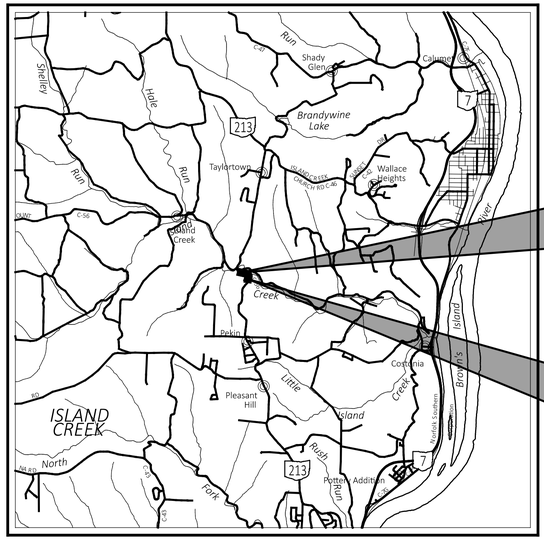
STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

JEF-SR 213-4.51

ISLAND CREEK TOWNSHIP

JEFFERSON COUNTY



LOCATION MAP

LATITUDE: 40°26'30" LONGITUDE: -80°39'45"

PORTION TO BE IMPROVED	
INTERSTATE HIGHWAY	
FEDERAL ROUTES	
STATE ROUTES	
COUNTY & TOWNSHIP ROADS	
OTHER ROADS	

DESIGN DESIGNATION

CURRENT ADT (2026)	1,500
DESIGN YEAR ADT (2046)	1,700
DESIGN HOURLY VOLUME (2046)	250
DIRECTIONAL DISTRIBUTION	60%
TRUCKS (24 HOUR B&C)	3%
DESIGN SPEED	60 MPH
LEGAL SPEED	55 MPH
DESIGN FUNCTIONAL CLASSIFICATION: 05-MAJOR COLLECTOR (RURAL)	
NHS PROJECT	NO

INDEX OF SHEETS:

TITLE SHEET	P.1
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RIGHT OF WAY PLANS	

DESIGN EXCEPTIONS

DESIGN FEATURE	APPROVAL DATE	SHEET NUMBERS
HORIZONTAL CURVE RADIUS	8-14-25	P.2, P.13
MAXIMUM GRADE	8-14-25	P.13
STOPPING SIGHT DISTANCE (HORIZONTAL)	8-14-25	P.2, P.13
STOPPING SIGHT DISTANCE (VERTICAL)	8-14-25	P.13

STANDARD CONSTRUCTION DRAWINGS								SUPPLEMENTAL SPECIFICATIONS		SPECIAL PROVISIONS
BP-3.1	1-19-24	MT-97.10	7-18-25					800-23	7-18-25	
BP-3.2	1-18-19	MT-101.60	1-17-25					832	7-18-25	
BP-4.1	7-19-23	MT-105.10	1-17-20					902	7-19-19	
DM-4.2	7-12-12	TC-41.20	10-18-13							
DM-4.3	1-15-16	TC-41.30	4-21-23							
DM-4.4	1-15-16	TC-42.20	10-18-13							
		TC-52.10	10-18-13							
MGS-2.1	7-18-25	TC-52.20	1-15-21							
MGS-4.3	7-18-25	TC-61.30	7-19-24							
		TC-65.10	1-17-14							
RM-1.1	1-20-23	TC-65.11	1-17-25							

FEDERAL PROJECT NUMBER

E230412

RAILROAD INVOLVEMENT

NONE

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF REALIGNING SR 213 TO AVOID CURRENT AND FUTURE SLOPE FAILURES ON THE NORTH AND EAST HILL SIDES. WORK CONSISTS OF ROADWAY REALIGNMENT, GUARDRAIL REPLACEMENT AND DRAINAGE IMPROVEMENTS.

EARTH DISTURBED AREAS

PROJECT EARTH DISTURBED AREA:	3.0 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA:	0.6 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA:	3.6 ACRES

2023 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS, AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON SHEET P.6

Thomas D. Corey
District 11 Deputy Director

Pamela Boratyn
Director, Department of Transportation

UNDERGROUND UTILITIES
Contact Two Working Days Before You Dig
OHIO811.org Before You Dig
OHIO811, 8-1-1, or 1-800-362-2764
(Non members must be called directly)

PLAN PREPARED BY:

ms consultants, inc.
ENGINEERS, ARCHITECTS & PLANNERS
333 E. FEDERAL STREET
YOUNGSTOWN, OHIO 44503
PHONE (330) 744-5321

ENGINEER'S SEAL

STATE OF OHIO
JUSTIN DAVID KUCZYNSKI
E-82433
REGISTERED
PROFESSIONAL ENGINEER

Justin D. Kuczynski

Digitally signed by Justin D. Kuczynski
DN: C=US
Email: jkuczynski@msconsultants.com, O="ms consultants, inc.", OU=Youngstown Highway, CN=Justin D. Kuczynski
Date: 2026.01.08 10:05:55-05'00'

TITLE SHEET

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.1 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:41:12 AM USER: jkuczynski
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MONUMENT TABLE

REF NO.	ALIGNMENT	STA.	OFFSET	NORTHING	EASTING	623 MONUMENT ASSEMBLY, TYPE C	623 MONUMENT ASSEMBLY REMOVED AND RESET
						EACH	EACH
MN-1	EXIST. R/W SR 213	250+31.00	0.00' RT	287745.751	2479805.872		1
MN-2	EXIST. R/W SR 213	252+30.48	32.29' RT	2887785.833	2479610.514		1
MN-3	EXIST. R/W SR 213	253+80.48	13.46' RT	287828.725	2479467.204		1
MN-4	PROP. R/W SR 213	1+28.37	6.30' RT	287350.284	2480073.586	1	
MN-5	PROP. R/W SR 213	3+16.13	14.90' LT	287537.229	2480077.705	1	
MN-6	PROP. R/W SR 213	4+90.80	14.90' LT	287675.689	2479979.164	1	
MN-7	PROP. R/W SR 213	6+24.56	14.90' LT	287720.287	2479853.661	1	
MN-8	PROP. R/W SR 213	6+77.04	14.90' LT	287732.675	2479802.665	1	
					TOTAL CARRIED TO GENERAL SUMMARY	5	3

SETTING OF ALL MONUMENTS SHALL BE PERFORMED BY A SURVEYOR REGISTERED IN THE STATE OF OHIO. THE MONUMENT ASSEMBLIES AND REFERENCE MONUMENTS WILL BE INSTALLED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION. THE IRON PIN AND CAP (WHEN REQUIRED) ARE TO BE INSTALLED BY THE CONTRACTOR'S SURVEYOR.

CHANGES OR ALTERATIONS TO THE LOCATION OF ANY MONUMENTS SHOWN IN THIS TABLE, REQUIRE PRIOR APPROVAL FROM THE DISTRICT REAL ESTATE ADMINISTRATOR OF THE OHIO DEPARTMENT OF TRANSPORTATION. IN THE EVENT THAT CHANGES OR ALTERATIONS ARE APPROVED, A REVISED CENTERLINE PLAT WITH THE NEW LOCATIONS SHALL BE RECORDED IN THE APPLICABLE COUNTY RECORDS AND THE OHIO DEPARTMENT OF TRANSPORTATION. SPECIFICATIONS FOR MONUMENT ASSEMBLIES, REFERENCE MONUMENTS AND RIGHT OF WAY MONUMENTS ARE SHOWN ON STANDARD CONSTRUCTION DRAWING RM-1.1.

C1 ℄ CONST. SR 213 SPIRAL DATA
P.I. = STA. 2+72.00
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 132.48'
y = 13.71'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 1+82.37
End = Sta. 3+16.13
C.B. = N00°26'30"W

C2 ℄ CONST. SR 213 CURVE DATA
P.I. = STA. 4+08.56
Δ = 46°19'56" LT
Dc = 26°31'33" (NDC Dc = 4°45')
R = 216.00'
T = 92.43'
L = 174.67'
E = 18.94'
SSD = 260' (570'MIN)
ACTUAL DESIGN SPEED = 36 MPH

C3 ℄ CONST. SR 213 SPIRAL DATA
P.I. = STA. 5+35.80
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 130.36'
y = 27.31'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 4+90.80
End = Sta. 6+24.56
C.B. = N70°26'15"W

C4 ℄ CONST. SR 213 SPIRAL DATA
P.I. = STA. 9+76.66
Ls = 77.00'
Θs = 07°42'46"
LT = 51.38'
ST = 25.71'
x = 76.86'
y = 3.45'
k = 38.48'
p = 0.86'
C = 76.94'
Start = Sta. 9+25.28
End = Sta. 10+02.28
C.B. = N73°46'33"W

C5 ℄ CONST. SR 213 CURVE DATA
P.I. = STA. 12+65.40
Δ = 85°13'43" RT
Dc = 20°02'01"
R = 286.00'
T = 263.12'
L = 425.43'
E = 102.62'

X1 ℄ EXIST. R/W SR 213 CURVE DATA
P.I. = STA. 244+43.42
Δ = 16°36'33" RT
Dc = 16°00'00"
R = 358.10'
T = 52.27'
L = 103.81'
E = 3.79'

X2 ℄ EXIST. R/W SR 213 CURVE DATA
P.I. = STA. 248+03.22
Δ = 108°52'47" LT
Dc = 25°59'59"
R = 220.37'
T = 308.26'
L = 418.77'
E = 158.56'

X3 ℄ EXIST. R/W SR 213 SPIRAL DATA
P.I. = STA. 253+30.84
Ls = 150.00'
Θs = 15°00'00"
LT = 100.36'
ST = 50.33'
x = 148.98'
y = 13.03'
k = 74.83'
p = 3.26'
C = 149.54'
Start = Sta. 252+30.48
End = Sta. 253+80.48
C.B. = N73°21'25"W

X4 ℄ EXIST. R/W SR 213 CURVE DATA
P.I. = STA. 256+24.72
Δ = 80°53'59" RT
Dc = 20°00'00"
R = 286.48'
T = 244.24'
L = 404.50'
E = 89.98'

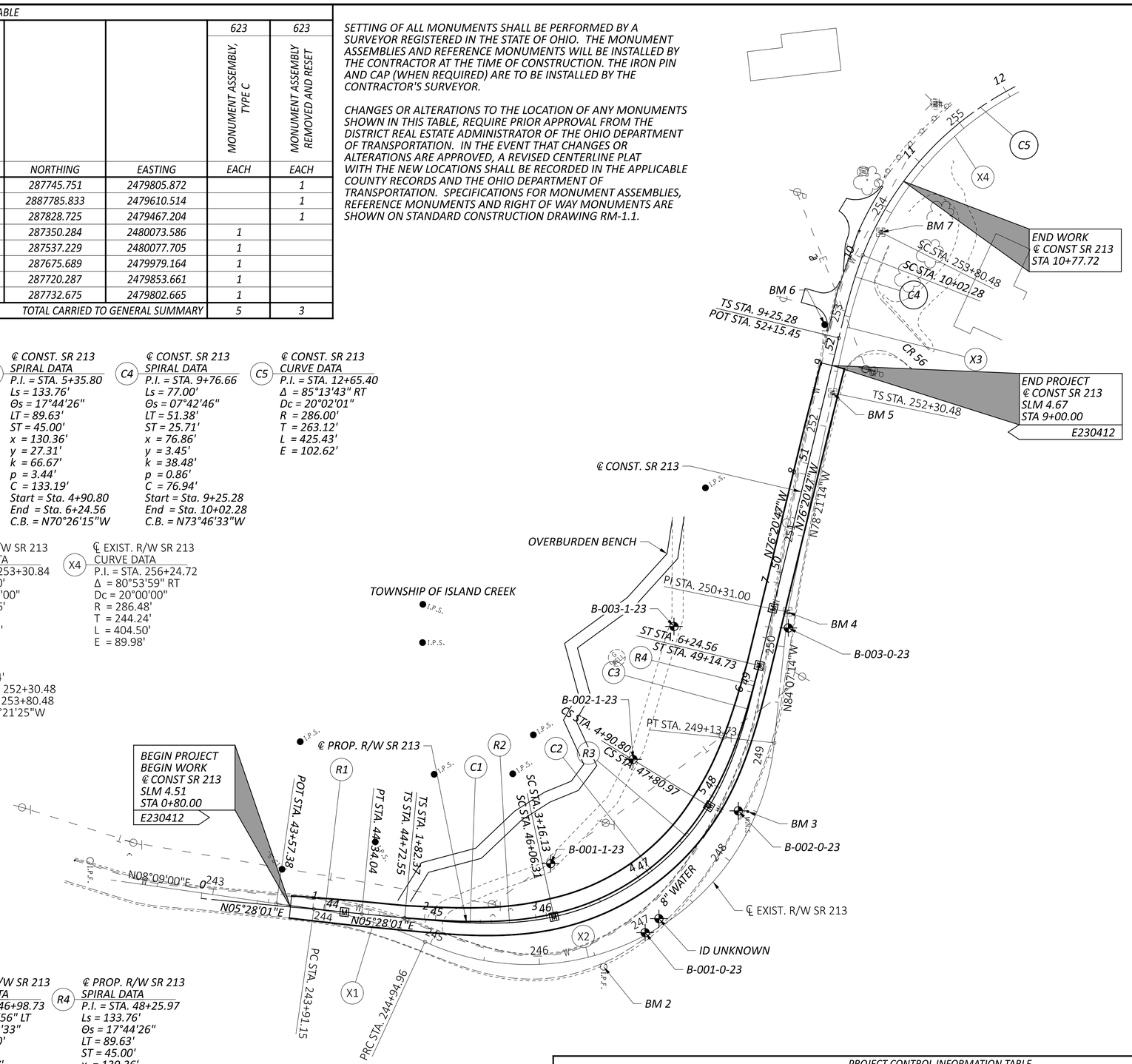
ALIGNMENT DATA FOR ℄ PR. R/W S.R. 213 AND ℄ EX. R/W S.R 213 WILL BE REMOVED FROM THE REST OF THE PLAN SET FOR CLARITY.

R1 ℄ PROP. R/W SR 213 CURVE DATA
P.I. = STA. 43+95.72
Δ = 02°40'59" LT
Dc = 03°30'00"
R = 1,637.00'
T = 38.34'
L = 76.66'
E = 0.45'

R2 ℄ PROP. R/W SR 213 SPIRAL DATA
P.I. = STA. 45+62.17
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 132.48'
y = 13.71'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 44+72.55
End = Sta. 46+06.31
C.B. = N00°26'30"W

R3 ℄ PROP. R/W SR 213 CURVE DATA
P.I. = STA. 46+98.73
Δ = 46°19'56" LT
Dc = 26°31'33"
R = 216.00'
T = 92.43'
L = 174.67'
E = 18.94'

R4 ℄ PROP. R/W SR 213 SPIRAL DATA
P.I. = STA. 48+25.97
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 130.36'
y = 27.31'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 47+80.97
End = Sta. 49+14.73
C.B. = N70°26'15"W



HORIZONTAL SCALE IN FEET
0 25 50 100

SCHEMATIC PLAN

PROJECT CONTROL INFORMATION TABLE

NO.	ALIGNMENT	TYPE	STA.	OFFSET	NORTHING	EASTING	ELEV.
BM 2	CONST. SR 213	IRON PIN	3+43.15	55.23' RT	287581.587	2480122.412	878.411'
BM 3	CONST. SR 213	MAG. NAIL SET	5+02.97	32.29' RT	287710.168	2479983.926	855.890'
BM 4	CONST. SR 213	MONUMENT BOX	6+77.07	13.46' RT	287745.751	2479805.872	834.268'
BM 5	CONST. SR 213	MONUMENT BOX	8+76.31	6.30' RT	287785.833	2479610.514	810.992'
BM 6	CONST. SR 213	IRON PIN	9+33.80	14.90' LT	287778.817	2479549.623	807.024'
BM 7	CONST. SR 213	MONUMENT BOX	10+27.65	6.34' RT	287828.725	2479467.204	801.235'

DESIGN AGENCY
ms consultants, inc.

DESIGNER CJR
REVIEWER JDK 8-15-25
PROJECT ID 118631
SHEET P.2 TOTAL 56

JEF-SR 213-4.51

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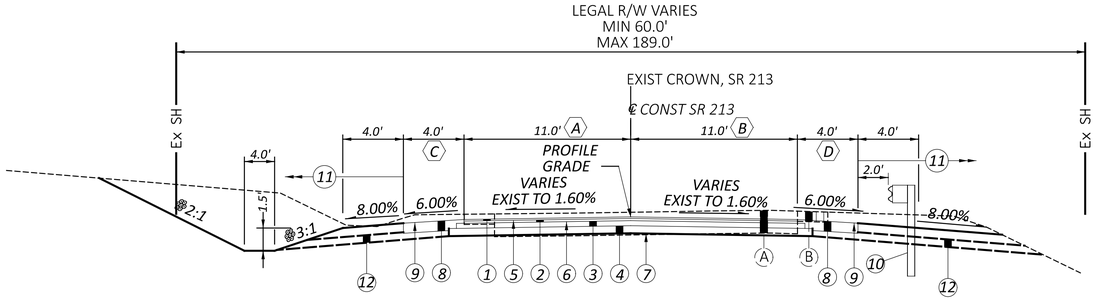


TRANSITION SECTION - SR 213

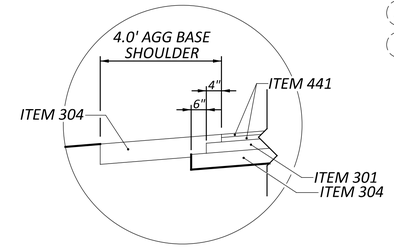
STA 0+80.00 TO STA 1+40.19
STA 8+33.79 TO STA 9+00.00

(A) VARIES FROM 10.0' AT STA 0+80.00 TO 11.0' AT STA 1+35.00
VARIES FROM 11.0' AT STA 8+45.00 TO 10.38' AT STA 9+00.00

(B) VARIES FROM 10.0' AT STA 0+80.00 TO 11.0' AT STA 1+35.00
VARIES FROM 11.0' AT STA 8+45.00 TO 11.40' AT STA 9+00.00

(C) VARIES FROM 1.5' AT STA 0+80.00 TO 4.0' AT STA 1+35.00
VARIES FROM 4.0' AT STA 8+45.00 TO 1.5' AT STA 9+00.00

(D) VARIES FROM 1.5' AT STA 0+80.00 TO 4.0' AT STA 1+35.00
VARIES FROM 4.0' AT STA 8+45.00 TO 1.5' AT STA 9+00.00



BASE AND SUBBASE DETAIL

EXISTING LEGEND

(A) EXIST ASPHALT PAVEMENT, 18"

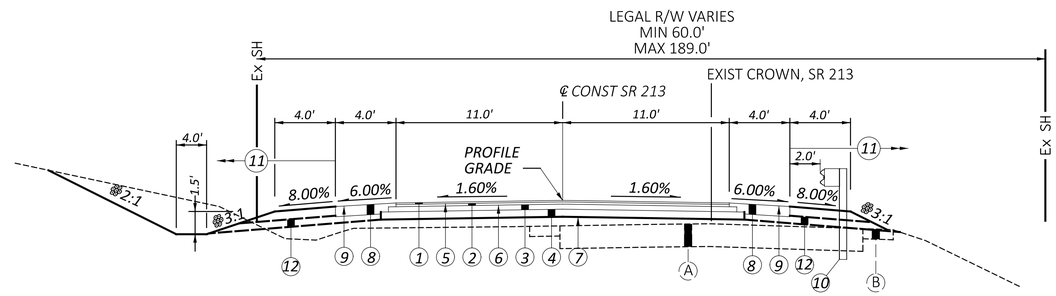
(B) EXIST AGGREGATE BASE SHOULDER, UNKNOWN DEPTH *

* NOTE: EXISTING ASPHALT PAVEMENT THICKNESS BASED ON GEOTECHNICAL BORING LOG PROVIDED BY ODOT

PROPOSED LEGEND:

1. ITEM 441 - ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG70-22M (T=1.25")
2. ITEM 441 - ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449) (T=1.75")
3. ITEM 301 - ASPHALT CONCRETE BASE, PG64-22, (449) (T=4")
4. ITEM 304 - AGGREGATE BASE (T=6")
5. ITEM 407 - NON-TRACKING TACK COAT (0.06 GAL/SY)
6. ITEM 407 - NON-TRACKING TACK COAT (0.09 GAL/SY)
7. ITEM 204 - SUBGRADE COMPACTION
8. ITEM 304 - AGGREGATE BASE (T=8")
9. ITEM 408 - PRIME COAT, AS PER PLAN
10. ITEM 606 - GUARDRAIL, TYPE MGS WITH LONG POSTS
11. ITEM 659 - SEEDING AND MULCHING
12. ITEM 605 - AGGREGATE DRAINS
13. ITEM 204 - EXCAVATION OF SUBGRADE (BEDROCK)
14. ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN

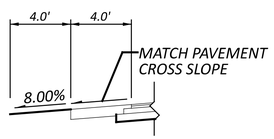
UNLESS OTHERWISE SHOWN ON THE PLANS



NORMAL SECTION - SR 213

STA 1+40.19 TO STA 1+55.62
STA 6+51.31 TO STA 8+33.79

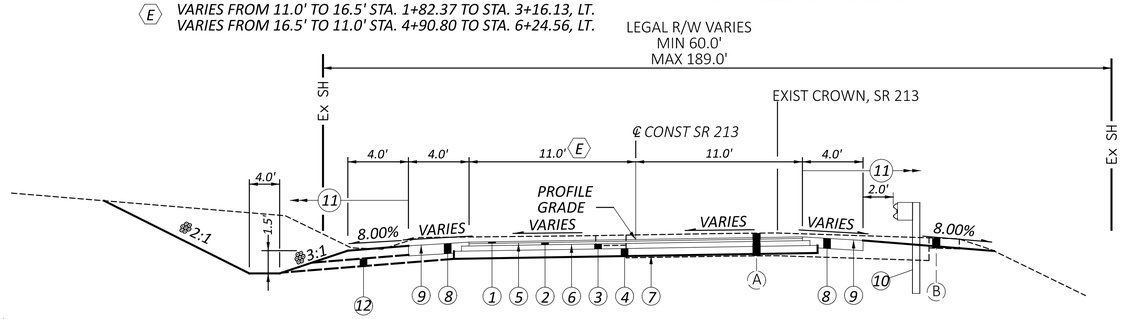
(E) VARIES FROM 11.0' TO 16.5' STA. 1+82.37 TO STA. 3+16.13, LT.
VARIES FROM 16.5' TO 11.0' STA. 4+90.80 TO STA. 6+24.56, LT.



SHOULDER DETAIL LOW SIDE OF SUPERELEVATION

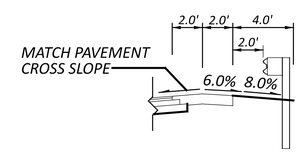
STA 2+83.33 TO STA 5+25.00

*NOTE:
SHOULDER CROSS SLOPE TO MATCH PAVEMENT WHEN PAVEMENT CROSS SLOPE IS GREATER THAN -6.00%



SUPERELEVATION TRANSITION SECTION - SR 213

STA 1+55.62 TO STA 3+16.13
STA 4+90.80 TO STA 6+51.31



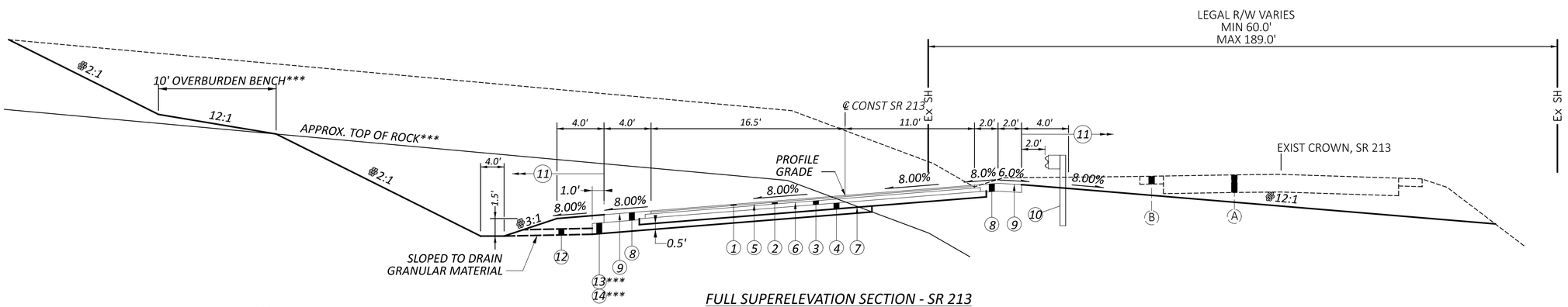
SHOULDER DETAIL HIGH SIDE OF SUPERELEVATION

STA 1+98.33 TO STA 6+08.33

**NOTE:
SHOULDER ROUNDING WHEN PAVEMENT CROSS SLOPE IS GREATER THAN +1.00%

ITEM 605 - AGGREGATE DRAINS LOCATIONS

STATION	SIDE	LENGTH (FT)
0+80	RT	10
1+05	LT	10
1+25	RT	15
1+50	LT	15
1+75	LT	15
2+00	LT	15
2+25	LT	15
2+50	LT	15
2+75	LT	15
3+00	LT	15
3+25	LT	15
3+50	LT	15
3+75	LT	15
4+00	LT	15
4+25	LT	15
4+50	LT	15
4+75	LT	15
5+00	LT	15
5+25	LT	15
5+50	LT	15
5+75	LT	15
6+00	LT	15
6+25	LT	15
6+50	LT	15
6+75	RT	15
7+00	LT	15
7+25	RT	15
7+50	LT	15
7+75	RT	15
8+00	LT	15
8+25	RT	15
8+50	LT	15
8+75	RT	10
9+00	LT	10
	TOTAL	490



*** SEE CROSS SECTIONS FOR STATION LIMITS

FULL SUPERELEVATION SECTION - SR 213

STA 3+16.13 TO STA 4+90.80

TYPICAL SECTIONS

DESIGN AGENCY
ms consultants, inc.

DESIGNER CJR
REVIEWER JDK 8-15-25
PROJECT ID 118631
SHEET P.3 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:41:21 AM USER: jkuczynski
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ROADWAY

ROUNDING

THE ROUNDING AT SLOPE BREAKPOINTS SHOWN ON THE TYPICAL SECTIONS APPLIES TO ALL CROSS SECTIONS EVEN THOUGH OTHERWISE SHOWN.

UTILITIES

LISTED BELOW ARE ALL UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS.

THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

AEP OHIO POWER COMPANY
ATTN: CLARKE SAUNDERS
777 HOPEWELL DRIVE
HEATH, OHIO 43056
614-460-4794
CMSAUNDERS@AEP.COM

AT&T OHIO, INC.
ATTN: BARRETT J. TAMASOVICH
160 NORTH 6TH STREET
ZANESVILLE, OHIO 43701
740-454-3552
BT2178@ATT.COM

JEFFERSON COUNTY WATER AND SEWER
ATTN: MIKE EROSHEVICH
P.O. BOX 2579
WINTERSVILLE, OHIO 43953
740-283-8577
MEROSHEVICH@JCWATERSEWER.COM

JEFFERSON COUNTY CABLE TV
ATTN: ROBERT LOVERIDGE
116 SOUTH 4TH ST.
TORONTO, OHIO 43964
740-537-2214
B.LOVERIDGE@LIVE.COM

FRONTIER COMMUNICATIONS
ATTN: LARRY WENDELL
1121 TUSCARAWAS AVENUE, NW
NEW PHILADELPHIA, OHIO 44663
330-364-0510
LAWRENCE.W.WENDELL@FTR.COM

SURVEYING PARAMETERS - OHIO STATE PLAN (NORTH/SOUTH)

PRIMARY PROJECT CONTROL MONUMENTS GOVERN ALL POSITIONING ON ODOT PROJECTS. SEE SHEET P.02 OF THE PLANS FOR A TABLE CONTAINING PROJECT CONTROL INFORMATION.

USE THE FOLLOWING PRIMARY PROJECT CONTROL, VERTICAL POSITIONING, AND HORIZONTAL POSITIONING PARAMETERS FOR ALL SURVEYING:

PRIMARY PROJECT CONTROL -
POSITIONING METHOD: ODOT VRS DATA COLLECTION PER 502.2E. OF SURVEY MANUAL.
MONUMENT TYPE: PROJECT CONTROL MONUMENT TYPE B
MONUMENT TYPE: PROJECT CONTROL MONUMENT TYPE B - 5/8"X30" REBAR WITH A RED 'MS CONS. INC. TRAVERSE' CAP

VERTICAL POSITIONING -
ORTHOMETRIC HEIGHT DATUM: NAVD88
GEOID: GEOID

HORIZONTAL POSITIONING -
REFERENCE FRAME: NAD (2011)
REFERENCE ELLIPSOID: GRS80
MAP PROJECTION: LAMBERT CONFORMAL CONIC
COORDINATE SYSTEM: OHIO STATE PLANE, NORTH ZONE (3401)
COMBINED SCALE FACTOR: 1.00000000
ORIGIN OF SCALE (X,Y) : EASTING(X): 0 NORTHING(Y): 0

USE THE POSITIONING METHOD AND MONUMENT TYPE USED IN THE ORIGINAL SURVEY TO RESTORE ALL MONUMENTS RELATED TO PRIMARY PROJECT CONTROL THAT ARE DAMAGED OR DESTROYED BY CONSTRUCTION ACTIVITIES. RESTORE THE DAMAGED OR DESTROYED MONUMENTS IN ACCORDANCE WITH ODOT CMS 623.

UNITS ARE IN U.S. SURVEY FEET.

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION AT ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

BENCHING OF FOUNDATION SLOPES

ALTHOUGH CROSS-SECTIONS INDICATE SPECIFIC DIMENSIONS FOR PROPOSED BENCHING OF THE EMBANKMENT FOUNDATIONS IN CERTAIN AREAS, NO WAIVER OF THE SPECIFICATIONS IS INTENDED. BENCH ALL OTHER SLOPED EMBANKMENT AREAS AS SET FORTH IN SECTION 203.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). NO ADDITIONAL PAYMENT WILL BE MADE FOR BENCHING REQUIRED UNDER THE PROVISIONS OF SECTION 203.05.

MONUMENT ASSEMBLIES

CONSTRUCT MONUMENT ASSEMBLIES IN ACCORDANCE WITH THE DETAILS SHOWN ON THE STANDARD CONSTRUCTION DRAWINGS AND AT THE LOCATIONS SHOWN ON SHEET NO. P.2.

PAVEMENT RESTORATION FOR MONUMENT ASSEMBLY INSTALLATIONS

THE FOLLOWING QUANTITY IS PROVIDED FOR PAVEMENT RESTORATION FOLLOWING INSTALLATION OF ITEM 623, MONUMENT ASSEMBLIES.

ITEM 301, ASPHALT CONCRETE BASE, PG64-22, (449) 1 CY

THE ABOVE QUANTITY IS BASED ON A 301 THICKNESS OF 6 INCHES AND A WIDTH OF TWO FEET AROUND THE PERIMETER OF THE MONUMENT ASSEMBLIES.

PROVIDE ANY MATERIALS USED OUTSIDE THE LIMITS STATED ABOVE AT NO ADDITIONAL COST.

ITEM 202 - REMOVAL, MISC.: DRIVE POST

THE REMOVAL ITEM SHALL INCLUDE COMPLETE REMOVAL AND DISPOSAL OF THE DESCRIBED ITEM AS INDICATED IN THE PLAN. PAYMENT FOR EACH ITEM 202 - REMOVAL, MISC.: AS LISTED IN THE GENERAL SUMMARY SHALL INCLUDE ALL MATERIAL, EQUIPMENT, AND LABOR NECESSARY TO REMOVE AND DISPOSE OF THE ITEM.

ITEM 204 - PROOF ROLLING

THE FOLLOWING QUANTITY IS PROVIDED IN THE GENERAL SUMMARY TO ADDRESS LOCATIONS REQUIRING PROOF ROLLING.

ITEM 204 - PROOF ROLLING 1 HOUR

ITEM 204 - SUBGRADE COMPACTION AND PROOF ROLLING

CONSTRUCT THE SUBGRADE AS FOLLOWS AND IN THE FOLLOWING SEQUENCE:

1. SHAPE THE SUBGRADE TO WITHIN 0.2 FEET OF THE PLAN SUBGRADE ELEVATION.

2. EXCAVATE AND REPLACE UNSUITABLE SUBGRADE BEFORE PROOF ROLLING. THE EXCAVATION LIMITS ARE SHOWN AND LABELED ON THE CROSS SECTIONS AS UNSUITABLE SUBGRADE. UNSUITABLE SUBGRADE INCLUDES UNSUITABLE SOIL (A-4B, A-2-5, A-5, A-7-5, AND SOIL WITH A LIQUID LIMIT GREATER THAN 65) AND ANY COAL, SHALE, OR ROCK WHICH NEEDS TO BE REMOVED ACCORDING TO SECTION 204.05 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS). IF THERE IS UNSUITABLE SUBGRADE IN A SHALLOW FILL LOCATION, EXCAVATE AND REPLACE THE UNSUITABLE SUBGRADE BEFORE CONSTRUCTING THE SHALLOW FILL AND SHAPING THE SUBGRADE.

3. COMPACT THE SUBGRADE ACCORDING TO C&MS 204.03.

4. PROOF ROLL THE COMPACTED SUBGRADE ACCORDING TO C&MS 204.06.

5. EXCAVATE UNSTABLE SUBGRADE AS DIRECTED BY THE ENGINEER AND STABILIZE BY REPLACING WITH THE SPECIFIED MATERIALS ACCORDING TO C&MS 204.07. EXCAVATIONS WILL EXTEND 18 INCHES BEYOND THE EDGE OF THE SURFACE OF THE PAVEMENT, PAVED SHOULDERS, OR PAVED MEDIANS.

6. PROOF ROLL THE STABILIZED AREAS ACCORDING TO C&MS 204.06 TO VERIFY STABILITY.

7. FINE GRADE THE SUBGRADE TO THE SPECIFIED GRADE. THE QUANTITIES FOR EXCAVATING THE UNSUITABLE SUBGRADE AND UNSTABLE SUBGRADE ARE BOTH PAID UNDER ITEM 204, EXCAVATION OF SUBGRADE.

ITEM 204 - GRANULAR MATERIAL, TYPE B, AS PER PLAN

THIS MATERIAL SHALL BE USED AS BACKFILL FOR LOCATIONS UNDER PAVEMENT AND PAVED SHOULDER REQUIRING REMOVAL OF UNSUITABLE MATERIALS AS INDICATED IN THE PLAN AND VERIFIED AND DELINEATED IN THE FIELD BY THE ENGINEER. GRANULAR SLAG (GS) SHALL NOT BE PERMITTED FOR THIS ITEM. ALL OTHER REQUIREMENTS OF SECTIONS 204 AND 703.16.C OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS SHALL BE APPLICABLE FOR GRANULAR MATERIAL, TYPE B, AS PER PLAN.

EXCAVATION, AS PER PLAN

THIS ITEM SHALL CONSIST OF BEDROCK EXCAVATION. THE APPROXIMATE TOP OF BEDROCK HAS BEEN DRAFTED ON THE CROSS SECTIONS. THE SOIL PROFILE SHEETS SHOULD BE REFERENCED FOR ADDITIONAL INFORMATION. THE FINAL TOP OF ROCK LOCATION SHALL BE CONFIRMED BY THE ENGINEER DURING CONSTRUCTION

THE FINISHED SLOPE SHOULD BE CONSTRUCTED AS PER C&MS 203.08.E. THE DEPARTMENT DOES NOT ANTICIPATE THE NEED FOR THE USE OF CONTROLLED BLASTING TECHNIQUES DURING EXCAVATION. IF THE CONTRACTOR ELECTS TO UTILIZE CONTROLLED BLASTING, ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF C&MS ITEM 208. THE COST FOR PRE-SPLITTING, PRE-BLAST CONDITION SURVERY, BLASTING CONSULTANT, AIR BLAST AND NOISE CONTROL, VIBRATION CONTROL AND MONITORING, AND HYDROLOGIST SHALL BE INCLUDED WITHIN THE BID PRICE FOR ITEM 203 EXCAVATION, AS PER PLAN

OVERBURDEN BENCH

THE OVERBURDEN BENCH AS SHOWN IN THE PLAN VIEW AND ON THE CROSS SECTIONS SHALL BE LOCATED AT THE SOIL-BEDROCK INTERFACE. THIS BENCH HAS BEEN APPROXIMATED BASED ON SOIL BORINGS, BUT WILL NEED ADJUSTED DURING CONSTRUCTION BASED ON BEDROCK DEPTH.

THIS BENCH WILL ALSO BE USED FOR POST-CONSTRUCTION PRIVATE PROPERTY ACCESS ACROSS THE HILLSIDE SIMILAR TO THE EXISITING FIELD DRIVE CONDITION. ALTHOUGH THE ELEVATION OF THE BENCH MAY BE ADJUSTED IN CONSTRUCTION, THE ENDS SHALL TIE IN NEAR THE PLAN LOCATION. THE BENCH SHALL BE CONSTRUCTED TO PROVIDE A RELATIVELY SMOOTH ACCESS THAT IS TRAVERSABLE BY OFF-ROAD VEHICLES.

CONNECTION BETWEEN EXISTING AND PROPOSED GUARDRAIL

WHEN IT IS NECESSARY TO SPLICE PROPOSED GUARDRAIL TO EXISTING GUARDRAIL, ONLY THE EXISTING GUARDRAIL SHALL BE CUT, DRILLED, OR PUNCHED. THE CONNECTION SHALL BE MADE USING A W-BEAM, BEAM SPLICE AS SHOWN IN AASHTO M 180-12, EXCEPT THE BEAM WASHERS ARE NOT TO BE USED. PAYMENT SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE RESPECTIVE GUARDRAIL ITEMS.

EROSION CONTROL

ITEM 659 - SEEDING AND MULCHING, AS PER PLAN

ADMINISTER A MODIFIED VERSION OF SEEDING AND MULCHING, CLASS 3C, CROWN VETCH MIXTURE TO ALL CUT SLOPES FROM THE BACK OF THE DITCH TO THE TOP OF THE CUT. IN ADDITION TO THE APPLICATION OF THE GRASS SEED, BLACK LOCUST SEED (ROBINA PSEUDOACACIA), WITH A 70% OR GREATER GERMINATION RATE, SHALL BE SPREAD IN THE SAME AREAS AS THE CLASS 3C, CROWN VETCH MIXTURE. USE SCARIFIED SEED IF NECESSARY. THE LOCUST SEED SHALL BE SPREAD AT THE RATE OF ONE POUND PER ACRE. THE LOCUST SEED SHALL BE MIXED WITH THE GRASS SEED AND APPLIED IN ONE OPERATION.

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF THESE PERMANENT SEEDED AREAS ON THE CUT SLOPE:

659 - SEEDING AND MULCHING, AS PER PLAN	P.31 (11,678 SY)
659 - COMMERCIAL FERTILIZER	
[(11678 SY) X (1 ACRE/7410 SY)] =	1.58 TON
659 - LIME	
(11678 SY) X (1 ACRE/4840 SY) =	2.41 ACRE
659 - WATER	
(11678 SY) X (0.0027 M GAL/SY) X 2 =	63 MGAL

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF THESE PERMANENT SEEDED AREAS OUTSIDE THE LIMITS OF THE CUT SLOPE:

659 - SEEDING AND MULCHING	P.31 (3,342 SY)
659 - SOIL ANALYSIS TEST	2 EACH
659 - TOPSOIL	
(3342 SY) X (111 CY/1000 SY) =	371 CY
659 - REPAIR SEEDING AND MULCHING	
(3342 SY) X 0.05 =	167 SY
659 - INTER-SEEDING	
(3342 SY) X 0.05 =	167 SY
659 - COMMERCIAL FERTILIZER	
[(3342 SY) X (1 ACRE/7410 SY)] + [(167 SY) X (1 TON/11115 SY)] =	0.47 TON
659 - LIME	
(3342 SY) X (1 ACRE/4840 SY) =	0.69 ACRE
659 - WATER	
[(3342 SY) X (0.0027 M GAL/SY) X 2] + [(167 SY) X (0.0027 M GAL/SY)]=	18 MGAL

GENERAL NOTES

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.4 TOTAL 56

JEF-SR 213-4.51

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ENVIRONMENTAL

ENDANGERED BAT HABITAT REMOVAL

THE PROJECT IS LOCATED WITHIN THE KNOWN HABITAT RANGES OF THE FEDERALLY LISTED AND PROTECTED INDIANA BAT AND NOTHERN LONG-EARED BAT. NO TREES SHALL BE REMOVED UNDER THIS PROJECT FROM APRIL 1 THROUGH SEPTEMBER 30. ALL NECESSARY TREE REMOVAL SHALL OCCUR FROM OCTOBER 1 THROUGH MARCH 31. THIS REQUIREMENT IS NECESSARY TO AVOID AND MINIMIZE IMPACTS TO THESE SPECIES AS REQUIRED BY THE ENDANGERED SPECIES ACT. FOR THE PURPOSES OF THIS NOTE, A TREE IS DEFINED AS LIVE, DYING, OR DEAD WOODY PLANT, WITH A TRUNK THREE INCHES OR GREATER IN DIAMETER AT A HEIGHT OF 4.5 FEET ABOVE THE GROUND SURFACE, AND WITH A MINIMUM HEIGHT OF 13 FEET.

DRINKING WATER SOURCE PROTECTION AREA

THIS PROJECT IS LOCATED WITHIN THE OHIO RIVER ZONE OF CRITICAL CONCERN FOR THE CITY OF STEUBENVILLE COMMUNITY SURFACE WATER PROTECTION AREA. BEST MANAGEMENT PRACTICES SHALL BE EXERCISED WITH REGARD TO CONDUCTING VEHICLE MAINTENANCE, REFUELING, AND THE STORAGE OF POTENTIAL WATER CONTAMINANTS WITHIN THE PROJECT AREA. MAINTAIN A SPILL KIT ON-SITE THROUGHOUT CONSTRUCTION ACTIVITIES. IMMEDIATELY MITIGATE ANY EVENT, SUCH AS A SPILL OF FUELS, OILS, OR CHEMICALS, THAT COULD THREATEN TO CONTAMINATE THE DRINKING WATER SUPPLY. REPORT ALL SPILLS OR EVENTS TO THE CITY OF STEUBENVILLE WATER PLANT AT 740-283-6041. IF THE SPILL IS A REPORTABLE AMOUNT (PER OHIO EPA'S RELEASE REPORTING REQUIREMENTS), CONTACT THE CITY OF STEUBENVILLE'S FIRE DEPARTMENT AT 740-283-6063, AND THE OHIO EPA'S SPILLS HOTLINE 1-800-282-9378 FOR CLEAN-UP OF THE SPILL.

POST CONSTRUCTION STORM WATER TREATMENT

THIS PLAN UTILIZES STRUCTURAL BEST MANAGEMENT PRACTICES (BMP'S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

THIS PLAN UTILIZES VEGETATED FILTER STRIP(S) FOR POST CONSTRUCTION STORM WATER TREATMENT.

THE SELECTED BMPS ARE LOCATED OFFSITE WITHIN THE SAME HUC12 WATERSHED AS THE PROJECT SITE, IN ACCORDANCE WITH OHIO EPA AND ODOT STORMWATER MANAGEMENT POLICIES.

PAVEMENT

ITEM 408 - PRIME COAT, AS PER PLAN

APPLY "MC-70" AT A RATE OF 0.40 GALLONS PER SQUARE YARD, OR AS DETERMINED BY THE ENGINEER, TO THE COMPLETED COMPACTED AGGREGATE BASE SHOULDER, AS PER PLAN.

GENERAL NOTES

DESIGN AGENCY

ms consultants. inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.5 TOTAL 56

ITEM 614, MAINTAINING TRAFFIC

A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES, EXCEPT FOR A PERIOD NOT TO EXCEED 70 CONSECUTIVE CALENDAR DAYS, WHEN THROUGH TRAFFIC MAY BE DETOURED AS SHOWN ON SHEET P.07.

THE DETOUR FOR THIS PROJECT MUST OCCUR BETWEEN 6/1/2026 AND 8/15/2026.

A DISINCENTIVE SHALL BE ASSESSED IN THE AMOUNT OF $1,900 PER DAY FOR EACH CALENDAR DAY THE ROADWAY REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT.

THE CONTRACTOR SHALL PROVIDE THE SIGNS, SUPPORTS, AND HARDWARE REQUIRED FOR THE OFFICIAL DETOUR FOR S.R. 213 AS SHOWN ON SHEET P.07. THE CONTRACTOR SHALL THEN INSTALL, MAINTAIN, AND REMOVE SIGNS THROUGHOUT THE DURATION OF THE DETOUR.

PRIOR TO OPENING THE ROADWAY TO TRAFFIC, THE PAVEMENT BUILD-UP SHALL BE COMPLETED THROUGH THE INTERMEDIATE COURSE. IN ADDITION, TEMPORARY TRAFFIC CONTROL DEVICES, INCLUDING BUT NOT LIMITED TO, TEMPORARY SIGNS, PAVEMENT MARKINGS, AND CHANNELIZING DEVICES SHALL BE PLACED. A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGH THE USE OF FLAGGERS PER SCD MT-97.10 WHILE REMAINING WORK IS COMPLETED.

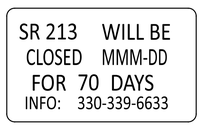
NOTICE OF CLOSURE SIGN

NOTICE OF CLOSURE SIGNS (W20-H13) SHALL BE ERECTED BY THE CONTRACTOR PRIOR TO THE SCHEDULED ROAD OR RAMP CLOSURE IN ACCORDANCE WITH THE NOTICE OF CLOSURE TIME TABLE BELOW.

THE SIGNS SHALL BE ERECTED ON THE RIGHT-HAND SIDE OF THE ROAD FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. ON ROADWAYS, THEY SHOULD BE ERECTED AT OR NEAR THE POINT OF CLOSURE.

NOTICE OF CLOSURE SIGN TIME TABLE		
ITEM	DURATION OF CLOSURE	SIGN DISPLAYED TO PUBLIC
ROAD CLOSURES	≥ 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	7 CALENDAR DAYS PRIOR TO CLOSURE
	≤ 12 HOURS	2 BUSINESS DAYS PRIOR TO CLOSURE

THE SIGN SHALL DISPLAY THE DATE OF THE CLOSURE IN MMM-DD FORMAT AND THE NUMBER OF DAYS OF THE CLOSURE. THE LAST LINE OF THE W20-H13 SIGN LISTS A PHONE NUMBER WHICH A MOTORIST MAY CALL FOR ADDITIONAL INFORMATION.



W20-H13-60

THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN STANDARD 48 X 30 INCH ROAD CLOSED SIGNS, SIGN SUPPORTS, BARRICADES AND LIGHTS, AS DETAILED IN SCD MT-101.60 AT THE PROJECT LIMITS DURING PERIODS IN WHICH THE ROAD IS CLOSED TO TRAFFIC.

RE-OPENING TO TRAFFIC

PRIOR TO OPENING THE ROAD TO TRAFFIC, TEMPORARY OR PERMANENT PAVEMENT MARKINGS SHALL BE IN PLACE

METHOD OF PAYMENT

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

ITEM 614, MAINTAINING TRAFFIC LUMP SUM

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED FOR DUST CONTROL PURPOSES:

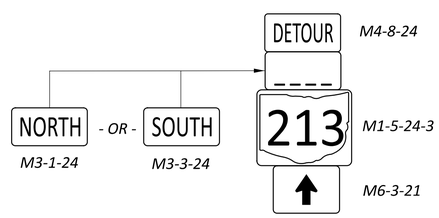
ITEM 616, WATER 110 M. GAL.

ITEM 614, DETOUR SIGNING

THE FOLLOWING SIGNS SHALL BE ERECTED ALONG THE OFFICIAL DETOUR ROUTE AND SHALL BE ASSEMBLED AS SHOWN. ALL DETOUR SIGNING SHALL BE INSTALLED BEFORE THE COMMENCING OF THE DETOUR.

EACH SIGN ASSEMBLY SHALL BE PLACED 100 FT. (OR AS DIRECTED) IN ADVANCE OF THE IMPENDING CHANGE OF ROUTE. OFFSET SHALL BE AS PER SCD TC-42.20.

IN ADDITION TO THE SIGNS LISTED IN THIS NOTE AND SHOWN ON THE INTERSECTION MAPS, PLACE THE FOLLOWING SIGN ASSEMBLIES AT INTERVALS NOT TO EXCEED 2 MILES IN RURAL AREAS AND AT INTERVALS NOT TO EXCEED 2 BLOCKS WITHIN URBAN AREAS. IT IS RECOMMENDED THAT AN ASSEMBLY BE PLACED JUST PAST EACH SIGNIFICANT INTERSECTION WHEN THE DETOUR CONTINUES IN AN UN-ALTERED DIRECTION. IT IS ANTICIPATED THAT 14 SIGN ASSEMBLIES WILL BE REQUIRED TO MEET THIS MAXIMUM SPACING. SEE SHEET P.07 FOR MAP SHOWING THE ENTIRE OFFICIAL DETOUR ROUTE.



PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, DETOUR SIGNING, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

WORKZONE MARKINGS AND SIGNS

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR USE AT LOCATIONS IDENTIFIED BY THE ENGINEER FOR WORK ZONE PAVEMENT MARKINGS PER THE REQUIREMENTS OF C&MS 614.04 AND 614.11.

ITEM 614, WORK ZONE CENTER LINE, CLASS II, 642 PAINT 0.16 MILE
ITEM 614, WORK ZONE CENTER LINE, CLASS III, 642 PAINT 0.16 MILE
ITEM 614, WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT 0.31 MILE

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION OF TRAFFIC RESTRICTIONS TIME TABLE		
ITEM	DURATION OF CLOSURE	NOTICE DUE TO PROJECT ENGINEER
ROAD CLOSURES	≥ 2 WEEKS	21 CALENDAR DAYS PRIOR TO CLOSURE
	> 12 HOURS & < 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	≤ 12 HOURS	4 BUSINESS DAYS PRIOR TO CLOSURE
LANE CLOSURES & RESTRICTIONS	≥ 2 WEEKS	14 CALENDAR DAYS PRIOR TO CLOSURE
	< 2 WEEKS	5 BUSINESS DAYS PRIOR TO CLOSURE
START OF CONSTRUCTION & TRAFFIC PATTERN CHANGES	N/A	14 CALENDAR DAYS PRIOR TO IMPLEMENTATION

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

DESIGNATED STATE & LOCAL DETOUR ROUTE

IN ADDITION TO THE OFFICIAL , SIGNED DETOUR ROUTE, A LOCAL ROUTE HAS BEEN DETERMINED TO BE SECONDARY, UNSIGNED DETOUR ROUTE OR "DESIGNATED LOCAL DETOUR ROUTE." THIS ROUTE IS SHOWN ON SHEET P.7. DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THIS ROUTE IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST, AND STANDING WATER. ONCE THE DETOUR IS REMOVED AND TRAFFIC RETURNED TO ITS NORMAL PATTER, THE DESIGNATED LOCAL DETOUR ROUTE SHALL BE RESTORED TO A CONDITION THAT IS EQUIVALENT TO THAT WHICH EXISTED PRIOR TO ITS USE FOR THIS PURPOSE. ALL SUCH WORK SHALL BE PERFORMED WHEN AND AS DETERMINED BY THE ENGINEER.

DURING THE TIME THAT TRAFFIC IS DETOURED, THE CONTRACTOR SHALL MAINTAIN THE ROUTES THAT ARE PART OF THE OFFICIAL STATE DETOUR ROUTE THROUGH MUNICIPAL CORPORATIONS IN A CONDITION WHICH IS REASONABLY SMOOTH AND FREE FROM HOLES, RUTS, RIDGES, BUMPS, DUST, AND STANDING WATER.

THE FOLLOWING ESTIMATED QUANTITIES ARE PROVIDED FOR USE AS DETERMINED BY THE ENGINEER TO MAINTAIN AND SUBSEQUENTLY RESTORE THE DESIGNATED STATE & LOCAL DETOUR ROUTES.

ITEM 614, ASPHALT CONCRETE FOR MAINTAINING TRAFFIC 50 CY

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW SHALL NOT BE PERMITTED AT PROJECT COST NOR TIME COMPENSATION. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS AND/OR IN CONTRARY TO OTHER TRAFFIC CONTROL DEVICES IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE SHIFT DURATION SHALL NOT BE LESS THAN THE LEO'S MINIMUM SHOW-UP TIME REQUIRED BY THEIR LAW ENFORCEMENT AGENCY. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 50 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF AN LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

MAINTENANCE OF TRAFFIC GENERAL NOTES

DESIGN AGENCY
ms consultants. inc.

DESIGNER CLB
REVIEWER KWR 07/18/24
PROJECT ID 118631
SHEET P.6 TOTAL 56

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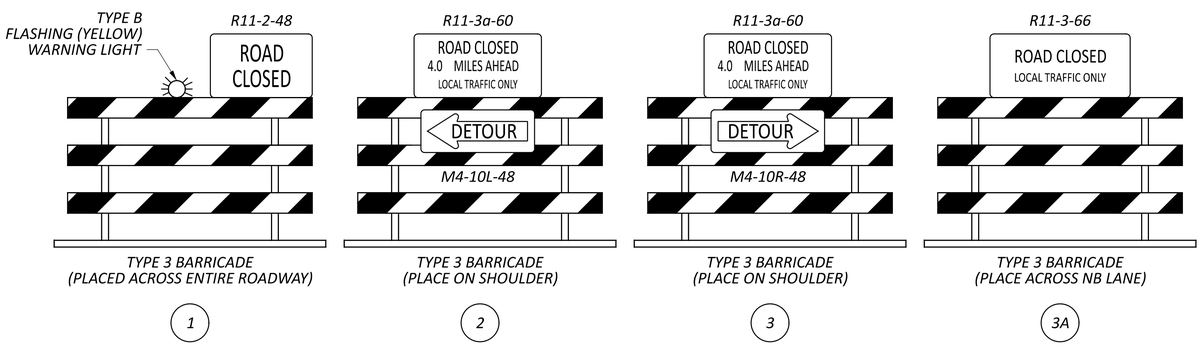
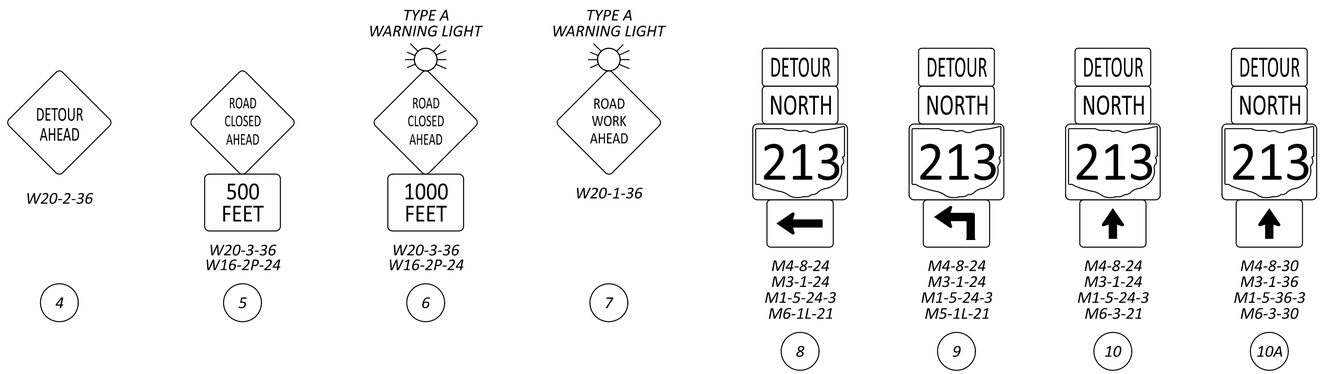
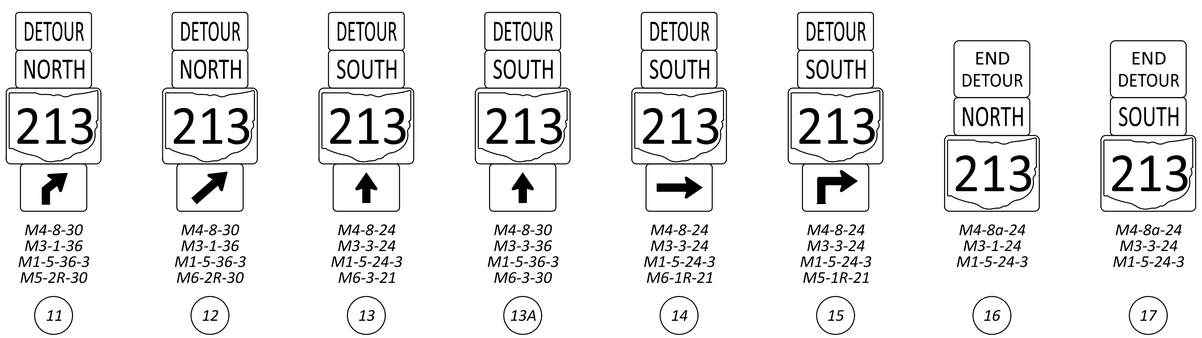
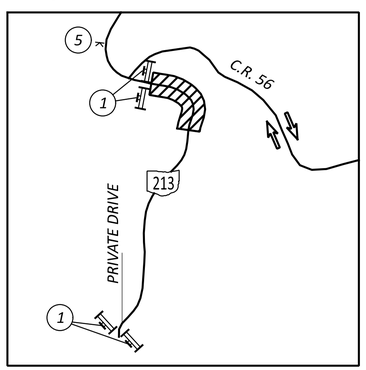
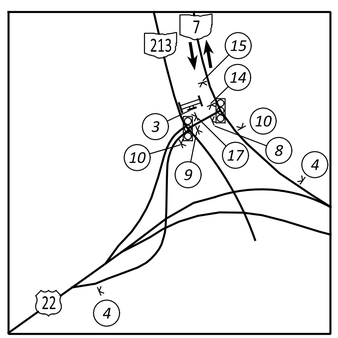




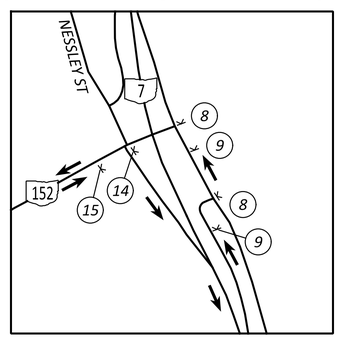




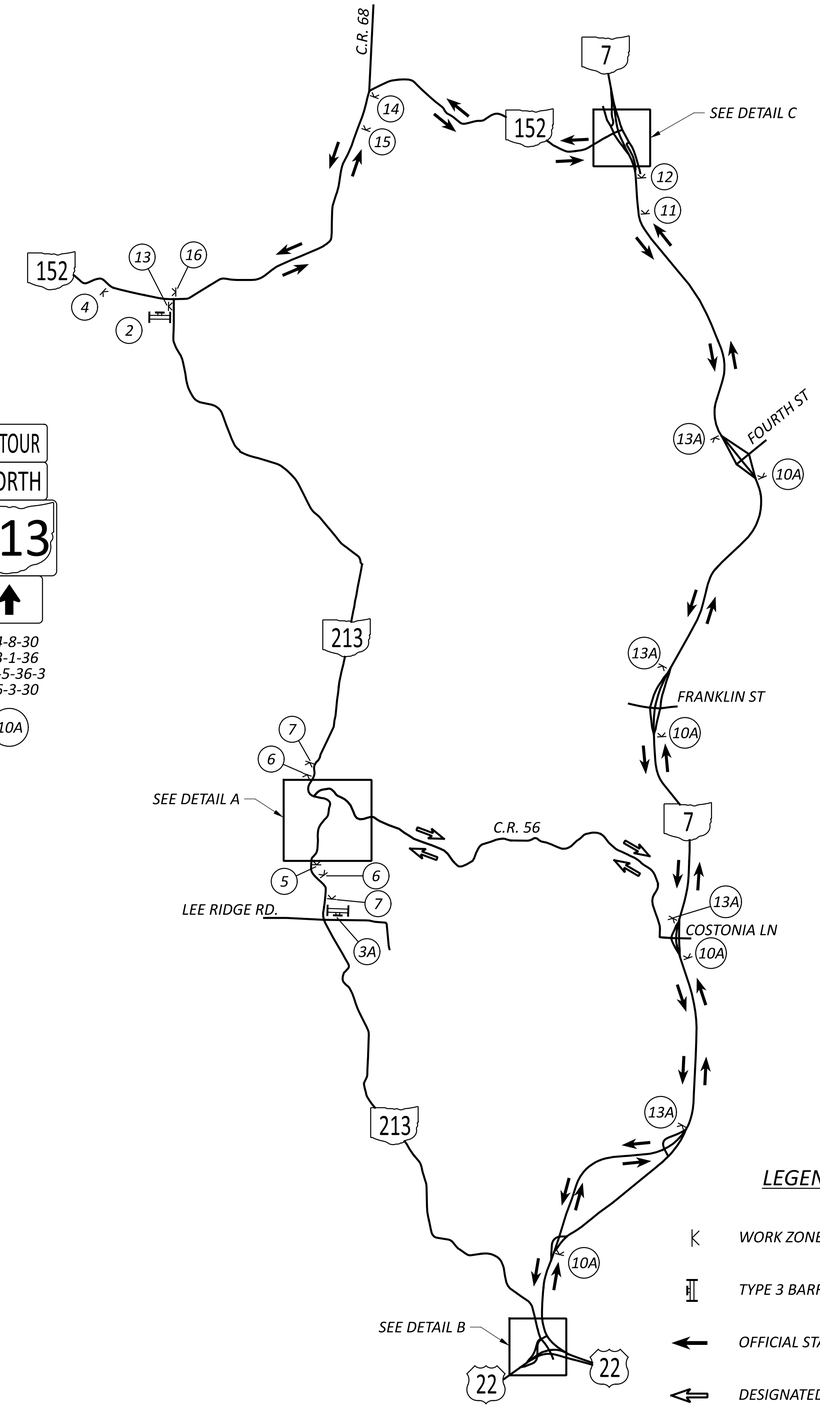
DETAIL A



DETAIL B



DETAIL C



LEGEND

- WORK ZONE SIGN W/ SUPPORT
- TYPE 3 BARRICADE W/ SIGN
- OFFICIAL STATE ROUTE DETOUR
- DESIGNATED LOCAL DETOUR ROUTE
- SIGNALIZED INTERSECTION
- WORK ZONE

DETOUR PLAN - S.R. 213

DESIGN AGENCY
ms consultants. inc.

DESIGNER: KWR
REVIEWER: KJF 11/20/23
PROJECT ID: 118631
SHEET: P.7 TOTAL: 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:42:10 AM USER: jkuczynski
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SHEET NUM.													PART.	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
P.2	P.3	P.4	P.10	P.11	P.31	P.33	P.34					OFFICE CALCS	01/STR						
																		ROADWAY	
		LS											LS	201	11000	LS		CLEARING AND GRUBBING	
						78						2,208	2,286	202	23000	2,286	SY	PAVEMENT REMOVED	
			53										53	202	35100	53	FT	PIPE REMOVED, 24" DIAMETER AND UNDER	
			878										878	202	38000	878	FT	GUARDRAIL REMOVED	
			1										1	202	58100	1	EACH	CATCH BASIN REMOVED	
			2										2	202	98100	2	EACH	REMOVAL MISC.: POST REMOVED	P.4
					37,450	5							37,455	203	10000	37,455	CY	EXCAVATION	
					16,709								16,709	203	10001	16,709	CY	EXCAVATION, AS PER PLAN	P.4
					201								201	203	20000	201	CY	EMBANKMENT	
						147						2,460	2,607	204	10000	2,607	SY	SUBGRADE COMPACTION	
					302								302	204	13000	302	CY	EXCAVATION OF SUBGRADE	
					302								302	204	30011	302	CY	GRANULAR MATERIAL, TYPE B, AS PER PLAN	P.4
		1											1	204	45000	1	HOUR	PROOF ROLLING	
			833										833	606	15100	833	FT	GUARDRAIL, TYPE MGS WITH LONG POSTS	
5													5	623	38500	5	EACH	MONUMENT ASSEMBLY, TYPE C	
3													3	623	40000	3	EACH	MONUMENT ASSEMBLY REMOVED AND RESET	
																		EROSION CONTROL	
			726										726	601	21050	726	SY	TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	
		2											2	659	00100	2	EACH	SOIL ANALYSIS TEST	
		371											371	659	00300	371	CY	TOPSOIL	
					3,342								3,342	659	10000	3,342	SY	SEEDING AND MULCHING	
					11,678								11,678	659	10001	11,678	SY	SEEDING AND MULCHING, AS PER PLAN	P.4
		167											167	659	14000	167	SY	REPAIR SEEDING AND MULCHING	
		167											167	659	15000	167	SY	INTER-SEEDING	
		2.05											2.05	659	20000	2.05	TON	COMMERCIAL FERTILIZER	
		3.1											3.1	659	31000	3.1	ACRE	LIME	
		81											81	659	35000	81	MGAL	WATER	
				LS									LS	832	15000	LS		STORM WATER POLLUTION PREVENTION PLAN	
				LS									LS	832	15002	LS		STORM WATER POLLUTION PREVENTION INSPECTIONS	
				LS									LS	832	15010	LS		STORM WATER POLLUTION PREVENTION INSPECTION SOFTWARE	
				40,000									40,000	832	30000	40,000	EACH	EROSION CONTROL	
																		DRAINAGE	
	490												490	605	31100	490	FT	AGGREGATE DRAINS	
			96										96	611	10900	96	FT	24" CONDUIT, TYPE D	
																		PAVEMENT	
		1										250	251	301	56000	251	CY	ASPHALT CONCRETE BASE, PG64-22, (449)	
						13						390	403	304	20000	403	CY	AGGREGATE BASE	
												328	328	407	20000	328	GAL	NON-TRACKING TACK COAT	
												280	280	408	10001	280	GAL	PRIME COAT, AS PER PLAN	P.5
												76	76	441	70100	76	CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (449), PG70-22M	
												107	107	441	70300	107	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (449)	
						89							89	452	10050	89	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS	
												156	156	617	10100	156	CY	COMPACTED AGGREGATE	
																		TRAFFIC CONTROL	
							33						33	621	00100	33	EACH	RPM, 2-WAY (YELLOW/YELLOW) (20' SPACING)	
							33						33	621	54000	33	EACH	RAISED PAVEMENT MARKER REMOVED	
			18										18	626	00110	18	EACH	BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL)	
							113.4						113.4	630	03100	113.4	FT	GROUND MOUNTED SUPPORT, NO. 3 POST	
							14						14	630	08600	14	EACH	SIGN POST REFLECTOR	
							66						66	630	80100	66	SF	SIGN, FLAT SHEET	
							22						22	630	84900	22	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
							14						14	630	86002	14	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
							0.31						0.31	646	10010	0.31	MILE	EDGE LINE, 6"	
							0.16						0.16	646	10200	0.16	MILE	CENTER LINE	

GENERAL SUMMARY

DESIGN AGENCY

ms consultants. inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.8 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:42:51 AM USER: jkuczynski
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SHEET NUM. P.6	PART. 01/STR	ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
						MAINTENANCE OF TRAFFIC	
50	50	614	11110	50	HOUR	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
LS	LS	614	12420	LS		DETOUR SIGNING	
50	50	614	13000	50	CY	ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	
0.16	0.16	614	21500	0.16	MILE	WORK ZONE CENTER LINE, CLASS II, 642 PAINT	
0.16	0.16	614	21550	0.16	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
0.31	0.31	614	22360	0.31	MILE	WORK ZONE EDGE LINE, CLASS III, 6", 642 PAINT	
110	110	616	10000	110	MGAL	WATER	
						INCIDENTALS	
LS	LS	614	11000	LS		MAINTAINING TRAFFIC	
	8	619	16010	8	MNTH	FIELD OFFICE, TYPE B	
	LS	623	10000	LS		CONSTRUCTION LAYOUT STAKES AND SURVEYING	
	LS	624	10000	LS		MOBILIZATION	

GENERAL SUMMARY

DESIGN AGENCY

ms consultants, inc.

DESIGNER CJR

REVIEWER JDK 8-15-25

PROJECT ID 118631

SHEET P.9 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:42:52 AM USER: jkuczynski
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REF NO.	SHEET NO.	STATION TO STATION					202 PIPE REMOVED, 24" DIAMETER AND UNDER	202 GUARDRAIL REMOVED	202 CATCH BASIN REMOVED	202 REMOVAL MISC.: POST REMOVED	601 TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT	606 GUARDRAIL, TYPE MGS WITH LONG POSTS	611 24" CONDUIT, TYPE D	626 BARRIER REFLECTOR, TYPE 2 (BIDIRECTIONAL)
							FT	FT	EACH	EACH	SY	FT	FT	EACH
				TO										
R1	P.13	2+10.00	LT	TO	2+25.00	LT				2				
R2	P.13	0+80.00	RT	TO	9+00.00	RT		878						
R3	P.13	7+62.43	LT	TO	7+63.64	RT	53		1					
G1	P.13	0+80.00	RT	TO	9+00.00	RT						832.47		18
D1	P.13	0+80.00	LT	TO	9+35.60	LT					677.44			
D2	P.13	9+35.60	LT	TO	9+68.25	LT							34	
D3	P.13	9+68.25	LT	TO	10+22.44	LT					48.56			
D4	P.13	10+22.44	LT	TO	10+77.72	LT							62	
TOTALS CARRIED TO GENERAL SUMMARY							53	878	1	2	726	833	96	18

ROADWAY AND DRAINAGE SUBSUMMARY

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:42:53 AM USER: jkuczynski
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DESIGN AGENCY
ms consultants, inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.10 TOTAL 56

PROJECT DESCRIPTION

KNOXVILLE QUADRANGLE
OHIO- WEST VIRGINIA
7.5-MINUTE SERIES

Longitude: 40°26'30" *
Latitude: -80°39'45" *

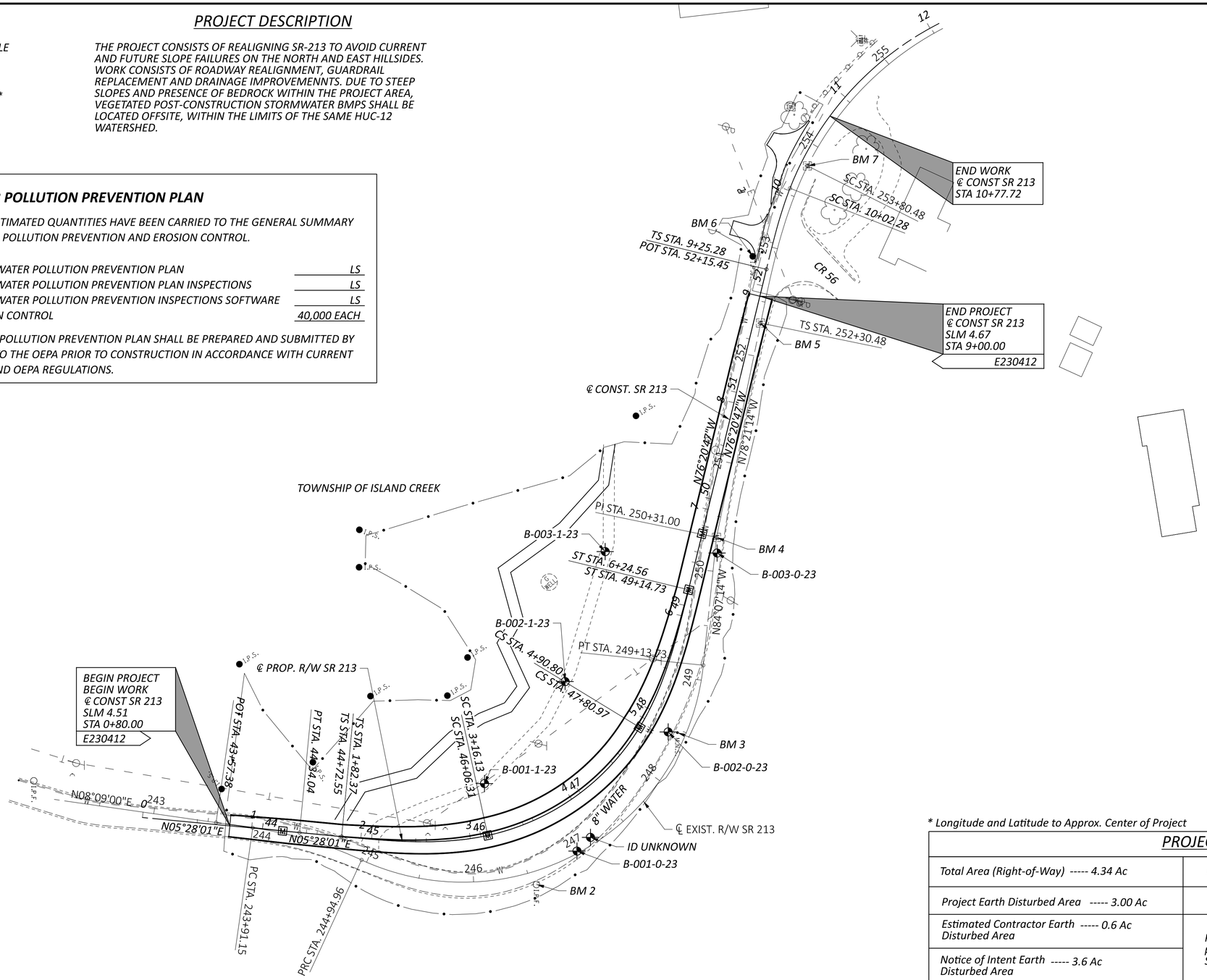
THE PROJECT CONSISTS OF REALIGNING SR-213 TO AVOID CURRENT AND FUTURE SLOPE FAILURES ON THE NORTH AND EAST HILLSIDES. WORK CONSISTS OF ROADWAY REALIGNMENT, GUARDRAIL REPLACEMENT AND DRAINAGE IMPROVEMENNTS. DUE TO STEEP SLOPES AND PRESENCE OF BEDROCK WITHIN THE PROJECT AREA, VEGETATED POST-CONSTRUCTION STORMWATER BMPS SHALL BE LOCATED OFFSITE, WITHIN THE LIMITS OF THE SAME HUC-12 WATERSHED.

STORM WATER POLLUTION PREVENTION PLAN

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY FOR STORM WATER POLLUTION PREVENTION AND EROSION CONTROL.

ITEM 832 - STORMWATER POLLUTION PREVENTION PLAN	LS
ITEM 832 - STORMWATER POLLUTION PREVENTION PLAN INSPECTIONS	LS
ITEM 832 - STORMWATER POLLUTION PREVENTION INSPECTIONS SOFTWARE	LS
ITEM 832 - EROSION CONTROL	40,000 EACH

THE STORM WATER POLLUTION PREVENTION PLAN SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR TO THE OEPA PRIOR TO CONSTRUCTION IN ACCORDANCE WITH CURRENT ODOT GUIDANCE AND OEPA REGULATIONS.



* Longitude and Latitude to Approx. Center of Project

PROJECT DATA

Total Area (Right-of-Way) ----- 4.34 Ac	Runoff Coefficient for Pre-Construction Site ----- 0.3-0.9
Project Earth Disturbed Area ----- 3.00 Ac	Runoff Coefficient for Post Construction Site ----- 0.3-0.9
Estimated Contractor Earth Disturbed Area ----- 0.6 Ac	Post Construction BMP: Offsite Vegetated Filter Strips were provided to meet NPDES post construction requirements. See Sheet P.12 for BMP limits.
Notice of Intent Earth Disturbed Area ----- 3.6 Ac	
Impervious (Paved) Area of Pre-Construction Site ----- 0.476 Ac	Immediate Receiving Waters ----- Island Creek
Impervious (Paved) Area for Post Construction Site ----- 0.622 Ac	Subsequent Receiving Waters ----- Ohio River
	Treatment Provided ----- 1.29 Ac
	Treatment Required* ----- 1.23 Ac

* Calculated per L&D Vol. 2, Sec. 1111.7

PROJECT SITE PLAN

DESIGN AGENCY
ms consultants. inc.

DESIGNER
AGG

REVIEWER
MRB 6-5-25

PROJECT ID
118631

SHEET P.11 TOTAL 56

JEF-SR 213-4.51

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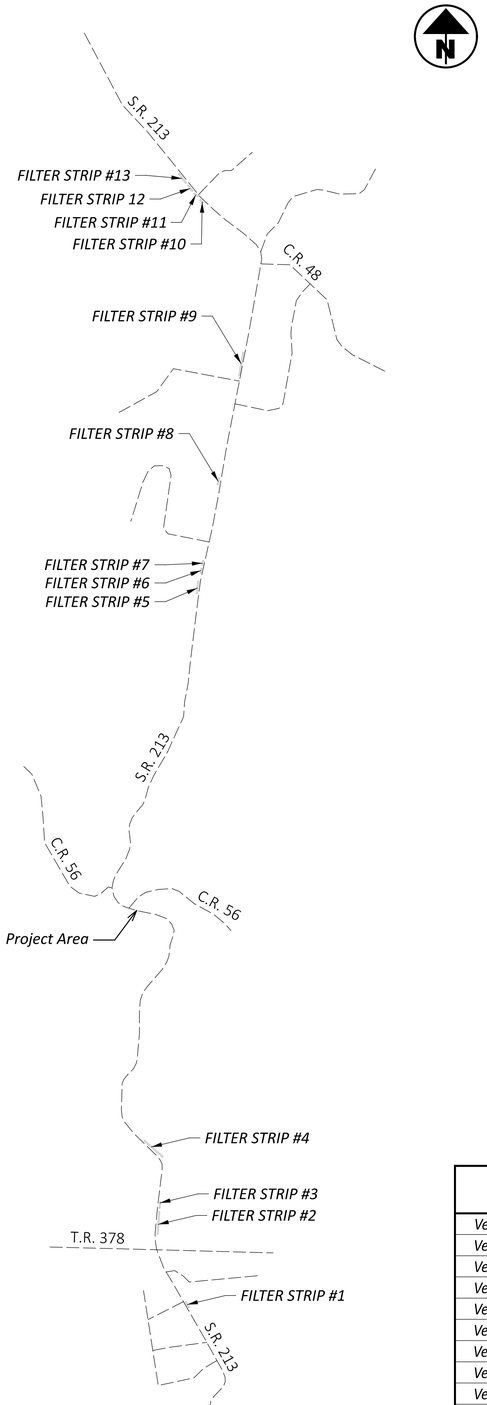

KNOXVILLE QUADRANGLE

OHIO- WEST VIRGINIA

7.5-MINUTE SERIES

*Longitude: 40°26'30" **

*Latitude: -80°39'45" **

PROJECT DESCRIPTION

THE PROJECT CONSISTS OF REALIGNING SR-213 TO AVOID CURRENT AND FUTURE SLOPE FAILURES ON THE NORTH AND EAST HILLSIDES. WORK CONSISTS OF ROADWAY REALIGNMENT, GUARDRAIL REPLACEMENT AND DRAINAGE IMPROVEMENNTS. DUE TO STEEP SLOPES AND PRESENCE OF BEDROCK WITHIN THE PROJECT AREA, VEGETATED POST-CONSTRUCTION STORMWATER BMPS SHALL BE LOCATED OFFSITE, WITHIN THE LIMITS OF THE SAME HUC-12 WATERSHED.

OFFSITE BMP LOCATIONS

VFS	EDA TREATMENT CREDIT (AC.)	LENGTH (FT)	WIDTH (FT)	BOTTOM LEFT		TOP LEFT		TOP RIGHT		BOTTOM RIGHT	
				NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING	NORTHING	EASTING
Vegetated Filter Strip #1	0.06	87	15	282533.4443	2480314.0953	282608.5666	2480270.8776	282616.0465	2480283.8795	282540.9243	2480327.0972
Vegetated Filter Strip #2	0.21	299	15	283504.6533	2479900.5671	283802.6374	2479925.1933	283801.4020	2479940.1424	283503.4179	2479915.5161
Vegetated Filter Strip #3	0.06	87	15	283848.1963	2479926.7809	283934.2991	2479936.6534	283932.5904	2479951.5557	283846.4876	2479941.6833
Vegetated Filter Strip #4	0.22	325	15	284520.8952	2479970.9259	284736.6144	2479727.8411	284747.8337	2479737.7974	284532.1145	2479980.8822
Vegetated Filter Strip #5	0.11	166	15	291962.5654	2480417.4040	292126.7031	2480438.8509	292124.7597	2480453.7245	291960.6219	2480432.2776
Vegetated Filter Strip #6	0.05	66	15	292233.3723	2480468.1732	292297.7681	2480482.0151	292294.6159	2480496.6801	292230.2200	2480482.8383
Vegetated Filter Strip #7	0.04	61	15	292339.4383	2480491.2897	292398.3225	2480505.8877	292394.7131	2480520.4470	292335.8289	2480505.8490
Vegetated Filter Strip #8	0.06	91	15	293399.0768	2480696.1525	293488.4799	2480713.1252	293485.6822	2480727.8619	293396.2791	2480710.8893
Vegetated Filter Strip #9	0.21	303	15	294845.1141	2480980.3175	295144.0141	2481031.9881	295141.4590	2481046.7689	294842.5589	2480995.0983
Vegetated Filter Strip #10	0.04	55	15	297115.0865	2480501.6137	297155.3849	2480464.7735	297165.5058	2480475.8445	297125.2074	2480512.6847
Vegetated Filter Strip #11	0.05	75	15	297199.3565	2480429.1492	297237.6421	2480390.2215	297248.3366	2480400.7395	297210.0509	2480439.6672
Vegetated Filter Strip #12	0.07	99	15	297268.7166	2480363.2869	297347.0845	2480303.1212	297356.2190	2480315.0192	297277.8510	2480375.1849
Vegetated Filter Strip #13	0.11	155	15	297375.1364	2480278.6305	297498.2519	2480184.2435	297507.3783	2480196.1476	297384.2628	2480290.5346
Treatment Provided (AC):	1.29	*THE NORTHING AND EASTING LOCATIONS ARE REPRESENTATIVE OF THE FOUR CORNERS OF THE PROPOSED VEGETATED FILTER STRIPS, ORIENTED IN A NORTH/SOUTH DIRECTION.									
Treatment Required (AC):	1.23										

HORIZONTAL SCALE IN FEET
0 500 1000 2000

PROJECT SITE PLAN - OFFSITE BMP LOCATIONS

DESIGN AGENCY
ms consultants. inc.

DESIGNER
AGG

REVIEWER
MRB 6-4-25

PROJECT ID
118631

SHEET P.12 TOTAL 36

JEF-SR 213-4.51

MODEL: Project Site Plan PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:43:03 AM USER: jkuczynski
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C1 ℄ CONST. SR 213
SPIRAL DATA
P.I. = STA. 2+72.00
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 132.48'
y = 13.71'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 1+82.37
End = Sta. 3+16.13
C.B. = N00°26'30"W

C2 ℄ CONST. SR 213
CURVE DATA
P.I. = STA. 4+08.56
Δ = 46°19'56" LT
Dc = 26°31'33" (NDC Dc = 4°45')
R = 216.00'
T = 92.43'
L = 174.67'
E = 18.94'
SSD = 260' (570'MIN)
ACTUAL DESIGN SPEED = 36 MPH

C3 ℄ CONST. SR 213
SPIRAL DATA
P.I. = STA. 5+35.80
Ls = 133.76'
Θs = 17°44'26"
LT = 89.63'
ST = 45.00'
x = 130.36'
y = 27.31'
k = 66.67'
p = 3.44'
C = 133.19'
Start = Sta. 4+90.80
End = Sta. 6+24.56
C.B. = N70°26'15"W

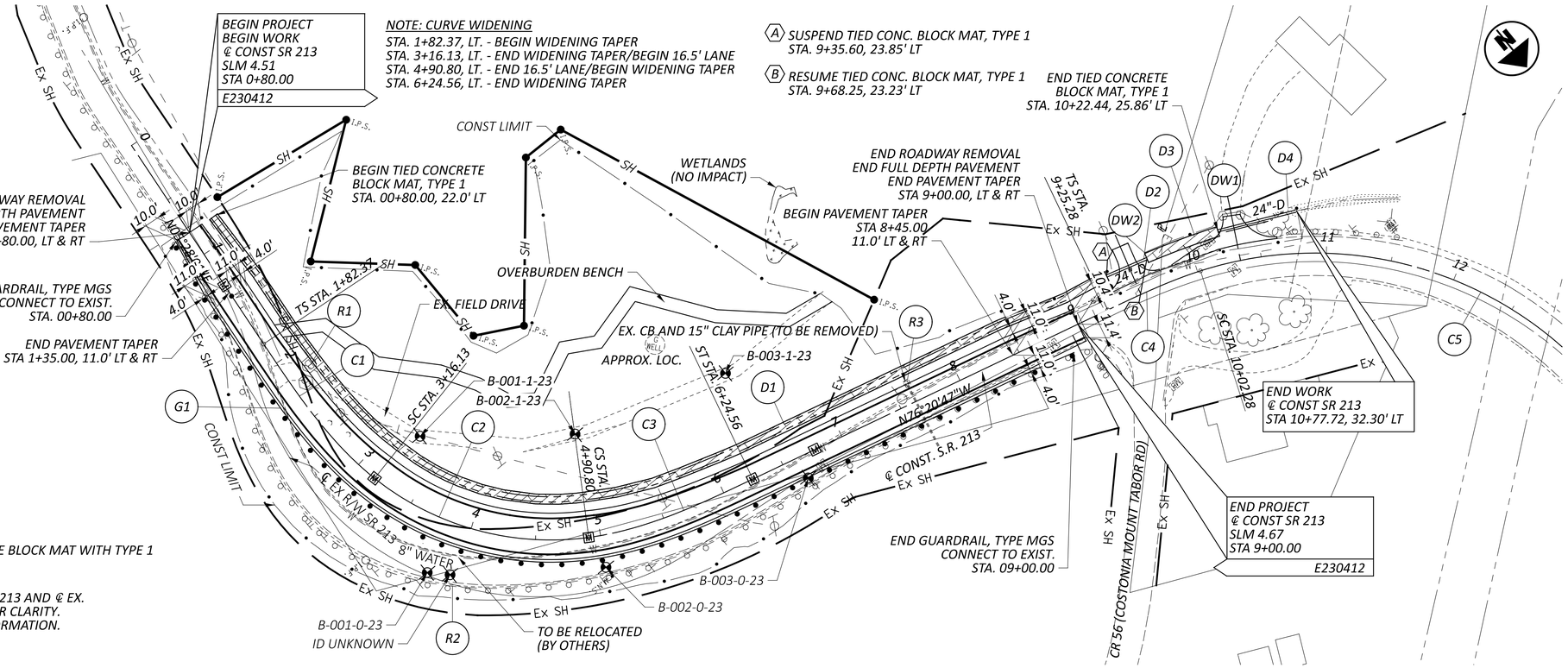
C4 ℄ CONST. SR 213
SPIRAL DATA
P.I. = STA. 9+76.66
Ls = 77.00'
Θs = 07°42'46"
LT = 51.38'
ST = 25.71'
x = 76.86'
y = 3.45'
k = 38.48'
p = 0.86'
C = 76.94'
Start = Sta. 9+25.28
End = Sta. 10+02.28
C.B. = N73°46'33"W

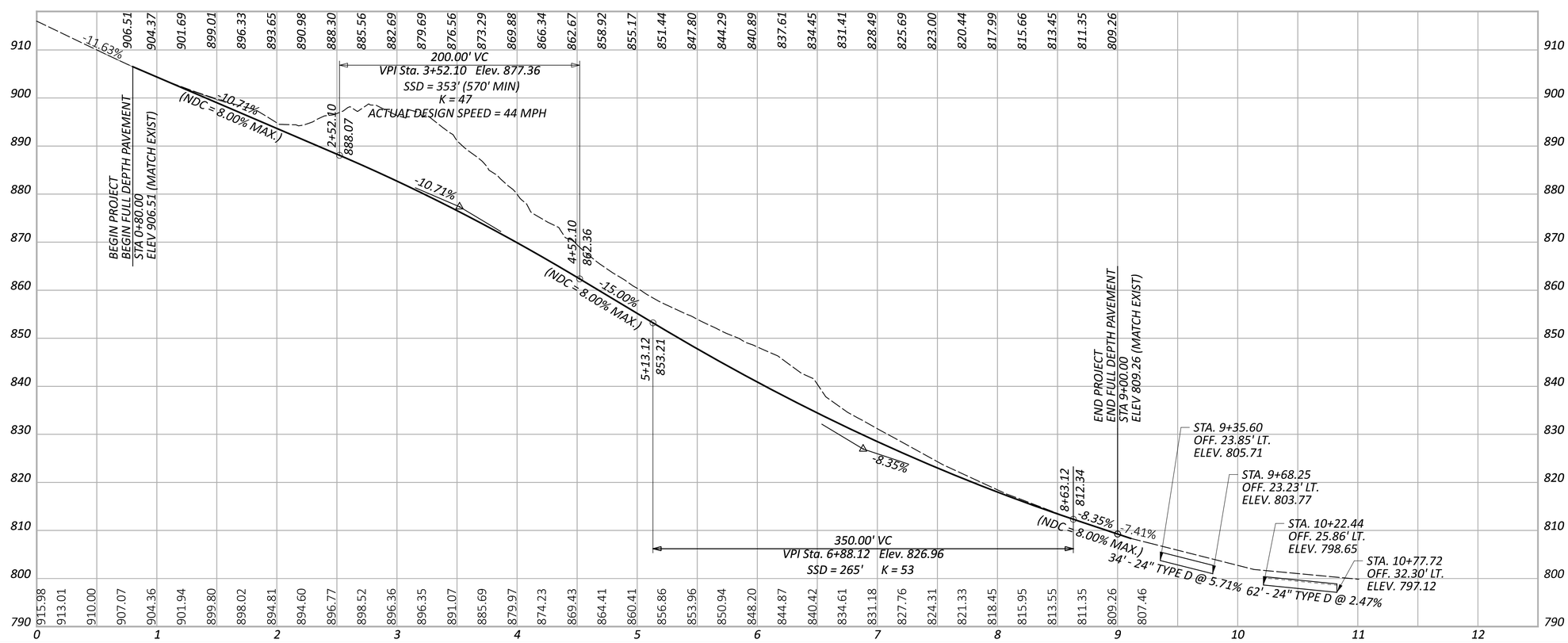
C5 ℄ CONST. SR 213
CURVE DATA
P.I. = STA. 12+65.40
Δ = 85°13'43" RT
Dc = 20°02'01"
R = 286.00'
T = 263.12'
L = 425.43'
E = 102.62'

LEGEND

ITEM 601- TIED CONCRETE BLOCK MAT WITH TYPE 1 UNDERLAYMENT

ALIGNMENT DATA FOR ℄ PR. R/W S.R. 213 AND ℄ EX. R/W S.R 213 HAVE BEEN REMOVED FOR CLARITY. PLEASE SEE SHEET P.2 FOR MORE INFORMATION.





HORIZONTAL SCALE IN FEET
0 25 50 100

PLAN AND PROFILE SHEET SR 213

DESIGN AGENCY
ms consultants, inc.

DESIGNER CJR
REVIEWER JDK 8-15-25
PROJECT ID 118631
SHEET P.13 TOTAL 56

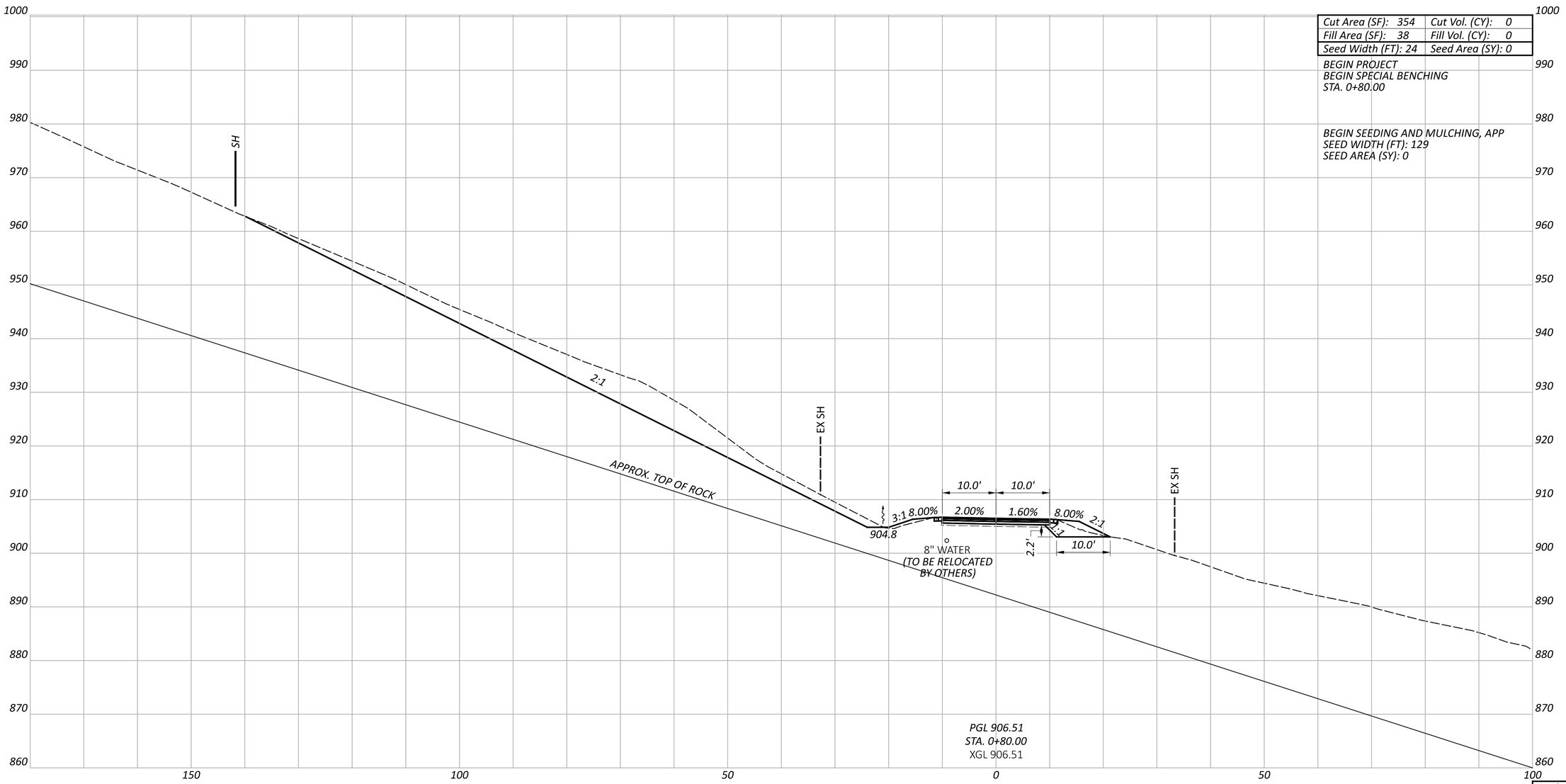
JEF-SR 213-4.51

MODEL: ALT III - Plan 1 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:43:19 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_GP005.dgn

Cut Area (SF): 354	Cut Vol. (CY): 0
Fill Area (SF): 38	Fill Vol. (CY): 0
Seed Width (FT): 24	Seed Area (SY): 0

BEGIN PROJECT
BEGIN SPECIAL BENCHING
STA. 0+80.00

BEGIN SEEDING AND MULCHING, APP
SEED WIDTH (FT): 129
SEED AREA (SY): 0



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 0+80.00

DESIGN AGENCY
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REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.14 TOTAL 56

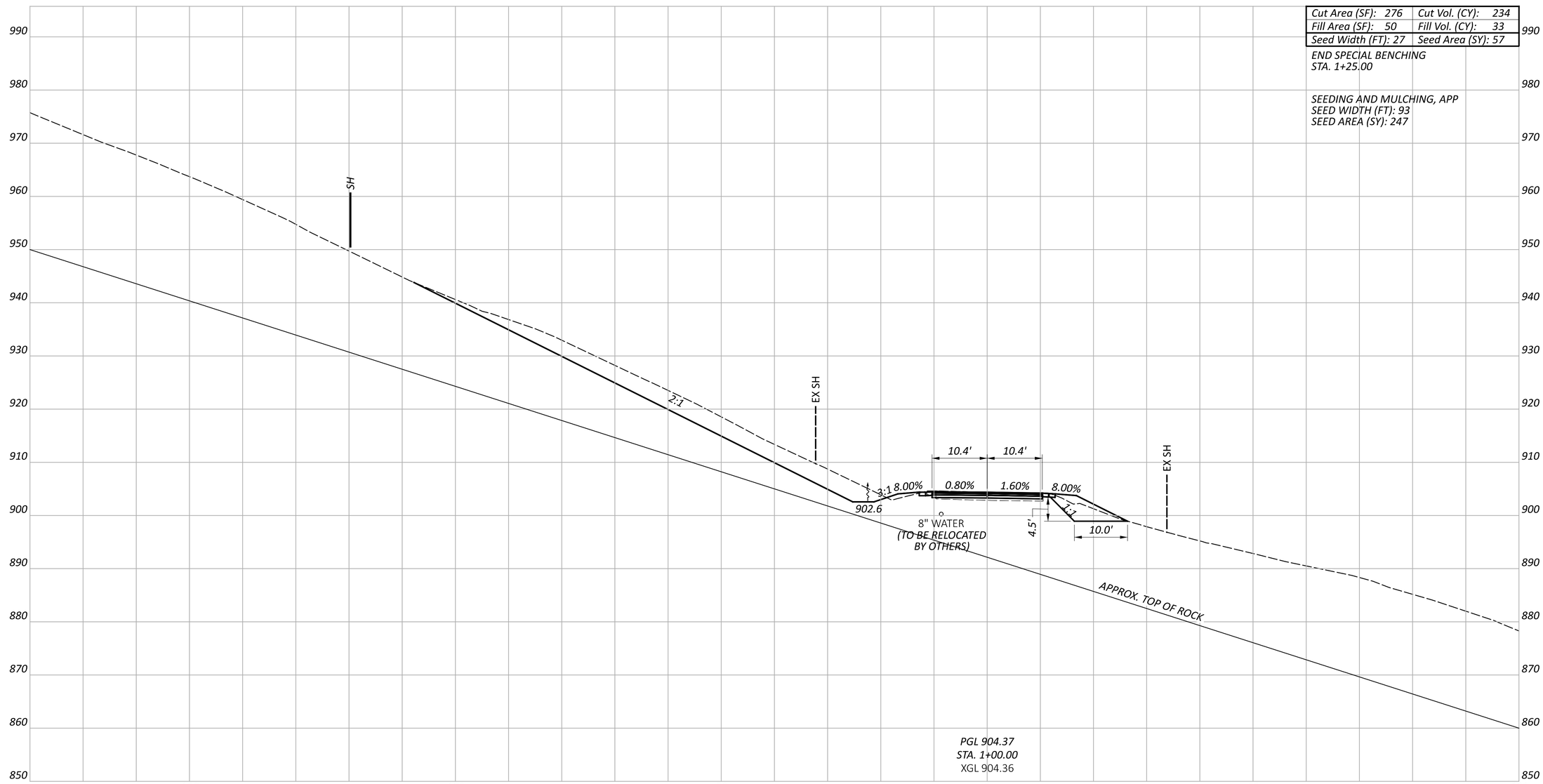
JEF-SR 213-4.51

MODEL: SR213 - 0+80.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 10:03:33 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Cut Area (SF): 276	Cut Vol. (CY): 234
Fill Area (SF): 50	Fill Vol. (CY): 33
Seed Width (FT): 27	Seed Area (SY): 57

END SPECIAL BENCHING
STA. 1+25.00

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 93
SEED AREA (SY): 247



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 1+00.00

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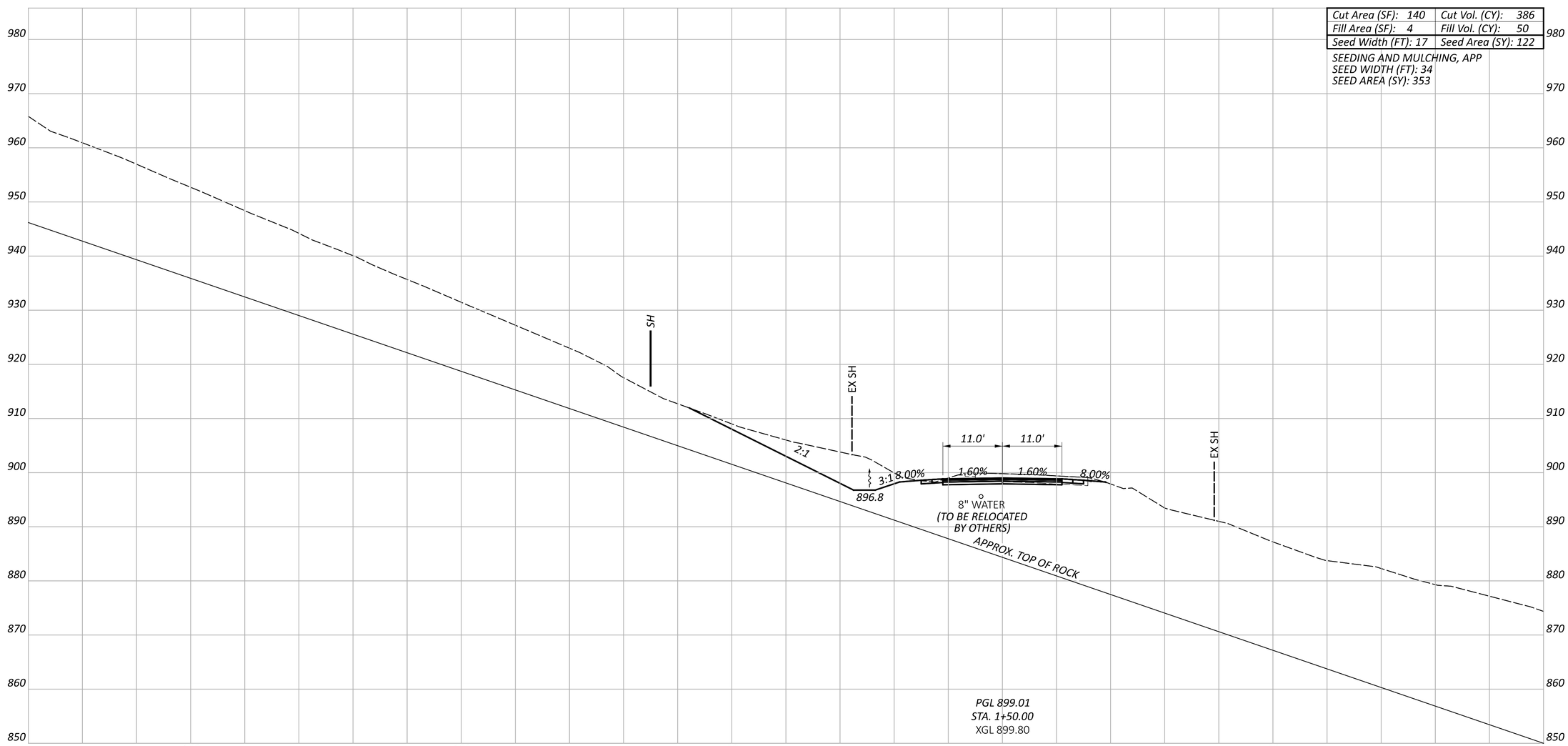
SHEET P.15 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 1+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:41 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Cut Area (SF): 140	Cut Vol. (CY): 386
Fill Area (SF): 4	Fill Vol. (CY): 50
Seed Width (FT): 17	Seed Area (SY): 122

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 34
SEED AREA (SY): 353



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 1+50.00

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SHEET P.16 TOTAL 56

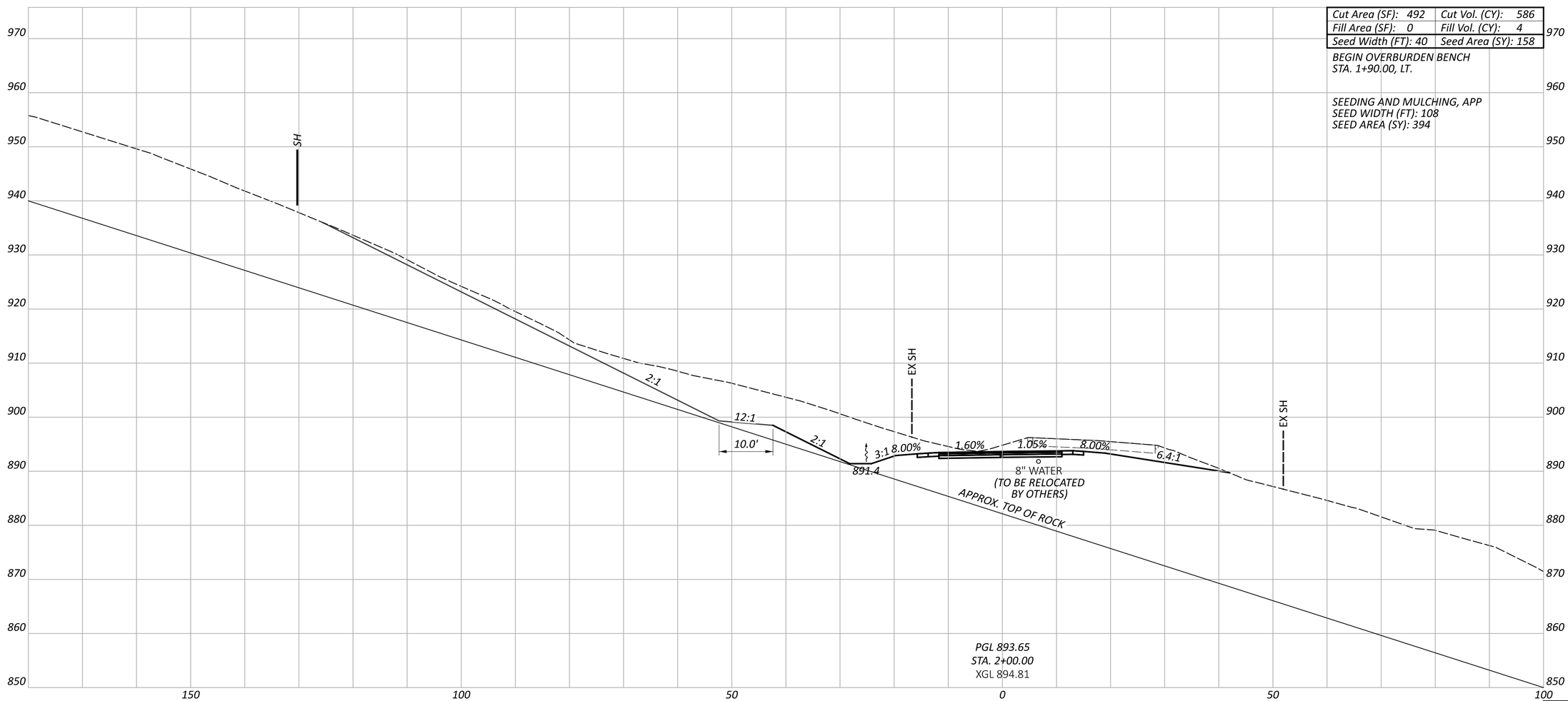
JEF-SR 213-4.51

MODEL: SR213 - 1+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:44 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Cut Area (SF): 492	Cut Vol. (CY): 586
Fill Area (SF): 0	Fill Vol. (CY): 4
Seed Width (FT): 40	Seed Area (SY): 158

BEGIN OVERBURDEN BENCH
STA. 1+90.00, LT.

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 108
SEED AREA (SY): 394



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 2+00.00

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SHEET P.17 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 2+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:47 AM USER: jkuczynski
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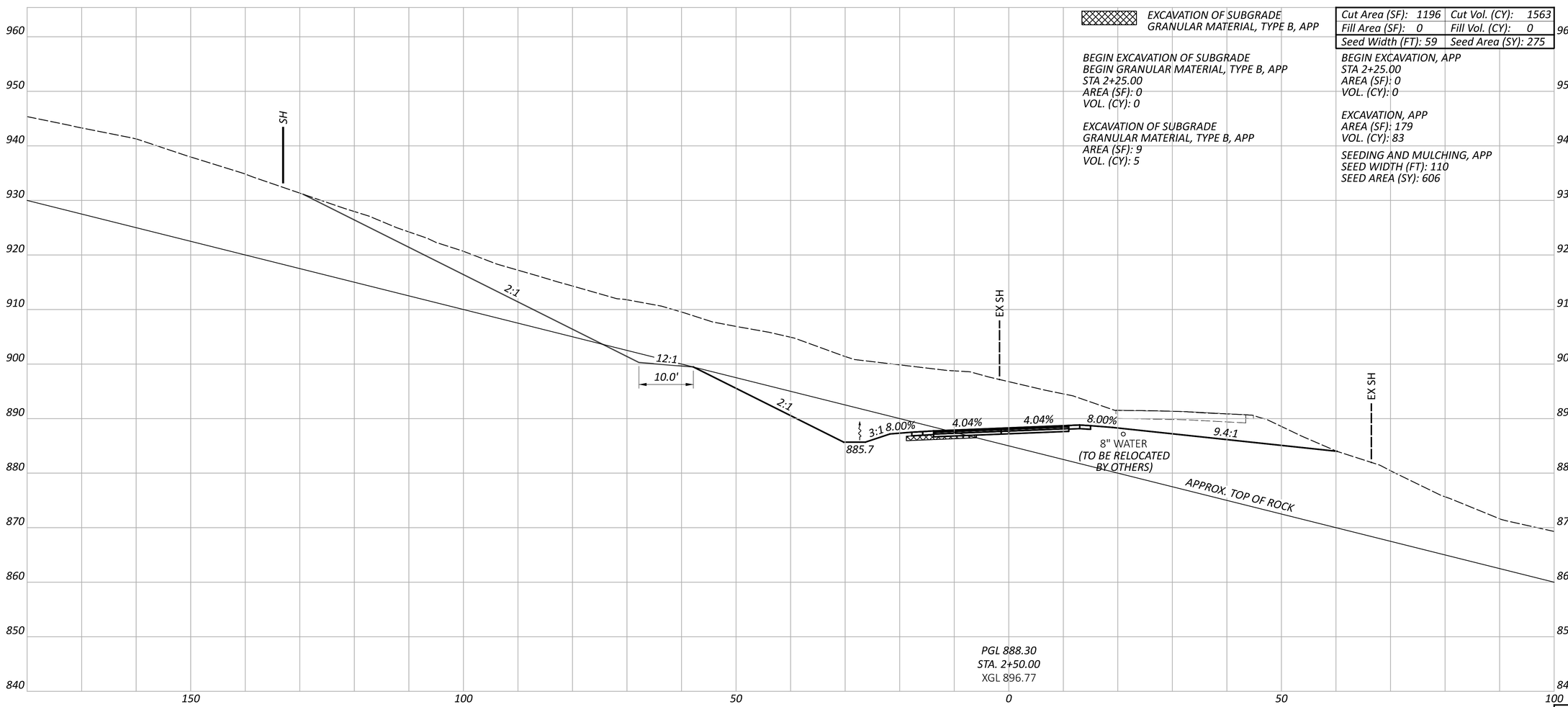

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP

Cut Area (SF): 1196	Cut Vol. (CY): 1563
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 59	Seed Area (SY): 275

BEGIN EXCAVATION OF SUBGRADE
BEGIN GRANULAR MATERIAL, TYPE B, APP
STA 2+25.00
AREA (SF): 0
VOL. (CY): 0

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP
AREA (SF): 9
VOL. (CY): 5

BEGIN EXCAVATION, APP
STA 2+25.00
AREA (SF): 0
VOL. (CY): 0

EXCAVATION, APP
AREA (SF): 179
VOL. (CY): 83

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 110
SEED AREA (SY): 606

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 2+50.00

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SHEET P.18 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 2+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:51 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP

Cut Area (SF): 1092	Cut Vol. (CY): 2119
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 65	Seed Area (SY): 344

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP
AREA (SF): 23
VOL. (CY): 30

EXCAVATION, APP
AREA (SF): 907
VOL. (CY): 1006

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 105
SEED AREA (SY): 597

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 3+00.00

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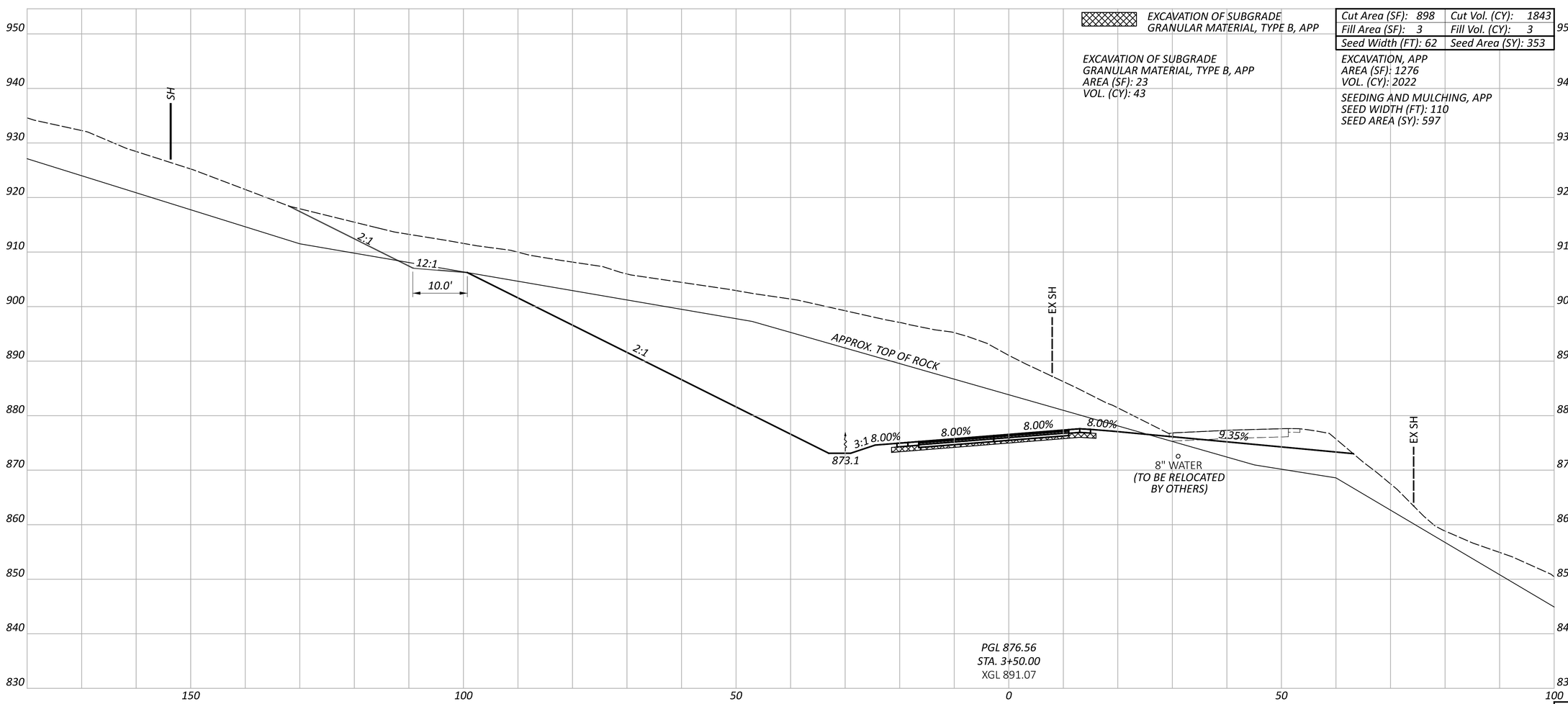
SHEET P.19 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 3+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:54 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn



Cut Area (SF): 898	Cut Vol. (CY): 1843
Fill Area (SF): 3	Fill Vol. (CY): 3
Seed Width (FT): 62	Seed Area (SY): 353

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 3+50.00

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SHEET P.20 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 3+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:45:57 AM USER: jkuczynski
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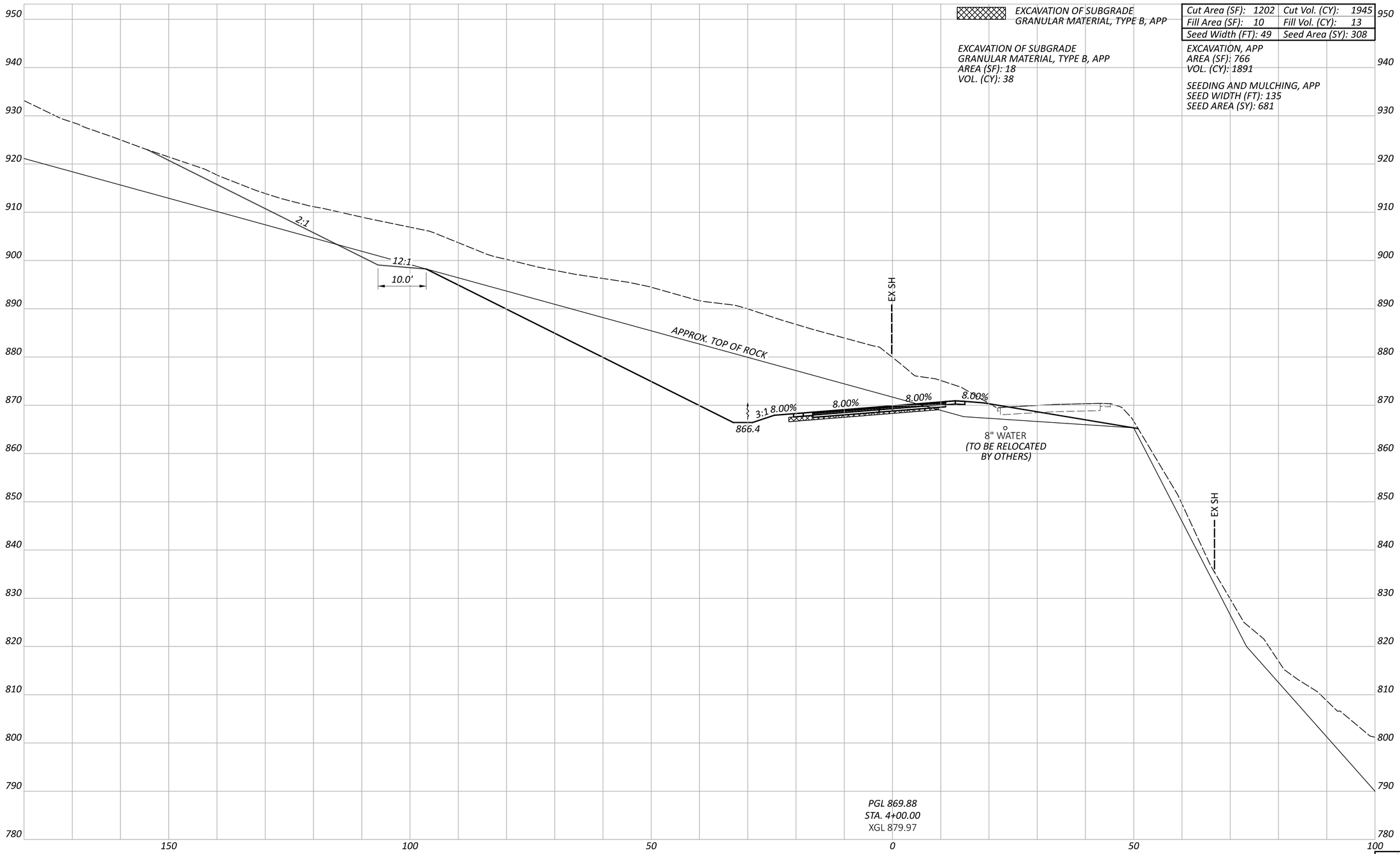

Cut Area (SF): 1202	Cut Vol. (CY): 1945
Fill Area (SF): 10	Fill Vol. (CY): 13
Seed Width (FT): 49	Seed Area (SY): 308

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 4+00.00

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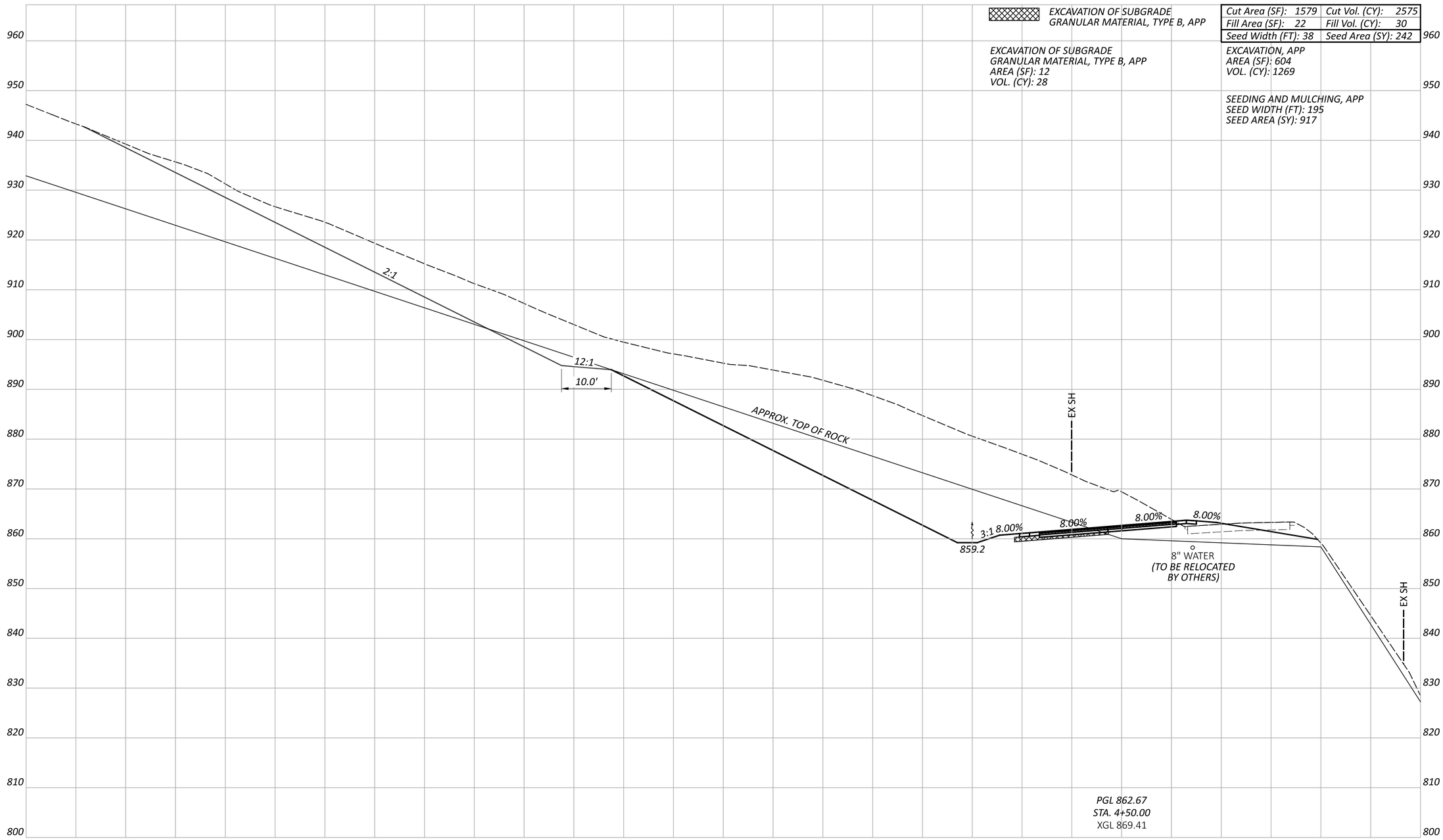
SHEET P.21 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 4+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:01 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn



Cut Area (SF): 1579	Cut Vol. (CY): 2575
Fill Area (SF): 22	Fill Vol. (CY): 30
Seed Width (FT): 38	Seed Area (SY): 242

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 4+50.00

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SHEET P.22 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 4+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:04 AM USER: jkuczynski
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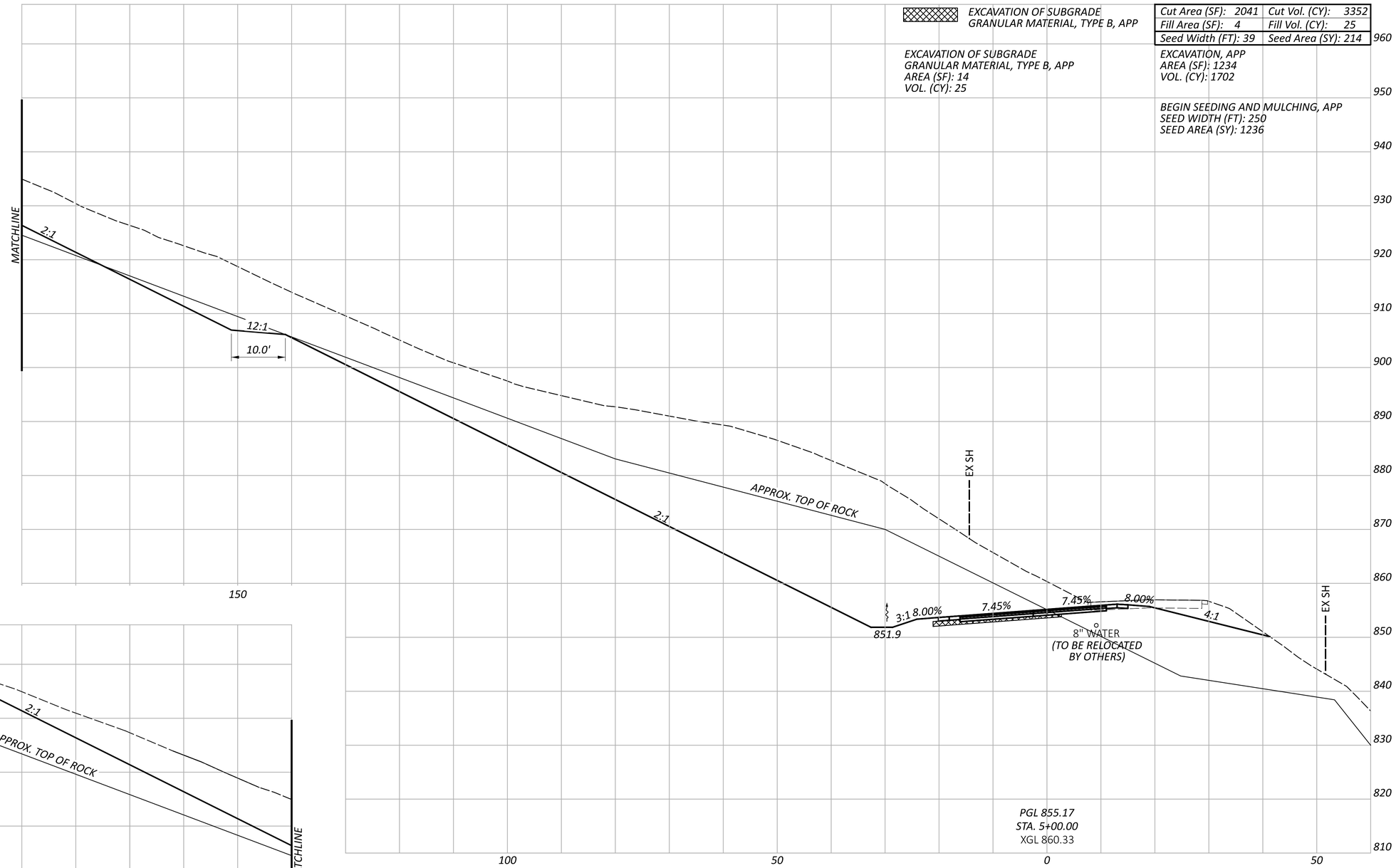
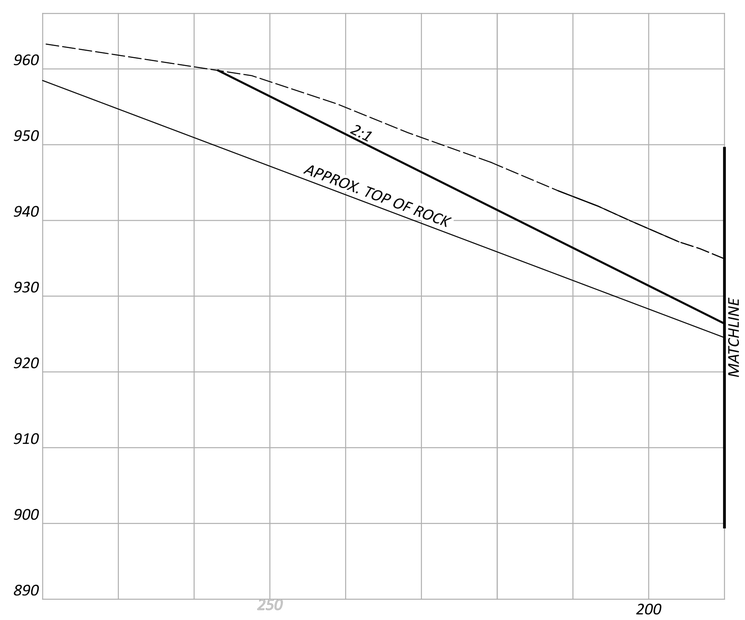


Cut Area (SF): 2041	Cut Vol. (CY): 3352
Fill Area (SF): 4	Fill Vol. (CY): 25
Seed Width (FT): 39	Seed Area (SY): 214



CROSS SECTIONS
STA. 5+00.00

Sheet Totals		
Seeding	Cut	Fill

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PROJECT ID
118631

SHEET P.23 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 5+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:07 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

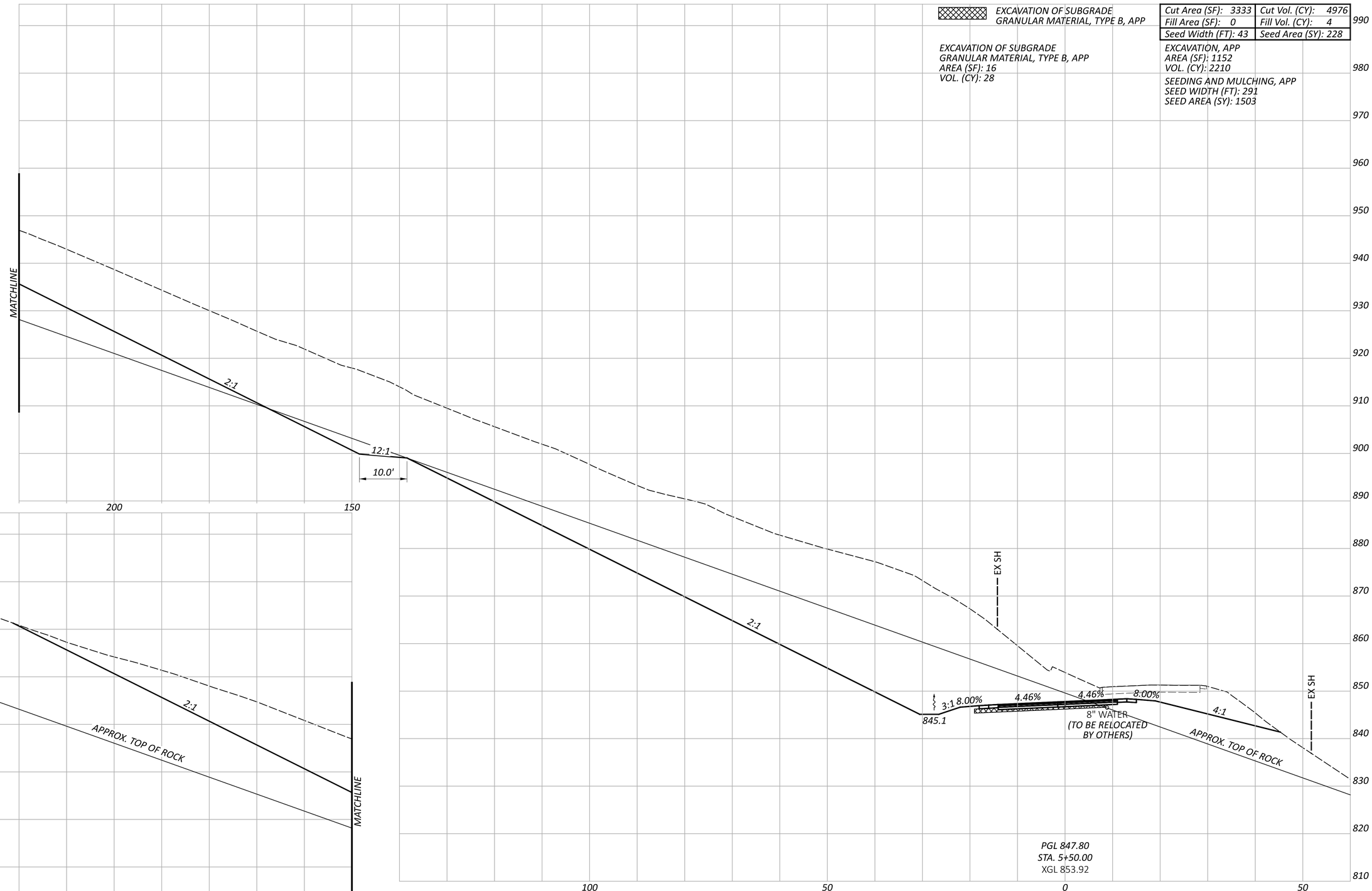
EXCAVATION OF SUBGRADE GRANULAR MATERIAL, TYPE B, APP

Cut Area (SF): 3333	Cut Vol. (CY): 4976
Fill Area (SF): 0	Fill Vol. (CY): 4
Seed Width (FT): 43	Seed Area (SY): 228

EXCAVATION OF SUBGRADE GRANULAR MATERIAL, TYPE B, APP
AREA (SF): 16
VOL. (CY): 28

EXCAVATION, APP
AREA (SF): 1152
VOL. (CY): 2210

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 291
SEED AREA (SY): 1503



CROSS SECTIONS
STA. 5+50.00

JEF-SR 213-4.51

MODEL: SR213 - 5+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:11 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Sheet Totals		
Seeding	Cut	Fill

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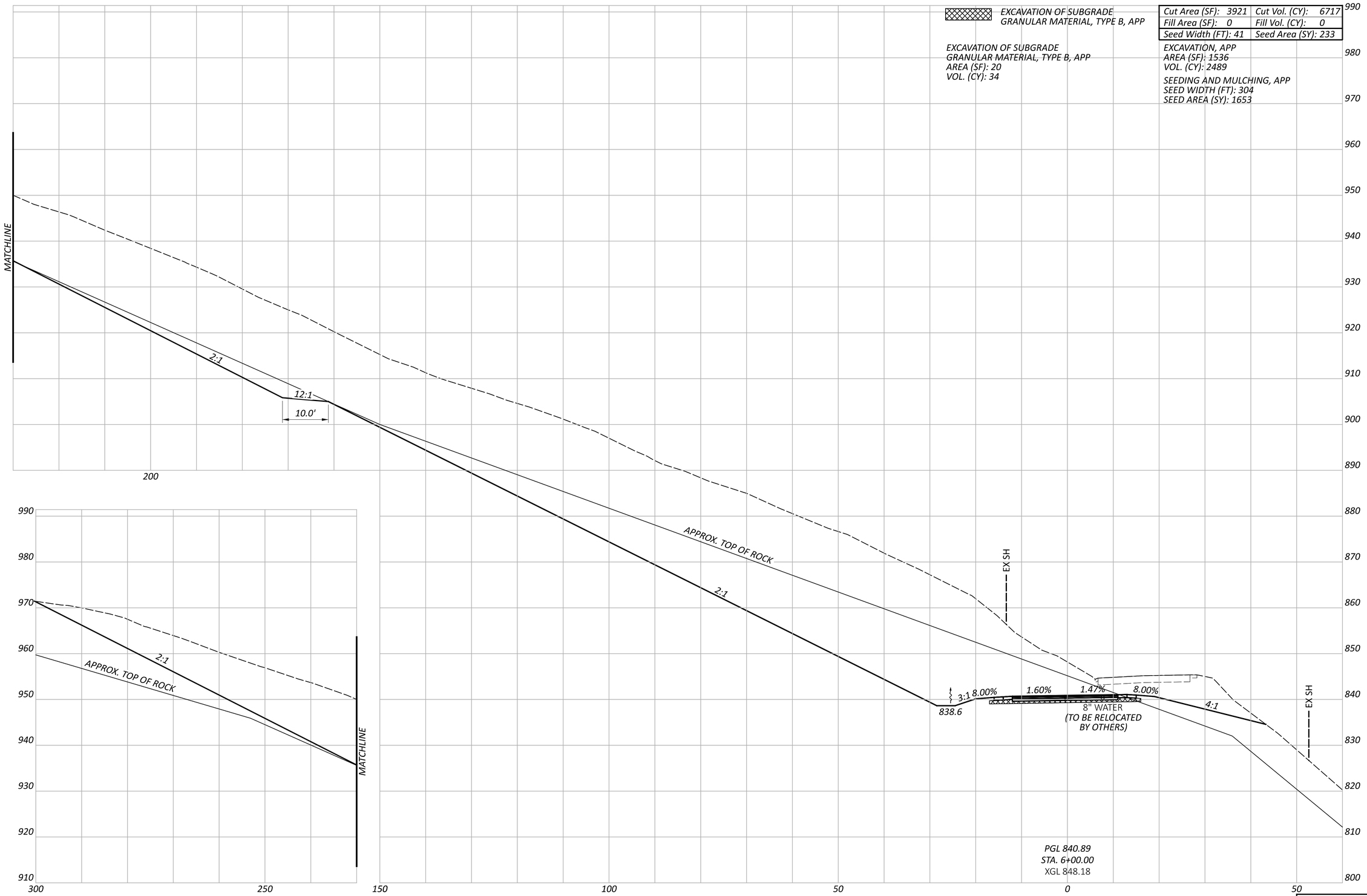
SHEET P.24 TOTAL 56



Cut Area (SF): 3921	Cut Vol. (CY): 6717
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 41	Seed Area (SY): 233

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 6+00.00

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SHEET P.25 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 6+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:14 AM USER: jkuczynski
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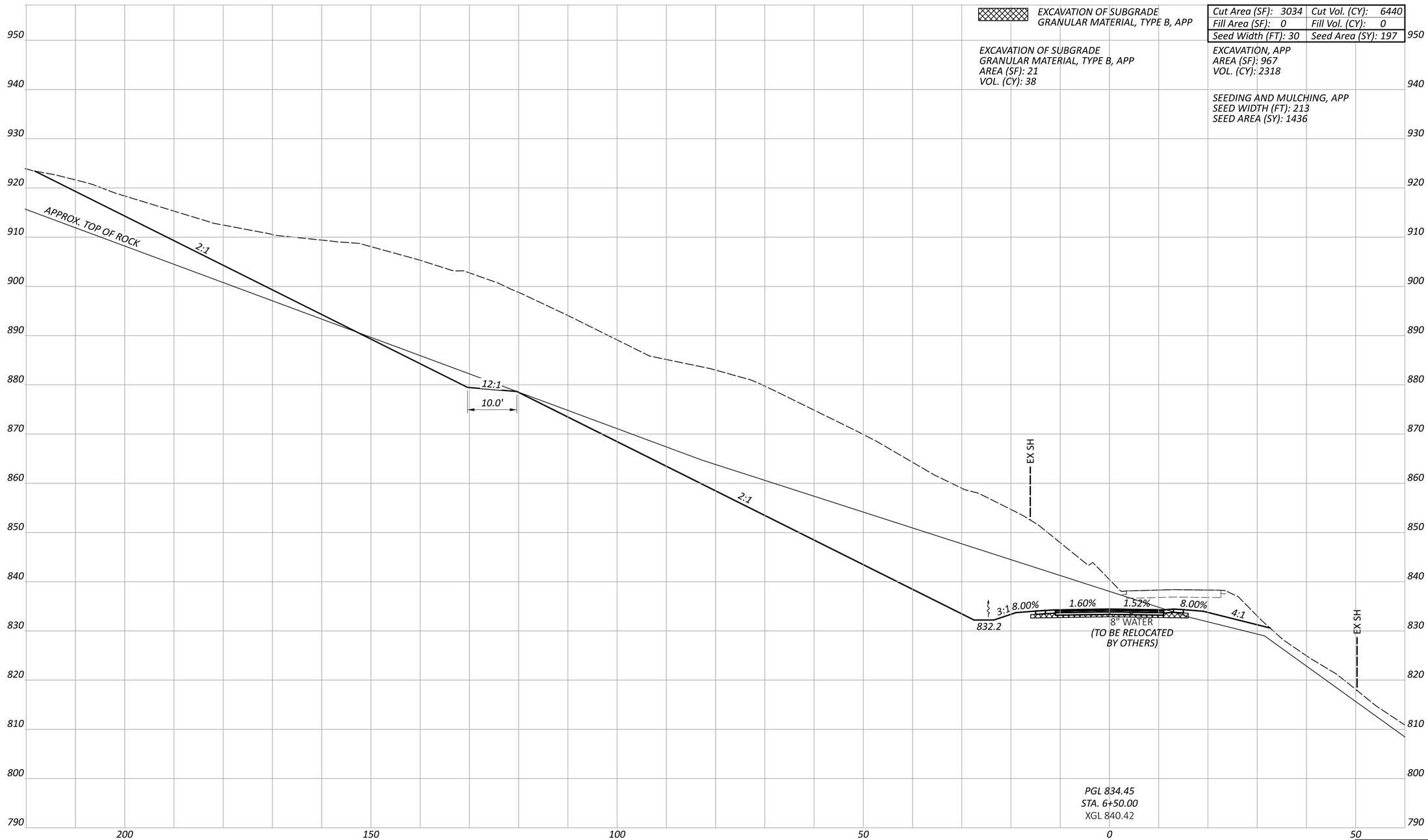

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP
AREA (SF): 21
VOL. (CY): 38

Cut Area (SF): 3034	Cut Vol. (CY): 6440
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 30	Seed Area (SY): 197

EXCAVATION, APP
AREA (SF): 967
VOL. (CY): 2318

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 213
SEED AREA (SY): 1436

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 6+50.00

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PROJECT ID
118631

SHEET P.26 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 6+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:17 AM USER: jkuczynski
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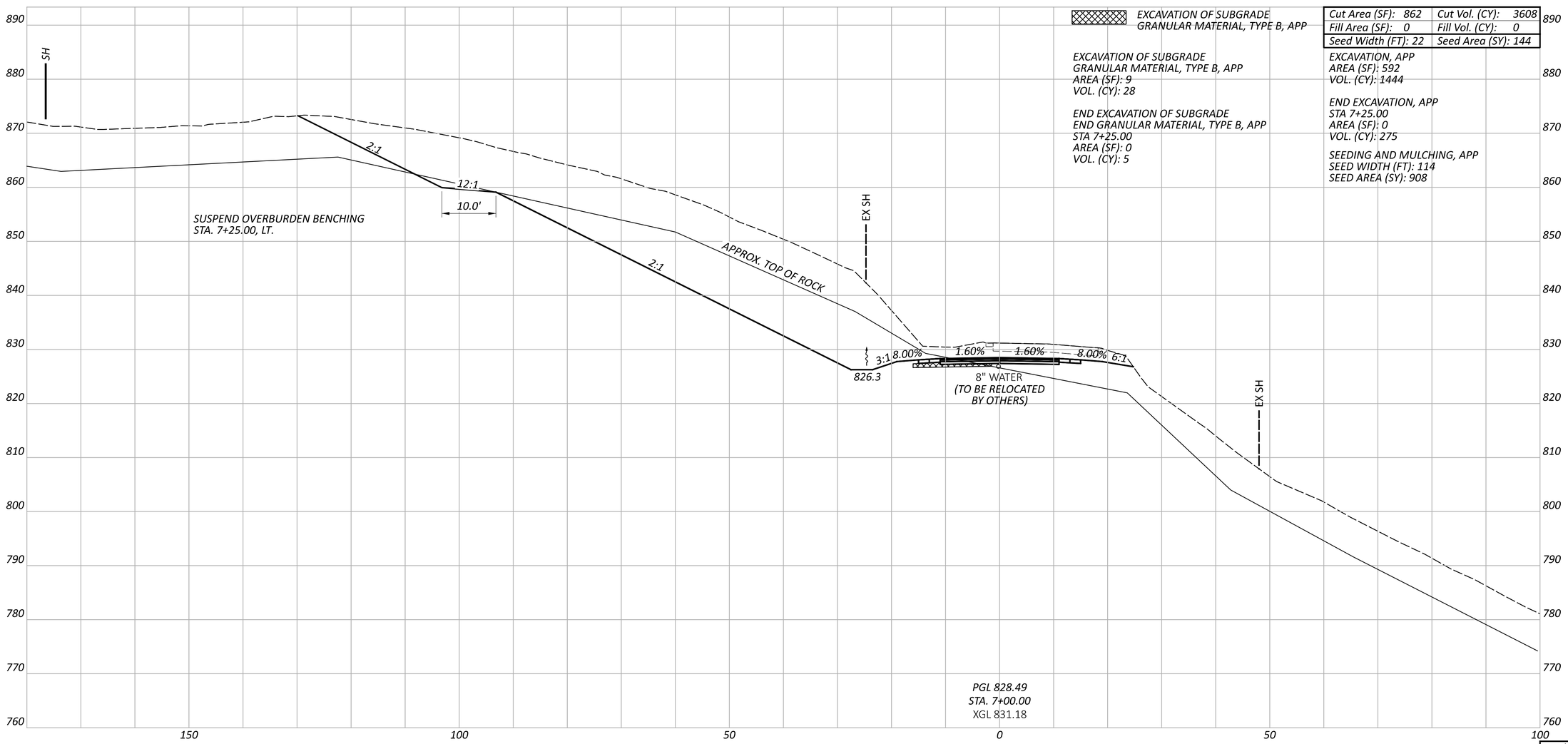

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP

EXCAVATION OF SUBGRADE
GRANULAR MATERIAL, TYPE B, APP
AREA (SF): 9
VOL. (CY): 28

END EXCAVATION OF SUBGRADE
END GRANULAR MATERIAL, TYPE B, APP
STA 7+25.00
AREA (SF): 0
VOL. (CY): 5

Cut Area (SF): 862	Cut Vol. (CY): 3608
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 22	Seed Area (SY): 144

EXCAVATION, APP
AREA (SF): 592
VOL. (CY): 1444

END EXCAVATION, APP
STA 7+25.00
AREA (SF): 0
VOL. (CY): 275

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 114
SEED AREA (SY): 908

CROSS SECTIONS
STA. 7+00.00

JEF-SR 213-4.51

MODEL: SR213 - 7+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:20 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Sheet Totals		
Seeding	Cut	Fill

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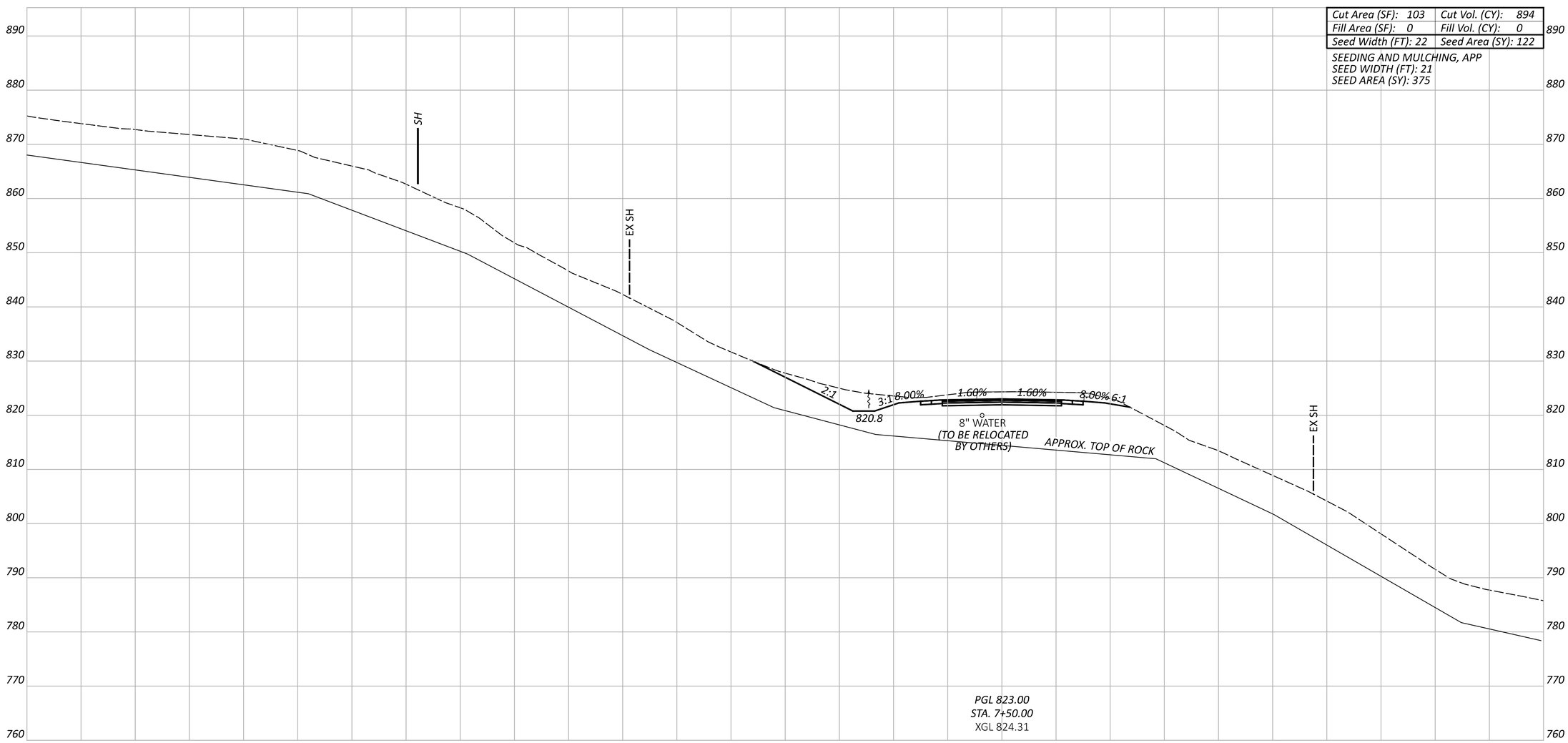
PROJECT ID
118631

SHEET P.27 TOTAL 56

Cut Area (SF): 103	Cut Vol. (CY): 894
Fill Area (SF): 0	Fill Vol. (CY): 0
Seed Width (FT): 22	Seed Area (SY): 122

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 21
SEED AREA (SY): 375



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 7+50.00

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JDK 8-15-25

PROJECT ID
118631

SHEET P.28 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 7+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:24 AM USER: jkuczynski
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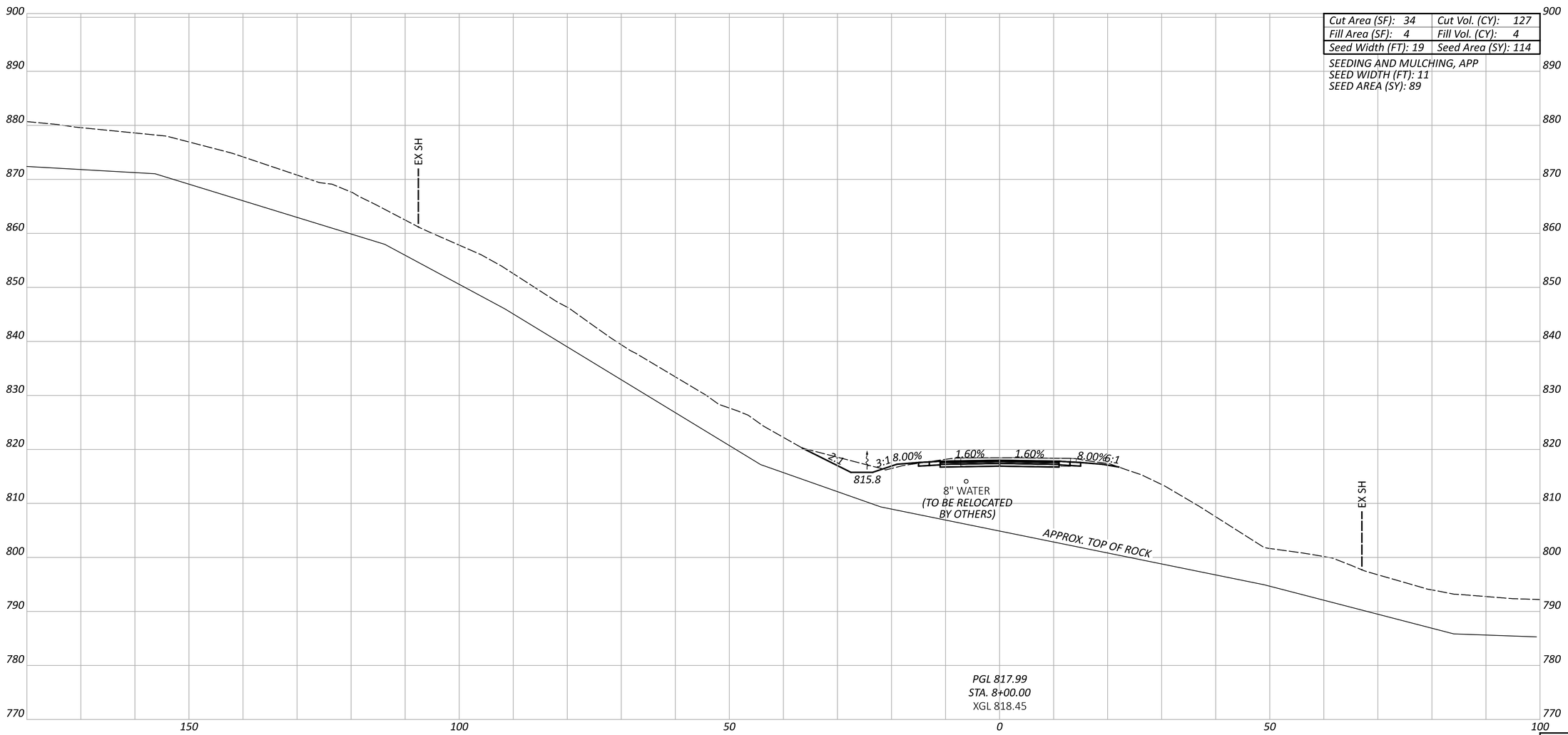

Cut Area (SF): 34	Cut Vol. (CY): 127
Fill Area (SF): 4	Fill Vol. (CY): 4
Seed Width (FT): 19	Seed Area (SY): 114

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 11
SEED AREA (SY): 89

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 8+00.00

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JDK 8-15-25

PROJECT ID
118631

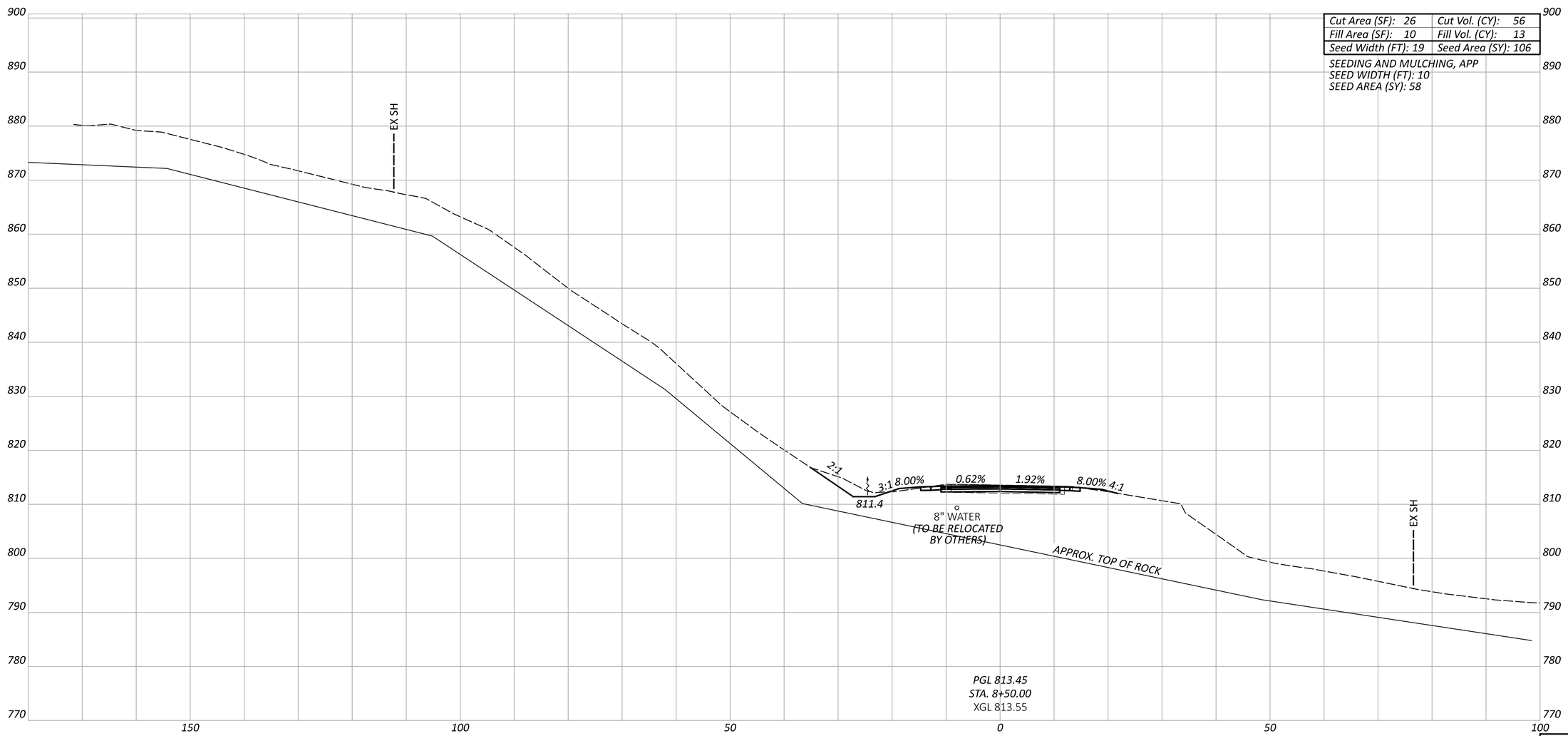
SHEET P.29 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 8+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:27 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

Cut Area (SF): 26	Cut Vol. (CY): 56
Fill Area (SF): 10	Fill Vol. (CY): 13
Seed Width (FT): 19	Seed Area (SY): 106

SEEDING AND MULCHING, APP
SEED WIDTH (FT): 10
SEED AREA (SY): 58



Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 8+50.00

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JDK 8-15-25

PROJECT ID
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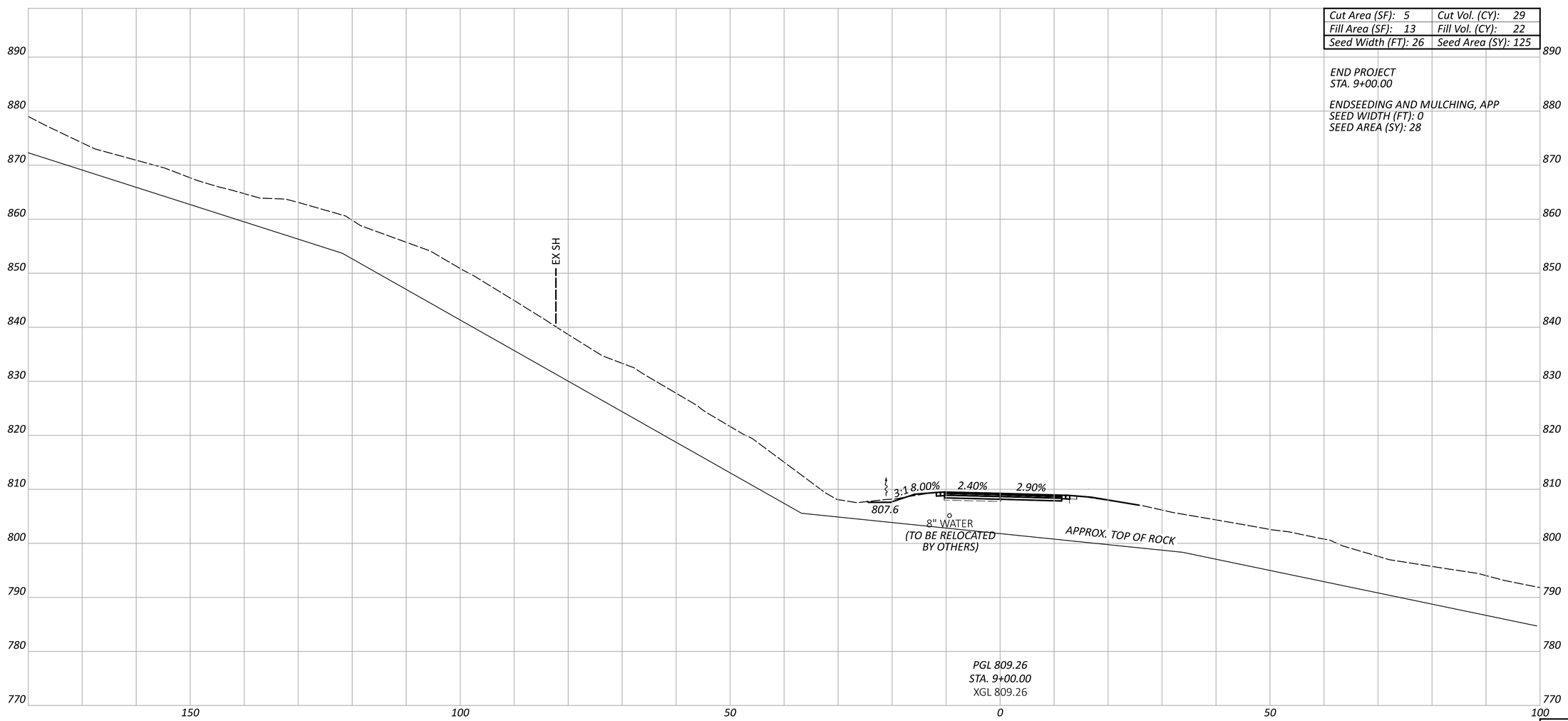
SHEET P.30 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 8+50.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:30 AM USER: jkuczynski
N:\01\60\08406-00\117666\Task-11-E_PID118631-JEF-213-4.57\118631\400-Engineering\Roadway\Sheets\118631_XS005.dgn

EARTHWORK TOTALS			
ITEM 203	EXCAVATION	37450	CY
ITEM 203	EXCAVATION, AS PER PLAN	16709	CY
ITEM 203	EMBANKMENT	201	CY
ITEM 659	SEEDING AND MULCHING	3342	SY
ITEM 659	SEEDING AND MULCHING, AS PER PLAN	11678	SY
ITEM 204	GRANULAR MATERIAL, TYPE B, AS PER PLAN	302	CY
ITEM 204	EXCAVATION OF SUBGRADE	302	CY
TOTALS CARRIED TO GENERAL SUMMARY			



Cut Area (SF): 5	Cut Vol. (CY): 29
Fill Area (SF): 13	Fill Vol. (CY): 22
Seed Width (FT): 26	Seed Area (SY): 125

END PROJECT
STA. 9+00.00

ENDSEEDING AND MULCHING, APP
SEED WIDTH (FT): 0
SEED AREA (SY): 28

Sheet Totals		
Seeding	Cut	Fill

CROSS SECTIONS
STA. 9+00.00

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.31 TOTAL 56

JEF-SR 213-4.51

MODEL: SR213 - 9+00.00 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:33 AM USER: jkuczynski
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SUPERELEVATION TABLE - SR 213

Curve No. 1

P.I. = 4+08.56 | Dc = 26°31'33"

LEFT SIDE 11.0' W/ WIDENING 11.0' - 13.75'					CURVE WIDENING (LT SIDE) 0.0' - 2.75'				CENTERLINE CONTROL		RIGHT SIDE SIDE 11.0'					
ELEVATION	TRANSITION RATE	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	ELEVATION	ELEVATION CORRECTION	CROSS SLOPE	WIDTH	STATION	ELEVATION	WIDTH	CROSS SLOPE	ELEVATION CORRECTION	TRANSITION RATE	ELEVATION	REMARKS
906.71	152:1	0.20	0.020	10.00	-	-	-	-	0+80.00	906.51	10.00	-0.016	-0.16		906.35	TRANS FROM EX
904.45	↑	0.08	0.008	10.36	-	-	-	-	1+00.00	904.37	10.36	-0.016	-0.17		904.20	
901.61		-0.08	-0.007	10.82	-	-	-	-	1+25.00	901.69	10.82	-0.016	-0.17		901.52	
900.47	↓	-0.15	-0.013	11.00	-	-	-	-	1+35.00	900.62	11.00	-0.016	-0.18		900.44	
899.97	152:1	-0.18	-0.016	11.00	-	-	-	-	1+40.19	900.15	11.00	-0.016	-0.18		899.98	END TRANS FROM EX
898.84		-0.18	-0.016	11.00	-	-	-	-	1+50.00	899.01	11.00	-0.016	-0.18		898.84	
898.23		-0.18	-0.016	11.00	-	-	-	-	1+55.62	898.41	11.00	-0.016	-0.18	152:1	898.23	NC
896.16		-0.18	-0.016	11.00	-	-	-	-	1+75.00	896.33	11.00	-0.004	-0.05	↑	896.28	
895.37		-0.18	-0.016	11.00	-	-	-	0.00	1+82.37	895.54	11.00	0.000	0.00		895.54	TS, ½ LEVEL
893.47		-0.18	-0.016	11.36	893.65	-0.01	-0.016	0.36	2+00.00	893.66	11.00	0.011	0.12		893.77	
892.48	152:1	-0.18	-0.016	11.55	892.67	-0.01	-0.016	0.55	2+09.12	892.68	11.00	0.016	0.18		892.85	RC
890.65	↑	-0.30	-0.025	11.88	890.95	-0.02	-0.025	0.88	2+25.00	890.98	11.00	0.025	0.28		891.26	
887.74		-0.50	-0.040	12.39	888.24	-0.06	-0.040	1.39	2+50.00	888.30	11.00	0.040	0.44		888.74	
884.74		-0.71	-0.055	12.90	885.46	-0.11	-0.055	1.90	2+75.00	885.56	11.00	0.055	0.61		886.17	
881.58	↓	-0.94	-0.070	13.42	882.52	-0.17	-0.070	2.42	3+00.00	882.70	11.00	0.070	0.77	↓	883.47	
879.45	152:1	-1.10	-0.080	13.75	880.55	-0.22	-0.080	2.75	3+16.13	880.77	11.00	0.080	0.88	152:1	881.65	SC, FS
878.37		-1.10	-0.080	13.75	879.47	-0.22	-0.080	2.75	3+25.00	879.69	11.00	0.080	0.88		880.57	
875.24		-1.10	-0.080	13.75	876.34	-0.22	-0.080	2.75	3+50.00	876.56	11.00	0.080	0.88		877.44	
871.97		-1.10	-0.080	13.75	873.07	-0.22	-0.080	2.75	3+75.00	873.29	11.00	0.080	0.88		874.17	
868.56		-1.10	-0.080	13.75	869.66	-0.22	-0.080	2.75	4+00.00	869.88	11.00	0.080	0.88		870.76	
865.03		-1.10	-0.080	13.75	866.13	-0.22	-0.080	2.75	4+25.00	866.35	11.00	0.080	0.88		867.23	
861.35		-1.10	-0.080	13.75	862.45	-0.22	-0.080	2.75	4+50.00	862.67	11.00	0.080	0.88		863.55	
857.60		-1.10	-0.080	13.75	858.70	-0.22	-0.080	2.75	4+75.00	858.92	11.00	0.080	0.88		859.80	
855.23	152:1	-1.10	-0.080	13.75	856.33	-0.22	-0.080	2.75	4+90.80	856.55	11.00	0.080	0.88	152:1	857.43	CS, FS
853.97	↑	-1.01	-0.074	13.56	854.98	-0.19	-0.074	2.56	5+00.00	855.17	11.00	0.074	0.82	↑	855.99	
851.35		-0.83	-0.063	13.17	852.18	-0.14	-0.063	2.17	5+19.04	852.32	11.00	0.063	0.69		853.02	
850.54		-0.78	-0.060	13.05	851.32	-0.12	-0.060	2.05	5+25.00	851.44	11.00	0.060	0.66		852.09	
847.18		-0.56	-0.045	12.53	847.73	-0.07	-0.045	1.53	5+50.00	847.80	11.00	0.045	0.49		848.29	
843.90	↓	-0.36	-0.030	12.02	844.26	-0.03	-0.030	1.02	5+75.00	844.29	11.00	0.030	0.33		844.61	
840.99	152:1	-0.18	-0.016	11.55	841.17	-0.01	-0.016	0.55	5+97.81	841.18	11.00	0.016	0.18		841.36	RC
840.71		-0.18	-0.016	11.50	840.88	-0.01	-0.016	0.50	6+00.00	840.89	11.00	0.015	0.16		841.05	
837.49		-0.18	-0.016	11.00	-	-	-	0.00	6+24.56	837.67	11.00	0.000	0.00		837.67	ST, ½ LEVEL
837.44		-0.18	-0.016	11.00	-	-	-	-	6+25.00	837.61	11.00	0.000	0.00		837.61	
834.28		-0.18	-0.016	11.00	-	-	-	-	6+50.00	834.45	11.00	-0.015	-0.17	↓	834.29	
834.12		-0.18	-0.016	11.00	-	-	-	-	6+51.31	834.29	11.00	-0.016	-0.18	152:1	834.12	NC
831.24		-0.18	-0.016	11.00	-	-	-	-	6+75.00	831.41	11.00	-0.016	-0.18		831.24	
828.31		-0.18	-0.016	11.00	-	-	-	-	7+00.00	828.49	11.00	-0.016	-0.18		828.31	
825.51		-0.18	-0.016	11.00	-	-	-	-	7+25.00	825.69	11.00	-0.016	-0.18		825.51	
822.83		-0.18	-0.016	11.00	-	-	-	-	7+50.00	823.00	11.00	-0.016	-0.18		822.83	
820.26		-0.18	-0.016	11.00	-	-	-	-	7+75.00	820.44	11.00	-0.016	-0.18		820.26	
817.81		-0.18	-0.016	11.00	-	-	-	-	8+00.00	817.99	11.00	-0.016	-0.18		817.81	
815.49		-0.18	-0.016	11.00	-	-	-	-	8+25.00	815.66	11.00	-0.016	-0.18		815.49	
814.70	152:1	-0.18	-0.016	11.00	-	-	-	-	8+33.79	814.87	11.00	-0.016	-0.18	480:1	814.70	TRANS TO EX
813.78	↑	-0.10	-0.009	11.00	-	-	-	-	8+45.00	813.88	11.00	-0.018	-0.20	↑	813.68	
813.38		-0.07	-0.006	10.94	-	-	-	-	8+50.00	813.45	11.04	-0.019	-0.21		813.24	
811.44	↓	0.09	0.009	10.62	-	-	-	-	8+75.00	811.35	11.22	-0.024	-0.27	↓	811.08	
809.50	152:1	0.24	0.024	10.38	-	-	-	-	9+00.00	809.26	11.40	-0.029	-0.33	480:1	808.93	END TRANS TO EX

SUPERELEVATION TABLE
SR 213

DESIGN AGENCY
ms consultants, inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.32 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:35 AM USER: jkuczynski
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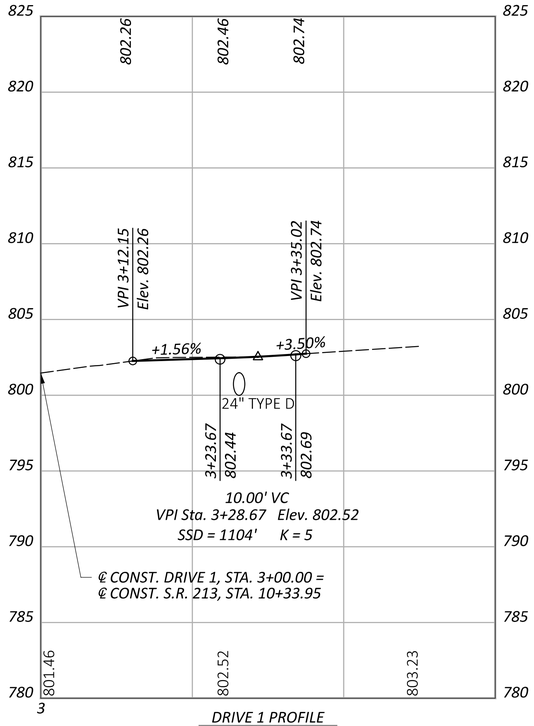
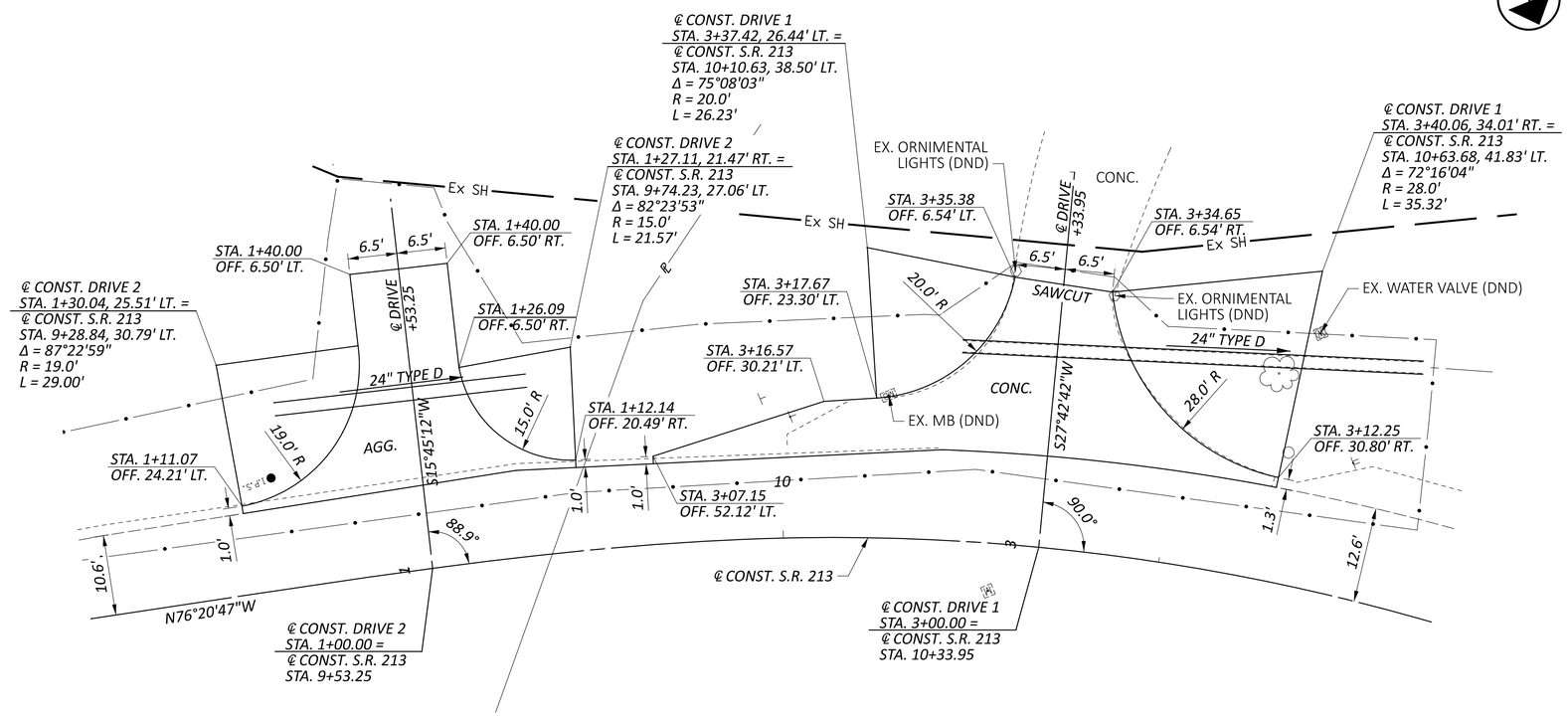
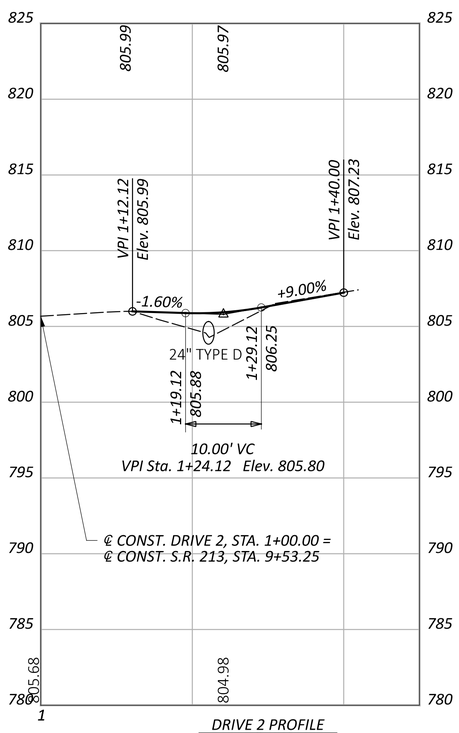


DRIVE 1 PROFILE
1"=10'



DW2 RESIDENTIAL AGGREGATE DRIVE DETAIL
STA. 9+53.25, LT.

DW1 RESIDENTIAL CONCRETE DRIVE DETAIL
STA. 10+33.95, LT.



DRIVE 2 PROFILE
1"=10'

EXISTING MATERIALS	PROPOSED RESIDENTIAL DRIVES
AGGREGATE	ITEM 304 - 8" AGGREGATE BASE
CONCRETE	ITEM 452 - 6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS

REF NO.	SHEET NO.	STATION	SIDE	DRIVE TYPE	EXISTING MATERIAL	EXISTING AREA (S.F) ASPHALT	EXISTING AREA (S.F) CONCRETE	EXISTING AREA (S.F) GRAVEL	PROPOSED AREA (S.F.) ASPHALT	PROPOSED AREA (S.F.) GRAVEL	PROPOSED AREA (S.F.) CONCRETE	202 PAVEMENT REMOVED	203 EXCAVATION	204 SUBGRADE COMPACTION		304 AGGREGATE BASE, 8" DEPTH		452 6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC MS
												SY	CY	SY		CY		SY
	CL S.R. 213																	
DW2	P.13	09+53.25	LT	RES.						520			4	58		13		
DW1	P.13	10+33.95	LT	RES.	CONC.		695				796	78	1	89				89
TOTALS CARRIED TO GENERAL SUMMARY												78	5	147		13		89

HORIZONTAL SCALE IN FEET
0 5 10 20

DRIVE DETAILS
SR 213

DESIGN AGENCY
ms consultants, inc.

DESIGNER
CJR

REVIEWER
JDK 8-15-25

PROJECT ID
118631

SHEET P.33 TOTAL 56

JEF-SR 213-4.51

MODEL: CLP_1 - Plan 1 [Sheet] PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:39 AM USER: jkuczynski
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SIGNING SUBSUMMARY

REF. NO.	SHEET NO.	STATION	SIDE	CODE	SIZE (INCHES)		630 GROUND MOUNTED SUPPORT, NO. 3 POST	630 SIGN POST REFLECTOR	630 SIGN, FLAT SHEET	630 REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	630 REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL
							FT	EACH	SF	EACH	EACH
S1	P.35	NO STATION	RT	W1-2L	36 X 36		14.7	1	9.00		
				W13-1P	24 X 24				4.00		
S2	P.35	1+82	RT	W1-8L	18 X 24		10.5	2	3.00		
				W1-8R	18 X 24				3.00		
S3	P.35	3+02	RT	W1-8L	18 X 24		10.5	2	3.00		
				W1-8R	18 X 24				3.00		
S4	P.35	3+50	RT	W1-6L	48 X 24		10.5 / 10.5	2	8.00		
S5	P.35	4+22	RT	W1-8L	18 X 24		10.5	2	3.00		
				W1-8R	18 X 24				3.00		
S6	P.35	4+50	RT	W1-6R	48 X 24		10.5 / 10.5	2	8.00		
S7	P.36	5+42	RT	W1-8L	18 X 24		10.5	2	3.00		
				W1-8R	18 X 24				3.00		
S8	P.36	8+50	LT	W1-2R	36 X 36		14.7	1	9.00		
				W13-1P	24 X 24				4.00		
R1	P.35	NO STATION	RT	-	-					2	1
R2	P.35	2+43	RT	-	-					2	1
R3	P.35	3+03	RT	-	-					1	2
R4	P.35	3+15	RT	-	-					2	1
R5	P.35	3+52	RT	-	-					2	1
R6	P.35	3+79	RT	-	-					2	1
R7	P.35	4+36	RT	-	-					2	1
R8	P.35	4+97	RT	-	-					1	2
R9	P.36	5+15	RT	-	-					2	1
R10	P.36	5+85	RT	-	-					2	1
R11	P.36	6+66	RT	-	-					2	1
R12	P.36	7+52	LT	-	-					2	1
TOTALS CARRIED TO GENERAL SUMMARY							113.4	14	66	22	14

PAVEMENT MARKING SUBSUMMARY

REF NO.	SHEET NO.	STATION TO STATION					621 RPM, 2-WAY (YELLOW/YELLOW) (20' SPACING)	621 RPM, 2-WAY (YELLOW/YELLOW) (40' SPACING)	621 RAISED PAVEMENT MARKER REMOVED	646 EDGE LINE, 6", WHITE	646 CENTER LINE, DOUBLE SOLID
							EACH	EACH	EACH	FT/MILE	FT/MILE
				TO							
WE-1	P.35	0+80	LT		5+00	LT				420	
DY-1	P.35	0+80	CL		5+00	CL	16	3	19		420
WE-2	P.35	0+80	RT		5+00	RT				420	
WE-3	P.36	5+00	LT		9+00	LT				400	
DY-2	P.36	5+00	CL		9+00	CL	7	7	14		400
WE-4	P.36	5+00	RT		9+00	RT				400	
TOTAL FEET										1640	820
TOTAL MILES										0.31	0.16
TOTALS CARRIED TO GENERAL SUMMARY							33		33	0.31	0.16

SIGNING AND PAVEMENT MARKING SUBSUMMARY

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CLM

REVIEWER
KWR 07/16/25

PROJECT ID
118631

SHEET P.34 TOTAL 56

JEF-SR 213-4.51

MODEL: Sheet_SurvFt PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:41 AM USER: jkuczynski
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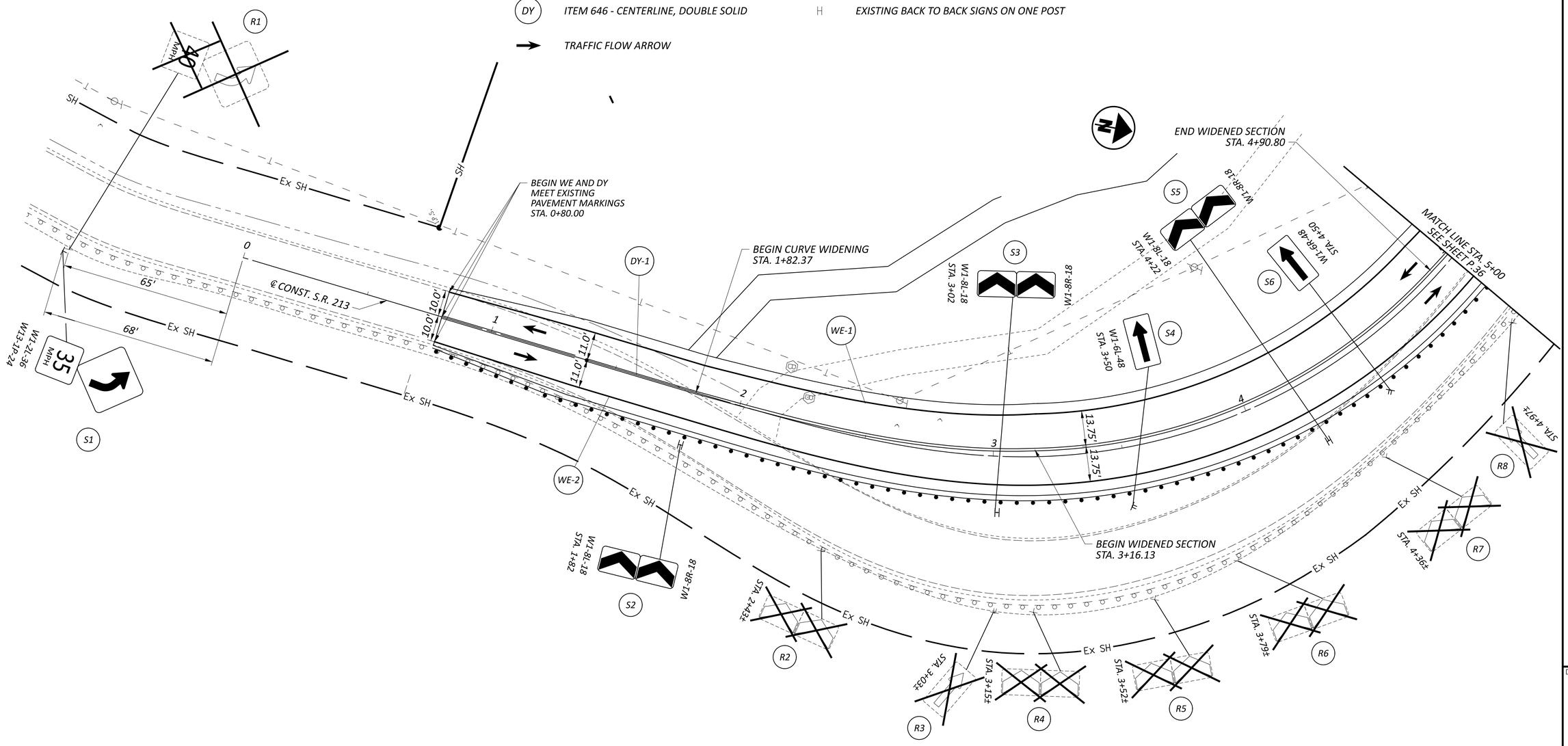
LEGEND

	EXISTING SIGN TO BE REMOVED		PROPOSED SIGN ON ONE POST
	PROPOSED SIGN		PROPOSED BACK TO BACK SIGNS ON ONE POST
WE	ITEM 646 - EDGE LINE, 6", WHITE		EXISTING SIGN ON ONE POST
DY	ITEM 646 - CENTERLINE, DOUBLE SOLID		EXISTING BACK TO BACK SIGNS ON ONE POST
	TRAFFIC FLOW ARROW		



HORIZONTAL SCALE IN FEET
0 10 20 40

SIGNING AND PAVEMENT MARKING PLAN
S.R. 213 - STA. 0+00.00 TO 5+00

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CLB

REVIEWER
KWR 07/17/24

PROJECT ID
118631

SHEET P.35 TOTAL 56

JEF-SR 213-4.51

MODEL: 118631_TP001 PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:44 AM USER: jkuczynski
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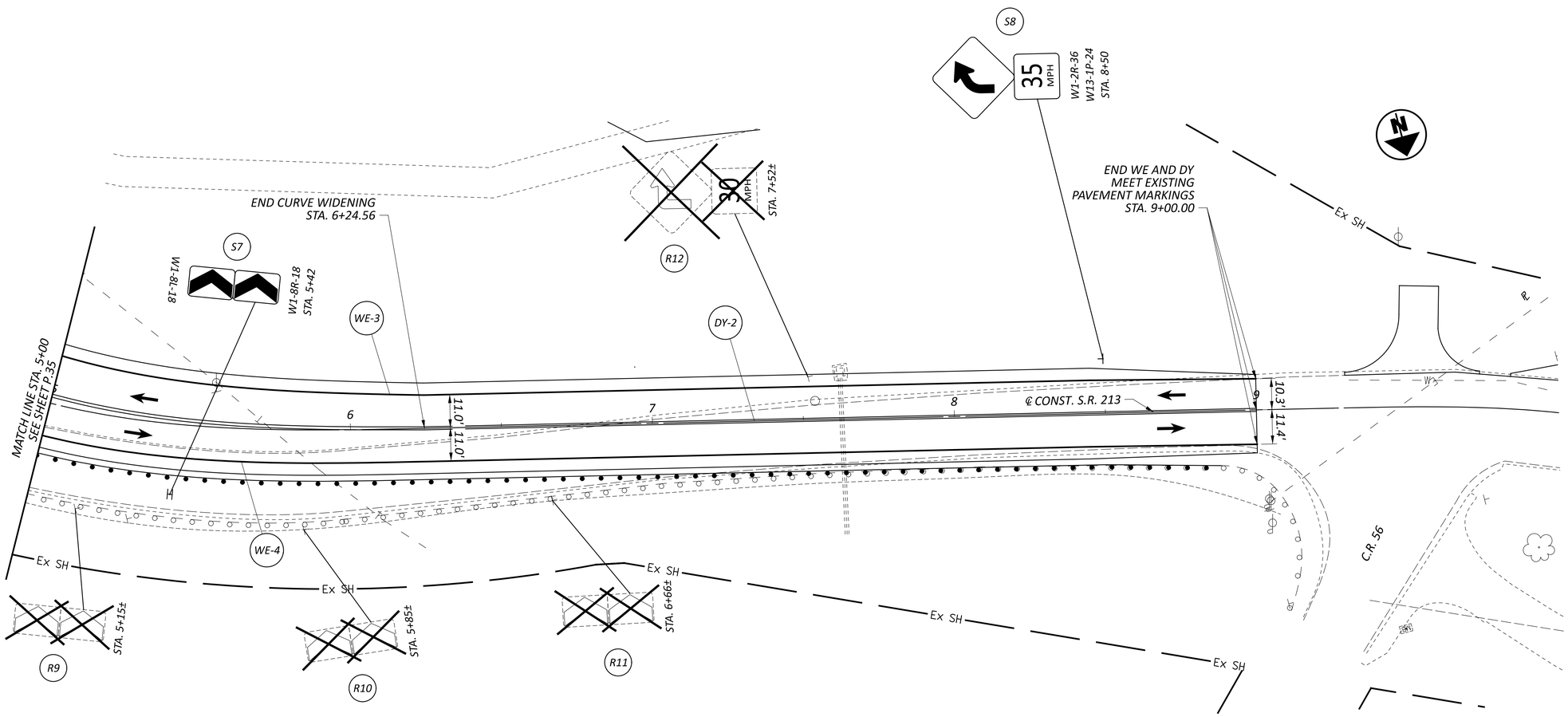

NOTES:

1. FOR SIGNING AND PAVEMENT MARKING LEGEND, SEE SHEET P.35.

HORIZONTAL SCALE IN FEET
0 10 20 40

SIGNING AND PAVEMENT MARKING PLAN
S.R. 213 - STA. 5+00 TO STA. 9+25.28

DESIGN AGENCY
ms consultants. inc.

DESIGNER
CLB

REVIEWER
KWR 07/17/24

PROJECT ID
118631

SHEET P.36 TOTAL 56

JEF-SR 213-4.51

MODEL: 118631_TP002 PAPERSIZE: 34x22 (in.) DATE: 1/8/2026 TIME: 9:46:45 AM USER: jkuczynski
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PROJECT DESCRIPTION

THE PROJECT CONSISTS OF REALIGNING S.R. 213 TO AVOID CURRENT AND FUTURE SLOPE FAILURES ON THE NORTH AND EAST HILL SIDES. WORK CONSISTS OF ROADWAY REALIGNMENT, GUARDRAIL REPLACEMENT AND DRAINAGE IMPROVEMENTS.

HISTORIC RECORDS

NO HISTORICAL GEOTECHNICAL RECORDS WERE FOUND FOR THIS PROJECT.

GEOLOGY

THE PROJECT IS LOCATED WITHIN THE LITTLE SWITZERLAND PLATEAU OF THE MARIETTA PLATEAU PHYSIOGRAPHIC PROVINCE WHICH IS CHARACTERIZED AS A HIGH RELIEF, HIGHLY DISSECTED PLATEAU CONTAINING HIGH-GRADIENT STREAMS. LANDSLIDES ARE NOTED AS BEING COMMON THROUGH THE AREA. BASED ON THE OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) OHIO GEOLOGY INTERACTIVE MAP THE PROJECT IS LOCATED WITHIN COLLUVIUM WITH A THIN ALLUVIAL CAP WHICH IS UNDERLAIN BY SHALE, SILTSTONE, SANDSTONE, AND CLAYSTONE FROM THE PENNSYLVANIAN-AGED CONEMAUGH GROUP.

RECONNAISSANCE

INITIAL FIELD RECONNAISSANCE WAS COMPLETED BY DISTRICT PERSONNEL ON JANUARY 6, 2022. THE ROADWAY WAS NOTED AS BEING IN FAIR TO POOR CONDITION DUE TO AGE AND CONSTRUCTED THROUGH CUT/FILL METHODS. IMMEDIATELY ABOVE THE ROADWAY, TO THE WEST, IS A STEEP VEGETATED SLOPE WHICH DOES NOT EXHIBIT SIGNS OF INSTABILITY. BELOW THE ROADWAY, TO THE EAST, IS A STEEP SLOPE WHICH EXPRESSES SIGNS OF INSTABILITY. SEVERAL OLDER RETAINING WALLS ARE PRESENT WHICH ARE REACHING THE END OF LIFE. THE ADJACENT LAND USAGE IS WOODED.

SUBSURFACE EXPLORATION

SIX (6) BORINGS WERE COMPLETED AS PART OF THE SUBSURFACE EXPLORATION. THREE (3) BORINGS, B-001-0-23 THOUGH B-003-0-23, WERE COMPLETED BETWEEN MAY 8 AND 10, 2023 USING A TRUCK MOUNTED CME 55 AND 3.25-INCH I.D. HOLLOW STEM AUGERS (HSA) TO ADVANCE THE BORINGS. THREE (3) BORINGS, B-001-1-23 THOUGH B-003-1-23, WERE COMPLETED BETWEEN JUNE 7 AND 20, 2023 USING A TRACK MOUNTED CME 850 AND 3.75-INCH I.D. HSA TO ADVANCE THE BORINGS. DISTURBED SOIL AND SEVERELY WEATHERED BEDROCK SAMPLES WERE COLLECTED IN ACCORDANCE WITH THE STANDARD PENETRATION TEST (AASHTO T206) AT 2.5-FOOT INTERVALS. THE HAMMER SYSTEMS USED WERE CALIBRATED ON APRIL 18, 2022 AND APRIL 25, 2023 WITH AN AVERAGE DRILL ROD ENERGY RATIO (ER) OF 87% AND 89% FOR THE CME 55 AND CME 850, RESPECTIVELY. ALL BORINGS WERE ADVANCED INTO BEDROCK AND SAMPLED (AASHTO T225) USING AN N SERIES WIRELINE CORE BARREL, WATER METHOD.

EXPLORATION FINDINGS

BORINGS B-001-0-23, B-002-0-23, AND B-003-0-23 WERE COMPLETED WITHIN THE EXISTING ROADWAY ENCOUNTERING 18-INCHES OF ASPHALT AT THE GROUND SURFACE. BENEATH THE SURFACE MATERIALS, B-001-0-23 ENCOUNTERED MEDIUM DENSE GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT (A-2-4) EXTENDING TO TOP OF ROCK. B-002-0-23 AND B-003-0-23 ENCOUNTERED COHESIVE SOIL CONSISTING OF MEDIUM STIFF TO STIFF SANDY SILT (A-4a) BENEATH THE SURFACE MATERIALS WHICH EXTENDED TO TOP OF ROCK.

SANDSTONE BEDROCK WAS FIRST ENCOUNTERED IN B-001-0-23, B-002-0-23, AND B-003-0-23 AT ELEVATION (EL.) 867.0, 843.4, AND 830.3 FEET (FT), RESPECTIVELY, AND WAS INITIALLY SPLIT SPOON SAMPLED PRIOR TO CORING. THE CORED SANDSTONE WITHIN B-001-0-23 WAS INITIALLY HIGHLY WEATHERED, MODERATELY STRONG, AND MEDIUM TO COARSE GRAINED TO EL. 852.7 FT WHERE IT TRANSITIONED INTO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, AND VERY FINE TO FINE GRAINED INTO WHICH THE BORING WAS TERMINATED. SANDSTONE WAS FIRST CORED IN B-002-0-23 AT EL. 837.9 FT DESCRIBED AS MODERATELY TO HIGHLY WEATHERED, MODERATELY STRONG, AND VERY FINE TO FINE GRAINED INTO WHICH THE BORING WAS TERMINATED. B-003-0-23 WAS SPLIT SPOON SAMPLED THROUGH THE UPPER SANDSTONE AND SHALE, WHICH WAS HIGHLY WEATHERED AND WEAK, WITH SHALE BEING FIRST CORED AT EL. 812.8 FT DESCRIBED AS HIGHLY WEATHERED AND SLIGHTLY STRONG. AT EL. 809.2 FT HIGHLY WEATHERED, SLIGHTLY STRONG SANDSTONE WAS ENCOUNTERED EXTENDING TO EL. 804.8 FT WHERE HIGHLY WEATHERED AND WEAK SHALE WAS ENCOUNTERED INTO WHICH B-003-0-23 WAS TERMINATED.

THE OFF-ROAD BORINGS WERE COMPLETED ABOVE THE ROADWAY ENCOUNTERING 4 TO 18-INCHES OF TOPSOIL UNDERLAIN BY SHALLOW RESIDUAL SOILS. B-001-1-23 ENCOUNTERED DENSE SANDY SILT (A-4a) BENEATH THE TOPSOIL EXTENDING TO EL. 896.6 FT WHERE HARD SILT AND CLAY (A-6a) WAS ENCOUNTERED EXTENDING TO TOP OF ROCK. BENEATH THE TOPSOIL, B-002-1-23 ENCOUNTERED STIFF SILTY CLAY (A-6b) EXTENDING TO EL. 887.1 FT UNDERLAIN BY MEDIUM DENSE STONE FRAGMENTS WITH SAND AND SILT (A-2-4) WHICH EXTENDED TO TOP OF ROCK. B-003-1-23 ENCOUNTERED DENSE STONE FRAGMENTS WITH SAND AND SILT (A-2-4) WHICH BECAME LOOSE WITH DEPTH AND EXTENDED TO TOP OF ROCK.

B-001-1-23, B-002-1-23, AND B-003-1-23 ENCOUNTERED TOP OF SEVERELY TO HIGHLY WEATHERED BEDROCK AT EL. 886.6, 884.6, AND 879.5 FT, RESPECTIVELY, AND WAS INITIALLY SPLIT SPOON SAMPLED. B-001-1-23 FIRST ENCOUNTERED SEVERELY WEATHERED SHALE UNDERLAIN BY HIGHLY WEATHERED SILTSTONE AT EL. 881.7 FT INTO WHICH THE BORING WAS TERMINATED. B-002-1-23 FIRST ENCOUNTERED SILTSTONE WHICH WAS SPLIT SPOON SAMPLED TO EL. 880.6 WHERE THE CORE WAS DESCRIBED AS SEVERELY TO HIGHLY WEATHERED EXTENDING TO EL. 869.2 FT WHERE SANDSTONE IN SEVERELY TO HIGHLY WEATHERED CONDITION WAS ENCOUNTERED. THE SANDSTONE IN B-002-1-23 EXTENDED TO EL. 859.0 FT UNDERLAIN BY SILTSTONE IN HIGHLY WEATHERED CONDITION AND INTO WHICH THE BORING WAS TERMINATED. SANDSTONE WAS FIRST ENCOUNTERED AT EL. 879.5 FT AND CORE SAMPLED IN B-003-1-23 WHICH WAS INITIALLY SEVERELY TO HIGHLY WEATHERED UNDERLAIN BY SILTSTONE AT EL. 851.9 FT IN HIGHLY WEATHERED CONDITION. SLIGHTLY STRONG SANDSTONE BEDROCK WAS ENCOUNTERED AT EL. 845.1 FT IN MODERATELY WEATHERED CONDITION INTO WHICH B-003-1-23 WAS TERMINATED.

REPRESENTATIVE ROCK SAMPLES WERE TESTED FOR STRENGTH EITHER THROUGH UNCONFINED COMPRESSIVE STRENGTH, POINT LOAD INDEX TESTING OR SLAKE DURABILITY INDEX TESTING. THESE TEST RESULTS ARE PRESENTED IN TABULAR FORMAT, SEE BEDROCK TEST SUMMARY TABLE.

ALL BORINGS WERE REPORTED AS BEING DRY PRIOR TO STARTING THE CORING OPERATIONS.

LEGEND

	DESCRIPTION	ODOT CLASS	CLASSIFIED MECH.	CLASSIFIED VISUAL
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND AND SILT	A-2-4	4	1
	SANDY SILT	A-4a	5	5
	SILT AND CLAY	A-6a	2	2
	SILTY CLAY	A-6b	1	1
		TOTAL	12	9
	SANDSTONE	VISUAL		
	SHALE	VISUAL		
	SILTSTONE	VISUAL		
	PAVEMENT = X = APPROXIMATE THICKNESS	VISUAL		
	TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
	BORING LOCATION - PLAN VIEW.			
	DRIVE SAMPLE AND ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.			
N_{60}	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
X/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.			
X/Y/D"	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT): X = NUMBER OF BLOWS FOR 6 INCHES (UNCORRECTED). Y/D" = NUMBER OF BLOWS (UNCORRECTED) FOR D" OF PENETRATION AT REFUSAL.			
γ	INDICATES UNIT WEIGHT OF ROCK.			
Id2	INDICATES SLAKE DURABILITY TEST, ASTM D4644.			
NQ	"N" SERIES ROCK CORE BARREL OF "Q" WIRELINE BIT SIZE.			
Qu	INDICATES UNCONFINED COMPRESSION TEST, ASTM D7012.			
Sc	INDICATES POINT LOAD STRENGTH VALUE, ASTM D5731.			
SS	INDICATES A SPLIT SPOON SAMPLE.			
TR	INDICATES TOP OF ROCK ELEVATION.			

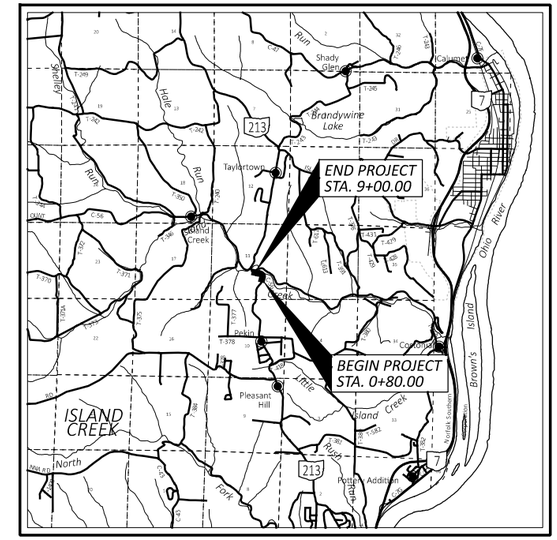
SPECIFICATIONS

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, OFFICE OF GEOTECHNICAL ENGINEERING, SPECIFICATIONS FOR GEOTECHNICAL EXPLORATIONS, DATED JANUARY 2022.

AVAILABLE INFORMATION

THE SOIL, BEDROCK, AND GROUNDWATER INFORMATION COLLECTED FOR THIS SUBSURFACE EXPLORATION THAT CAN BE CONVENIENTLY DISPLAYED ON THE GEOTECHNICAL PROFILE SHEETS HAS BEEN PRESENTED. GEOTECHNICAL REPORTS, IF PREPARED, ARE AVAILABLE FOR REVIEW ON THE OFFICE OF CONTRACT SALES WEBSITE.

INDEX OF SHEETS			
LOCATION FROM STA.	TO STA.	PLAN VIEW SHEET	PROFILE VIEW SHEET	CROSS SECTION SHEET
CONST. S.R. 213				
1+50	8+00	2	3	-
3+50		-	-	4
5+00		-	-	5
6+50		-	-	6
BORING LOGS & ROCK CORE PHOTOS, SHEETS 7-20.				



LOCATION MAP

SCALE IN MILES

0 1 2 3 4

PARTICLE SIZE DEFINITIONS

BOULDERS	12"	COBBLES	3"	GRAVEL	2.0 mm (No. 10 SIEVE)	COARSE SAND	0.42 mm (No. 40 SIEVE)	FINE SAND	0.074 mm (No. 200 SIEVE)	SILT	0.005 mm	CLAY

BEDROCK TEST SUMMARY							
BORING ID	SAMPLE ELEVATION	SAMPLE DEPTH	Id2 (%)	Id2 TYPE	Sc (PSI)	Qu (PSI)	LITHOLOGY
B-001-0-23	860.2' - 859.8'	12.8' - 13.2'	-	-	-	5,883	SANDSTONE
B-001-1-23	862.1' - 861.1'	23.4' - 24.4'	81.5	II	-	-	SILTSTONE
	852.8' - 852.0'	32.7' - 33.5'	86.4	II	-	-	SILTSTONE
B-002-0-23	832.5' - 832.2'	24.4' - 24.7'	-	-	-	4,999	SANDSTONE
B-002-1-23	874.3' - 873.1'	18.8' - 20.0'	87.7	II	2,518	-	SILTSTONE
	861.9' - 861.0'	31.2' - 32.1'	95.4	I	2,893	-	SANDSTONE
	850.6' - 849.8'	42.5' - 43.3'	22.1	III	-	-	SILTSTONE
	849.8' - 849.2'	43.3' - 43.9'	-	-	-	258	SILTSTONE
B-003-1-23	891.6' - 890.4'	13.5' - 14.7'	67.7	III	-	-	SANDSTONE
	888.9' - 888.1'	16.2' - 17.0'	-	-	2,395	-	SANDSTONE
	887.1' - 886.6'	18.0' - 18.5'	-	-	1,865	-	SANDSTONE
	874.9' - 873.3'	30.2' - 31.8'	-	-	2,507	-	SANDSTONE
	867.4' - 866.3'	37.7' - 38.8'	37.9	III	-	-	SILTSTONE
	862.6' - 861.1'	42.5' - 44.0'	93.4	II	5,799	-	SANDSTONE

RECON. -	CCN	01/06/22
DRILLING -	CEM (CME 55)	05/08-10/23
	DML (CME 850)	06/07-20/23
DRAWN -	ARR	06/30/25
REVIEWED -	SAT	07/09/25

GEOTECHNICAL PROFILE - LANDSLIDE

DESIGN AGENCY

DESIGNER ARR

REVIEWER SAT 07/09/25

PROJECT ID 118631

SUBSET 1 TOTAL 20

SHEET P.37 TOTAL 56

JEF-SR 213-4.51

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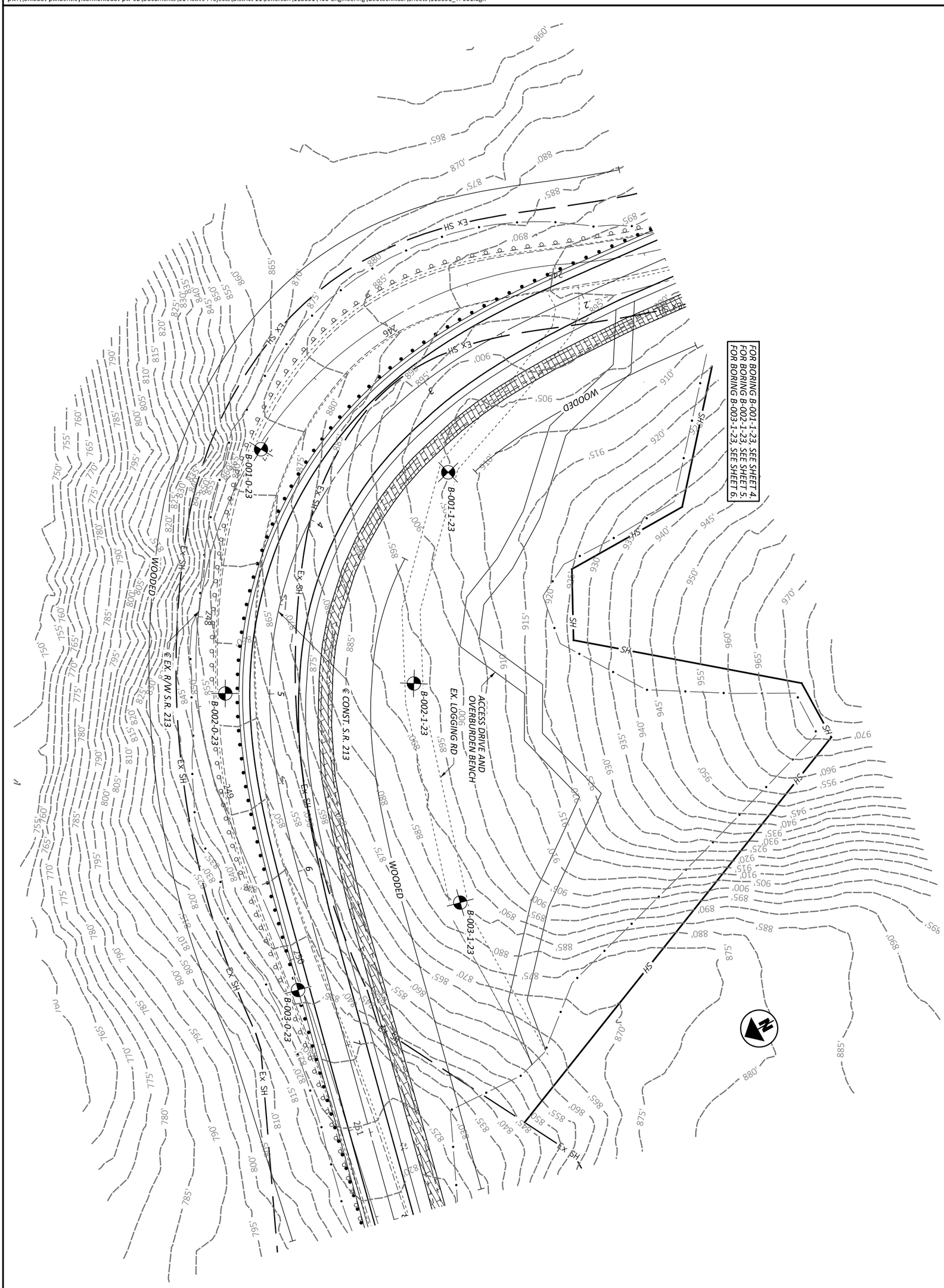

DESIGNER	REVIEWER	PROJECT ID	SUBSET	TOTAL	SHEET	TOTAL
ARR	SAT 07/09/25	118631	2	20	P.38	56

DESIGN AGENCY

GEOTECHNICAL PROFILE - LANDSLIDE
STA. 1+50 TO STA. 8+00 CONST. S.R. 213

HORIZONTAL SCALE IN FEET
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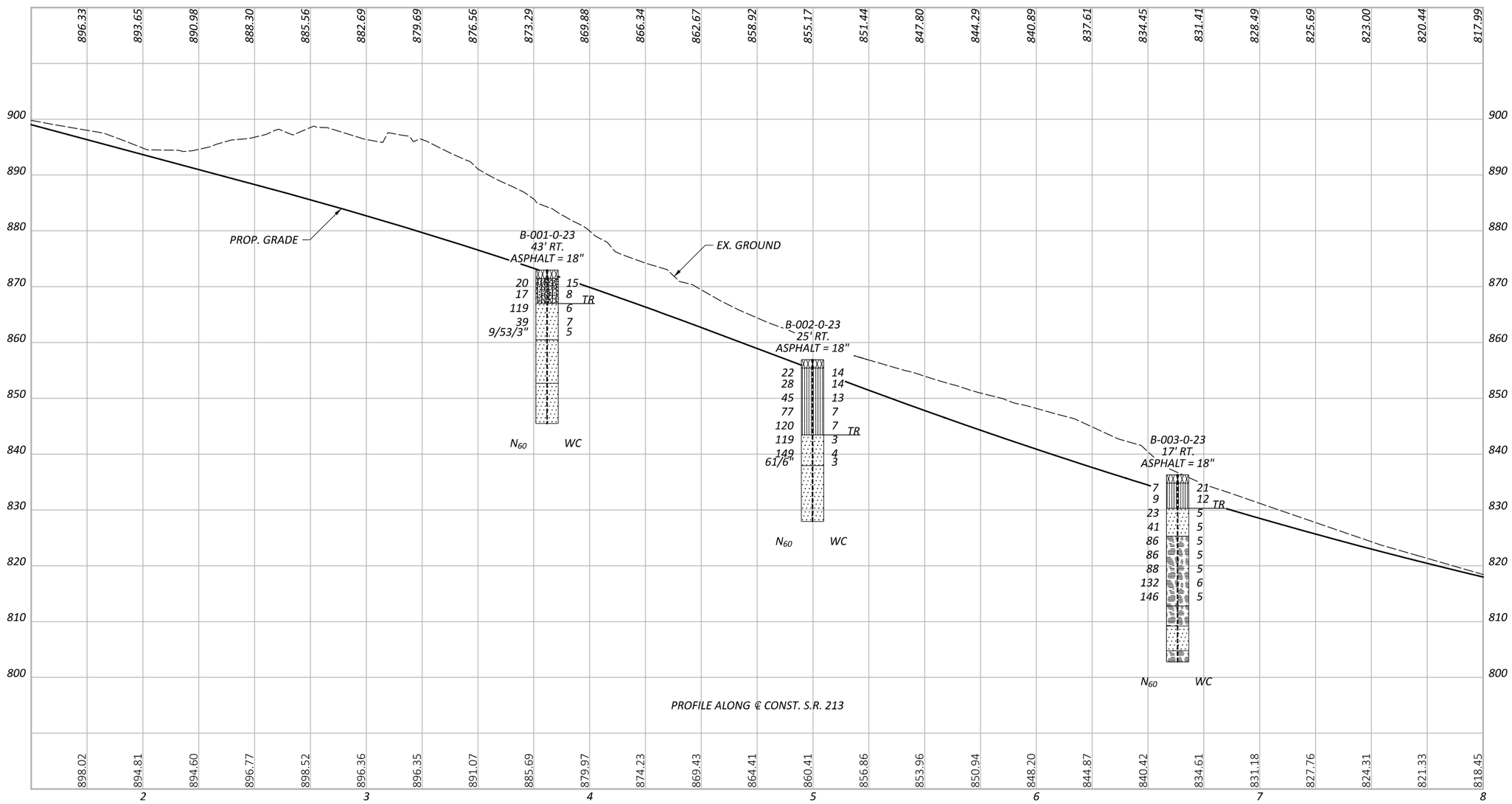

HORIZONTAL SCALE IN FEET
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GEOTECHNICAL PROFILE - LANDSLIDE
STA. 1+50 TO STA. 8+00 CONST. S.R. 213

DESIGN AGENCY

DESIGNER ARR
REVIEWER SAT 07/09/25
PROJECT ID 118631
SUBSET 3 TOTAL 20
SHEET P.39 TOTAL 56

JEF-SR 213-4.51

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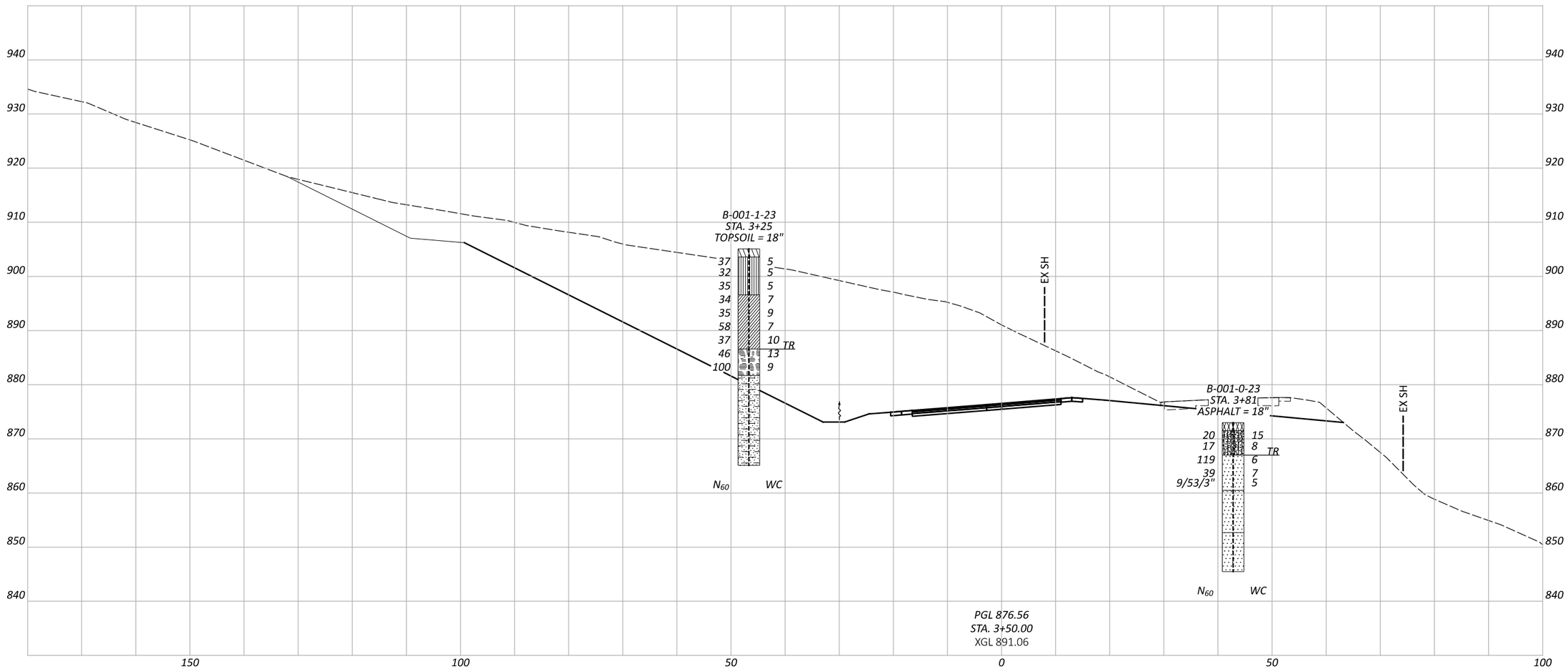

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CROSS SECTION STA. 3+50 CONST. S.R. 213

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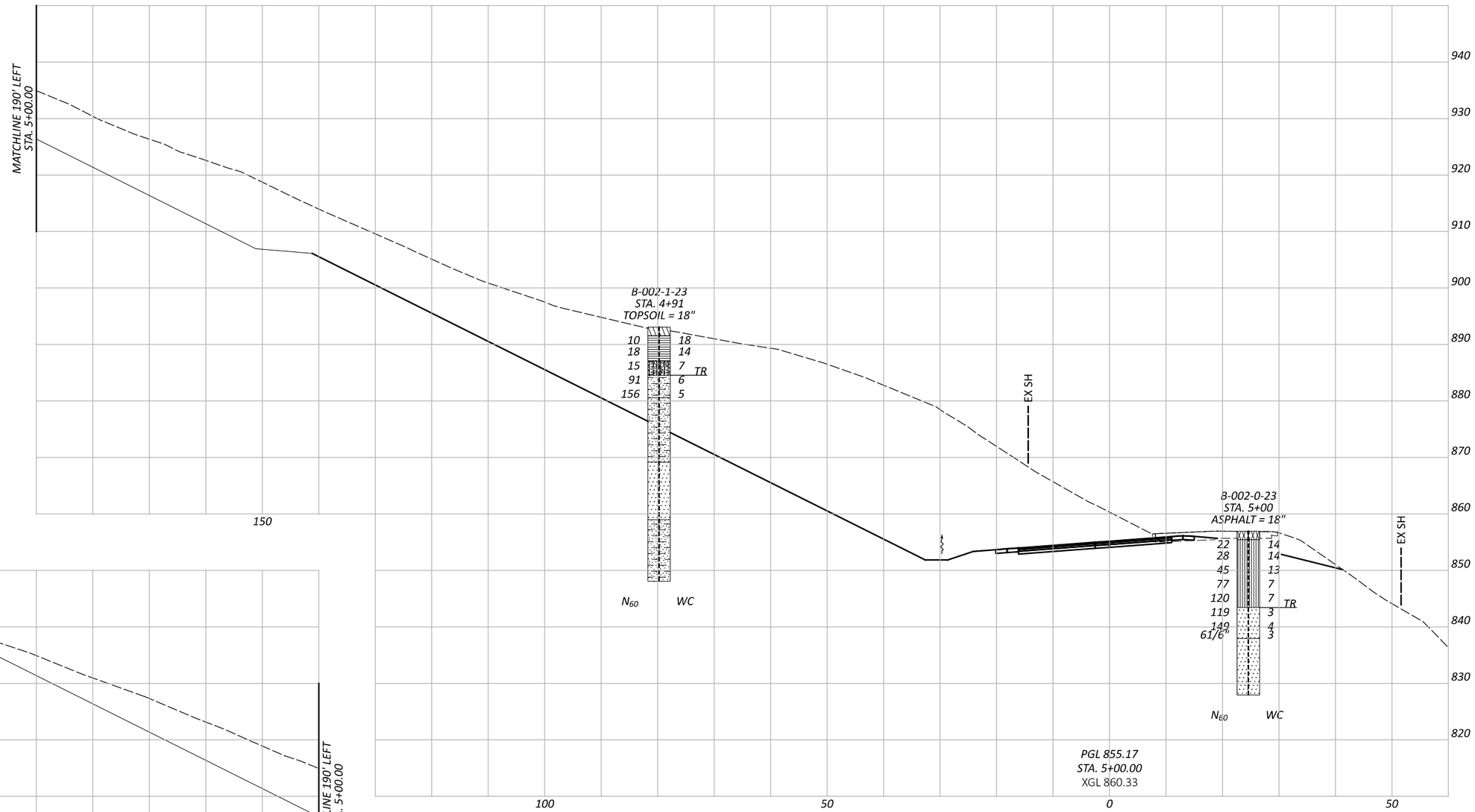
DESIGN AGENCY

DESIGNER	ARR
REVIEWER	SAT 07/09/25
PROJECT ID	118631
SUBSET	4
TOTAL	20
SHEET	P.40
TOTAL	56



GEOTECHNICAL PROFILE - LANDSLIDE
CROSS SECTION STA. 5+00 CONST. S.R. 213

DESIGN AGENCY

DESIGNER
ARR

REVIEWER
SAT 07/09/25

PROJECT ID
118631

SUBSET 5 | TOTAL 20

SHEET P.41 | TOTAL 56

JEF-SR 213-4.51

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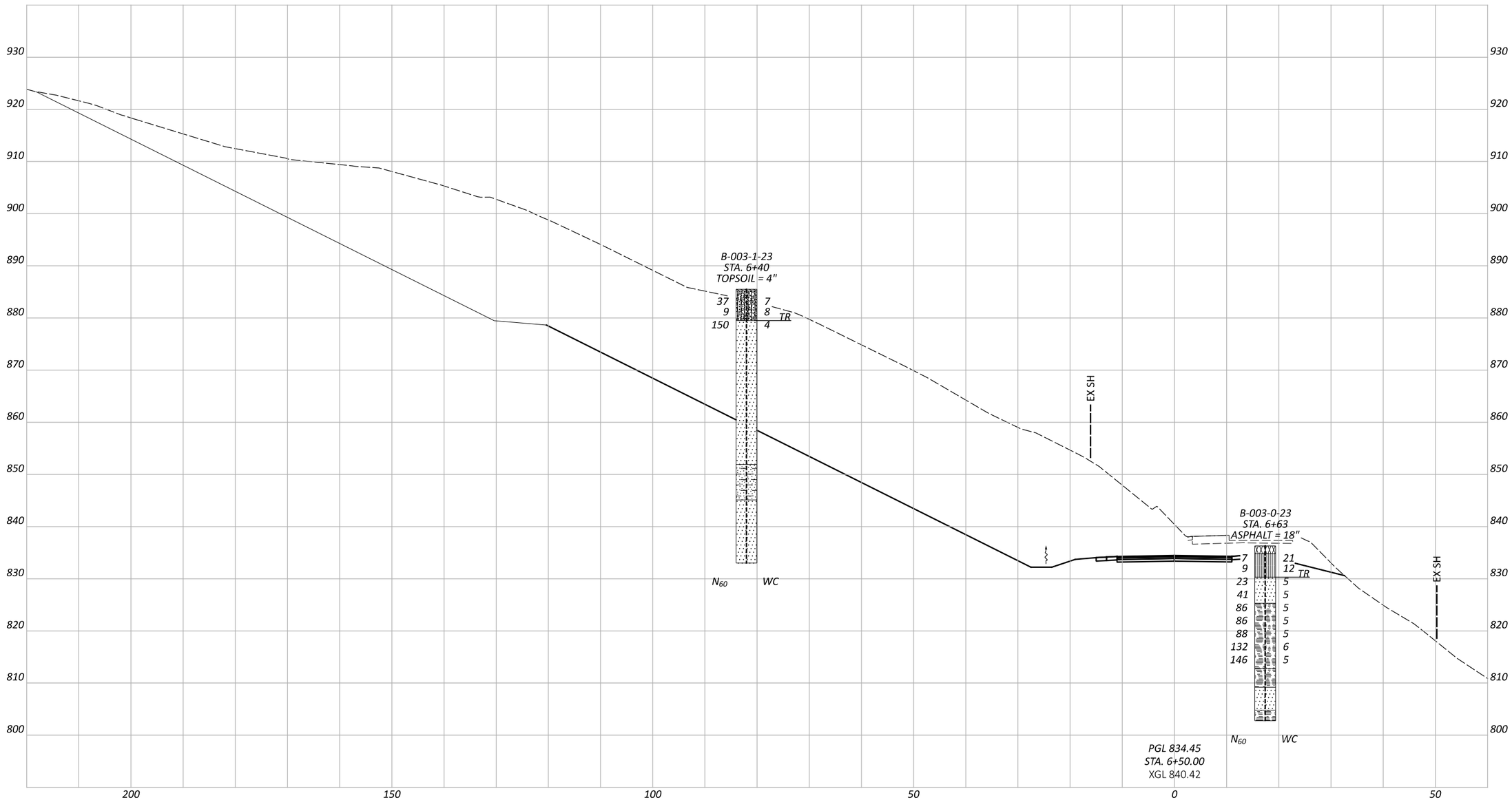

GEOTECHNICAL PROFILE - LANDSLIDE
CROSS SECTION STA. 6+50 CONST. S.R. 213

JEF-SR 213-4.51

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DESIGN AGENCY

DESIGNER
ARR

REVIEWER
SAT 07/09/25

PROJECT ID
118631

SUBSET	TOTAL
6	20

SHEET	TOTAL
P.42	56

JEF-SR 213-4.51

MODEL: Boring Log for B-001-0-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:27 PM USER: aross3
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PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET: 3+81, 43' RT.
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / MCINTOSH	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213
PID: 118631 SFN: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 4/18/22	ELEVATION: 873.0 (ft) EOB: 27.5 ft.
START: 5/8/23 END: 5/9/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 87	LAT / LONG: 40.441333, -80.661917

EXPLORATION ID B-001-0-23

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 873.0	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (18")	871.5																	
MEDIUM DENSE, BROWN AND GRAY, **GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, MOIST		2	9 4 10	20	67	SS-1	-	41	15	11	17	16	28	19	9	15	A-2-4 (0)	
@3.5'; BROWN, TRACE CLAY, DAMP	867.0	4	5 7 5	17	61	SS-2	-	50	15	19	9	7	23	16	7	8	A-2-4 (0)	
SANDSTONE, YELLOWISH BROWN, HIGHLY WEATHERED, WEAK, MEDIUM TO COARSE GRAINED.	TR	6	24 38 44	119	261	SS-3	-	-	-	-	-	-	-	-	-	6	Rock (V)	
@8.5'; BROWN, MODERATELY WEATHERED.		9	8 16 11	39	39	SS-4	-	-	-	-	-	-	-	-	-	7	Rock (V)	
	860.5	11	9 53/3"	-	100	SS-5	-	-	-	-	-	-	-	-	-	5	Rock (V)	
SANDSTONE, BROWN, HIGHLY WEATHERED, MODERATELY STRONG, MEDIUM TO COARSE GRAINED, VERY THIN BEDDED, FRIABLE, JOINT, FRACTURED TO MODERATELY FRACTURED, OPEN; BLOCKY, GOOD; RQD 12%, REC 40%. @12.5'; NO WATER RETURN @ 12.8' - 13.2'; γ = 149 pcf; Qu = 5,883 psi @14.5' - 14.8'; CLAY SEAM		15	18		63	NQ2-1											CORE	
	852.7	20	0		47	NQ2-2											CORE	
SANDSTONE, DARK YELLOWISH BROWN WITH GRAY, HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, VERY FINE TO FINE GRAINED, VERY THIN TO THIN BEDDED, ARGILLACEOUS, SLIGHTLY MICACEOUS, JOINT, HIGHLY FRACTURED, OPEN, VERY ROUGH; VERY BLOCKY, FAIR; RQD 35%, REC 100%. @22.5'; DARK GRAY, HIGHLY FRACTURED TO FRACTURED, NARROW, SLIGHTLY ROUGH; BLOCKY.		25	15		100	NQ2-3											CORE	
	845.5	EOB 27																

NOTES: LAT/LONG/ELEV FROM CONSULTANT SURVEY GRADE INSTRUMENTS. HOLE DRY BEFORE CORING.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED 10 LB. ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 4/22/25 10:02 - X:\GINT\PROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.43	56	7	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-001-0-23

JEF-SR 213-4.51

MODEL: Boring Log for B-001-1-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:33 PM USER: aross3
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PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / SPROUSE	DRILL RIG: CME 850R TRACKED	STATION / OFFSET: 3+25, 47' LT.
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / LEWIS	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213
PID: 118631 SFN: N/A	DRILLING METHOD: 3.75" HSA / NQ2	CALIBRATION DATE: 4/25/23	ELEVATION: 905.1 (ft) EOB: 40.0 ft.
START: 6/15/23 END: 6/20/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 89	LAT / LONG: 40.441109, -80.662162

EXPLORATION ID B-001-1-23

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 905.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (18")	903.6																	
DENSE, BROWN, **SANDY SILT**, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP			10 11 14	37	78	SS-1	-	38	9	11	29	13	26	16	10	5	A-4a (1)	
			6 9 13	32	50	SS-2	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
			9 11 13	35	67	SS-3	-	-	-	-	-	-	-	-	-	5	A-4a (V)	
HARD, BROWN, **SILT AND CLAY**, TRACE SAND, TRACE STONE FRAGMENTS, DAMP	896.6		13 12 11	34	78	SS-4	4.00	-	-	-	-	-	-	-	-	7	A-6a (V)	
			9 10 14	35	89	SS-5	4.5+	6	3	6	58	27	27	16	11	9	A-6a (8)	
			17 18 21	58	89	SS-6	4.5+	-	-	-	-	-	-	-	-	7	A-6a (V)	
@16.0'; LITTLE SAND, LITTLE STONE FRAGMENTS			14 12 13	37	78	SS-7	4.00	16	8	10	39	27	29	17	12	10	A-6a (7)	
SHALE, BROWN AND BLACK, SEVERELY WEATHERED, VERY WEAK, LAMINATED, SLIGHTLY CARBONACEOUS; RQD 0%, REC 91%.	886.6	TR	2 10 21	46	78	SS-8	-	-	-	-	-	-	-	-	-	13	Rock (V)	
@21.0'; HIGHLY WEATHERED, VERY WEAK TO WEAK.			22 24 44	100	100	SS-9	-	-	-	-	-	-	-	-	-	9	Rock (V)	
SILTSTONE, BROWNISH GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG, VERY THIN BEDDED, SLIGHTLY ARENACEOUS, JOINT AND BEDDING, HIGHLY FRACTURED, OPEN, SLIGHLTY ROUGH; DISINTEGRATED, VERY POOR TO POOR; RQD 0%, REC 68%. @ 23.4' - 24.4'; Id2 = 81.5%	881.7		0		90	NQ2-1											CORE	
			0		50	NQ2-2											CORE	
@ 32.7' - 33.5'; Id2 = 86.4%			0		63	NQ2-3											CORE	
	865.1	EOB	0		67	NQ2-4											CORE	

NOTES: LAT/LONG FROM OGE HANDHELD GPS UNIT. ELEV FROM CONSULTANT SURVEY BASEMAP. HOLE DRY BEFORE CORING.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 50 LB. BENTONITE CHIPS; TREMIED 60 GAL. BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 4/22/25 09:59 - X:\GINT\PROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.44	56	8	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-001-1-23

JEF-SR 213-4.51

MODEL: Boring Log for B-002-0-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:38 PM USER: aross3
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 11\Jefferson\118631\400-Engineering\Geotechnical\Sheets\118631_YL001.dgn

PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET: 5+00, 25' RT.	EXPLORATION ID B-002-0-23
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / MCINTOSH	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213	
PID: 118631 SFN: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 4/18/22	ELEVATION: 856.9 (ft) EOB: 29.0 ft.	PAGE 1 OF 1
START: 5/9/23 END: 5/9/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 87	LAT / LONG: 40.441556, -80.662306	

MATERIAL DESCRIPTION AND NOTES	ELEV. 856.9	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (18")	855.4																	
VERY STIFF, BROWN, **SANDY SILT**, SOME CLAY, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP		2–3	15 9 6	22	67	SS-1	3.50	19	8	18	34	21	22	16	6	14	A-4a (4)	
		4–5	3 9 10	28	50	SS-2	2.50	-	-	-	-	-	-	-	-	14	A-4a (V)	
@6.0' - 7.5'; NO RECOVERY, AUGER CUTTINGS TAKEN		6–7	12 17 14	45	0	SS-3	-	-	-	-	-	-	-	-	-	13	A-4a (V)	
@8.5'; HARD, REDDISH BROWN, LITTLE CLAY, TRACE GRAVEL AND STONE FRAGMENTS		9–10	11 27 26	77	100	SS-4	4.5+	3	28	24	28	17	27	18	9	7	A-4a (2)	
@11.0'; BROWN AND GRAY, LITTLE STONE FRAGMENTS		11–12	17 46 37	120	100	SS-5	4.00	19	7	30	32	12	25	21	4	7	A-4a (2)	
	843.4	TR																
SANDSTONE, GRAYISH BROWN, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED.		14–15	49 30 52	119	100	SS-6	-	-	-	-	-	-	-	-	-	3	Rock (V)	
		16–17	49 50 53	149	100	SS-7	-	-	-	-	-	-	-	-	-	4	Rock (V)	
	837.9	19	61	-	100	SS-8	-	-	-	-	-	-	-	-	-	3	Rock (V)	
SANDSTONE, OLIVE GRAY WITH BROWNISH GRAY, MODERATELY TO HIGHLY WEATHERED, MODERATELY STRONG, VERY FINE TO FINE GRAINED, VERY THIN TO THIN BEDDED, SLIGHTLY MICACEOUS, ARGILLACEOUS, JOINT, FRACTURED TO MODERATELY FRACTURED, NARROW, SLIGHTLY ROUGH; BLOCKY, FAIR; RQD 20%, REC 100%.		20–23	7		100	NQ2-1											CORE	
@ 24.4' - 24.7'; γ = 164 pcf; Qu = 4,999 psi		24–28	33		100	NQ2-2											CORE	
	827.9	EOB 29																

NOTES: LAT/LONG/ELEV FROM CONSULTANT SURVEY GRADE INSTRUMENTS. HOLE DRY BEFORE CORING.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED 10 LB. ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 4/22/25 10:02 - X:\GINT\PROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.45	56	9	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-002-0-23

JEF-SR 213-4.51

MODEL: Boring Log for B-002-1-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:43 PM USER: aross3
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 11\Jefferson\118631\400-Engineering\Geotechnical\Sheets\118631_YL001.dgn

PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / SPROUSE	DRILL RIG: CME 850R TRACKED	STATION / OFFSET: 4+91, 80' LT.
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / LEWIS	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213
PID: 118631 SFN: N/A	DRILLING METHOD: 3.75" HSA / NQ2	CALIBRATION DATE: 4/25/23	ELEVATION: 893.1 (ft) EOB: 45.0 ft.
START: 6/13/23 END: 6/15/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 89	LAT / LONG: 40.441299, -80.662480

EXPLORATION ID B-002-1-23

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 893.1	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (18")	891.6																	
STIFF, REDDISH BROWN, **SILTY CLAY**, LITTLE SAND, TRACE STONE FRAGMENTS, DAMP @3.5'; VERY STIFF, LITTLE STONE FRAGMENTS	887.1	1 2 3 4 5 6	2 3 4	10	56	SS-1	1.50	1	6	10	38	45	35	19	16	18	A-6b (10)	
			2 5 7	18	67	SS-2	3.00	-	-	-	-	-	-	-	-	14	A-6b (V)	
MEDIUM DENSE, GRAYISH BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, TRACE CLAY, MOIST	884.6	7 8	3 4 6	15	56	SS-3	-	42	16	11	23	8	25	16	9	7	A-2-4 (0)	
SILTSTONE, GRAYISH BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, SLIGHTLY ARENACEOUS.	880.6	TR 9 10 11 12	20 26 36	91	67	SS-4	-	-	-	-	-	-	-	-	-	6	Rock (V)	
			25 38 68	156	78	SS-5	-	-	-	-	-	-	-	-	-	5	Rock (V)	
SILTSTONE, BROWNISH GRAY, SEVERELY TO HIGHLY WEATHERED, SLIGHTLY STRONG, THIN BEDDED, RUST STAINED, SLIGHTLY ARENACEOUS, JOINT, HIGHLY FRACTURED, OPEN, SLICKENSIDE TO SLIGHLTY ROUGH; DISINTEGRATED, POOR; RQD 0%, REC 88%.		13 14 15 16 17	0		78	NQ2-1											CORE	
@ 18.8' - 20.0'; Id2 = 87.7% @18.8' - 20.0'; S_c = 2,518 psi @22.1'; ARENACEOUS. @23.1' - 23.2'; RUST FILLED, OPEN HORIZONTAL FRACTURE	869.2	18 19 20 21 22 23 24	0		93	NQ2-2											CORE	
SANDSTONE, YELLOWISH BROWN, SEVERELY TO HIGHLY WEATHERED, SLIGHTLY STRONG, VERY FINE TO MEDIUM GRAINED, THIN BEDDED, ARGILLACEOUS, SLIGHLTY MICACEOUS, JOINT, HIGHLY FRACTURED, OPEN, SLIGHTLY ROUGH; DISINTEGRATED, POOR; RQD 0%, REC 76%. @24.9' - 29.7'; HIGH ANGLE OPEN FRACTURE, HIGHLY FRACTURED WITH LOSS		25 26 27	0		83	NQ2-3											CORE	
@30.9'; FRACTURED. @ 31.2' - 32.1'; Id2 = 95.4% @31.2' - 32.1'; S_c = 2,893 psi @31.3'; FINE TO COARSE GRAINED.	859.0	28 29 30 31 32 33	0		68	NQ2-4											CORE	
SILTSTONE, GRAY WITH RED, HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY THIN BEDDED, SLIGHTLY ARENACEOUS, SLIGHTLY FISSLE, JOINT, HIGHLY FRACTURED, OPEN, SLIGHLTY ROUGH; DISINTEGRATED, POOR; RQD 17%, REC 47%.		34 35 36 37	0		45	NQ2-5											CORE	
		38 39	0		54	NQ2-6											CORE	
		40 41 42	0		39	NQ2-7											CORE	
@ 42.5' - 43.3'; Id2 = 22.1% @43.1'; RED WITH YELLOWISH BROWN, MODERATELY WEATHERED, ARGILLACEOUS, JOINT, SLIGHTLY FRACTURED, NARROW, SLIGHTLY ROUGH; BLOCKY, GOOD. @ 43.3' - 43.9'; γ = 164 pcf; Qu = 258 psi @44.4'; GRAY WITH RED.	848.1	43 44 EOB 45	73		90	NQ2-8											CORE	

NOTES: LAT/LONG FROM OGE HANDHELD GPS UNIT. ELEV FROM CONSULTANT SURVEY BASEMAP. S_c = POINT LOAD STRENGTH VALUES AS PER ASTM D 5731. HOLE DRY BEFORE CORING.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 100 LB. BENTONITE CHIPS; TREMIED 60 GAL. BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 4/22/25 09:59 - X:\GINT\PROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.46	56	10	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-002-1-23

JEF-SR 213-4.51

MODEL: Boring Log for B-003-0-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:48 PM USER: aross3
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 11\Jefferson\118631\400-Engineering\Geotechnical\Sheets\118631_YL001.dgn

PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / CAREY	DRILL RIG: CME 55 TRUCK	STATION / OFFSET: 6+63, 17' RT.	EXPLORATION ID B-003-0-23
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / MCINTOSH	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213	
PID: 118631 SFN: N/A	DRILLING METHOD: 3.25" HSA / NQ2	CALIBRATION DATE: 4/18/22	ELEVATION: 836.3 (ft) EOB: 33.5 ft.	PAGE 1 OF 1
START: 5/10/23 END: 5/10/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 87	LAT / LONG: 40.441694, -80.662889	

MATERIAL DESCRIPTION AND NOTES	ELEV. 836.3	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
ASPHALT (18")	834.8																
MEDIUM STIFF, BROWN, **SANDY SILT**, SOME GRAVEL, LITTLE CLAY, MOIST		1 2 3	7	22	SS-1	0.50	-	-	-	-	-	-	-	-	21	A-4a (V)	
@3.5'; VERY STIFF, SOME GRAVEL AND STONE FRAGMENTS, DAMP	830.3	1 3 3	9	67	SS-2	2.50	30	16	13	27	14	25	20	5	12	A-4a (1)	
SANDSTONE, BROWN, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED.		8 9 7	23	100	SS-3	-	-	-	-	-	-	-	-	-	5	Rock (V)	
		13 12 16	41	100	SS-4	-	-	-	-	-	-	-	-	-	5	Rock (V)	
SHALE, GRAY AND BROWN, HIGHLY WEATHERED, WEAK, LAMINATED, SLIGHTLY ARENACEOUS.	825.3	18 26 33	86	100	SS-5	-	-	-	-	-	-	-	-	-	5	Rock (V)	
		16 29 30	86	100	SS-6	-	-	-	-	-	-	-	-	-	5	Rock (V)	
		16 28 33	88	100	SS-7	-	-	-	-	-	-	-	-	-	5	Rock (V)	
		24 42 49	132	100	SS-8	-	-	-	-	-	-	-	-	-	6	Rock (V)	
		26 46 55	146	100	SS-9	-	-	-	-	-	-	-	-	-	5	Rock (V)	
SHALE, BLACK, HIGHLY WEATHERED, SLIGHTLY STRONG, LAMINATED TO VERY THIN BEDDED, JOINT, HIGHLY FRACTURED TO FRACTURED, OPEN, SLIGHTLY ROUGH; VERY BLOCKY, POOR; RQD 0%, REC 100%.	812.8	0		83	NQ2-1											CORE	
SANDSTONE, GRAY WITH BROWN, HIGHLY WEATHERED, SLIGHTLY STRONG, FINE TO MEDIUM GRAINED, THIN BEDDED, SLIGHTLY MICACEOUS, ARGILLACEOUS, JOINT, HIGHLY FRACTURED TO FRACTURED, NARROW, SLIGHTLY ROUGH; BLOCKY, POOR; RQD 0%, REC 87%.	809.2	0		100	NQ2-2											CORE	
SHALE, BROWNISH GRAY, HIGHLY WEATHERED, WEAK, LAMINATED TO VERY THIN BEDDED, JOINT, HIGHLY FRACTURED, NARROW, SLIGHTLY ROUGH TO SMOOTH; VERY BLOCKY, POOR; RQD 0%, REC 100%.	804.8																
	802.8																

TR

EOB

NOTES: LAT/LONG/ELEV FROM CONSULTANT SURVEY GRADE INSTRUMENTS. HOLE DRY BEFORE CORING.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED 10 LB. ASPHALT PATCH; AUGER CUTTINGS MIXED WITH 50 LB. BENTONITE CHIPS

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 4/22/25 10:02 - X:\GINT\PROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P 47	56	11	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-003-0-23

JEF-SR 213-4.51

MODEL: Boring Log for B-003-1-23 PAPERSIZE: 17x11 (in.) DATE: 7/9/2025 TIME: 1:19:54 PM USER: aross3
pw:\\ohiodot-pw.bentley.com:ohiodot-pw-02\Documents\01 Active Projects\District 11\Jefferson\118631\400-Engineering\Geotechnical\Sheets\118631_YL001.dgn

PROJECT: JEF-213-4.51	DRILLING FIRM / OPERATOR: ODOT / LEWIS	DRILL RIG: CME 850R TRACKED	STATION / OFFSET: 6+40, 82' LT.
TYPE: LANDSLIDE	SAMPLING FIRM / LOGGER: ODOT / SPROUSE	HAMMER: CME AUTOMATIC	ALIGNMENT: CL CONST SR 213
PID: 118631 SFN: N/A	DRILLING METHOD: 3.75" HSA / NQ2	CALIBRATION DATE: 4/25/23	ELEVATION: 885.5 (ft) EOB: 52.5 ft.
START: 6/7/23 END: 6/13/23	SAMPLING METHOD: SPT / NQ2	ENERGY RATIO (%): 89	LAT / LONG: 40.441409, -80.662874

EXPLORATION ID B-003-1-23

PAGE 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 885.5	DEPTHS	SPT/ RQD	N_{60}	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%) GR	CS	FS	SI	CL	ATTERBERG LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
TOPSOIL (4")	885.2																	
DENSE, BROWN, **STONE FRAGMENTS WITH SAND AND SILT**, LITTLE CLAY, DAMP		1 2 3	9 7 18	37	72	SS-1	-	31	7	35	16	11	19	15	4	7	A-2-4 (0)	
@3.5'; LOOSE		4 5	9 4 2	9	56	SS-2	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
	879.5	TR 6																
SANDSTONE, BROWNISH GRAY, SEVERELY TO HIGHLY WEATHERED, SLIGHTLY STRONG, FINE TO COARSE GRAINED, VERY THIN BEDDED, ARGILLACEOUS, SLIGHTLY MICACEOUS, CONTAINS THIN CLAY SEAMS, JOINT, HIGHLY FRACTURED, OPEN, SLIGHTLY ROUGH; VERY BLOCKY, POOR TO FAIR; RQD 0%, REC 82%.		7	14 39 63	150	72	SS-3	-	-	-	-	-	-	-	-	-	4	Rock (V)	
		8 9 10 11 12	0		100	NQ2-1											CORE	
@13.5'; BROWN WITH GRAYISH BROWN. @ 13.5' - 14.7'; Id2 = 67.7% @14.5'; LOST WATER RETURN. @16.2' - 17.0'; S_c = 2,395 psi		13 14 15 16 17	0		97	NQ2-2											CORE	
@17.5' - 28.3'; HIGH ANGLE JOINT @18.0' - 18.5'; S_c = 1,865 psi		18 19 20 21 22	0		43	NQ2-3											CORE	
@25.6'; BROWNISH GRAY. @27.3'; GRAY.		23 24 25 26 27	0		80	NQ2-4											CORE	
@30.2' - 31.8'; S_c = 2,507 psi		28 29 30 31 32	0		85	NQ2-5											CORE	
@32.7' - 33.6'; HIGH ANGLE, RUST STAINED FRACTURE	851.9	33																
SILTSTONE, GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG, THIN BEDDED, CONTAINS CLAY SEAMS, ARGILLACEOUS, SLIGHTLY ARENACEOUS, JOINT, FRACTURED, OPEN SLIGHTLY ROUGH; VERY BLOCKY, FAIR; RQD 0%, REC 67%.		34 35 36 37	0		63	NQ2-6											CORE	
@ 37.7' - 38.8'; Id2 = 37.9%		38 39	0		92	NQ2-7											CORE	
	845.1	40																
SANDSTONE, GRAY, MODERATELY WEATHERED, MODERATELY STRONG, VERY FINE GRAINED TO FINE GRAINED, VERY THIN BEDDED, JOINT, FRACTURED TO MODERATELY FRACTURED, SLIGHTLY ROUGH; BLOCKY, GOOD; RQD 29%, REC 95%. @ 42.5' - 44.0'; Id2 = 93.4% @42.5' - 44.0'; S_c = 5,799 psi		41 42	25		92	NQ2-8											CORE	
@44.6' - 45.2'; MID-ANGLE FRACTURE @45.7'; VERY THIN CLAY SEAM.		43 44 45 46 47	20		97	NQ2-9											CORE	
@50.3' - 50.4'; MID-ANGLE, RUST STAINED FRACTURE		48 49 50 51	35		92	NQ2-10											CORE	
@52.1' - 52.3'; MID-ANGLE, RUST STAINED FRACTURE	833.0	EOB 52																

NOTES: LAT/LONG FROM OGE HANDHELD GPS UNIT. ELEV FROM CONSULTANT SURVEY BASEMAP. S_c = POINT LOAD STRENGTH VALUES AS PER ASTM D 5731. HOLE DRY BEFORE CORING.
ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 100 LB. BENTONITE CHIPS; TREMIED 60 GAL. BENTONITE GROUT

STANDARD ODOT SOIL BORING LOG (11 X 17) - OH DOT GDT - 7/9/25 12:51 - X:\GINTPROJECTS\2023 COMPLETE\601062.GPJ

SHEET	TOTAL	SUBSET	TOTAL	PROJECT ID	REVIEWER	DESIGNER	DESIGN AGENCY
P.48	56	12	20	118631	SAT 07/09/25	ARR	

GEOTECHNICAL PROFILE - LANDSLIDE
BORING LOG FOR B-003-1-23

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-001-0-23

Run #:	Depth		Recovery		RQD	
NQ2-1	12.5'	17.5'	38/60	63%	11/60	18%
NQ2-2	17.5'	22.5'	28/60	47%	0/60	0%

JEF-213-4.51 PID 118631

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-001-0-23

Run #:	Depth		Recovery		RQD	
NQ2-3	22.5'	27.5'	60/60	100%	9/60	15%

JEF-213-4.51 PID 118631

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-001-1-23

Run #:	Depth		Recovery		RQD	
NQ2-1	22.5’	27.5’	54/60	90%	0/60	0%
NQ2-2	27.5’	32.5’	30/60	50%	0/60	0%
JEF-213-4.51 PID 118631						

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-001-1-23

Run #:	Depth		Recovery		RQD	
NQ2-3	32.5’	37.5’	38/60	63%	0/60	0%
NQ2-4	37.5’	40.0’	20/30	67%	0/30	0%
JEF-213-4.51 PID 118631						

GEOTECHNICAL PROFILE - LANDSLIDE
ROCK CORE PHOTOS FOR B-001-1-23

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-002-0-23

Run #:	Depth		Recovery		RQD	
NQ2-1	19.0’	24.0’	60/60	100%	4/60	7%
NQ2-2	24.0’	29.0’	60/60	100%	20/60	33%
JEF-213-4.51 PID 118631						

GEOTECHNICAL PROFILE - LANDSLIDE
ROCK CORE PHOTO FOR B-002-0-23

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-002-1-23

Run #:	Depth		Recovery		RQD	
NQ2-1	12.5'	17.5'	47/60	78%	0/60	0%
NQ2-2	17.5'	22.5'	56/60	93%	0/60	0%
JEF-213-4.51 PID 118631						

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-002-1-23

Run #:	Depth		Recovery		RQD	
NQ2-3	22.5'	27.5'	50/60	83%	0/60	0%
NQ2-4	27.5'	32.5'	41/60	68%	0/60	0%
JEF-213-4.51 PID 118631						

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-002-1-23

Run #:	Depth		Recovery		RQD	
NQ2-5	32.5’	37.5’	27/60	45%	0/60	0%
NQ2-6	37.5’	39.5’	13/24	54%	0/24	0%
NQ2-7	39.5’	42.5’	14/36	39%	0/36	0%
JEF-213-4.51 PID 118631						

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-002-1-23

Run #:	Depth		Recovery		RQD	
NQ2-8	42.5’	45.0’	27/30	90%	22/30	73%
JEF-213-4.51 PID 118631						

GEOTECHNICAL PROFILE - LANDSLIDE
ROCK CORE PHOTOS FOR B-002-1-23 (CONT.)

OHIO DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING

Office of Geotechnical Engineering

B-003-0-23

Run #:	Depth		Recovery		RQD	
NQ2-1	23.5’	28.5’	50/60	83%	0/60	0%
NQ2-2	28.5’	33.5’	60/60	100%	0/60	0%
JEF-213-4.51 PID 118631						

OHIO DEPARTMENT OF TRANSPORTATION
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Run #:	Depth		Recovery		RQD	
NQ2-1	7.5’	12.5’	60/60	100%	0/60	0%
NQ2-2	12.5’	17.5’	58/60	97%	0/60	0%
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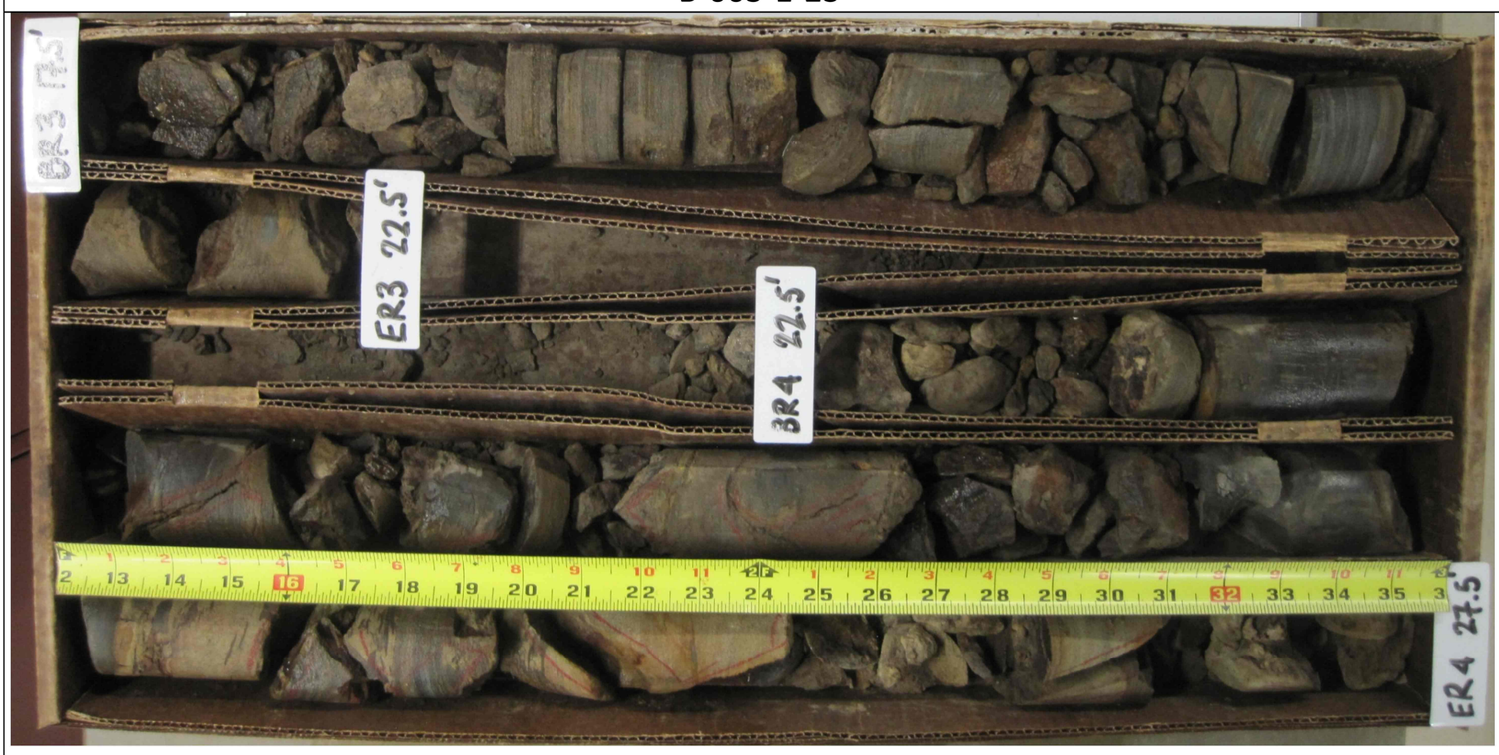

Run #:	Depth		Recovery		RQD	
NQ2-3	17.5'	22.5'	26/60	43%	0/60	0%
NQ2-4	22.5'	27.5'	48/60	80%	0/60	0%
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Run #:	Depth		Recovery		RQD	
NQ2-5	27.5'	32.5'	51/60	85%	0/60	0%
NQ2-6	32.5'	37.5'	38/60	63%	0/60	0%
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Run #:	Depth		Recovery		RQD	
NQ2-7	37.5'	39.5'	22/24	92%	0/24	0%
NQ2-8	39.5'	42.5'	33/36	92%	9/36	25%
NQ2-9	42.5'	47.5'	58/60	97%	12/60	20%
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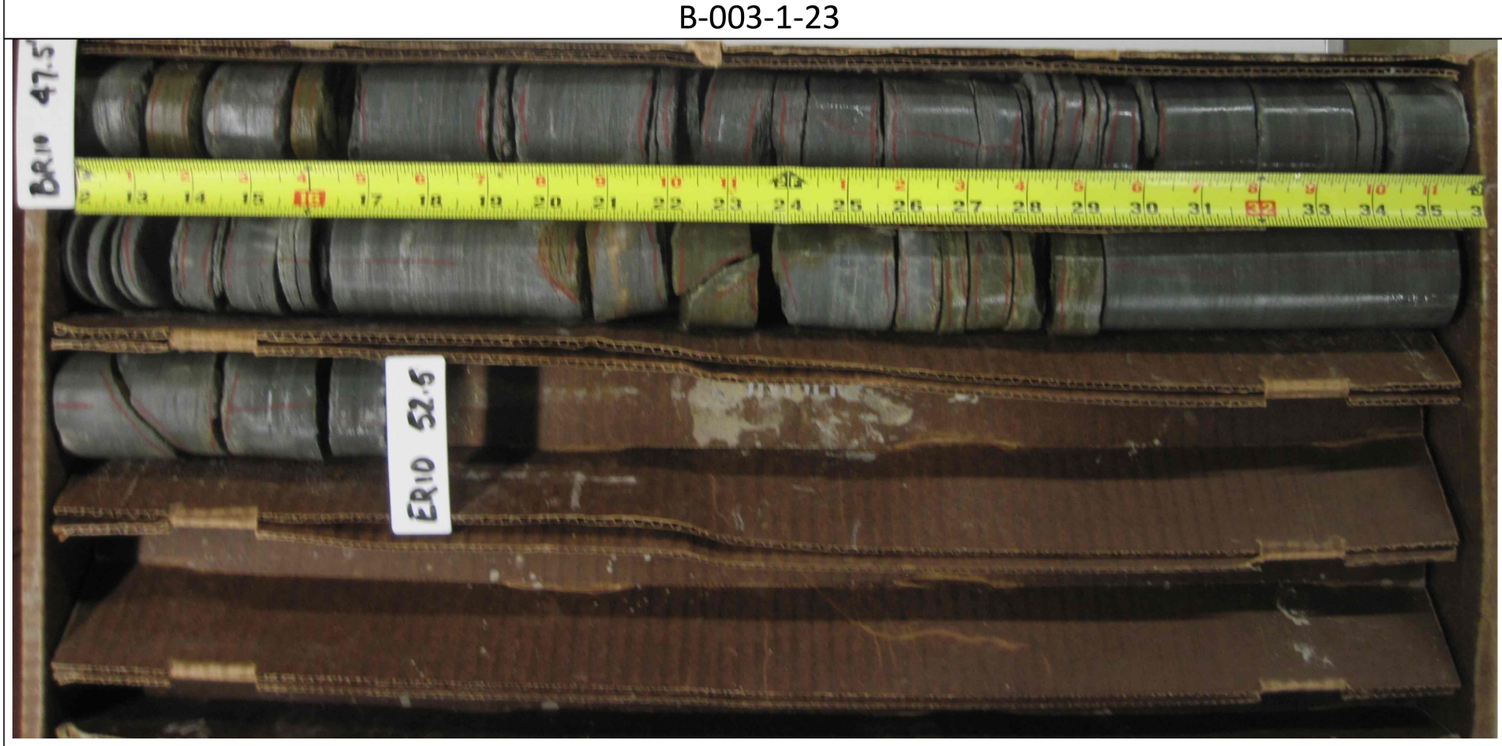

Run #:	Depth		Recovery		RQD	
NQ2-10	47.5'	52.5'	55/60	92%	21/60	35%
JEF-213-4.51 PID 118631						