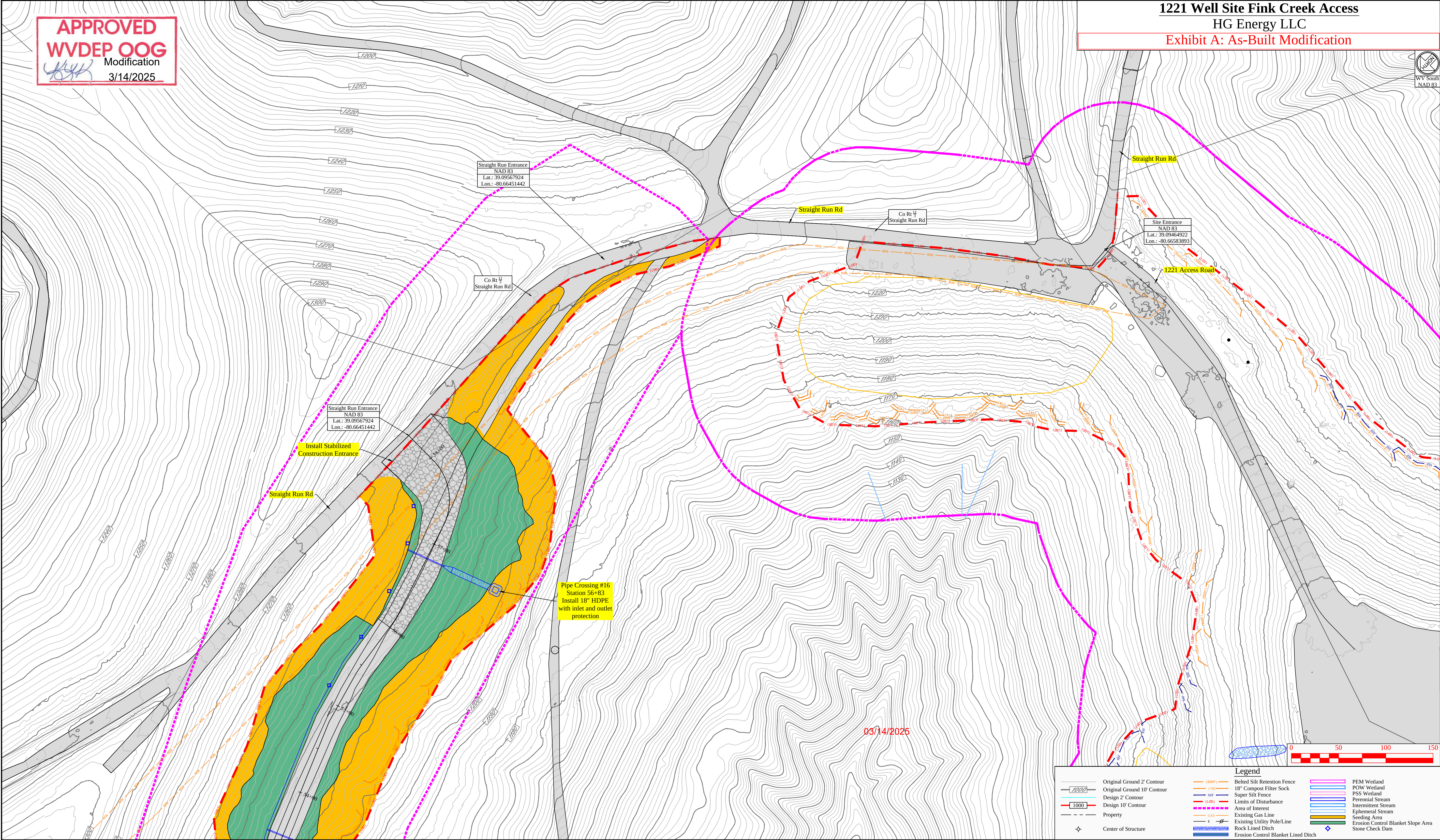
Revision	Design
Date	02-04-2025

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Kelly S Surveying
P.O. Box 254
Dolley, WV 26239
304-338-0965

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

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 13 of 32



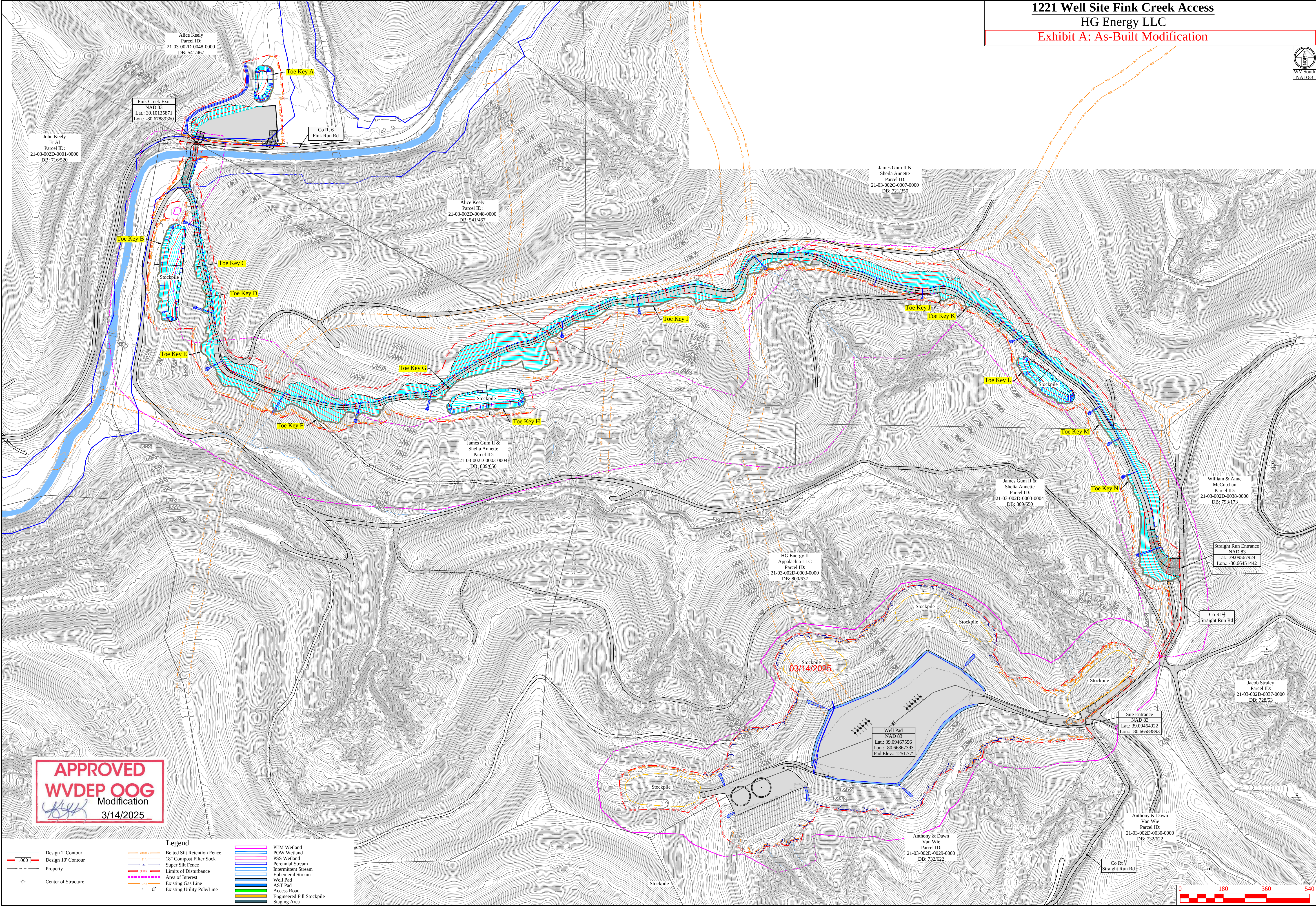
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1221 Well Site Fink Creek Access
HG Energy LLC
Exhibit A: As-Built Modification



Revision	Design
Date	02-04-2025
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Kelly Surveying P.O. Box 254 Dallman, WV 26239 304-338-0965	
Erosion and Sediment Control Plan 1221 Fink Creek Access Freemans Creek District Lewis County, WV	
Date: 02/04/2025 Scale: As Shown Designed By: ZS File No. Sheet 14 of 32	

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



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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 | | | |

Revision
Design

Date
02-04-2025



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

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 15 of 32

HG Energy LLC



WV South
NAD 83

Anthony & Dawn
Van Wie
Parcel ID:
21-03-002D-0029-0000
DB: 732/622

Watercourse X

Design

02-04-2025



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

Site Plan

1221 Well Site

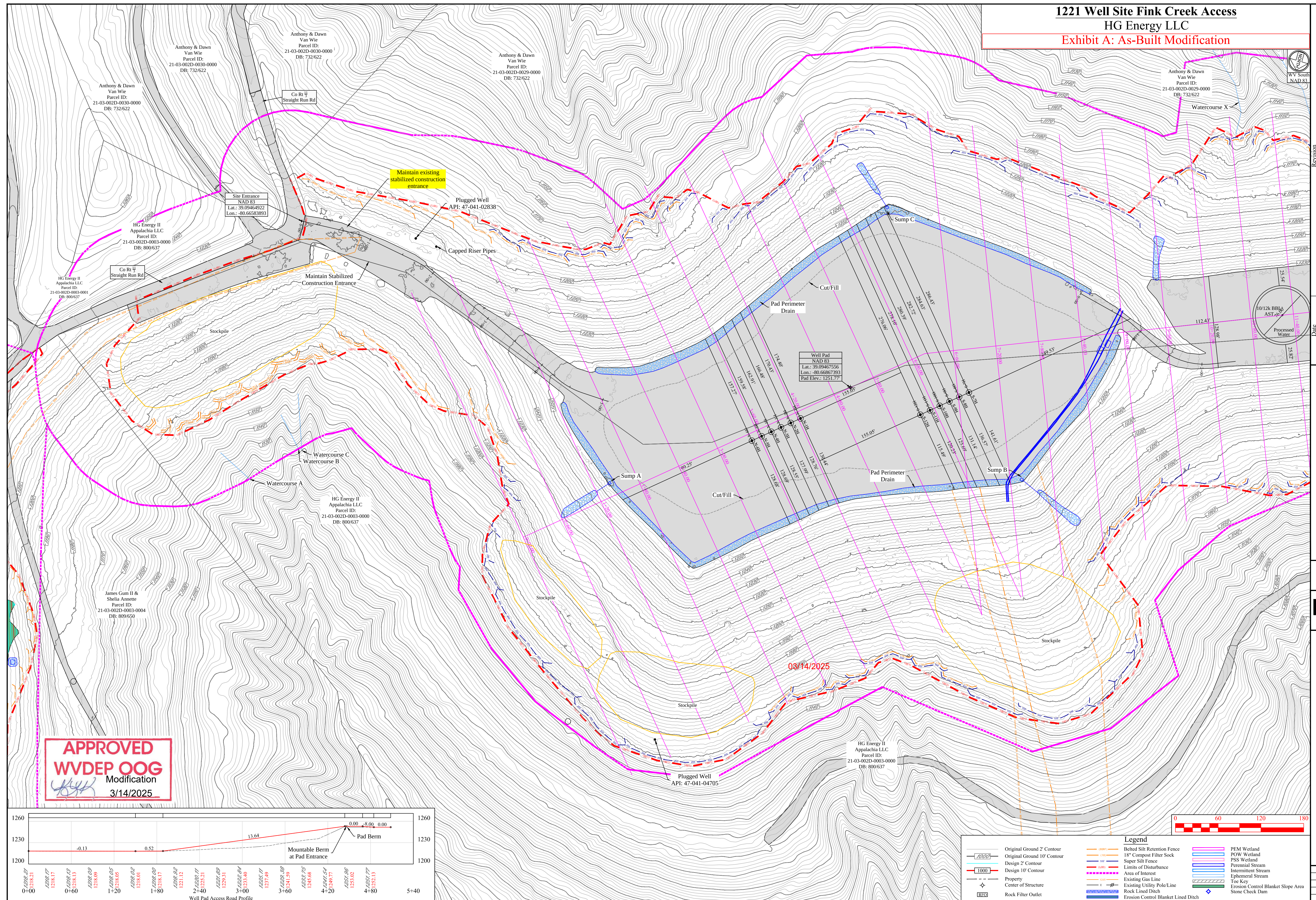
Freemans Creek District
Lewis County, WV

Date: 02/04/2025

Scale: As Shown

Designed By: ZS
File No.

Sheet 16 of 32



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



Revision
Design

Date
02-04-2025

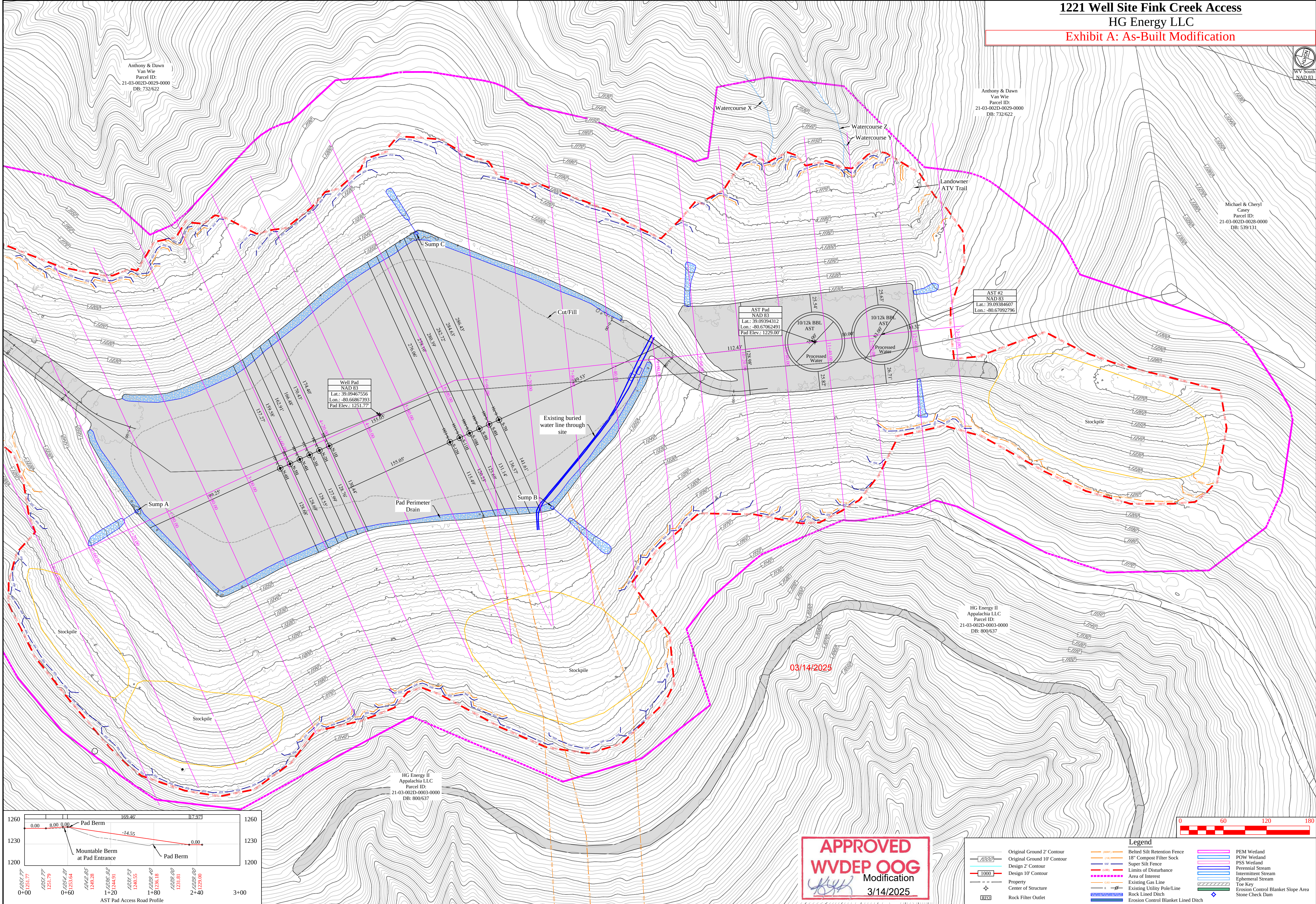


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Site Plan
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 17 of 32



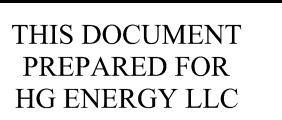
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WVDEP OOG
Modification
3/14/2025

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

Exhibit A: As-Built Modification



02-04-2025

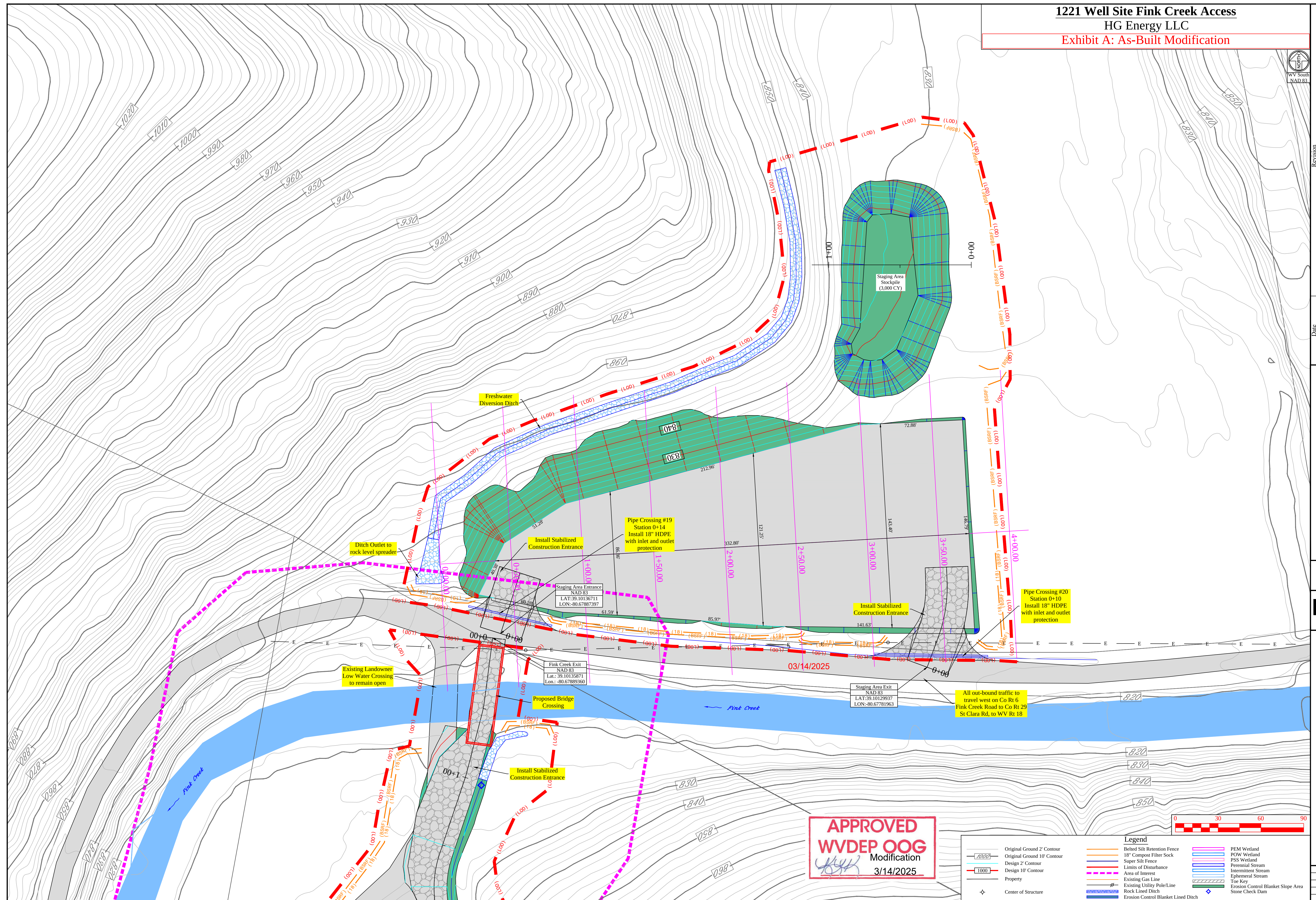


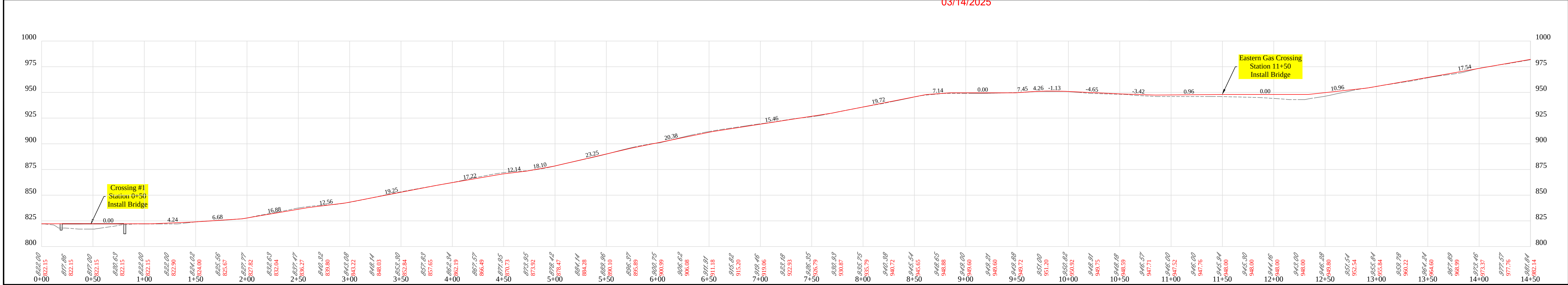
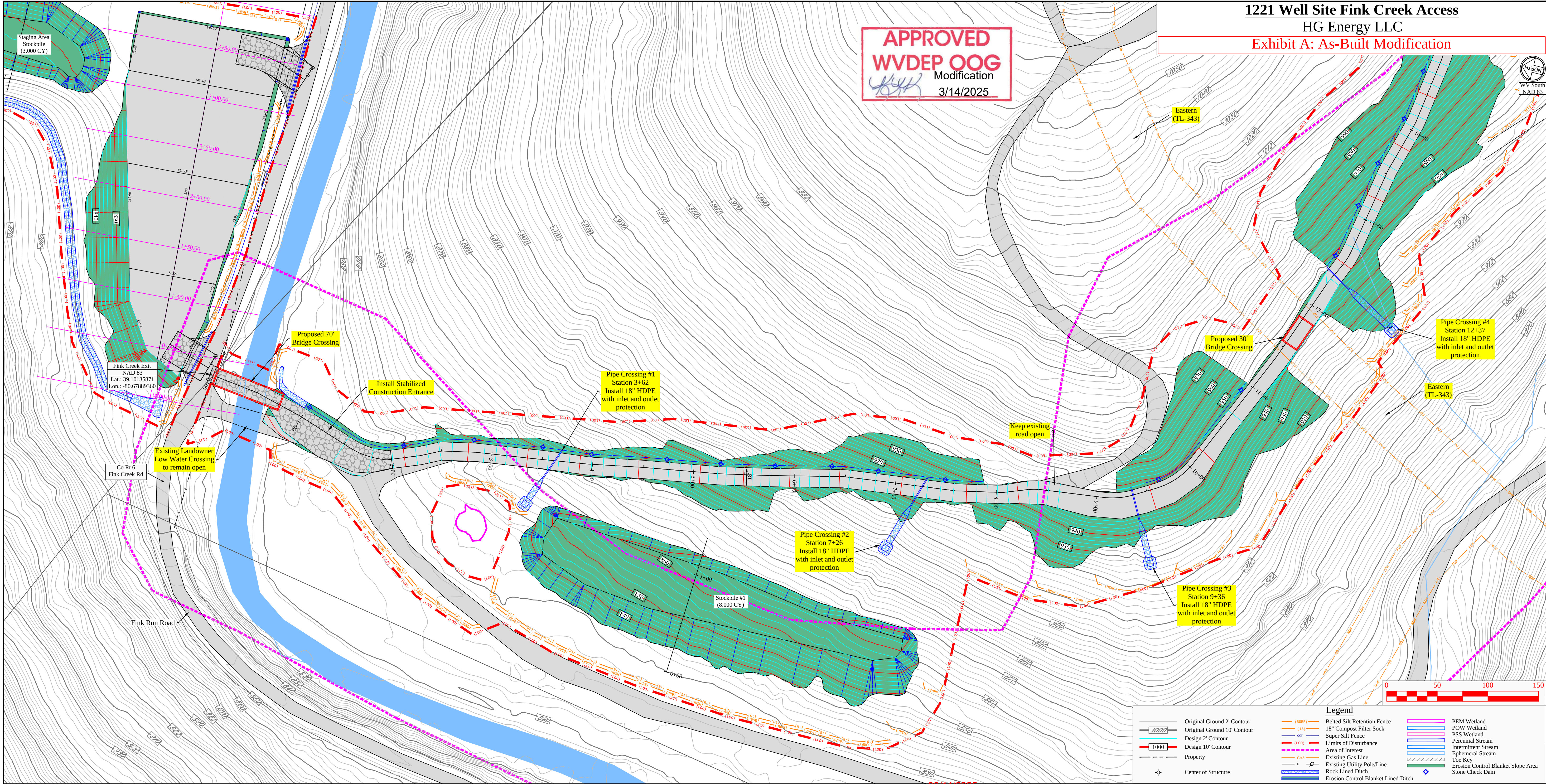
Site Plan - Fink Creek Existing Access

1221 Fink Creek Access

Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
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Sheet 18 of 32





Revision
Design

Date
02-04-2025

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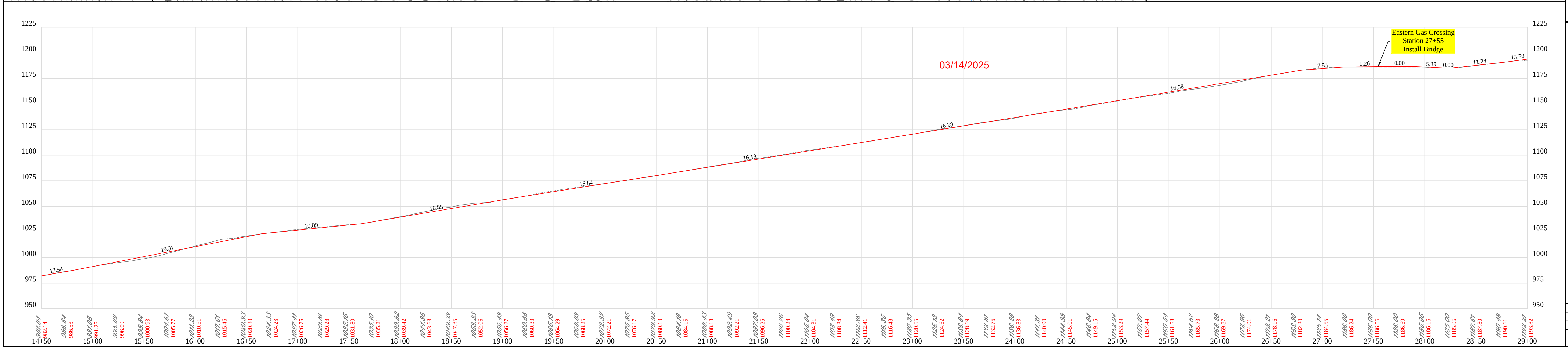
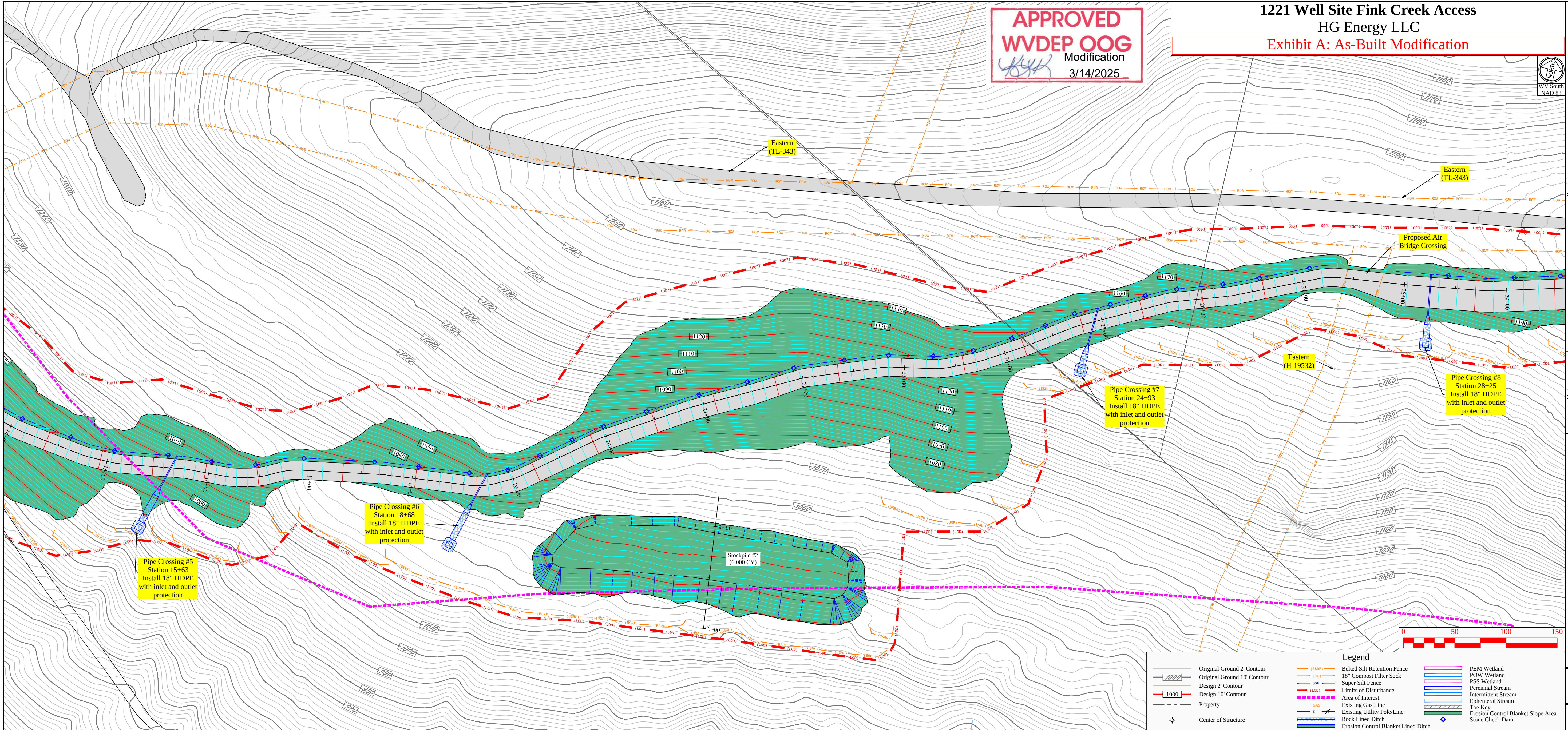
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Kelly S Surveying
1500 254
Belters, WV 26039
304-338-0965

Site Plan - Fink Creek Access Road

1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
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File No.
Sheet 19 of 32



Revision	Date	Design
	02-04-2025	

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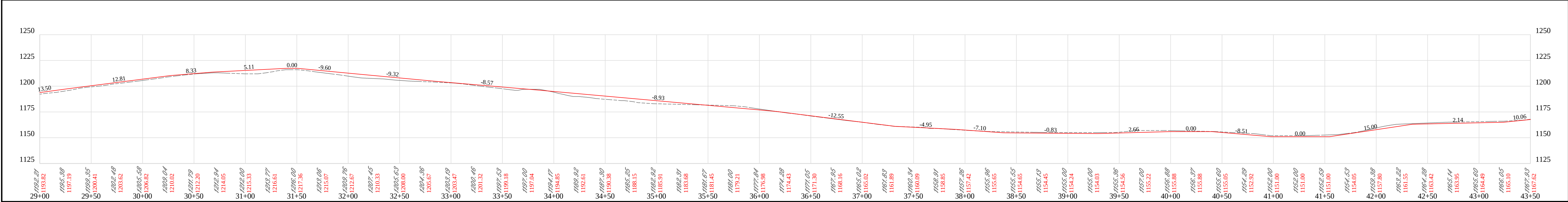
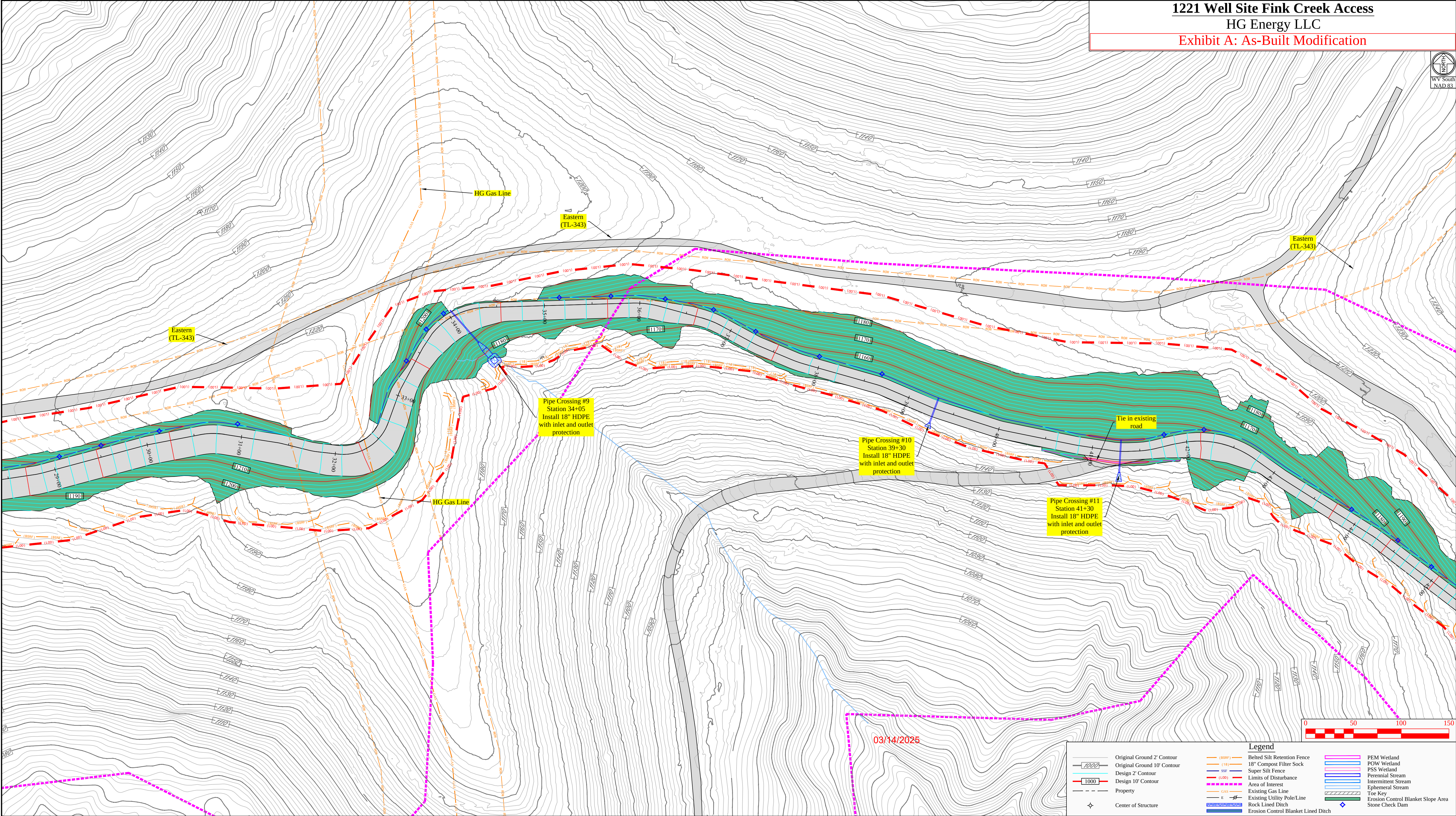
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Kelly S Surveying
P.O. Box 254
Delmar, WV 26299
304-338-0985

Site Plan - Fink Creek Access Road

1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 20 of 32



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



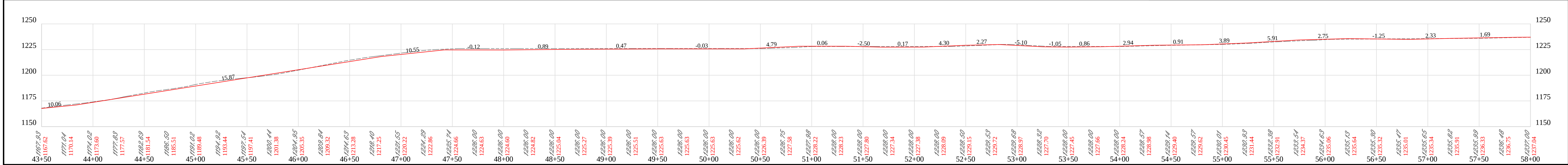
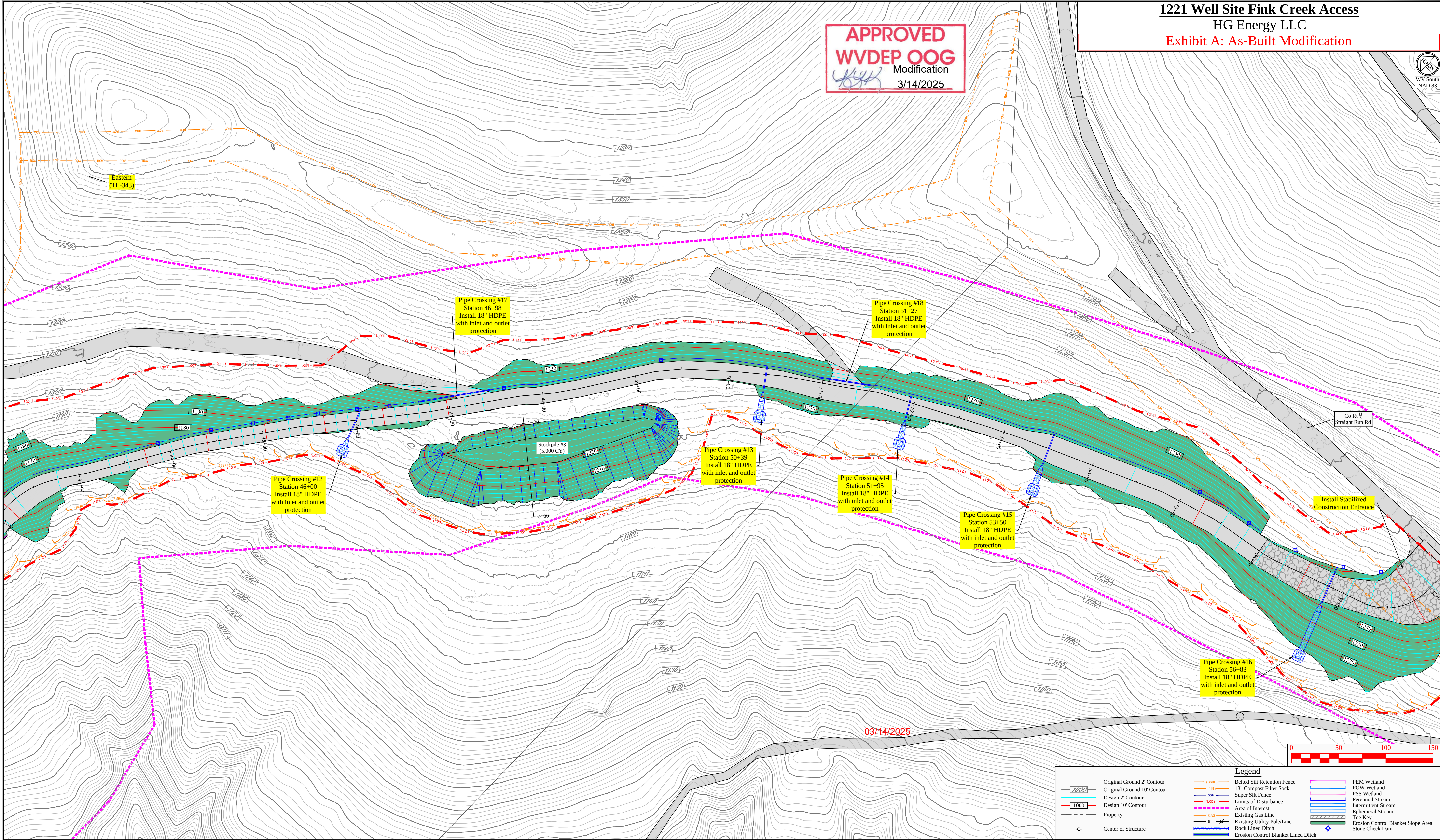
Revision	Date	Design
02-04-2025		



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Site Plan - Fink Creek Access Road	1221 Well Site	Freemans Creek District
		Lewis County, WV
		Date: 02/04/2025
		Scale: As Shown
	Designed By: ZS	
	File No.	
	Sheet 21 of 32	



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		



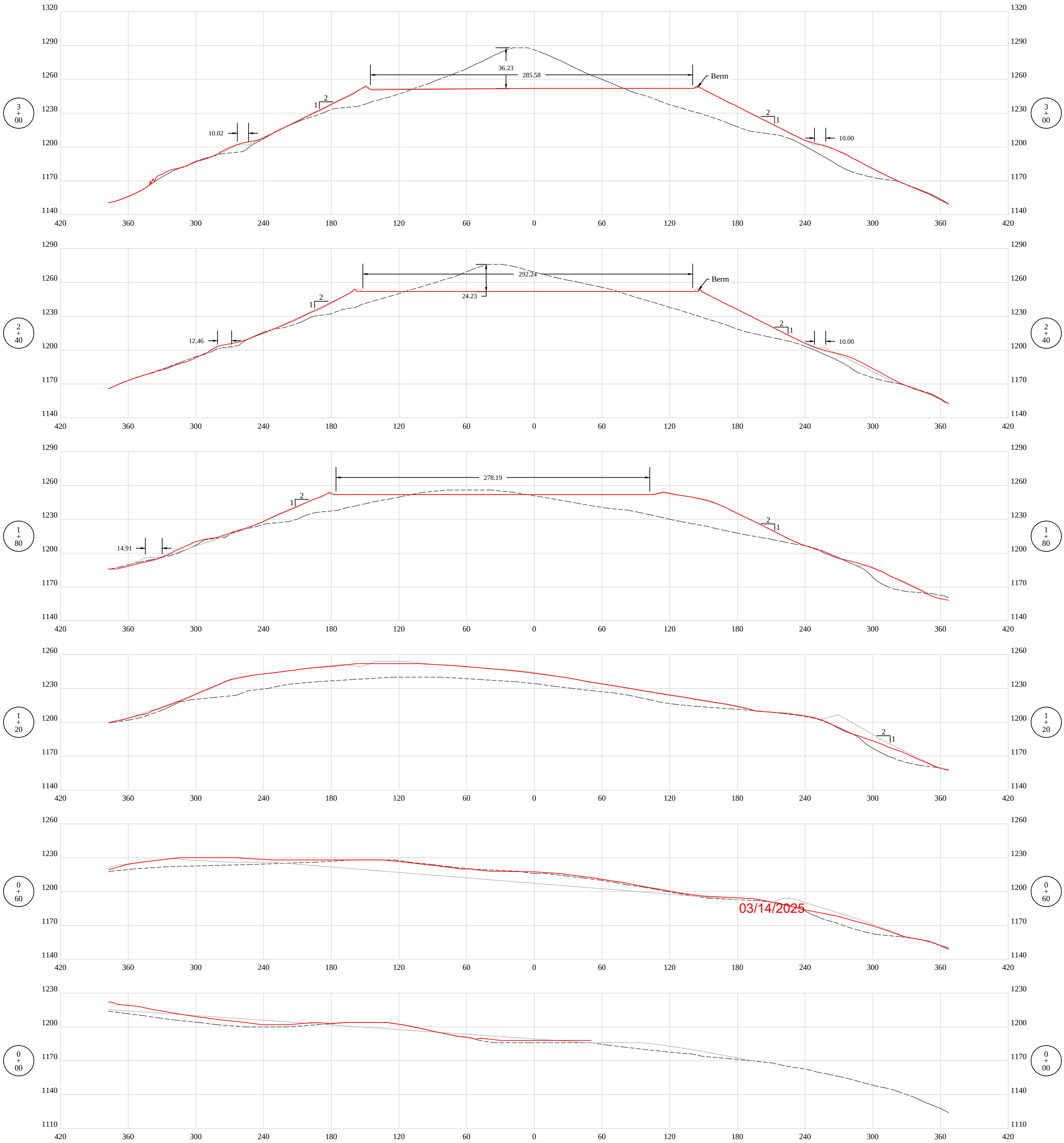
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Site Plan - Fink Creek Access Road
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 22 of 32

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Modification
3/14/2025



Legend
Design
Original Ground
As-Built



Revision
Design

Date
02-04-2025



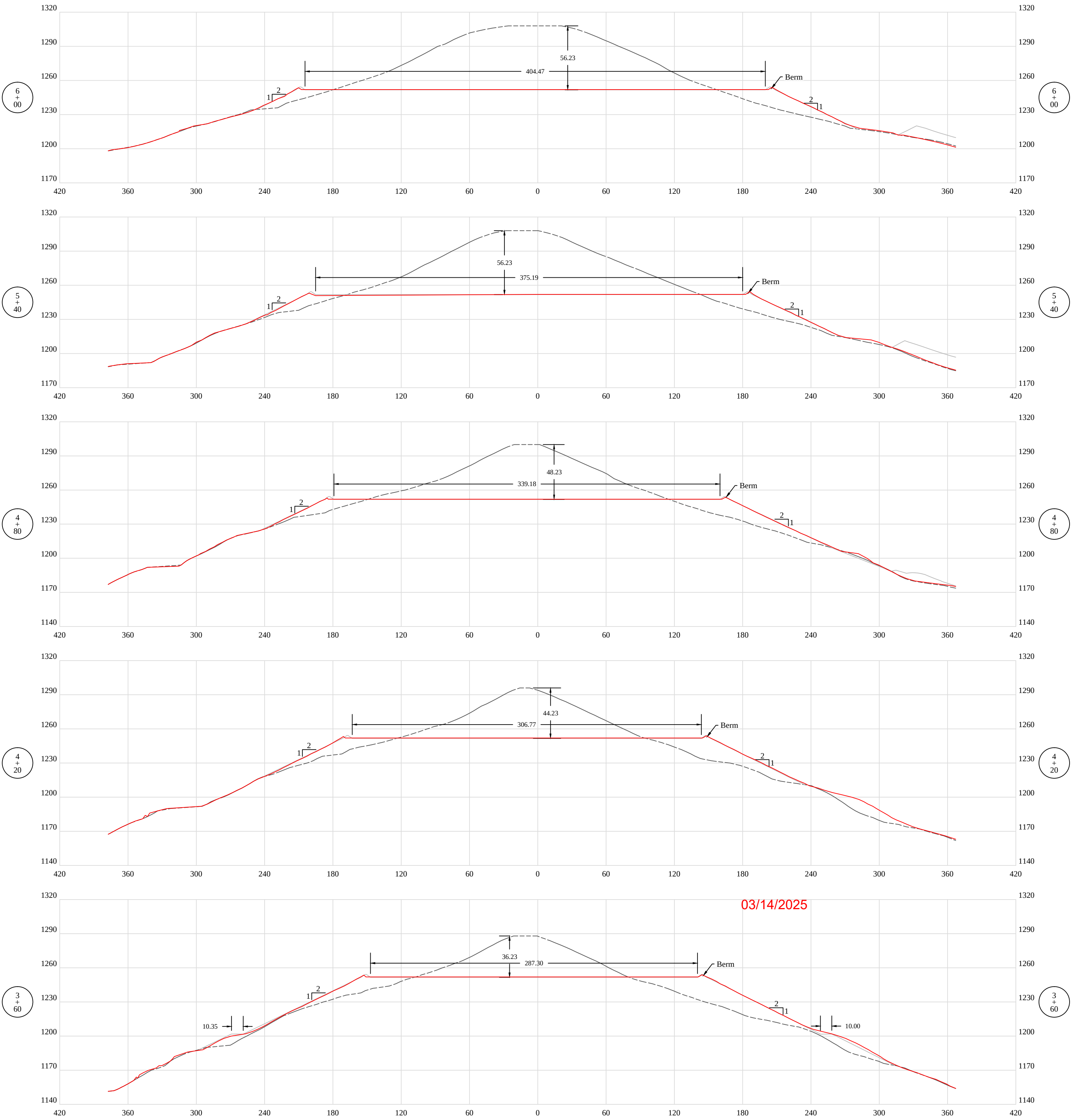
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Kelly Surveying
P.O. Box 254
Delmar, WV 26299
(304) 338-0985

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

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 24 of 32

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Modification
3/14/2025



Revision
Design

Date
02-04-2025



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Biller, WV 26209
(304) 338-0985

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

Legend

Design
Original Ground
As-Built

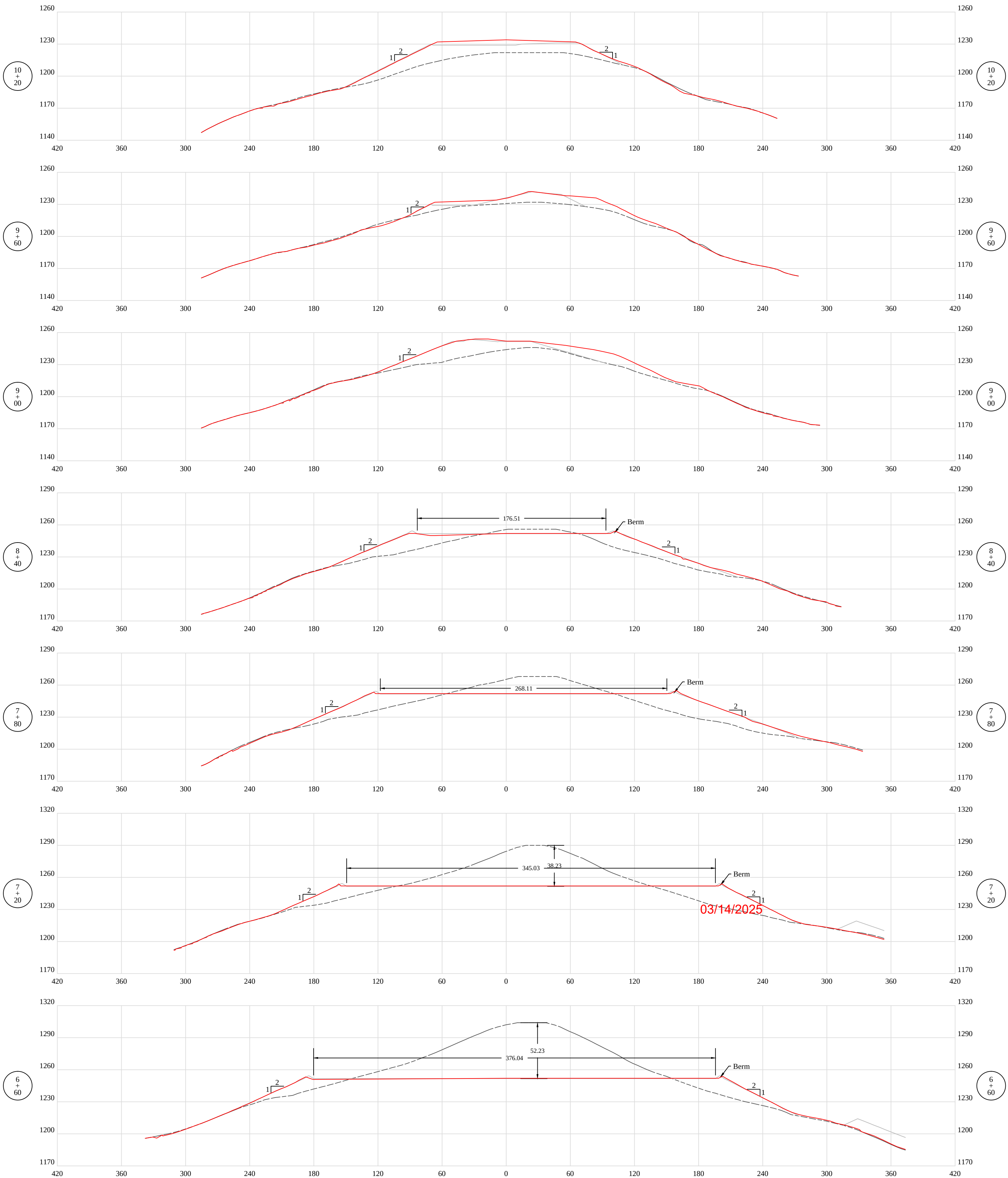


1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

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Modification
3/14/2025



Legend

- Design
- Original Ground
- As-Built

Revision
Design

Date
02-04-2025



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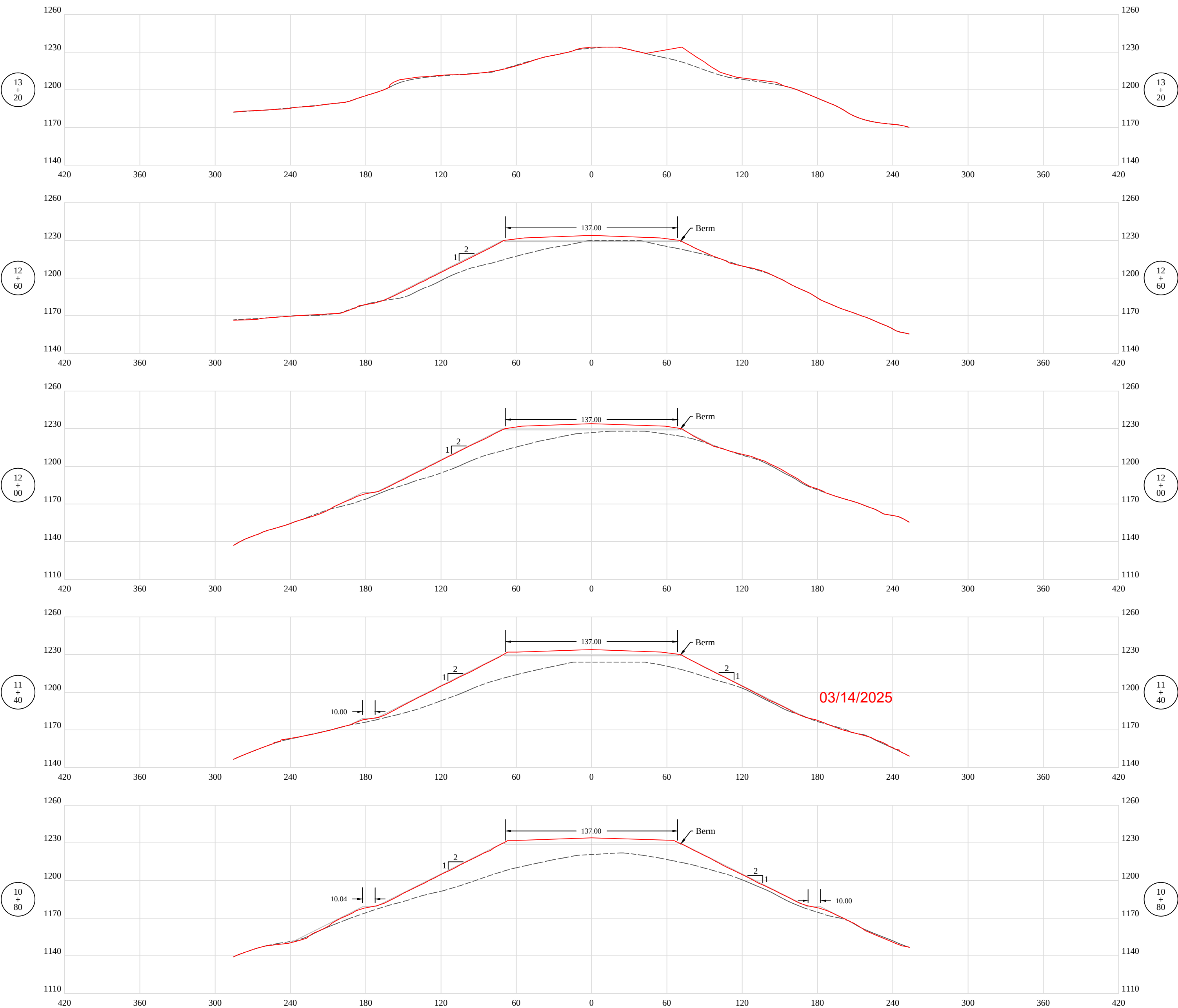
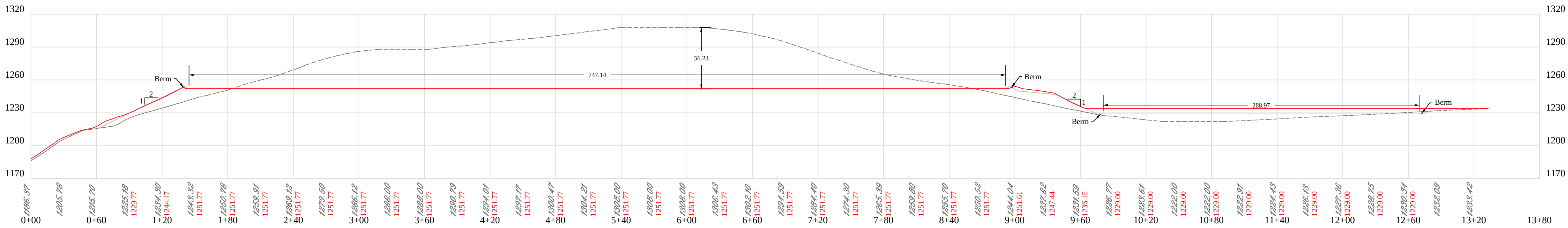
Cross Sections - Well Pad
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 26 of 32

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification



Legend

- Design
- Original Ground
- As-Built

Revision

Design

Date

02-04-2025



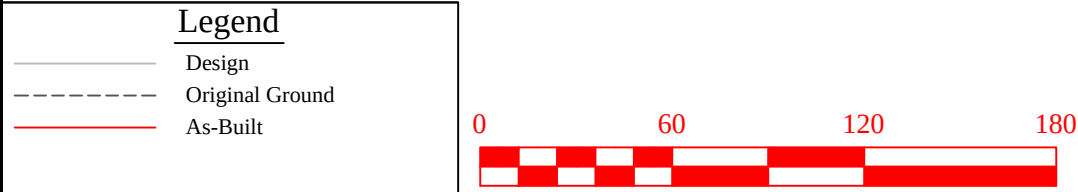
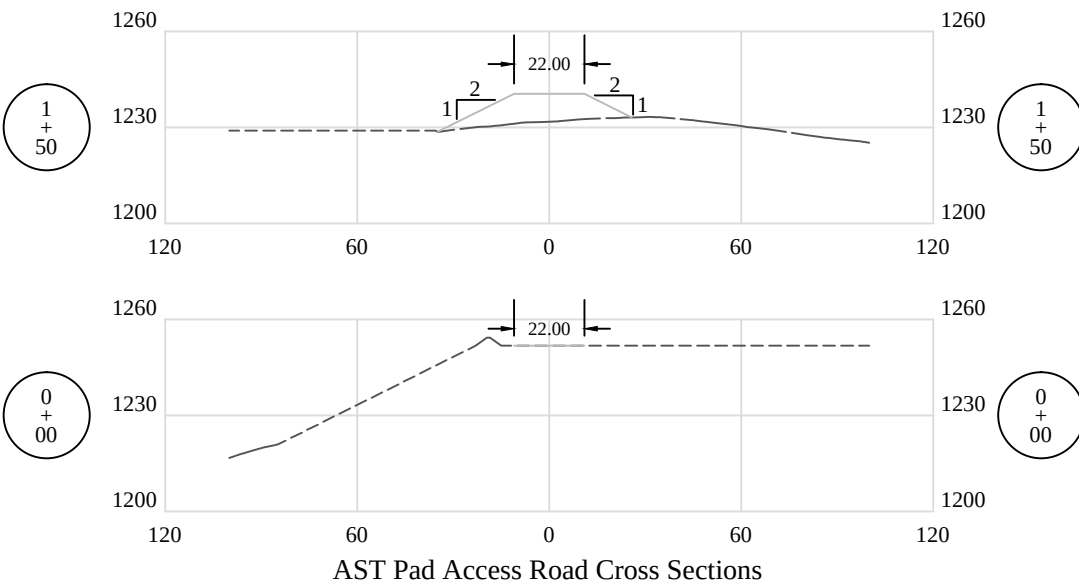
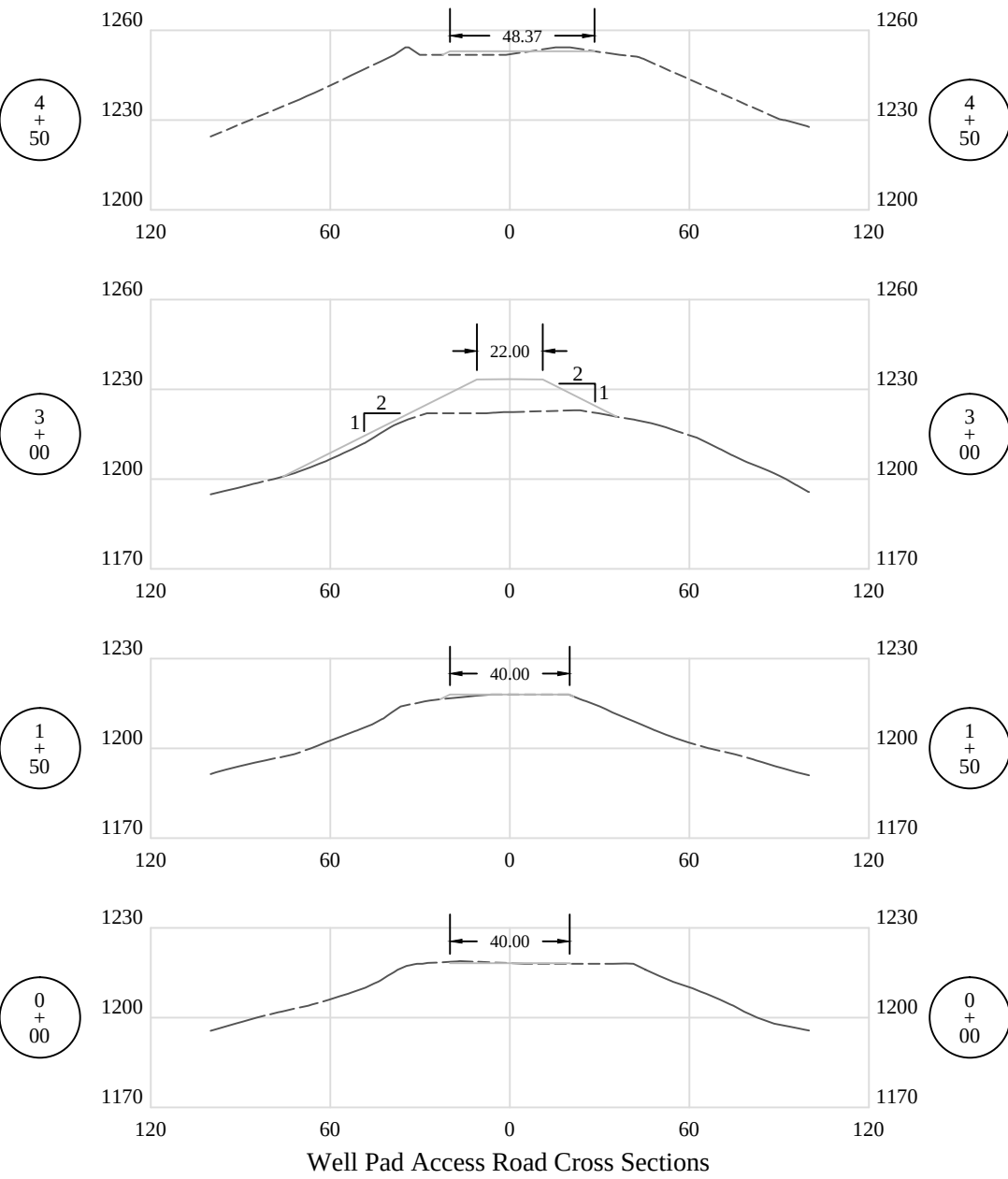
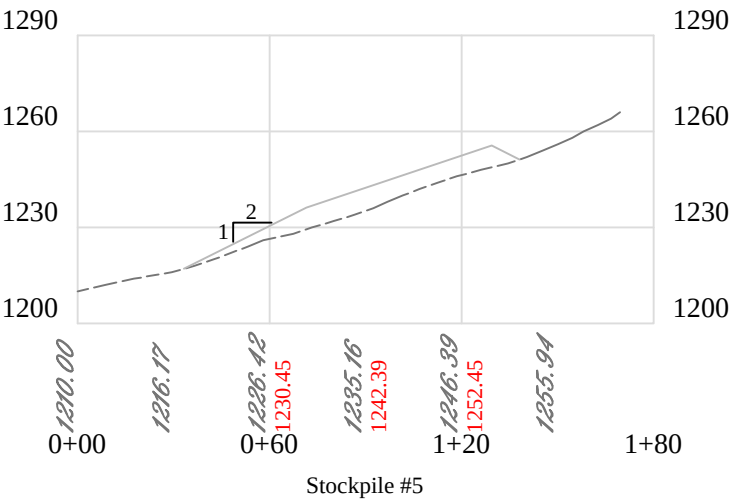
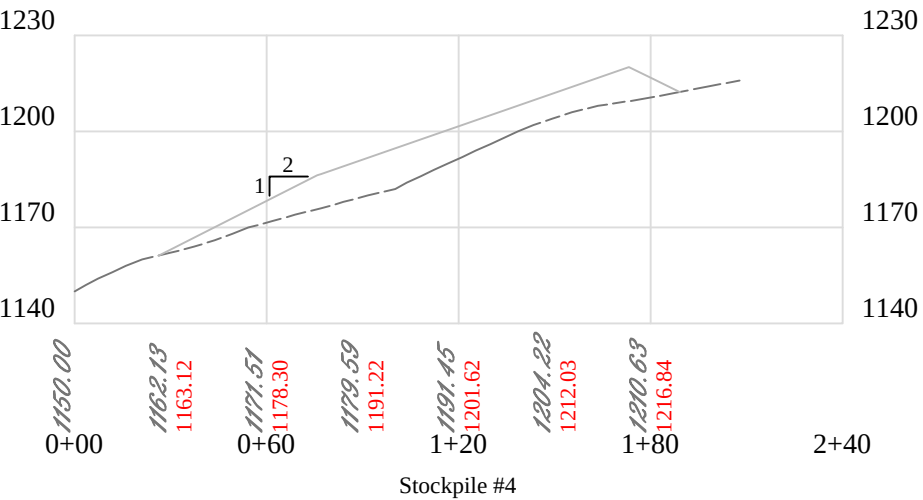
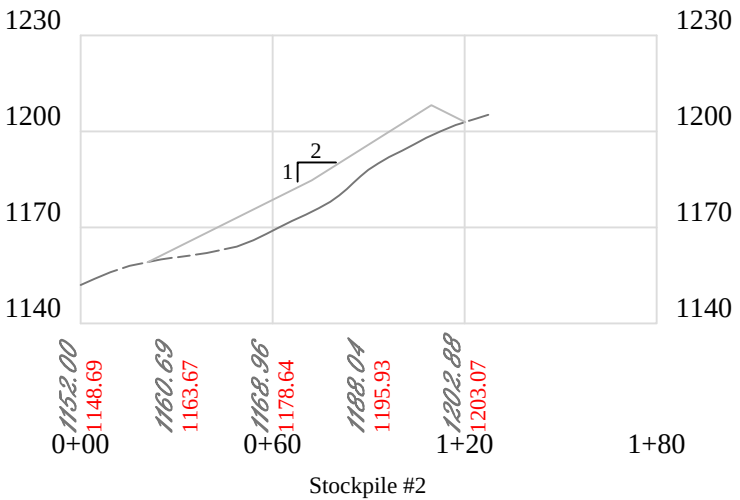
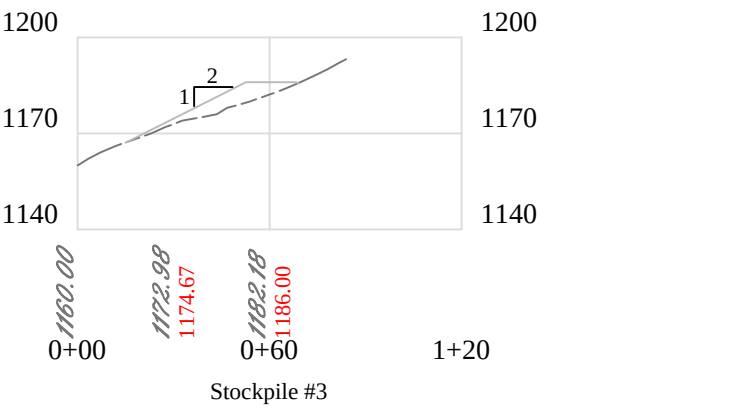
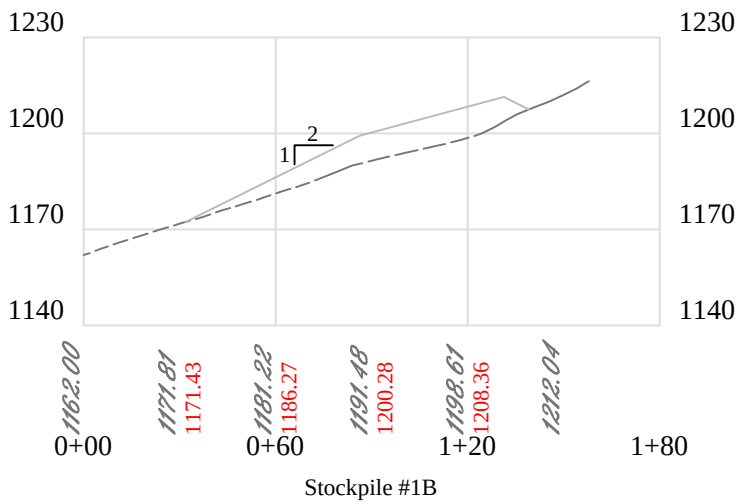
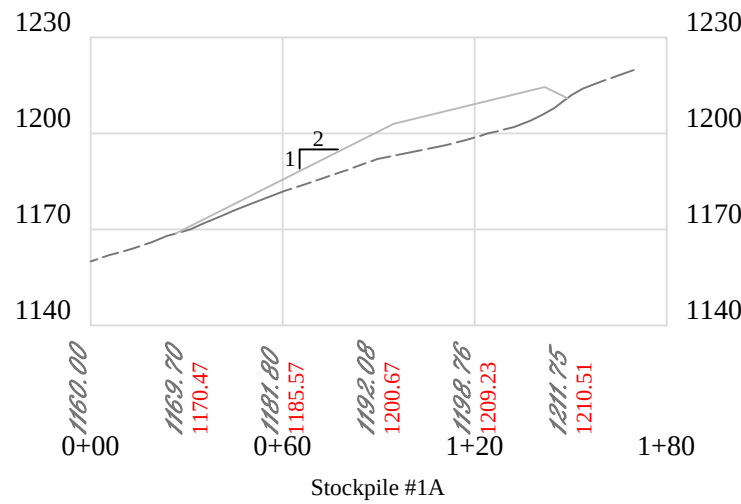
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HG ENERGY LLC

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

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

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Modification
3/14/2025

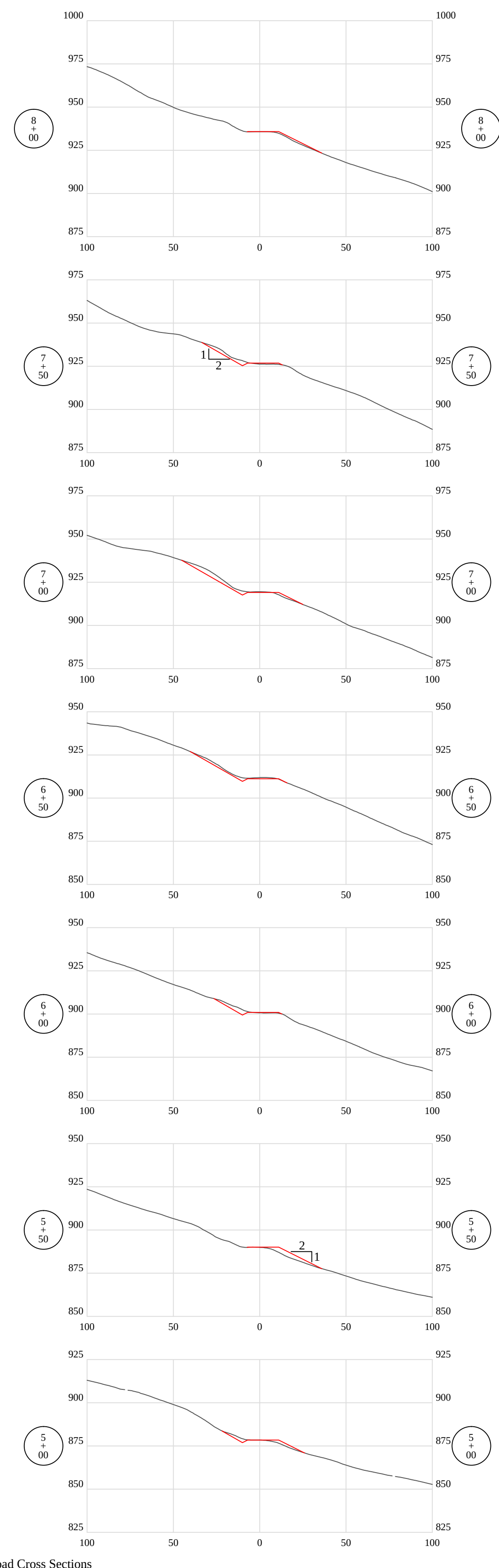
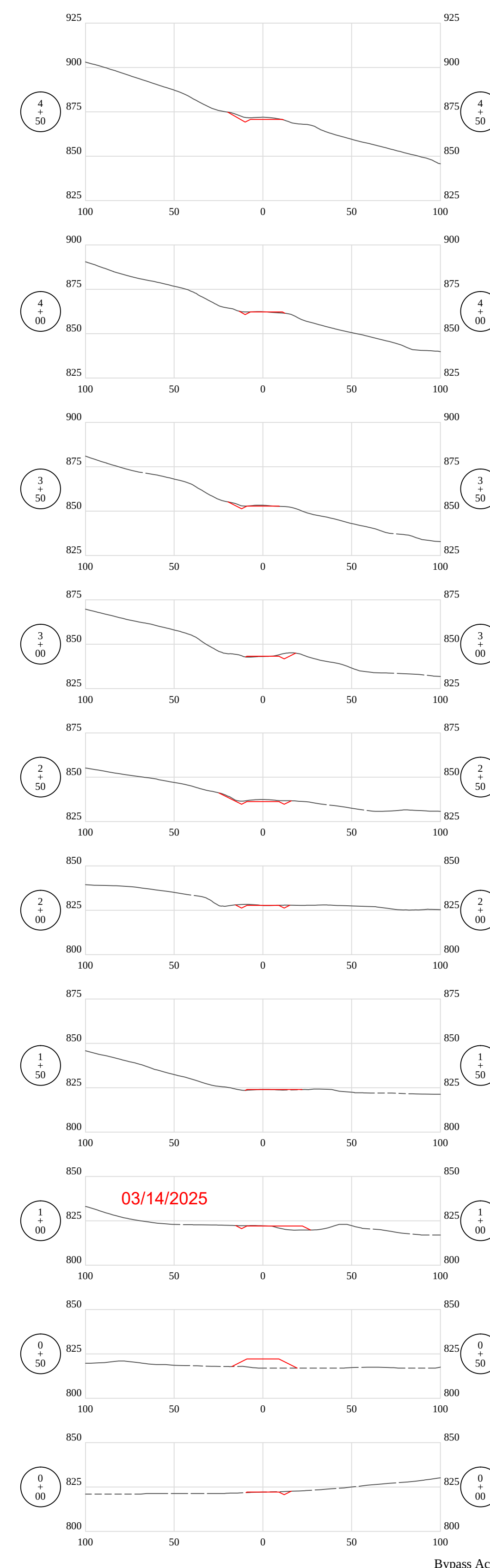
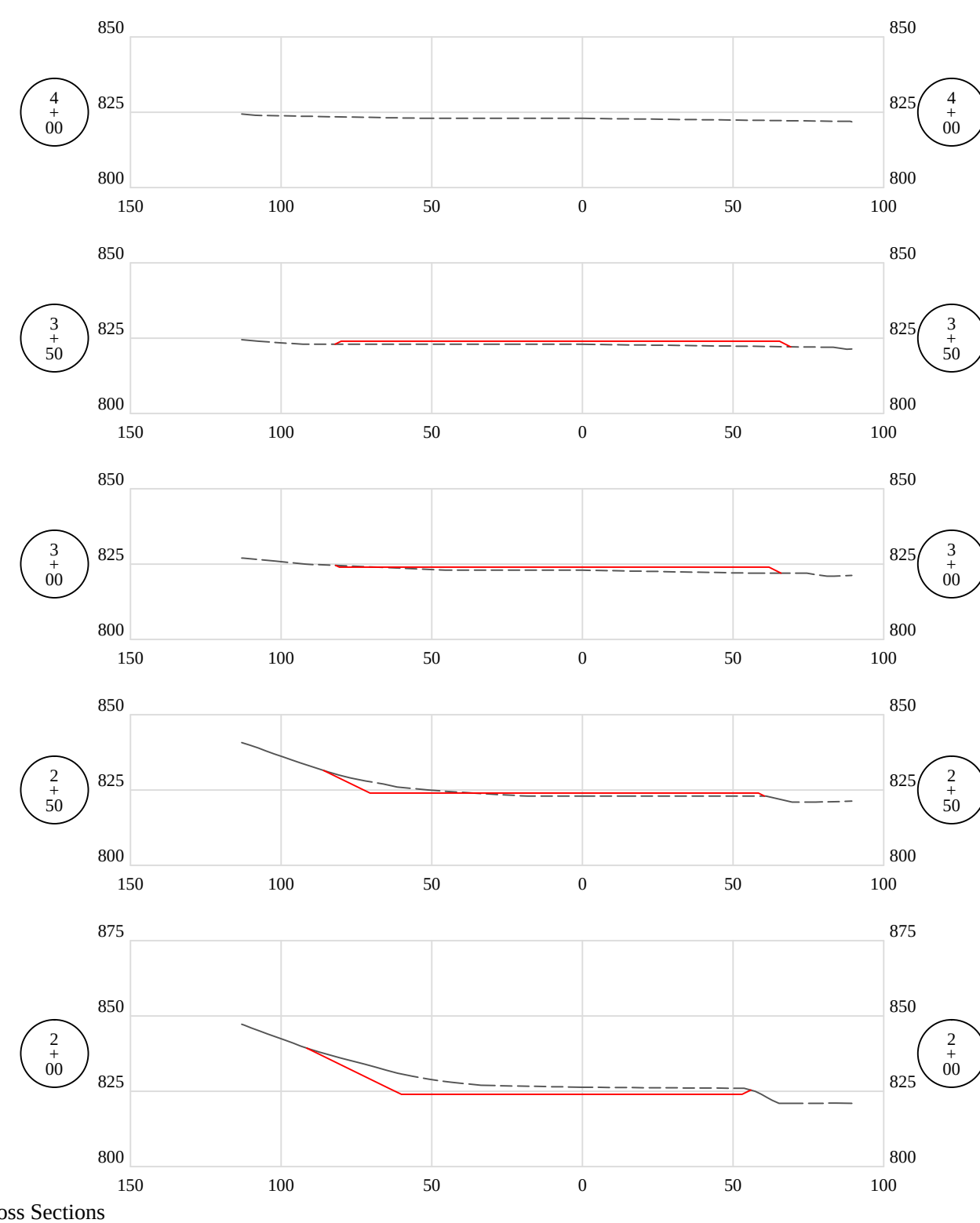
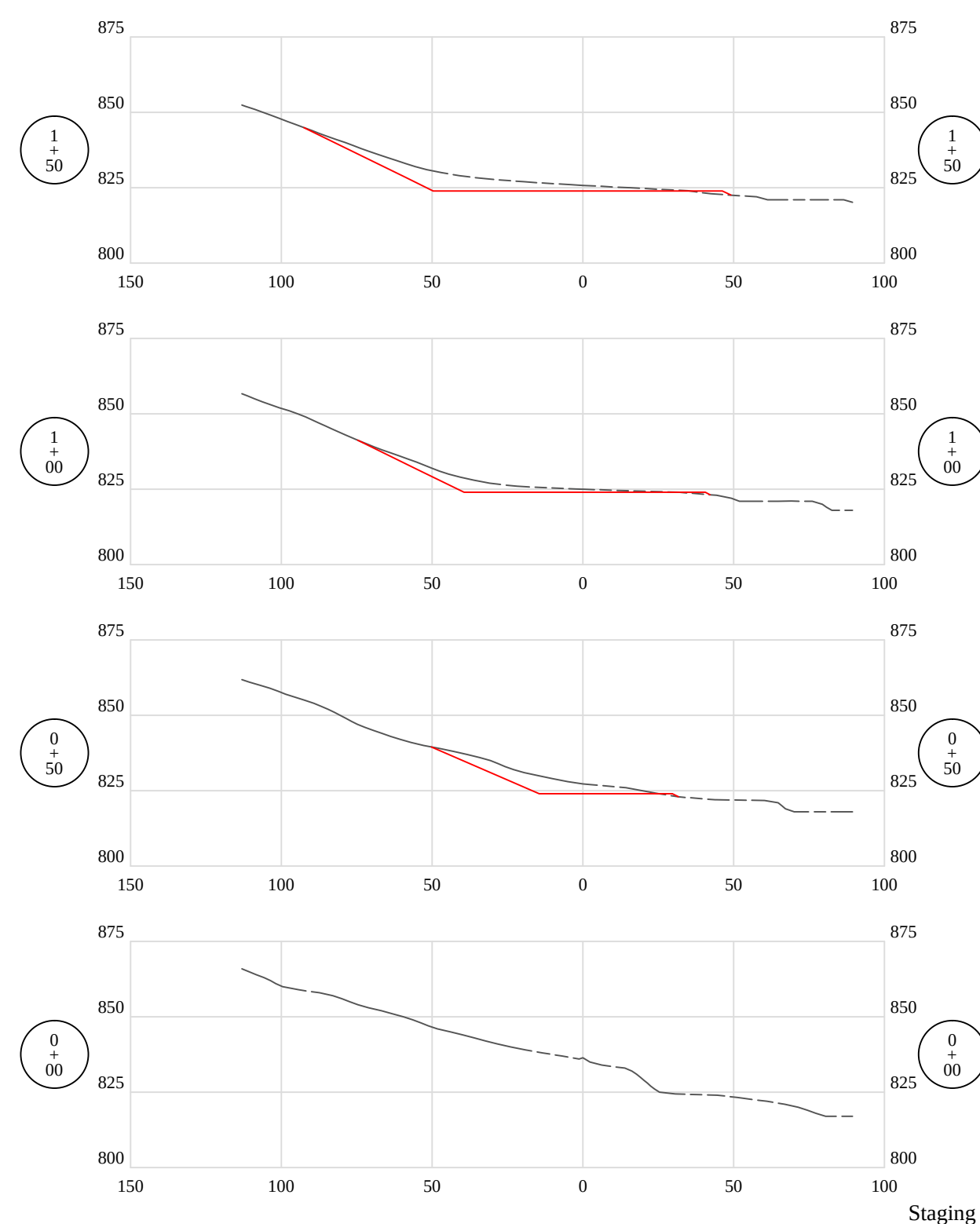
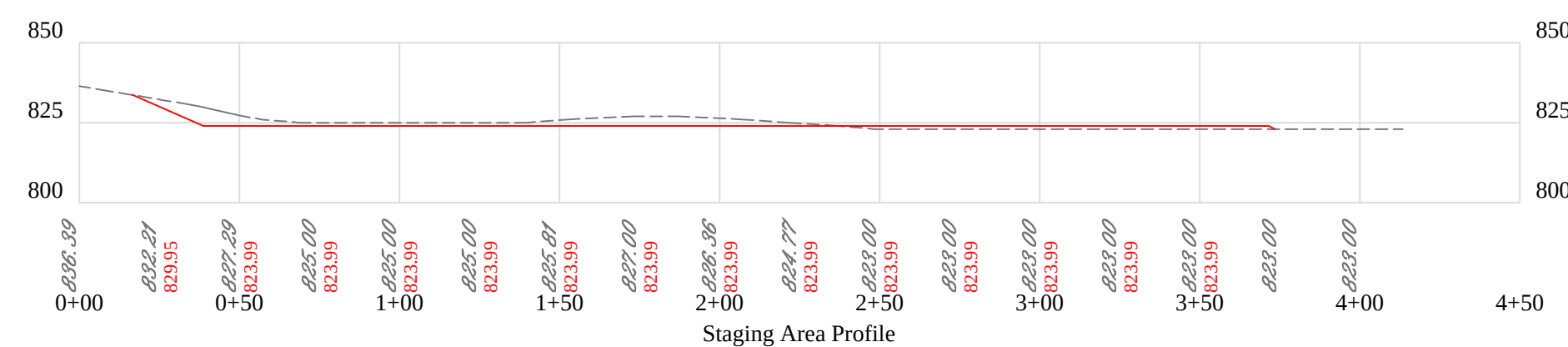
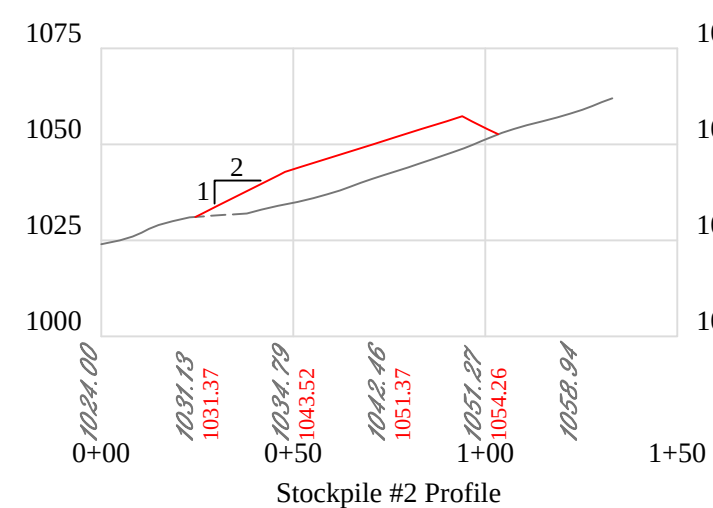
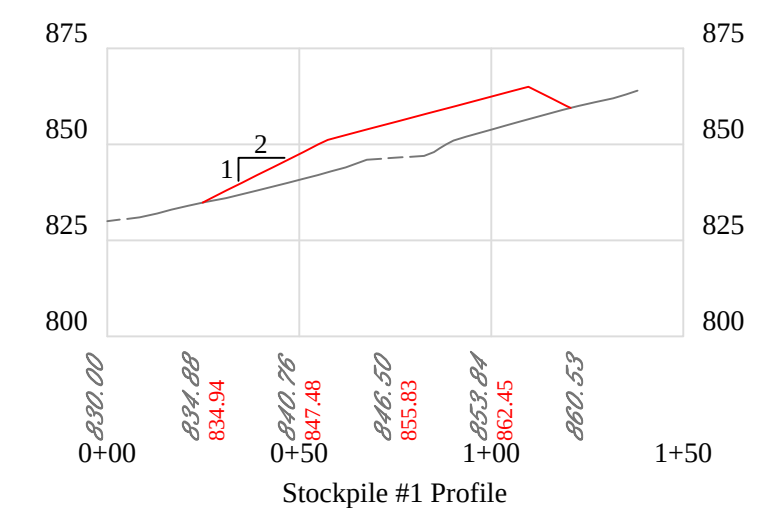
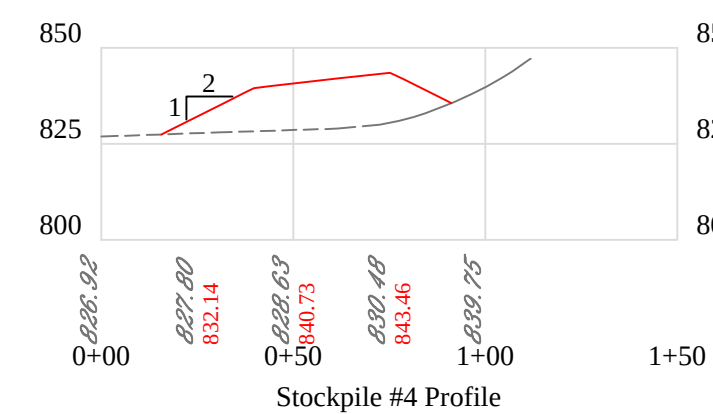
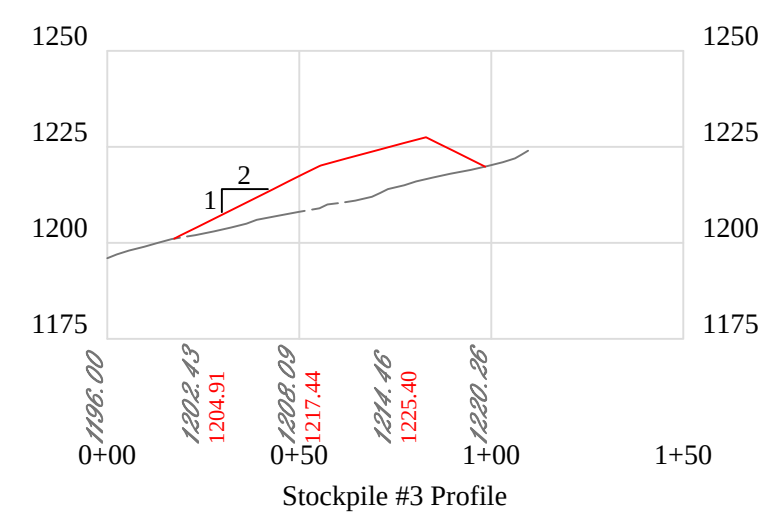
Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 27 of 32



03/14/2025



Revision	Design
Date	02-04-2025
THIS DOCUMENT PREPARED FOR HG ENERGY LLC	
Kelly Surveying P.O. Box 254 Biller, WV 26209 (304)338-0965	
Cross Sections - Access Road 1221 Well Site Freemans Creek District Lewis County, WV	
Date:	02/04/2025
Scale:	As Shown
Designed By:	ZS
File No.	
Sheet 28 of 32	



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3/14/2025

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

Date	Revision
12-04-2025	Design



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Cross Sections - Staging Area

1221 Well Site

Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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Sheet 29 of 32

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3/14/2025

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

Revision
Design

Date
02-04-2025

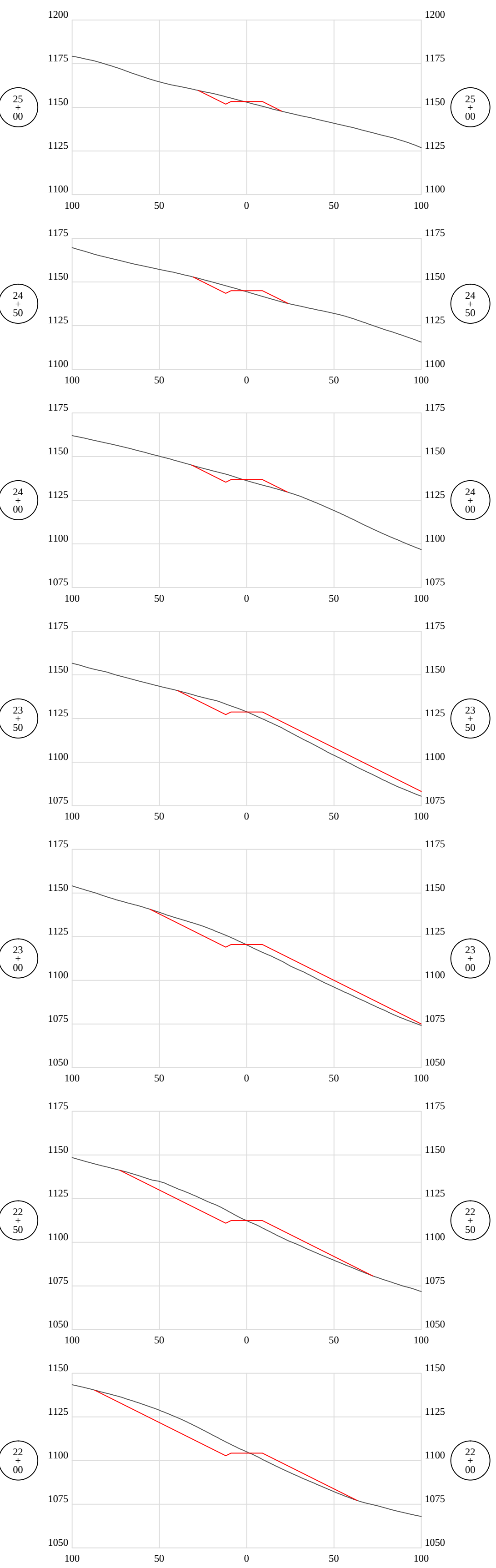
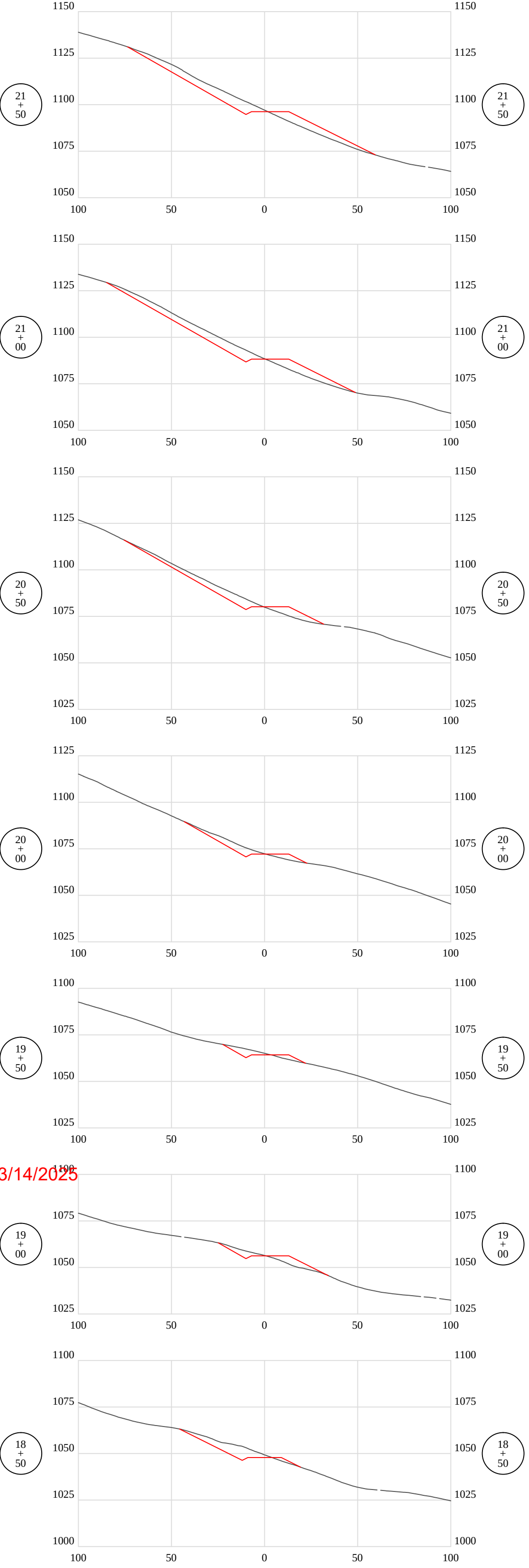
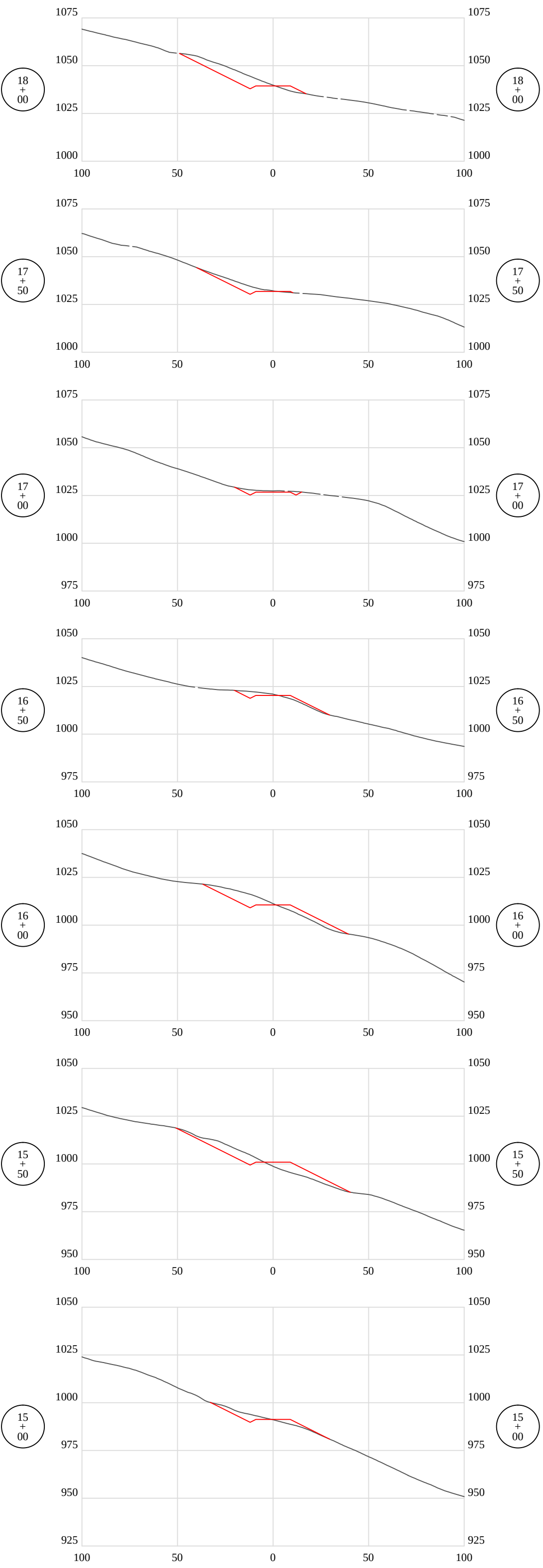
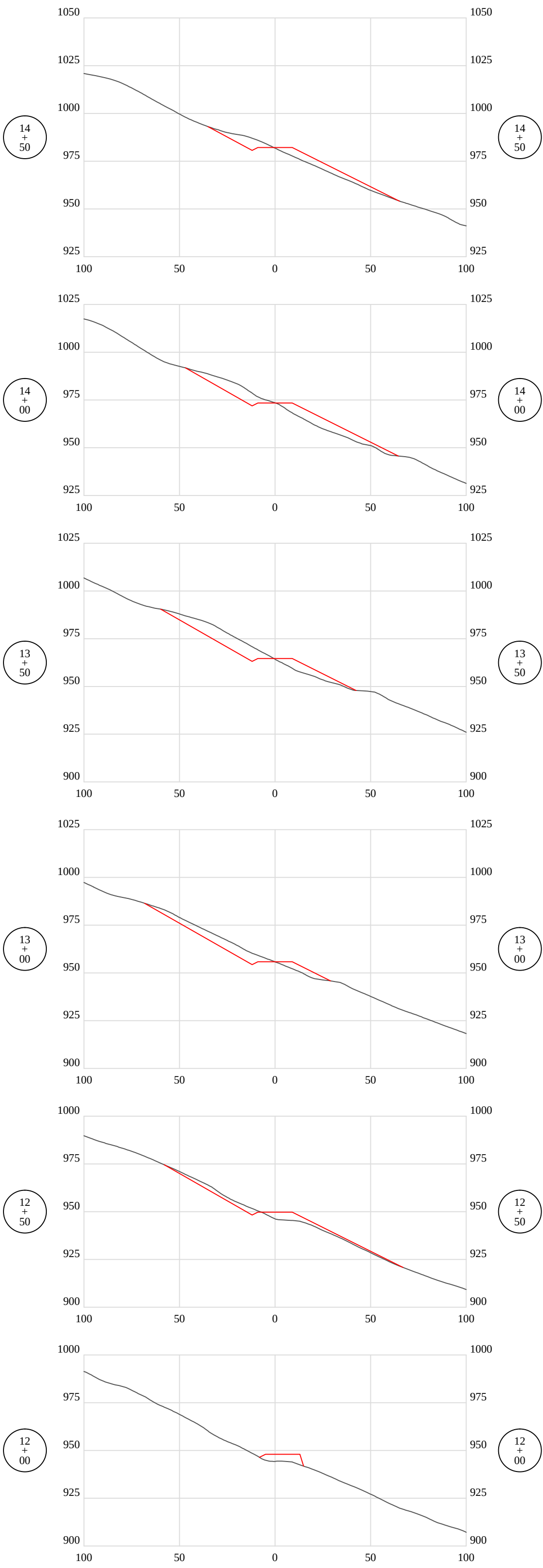
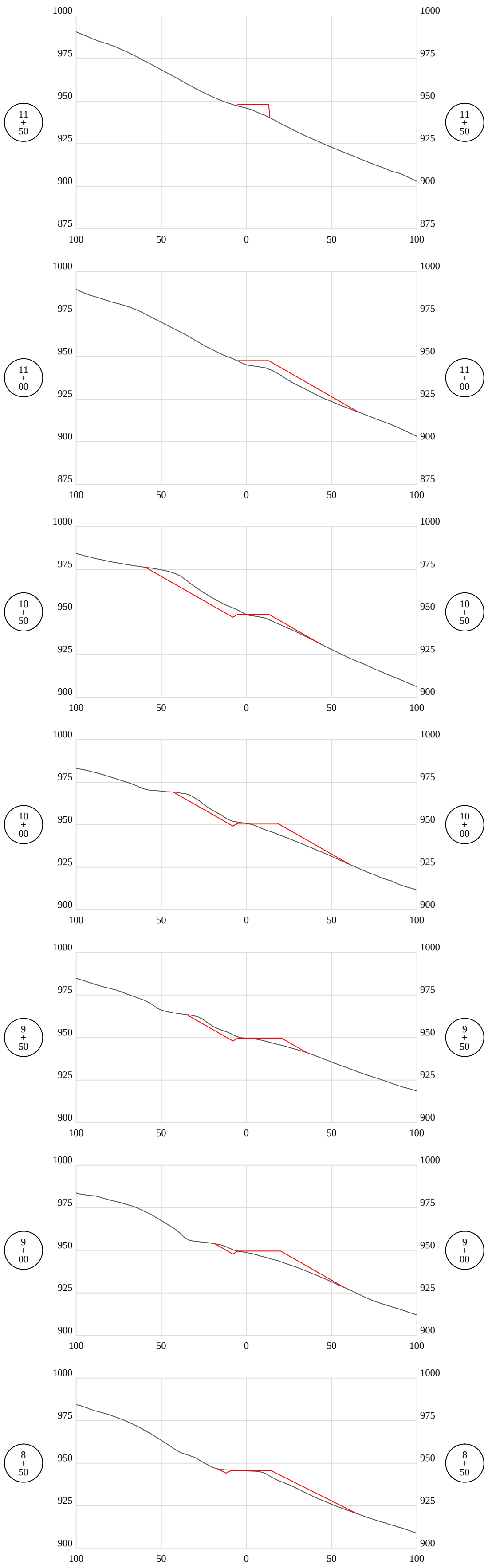


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Kelly Surveying
P.O. Box 254
Biller, WV 26209
304-338-0965

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 30 of 32



Legend
Design
Original Ground



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WVDEP OOG
Modification
3/14/2025

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

Revision
Design

Date
02-04-2025

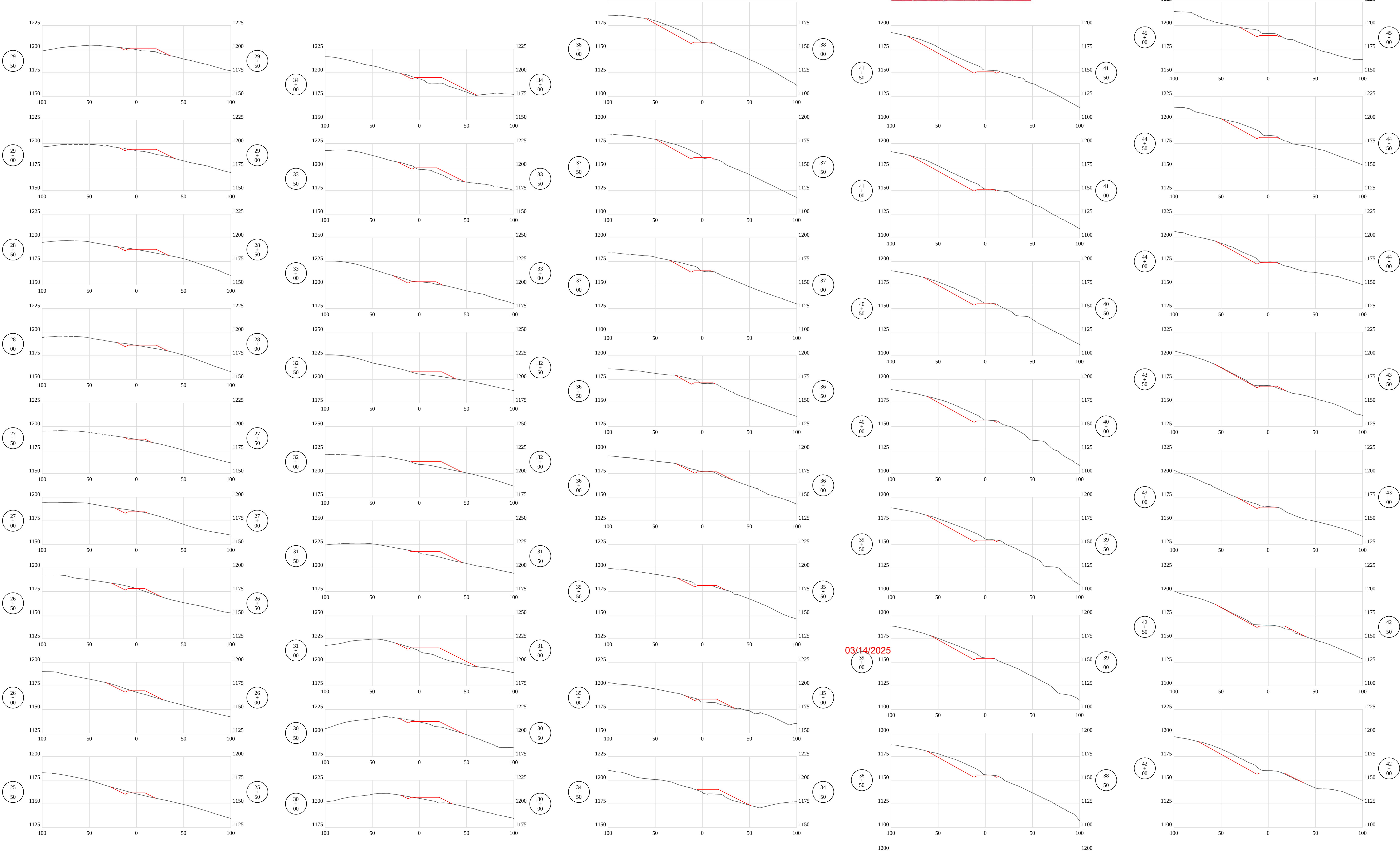


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Kelly Surveying
P.O. Box 254
Delmar, WV 26039
(304)338-0965

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

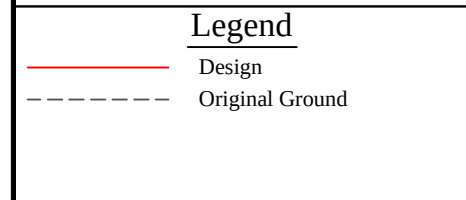
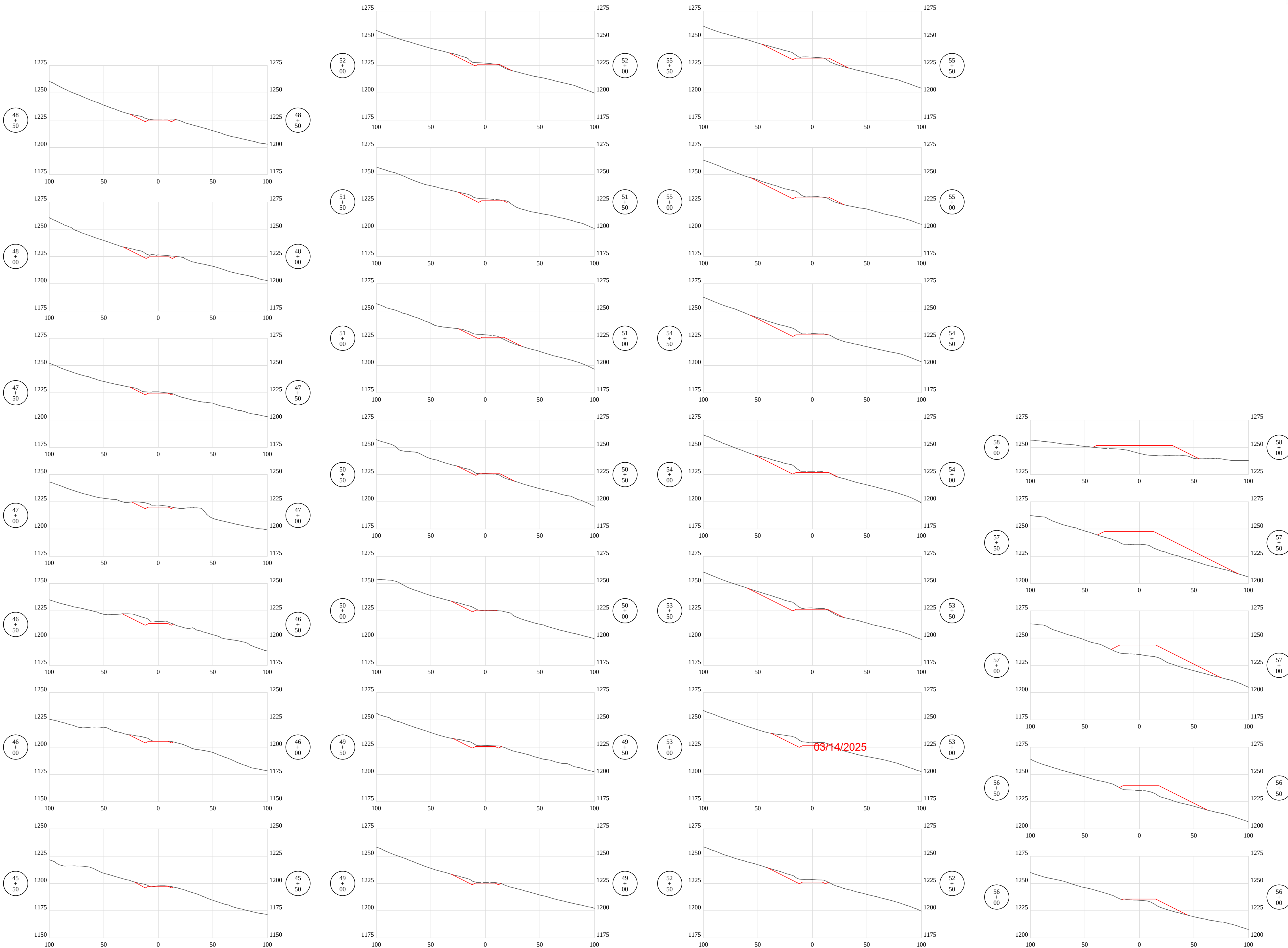


1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification

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Modification
3/14/2025



Revision
Design

Date
02-04-2025

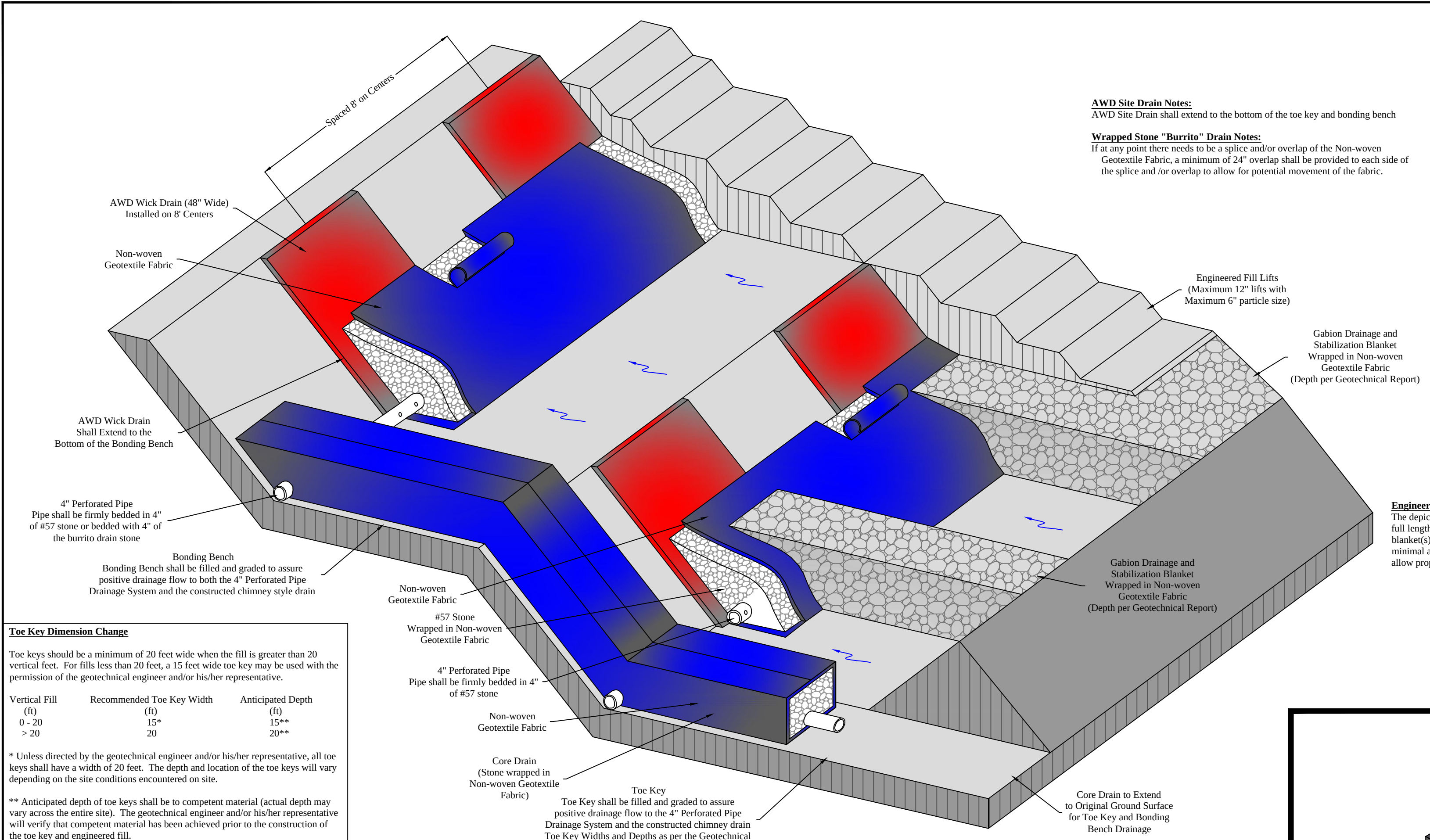


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Kelly Surveying
P.O. Box 254
Biller, WV 26209
(304)338-0985

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

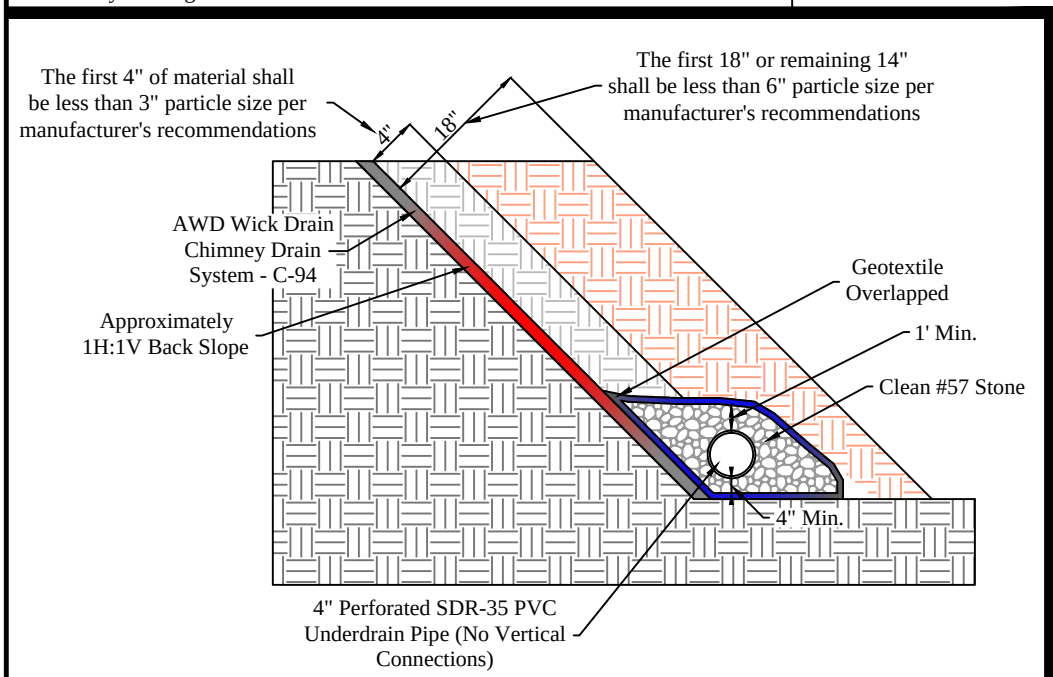
Date: 02/04/2025
Scale: As Shown
Designed By: ZS
File No.
Sheet 32 of 32



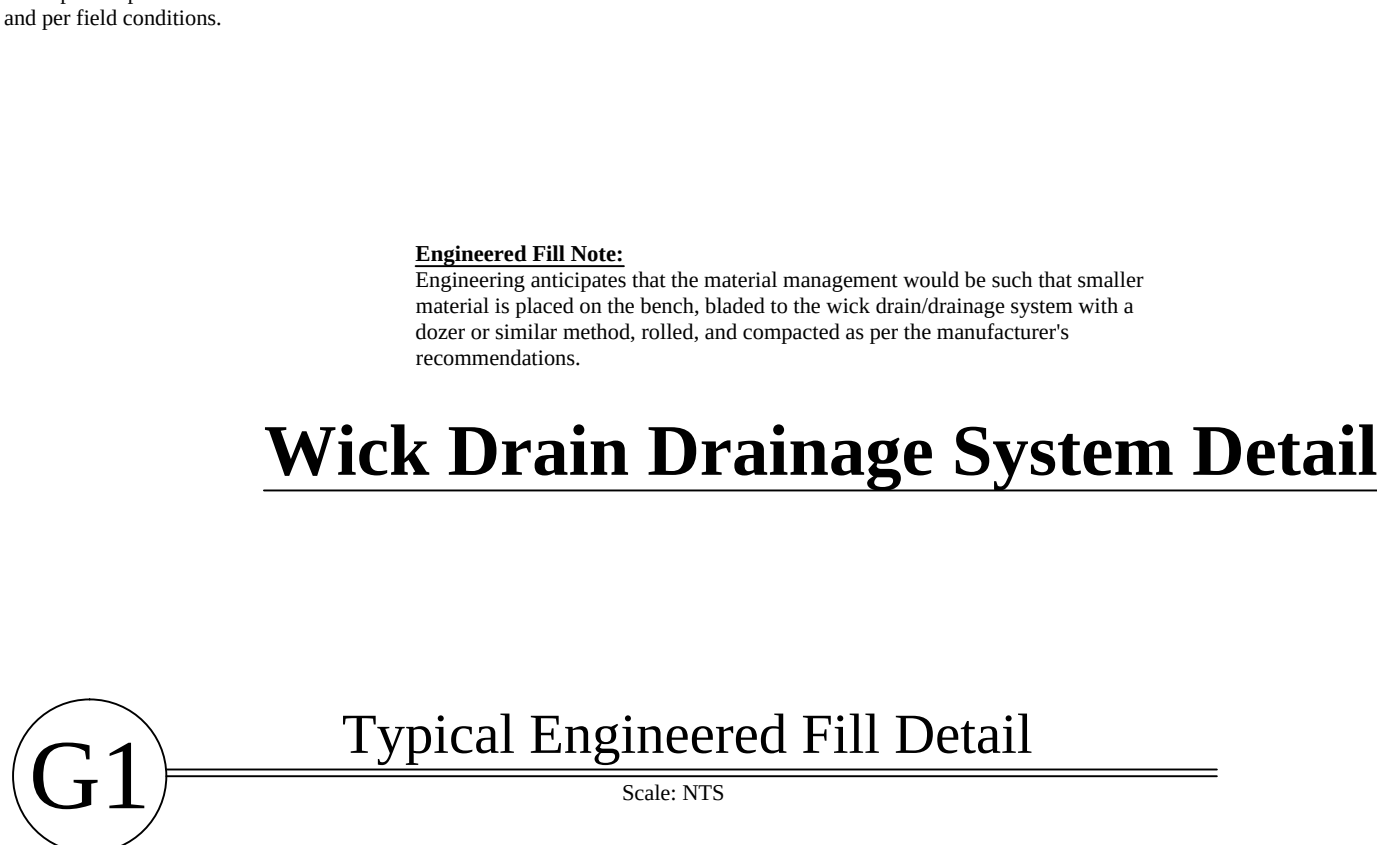
Toe Key Dimension Change		
Vertical Fill (ft)	Recommended Toe Key Width (ft)	Anticipated Depth (ft)
0 - 20	15*	15**
> 20	20	20**

* Unless directed by the geotechnical engineer and/or his/her representative, all toe keys shall have a width of 20 feet. The depth and location of the toe keys will vary depending on the site conditions encountered on site.

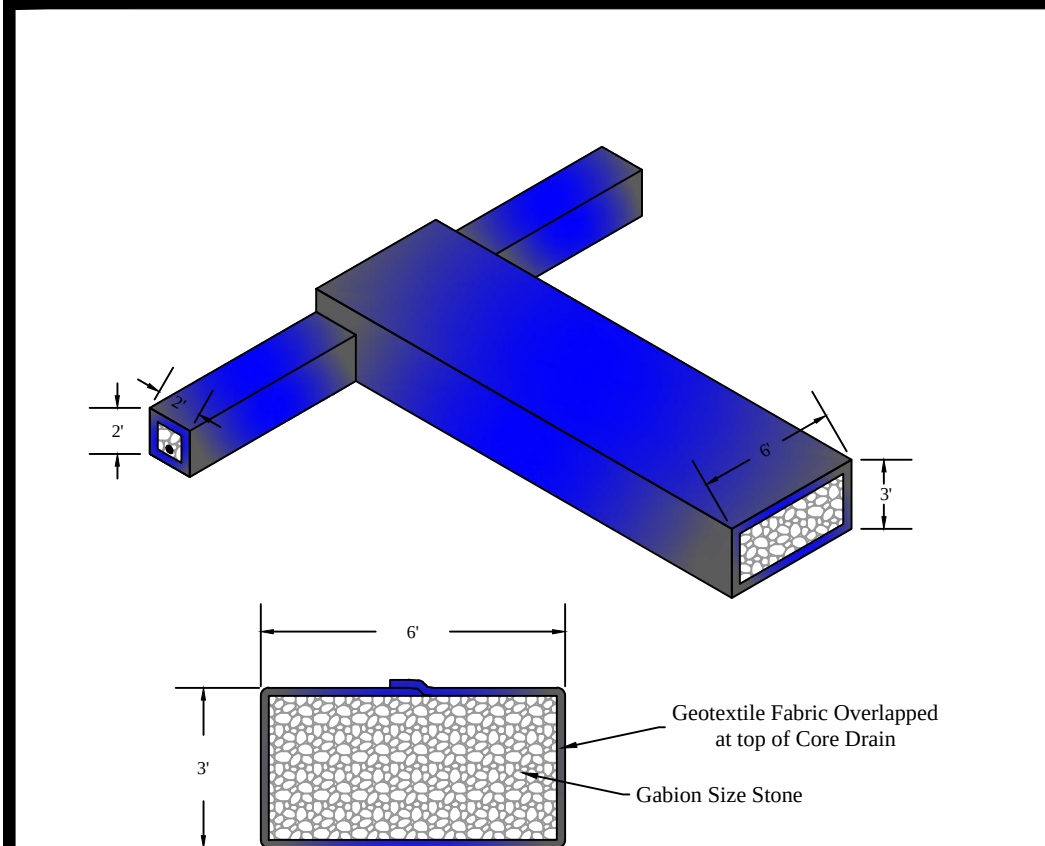
** Anticipated depth of toe keys shall be to competent material (actual depth may vary across the entire site). The geotechnical engineer and/or his/her representative will verify that competent material has been achieved prior to the construction of the toe key and engineered fill.



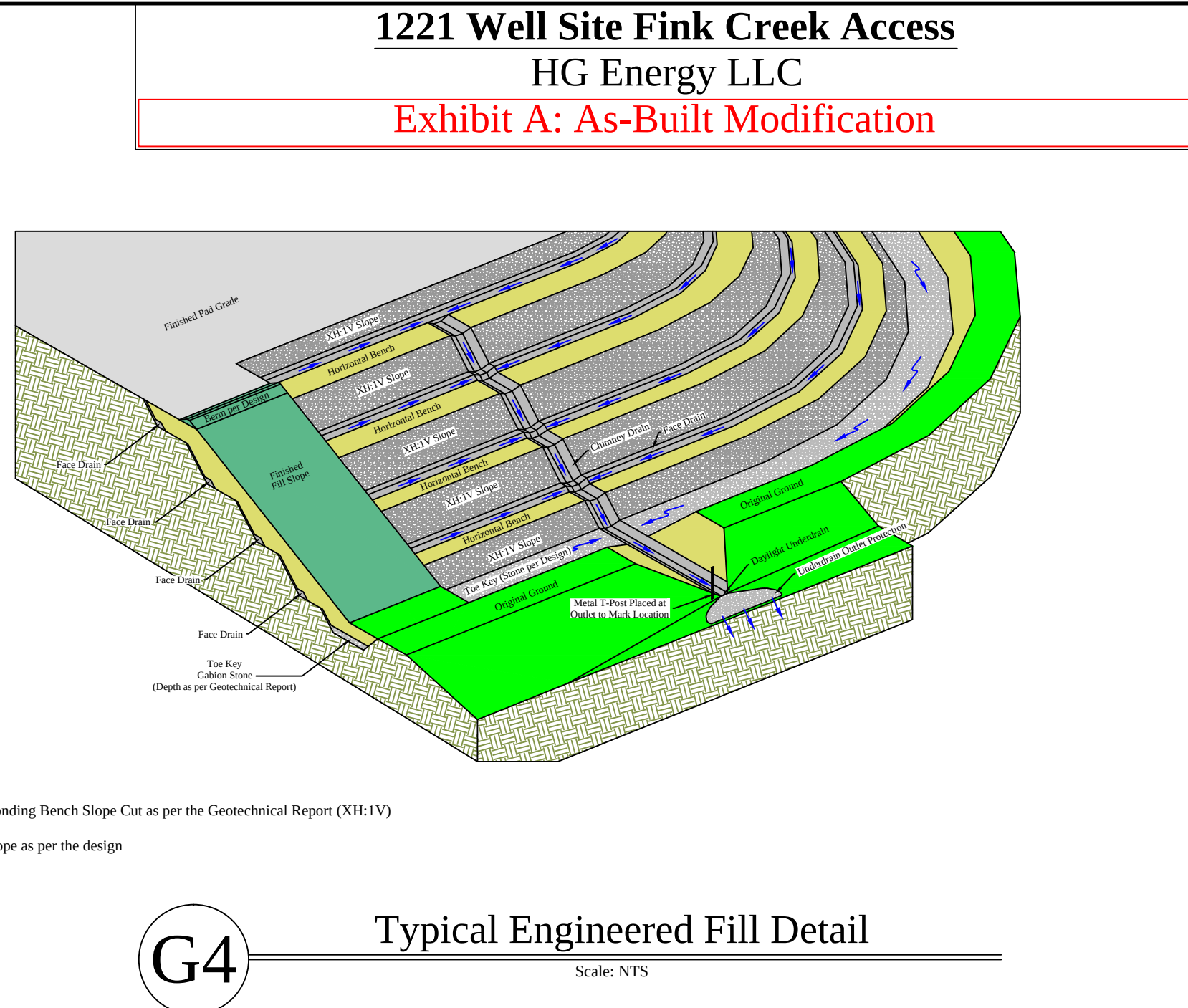
G2 Typical Face Drain Detail
Scale: NTS



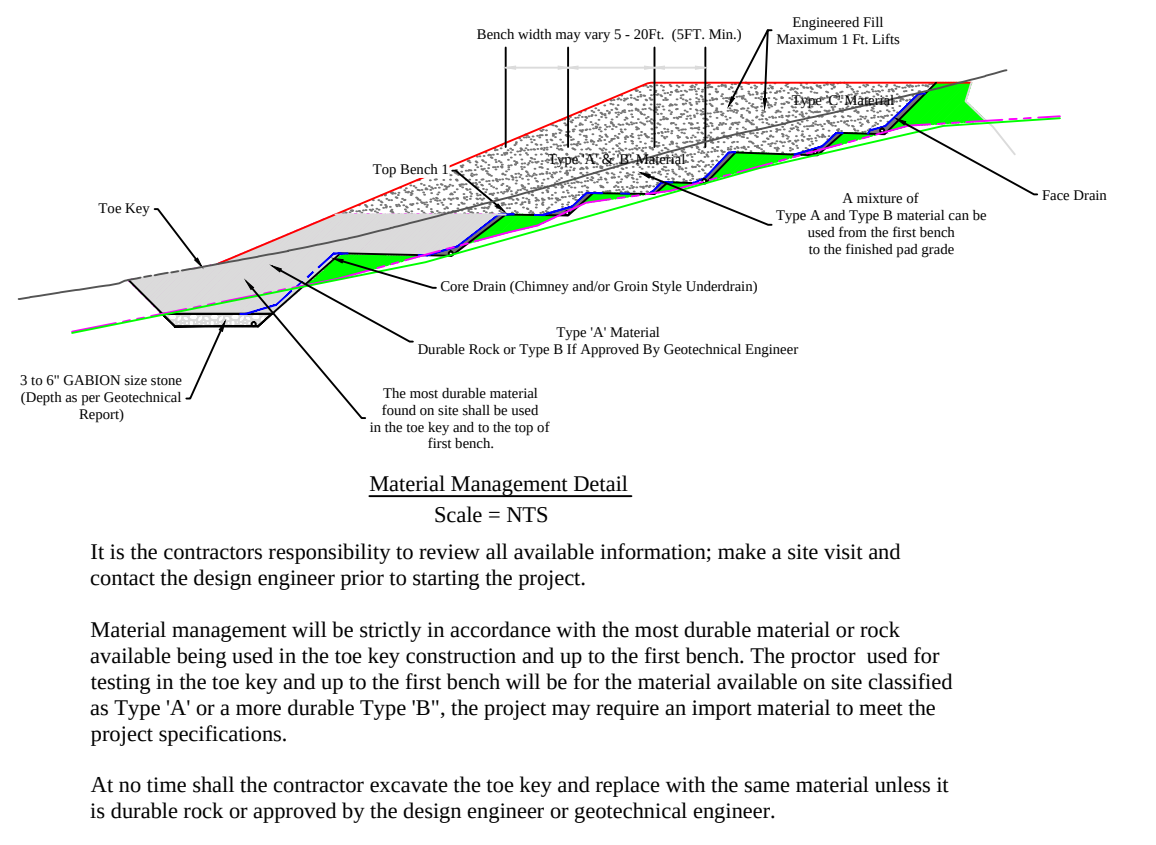
G1 Typical Engineered Fill Detail
Scale: NTS



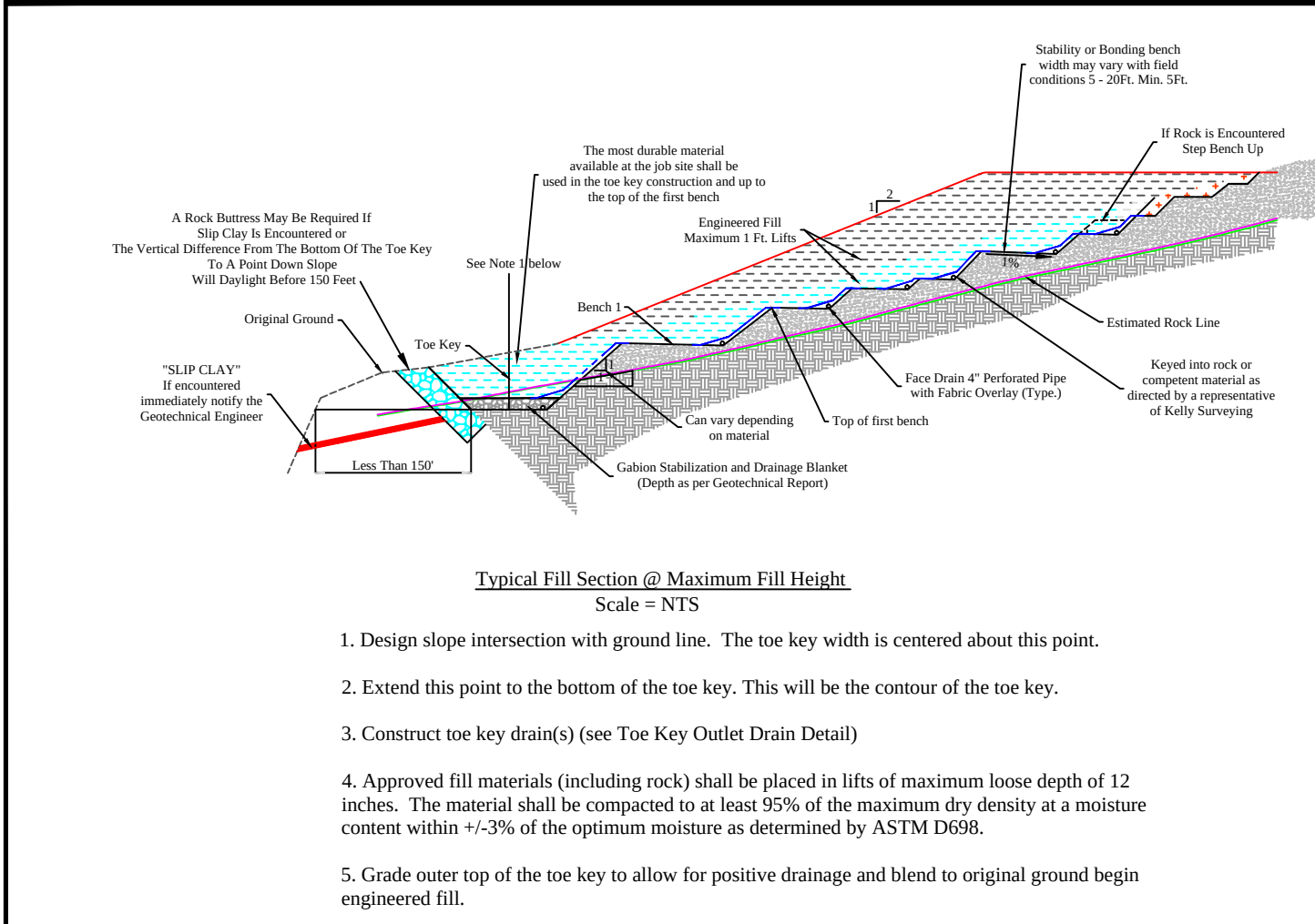
G3 Typical Core Drain Detail
Scale: NTS



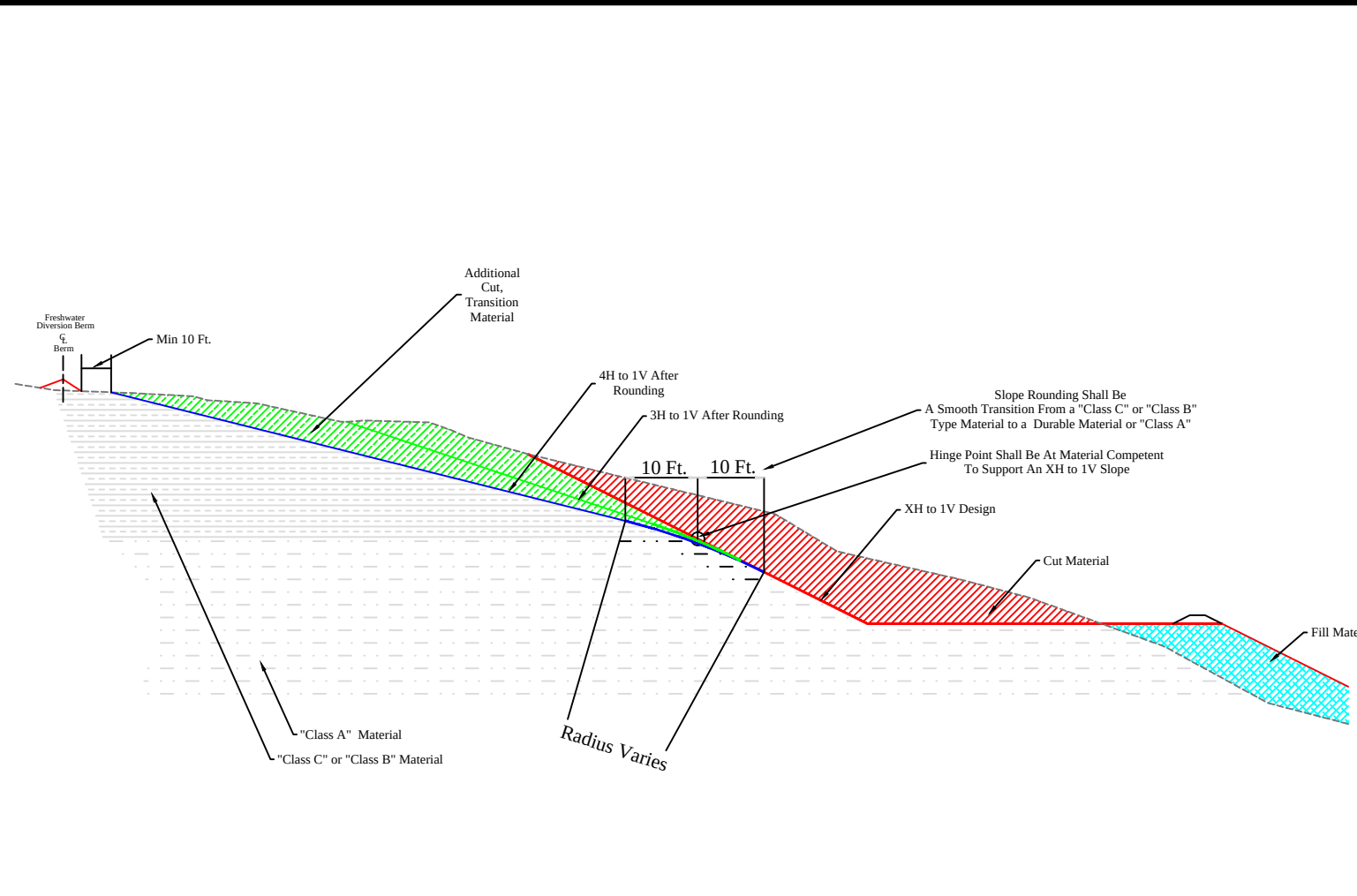
G4 Typical Engineered Fill Detail
Scale: NTS



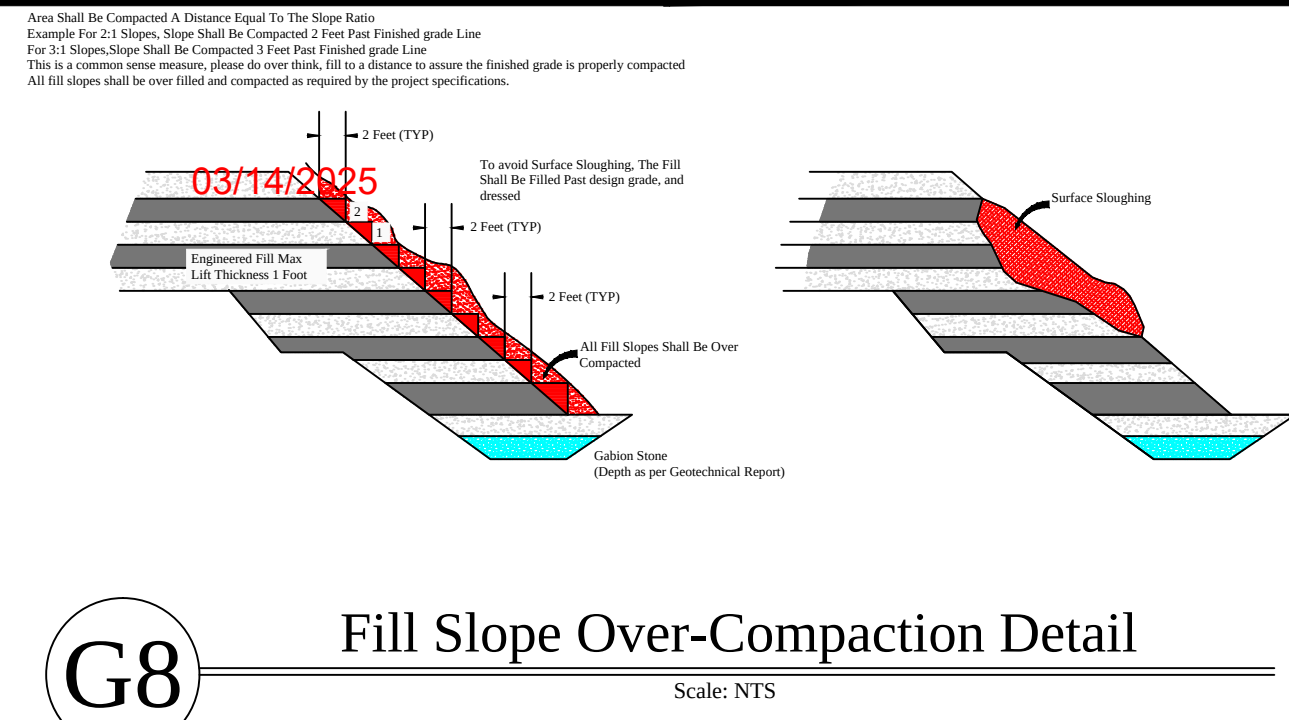
G5 Material Management Detail
Scale: NTS



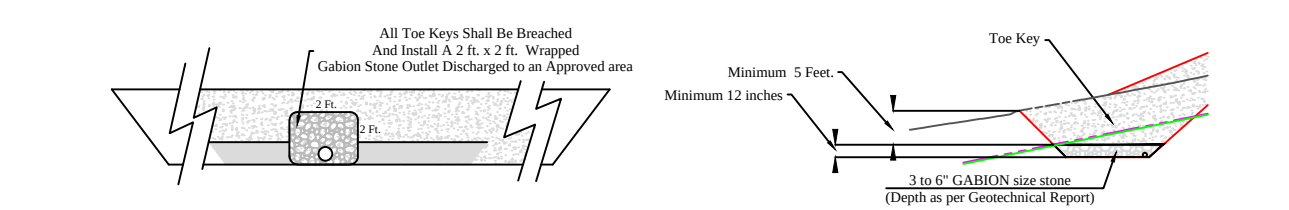
G6 Typical Fill Section at Maximum Fill Height
Scale: NTS



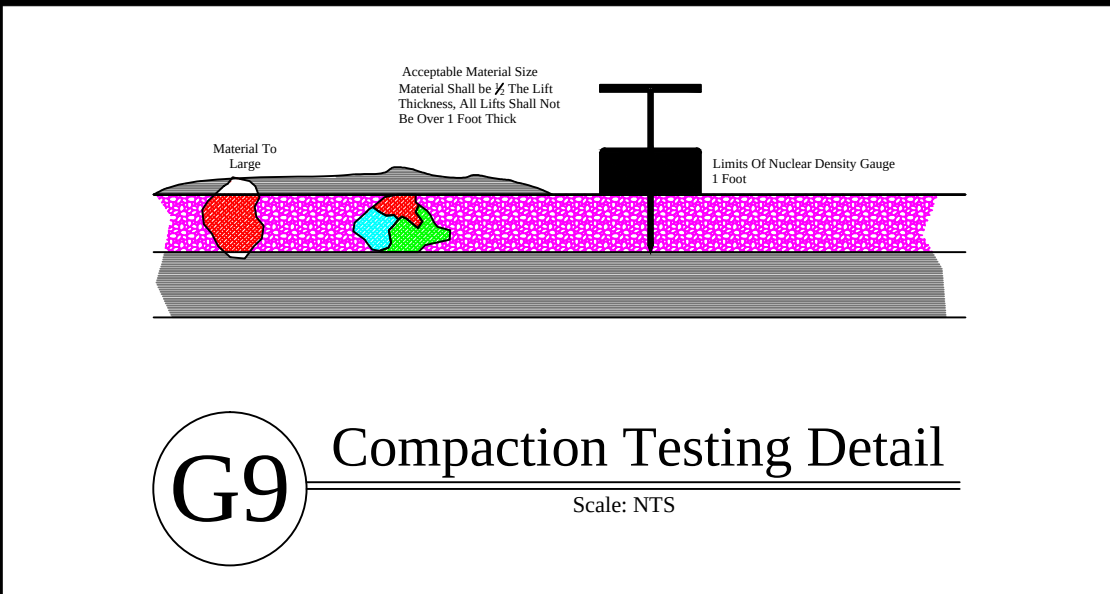
G7 Unstable Slope Management: Slope Rounding
Scale: NTS



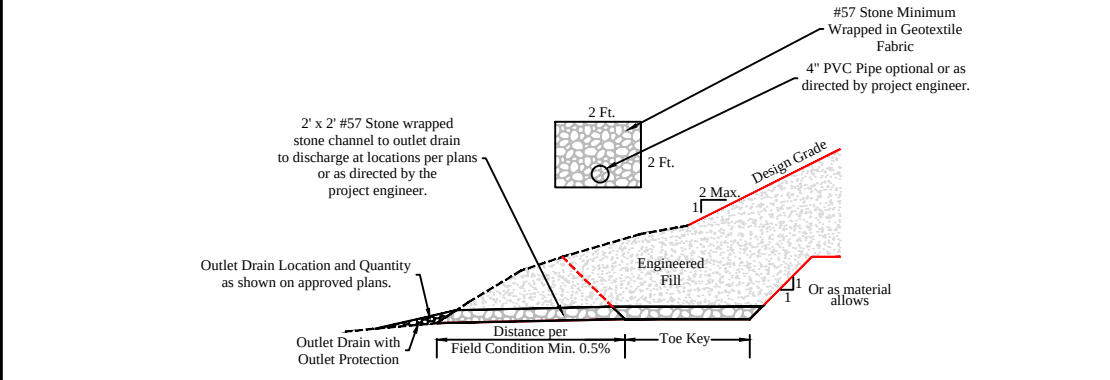
G8 Fill Slope Over-Compaction Detail
Scale: NTS



G10 Minimum Typical Toe Key Detail
Scale: NTS



G9 Compaction Testing Detail
Scale: NTS



G11 Minimum Toe Key Outlet Drain Detail
Scale: NTS

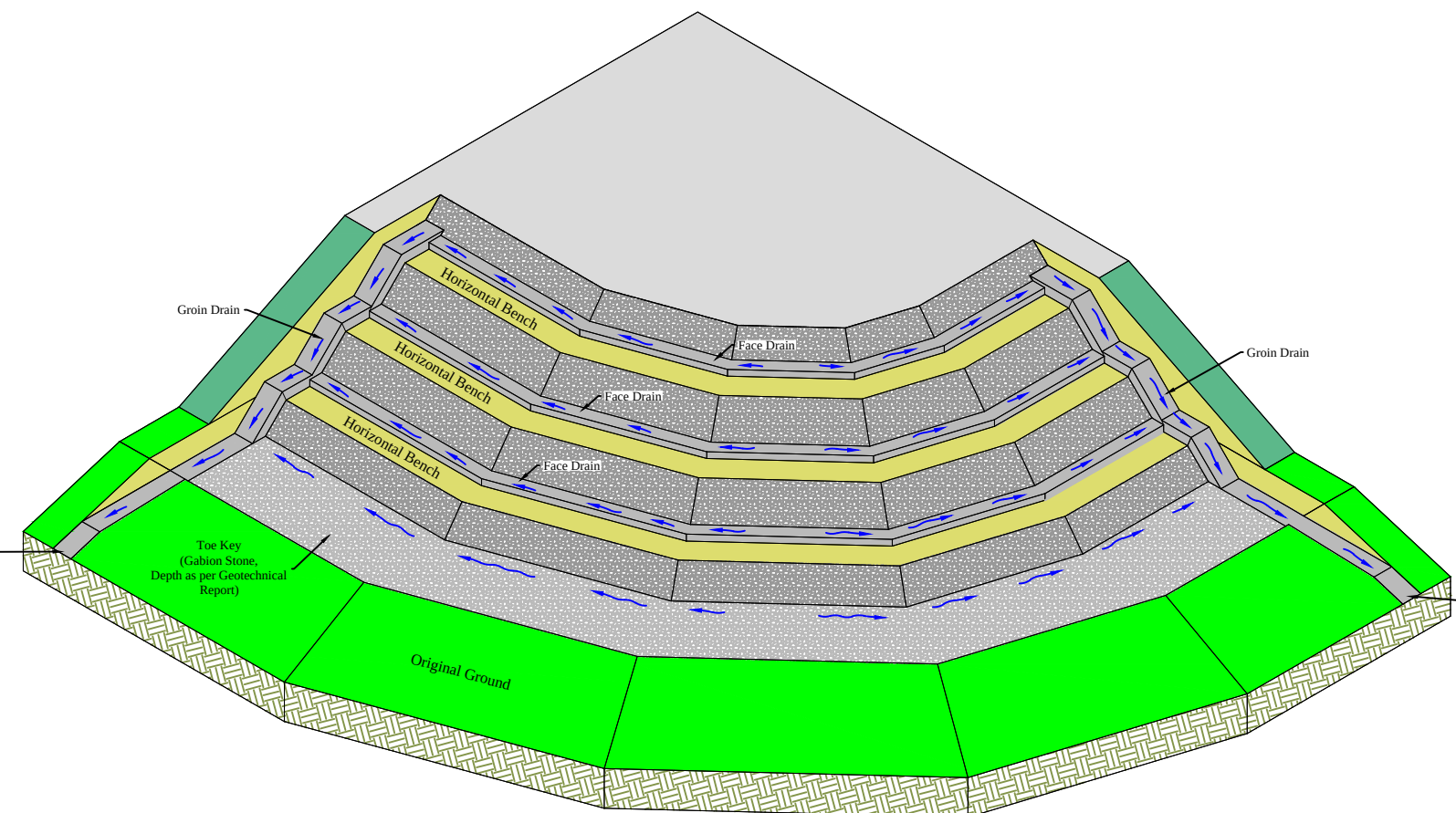
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3/14/2025

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

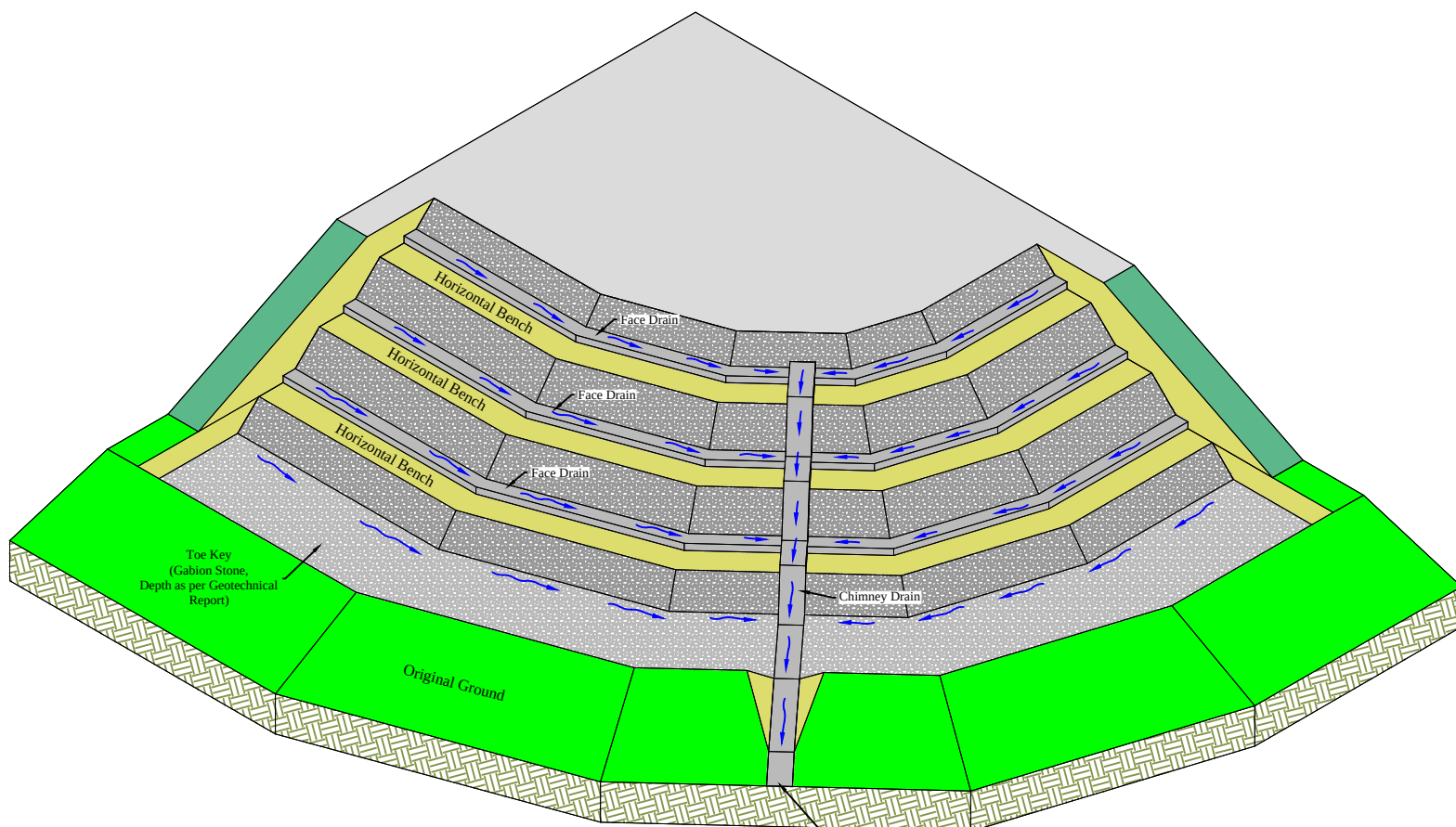
Date	02-04-2025
Revision	Design
THIS DOCUMENT PREPARED FOR HG ENERGY LLC	
Typical Geotechnical Details	
1221 Well Site	
Freemans Creek District	
Lewis County, WV	
Date:	02/04/2025
Scale:	As Shown
Designed By:	ZS
File No.	
Sheet G1 of G2	

Revision
Design

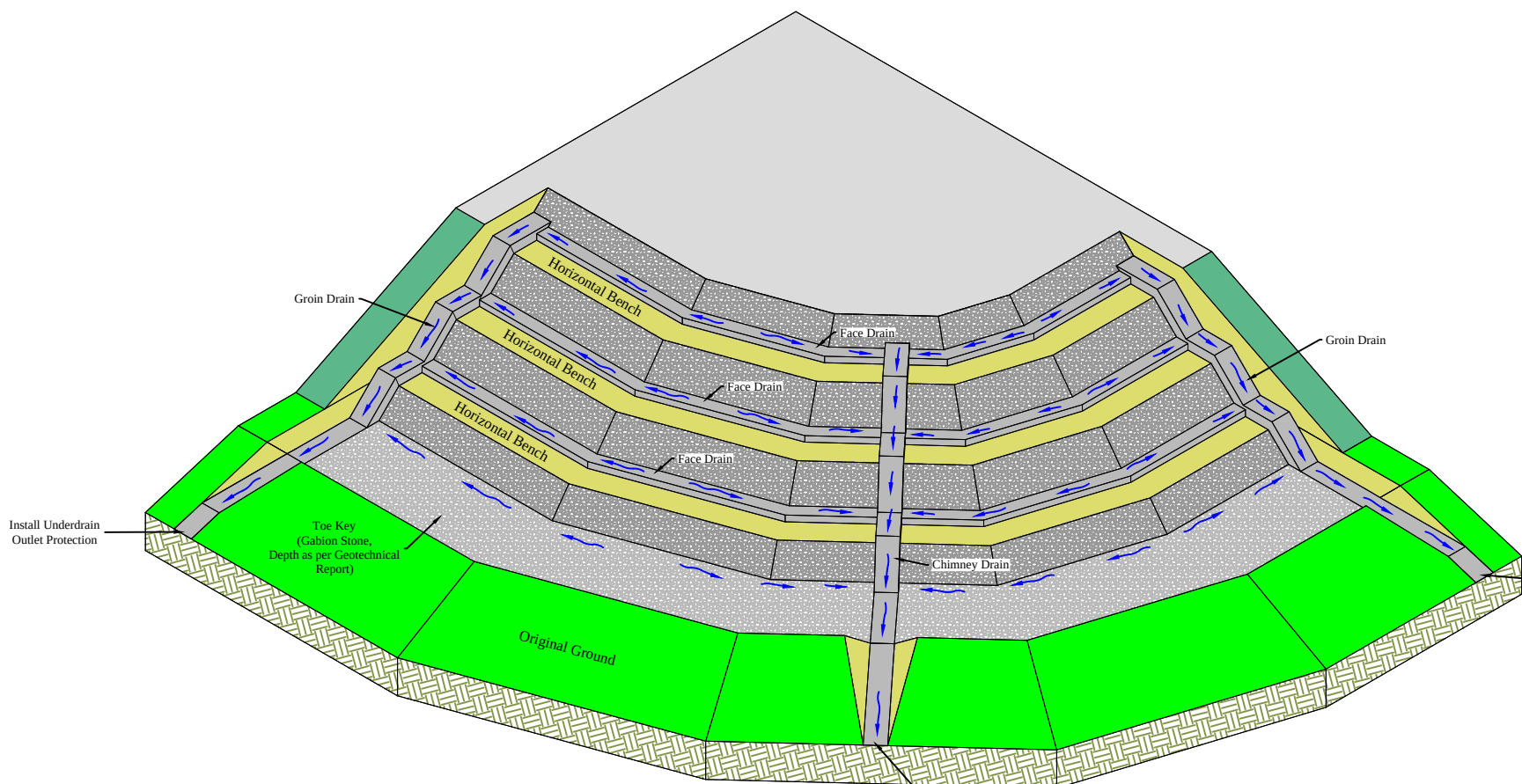
Date
02-04-2025



Groin Drain Underdrain Isometric View



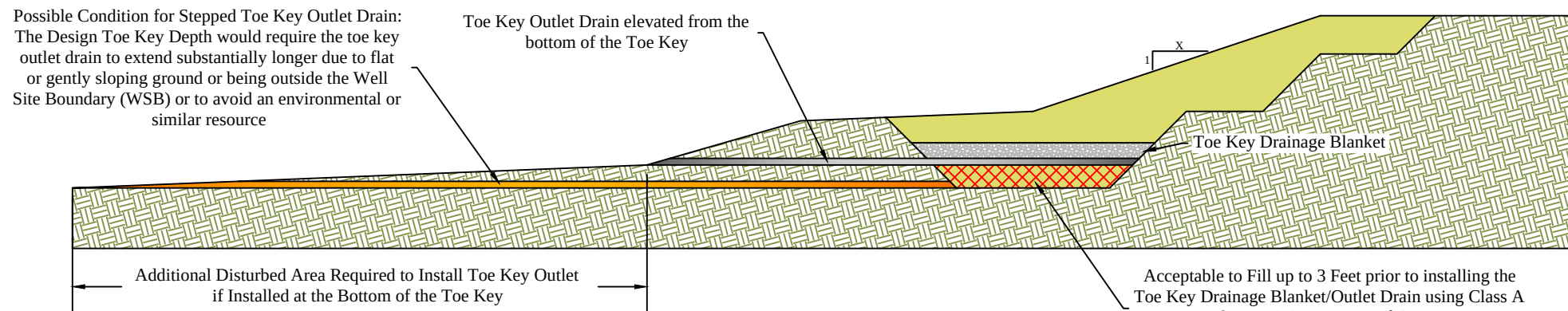
Chimney Drain Underdrain Isometric View



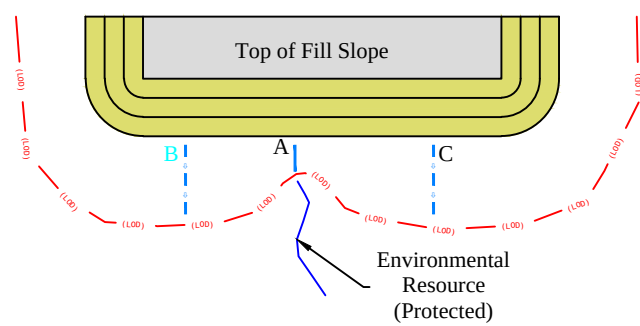
Groin Drain and Chimney Drain Underdrain Isometric View

G12 Chimney and Groin Underdrain Detail (Core Drain)

Scale: NTS



Applicable Case: Flat Slope at Toe Key Outlet



Toe Key Outlet Field Relocation

In the scenario above, Outlet Location A cannot provide positive drainage for the fill slope without impacting the Environmental Resource. Outlet Location A may be moved to Outlet Location B or Location C or, depending on subsurface conditions, Outlet Location A may be replaced with both Outlet Locations B & C to provide positive drainage from the fill slope without impacting the Environmental Resource or similar resource. Toe Key outlets shall be installed every 150' minimum or as field conditions allow.

Notes:

If a condition exists that will degrade the drainage system of the engineered fill, the Geotechnical Engineer and/or his/her representative shall elevate the toe key or bonding bench material before installing the drainage system to provide positive flow to an approved outlet. The toe key or bonding bench may be filled at maximum 15" loose lifts compacted to 12" using Class A Material Compacted to 98% ASTM D 698 for up to three feet or per the Geotechnical Engineer.

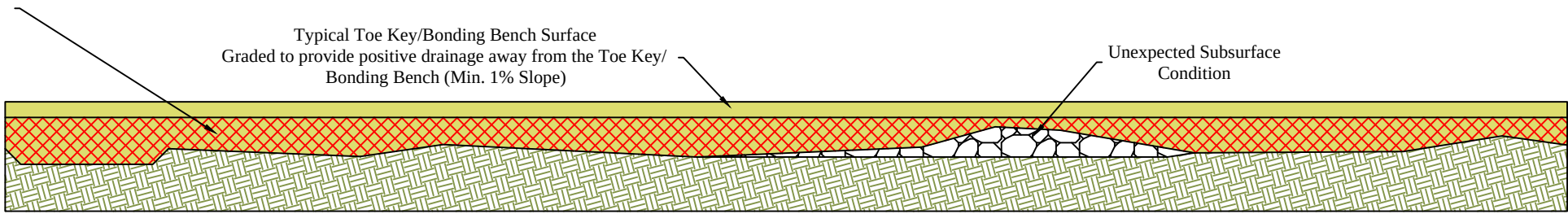
The Toe Key outlets can be field adjusted depending on the material horizon. The toe key outlet locations are conceptual as shown on the plan with the intent of providing a location that shall guarantee positive drainage away from the Toe Key without impacting environmental or similar resources.

G13 Stepped Toe Key/Bonding Bench

Scale: NTS

Acceptable to Fill up to 3 Feet prior to installing the Toe Key or Bonding Bench drainage structure to provide positive drainage away from the Toe Key/ Bonding Bench with the approval of the site Geotechnical Engineer

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



Applicable Case: Excessively Rough/Uneven Surface at Toe Key/Bonding Bench



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Typical Geotechnical Details

1221 Well Site

Freemans Creek District
Lewis County, WV

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3/14/2025

Date: 02/04/2025
Scale: As Shown
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Sheet G2 of G2

03/14/2025

1221 Well Site Fink Creek Access

HG Energy LLC

Exhibit A: As-Built Modification



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WVDEP OOG
Modification
3/14/2025

Revision
Design

Date
02-04-2025

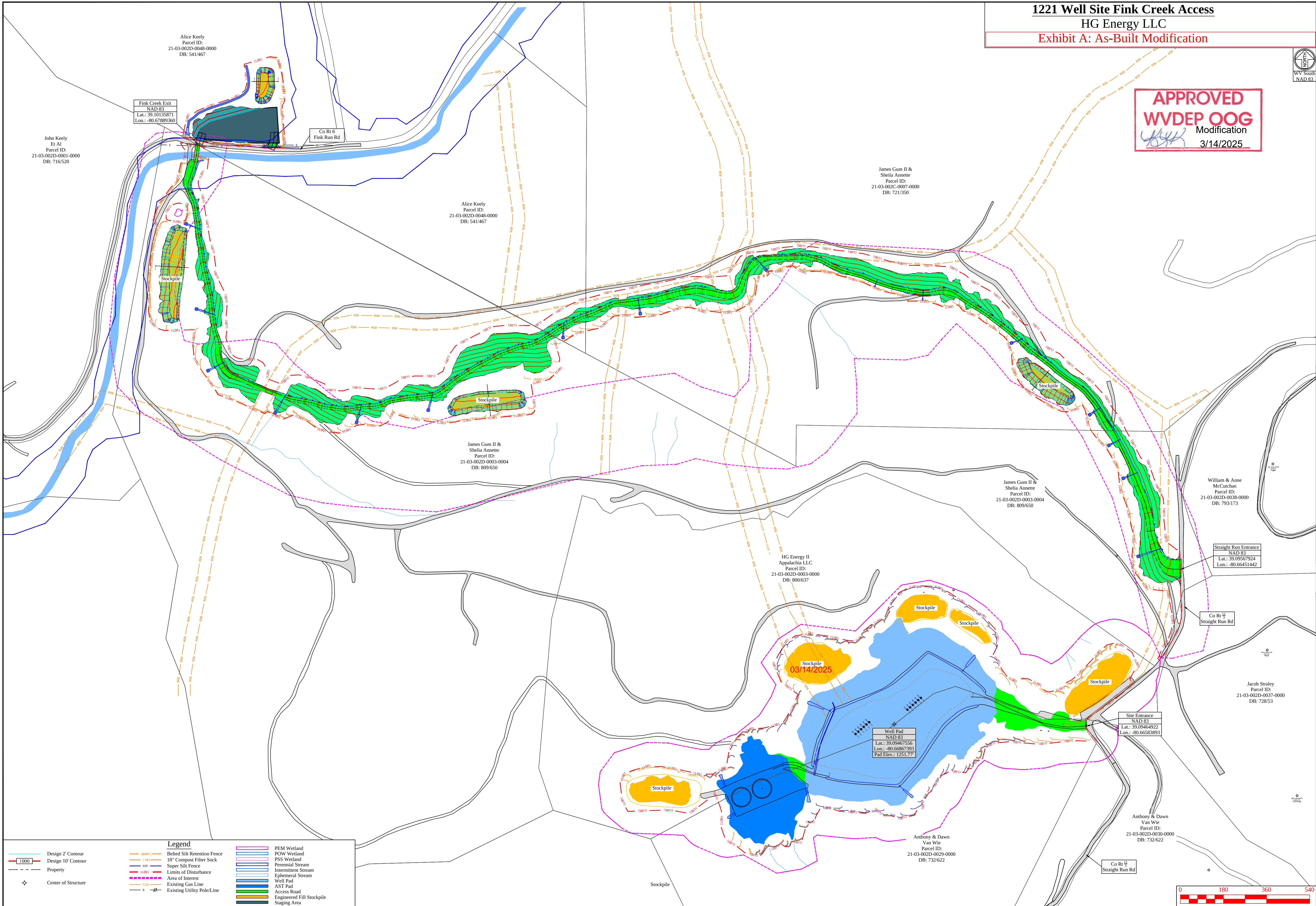


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Landowner Exhibit
1221 Well Site
Freemans Creek District
Lewis County, WV

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



Alice Keely
Parcel ID:
21-03-002D-0048-0000
DB: 541/467

Fink Creek Exit
NAD 83
Lat.: 39.10135871
Lon.: -80.67889360

John Keely
Et Al
Parcel ID:
21-03-002D-0001-0000
DB: 716/520

Co Rt 6
Fink Run Rd

Alice Keely
Parcel ID:
21-03-002D-0048-0000
DB: 541/467

James Gum II &
Sheila Annette
Parcel ID:
21-03-002C-0007-0000
DB: 721/350

James Gum II &
Sheila Annette
Parcel ID:
21-03-002D-0003-0004
DB: 809/650

HG Energy II
Appalachia LLC
Parcel ID:
21-03-002D-0003-0000
DB: 800/637

James Gum II &
Sheila Annette
Parcel ID:
21-03-002D-0003-0004
DB: 809/650

William & Anne
McCutchan
Parcel ID:
21-03-002D-0038-0000
DB: 793/173

Straight Run Entrance
NAD 83
Lat.: 39.09567924
Lon.: -80.66451442

Co Rt 4
Straight Run Rd

Jacob Straley
Parcel ID:
21-03-002D-0037-0000
DB: 728/53

Well Pad
NAD 83
Lat.: 39.09467556
Lon.: -80.66867393
Pad Elev.: 1251.77

Anthony & Dawn
Van Wie
Parcel ID:
21-03-002D-0030-0000
DB: 732/622

Site Entrance
NAD 83
Lat.: 39.09464922
Lon.: -80.66583893

Co Rt 4
Straight Run Rd

Anthony & Dawn
Van Wie
Parcel ID:
21-03-002D-0030-0000
DB: 732/622

Legend

- | | | | |
|----------------------------|-------------------------|----------------------------|-----------------------|
| Design 2' Contour | Design 10' Contour | Property | Center of Structure |
| Belts Silt Retention Fence | 18" Compust 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 | | |

Exhibit A: As-Built Modification

Modification
3/14/2025



DB: 809/650

21-03-002D-0003-0000
DB: 800/637

Parcel ID:
1-03-002D-0003-00

155

21-03-002D-0030-00
DB: 732/622

21-03-002D-0030-0000
DB: 732/622

The Contractor shall re-spread

Maintenance Schedule:

All BMP's shall be inspe

Reclamation Sequence:

1. The contractor shall re

IV-5 Lime and Fertilizer Application Rates		

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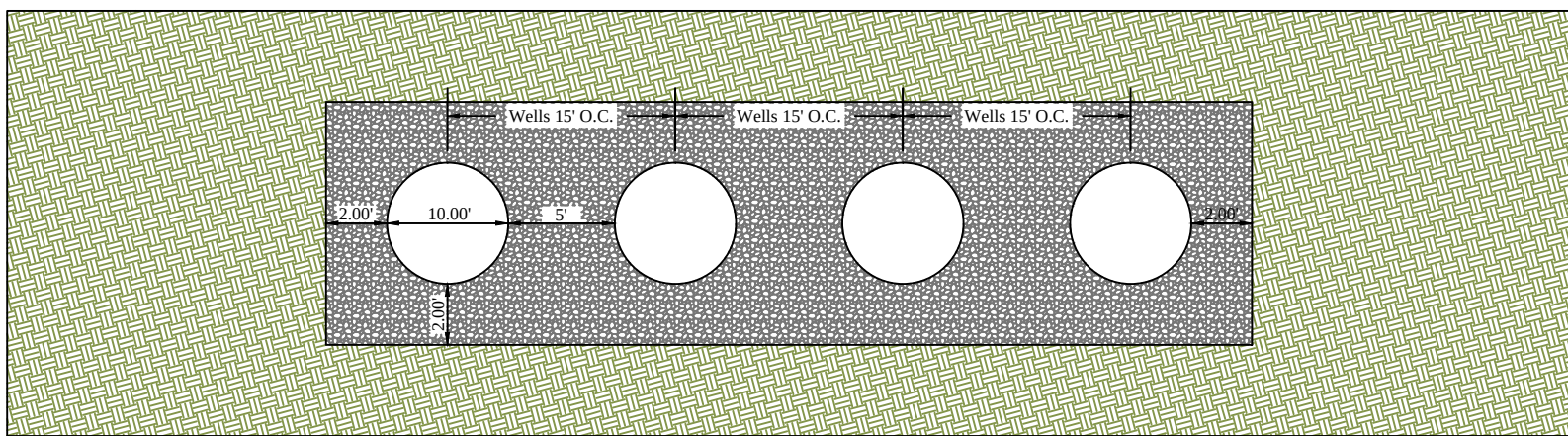
Above 6.0	2.00	500.00
5.0 to 6.0	3.00	500.00
Below 5.0	4.00	500.00

backblading, or tracking up and down the slope.

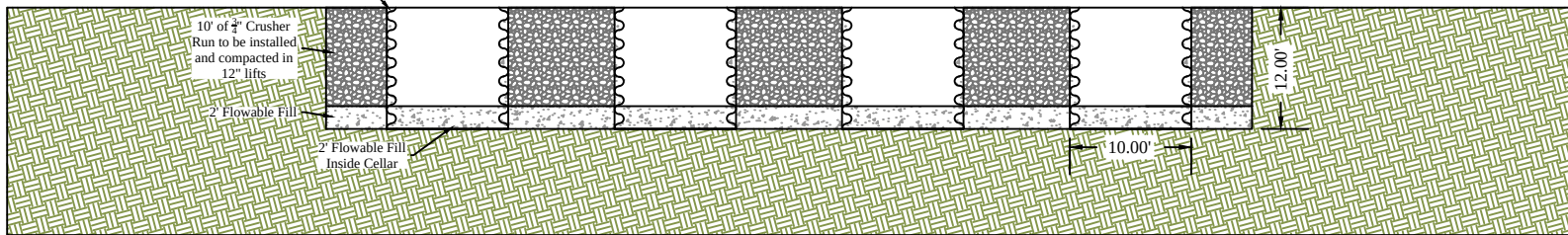
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File No.
Sheet S1 of S1



Trench Cellar Plan View



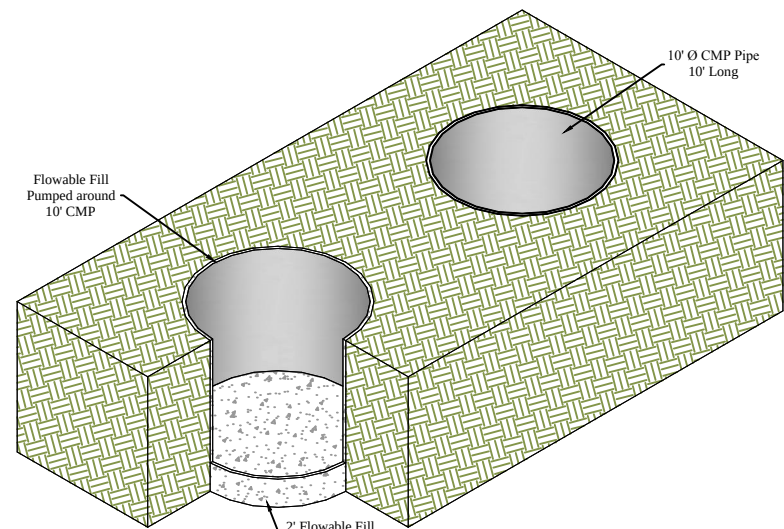
Trench Cellar Section View

M1

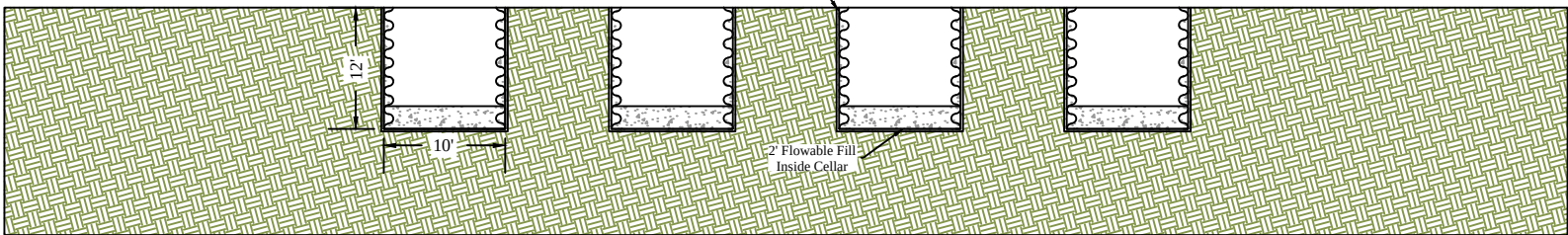
Typical Trenched Cellar Detail

Scale: NTS

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



Auger Cellar Plan View



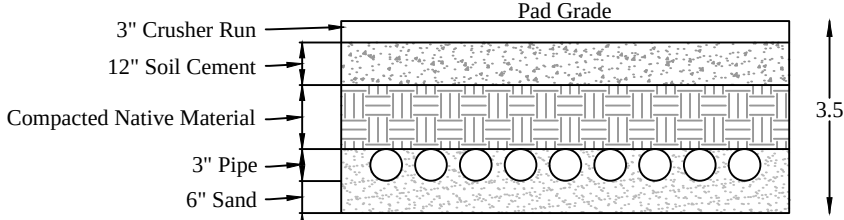
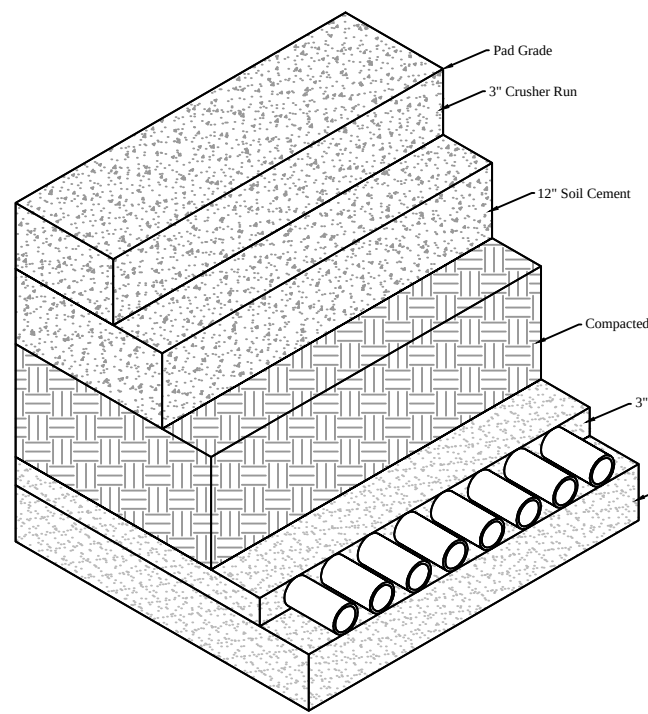
Auger Cellar Section View

M2

Typical Augered Cellar Detail

Scale: NTS

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



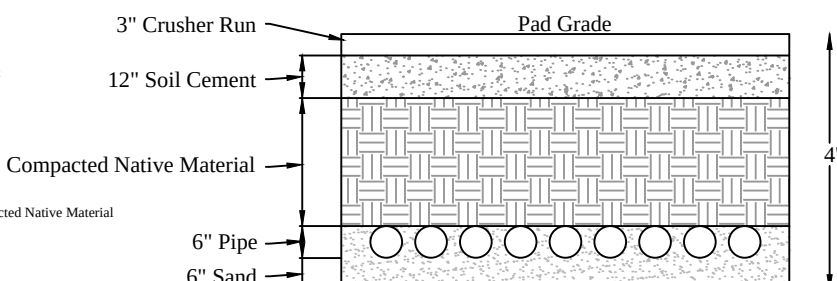
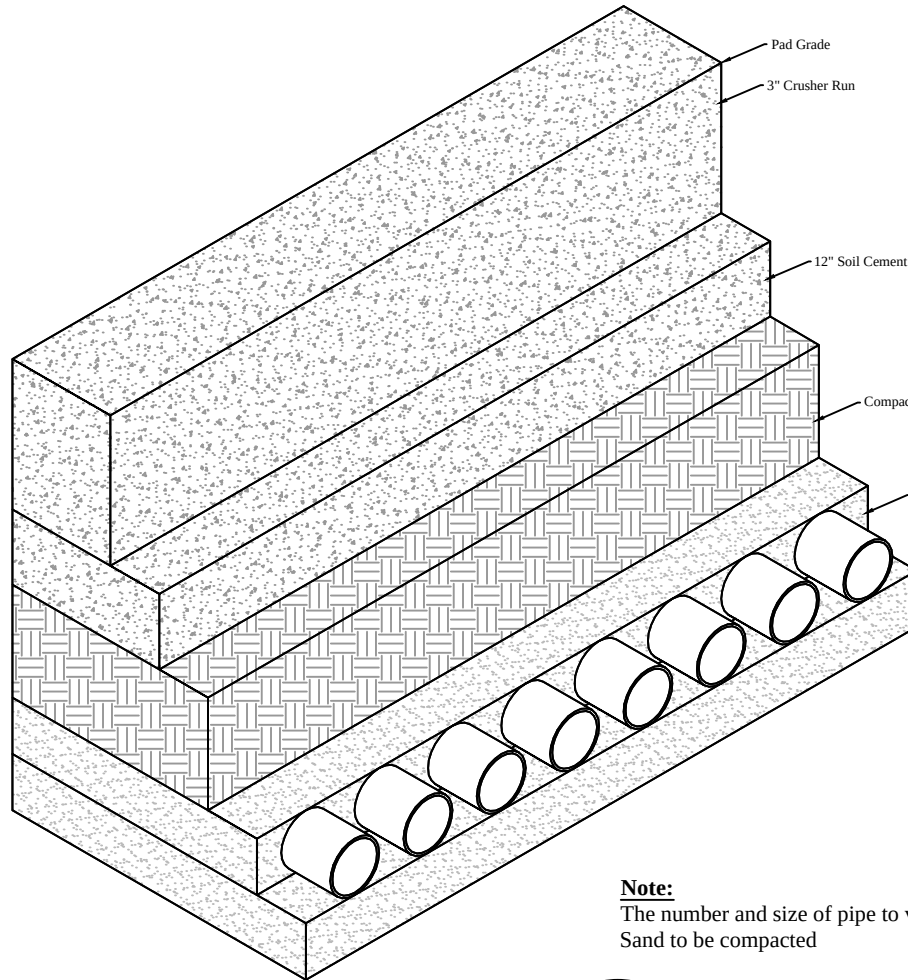
Well Line Detail

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

M3

Typical Well Line Detail

Scale: NTS



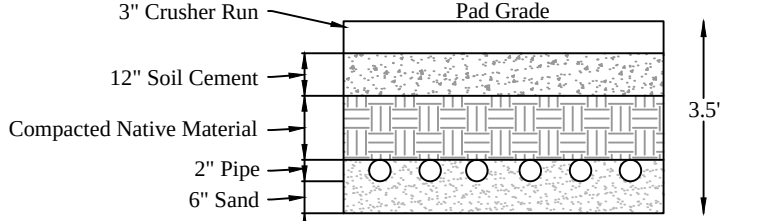
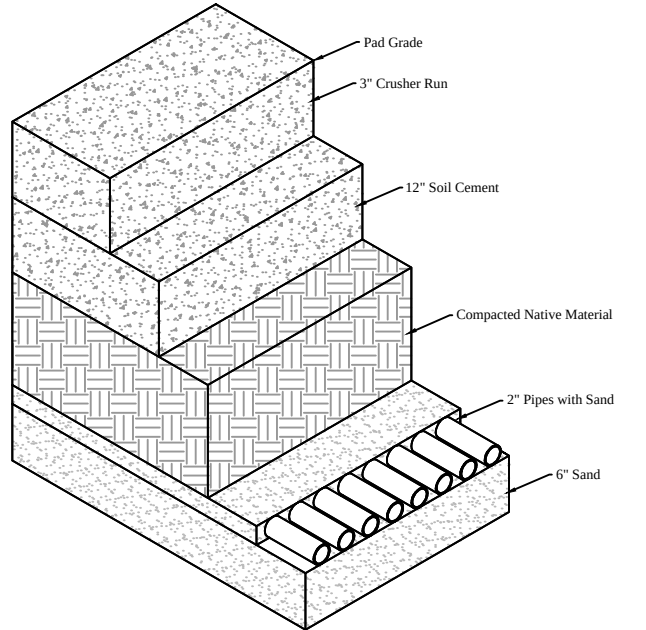
Sales Line Detail

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

M4

Typical Sales Line Detail

Scale: NTS



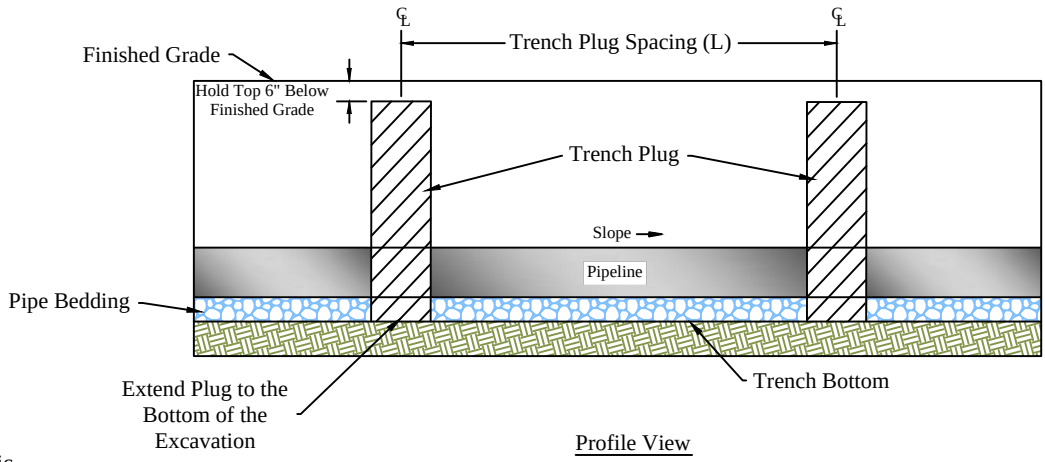
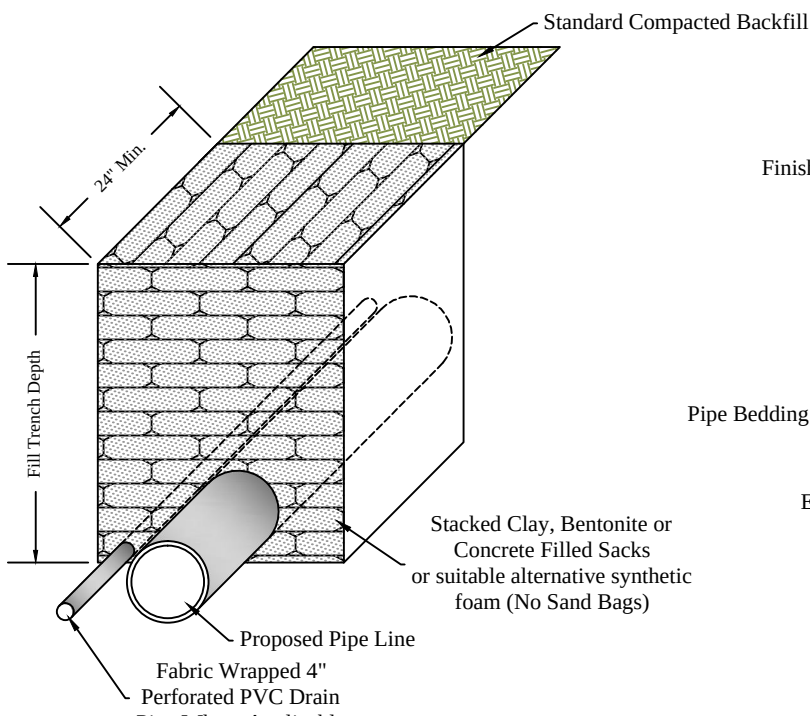
Tank Line Detail

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

M5

Typical Tank Line Detail

Scale: NTS



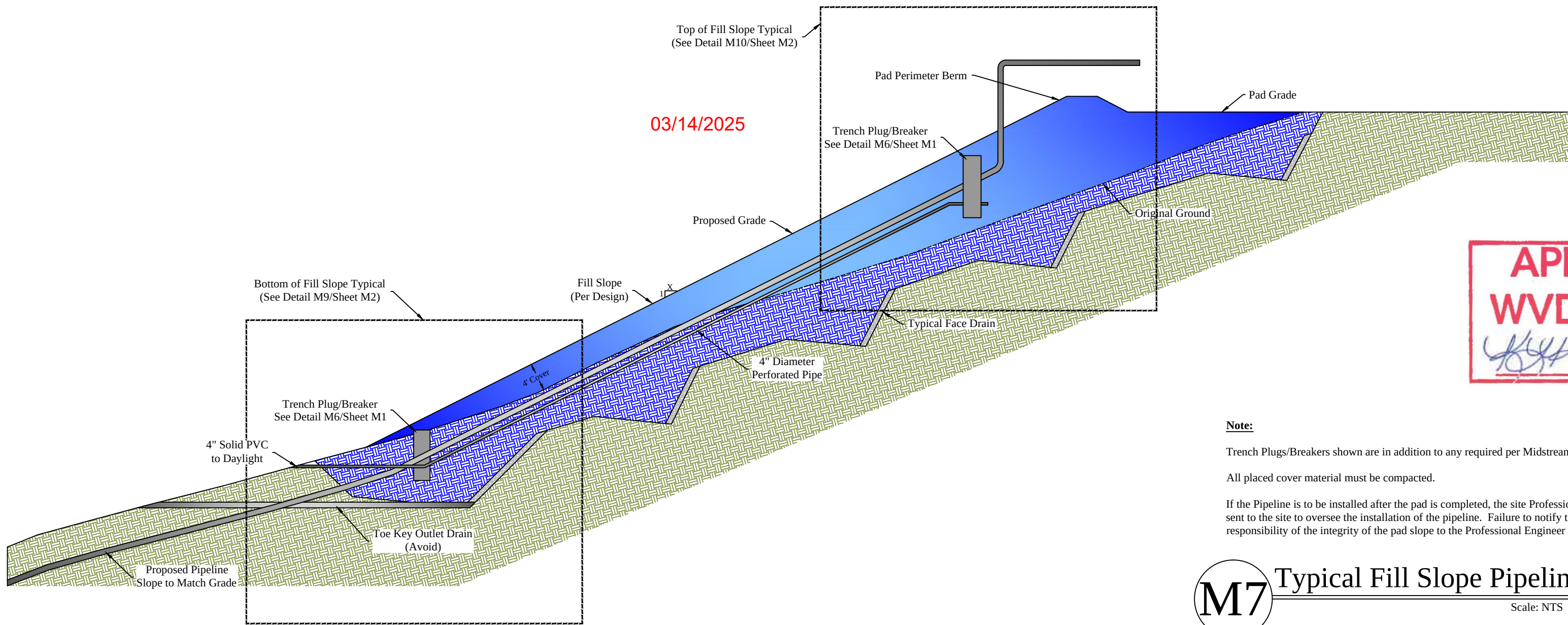
Typical Spacing of Trench Plug/Breakers

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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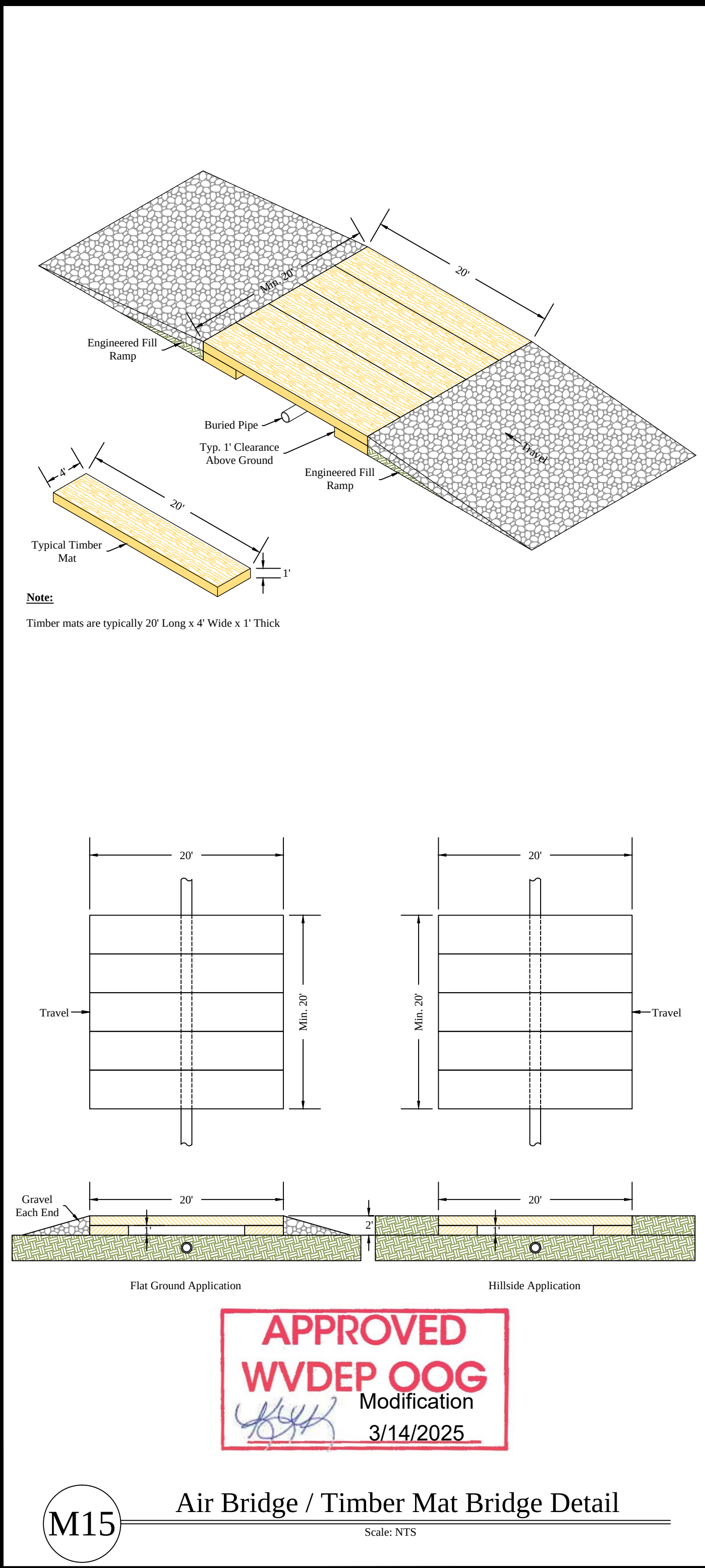
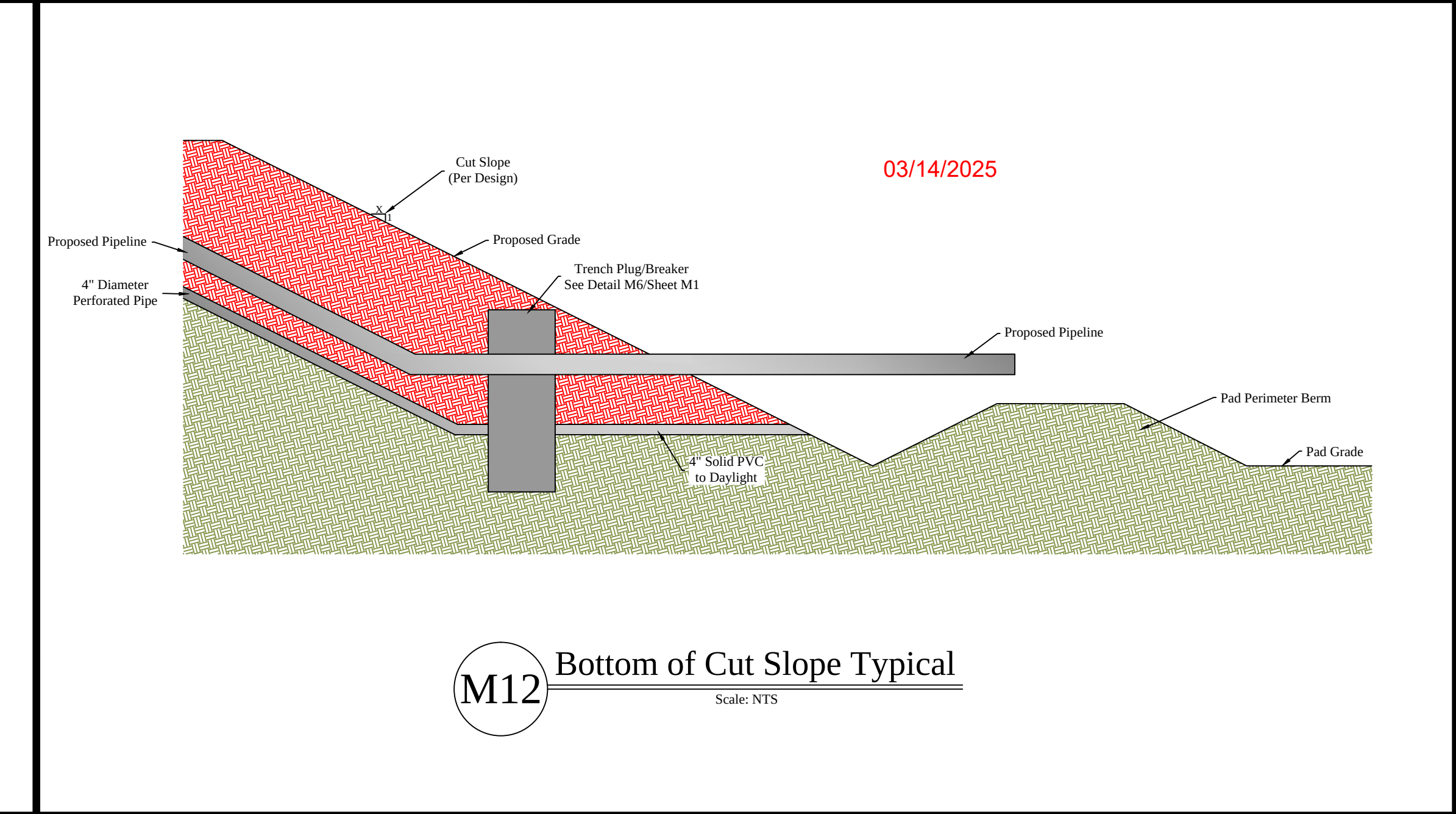
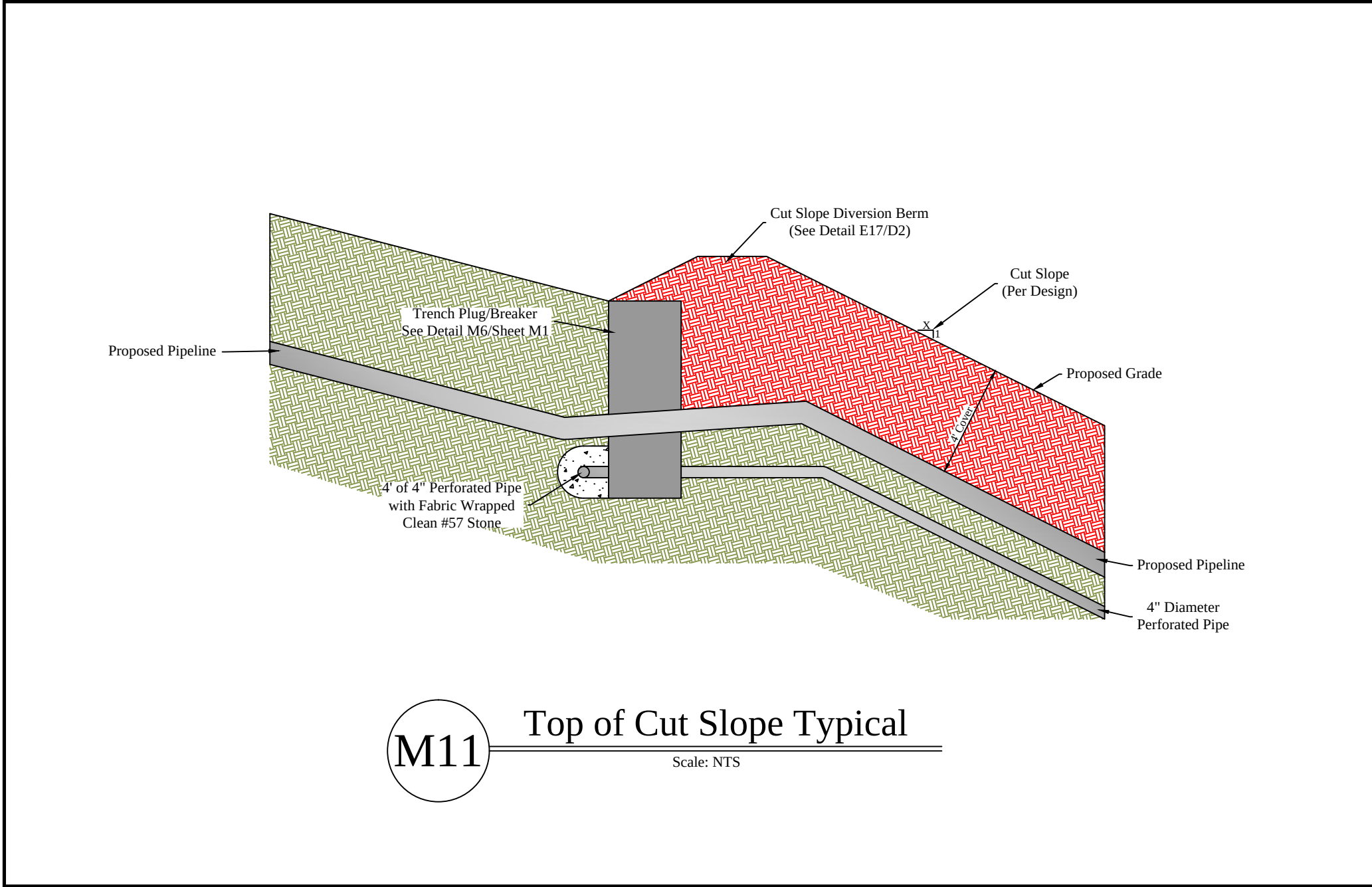
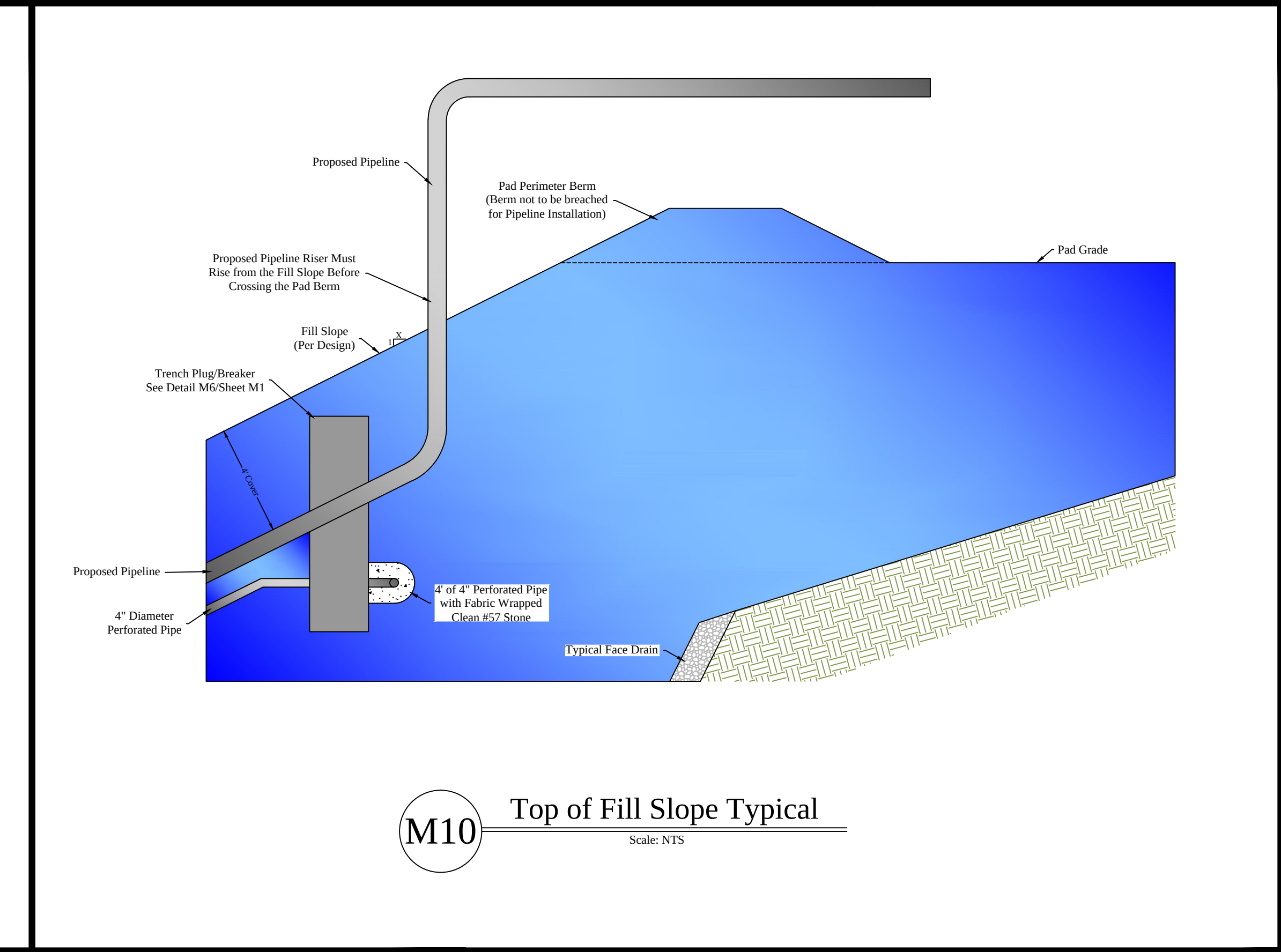
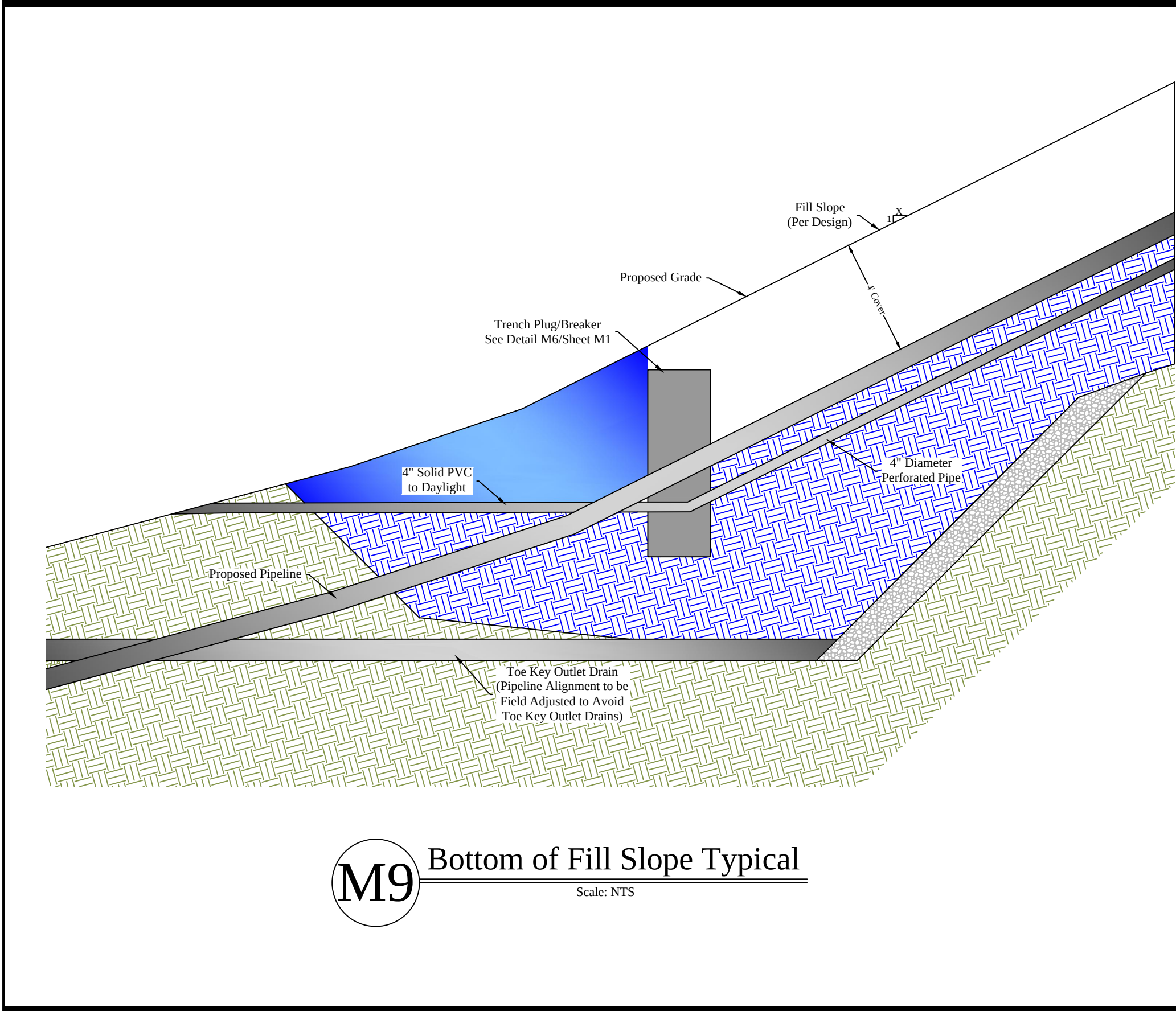
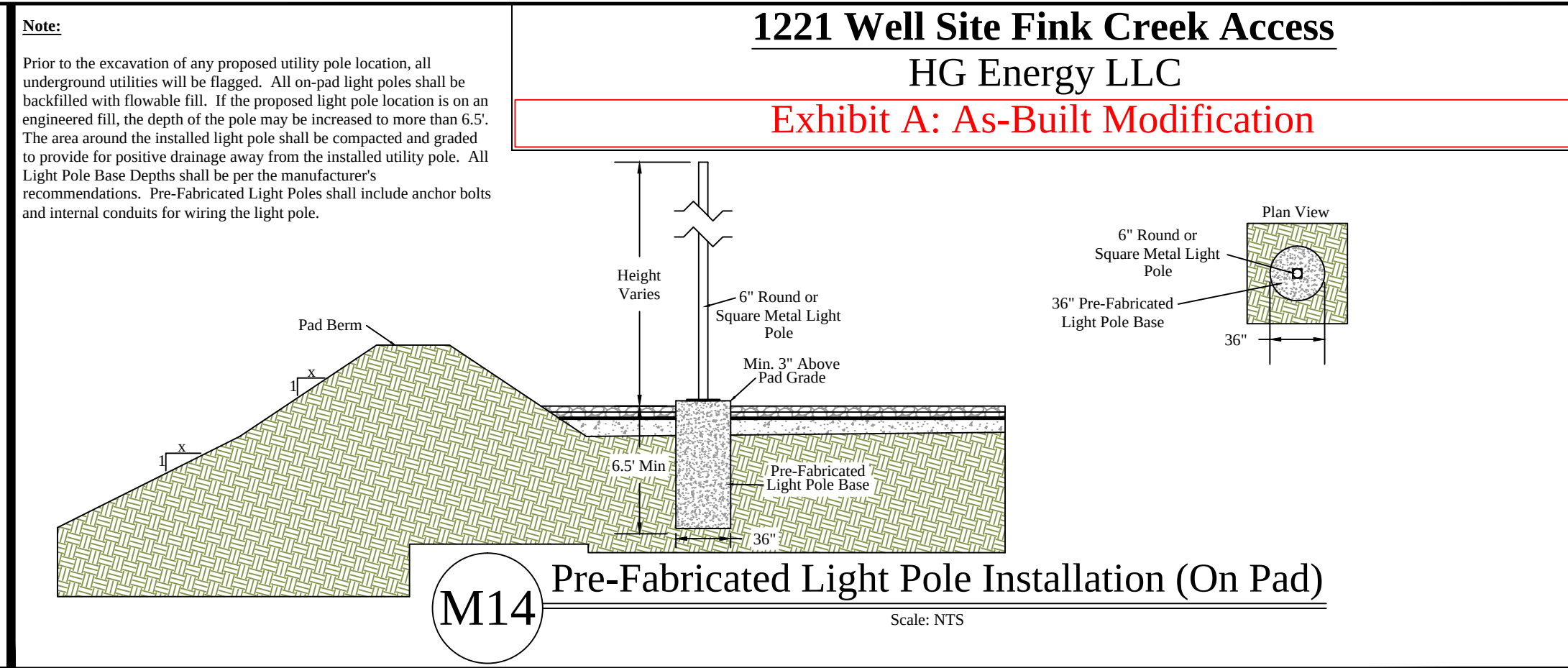
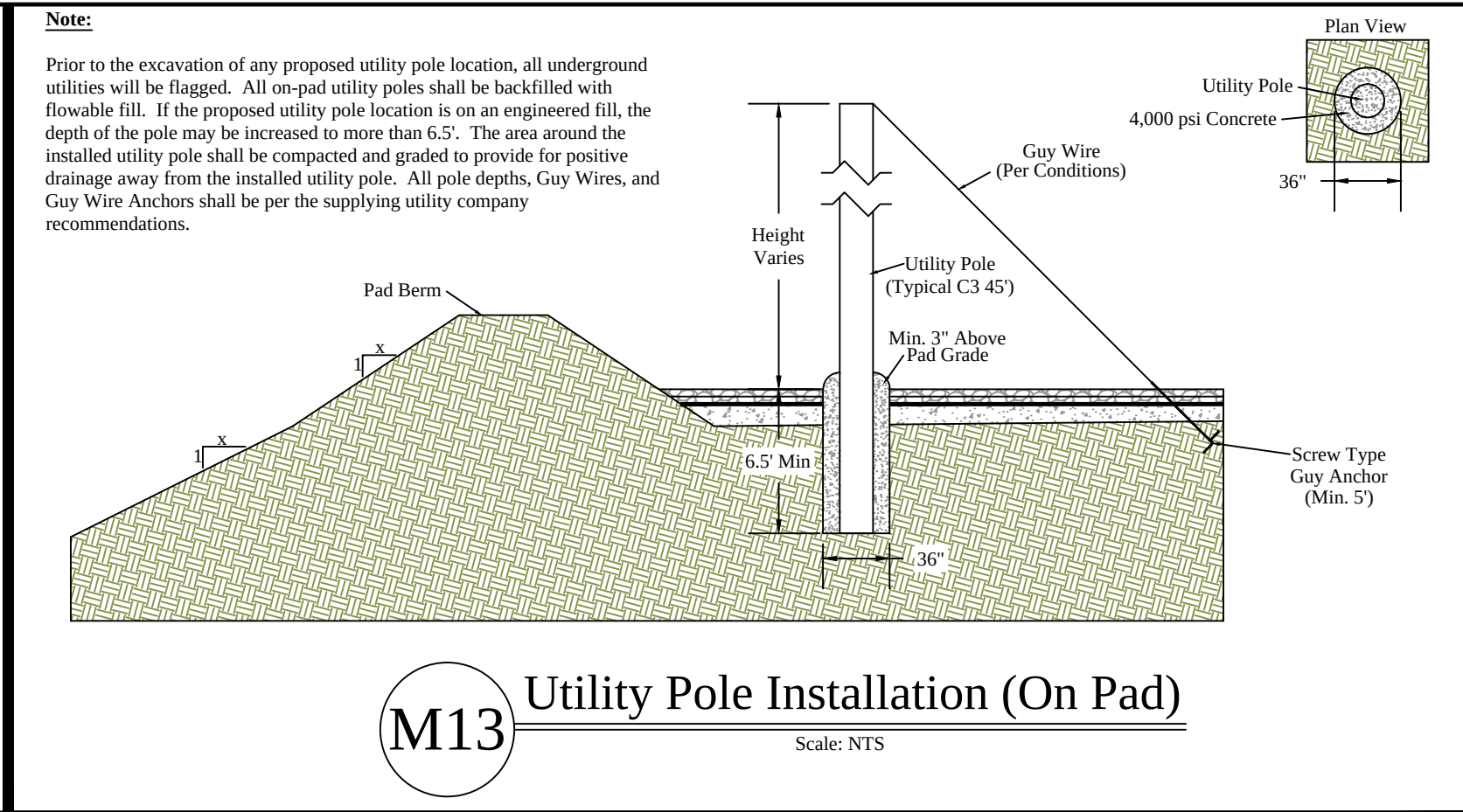
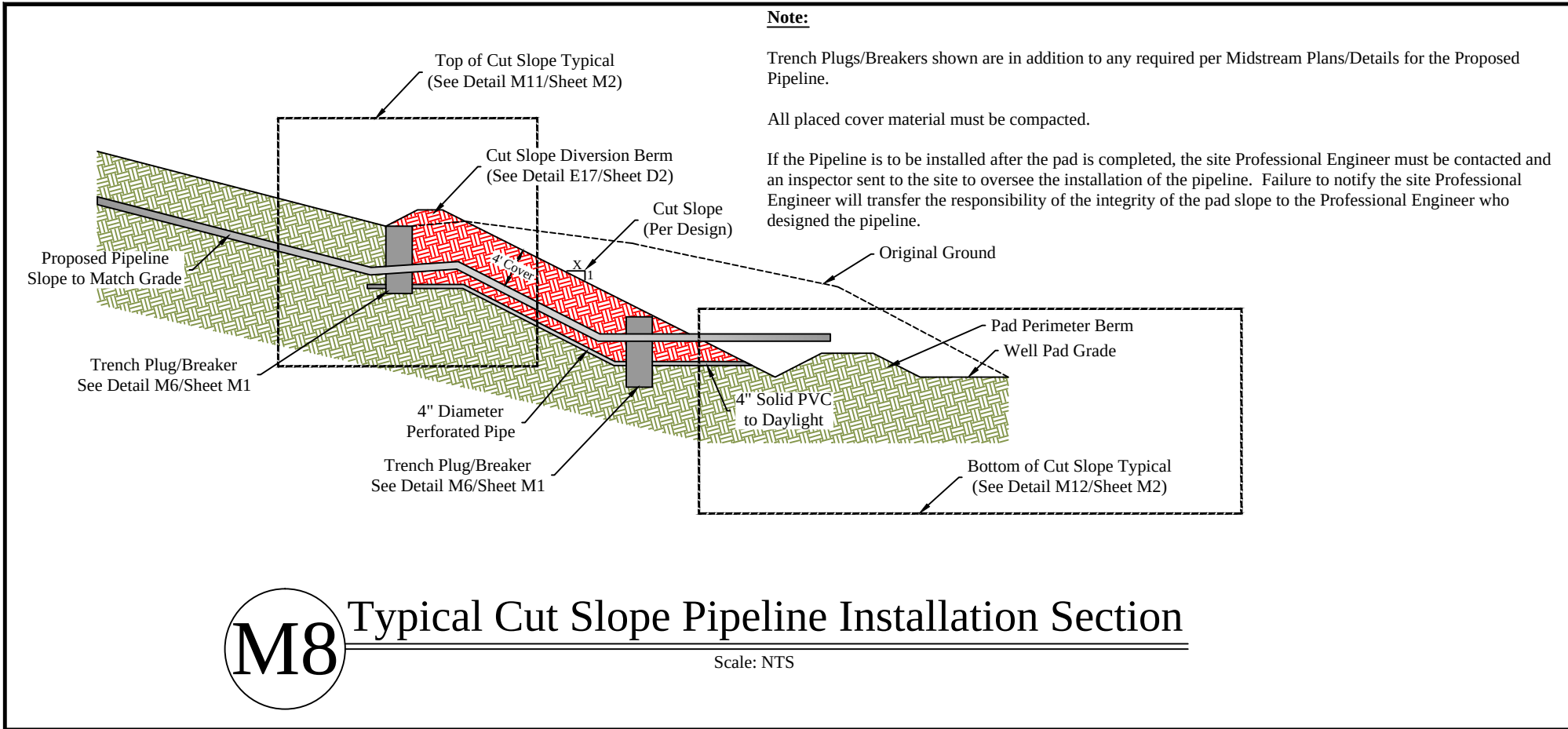


Typical Midstream Production Details

1221 Well Site

Freemans Creek District
Lewis County, WV

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



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P.O. Box 254
Dallman, WV 26029
(304) 338-0965

Typical Midstream Production Details

1221 Well Site

Freemans Creek District
Lewis County, WV

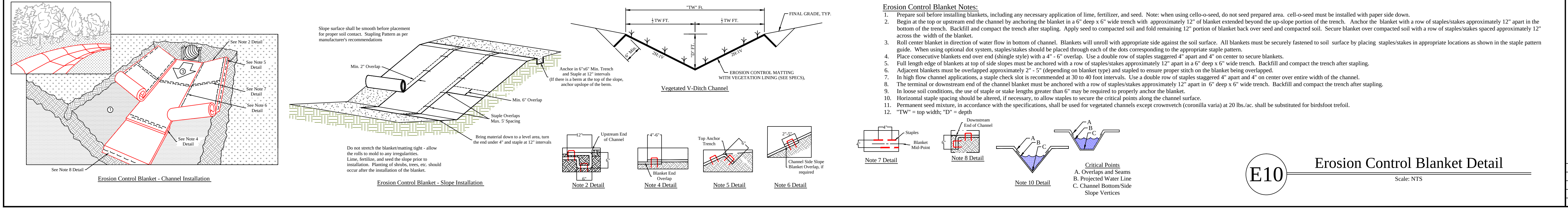
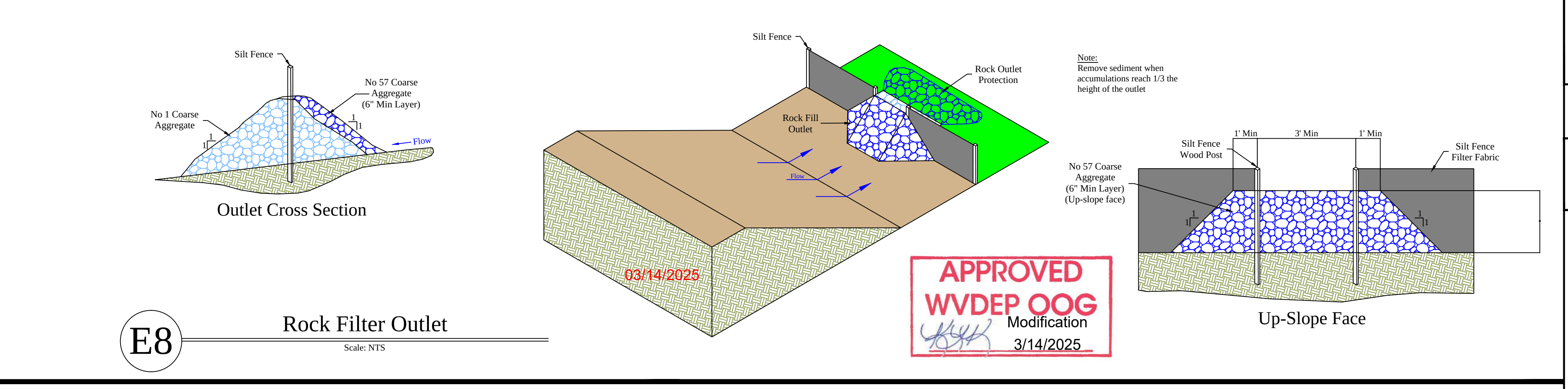
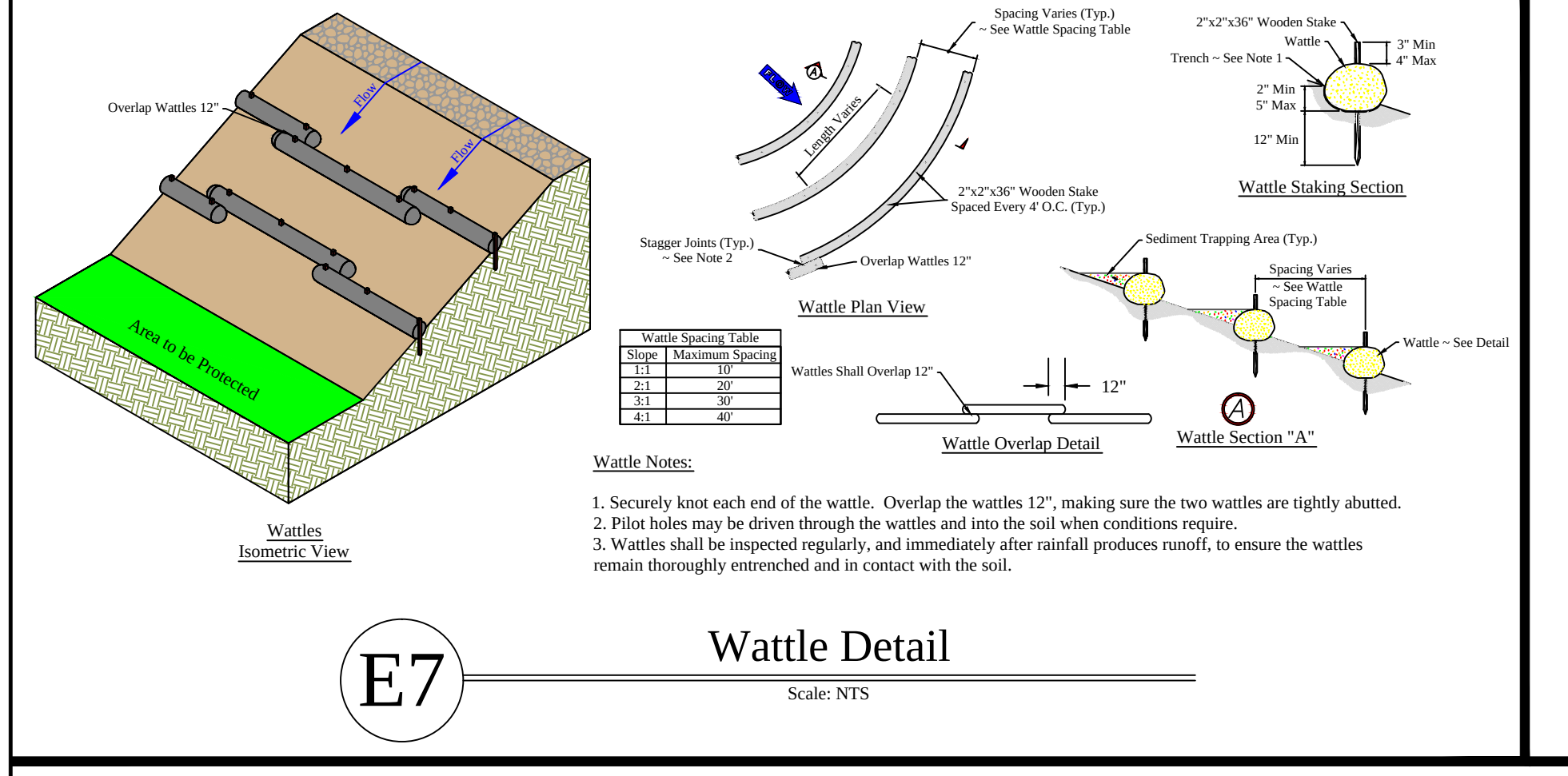
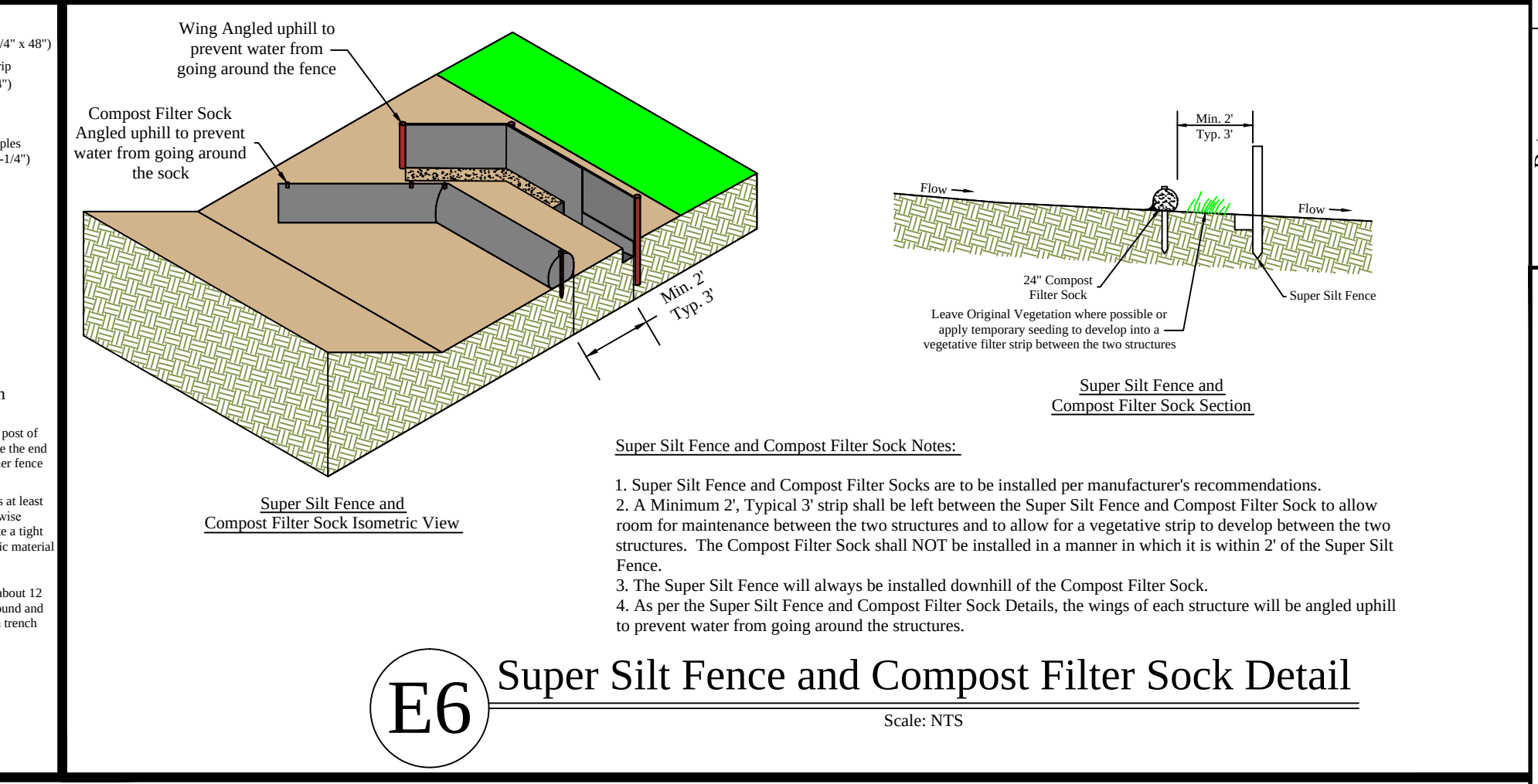
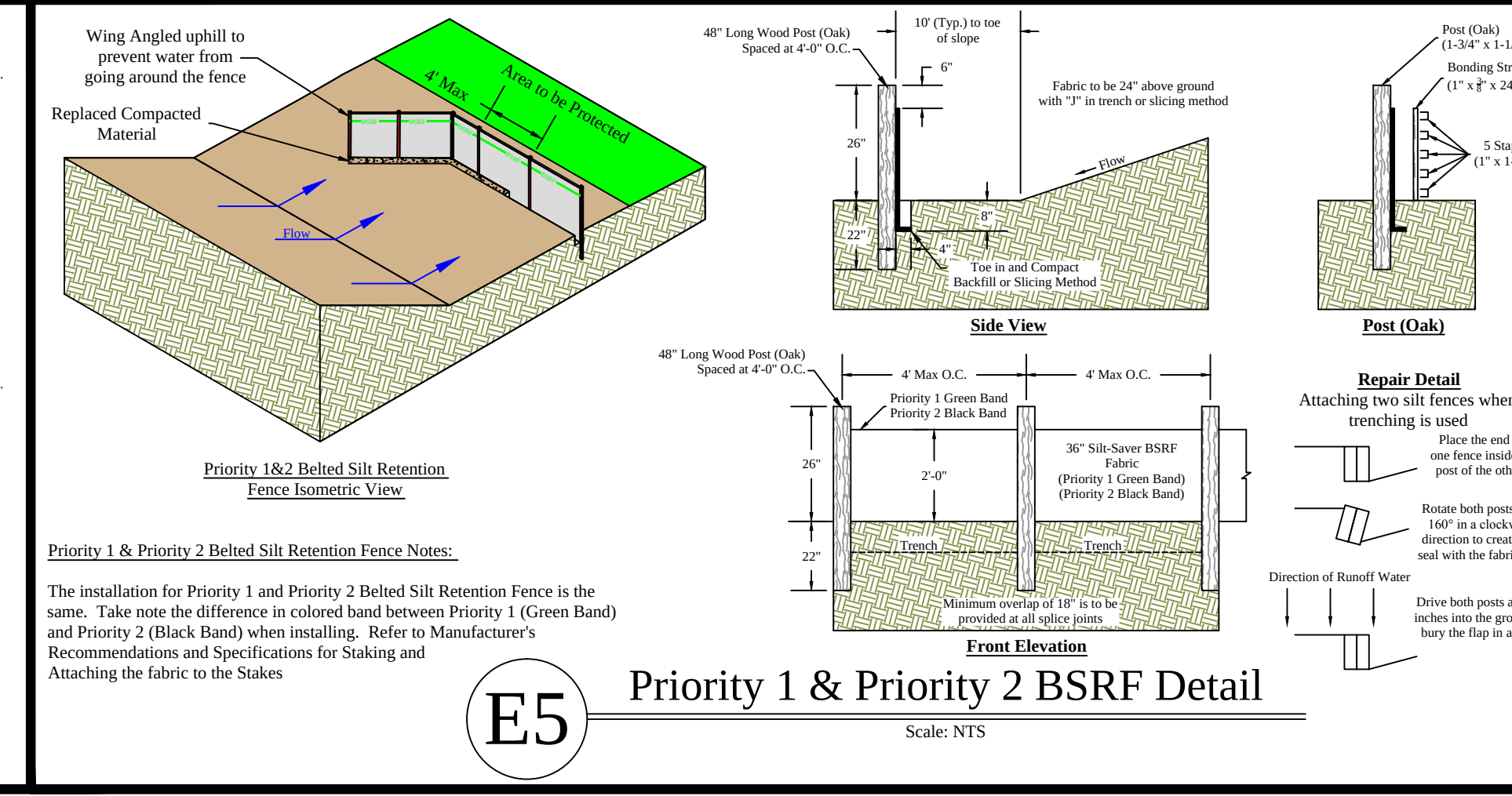
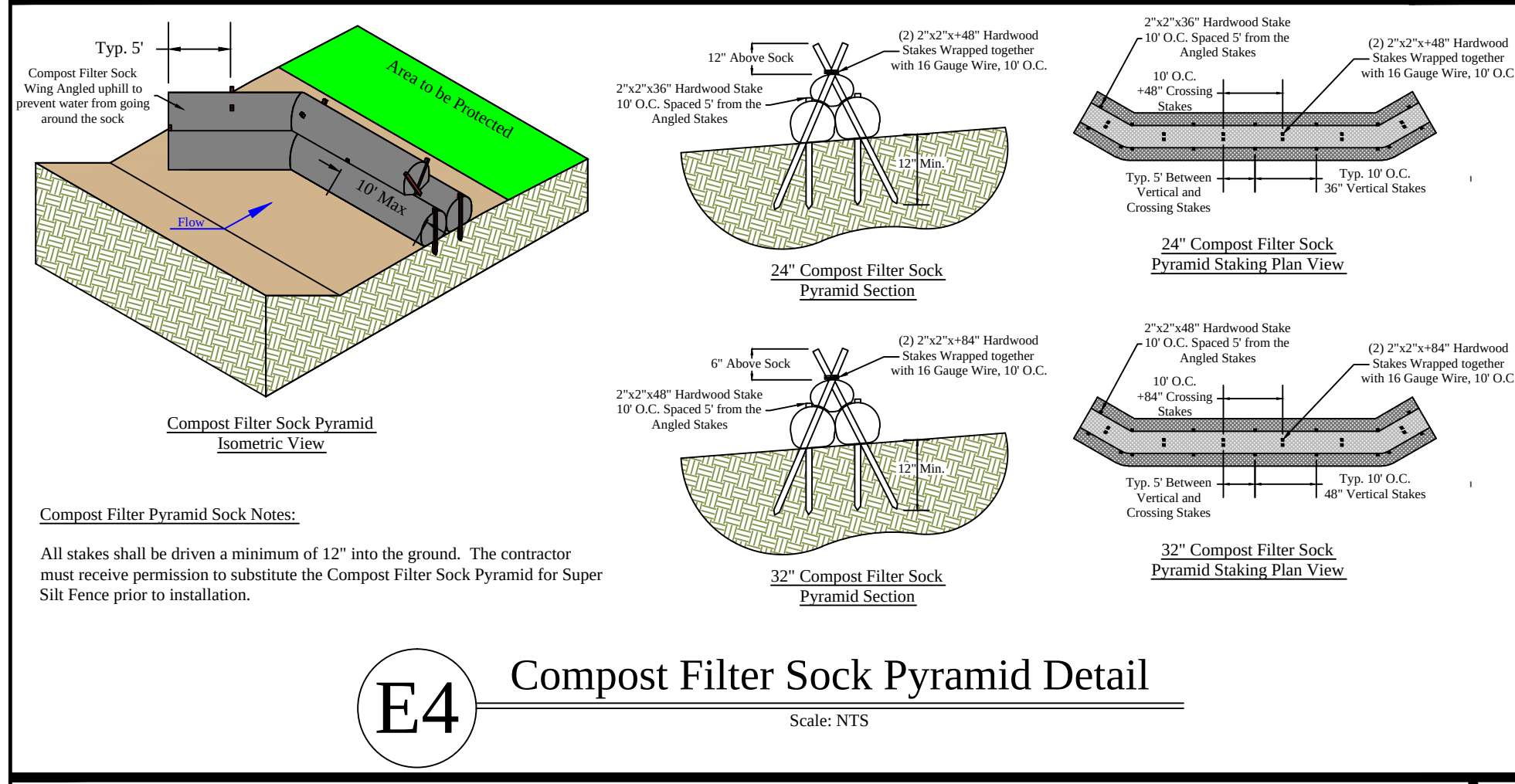
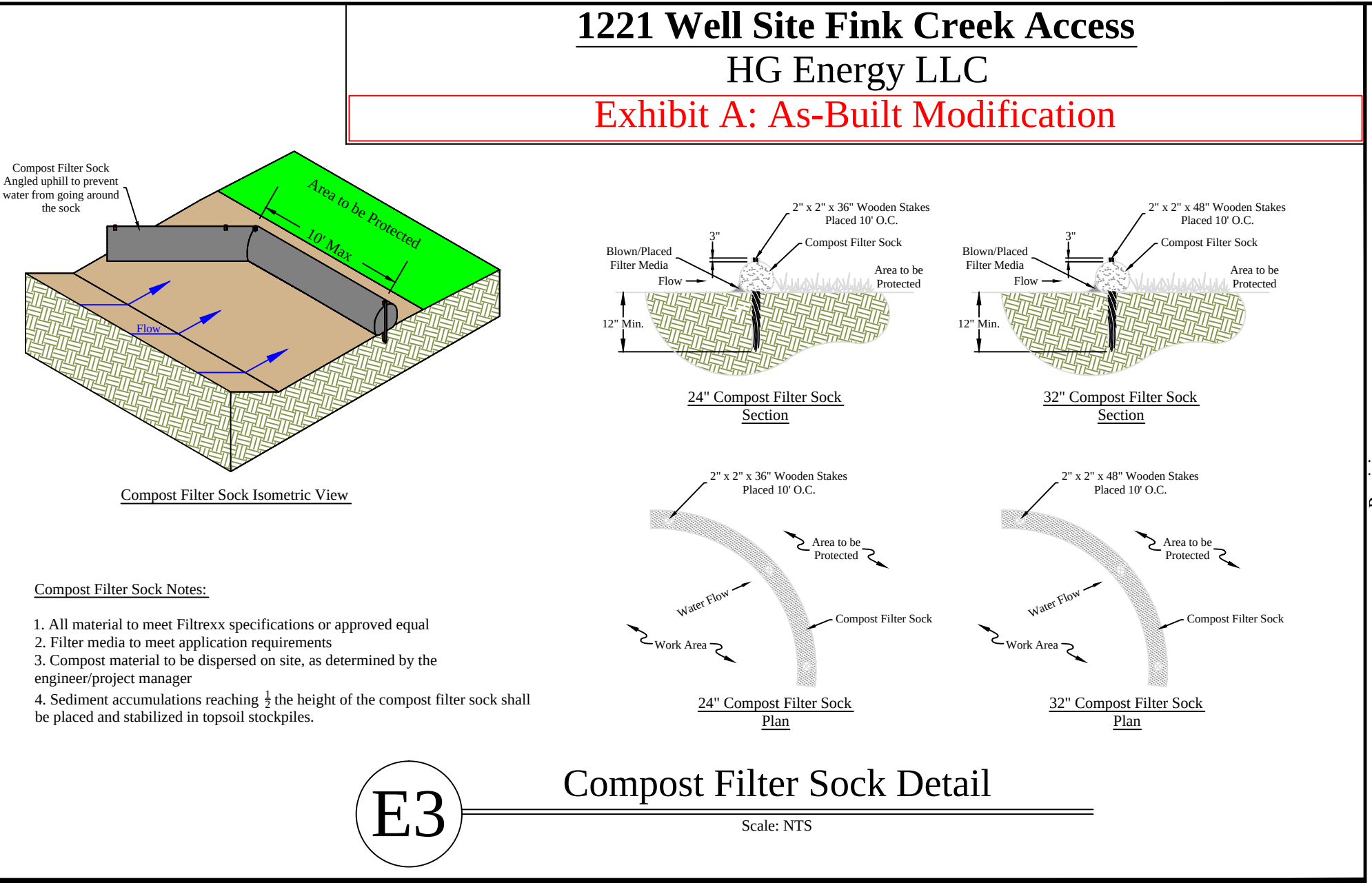
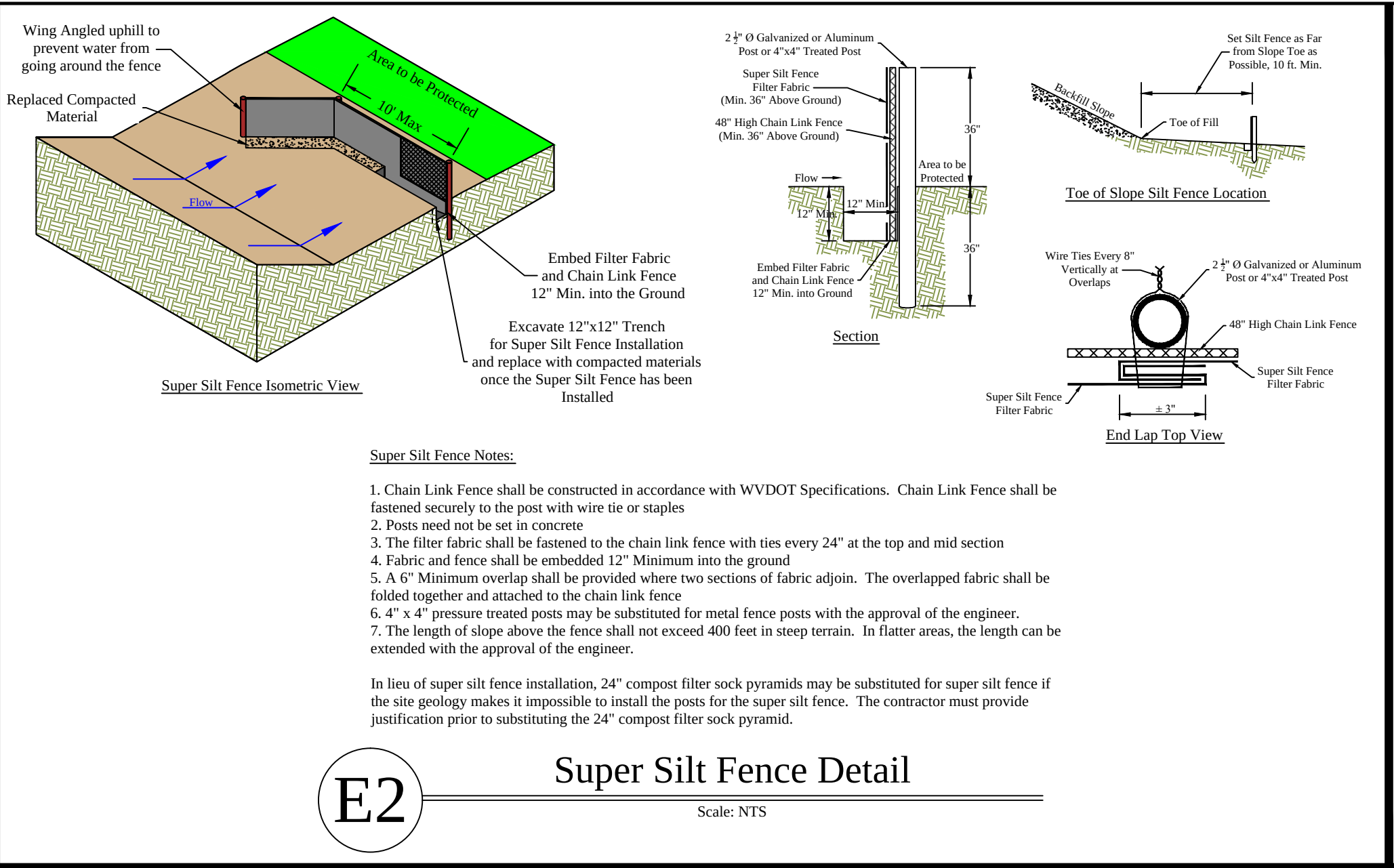
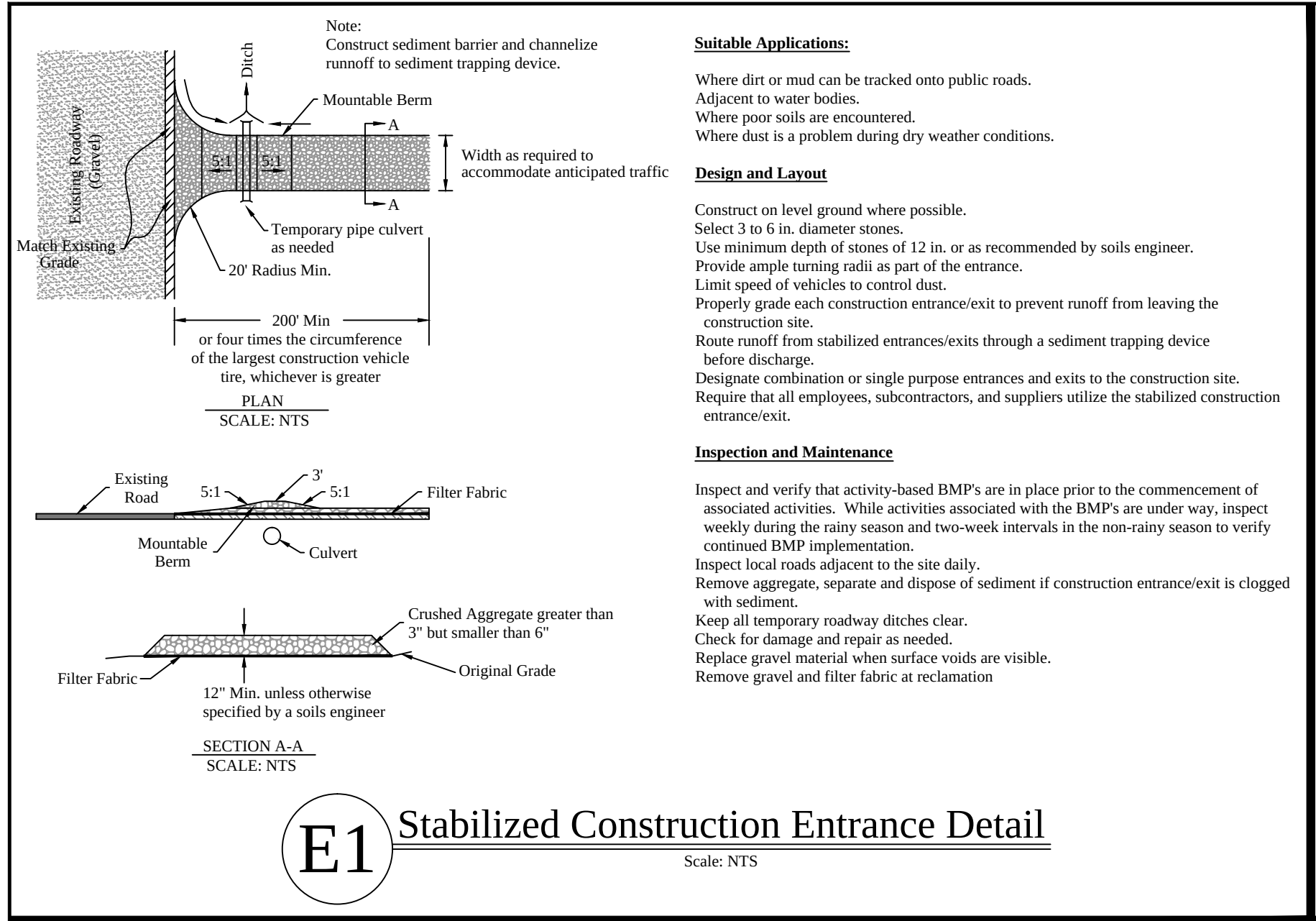
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Sheet M2 of M2



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

Erosion and Sediment Control Details

1221 Well Site

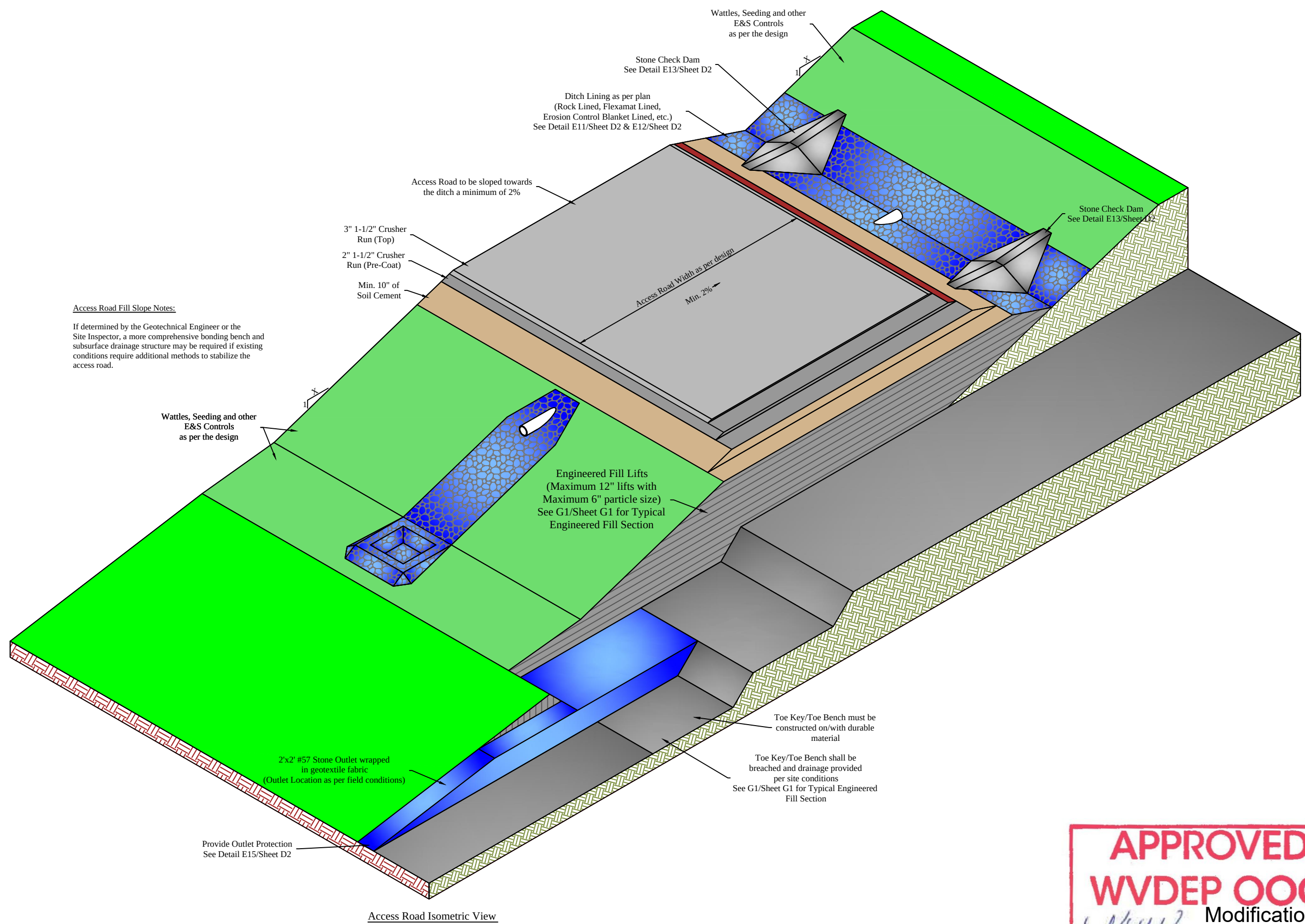
Freemans Creek District
Lewis County, WV

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

1221 Well Site Fink Creek Access

HG Energy LLC

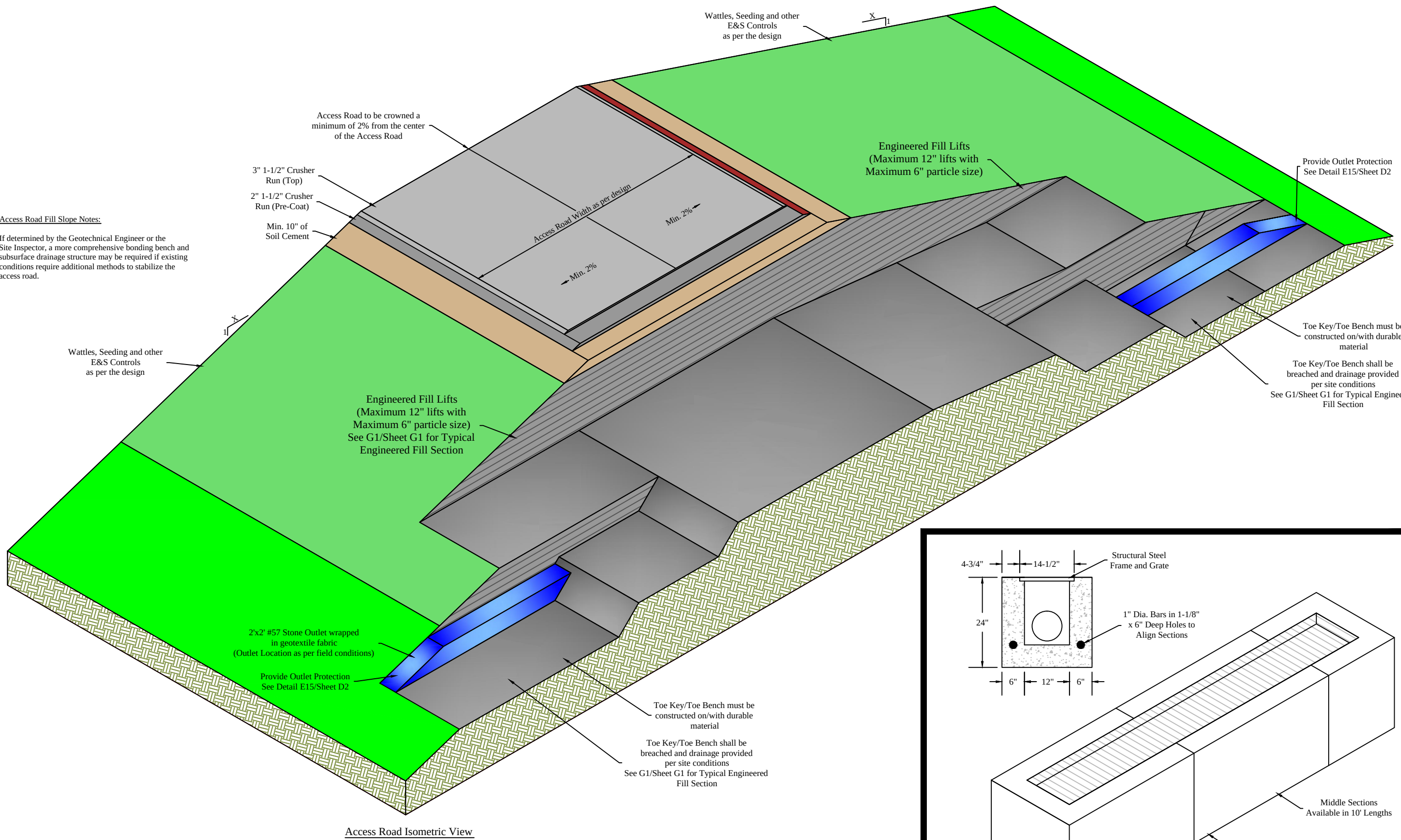
Exhibit A: As-Built Modification



R1 Typical Access Road Cut Section Details

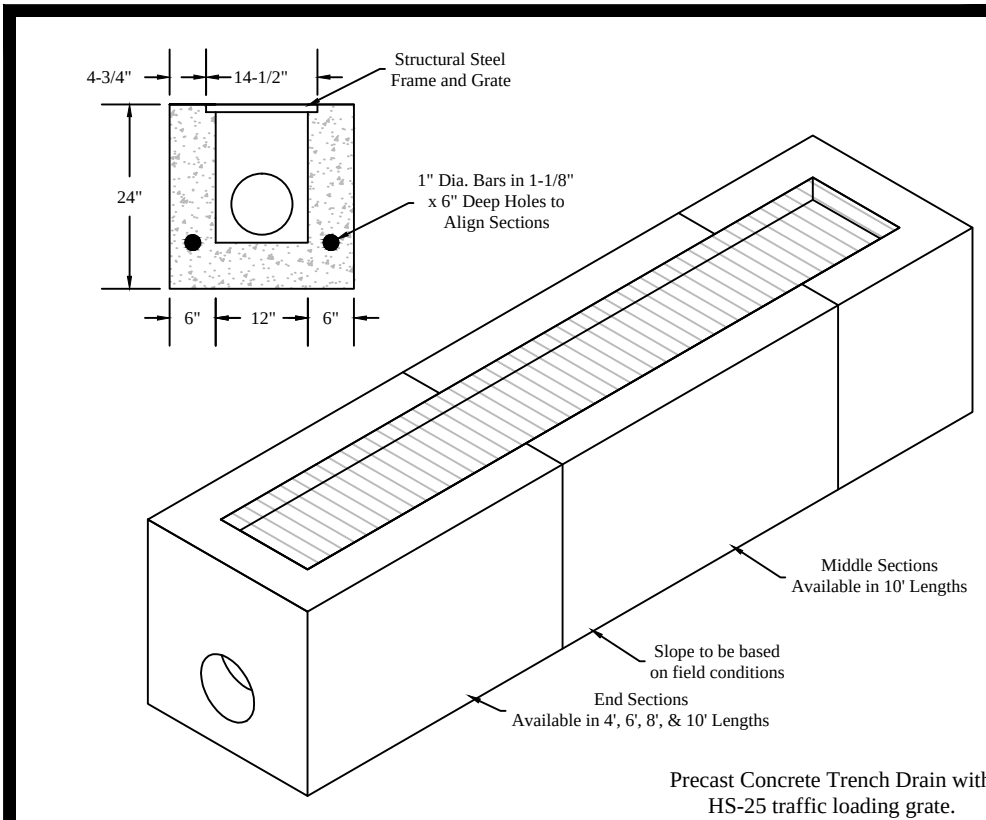
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3/14/2025



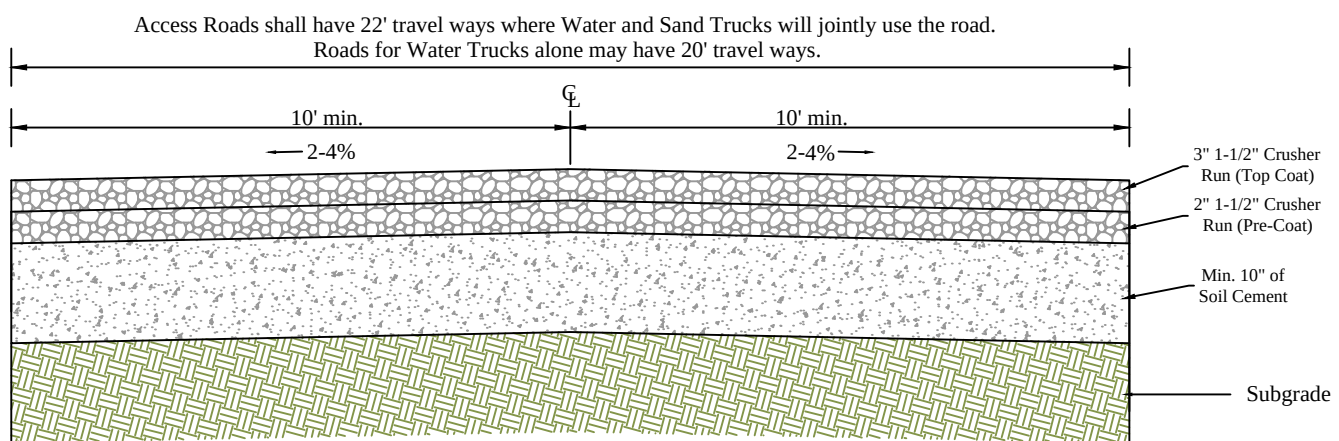
R2 Typical Access Road Fill Section Details

Scale: NTS



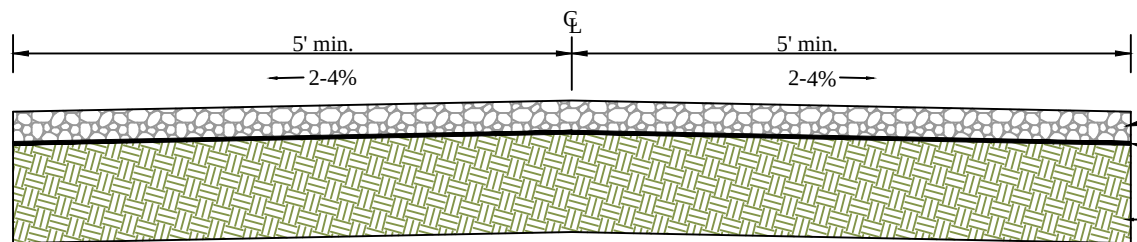
R8 Trench Grate Detail

Scale: NTS



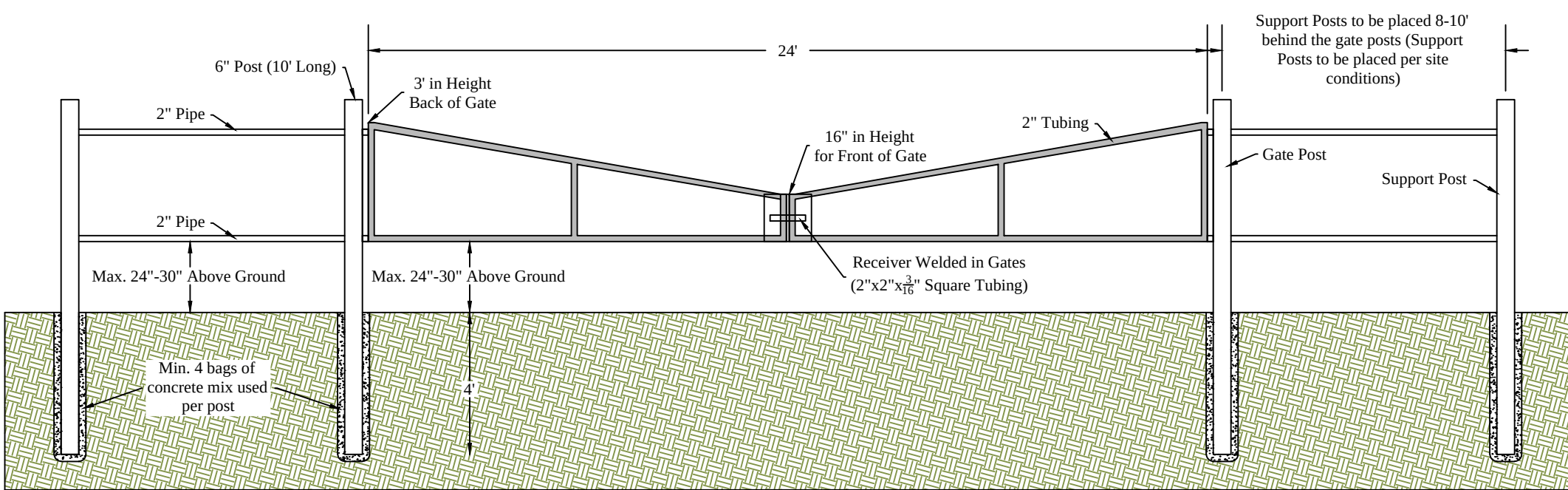
R3 Typical Access Road Surfacing Details

Scale: NTS



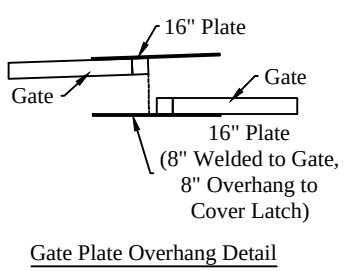
R4 Temporary/Adjacent Access Road Surfacing Details

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 1/4" 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

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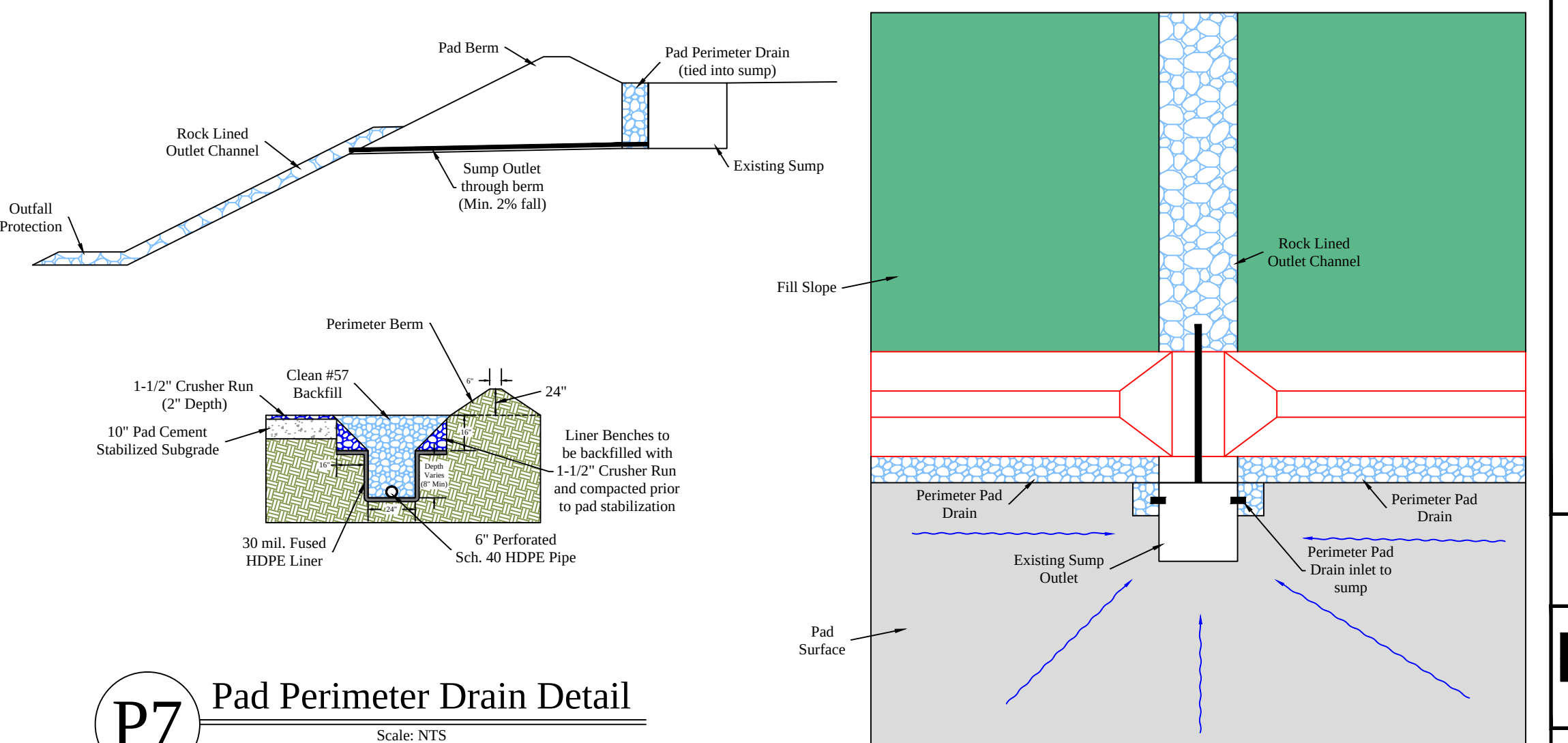
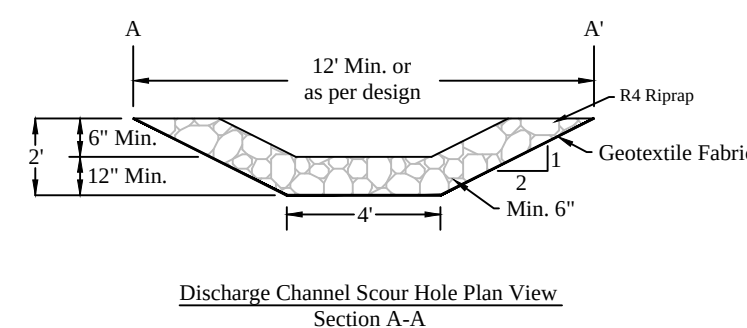
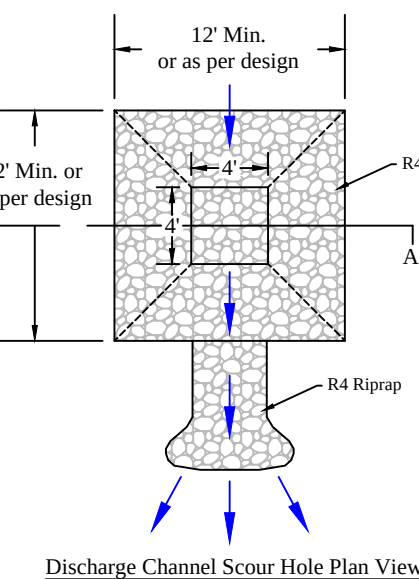
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Surveying
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Delmar, WV 26039
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Typical Access Road Details
1221 Well Site
Freemans Creek District
Lewis County, WV

Date: 02/04/2025
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P6 Typical Pad Trenching Detail
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