

MODEL: COVER SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:05:13 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZC001.dgn

**PROJECT DESCRIPTION**

THE PROJECT CONSISTS OF THE CONSTRUCTION OF EIGHT (8) NEW NOISE WALLS ALONG SR 161 BETWEEN ULRU ROAD NAD US 62 IN FRANKLIN COUNTY, OHIO. BASED ON THE AVAILABLE PROJECT INFORMATION, IT IS UNDERSTOOD THAT THE WALLS WILL RANGE FROM 497 TO 2,226 FEET IN LENGTH AND WILL BE 14 FEET HIGH. NOISE WALLS 3, 6, 8, 9, 11, 12 AND 15, AS DESIGNATED AND SHOWN ON THE PROJECT DOCUMENTS, ARE INCLUDED AS PART OF THIS INVESTIGATION.

**HISTORIC RECORDS**

HISTORIC GEOTECHNICAL RECORDS WERE OBTAINED FROM ODOT'S TRANSPORTATION INFORMATION MAPPING SYTEM (TIMS). RESULTS OF THESE EXPLORATIONS INDICATED THAT PREDOMINANTLY EXISTING COHESIVE AND GRANULAR SOILS ARE PRESENT BELOW THE EXISTING GROUND SURFACE, AND ARE UNDERLAIN BY AND SHALE BEDROCK. THESE RESULTS WERE NOT UTILIZED DURING THE CURRENT DESIGN

**GEOLOGY**

PHYSIOGRAPHICALLY, THE PROJECT SITE FALLS WITHIN GALION GLACIATED LOW PLATEAU. THIS REGION IS CHARACTERIZED BY ROLLING UPLANDS WHICH ARE TRANSITIONAL BETWEEN THE GENTLY ROLLING TILL PLAINS AND HILL GLACIATED ALLEGHENY PLATEAU. THE SOILS CONSIST OF THIN TO THICK DRIFT WITH MODERATE RELIEF.

BASED ON BEDROCK GEOLOGY AND TOPOGRAPHY MAPS OF THE AREA FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR), THE UNDERLYING BEDROCK BENEATH THE SITE IS MISSISSIPPIAN-AGE SHALES AND SANDSTONES THE BEDROCK SURFACE IN THE VICINITY OF THE SITE RANGES BETWEEN APPROXIMATELY 5 TO 25 FEET BELOW THE EXISTING SURFACE GRADE.

**RECONNAISSANCE**

FIELD RECONNAISSANCE WAS COMPLETED BY PERSONNELL FROM RESOURCE INTERNATIONAL, INC (RII) BETWEEN OCTBER 18 AND NOVEMBER 15, 2023. THE PROJECT SITE IS LOCATED ALONG SR 161 IN FRANKLIN COUNTY, OHIO. THE PROJECT SITE EXTENDS FROM URLY ROAD TO APPROXIMATELY 0.3 MILES WEST OF US 62. SR 161 WITHIN THE PROJECT LIMITS IS A BIDIRECTIONAL, DIVIDED, ASPHALT PAVED ROADWAY WITH TWO LANES IN EACH DIRECTION. ALONG THE PROJECT ALIGNMENT, THE LAND USE SURROUNDING SR 161 IS PRIMARILY RESIDENTIAL WITH SOME COMMERCIAL AND/OR INDUSTRIAL PURPOSE. SURFACE DRAINAGE APPEARS TO BE COLLECTED IN THE DRAINAGE DITCHES ALONG THE MAJORITY OF THE ROADWAY ALIGNMENT.

**SUBSURFACE EXPLORATION**

BETWEEN OCTOBER 23 AND DECEMBER 5, 2023, A TOTAL OF FIFTY-THREE (53) BORINGS, DESIGNATED AS B-001-0-23 THROUGH B-053-0-23, WERE PERFORMED AS PART OF THE SUBSURFACE EXPLORATION. THE BORINGS WERE DRILLED AND SAMPLED WITH DIEDRICH D50 TRACK MOUNTED DRILL RIG UTILIZING 3.25-INCH HOLLOW STEM AUGERS TO ADVANCE THE HOLES. STANDARD PENETRATION TESTING (SPT) AND SPLIT SPOON SAMPLING WERE PERFORMED AT 2.5-FOOT INTERVALS IN ALL BORINGS EITHER TO THE BORING TERMINATION DEPTHS OR TO AUGER REFUSAL ON BEDROCK. THE HAMMER UTILIZED IN DIEDRICH D50 TRACK RIG WAS CALIBRATED ON MARCH 21, 2022 AND HAD AN ENERGY RATIO OF 86.4 PERCENT.

THE DEPTH TO BEDROCK WAS DETERMINED BY SPLIT SPOON SAMPLER REFUSAL AND/OR AUGER REFUSAL ON BEDROCK. WHERE THE BORINGS WERE EXTENDED INTO THE BEDROCK, AN NQ2 SIZED, DOUBLE TUBE, DIAMOND BIT CORE BARREL (UTILIZING WIRE LINE EQUIPMENT) WAS USED TO CORE THE BEDROCK. THE ROCK CORES OBTAINED FROM THE BORINGS WERE LOGGED IN THE FIELD AND VISUALLY CLASSIFIED IN THE LABORATORY. THE RETRIEVED CORES WERE ANALYZED TO IDENTIFY THE TYPE OF ROCK, COLOR, MINERAL CONTENT, BEDDING PLANES AND OTHER GEOLOGICAL AND MECHANICAL FEATURES OF INTEREST IN THIS PROJECT.

**EXPLORATION FINDINGS**

THIS GEOTECHNICAL EXPLORATION WAS PERFORMED IN ACCORDANCE WITH THE STATE THE BORINGS WERE GENERALLY PERFORMED IN THE VICINITY OF THE PROPOSED NOISE WALL ALIGNMENTS. ALL BORINGS, EXCEPT B-038-0-23, ENCOUNTERED TOPSOIL THICKNESSES BETWEEN 1 INCH AND 10 INCHES. BORING B-038-0-23 ENCOUNTERED 3.0 INCHES OF ASPHALT OVERLYING 6.5 INCHES OF CONCRETE OVERLYING 3.5 INCHES OF AGGREGATE BASE.

UNDERLYING THE SURFICIAL SOILS, THE NATURAL SOILS WERE ENCOUNTERED, CONSISTING OF BOTH COHESIVE AND GRANULAR DEPOSITS. THE NATURAL COHESIVE SOILS WERE DESCRIBED AS SANDY SILT, SILT AND CLAY, SILTY CLAY, AND CLAY (ODOT A-4A, A-6A, A-6B, A-7-6). THE SHEAR STRENGTH AND CONSISTENCY OF THE COHESIVE SOILS ARE PRIMARILY DERIVED FROM THE HAND PENETROMETER VALUES (HP). THE COHESIVE SOILS ENCOUNTERED RANGED FROM MEDIUM STIFF (0.5 < HP 1.0 TSF) TO HARD (HP 4.0 TSF). THE UNCONFINED COMPRESSIVE STRENGTH OF THE COHESIVE SOIL SAMPLES TESTED, OBTAINED FROM THE HAND PENETROMETER, RANGED FROM 0.75 TO OVER 4.5 TSF (LIMIT OF THE INSTRUMENT).

THE GRANULAR SOILS WERE DESCRIBED AS GRAVEL, GRAVEL WITH SAND, GRAVEL WITH SAND AND SILT, GRAVEL WITH SAND AND SILT AND CLAY, AND COARSE AND FINE SAND (ODOT A-1-A, A1B, A-2-4, A-2-6, A-3A). THE RELATIVE DENSITY OF GRANULAR SOILS IS PRIMARILY DERIVED FROM SPT BLOW COUNTS (N<sub>s</sub>). BASED ON THE SPT BLOW COUNTS OBTAINED, THE GRANULAR SOILS ENCOUNTERED RANGED FROM LOOSE (5 < N<sub>s</sub> < 10 BLOWS PER FOOT [BPF]) TO VERY DENSE (N<sub>s</sub> > 50 BPF). BLOW COUNTS RECORDED FROM THE SPT SAMPLING WITHIN THE GRANULAR SOIL DEPOSITS RANGED FROM 9 TO 96 BPF.

BEDROCK WAS ENCOUNTERED IN BORINGS B-001-0-23, B-002-0-23, B-003-0-23, B-004-0-23, B-018-0-23, B-019-0-23, B-020-0-23, B-021-0-23, B-022-0-23, B-023-0-23, B-024-0-23, B-027-0-23, B-028-0-23, B-038-0-23, B-039-0-23, B-040-0-23, B-041-0-23, B-042-0-23, B-043-0-23, B-044-0-23, B-045-0-23, B-046-0-23, B-047-0-23, B-048-0-23, B-049-0-23, B-050-0-23, B-051-0-23, B-052-0-23, AND B-053-0-23 AT DEPTHS RANGING FROM 4.3 TO 23.0 FEET BENEATH THE EXISTING GROUND SURFACE. THE BEDROCK WAS DESCRIBED AS HIGHLY WEATHERED GRAY AND BROWN SANDSTONE, HIGHLY WEATHERED TO SEVERELY WEATHERED GRAY AND BLACK SILT, AND HIGHLY WEATHERED GRAY SHALESTONE.

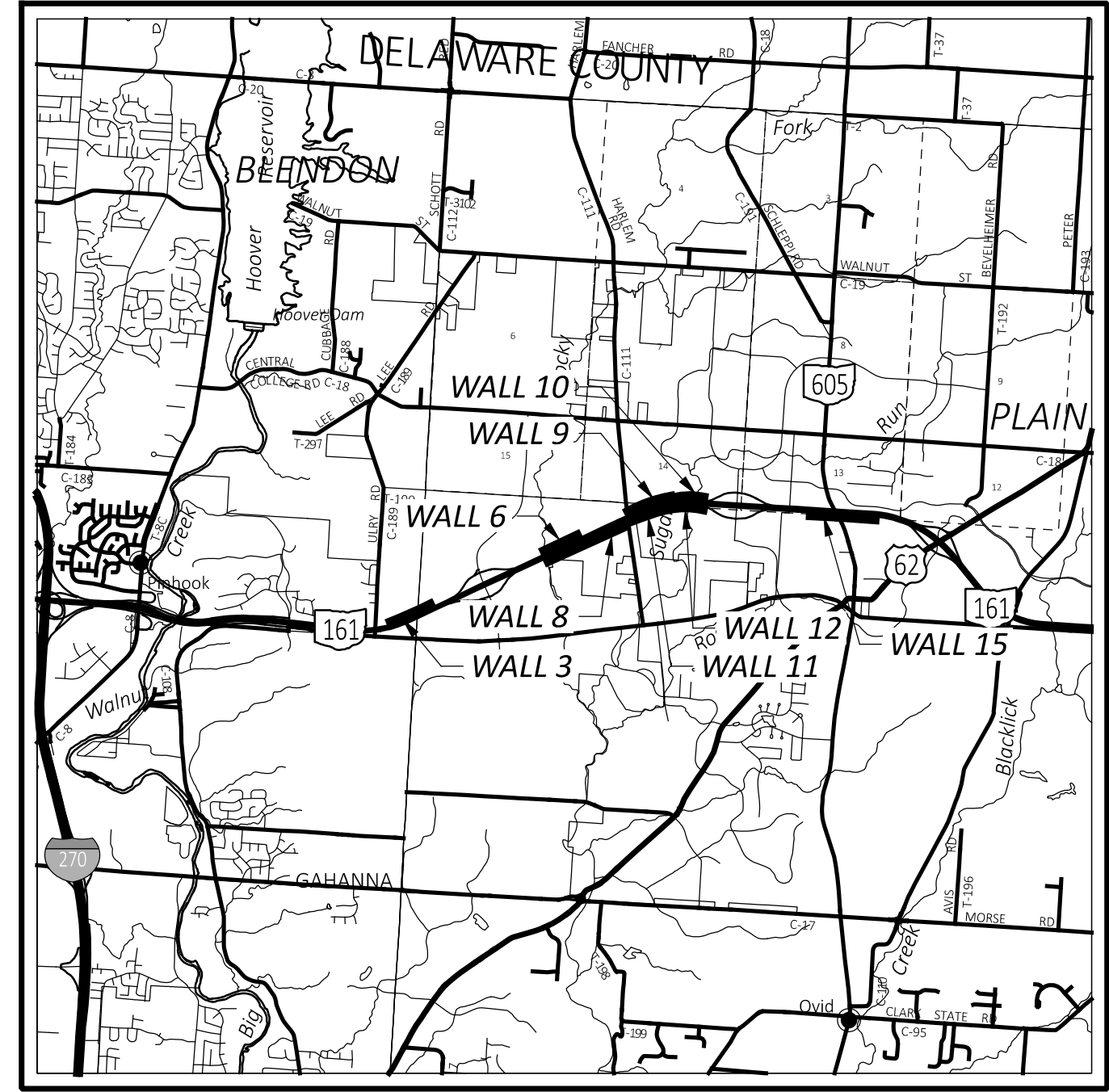
LEGEND		ODOT CLASS	CLASSIFIED MECH./VISUAL	
DESCRIPTION				
	GRAVEL AND/OR STONE FRAGMENTS	A-1-a	2	4
	GRAVEL AND/OR STONE FRAGMENTS WITH SAND	A-1-b	11	23
	GRAVEL AND/OR STONE FRAGS. WITH SAND & SILT	A-2-4	12	57
	GR. AND/OR ST. FRAGS. WITH SAND, SILT & CLAY	A-2-6	-	2
	COARSE AND FINE SAND	A-3a	1	9
	SANDY SILT	A-4a	18	58
	SILT AND CLAY	A-6a	26	102
	SILTY CLAY	A-6b	12	38
	CLAY	A-7-6	7	9
		TOTAL	89	302
	SANDSTONE	VISUAL		
	SHALE	VISUAL		
	SILTSTONE	VISUAL		
	PAVEMENT OR BASE = X = APPROXIMATE THICKNESS	VISUAL		
	SOD AND TOPSOIL = X = APPROXIMATE THICKNESS	VISUAL		
	BORING LOCATION - PLAN VIEW.			
	DRIVE SAMPLE AND/OR ROCK CORE BORING PLOTTED TO VERTICAL SCALE ONLY. HORIZONTAL BAR INDICATES A CHANGE IN STRATIGRAPHY.			
WC	INDICATES WATER CONTENT IN PERCENT.			
N <sub>60</sub>	INDICATES STANDARD PENETRATION RESISTANCE NORMALIZED TO 60% DRILL ROD ENERGY RATIO.			
X/Y/Z	NUMBER OF BLOWS FOR STANDARD PENETRATION TEST (SPT); X= NUMBER OF BLOWS FOR FIRST 6 INCHES. Y= NUMBER OF BLOWS FOR SECOND 6 INCHES. Z= NUMBER OF BLOWS FOR THIRD 6 INCHES.			
	INDICATES FREE WATER ELEVATION.			
	INDICATES A PLASTIC MATERIAL WITH A MOISTURE CONTENT EQUAL TO OR GREATER THAN THE LIQUID LIMIT MINUS 3.			
	INDICATES A NON-PLASTIC MATERIAL WITH A MOISTURE CONTENT GREATER THAN 25 % OR GREATER THAN 19 % WITH A WET APPEARANCE.			
SS	INDICATES A SPLIT SPOON SAMPLE.			
NP	INDICATES A NON-PLASTIC SAMPLE.			

**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 JULY 2022.

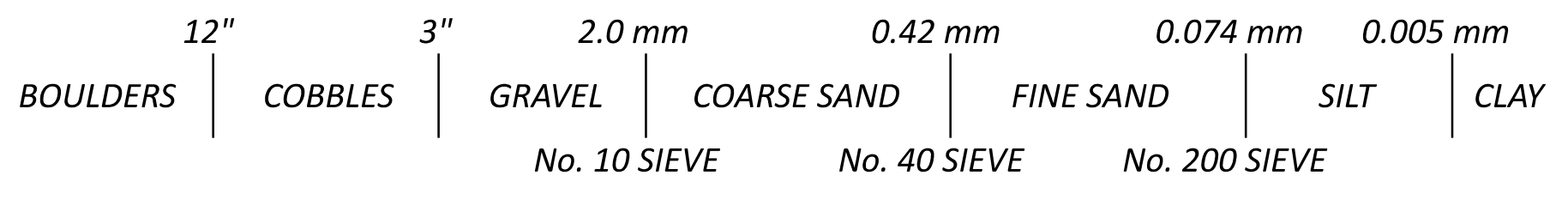
**AVAILABLE INFORMATION**

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.



LOCATION MAP  
SCALE IN MILES

**PARTICLE SIZE DEFINITIONS**



INDEX OF SHEETS			
SUMMARY OF SOIL TEST DATA, SHEETS 2 - 5.			
LOCATION FROM STA. TO STA.	PLAN	PROFILE	
@ CONST. SR 161 NOISE WALL 3			
2130+00 2135+00	6	6	
2135+00 2140+00	7	7	
NOISE WALL 6			
2192+00 2197+00	8	8	
2197+00 2202+00	9	9	
NOISE WALL 8			
2192+00 2197+00	10	10	
2197+00 2202+00	11	11	
2202+00 2207+00	12	12	
2207+00 2212+00	13	13	
2212+00 2217+00	14	14	
NOISE WALL 9			
2217+00 2222+00	15	15	
2222+00 2227+00	16	16	
2227+00 2232+00	17	17	

INDEX OF SHEETS (CON'T)			
LOCATION FROM STA. TO STA.	PLAN	PROFILE	
@ CONST. SR 161 NOISE WALL 11			
2216+00 2221+00	18	18	
2221+00 2226+00	19	19	
2226+00 2231+00	20	20	
2231+00 2236+00	21	21	
NOISE WALL 12			
2239+00 2244+00	22	22	
2244+00 2249+00	23	23	
NOISE WALL 15			
2286+00 2291+00	24	24	
2291+00 2296+00	25	25	
2296+00 2301+00	26	26	
2301+00 2306+00	27	27	
2306+00 2311+00	28	28	

BORING LOGS, SHEETS 29 - 66.

DRILLING - TG 10/23 - 12/05/2023  
 DRAWN - JAS, KSJ 01/18/2023  
 REVIEWED - DEK 01/18/2023

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 1 66  
 SHEET TOTAL  
 P.211 276



6350 Presidential Gateway, 9885 Rockside Road, 4480 Lake Forest Drive  
Columbus, OH 43231, Cleveland, OH 44125, Cincinnati, Ohio 45242  
Phone (614) 823-4949, Phone (216) 573-0955, Phone (513) 769-6998

**Unconfined Compressive Strength of Intact Rock Core Specimens**  
(ASTM D 7012-14)

Project: FRA-161-15.80  
Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

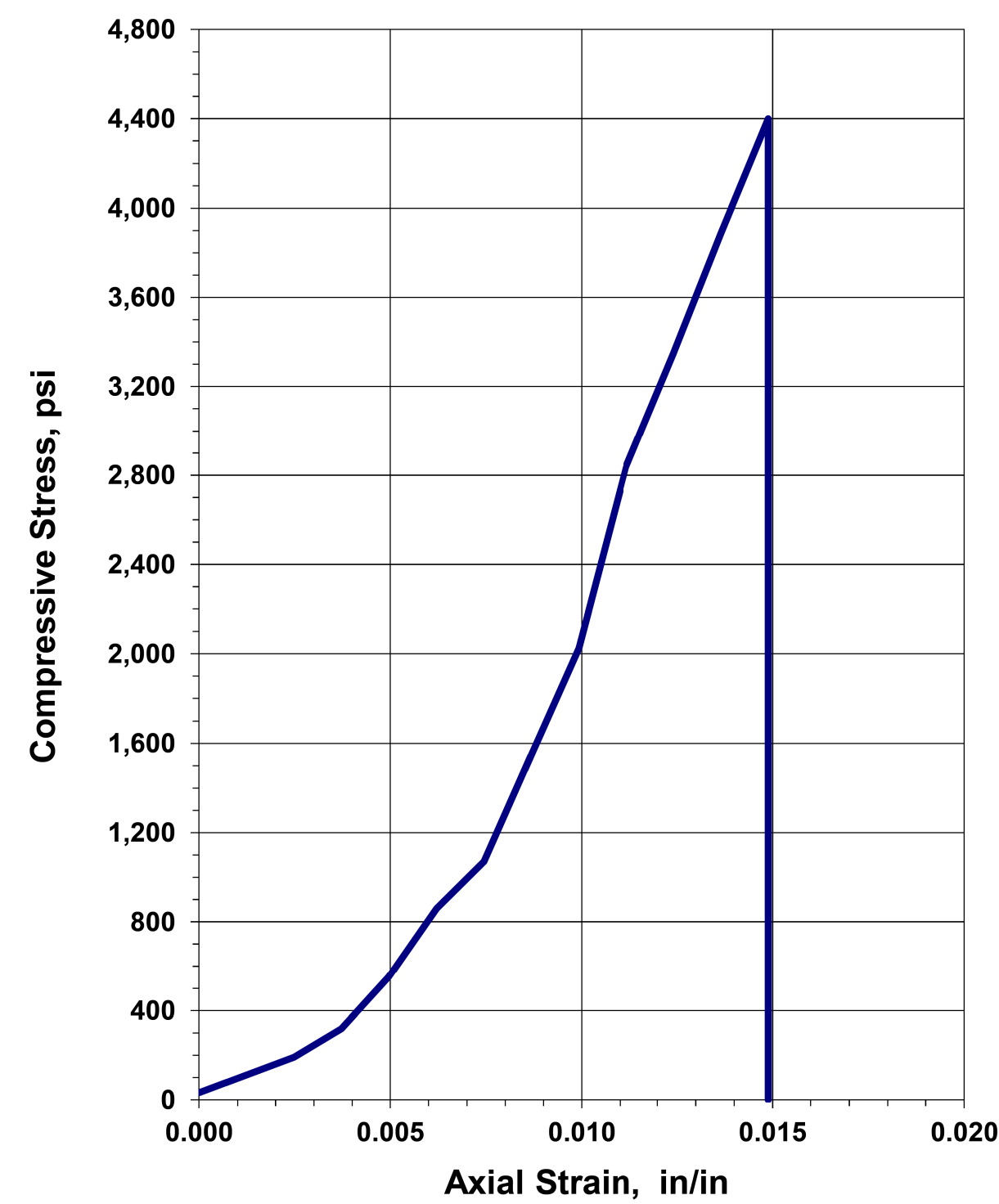
Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-001-0-23</u>	Average Length:	<u>4.030</u>	in
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.993</u>	in
Depth (ft):	<u>14.0'</u>	Length to diameter ratio:	<u>2.022</u>	
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.120</u>	in <sup>2</sup>
Sample Mass:	<u>470.86</u>	Volume:	<u>0.0073</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	Unit Weight (sample specimen)*:	<u>142.68</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>62.1</u>	Failure Load:	<u>13,727</u>	lbs
Testing Time:	<u>221</u>	Axial Strain at Failure:	<u>0.0149</u>	in/in
(Rate 2-15 min)		Compressive Strength:	<u>4,400</u>	psi

Sample Preparation: Per ASTM D4543

\*Actual test sample used for unit weight prior to testing.

**Unconfined Compression Test**



**Before Testing**



**After Failure**



REMARKS: \_\_\_\_\_



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(ASTM D 7012-14)

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Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

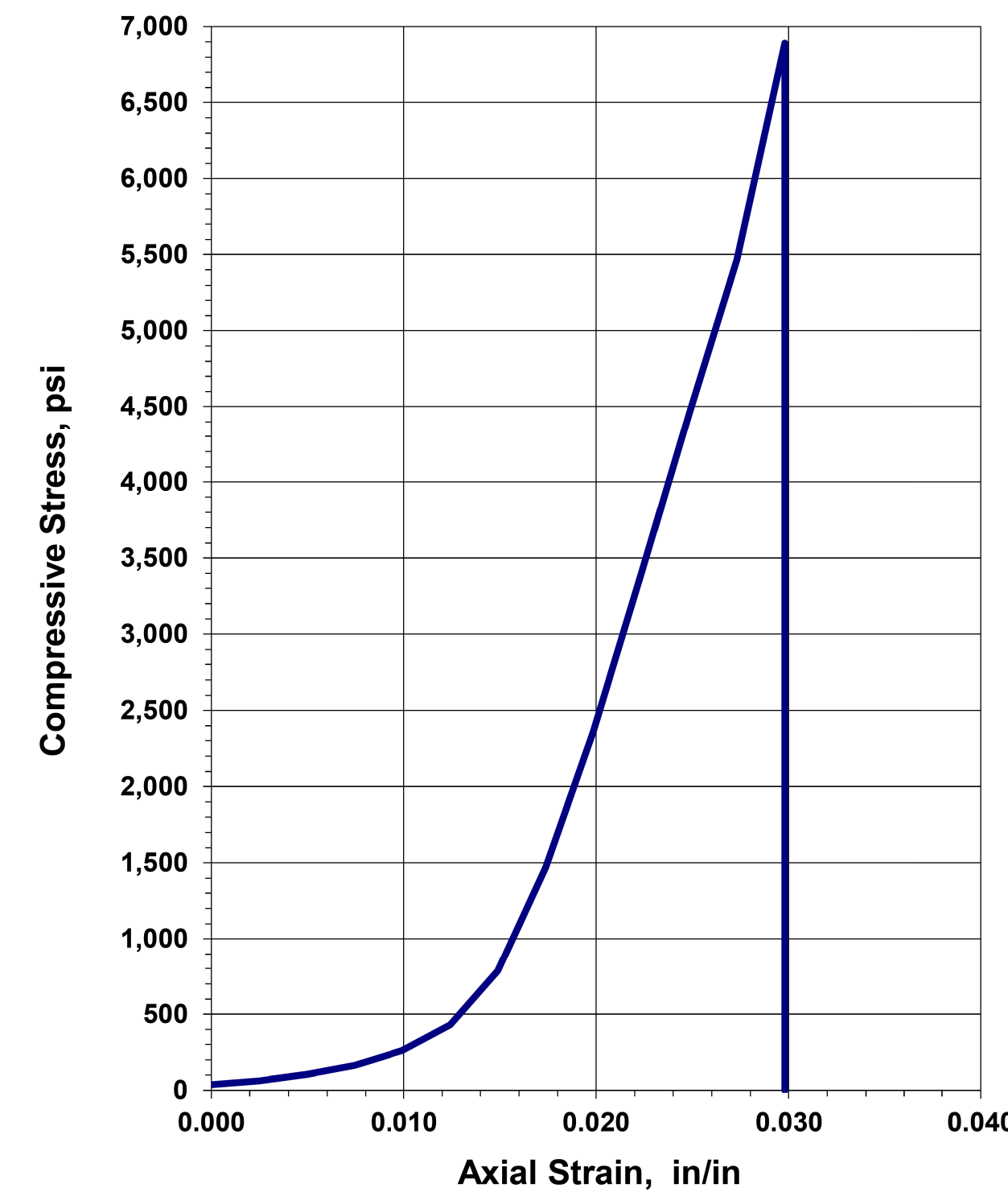
Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-003-0-23</u>	Average Length:	<u>4.028</u>	in
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.995</u>	in
Depth (ft):	<u>13.8'</u>	Length to diameter ratio:	<u>2.019</u>	
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.126</u>	in <sup>2</sup>
Sample Mass:	<u>480.55</u>	Volume:	<u>0.0073</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	Unit Weight (sample specimen)*:	<u>145.39</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>75.1</u>	Failure Load:	<u>21,542</u>	lbs
Testing Time:	<u>287</u>	Axial Strain at Failure:	<u>0.0298</u>	in/in
(Rate 2-15 min)		Compressive Strength:	<u>6,891</u>	psi

Sample Preparation: Per ASTM D4543

\*Actual test sample used for unit weight prior to testing.

**Unconfined Compression Test**



**Before Testing**



**After Failure**



REMARKS: \_\_\_\_\_



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### Unconfined Compressive Strength of Intact Rock Core Specimens (ASTM D 7012-14)

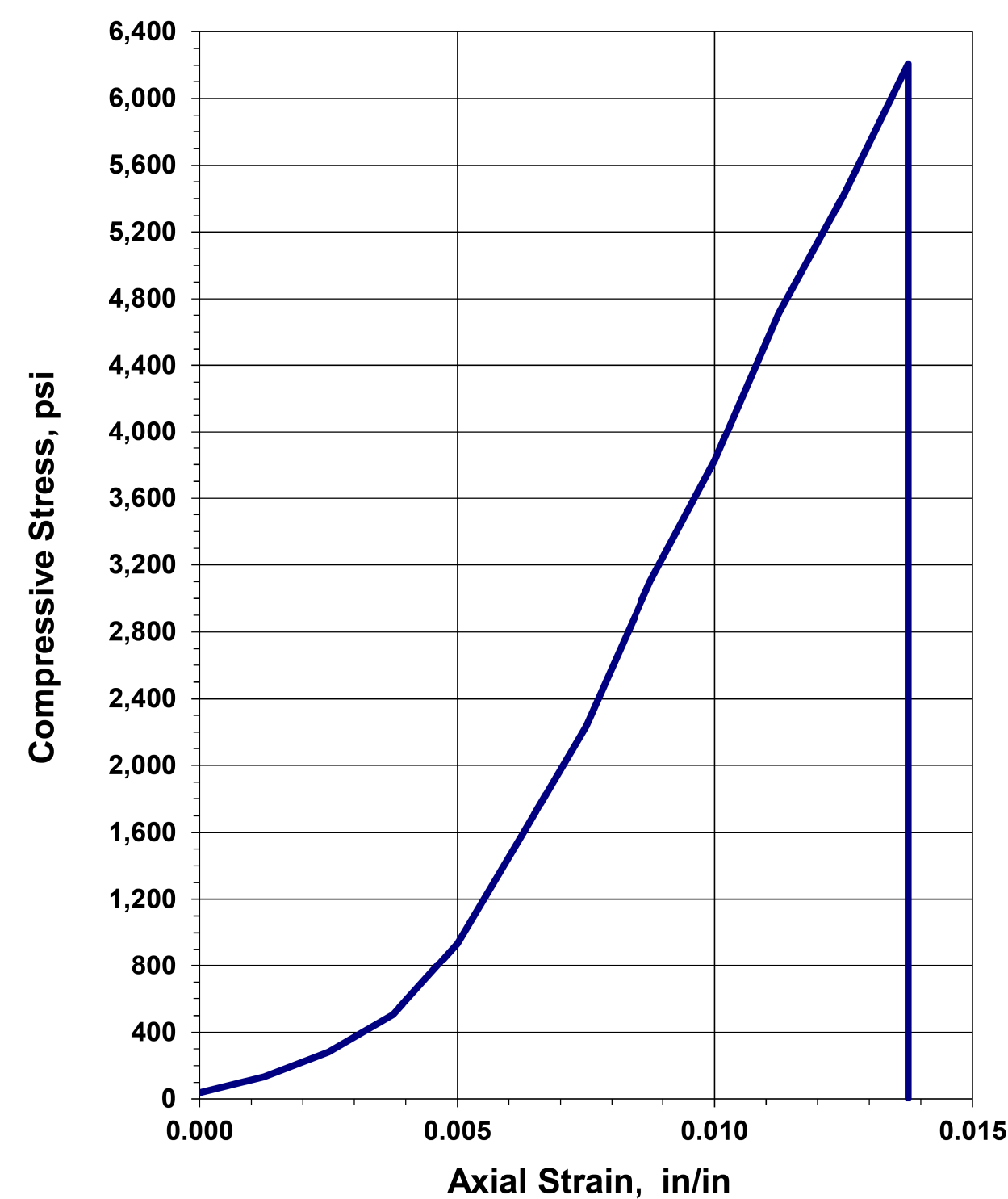
Project: FRA-161-15.80  
Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-043-0-23</u>	Average Length:	<u>4.000</u>	in
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.988</u>	in
Depth (ft):	<u>21.00</u>	Length to diameter ratio:	<u>2.012</u>	
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.104</u>	in <sup>2</sup>
Sample Mass:	<u>460.53</u>	Volume:	<u>0.0072</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	Unit Weight (sample specimen)*:	<u>141.30</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>87.2</u>	Failure Load:	<u>19,269</u>	lbs
Testing Time:	<u>221</u>	Axial Strain at Failure:	<u>0.0138</u>	in/in
(Rate 2-15 min)		Compressive Strength:	<u>6,208</u>	psi

Sample Preparation: Per ASTM D4543 \*Actual test sample used for unit weight prior to testing.

Unconfined Compression Test



Before Testing



After Failure



REMARKS: \_\_\_\_\_



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### Unconfined Compressive Strength of Intact Rock Core Specimens (ASTM D 7012-14)

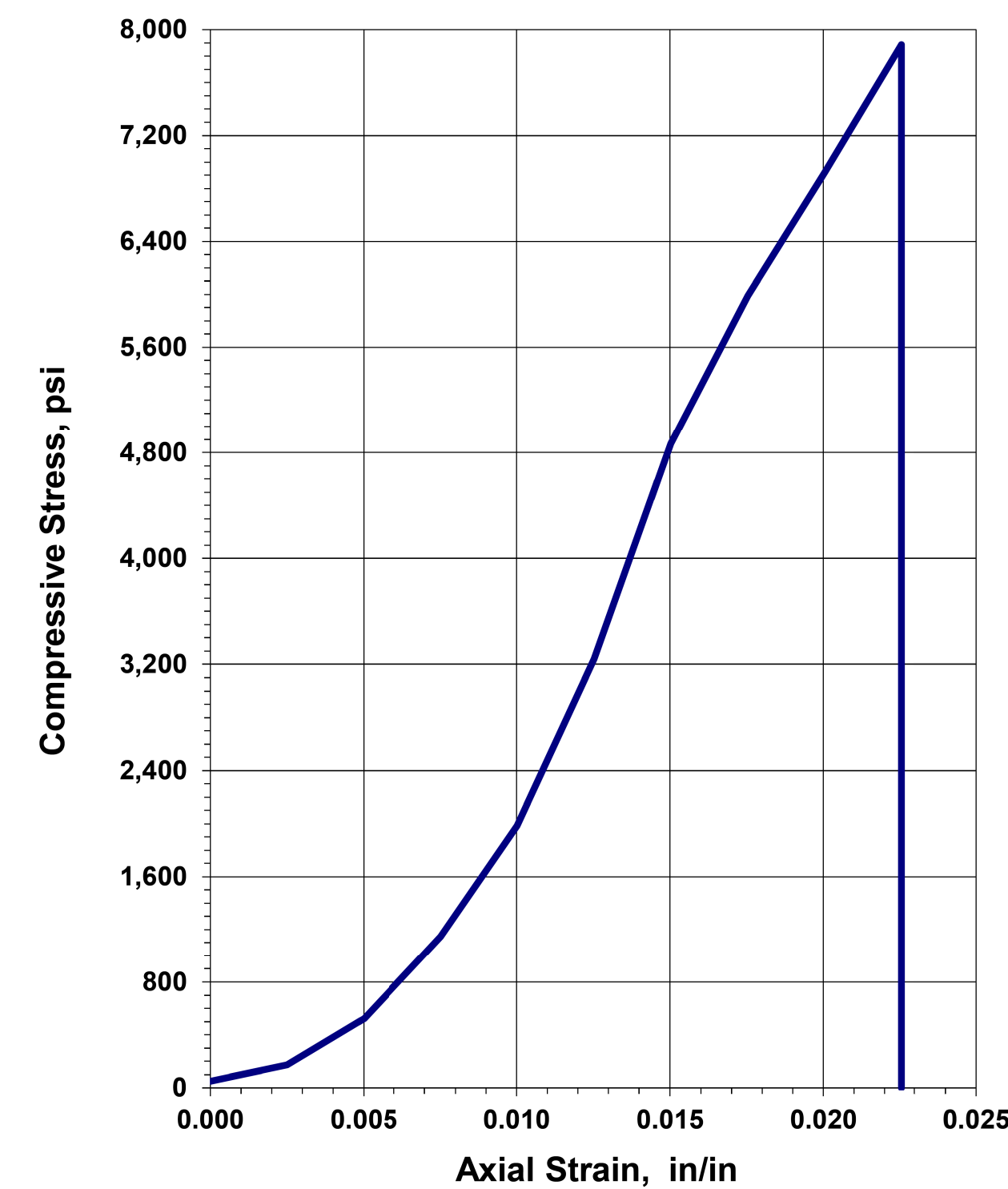
Project: FRA-161-15.80  
Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-046-0-23</u>	Average Length:	<u>3.992</u>	in
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.995</u>	in
Depth (ft):	<u>22.0'</u>	Length to diameter ratio:	<u>2.001</u>	
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.126</u>	in <sup>2</sup>
Sample Mass:	<u>519.17</u>	Volume:	<u>0.0072</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	Unit Weight (sample specimen)*:	<u>158.49</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>101.9</u>	Failure Load:	<u>24,655</u>	lbs
Testing Time:	<u>242</u>	Axial Strain at Failure:	<u>0.0225</u>	in/in
(Rate 2-15 min)		Compressive Strength:	<u>7,887</u>	psi

Sample Preparation: Per ASTM D4543 \*Actual test sample used for unit weight prior to testing.

Unconfined Compression Test



Before Testing



After Failure



REMARKS: \_\_\_\_\_



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Engineering Consultants

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**Unconfined Compressive Strength  
of Intact Rock Core Specimens**  
(ASTM D 7012-14)

Project: FRA-161-15.80  
Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

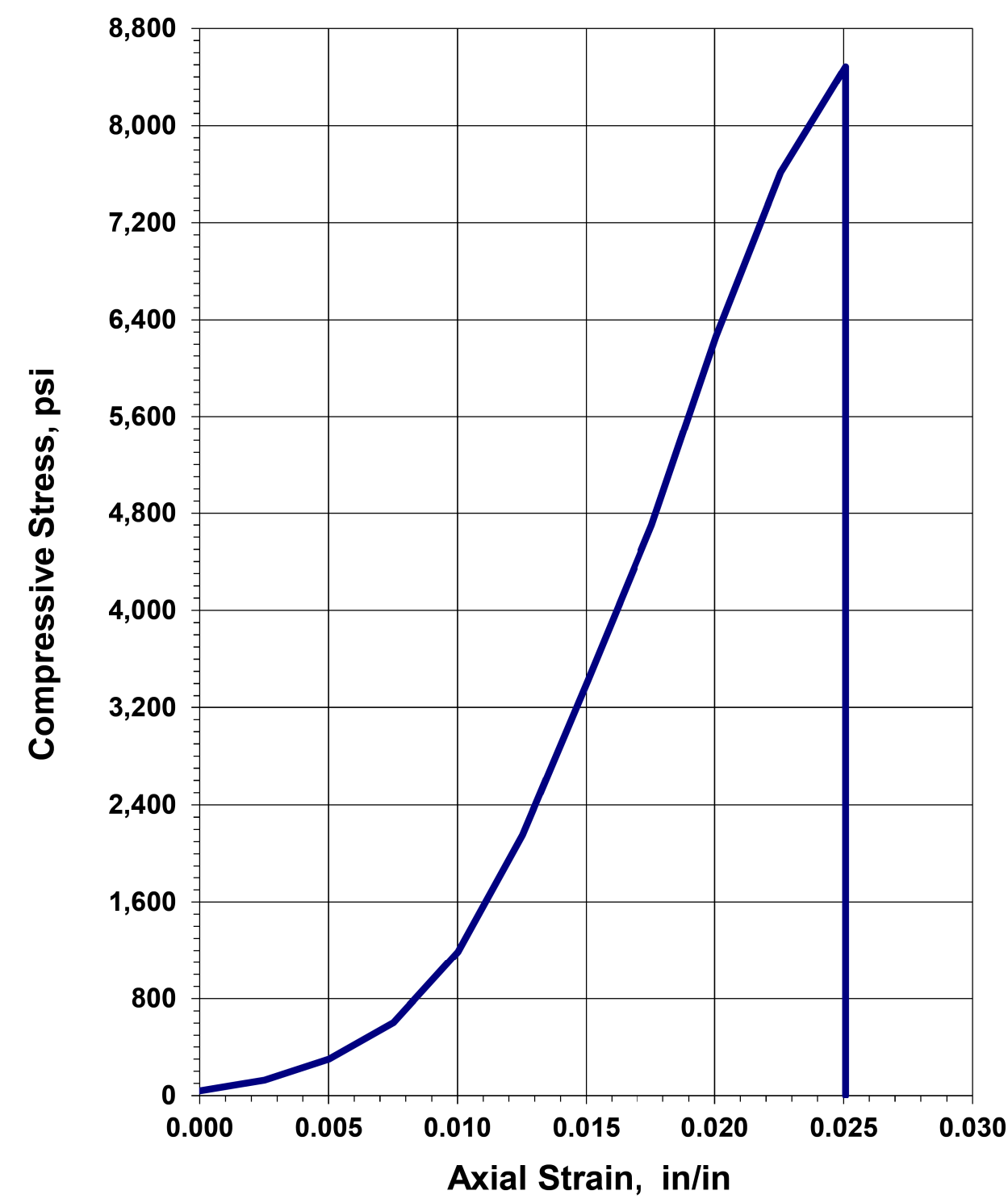
Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-050-0-23</u>	Average Length:	<u>3.988</u>	in	
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.985</u>	in	
Depth (ft):	<u>21.0'</u> feet	Length to diameter ratio:	<u>2.009</u>		
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.095</u>	in <sup>2</sup>	
Sample Mass:	<u>455.36</u>	grams	Volume:	<u>0.0071</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	°C	Unit Weight (sample specimen)*:	<u>140.56</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>108.5</u>	lbs/sec	Failure Load:	<u>26,255</u>	lbs
Testing Time:	<u>242</u>	sec	Axial Strain at Failure:	<u>0.0251</u>	in/in
(Rate 2-15 min)			Compressive Strength:	<u>8,484</u>	psi

Sample Preparation: Per ASTM D4543

\*Actual test sample used for unit weight prior to testing.

**Unconfined Compression Test**



**Before Testing**



**After Failure**



REMARKS: \_\_\_\_\_



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**Unconfined Compressive Strength  
of Intact Rock Core Specimens**  
(ASTM D 7012-14)

Project: FRA-161-15.80  
Project No.: W-23-107  
Date of Testing: 1/8/2024  
Test Performed by: KL/EM

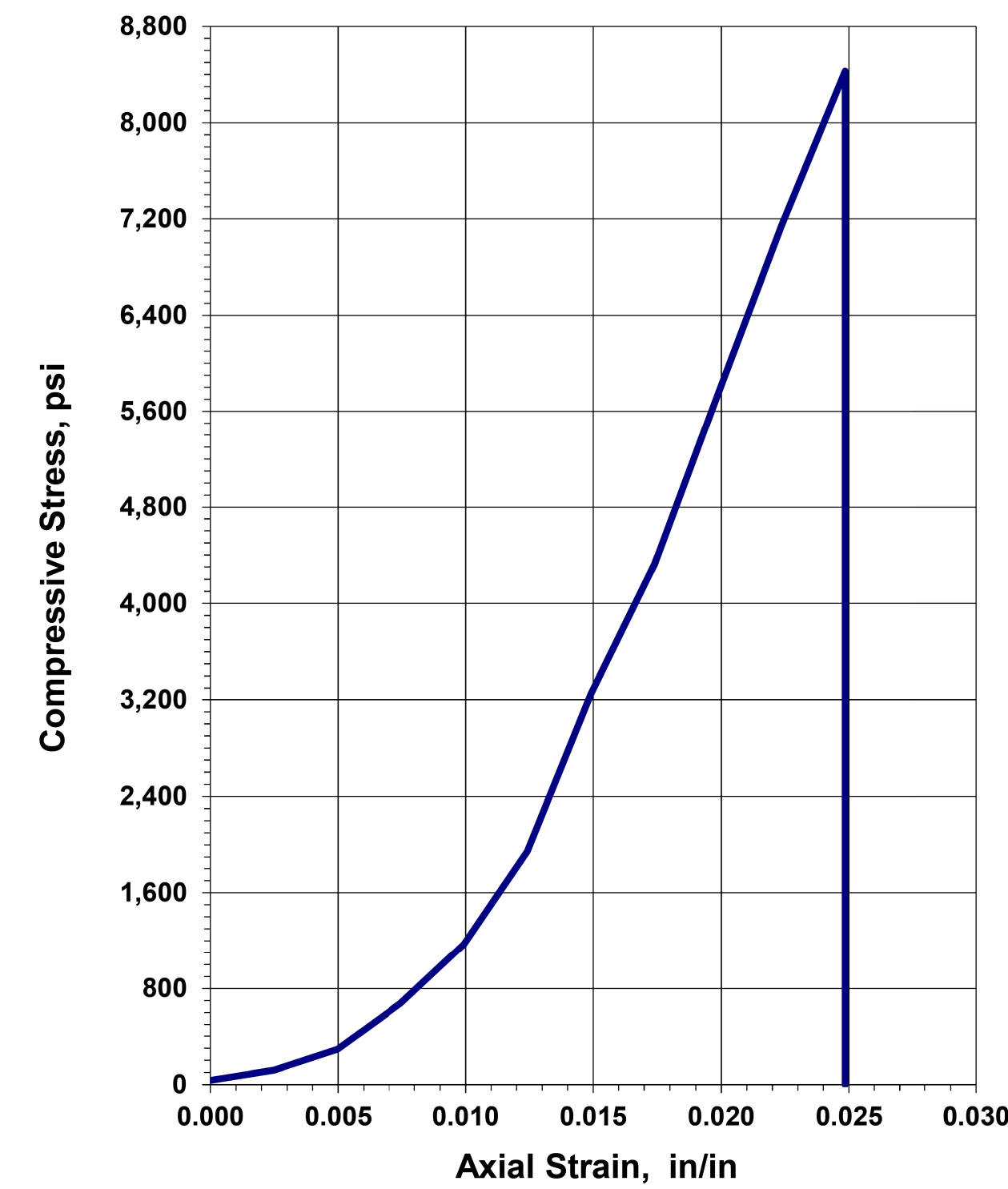
Rock Description: Gray Sandstone  
Rock Formation: \_\_\_\_\_

Boring No.:	<u>B-052-0-23</u>	Average Length:	<u>4.024</u>	in	
Sample No.:	<u>RC-2</u>	Average Diameter:	<u>1.993</u>	in	
Depth (ft):	<u>21.20</u>	feet	Length to diameter ratio:	<u>2.019</u>	
Moisture condition:	<u>As received</u>	Cross Sectional Area:	<u>3.120</u>	in <sup>2</sup>	
Sample Mass:	<u>505.98</u>	grams	Volume:	<u>0.0073</u>	ft <sup>3</sup>
Testing Temperature:	<u>23</u>	°C	Unit Weight (sample specimen)*:	<u>153.55</u>	lbs/ft <sup>3</sup>
Rate of Loading:	<u>112.4</u>	lbs/sec	Failure Load:	<u>26,295</u>	lbs
Testing Time:	<u>234</u>	sec	Axial Strain at Failure:	<u>0.0249</u>	in/in
(Rate 2-15 min)			Compressive Strength:	<u>8,429</u>	psi

Sample Preparation: Per ASTM D4543

\*Actual test sample used for unit weight prior to testing.

**Unconfined Compression Test**



**Before Testing**



**After Failure**



REMARKS: \_\_\_\_\_



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4480 Lake Forest Drive  
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**Point Load Strength Index  
 of Rock Specimens**  
 (ASTM D 5731-08)

Project: FRA-161-15.80  
 Project No.: W-23-107  
 Date of Testing: 1/8/2024  
 Test Performed by: EMIKL

Rock Description: Gray Shale

Boring No.: B-23-0-23  
 Station / Offset: RC-3  
 Sample No. / Depth: 21.5'-23.5'

Test Apparatus: Forney-LA 0080  
 Serial Number: A125/AZ/0014  
 Date of Calibration: 4/25/2023

Sample No.	Test Type	Depth (ft)	Width (mm)	Diameter (mm)	Load (N)	D <sub>e</sub> <sup>2</sup> (mm <sup>2</sup> )	D <sub>e</sub> (mm)	F	Is (MPa)	Is <sub>(50)</sub> (MPa)	σ <sub>c</sub> (MPa)
1	a ⊥	21.5-23.5	49.7	21.1	503	1,336	36.5	0.87	0.38	0.33	4.52
2	a ⊥	21.5-23.5	49.6	25.8	783	1,631	40.4	0.91	0.48	0.44	5.76
3	a ⊥	21.5-23.5	49.7	23.1	525	1,463	38.3	0.89	0.36	0.32	4.31
4	a ⊥	21.5-23.5	49.7	28.5	814	1,802	42.5	0.93	0.45	0.42	5.42
5	a ⊥	21.5-23.5	49.7	30.0	854	1,895	43.5	0.94	0.45	0.42	5.41
6	a ⊥	21.5-23.5	49.7	25.1	916	1,589	39.9	0.90	0.58	0.52	6.92
7	a ⊥	21.5-23.5	49.7	24.6	816	1,555	39.4	0.90	0.52	0.47	6.30
8	a ⊥	21.5-23.5	49.7	22.6	798	1,429	37.8	0.88	0.56	0.49	6.70
9	a ⊥	21.5-23.5	49.7	21.5	789	1,361	36.9	0.87	0.58	0.51	6.96
10	a ⊥	21.5-23.5	49.7	22.5	801	1,427	37.8	0.88	0.56	0.49	6.73

**STATISTICS**

Mean Is <sub>(50)</sub> ⊥	0.44 MPa (64 psi)
Mean Is <sub>(50)</sub>	
Ia <sub>(50)</sub>	

**Specific Specimen Shape:**

- d = diametrical
- a = axial
- b = block
- i = irregular lump
- ⊥ = perpendicular to bedding plane
- || = parallel to bedding plane

**Estimated Uniaxial Compression, σ<sub>c</sub> = K\*Is**

K = 12  
 Mean σ<sub>c</sub> = 5.90 MPa (0.856 psi)

\*Per Section 206.1.3 of 2011 ODOT Rock Slope Design Guide

Remarks:

1



**RESOURCE INTERNATIONAL, INC.**  
 Engineering Consultants

6350 Presidential Gateway.  
 Columbus, OH 43231  
 Phone (614) 823-4949

9885 Rockside Road  
 Cleveland, OH 44125  
 Phone (216) 573-0955

4480 Lake Forest Drive  
 Cincinnati, Ohio 45242  
 Phone (513) 769-6998

**Point Load Strength Index  
 of Rock Specimens**  
 (ASTM D 5731-08)

Project: FRA-161-15.80  
 Project No.: W-23-107  
 Date of Testing: 1/8/2024  
 Test Performed by: EMIKL

Rock Description: Gray Shale

Boring No.: B-39-0-23  
 Station / Offset: RC-2  
 Sample No. / Depth: 15.0-20.0

Test Apparatus: Forney-LA 0080  
 Serial Number: A125/AZ/0014  
 Date of Calibration: 4/25/2023

Sample No.	Test Type	Depth (ft)	Width (mm)	Diameter (mm)	Load (N)	D <sub>e</sub> <sup>2</sup> (mm <sup>2</sup> )	D <sub>e</sub> (mm)	F	Is (MPa)	Is <sub>(50)</sub> (MPa)	σ <sub>c</sub> (MPa)
1	a ⊥	17.5-18.5	49.9	21.7	50	1,381	37.2	0.88	0.04	0.03	0.43
2	a ⊥	17.5-18.5	49.5	24.4	45	1,539	39.2	0.90	0.03	0.03	0.35
3	a ⊥	17.5-18.5	50.5	20.4	40	1,309	36.2	0.86	0.03	0.03	0.37
4	a ⊥	17.5-18.5	50.6	23.9	48	1,538	39.2	0.90	0.03	0.03	0.37
5	a ⊥	17.5-18.5	50.6	22.3	49	1,440	38.0	0.88	0.03	0.03	0.41
6	a ⊥	17.5-18.5	50.6	21.1	49	1,362	36.9	0.87	0.04	0.03	0.43
7	a ⊥	17.5-18.5	50.6	22.6	53	1,455	38.1	0.89	0.04	0.03	0.44
8	a ⊥	17.5-18.5	50.6	22.6	48	1,456	38.2	0.89	0.03	0.03	0.40
9	a ⊥	17.5-18.5	50.6	35.0	51	2,255	47.5	0.98	0.02	0.02	0.27
10	a ⊥	17.5-18.5	50.6	22.2	52	1,429	37.8	0.88	0.04	0.03	0.44

**STATISTICS**

Mean Is <sub>(50)</sub> ⊥	0.03 MPa (4 psi)
Mean Is <sub>(50)</sub>	
Ia <sub>(50)</sub>	

**Specific Specimen Shape:**

- d = diametrical
- a = axial
- b = block
- i = irregular lump
- ⊥ = perpendicular to bedding plane
- || = parallel to bedding plane

**Estimated Uniaxial Compression, σ<sub>c</sub> = K\*Is**

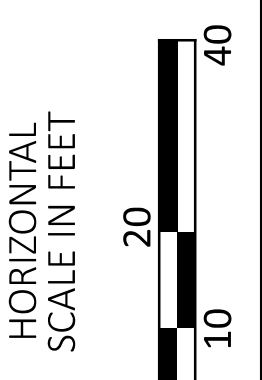
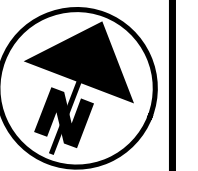
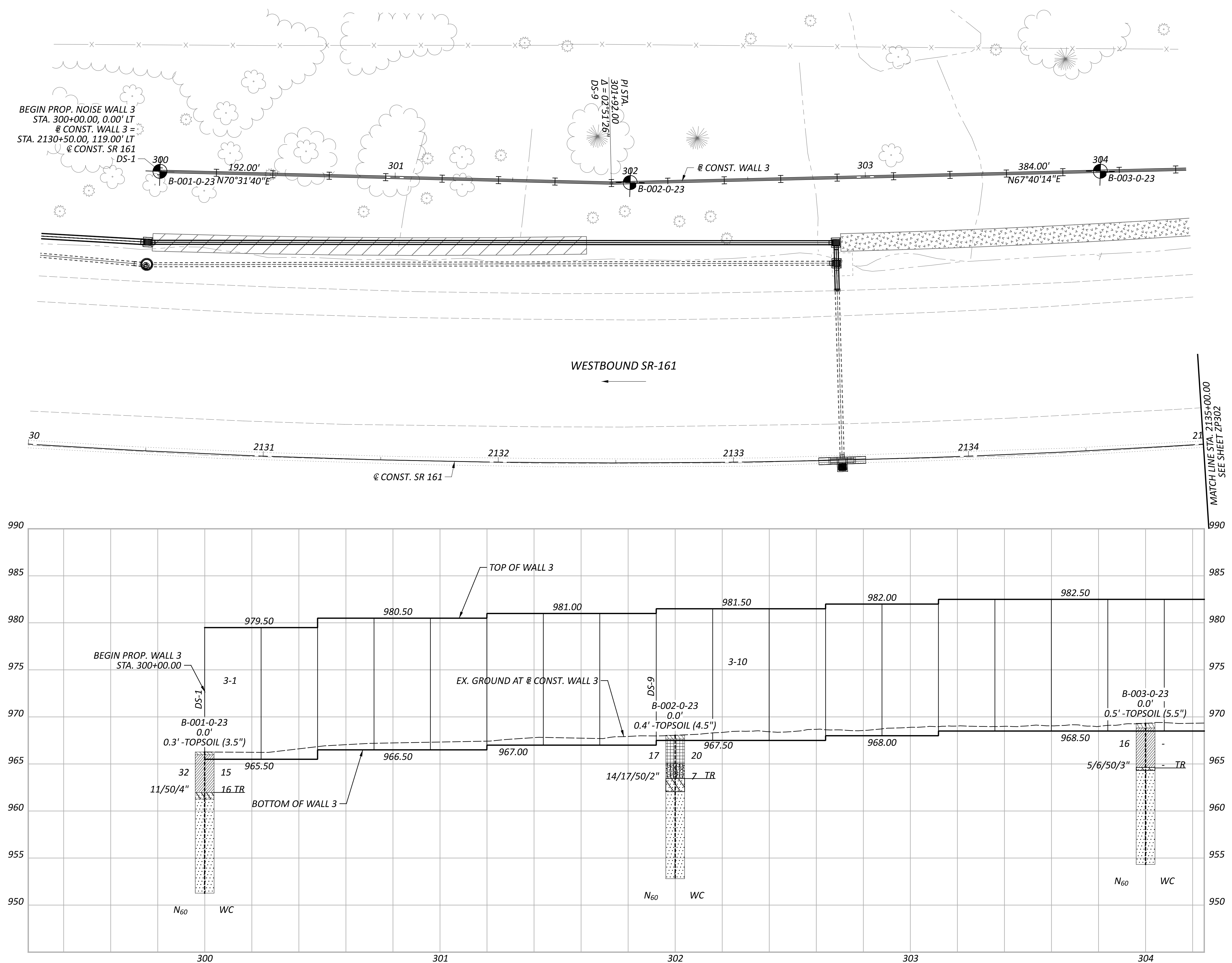
K = 12  
 Mean σ<sub>c</sub> = 0.39 MPa (0.057 psi)

\*Per Section 206.1.3 of 2011 ODOT Rock Slope Design Guide

Remarks:

**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 3 - Plan 2 PAPER: 34x22 (in.) DATE: 1/19/2024 TIME: 10:06:46 AM USER: kevinj  
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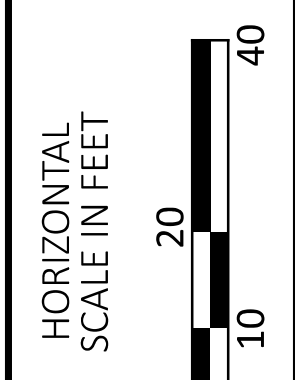
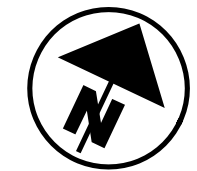
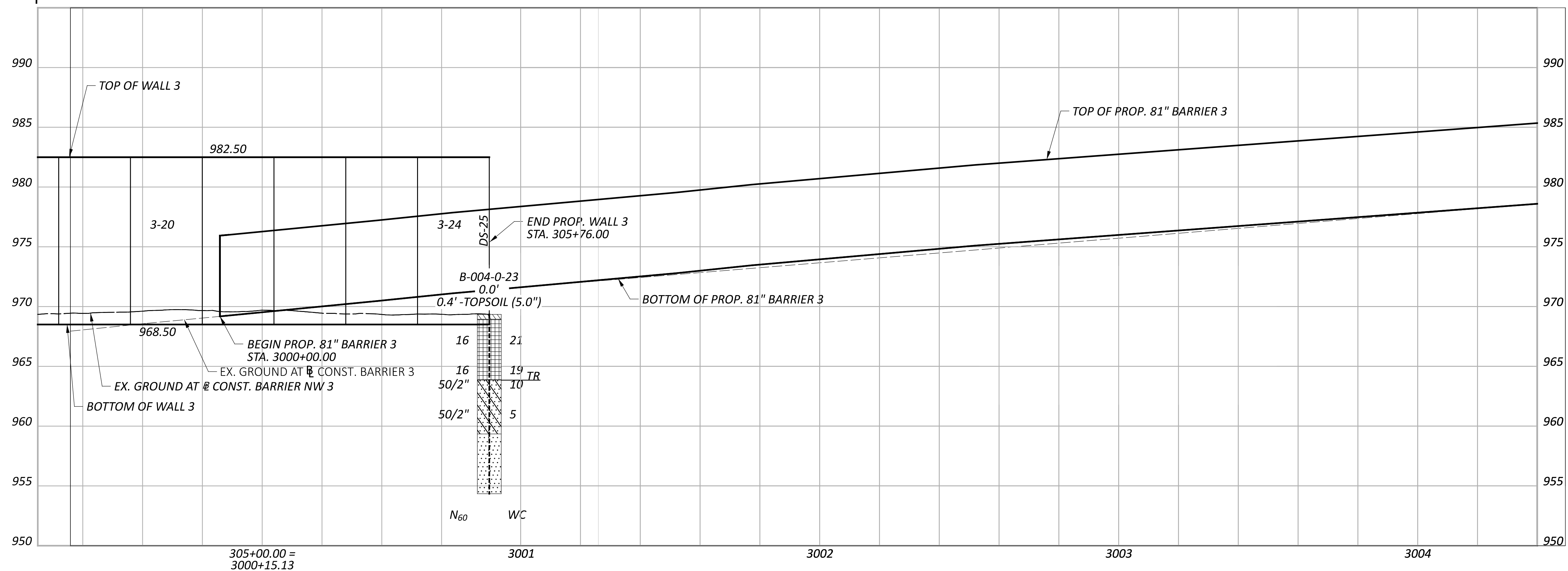
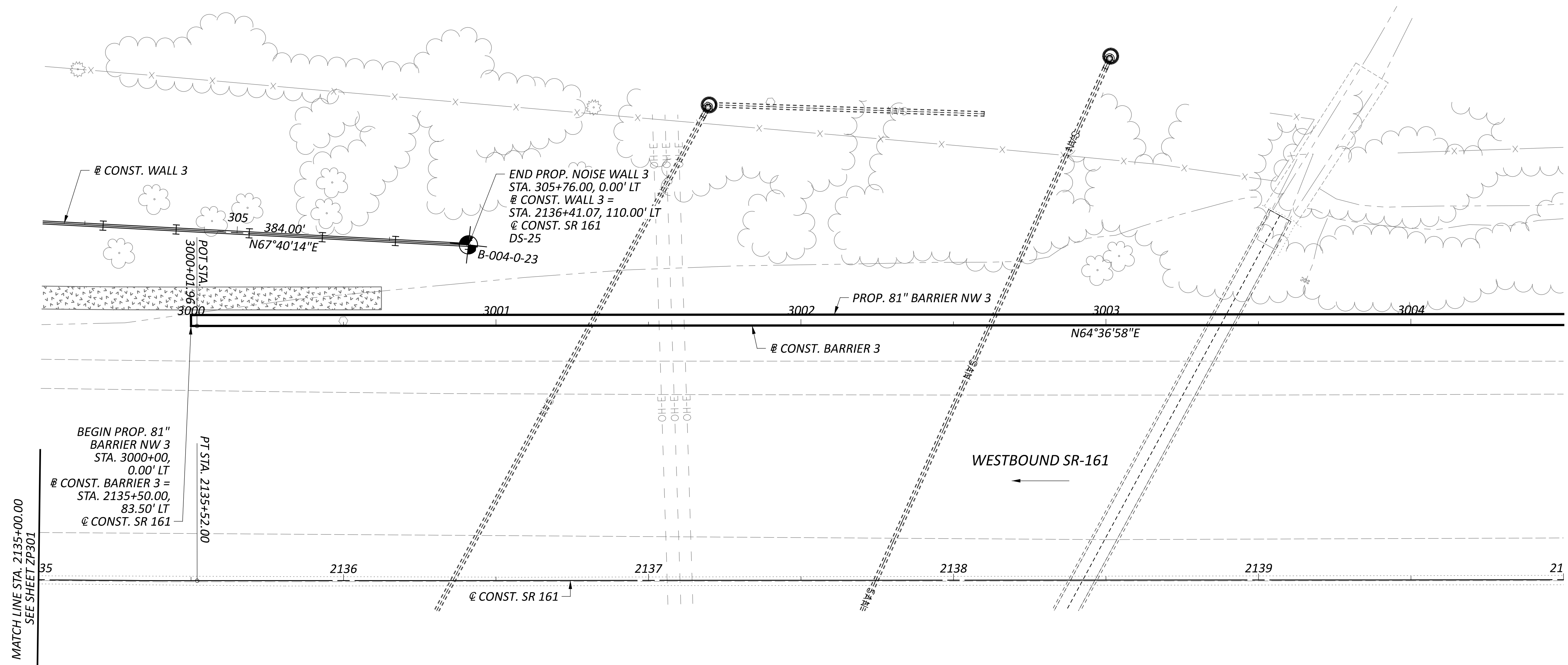


**GEOTECHNICAL PROFILE - NOISE WALL 3  
 STA. 2130+00.00 TO STA. 2135+00.00**

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
6	66
SHEET	TOTAL
P.216	276

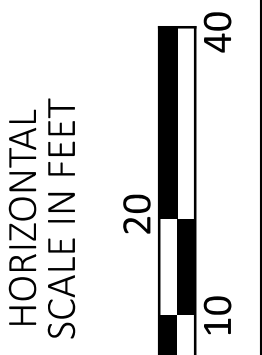
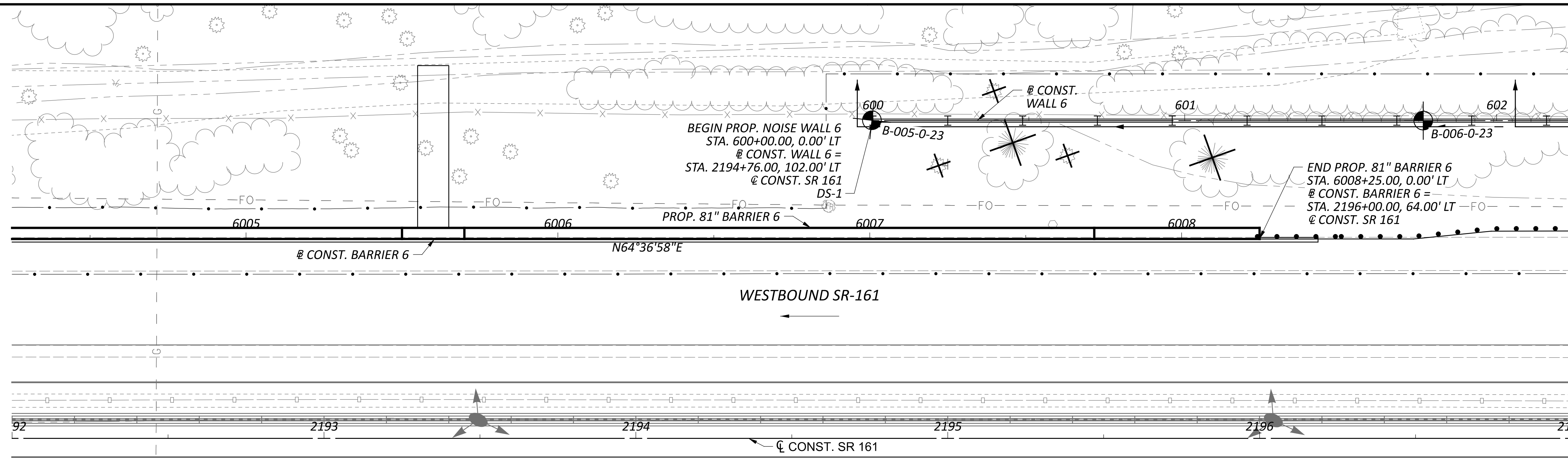
**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 3 - Plan 3 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:07:28 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP302.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 3  
 STA. 2135+00.00 TO STA. 2140+00.00**

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
7	66
SHEET	TOTAL
P.217	276



**GEOTECHNICAL PROFILE - NOISE WALL 6**  
 STA. 2192+00.00 TO STA. 2197+00.00

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

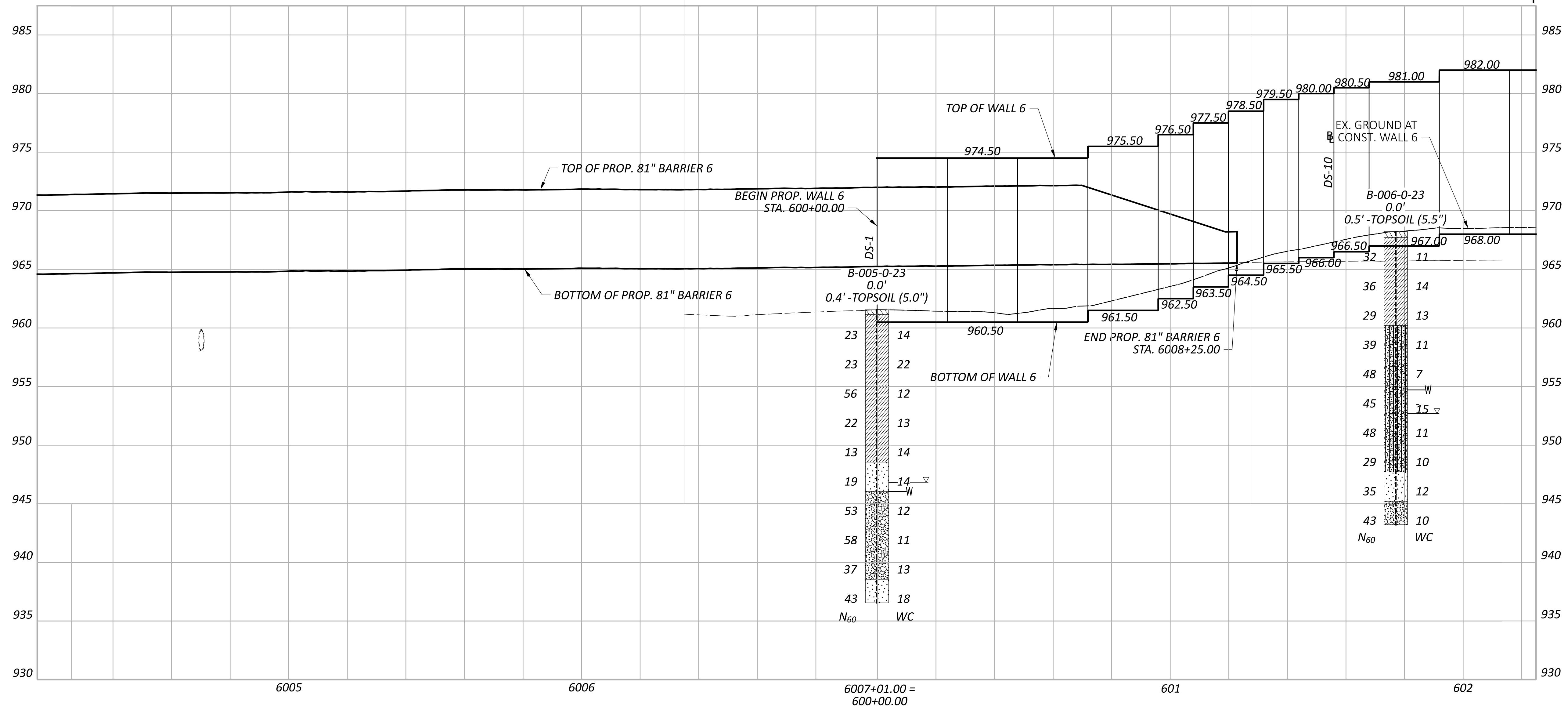
DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

SUBSET TOTAL  
 8 66

SHEET TOTAL  
 P.218 276

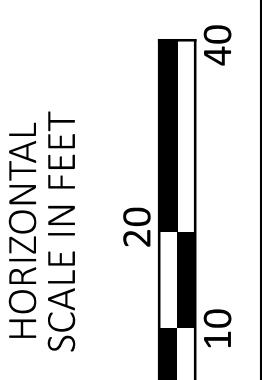
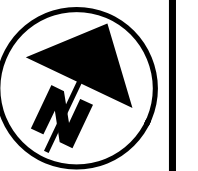
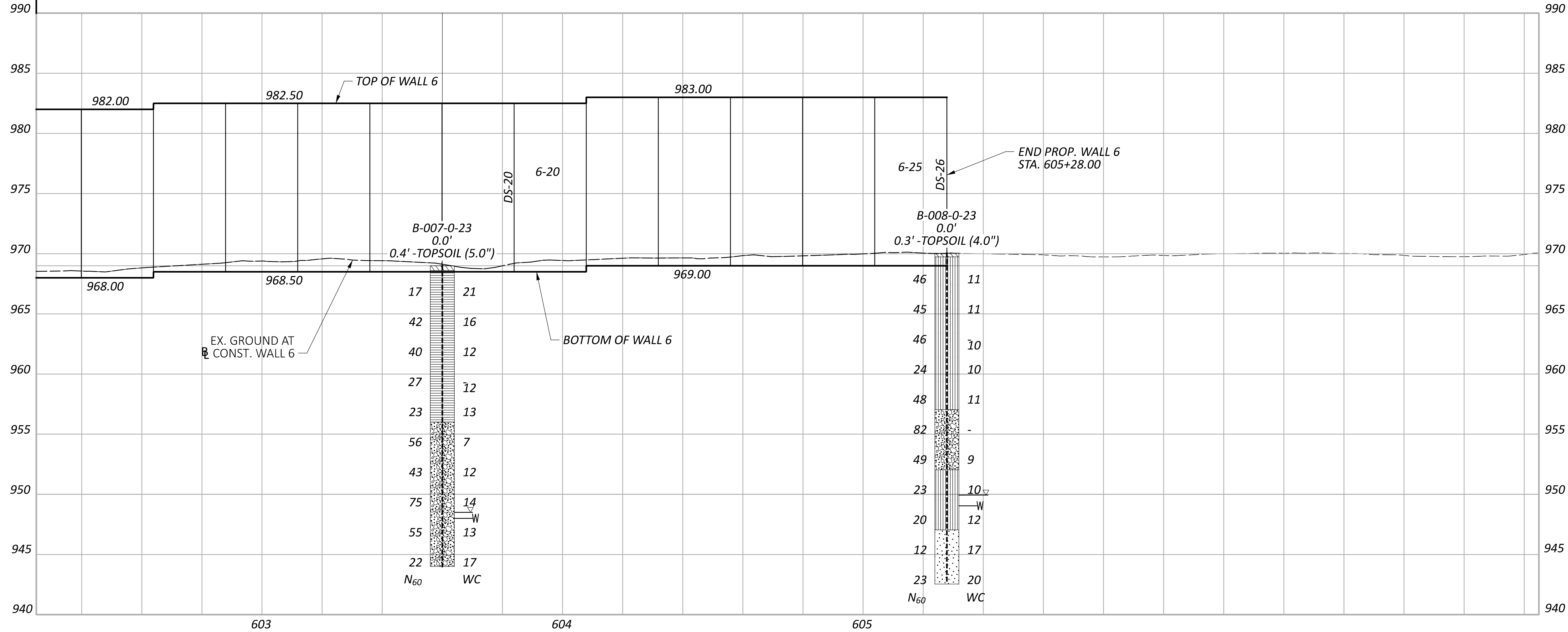
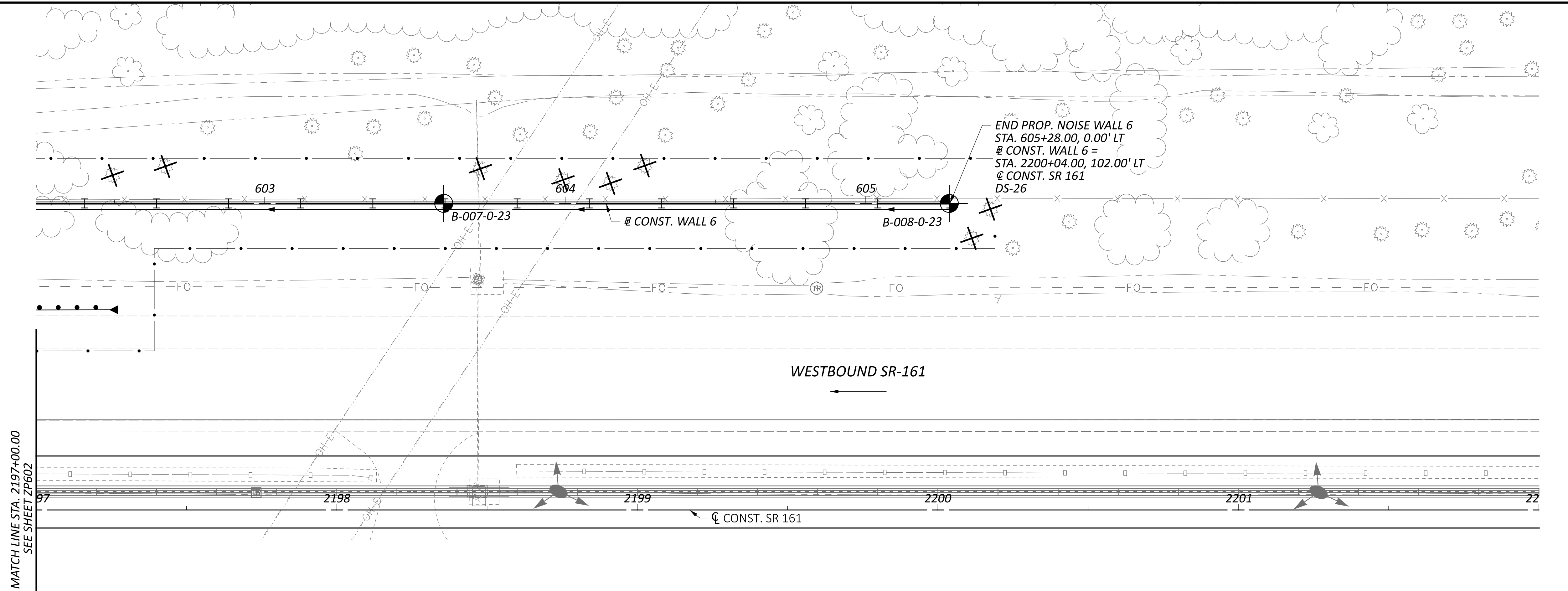


MATCH LINE STA. 2197+00.00  
 SEE SHEET ZP603



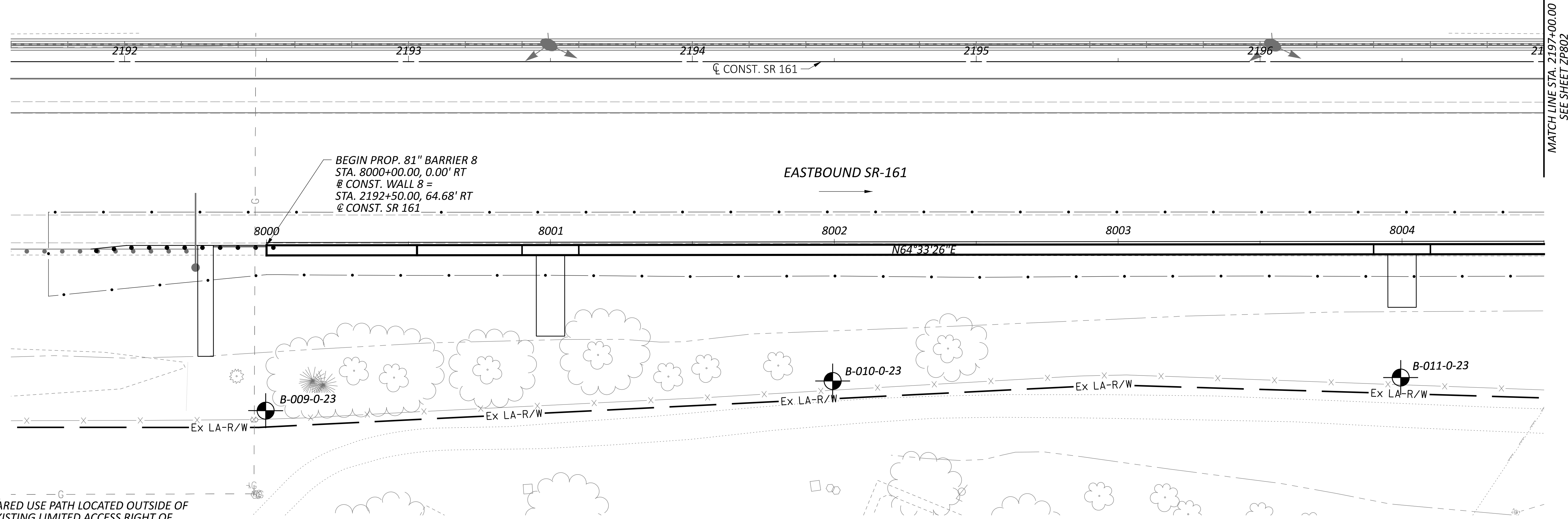
**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 6 - Plan 28 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:07:52 AM USER: kevinj  
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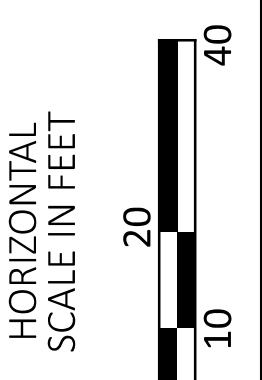
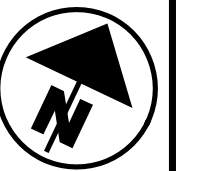
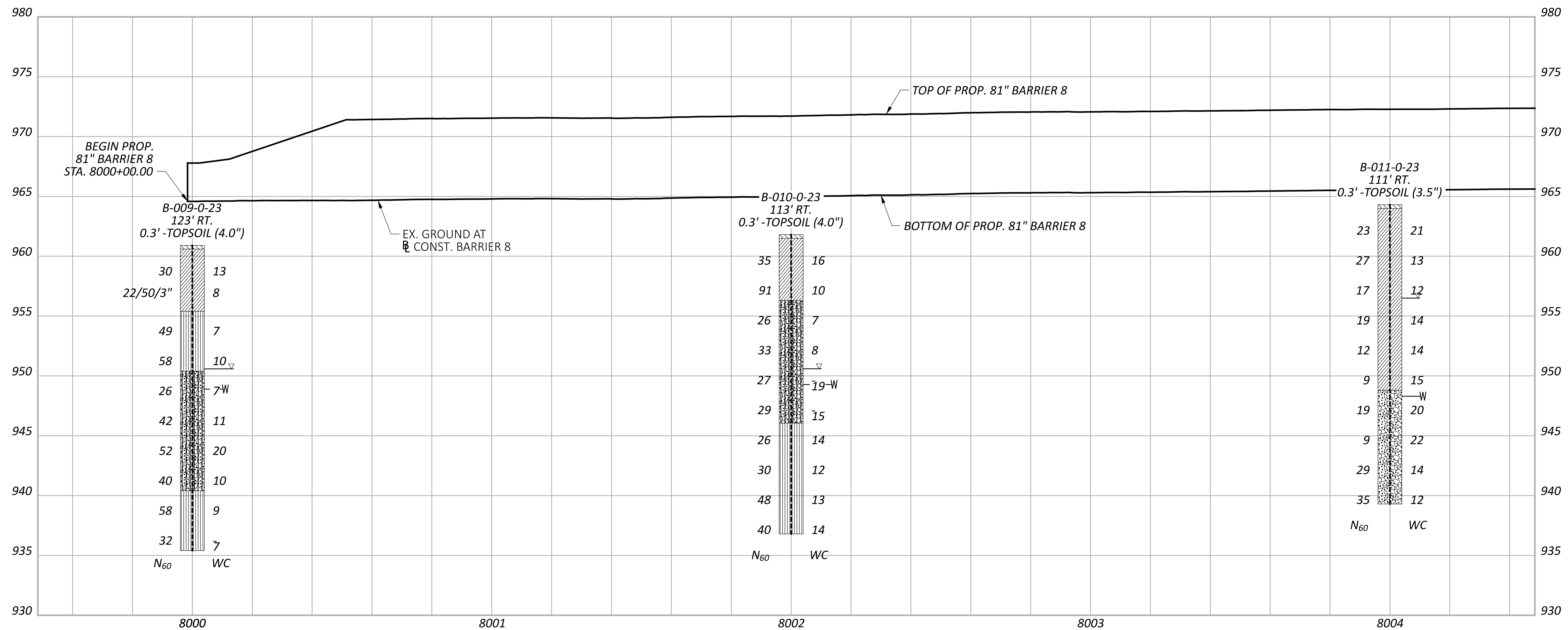


**GEOTECHNICAL PROFILE - NOISE WALL 6  
 STA. 2197+00.00 TO STA. 2202+00.00**

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
9	66
SHEET	TOTAL
P.219	276



**NOTES**  
 1.) SHARED USE PATH LOCATED OUTSIDE OF THE EXISTING LIMITED ACCESS RIGHT OF WAY OF SR-161 SHALL NOT BE USED FOR CONTRACTOR ACCESS.



**GEOTECHNICAL PROFILE - NOISE WALL 8**  
 STA. 2192+00.00 TO STA. 2197+00.00

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

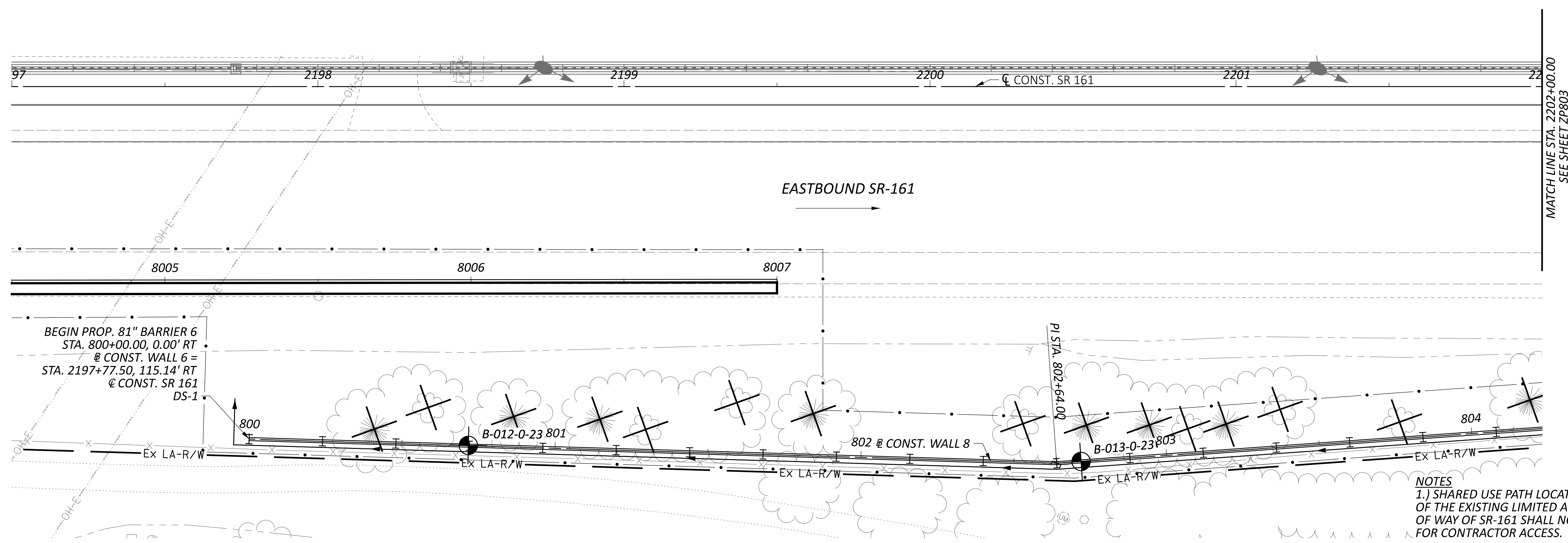
DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

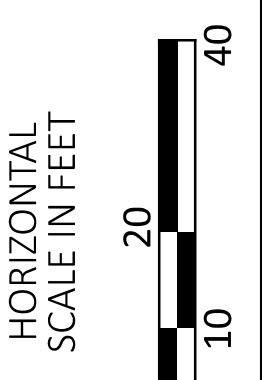
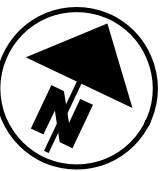
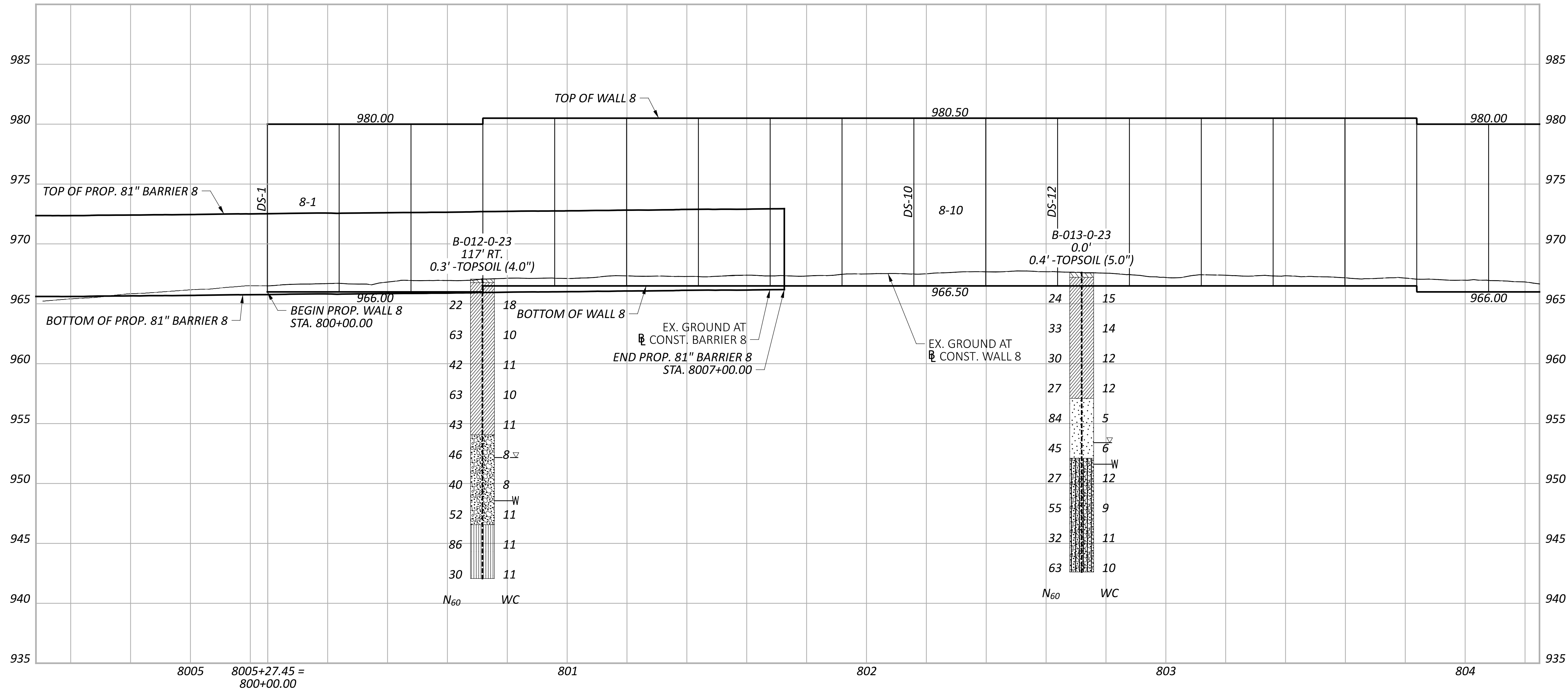
PROJECT ID  
 117607

SUBSET	TOTAL
10	66

SHEET	TOTAL
P.220	276



NOTES  
 1.) SHARED USE PATH LOCATED OUTSIDE OF THE EXISTING LIMITED ACCESS RIGHT OF WAY OF SR-161 SHALL NOT BE USED FOR CONTRACTOR ACCESS.



GEOTECHNICAL PROFILE - NOISE WALL 8  
 STA. 2197+00.00 TO STA. 2202+00.00

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

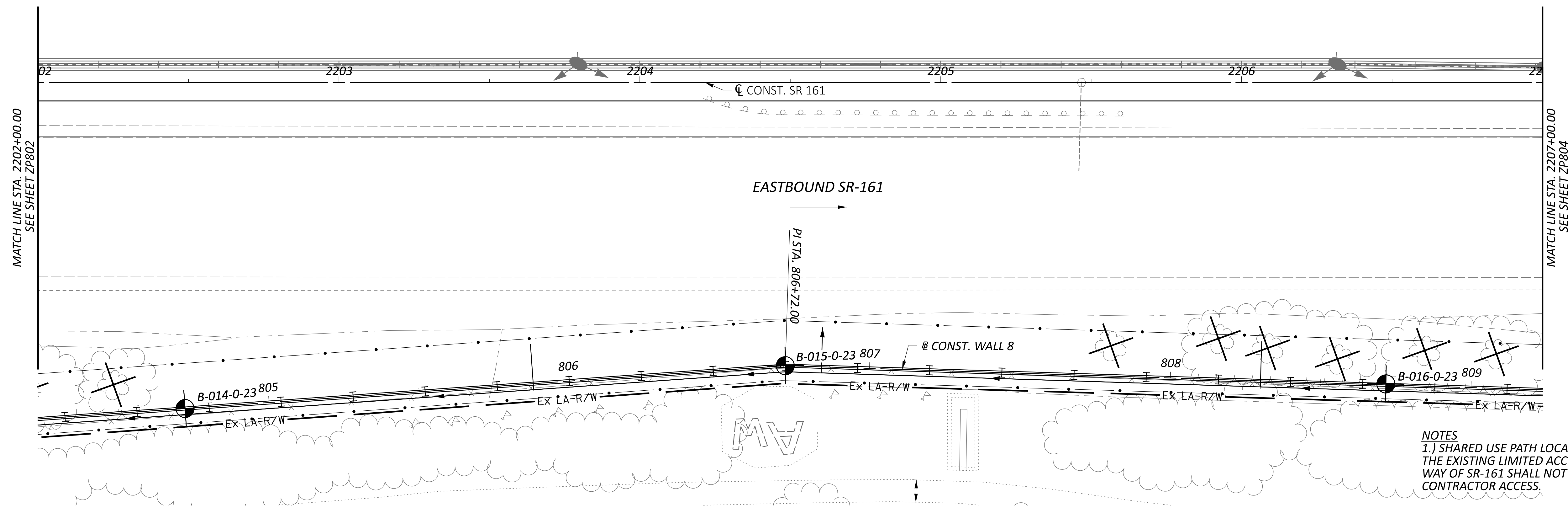
PROJECT ID  
 117607

SUBSET	TOTAL
11	66

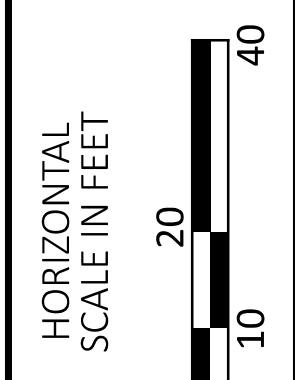
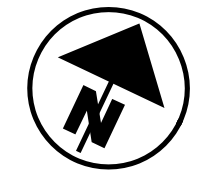
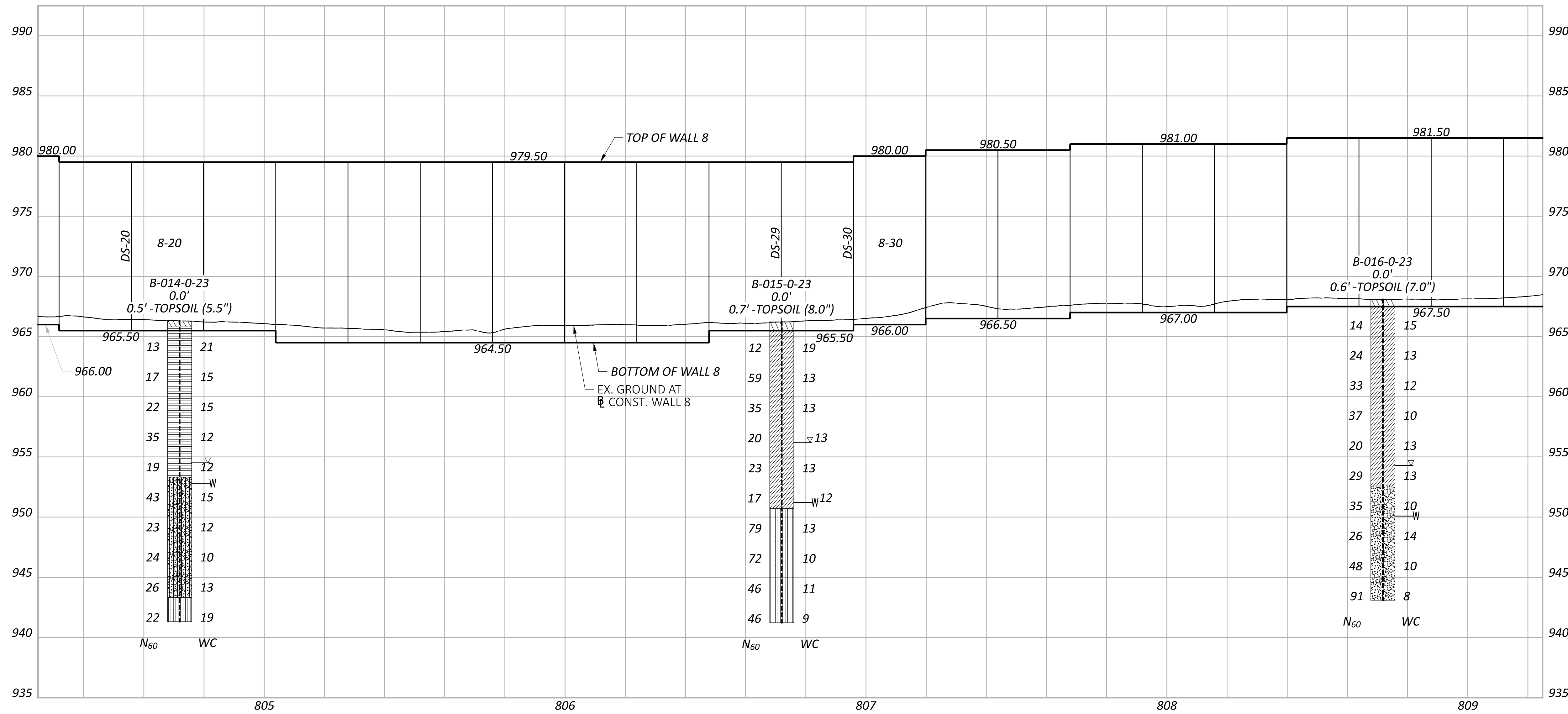
SHEET	TOTAL
P.221	276

**FRA-161-15.80 NOISE WALLS**

MODEL: CLP\_SR161 - Plan 9 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:08:23 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Sheets\117607\_ZP803.dgn



**NOTES**  
 1.) SHARED USE PATH LOCATED OUTSIDE OF THE EXISTING LIMITED ACCESS RIGHT OF WAY OF SR-161 SHALL NOT BE USED FOR CONTRACTOR ACCESS.

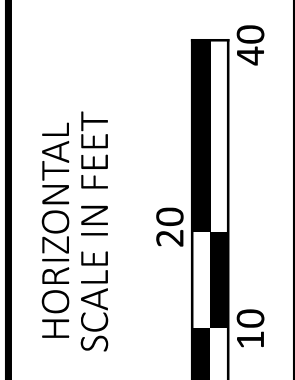
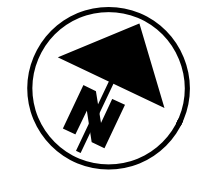
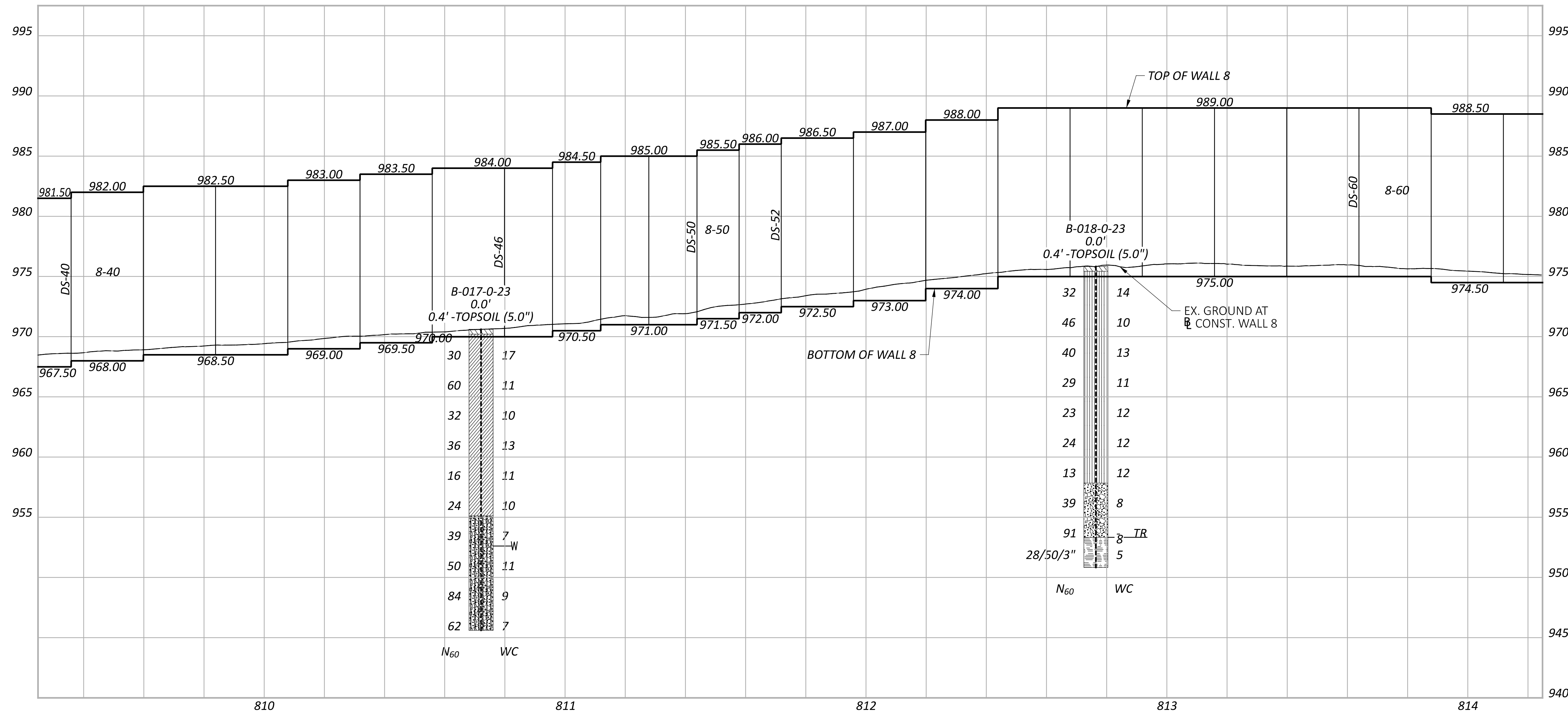
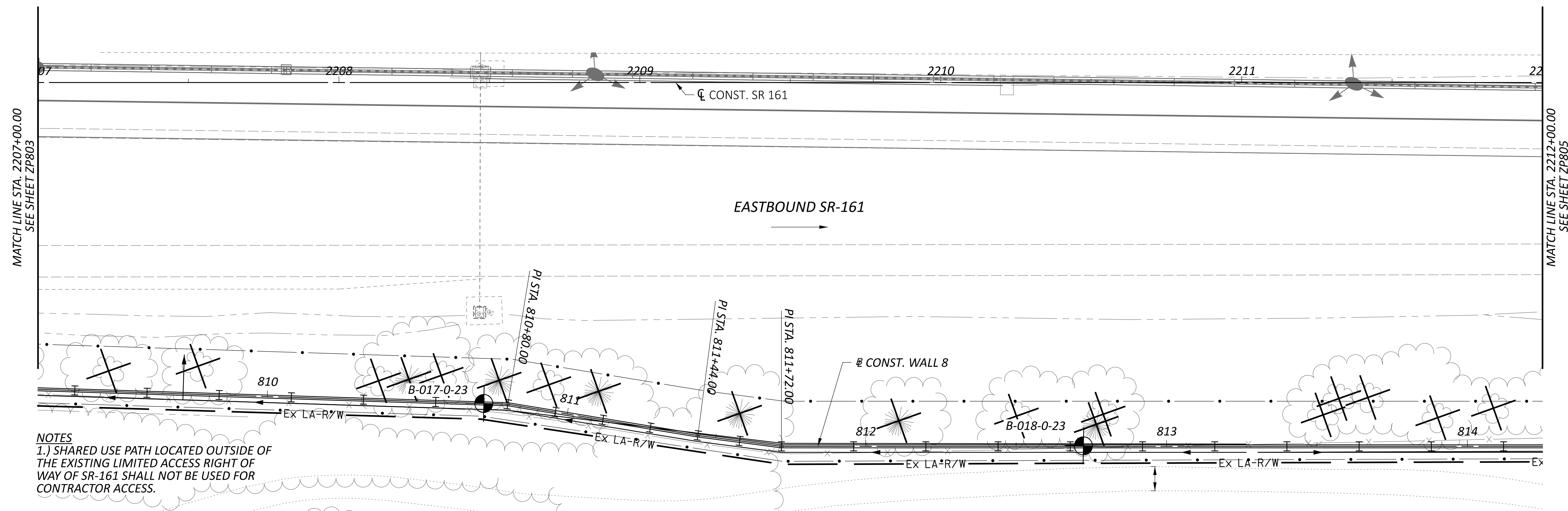


**GEOTECHNICAL PROFILE - NOISE WALL 8**  
 STA. 2202+00.00 TO STA. 2207+00.00

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
12	66
SHEET	TOTAL
P.222	276

**FRA-161-15.80 NOISE WALLS**

MODEL: CLP\_SR161 - Plan 10 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:08:34 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP804.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 8**  
 STA. 2207+00.00 TO STA. 2212+00.00

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
**KSJ**

REVIEWER  
**DEK 1/19/24**

PROJECT ID  
**117607**

SUBSET	TOTAL
13	66

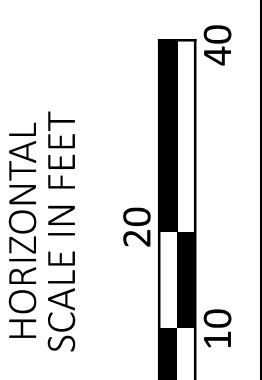
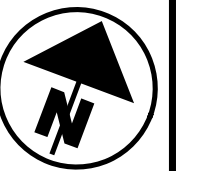
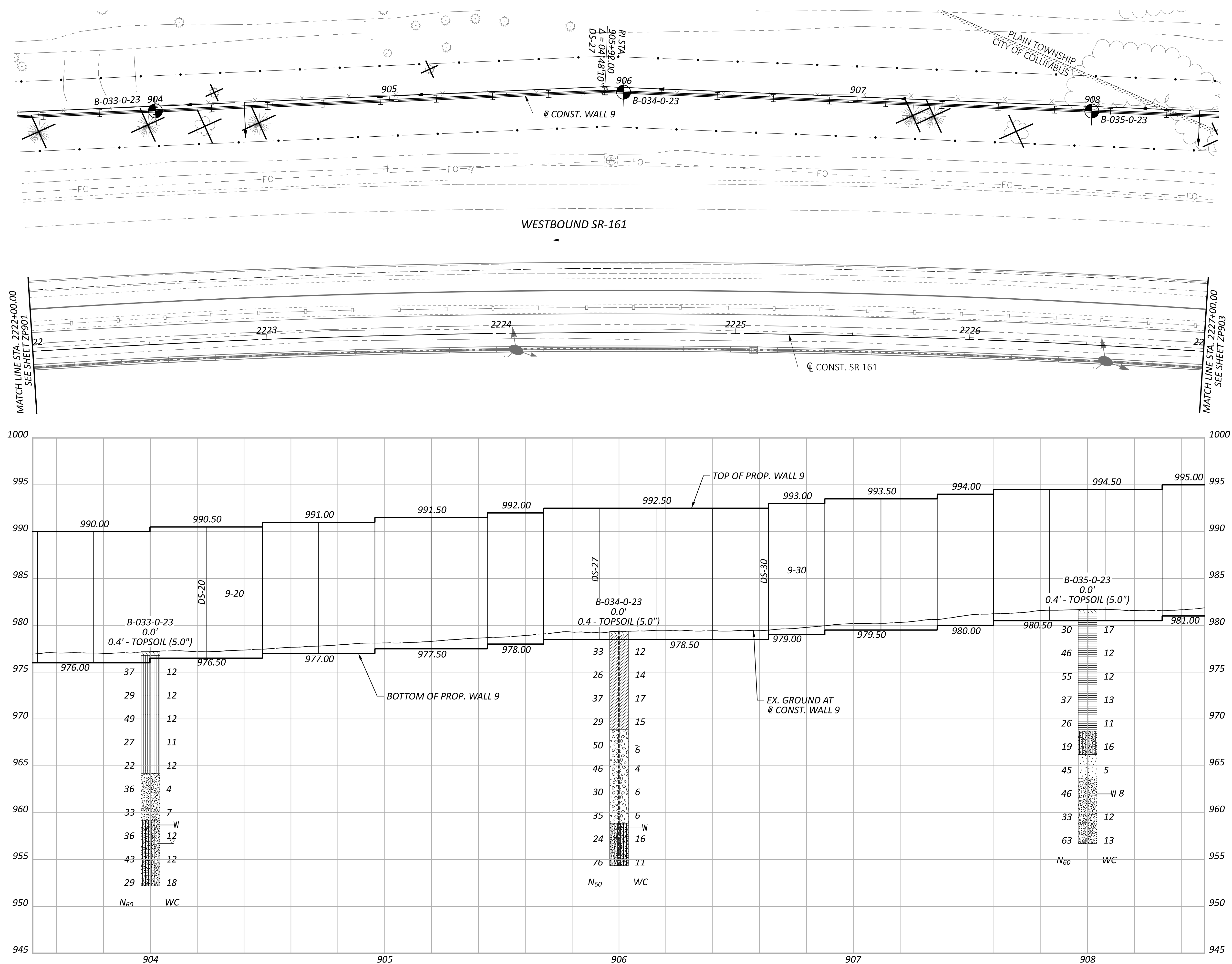
SHEET	TOTAL
P.223	276





**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 9 - Plan 13 PAPER SIZE: 34x42 (in.) DATE: 1/19/2024 TIME: 10:09:16 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Sheets\117607\_Zp902.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 9**  
 STA. 2222+00.00 TO STA. 2227+00.00

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

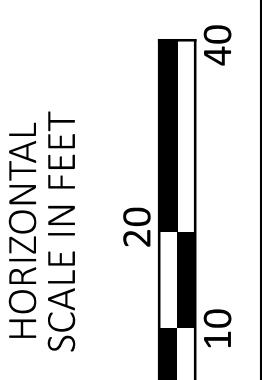
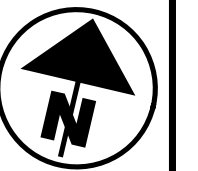
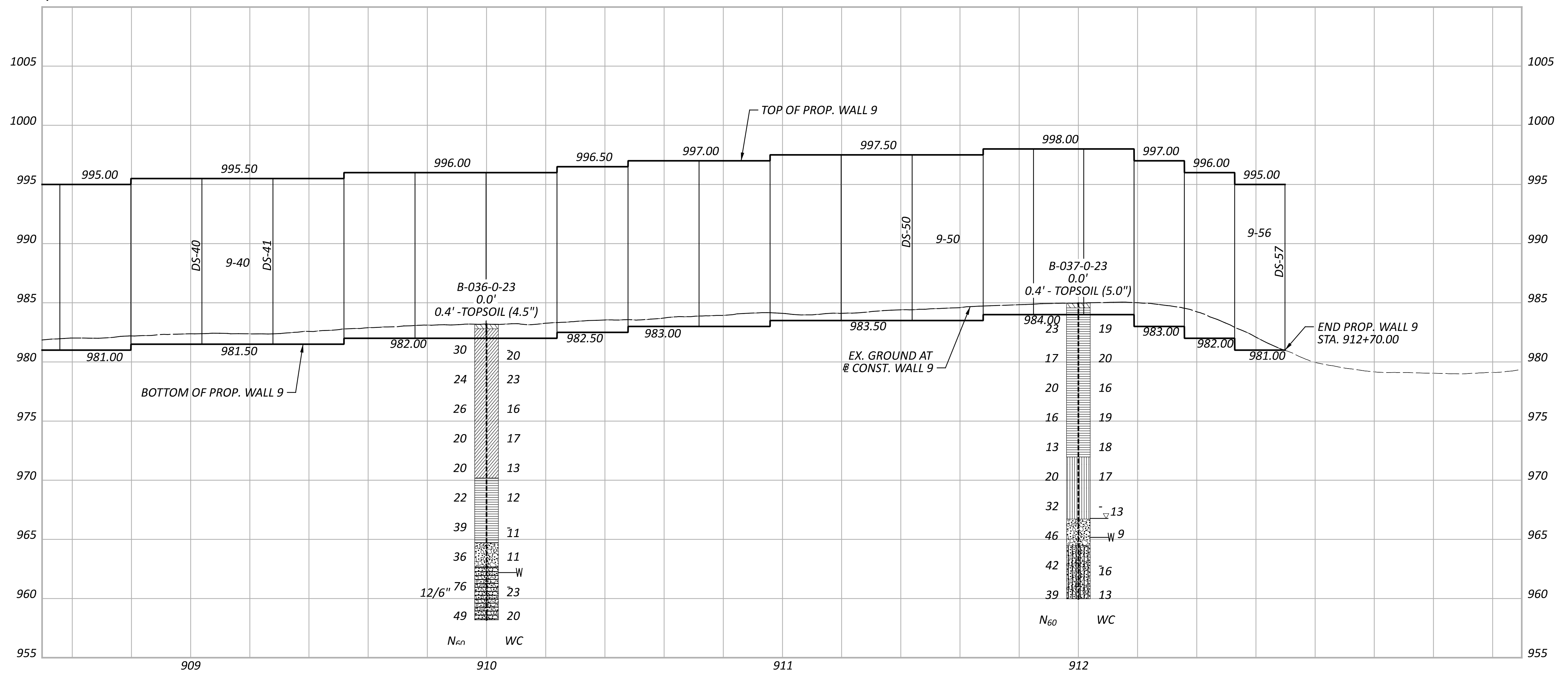
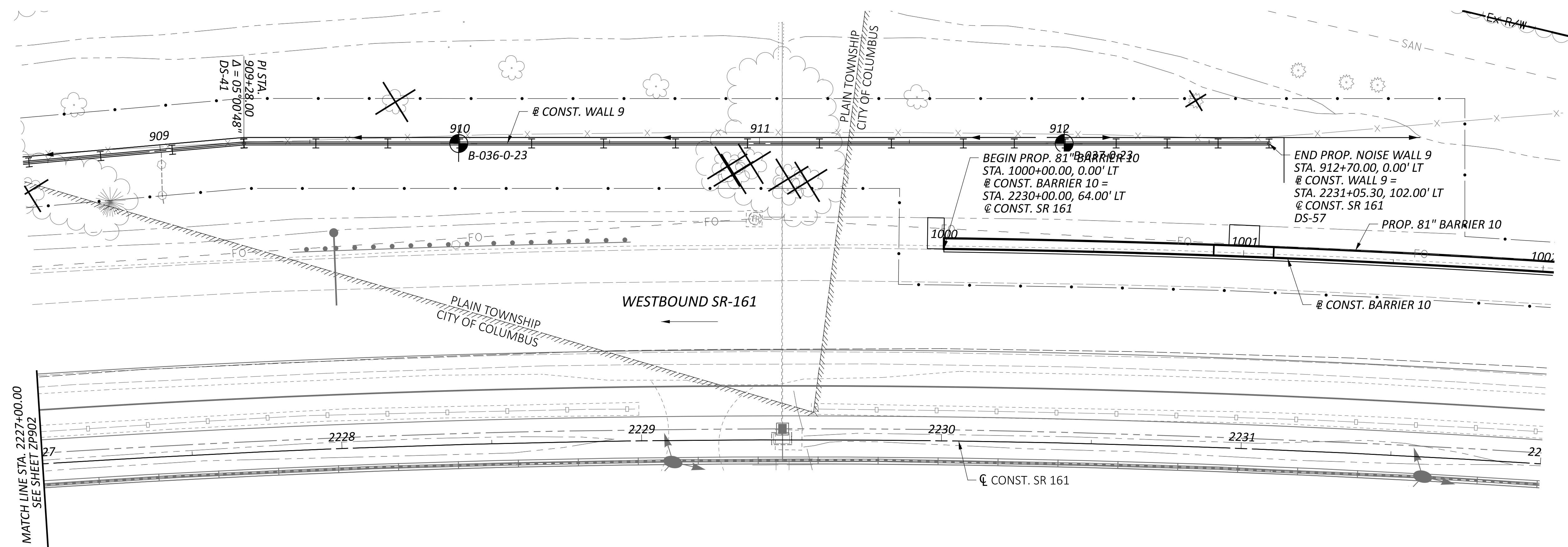
SUBSET	TOTAL
16	66

SHEET	TOTAL
P.226	276



**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 9 - Plan 14 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:09:27 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Sheets\117607\_Zp903.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 9  
 STA. 2227+00.00 TO STA. 2232+00.00**

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
**KSJ**

REVIEWER  
**DEK 1/19/24**

PROJECT ID  
**117607**

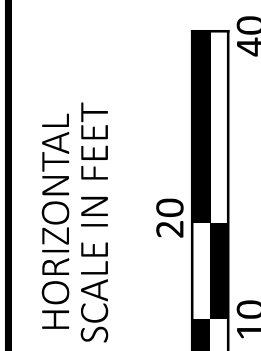
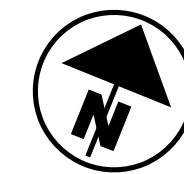
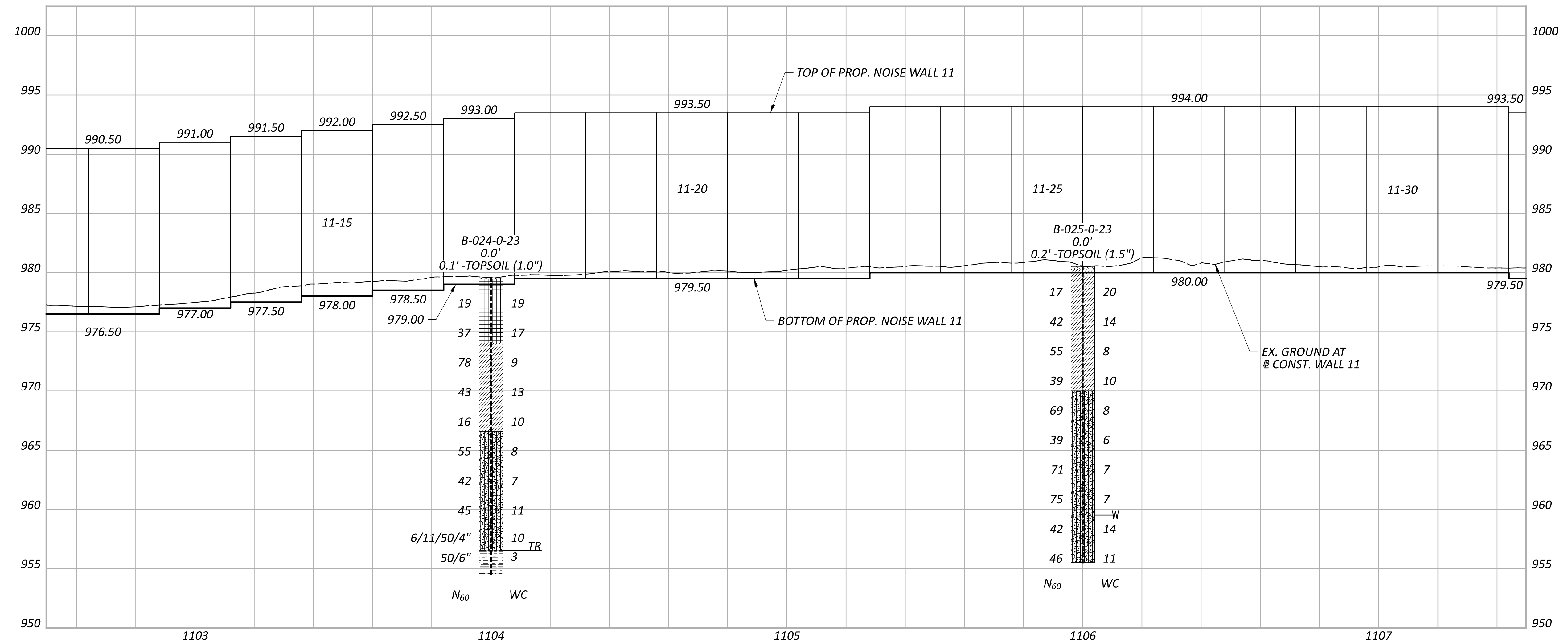
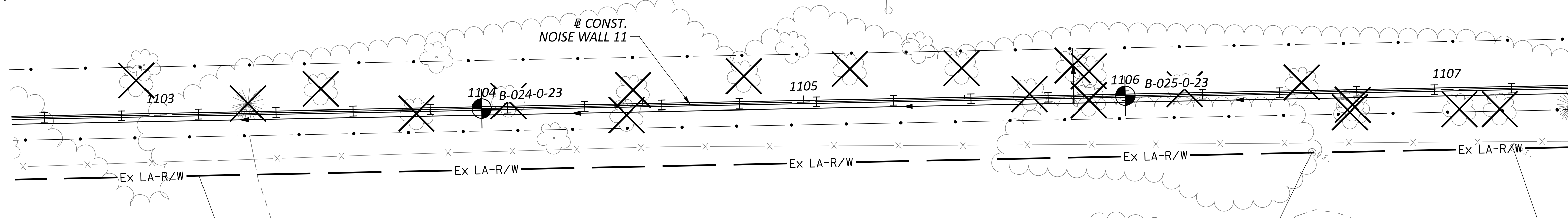
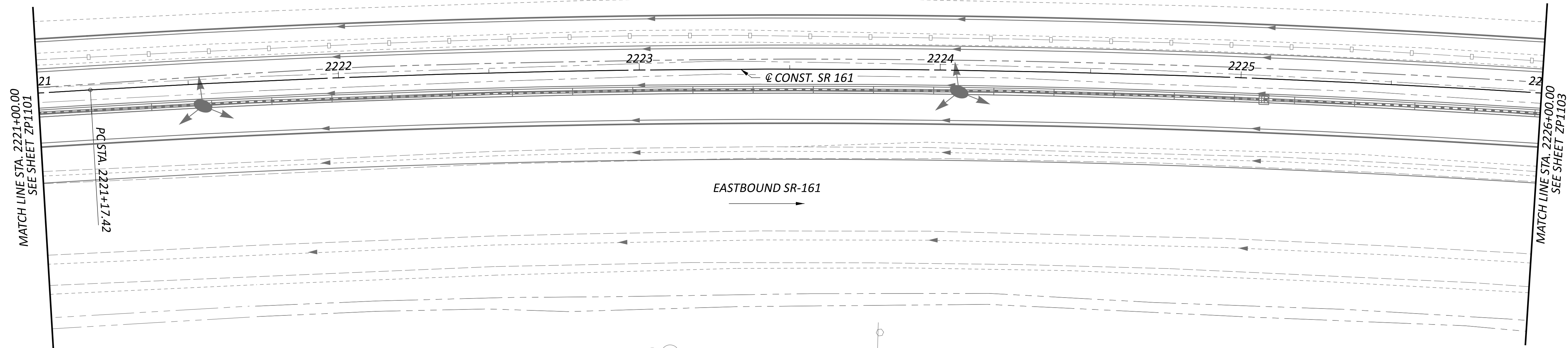
SUBSET	TOTAL
17	66

SHEET	TOTAL
P.227	276



**FRA-161-15.80 NOISE WALLS**

MODEL: Plan-1 PAPER: 34x42 (in.) DATE: 1/19/2024 TIME: 10:09:58 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP1102.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 11  
 STA. 2221+00.00 TO STA. 2226+00.00**

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
**KSJ**

REVIEWER  
**DEK 1/19/24**

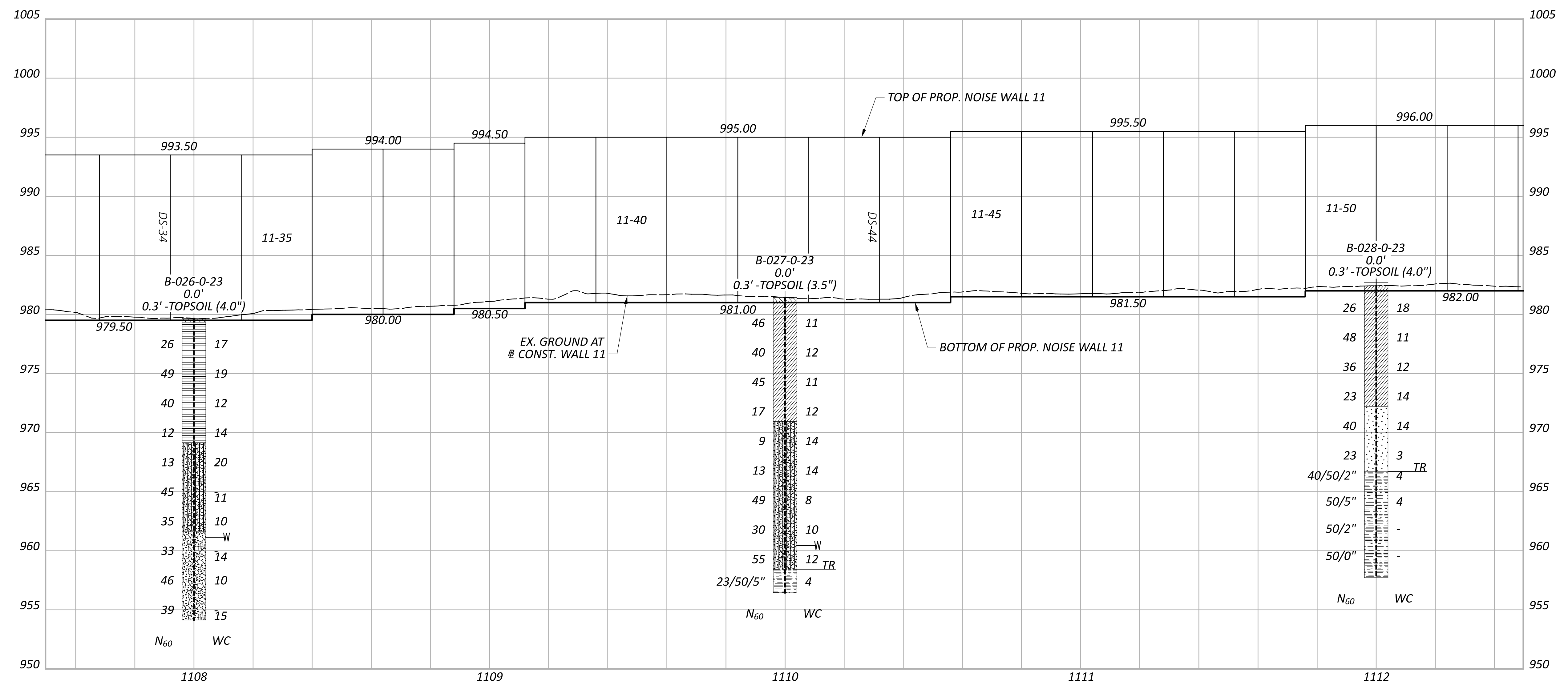
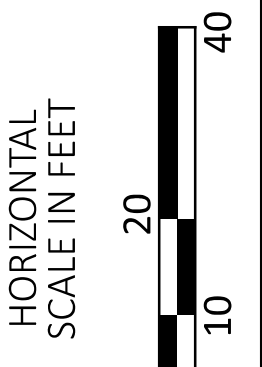
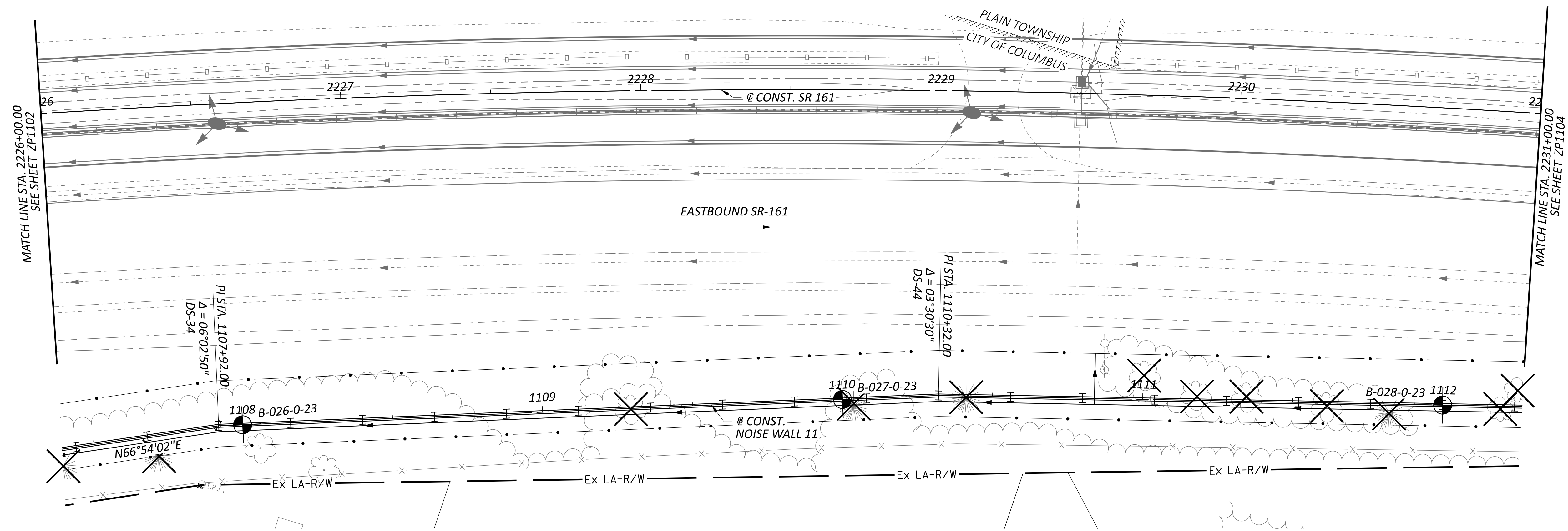
PROJECT ID  
**117607**

SUBSET	TOTAL
19	66

SHEET	TOTAL
P.229	276

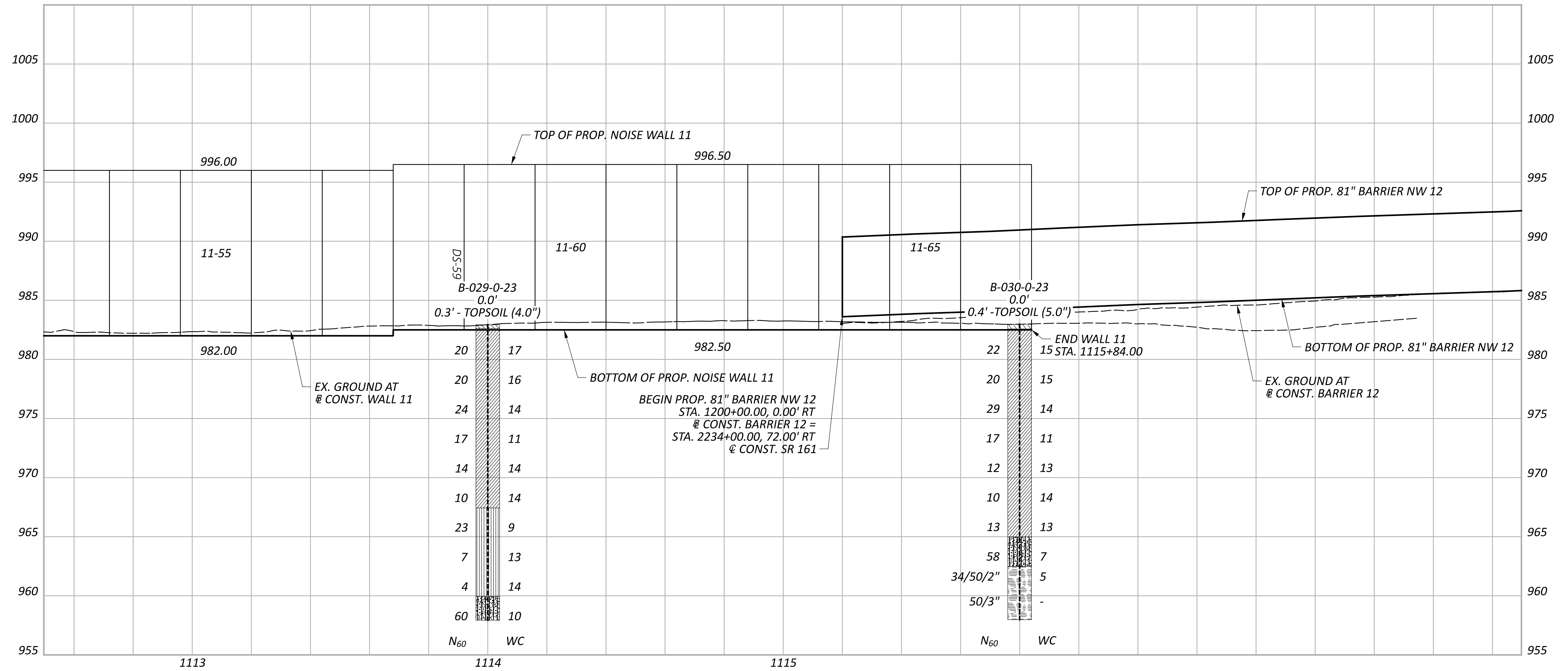
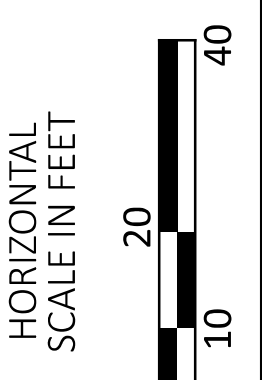
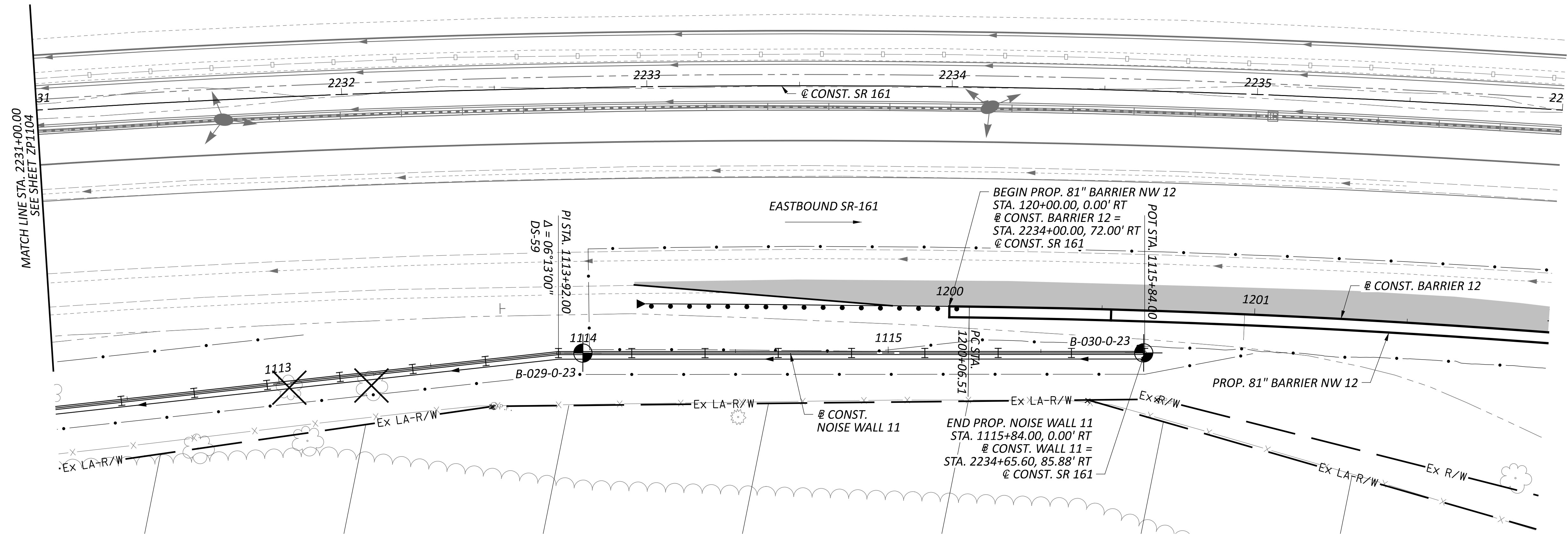
**FRA-161-15.80 NOISE WALLS**

MODEL: Plan-2 PAPER SIZE: 34x42 (in.) DATE: 1/19/2024 TIME: 10:10:10 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\_400-Engineering\Sheets\117607\_ZP1103.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 11  
 STA. 2226+00.00 TO STA. 2231+00.00**

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 KSJ  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 20 66  
 SHEET TOTAL  
 P.230 276



GEOTECHNICAL PROFILE - NOISE WALL 11  
 STA. 2231+00.00 TO STA. 2236+00.00

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

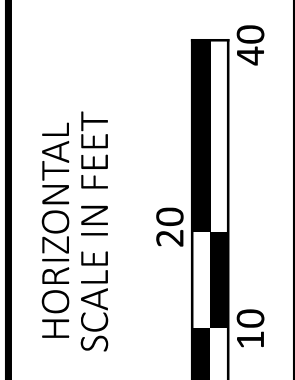
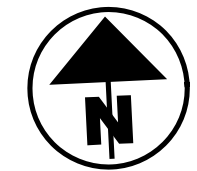
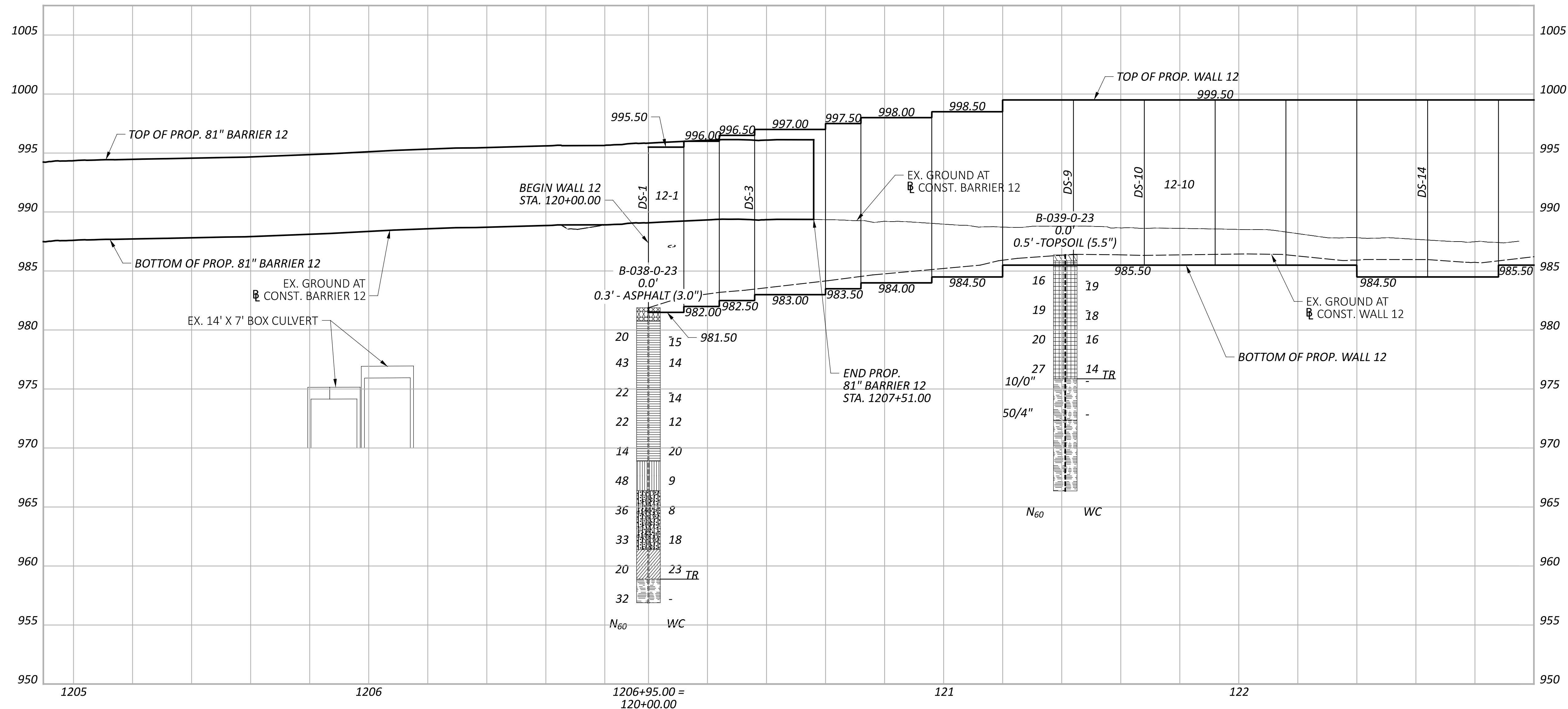
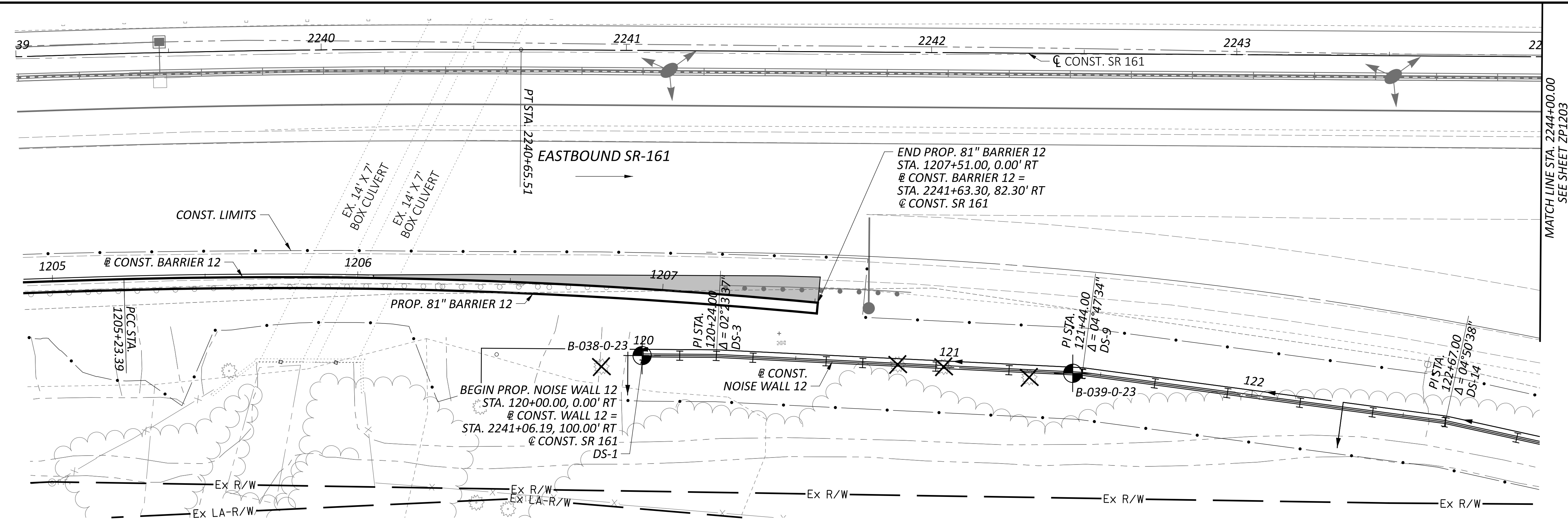
DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

SUBSET	TOTAL
21	66

SHEET	TOTAL
P.231	276

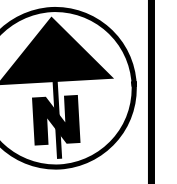
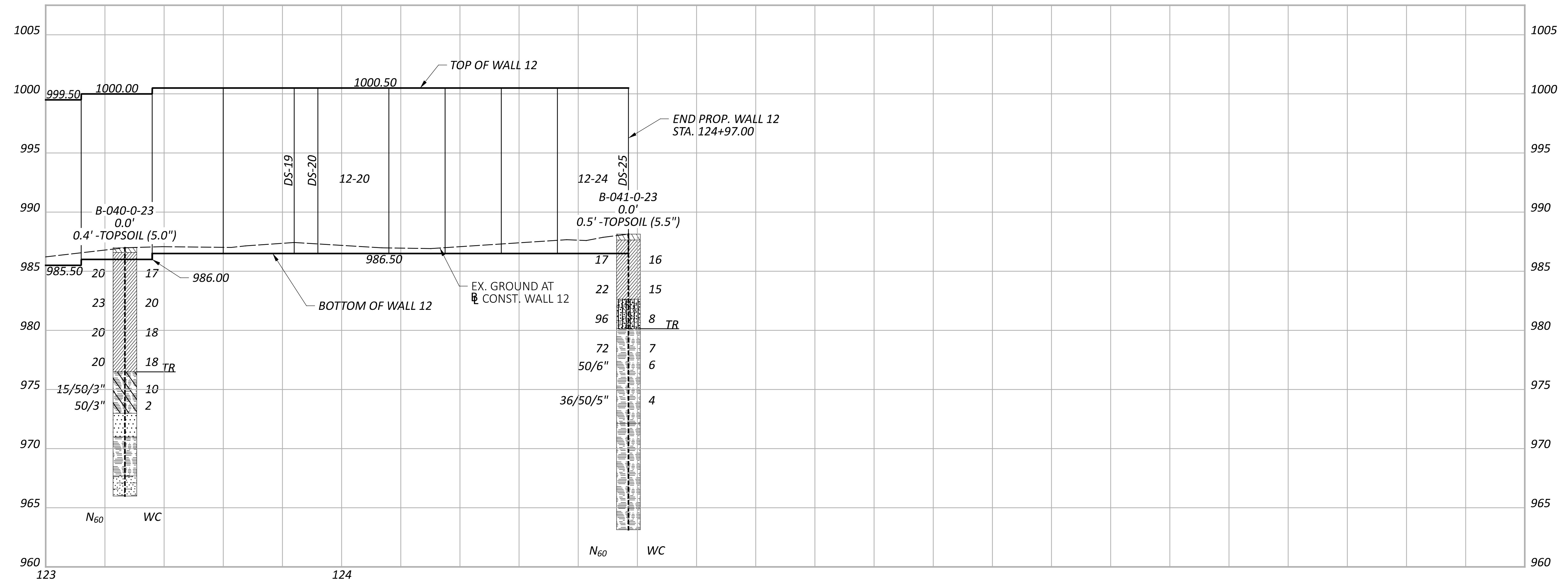
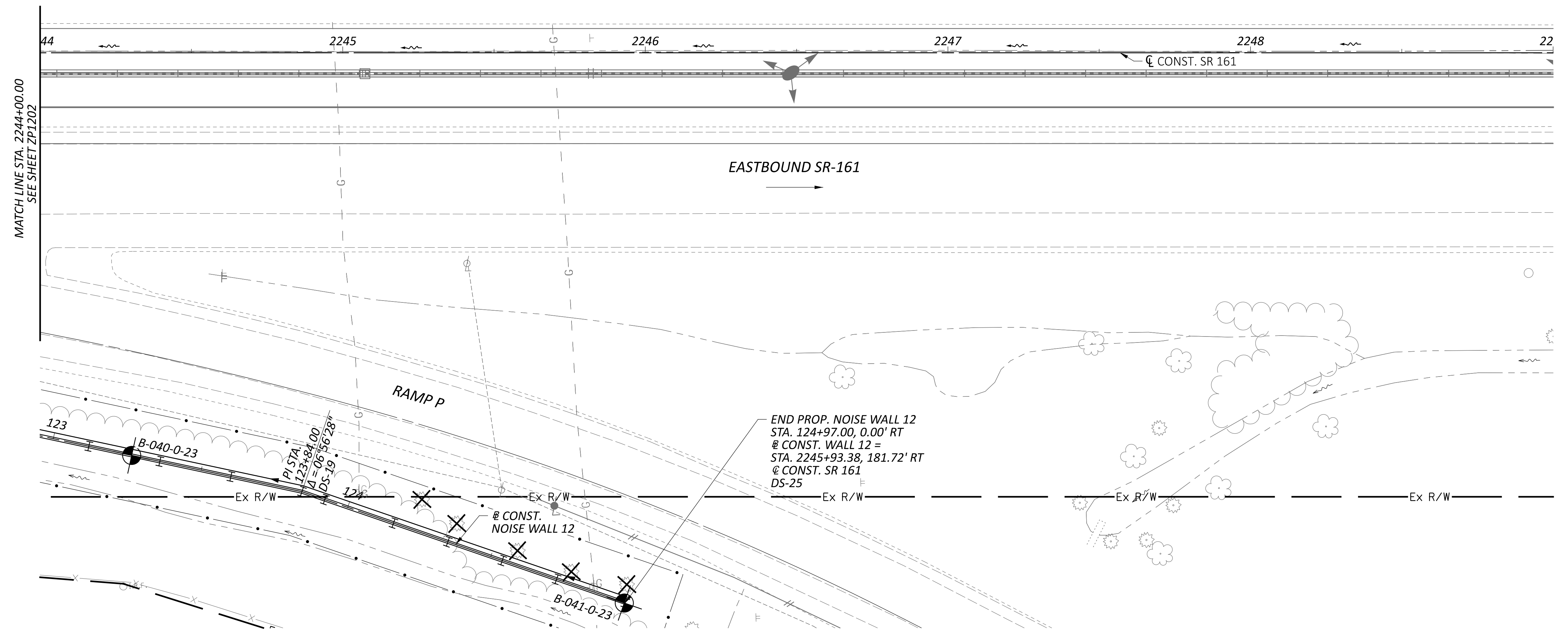


GEOTECHNICAL PROFILE - NOISE WALL 12  
 STA. 2239+00.00 TO STA. 2244+00.00

DESIGN AGENCY	
6350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
22	66
SHEET	TOTAL
P.232	276

**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 12 - Plan 21 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:10:40 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP1203.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 12  
 STA. 2244+00.00 TO STA. 2249+00.00**

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 KSJ

REVIEWER  
 DEK 1/19/24

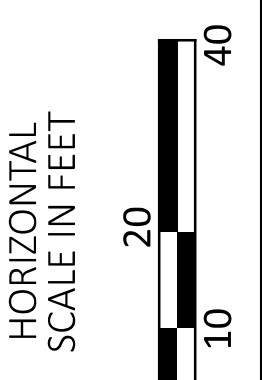
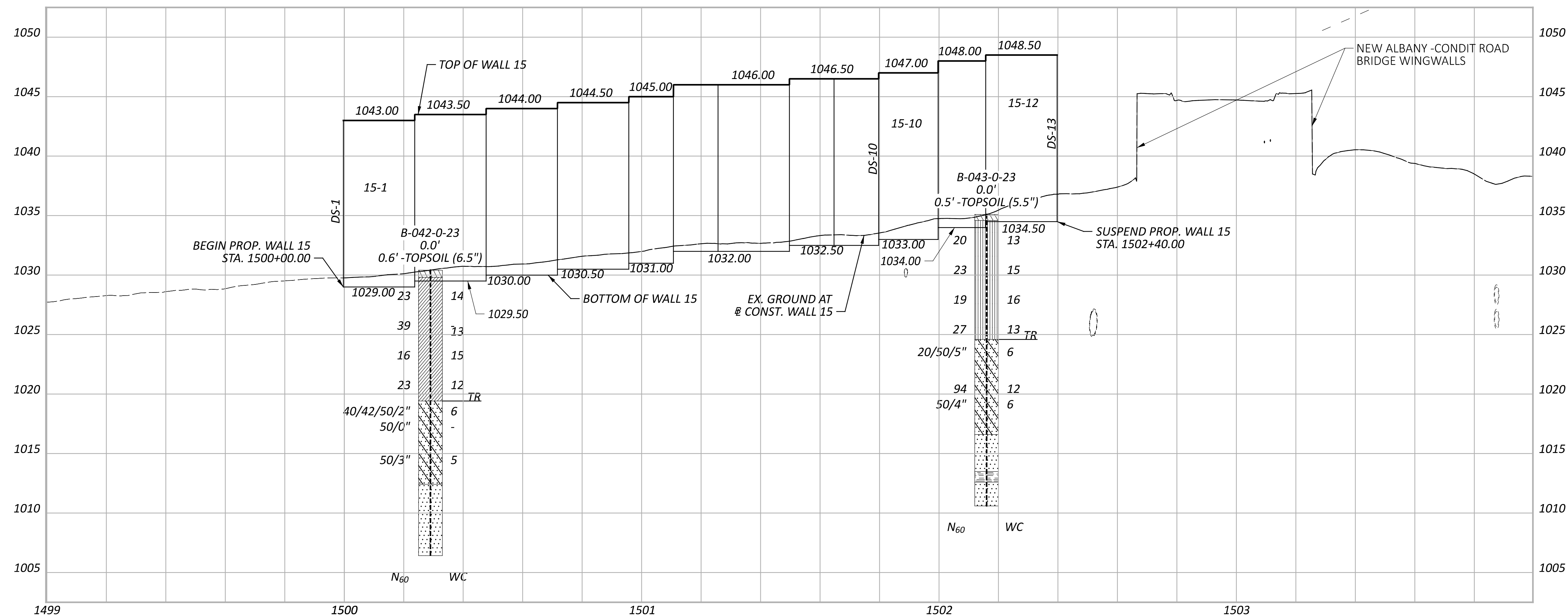
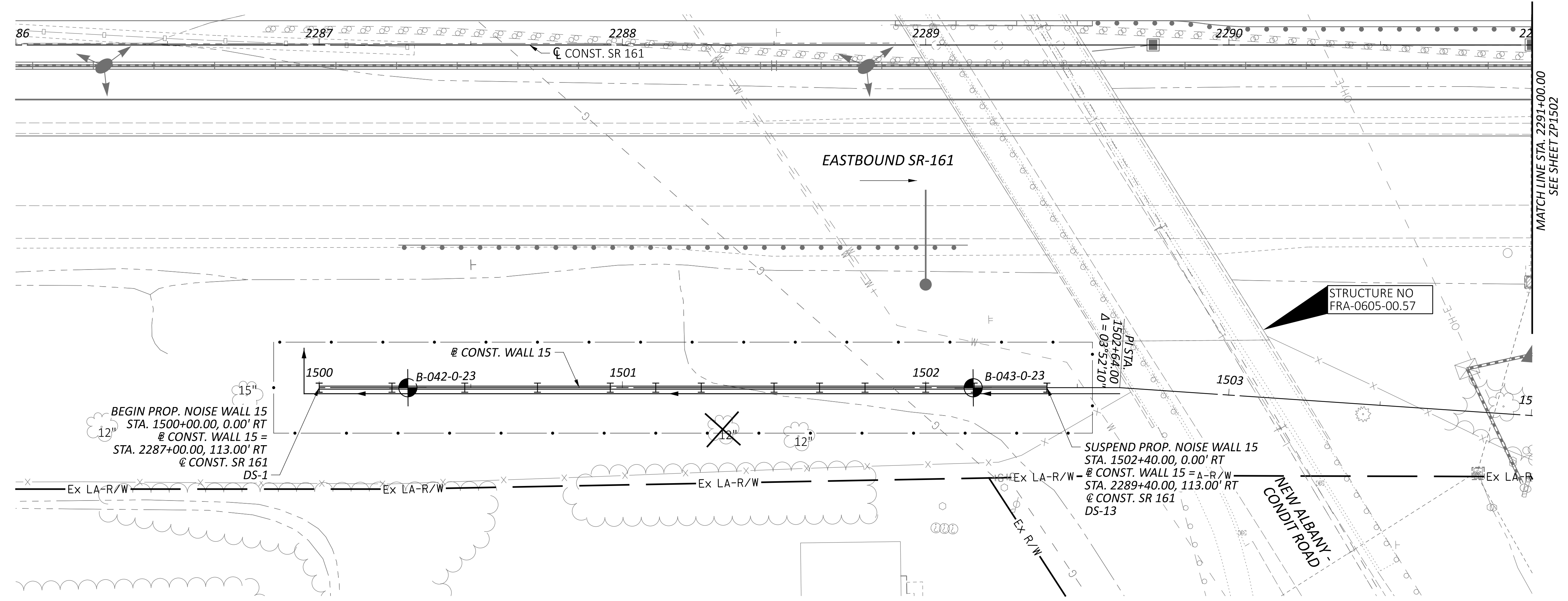
PROJECT ID  
 117607

SUBSET	TOTAL
23	66

SHEET	TOTAL
P.233	276

**FRA-161-15.80 NOISE WALLS**

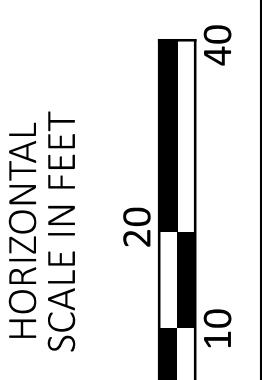
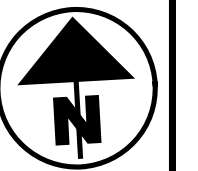
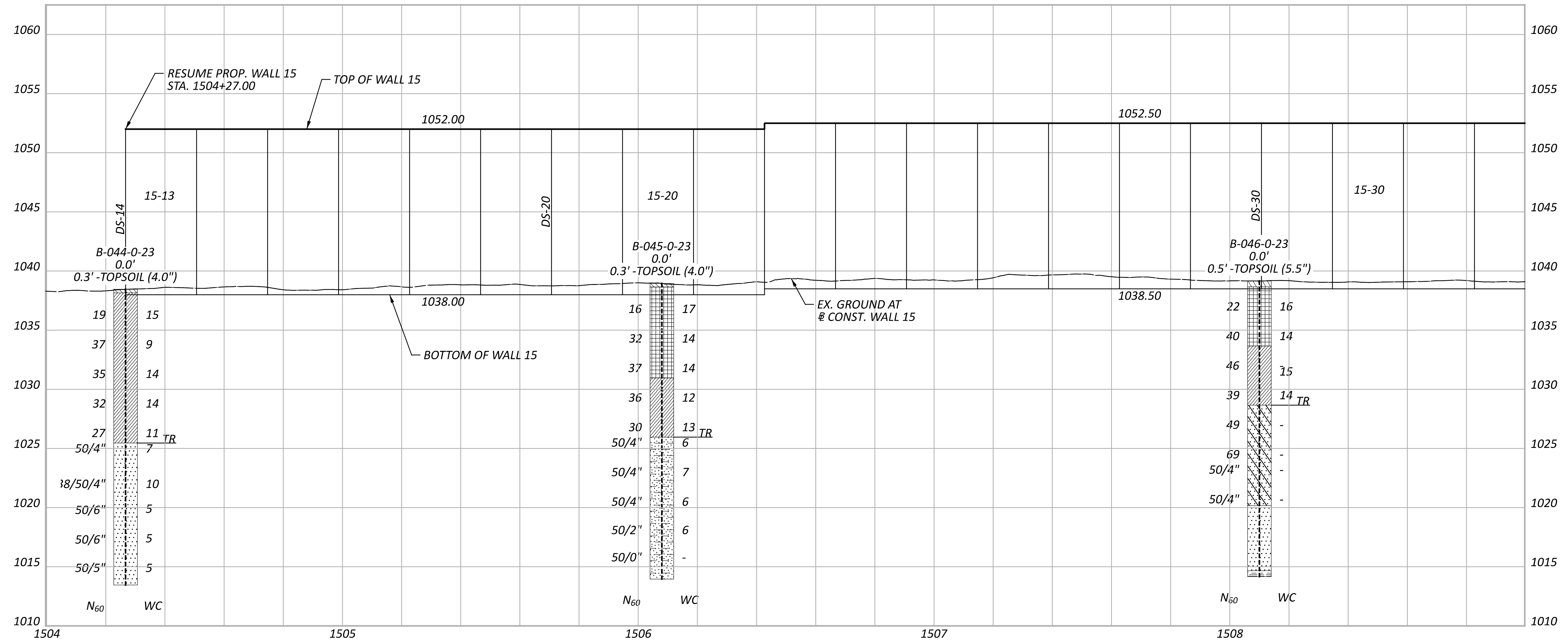
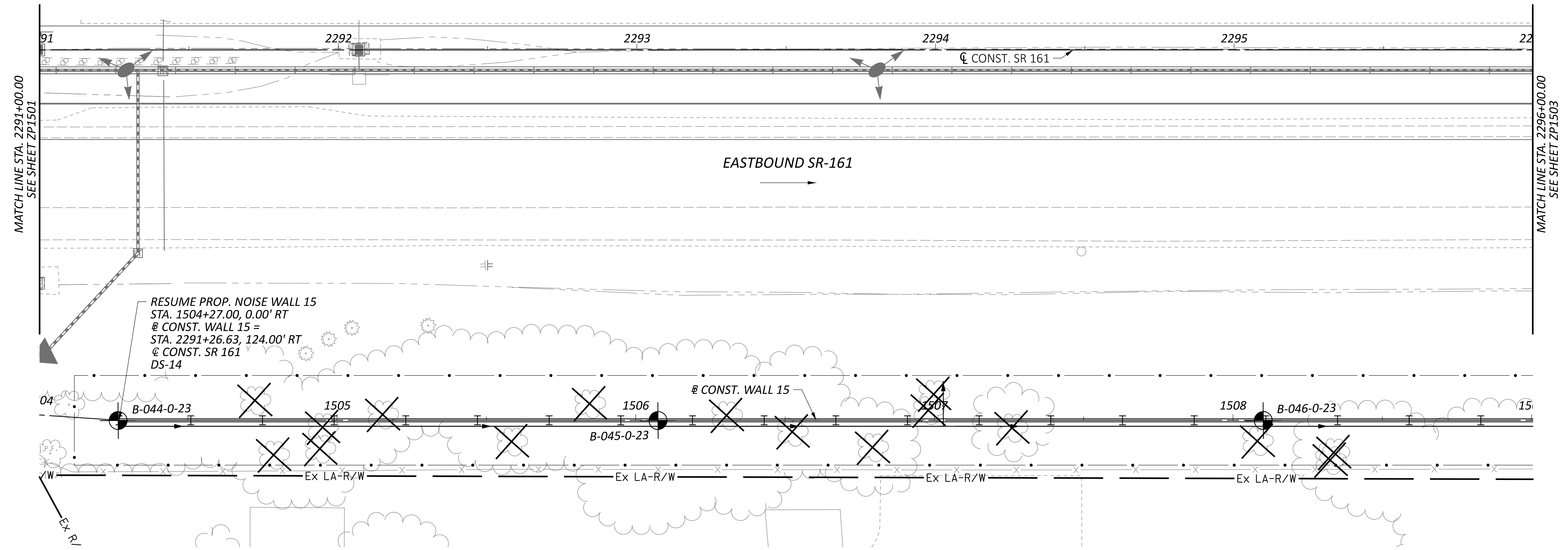
MODEL: Wall 15 - Plan 22 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:10:48 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP1501.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 15**  
**STA. 2286+00.00 TO STA. 2291+00.00**

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
24	66
SHEET	TOTAL
P.234	276



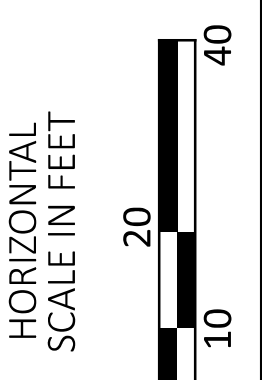
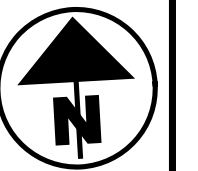
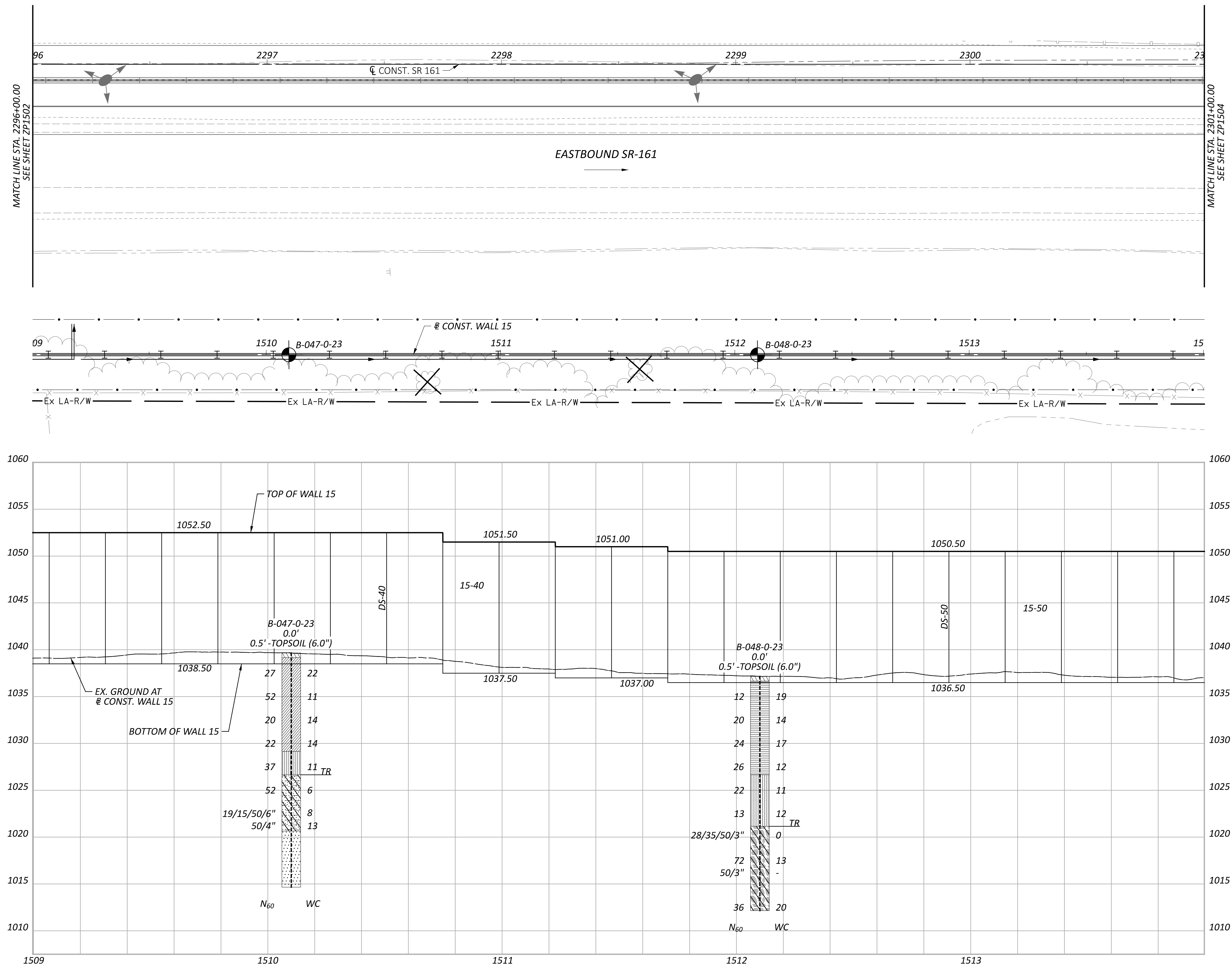


GEOTECHNICAL PROFILE - NOISE WALL 15  
 STA. 2291+00.00 TO STA. 2296+00.00

DESIGN AGENCY	
6350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
25	66
SHEET	
P.235	
TOTAL	
276	

**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 15 - Plan 24 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:11:12 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP1503.dgn

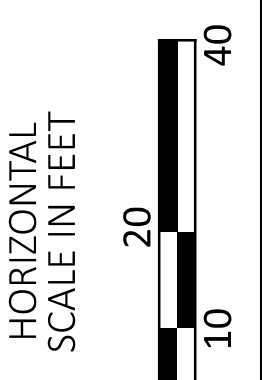
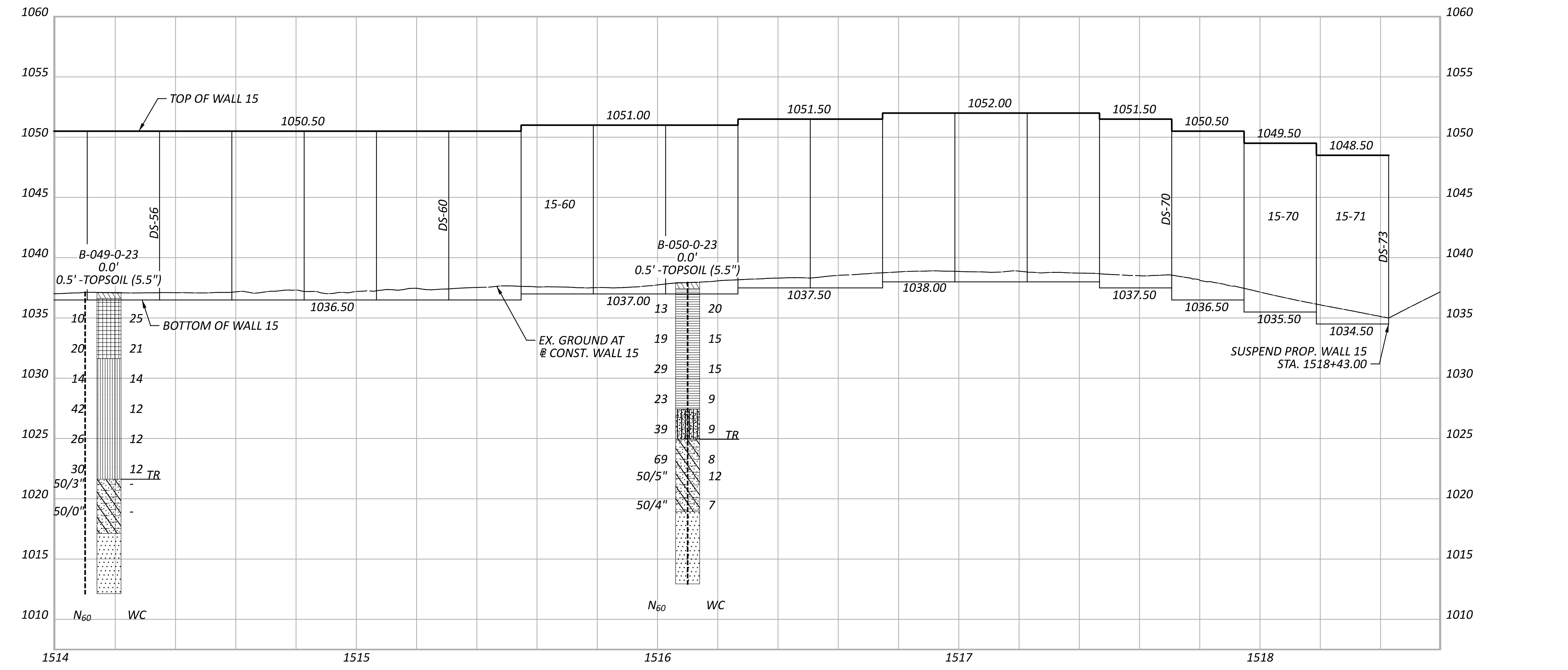
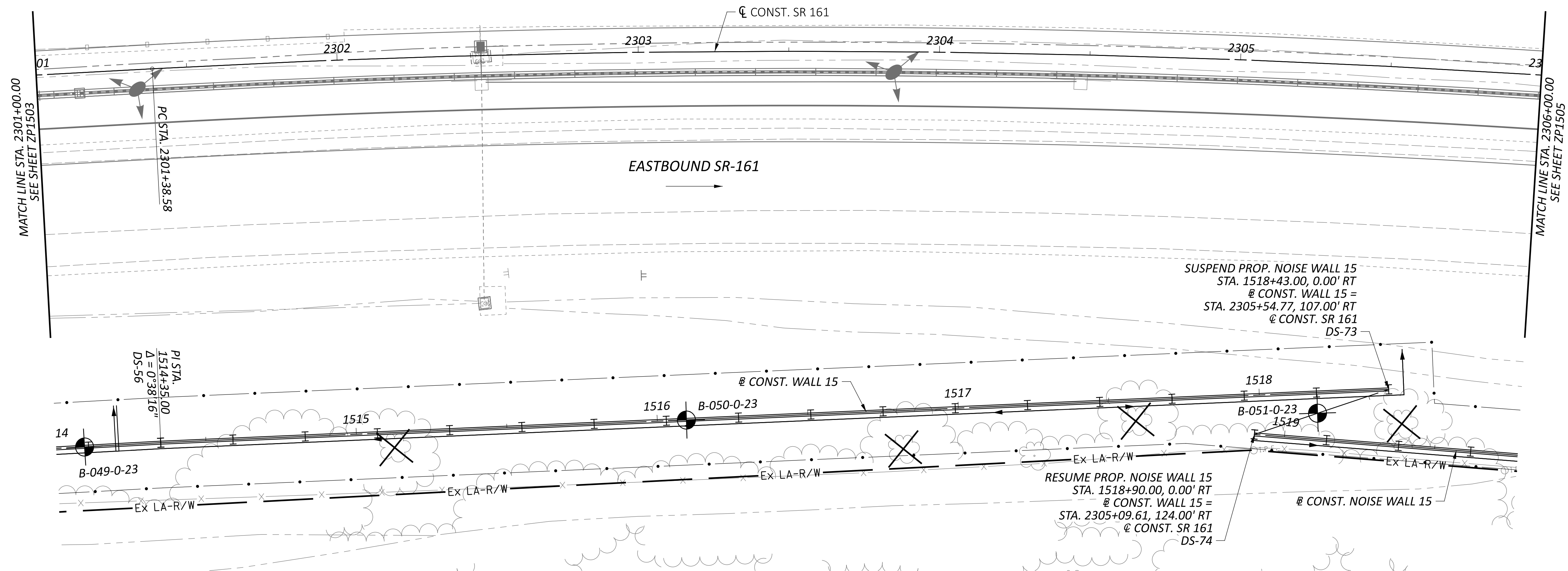


**GEOTECHNICAL PROFILE - NOISE WALL 15**  
 STA. 2296+00.00 TO STA. 2301+00.00

DESIGN AGENCY	
 RESOURCE INTERNATIONAL 8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
26	66
SHEET	TOTAL
P.236	276

**FRA-161-15.80 NOISE WALLS**

MODEL: Wall 15 - Plan 25 PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:11:22 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZP1504.dgn



**GEOTECHNICAL PROFILE - NOISE WALL 15  
 STA. 2301+00.00 TO STA. 2306+00.00**

DESIGN AGENCY	
8350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
KSJ	
REVIEWER	
DEK 1/19/24	
PROJECT ID	
117607	
SUBSET	TOTAL
27	66
SHEET	TOTAL
P.237	276



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:48:40 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL001.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/22/23 END: 11/22/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 300+00 / 0'  
 ALIGNMENT: CL WALL 3  
 ELEVATION: 966.3 (MSL) EOB: 15.0 ft.  
 LAT / LONG: 40.080429, -82.864610

EXPLORATION ID  
**B-001-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' - TOPSOIL (3.5")  
 HARD, BROWN SILT AND CLAY, LITTLE GRAVEL,  
 TRACE SAND, DAMP.

**SANDSTONE** : GRAY, HIGHLY WEATHERED.

**SANDSTONE** : BROWN AND GRAY, MODERATELY TO SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, IRON STAINED, PYRITIC, FRACTURED, NARROW APERTURE, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE CONDITION.  
 -HIGHLY FRACTURED AND HEAVILY IRON STAINED FROM 5.0' - 7.0'  
 -@ 6.6' - 7.0' 60 DEGREE FRACTURE

-@ 10.3' - 10.8' 45 DEGREE FRACTURE AND HEAVILY IRON STAINED

-@ 10.8' - 13.6' SPECKLES OF PYRITE THROUGHOUT

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
				GR	FS	SI	CL	LL	PL	PI		
1	6											
2	10	32	4.5+								15	A-6a (V)
3	12											
4	11										16	A-6a (V)
5	50/4"		4.5+									
6												
7												
8	0											CORE
9												
10												
11												
12												
13	45										100	NQ2-2
14												
15												

EOB

000-23 RII STA ODOT BORING LOG (8.5X11) - OH DOT GDT - 1/11/24 07:55 - U:\G\8\PROJECTS\2023\W-23-107.GPJ

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23.5 LBS CEMENT / 12 LBS BENTONITE POWDER / 20 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
**1**

**Boring:**  
 B-001-0-23

RC-1: 5.0'-10.0'  
 REC (%):80  
 RQD (%):10

RC-2: 10.0'-15.0'  
 REC (%):100  
 RQD (%):45



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:48:58 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL002.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/22/23 END: 11/22/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 302+00 / 0'  
 ALIGNMENT: CL WALL 3  
 ELEVATION: 968.1 (MSL) EOB: 15.3 ft.  
 LAT / LONG: 40.080609, -82.863925

EXPLORATION ID  
**B-002-0-23**  
 PAGE  
 1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV.	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
						GR	FS	SI	CL	LL	PL	PI		
0.4' TOPSOIL (4.5')	968.1	3												
HARD, BROWN-GRAY CLAY, SOME SILT, LITTLE COARSE TO FINE SAND, TRACE SAND AND GRAVEL, MOIST.	967.7	5	17	SS-1	4.5+	3	5	8	34	50	21	34	20	A-7-6 (19)
-@2.8' - 3.4' COBBLES	965.1	7												
VERY DENSE, GRAY GRAVEL WITH SAND AND SILT, DAMP.	963.5	14												
SANDSTONE : GRAY, HIGHLY WEATHERED.	962.1	17											7	A-2-4 (V)
		50/2"												
SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, PYRITIC, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE.			0	NQ2-1	68									CORE
-@6.0' - 9.7' APPROXIMATELY 4MM PYRITE NODULES THROUGHOUT														
-@9.7' CLAY SEAM														
-@10.25' - 12.0' MANY PYRITE FLECKS THROUGHOUT														
-@11.0' - 15.75' FEW PYRITE FLECKS	952.9	53		NQ2-2	96									CORE

000-23 RII STA ODOT BORING LOG (8.5X11) - OH DOT GDT - 1/11/24 07:55 - U:\G18\PROJECTS\2023\W-23-107.GPJ

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23.5 LBS CEMENT / 12 LBS BENTONITE POWDER / 20 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> 2	
<b>Boring:</b> B-002-0-23	
RC-1: 6.0-10.25' REC (%):98 RQD (%):10	
RC-2: 10.25-15.25' REC (%):96 RQD (%):53	



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:49:17 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL003.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/20/23 END: 11/22/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 304+00 / 0'  
 ALIGNMENT: CL WALL 3  
 ELEVATION: 969.1 (MSL) EOB: 15.0 ft.  
 LAT / LONG: 40.080806, -82.863307

EXPLORATION ID  
**B-003-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' - TOPSOIL (5.5')

HARD, BROWN SILT AND CLAY, TRACE GRAVEL

**SANDSTONE** : BROWN, HIGHLY WEATHERED.  
**SANDSTONE** : BROWN TO GRAY, MODERATELY TO SLIGHTLY WEATHERED; STRONG; FINE GRAINED, THIN BEDDED, PYRITIC, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.  
 -@7.0' - 9.0' HIGHLY FRACTURED; RED IRON OXIDE STAINING IN FRACTURES

-@10.0' - 11.0' 4MM PYRITE NODULES THROUGHOUT

-@11.0' - 11.2' CLAY SEAM

-@11.2' - 13.5' MANY TINY PYRTIE SPECKS THROUGHOUT

-@13.5' - 15.0' LITTLE PYRITE

DEPTH (ft)	ELEV.	SPT / RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
							GR	CS	FS	SI	CL	LL	PL		
1	969.1	3													
2	968.6	5	16	47	SS-1	4.5+									A-6a (V)
3		6													
4	964.4	5		60	SS-2	4.5+									A-6a (V)
5	964.1	6	50/3"												
6															
7		0		80	NQ2-1										CORE
8															
9															
10															
11															
12															
13		55		100	NQ2-2										CORE
14															
15	954.1														

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23.5 LBS CEMENT / 12 LBS BENTONITE POWDER / 20 GAL WATER

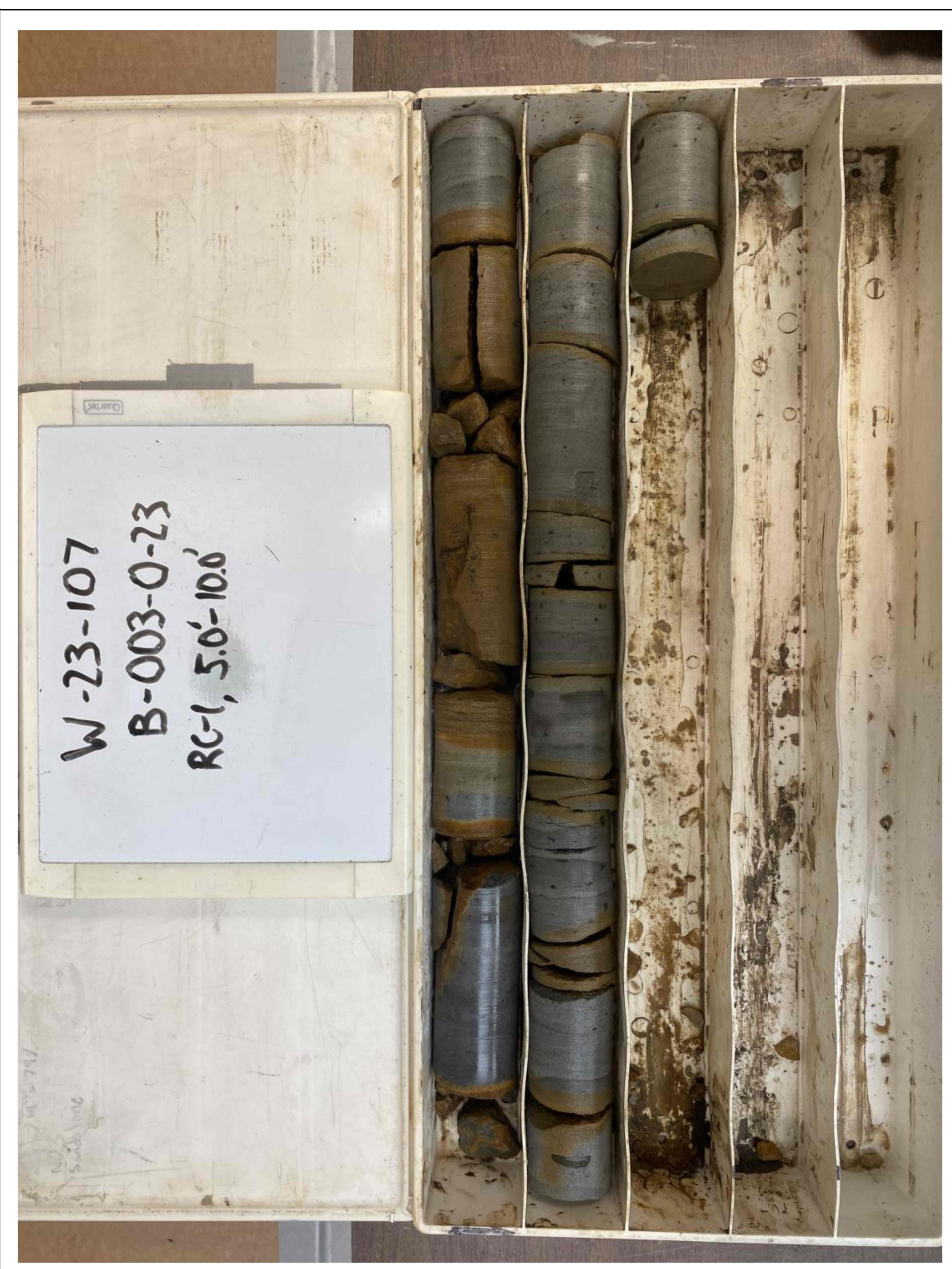
**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
**3**

**Boring:**  
 B-003-0-23

RC-1: 5.0'-10.0'  
 REC (%):80  
 RQD (%):0



DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 JAS

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

SUBSET TOTAL  
 31 66

SHEET TOTAL  
 P.241 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 3**  
**BORING LOG & ROCK CORE PHOTO FOR B-003-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:49:35 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1004.dgn

**Project Name:** FRA-161-15.80

**Location:**  
Franklin County, Ohio

**Photo No.**  
**4**

**Boring:**  
B-003-0-23

RC-2: 10.0-15.0'  
REC (%):100  
RQD (%):55



DESIGN AGENCY	
Rii	
6350 PRESIDENTIAL GATEWAY COLUMBUS, OHIO 43231 (614) 823-4949	
DESIGNER	
JAS	
REVIEWER	
DEK	1/19/24
PROJECT ID	
117607	
SUBSET	TOTAL
32	66
SHEET	TOTAL
P.242	276

GEOTECHNICAL PROFILE - NOISE WALLS  
 NOISE WALL 3  
 BORING LOG & ROCK CORE PHOTO FOR B-003-0-23



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:49:42 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL005.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/20/23 END: 11/20/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 305+76 / 0'  
 ALIGNMENT: CL WALL 3  
 ELEVATION: 969.2 (MSL) EOB: 15.0 ft.  
 LAT / LONG: 40.081003, -82.862692

EXPLORATION ID  
**B-004-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0")  
 HARD, MOTTLED BROWN CLAY, SOME SILT, TRACE COARSE TO FINE SAND, MOIST.

**SANDSTONE** : GRAY, HIGHLY WEATHERED.

**SANDSTONE** : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, PYRITIC, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.  
 -@11.8' - 12.4' FRACTURE  
 -@13.3' - 15.0' MANY TINY PYRITE NODULES THROUGHOUT

ELEV.	DEPTHS	SPT/ RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
969.2																
968.8		3														
		4	16	36	SS-1	4.5+	0	1	6	35	52	20	32	21	A-7-6 (18)	
		7														
		4	16	50	SS-2	4.5+	-	-	-	-	-	-	-	19	A-7-6 (V)	
		7														
963.7	TR	50/2"		100	SS-3									10	Rock (V)	
		9												5	Rock (V)	
		10														
959.2																
		0		75	NQ2-1											CORE
		13														
954.2																
		14														
		15														

EOB

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 23.5 LBS CEMENT / 12 LBS BENTONITE POWDER / 20 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
**5**

**Boring:**  
 B-004-0-23

RC-1: 10.0-15.0'  
 REC (%):75  
 RQD (%):0



DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 JAS

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

SUBSET TOTAL  
 33 66

SHEET TOTAL  
 P.243 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 3**  
**BORING LOG & ROCK CORE PHOTO FOR B-004-0-23**



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:50:32 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL007.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/17/23 END: 11/17/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 603+60 / 0'  
 ALIGNMENT: CL WALL 6  
 ELEVATION: 969.0 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.088248, -82.842572

EXPLORATION ID  
**B-007-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0')  
 HARD, BROWN TO BROWNISH GRAY SILTY CLAY, LITTLE COARSE TO FINE SAND, TRACE GRAVEL, DAMP TO MOIST.

DEPTH	ELEV.	SPT/ROD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	969.0	5	17	SS-1	4.5+	4	10	13	31	42	18	16	21	A-6b (10)	
2	968.6	5	7												
3															
4		12	42	SS-2	4.5+	-	-	-	-	-	-	-	16	A-6b (V)	
5		14	15												
6		8	12	SS-3	4.5+	-	-	-	-	-	-	-	12	A-6b (V)	
7		16													
8															
9		9	27	SS-4	-	-	-	-	-	-	-	-	-		
10		10													
11		22	-	2S-4A	4.5+	-	-	-	-	-	-	-	12	A-6b (V)	
12		8	23	SS-5	4.5+	-	-	-	-	-	-	-	13	A-6b (V)	
13															
14	956.0	12	56	SS-6	-	-	-	-	-	-	-	-	7	A-1-b (V)	
15		19	20												
16		13	43	SS-7	-	24	39	15	12	10	NP	NP	12	A-1-b (0)	
17		17													
18															
19		15	75	SS-8	-	-	-	-	-	-	-	-	14	A-1-b (V)	
20		16	36												
21	948.5														
22	948.0														
23		16	55	SS-9	-	-	-	-	-	-	-	-	13	A-1-b (V)	
24		20	18												
25		5	22	SS-10	-	-	-	-	-	-	-	-	17	A-1-b (V)	
26		7	8												
27	944.0														

MEDIUM DENSE TO VERY DENSE, GRAY GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, MOIST TO WET.

DEPTH	ELEV.	SPT/ROD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	969.0	10	46	SS-1	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
2	969.7	14	18												
3															
4		10	45	SS-2	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
5		21													
6		13	46	SS-3	-	-	-	-	-	-	-	-	-		
7		16	16												
8		28	-	2S-3A	4.5+	-	-	-	-	-	-	-	10	A-4a (V)	
9		5	24	SS-4	4.5+	13	11	16	30	30	16	14	2	A-4a (5)	
10		7	10												
11		5	48	SS-5	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
12		9	24												
13															
14	970.0	29	82	SS-6	-	-	-	-	-	-	-	-	-		
15		29	28												
16		10	49	SS-7	-	-	-	-	-	-	-	-	9	A-1-b (V)	
17		17	17												
18															
19	952.0	6	23	SS-8	4.5+	27	10	13	27	23	24	14	10	A-4a (3)	
20		8	8												
21	949.9														
22	949.0	10	20	SS-9	3.50	-	-	-	-	-	-	-	12	A-4a (V)	
23		7	7												
24		3	4	SS-10	-	-	-	-	-	-	-	-	17	A-3a (V)	
25		4	4												
26		3	23	SS-11	-	-	-	-	-	-	-	-	20	A-3a (V)	
27	942.5	6	10												

MEDIUM DENSE TO DENSE, GRAY GRAVEL WITH SAND, LITTLE SILT, MOIST.

DEPTH	ELEV.	SPT/ROD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	969.7	10	46	SS-1	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
2	969.7	14	18												
3															
4		10	45	SS-2	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
5		21													
6		13	46	SS-3	-	-	-	-	-	-	-	-	-		
7		16	16												
8		28	-	2S-3A	4.5+	-	-	-	-	-	-	-	10	A-4a (V)	
9		5	24	SS-4	4.5+	13	11	16	30	30	16	14	2	A-4a (5)	
10		7	10												
11		5	48	SS-5	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
12		9	24												
13															
14	970.0	29	82	SS-6	-	-	-	-	-	-	-	-	-		
15		29	28												
16		10	49	SS-7	-	-	-	-	-	-	-	-	9	A-1-b (V)	
17		17	17												
18															
19	952.0	6	23	SS-8	4.5+	27	10	13	27	23	24	14	10	A-4a (3)	
20		8	8												
21	949.9														
22	949.0	10	20	SS-9	3.50	-	-	-	-	-	-	-	12	A-4a (V)	
23		7	7												
24		3	4	SS-10	-	-	-	-	-	-	-	-	17	A-3a (V)	
25		4	4												
26		3	23	SS-11	-	-	-	-	-	-	-	-	20	A-3a (V)	
27	942.5	6	10												

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 21.0' AND UPON COMPLETION @ 20.5'; CAVE-IN DEPTH @ 13.1'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/17/23 END: 11/17/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

EXPLORATION ID  
**B-008-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (4.0')  
 HARD BROWN TO BROWN/GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP.

DEPTH	ELEV.	SPT/ROD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	969.7	10	46	SS-1	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
2	969.7	14	18												
3															
4		10	45	SS-2	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
5		21													
6		13	46	SS-3	-	-	-	-	-	-	-	-	-		
7		16	16												
8		28	-	2S-3A	4.5+	-	-	-	-	-	-	-	10	A-4a (V)	
9		5	24	SS-4	4.5+	13	11	16	30	30	16	14	2	A-4a (5)	
10		7	10												
11		5	48	SS-5	4.5+	-	-	-	-	-	-	-	11	A-4a (V)	
12		9	24												
13															
14	970.0	29	82	SS-6	-	-	-	-	-	-	-	-	-		
15		29	28												
16		10	49	SS-7	-	-	-	-	-	-	-	-	9	A-1-b (V)	
17		17	17												
18															
19	952.0	6	23	SS-8	4.5+	27	10	13	27	23	24	14	10	A-4a (3)	
20		8	8												
21	949.9														
22	949.0	10	20	SS-9	3.50	-	-	-	-	-	-	-	12	A-4a (V)	
23		7	7												
24		3	4	SS-10	-	-	-	-	-	-	-	-	17	A-3a (V)	
25		4	4												
26		3	23	SS-11	-	-	-	-	-	-	-	-	20	A-3a (V)	
27	942.5	6	10												

VERY DENSE TO DENSE, GRAY GRAVEL WITH SAND, LITTLE SILT, MOIST.

VERY STIFF TO HARD, GRAY SANDY SILT, SOME CLAY, SOME FINE GRAVEL, DAMP.  
 -COBBLES FROM 18.0' - 18.5'

MEDIUM DENSE, BROWN TO BROWNISH GRAY COARSE AND FINE SAND, TRACE FINE GRAVEL, TRACE SILT, WET.

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 21.0' AND UPON COMPLETION @ 20.1'; CAVE-IN DEPTH @ 13.1'



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:51:33 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL009.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/3/23 END: 11/3/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 2196+50 / 111' RT  
 ALIGNMENT: CL SR 161  
 ELEVATION: 964.3 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.087493, -82.842814

EXPLORATION ID  
**B-011-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (3.5")  
 STIFF TO HARD, BROWN TO GRAY SILT AND CLAY, "AND" COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP TO MOIST.

LOOSE TO DENSE, BROWN GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, WET.

-HEAVE @ 21.0' AND 23.0'

SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (GI)	BACK FILL	
				GR	CS	FS	SI	CL	LL	PL	PI				
5	7	23	53												
9	7	9	4.5+											21	A-6a (V)
7	9	27	61	SS-2	4.5+									13	A-6a (V)
10	9	10													
4	6	17	81	SS-3	4.5+									12	A-6a (5)
6	6	6													
5	5	19	89	SS-4	3.75									14	A-6a (V)
8	5	8													
2	3	12	56	SS-5	2.50									14	A-6a (V)
5	2	3	5												
1	2	9	53	SS-6	1.25									15	A-6a (V)
4	2	4													
3	6	19	39	SS-7										20	A-1-b (V)
7	6	7													
2	2	9	67	SS-8		68	17	1	5	NP	NP	NP	22	A-1-b (0)	
4	2	4													
5	9	29	100	SS-9										14	A-1-b (V)
11	9	11													
7	10	35	100	SS-10										12	A-1-b (V)
14	7	10	14												

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 16.0' AND UPON COMPLETION @ 7.8'. CAVE-IN DEPTH @ 13.9'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/3/23 END: 11/3/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 800+72 / 117' RT  
 ALIGNMENT: CL SR 161  
 ELEVATION: 967.1 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.087734, -82.842176

EXPLORATION ID  
**B-012-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (4.0")  
 HARD, LIGHT BROWN SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.

-COBBLES FROM 4.8' - 5.2'  
 -AUGER REFUSAL @ 5.2'. OFFSET 7.0' SW, CONTINUED SAMPLING AT 6.0'

DENSE TO VERY DENSE, DARK GRAY GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, MOIST.

HARD, BROWN SANDY SILT, LITTLE CLAY, TRACE FINE GRAVEL, MOIST.

SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (GI)	BACK FILL	
				GR	CS	FS	SI	CL	LL	PL	PI				
5	6	22	53	SS-1	4.5+										
9	6	9	4.5+												
14	6	63	72	SS-2	4.5+										
28	14	28													
11	13	42	78	SS-3	4.5+										
16	13	16													
20	28	63	47	SS-4										10	A-6a (V)
16	20	16													
5	18	43	33	SS-5	4.5+									11	A-6a (V)
12	5	12													
7	14	46	53	SS-6		46	21	8	18	7	NP	NP	8	A-1-b (0)	
18	7	18													
15	15	40	72	SS-7										8	A-1-b (V)
10	15	10													
17	18	52	61	SS-8										11	A-1-b (V)
18	17	18													
18	18	50	50	SS-9	4.5+									11	A-4a (V)
26	18	26													
6	9	30	47	SS-10	4.5+									11	A-4a (V)
12	6	12													

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 18.5' AND UPON COMPLETION @ 14.9'. CAVE-IN DEPTH @ 18.5'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
 37 66  
 SHEET TOTAL  
 P.247 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 8**  
**BORING LOGS B-011-0-23 AND B-012-0-23**

FRA-161-15.80 NOISE WALLS

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:52:03 AM USER: kevinj

J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL010.dgn

RESOURCE INTERNATIONAL, INC.



PROJECT: FRA-161-15.80 NOISE WALLS  
TYPE: NOISE WALLS  
PID: 117607 SFN: NA  
START: 11/3/23 END: 11/3/23

DRILLING FIRM / OPERATOR: RII/TG  
SAMPLING FIRM / LOGGER: RII/MJ  
DRILLING METHOD: 3.25" HSA  
SAMPLING METHOD: SPT

DRILL RIG: DIEDRICH D-50 (# 313)  
HAMMER: AUTOMATIC  
CALIBRATION DATE: 3/21/22  
ENERGY RATIO (%): 86.4

STATION / OFFSET: 802+72 / 0'  
ALIGNMENT: CL WALL 8  
ELEVATION: 967.4 (MSL) EOB: 25.0 ft.  
LAT / LONG: 40.087953, -82.841539

EXPLORATION ID  
B-013-0-23

PAGE  
1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 967.4	SPT/ ROD	REC SAMPLE ID	HP (tsf)	GRADATION (%)					ATTENBERG			ODOT CLASS (GI)	BACK FILL	
					GR	CS	FS	SI	CL	LL	PL	PI			WC
0.4' TOPSOIL (5.0')		1-5													
HARD, LIGHT BROWN TO BROWN SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.	967.0	6-10	SS-1	4.5+									15	A-6a (V)	
		11-13	SS-2	4.5+									14	A-6a (V)	
		14-11	SS-3	4.5+									12	A-6a (V)	
		12-7	SS-4	4.5+									12	A-6a (8)	
		10-11	SS-5	-									5	A-3a (V)	
		9-16	SS-6	-									6	A-3a (V)	
		8-11	SS-7	-									12	A-2-4 (V)	
		7-14	SS-8	-									9	A-2-4 (V)	
		6-10	SS-9	-		65	10	6	12	7	23	16	7	11	A-2-4 (0)
		5-21	SS-10	-										10	A-2-4 (V)

-AUGER LOST IN BORING @ 18.5' - 23.5'

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 16.0' AND UPON COMPLETION @ 14.2'  
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

RESOURCE INTERNATIONAL, INC.



PROJECT: FRA-161-15.80 NOISE WALLS  
TYPE: NOISE WALLS  
PID: 117607 SFN: NA  
START: 11/6/23 END: 11/2/23

DRILLING FIRM / OPERATOR: RII/TG  
SAMPLING FIRM / LOGGER: RII/MJ  
DRILLING METHOD: 3.25" HSA  
SAMPLING METHOD: SPT

DRILL RIG: DIEDRICH D-50 (# 313)  
HAMMER: AUTOMATIC  
CALIBRATION DATE: 3/21/22  
ENERGY RATIO (%): 86.4

STATION / OFFSET: 804+72 / 0'  
ALIGNMENT: CL WALL 8  
ELEVATION: 966.4 (MSL) EOB: 25.0 ft.  
LAT / LONG: 40.088209, -82.840922

EXPLORATION ID  
B-014-0-23

PAGE  
1 OF 1

MATERIAL DESCRIPTION AND NOTES	ELEV. 966.4	SPT/ ROD	REC SAMPLE ID	HP (tsf)	GRADATION (%)					ATTENBERG			ODOT CLASS (GI)	BACK FILL
					GR	CS	FS	SI	CL	LL	PL	PI		
0.5' TOPSOIL (5.5')		1-3												
HARD, LIGHT BROWN TO GRAY SILTY CLAY LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.	965.9	4-6	SS-1	4.5+									21	A-6b (V)
		7-9	SS-2	4.5+									15	A-6b (12)
		10-16	SS-3	4.5+									15	A-6b (V)
		11-10	SS-4	4.5+									12	A-6b (V)
		12-8	SS-5	4.25									12	A-6b (V)
		13-13	SS-6	-									15	A-2-4 (V)
		14-16	SS-7	-									12	A-2-4 (0)
		15-18	SS-8	-									10	A-2-4 (V)
		16-8	SS-9	-									13	A-2-4 (V)
		17-21	SS-10	-									19	A-4a (V)

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 13.5' AND UPON COMPLETION @ 11.8'. CAVE-IN DEPTH @ 12.3'  
ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
**RESOURCE INTERNATIONAL**  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
**38 66**  
 SHEET TOTAL  
**P.248 276**

GEOTECHNICAL PROFILE - NOISE WALLS  
 NOISE WALL 8  
 BORING LOGS B-013-0-23 AND B-014-0-23

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:52:33 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL01.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/23/23 END: 10/23/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 806+72 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 966.5 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.088482, -82.840308

EXPLORATION ID  
**B-015-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.7' -TOPSOIL (8.0")

VERY STIFF, BROWNISH GRAY TO GRAY SILTY CLAY, SOME COARSE TO FINE SAND, TRACE GRAVEL AND SAND, DAMP TO MOIST.

ELEV. 966.5

DEPTHS

SPT/ RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

WC

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT/ RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	WC	ODOT CLASS (GI)	BACK FILL
1	3						
2	4	12			19	A-6b (V)	
3	4						
4	10	59			13	A-6b (V)	
5	30						
6	11						
7	11	35			13	A-6b (8)	
8	13						
9	6	20			13	A-6b (V)	
10	8						
11	6	23			13	A-6b (V)	
12	10						
13							
14	6	17			12	A-6b (V)	
15	7	47					
16							
17	17	79			13	A-4a (V)	
18	30						
19	24	72					
20	26				10	A-4a (0)	
21	19						
22	10	46			11	A-4a (V)	
23	18						
24	15	46			9	A-4a (V)	
25	17						

ELEV. 951.0

DEPTHS

SPT/ RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

WC

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT/ RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	WC	ODOT CLASS (GI)	BACK FILL
1	3						
2	4	12			19	A-6b (V)	
3	4						
4	10	59			13	A-6b (V)	
5	30						
6	11						
7	11	35			13	A-6b (8)	
8	13						
9	6	20			13	A-6b (V)	
10	8						
11	6	23			13	A-6b (V)	
12	10						
13							
14	6	17			12	A-6b (V)	
15	7	47					
16							
17	17	79			13	A-4a (V)	
18	30						
19	24	72					
20	26				10	A-4a (0)	
21	19						
22	10	46			11	A-4a (V)	
23	18						
24	15	46			9	A-4a (V)	
25	17						

NOTES: SEEPAGE @ 14.0'. GROUNDWATER INITIALLY ENCOUNTERED @ 15.0' AND UPON COMPLETION @ 10.0'. CAVE-IN DEPTH @ 14.1'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/23/23 END: 10/23/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 808+72 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 968.4 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.088693, -82.839666

EXPLORATION ID  
**B-016-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.6' -TOPSOIL (7.0")

VERY STIFF TO HARD, LIGHT BROWN TO BROWN SILT AND CLAY, SOME COARSE TO FINE GRAVEL, LITTLE FINE GRAVEL, DAMP TO MOIST.

ELEV. 968.4

DEPTHS

SPT/ RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

WC

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT/ RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	WC	ODOT CLASS (GI)	BACK FILL
1	5						
2	5	14			15	A-6a (V)	
3	5						
4	8	24			13	A-6a (V)	
5	9						
6	11	33			12	A-6a (V)	
7	11						
8	12						
9	13	37			10	A-6a (6)	
10	13						
11	7	20			13	A-6a (V)	
12	7						
13	7						
14	5	29			13	A-6a (V)	
15	11						
16	12	35			10	A-1-b (0)	
17	12						
18	11						
19	9	26			14	A-1-b (V)	
20	9						
21	16	48			10	A-1-b (V)	
22	16						
23	17						
24	13	91			8	A-1-b (V)	
25	31						

ELEV. 952.9

DEPTHS

SPT/ RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

WC

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT/ RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	WC	ODOT CLASS (GI)	BACK FILL
1	5						
2	5	14			15	A-6a (V)	
3	5						
4	8	24			13	A-6a (V)	
5	9						
6	11	33			12	A-6a (V)	
7	11						
8	12						
9	13	37			10	A-6a (6)	
10	13						
11	7	20			13	A-6a (V)	
12	7						
13	7						
14	5	29			13	A-6a (V)	
15	11						
16	12	35			10	A-1-b (0)	
17	12						
18	11						
19	9	26			14	A-1-b (V)	
20	9						
21	16	48			10	A-1-b (V)	
22	16						
23	17						
24	13	91			8	A-1-b (V)	
25	31						

NOTES: SEEPAGE @ 17.5'. GROUNDWATER INITIALLY ENCOUNTERED @ 18.0' AND UPON COMPLETION @ 13.8'. CAVE-IN DEPTH @ 21.0'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
 RESOURCE INTERNATIONAL  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 39 66  
 SHEET TOTAL  
 P.249 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 8**  
**BORING LOGS B-015-0-23 AND B-016-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:53:02 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL012.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/23/23 END: 10/23/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 810+72 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 970.7 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.088908, -82.839020

EXPLORATION ID  
**B-017-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0')

HARD TO VERY STIFF, BROWN TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.

DENSE TO VERY DENSE, GRAY GRAVEL WITH SAND AND SILT, TRACE CLAY, DAMP TO MOIST.

DEPTH	ELEV.	SPT / RQD	REC SAMPLE (%)	HP ID	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
					GR	CS	FS	SI	CL	LL	PL	PI			
1	970.3	6													
2	970.3	9	30	SS-1	4.5+	-	-	-	-	-	-	-	-	17	A-6a (V)
3	970.3	12													
4	970.3	20	60	SS-2	4.5+	-	-	-	-	-	-	-	-	11	A-6a (V)
5	970.3	22	20												
6	970.3	12	32	SS-3	4.5+	9	10	16	37	28	17	11	10	A-6a (6)	
7	970.3	11	11												
8	970.3														
9	970.3	7	36	SS-4	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)
10	970.3	10	15												
11	970.3	5	16	SS-5	4.00	-	-	-	-	-	-	-	-	11	A-6a (V)
12	970.3	6													
13	970.3														
14	970.3	5	24	SS-6	3.50	-	-	-	-	-	-	-	-	10	A-6a (V)
15	970.3	12													
16	955.2	10	39	SS-7	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
17	955.2	12	15												
18	955.2														
19	955.2	10	50	SS-8	-	45	15	12	22	6	NP	NP	11	A-2-4 (0)	
20	955.2	15	20												
21	955.2	15	84	SS-9	-	-	-	-	-	-	-	-	-	9	A-2-4 (V)
22	955.2	30	28												
23	955.2														
24	945.7	13	62	SS-10	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
25	945.7	17	26												

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 18.0'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/23/23 END: 10/23/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 812+76 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 975.5 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.089106, -82.838365

EXPLORATION ID  
**B-018-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0')

VERY STIFF TO HARD, BROWN TO GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP TO MOIST.

DENSE TO VERY DENSE, BROWN-GRAY TO GRAY GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

DEPTH	ELEV.	SPT / RQD	REC SAMPLE (%)	HP ID	GRADATION (%)					ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
					GR	CS	FS	SI	CL	LL	PL	PI			
1	975.1	6													
2	975.1	10	32	SS-1	4.5+	-	-	-	-	-	-	-	-	14	A-4a (V)
3	975.1	12													
4	975.1	12	46	SS-2	4.5+	-	-	-	-	-	-	-	-	10	A-4a (V)
5	975.1	13	19												
6	975.1	17	40	SS-3	4.5+	-	-	-	-	-	-	-	-	13	A-4a (V)
7	975.1	13	15												
8	975.1														
9	975.1	8	29	SS-4	4.5+	-	-	-	-	-	-	-	-	11	A-4a (V)
10	975.1	9	11												
11	975.1	7	23	SS-5	3.25	13	11	15	35	26	24	15	9	A-4a (5)	
12	975.1	8	8												
13	975.1														
14	975.1	6	24	SS-6	3.25	-	-	-	-	-	-	-	-	12	A-4a (V)
15	975.1	8	9												
16	975.1	3	13	SS-7	2.50	-	-	-	-	-	-	-	-	12	A-4a (V)
17	975.1	4	5												
18	975.1														
19	975.1	8	39	SS-8	-	61	15	8	11	5	26	20	6	A-1-b (0)	
20	975.1	13	14												
21	975.1	11	91	SS-9	-	-	-	-	-	-	-	-	-	-	
22	975.1	29	34												
23	953.0	38	-	2S-9A	-	-	-	-	-	-	-	-	-	8	Rock (V)
24	953.0	28	-	SS-10	-	-	-	-	-	-	-	-	-	5	Rock (V)
25	950.5	50/3'													

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 18.4'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
 40 66  
 SHEET TOTAL  
 P.250 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 8**  
**BORING LOGS B-017-0-23 AND B-018-0-23**



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:53:32 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL013.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/23/23 END: 10/23/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 814+72 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 974.9 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.089329, -82.837734

EXPLORATION ID  
**B-019-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
				GR	CS	FS	SI	CL	LL			
7	26	SS-1	4.5+									
9	26	SS-1	4.5+									16 A-6a (V)
12	40	SS-2	4.5+									10 A-6a (V)
16	40	SS-2	4.5+									10 A-6a (V)
4	14	SS-3	-									10 A-2-4 (V)
7	3	SS-3	-									10 A-2-4 (V)
3	16	SS-4	4.25									11 A-4a (5)
5	16	SS-4	4.25									11 A-4a (5)
6	16	SS-4	4.25									11 A-4a (5)
4	16	SS-5	2.50									12 A-4a (V)
5	16	SS-5	2.50									12 A-4a (V)
6	26	SS-6	2.50									12 A-4a (V)
10	26	SS-6	2.50									12 A-4a (V)
5	22	SS-7	3.50									13 A-4a (V)
6	22	SS-7	3.50									13 A-4a (V)
9	22	SS-7	3.50									13 A-4a (V)
10	22	SS-7	3.50									13 A-4a (V)
12	39	SS-8	-									9 A-1-b (0)
15	39	SS-8	-									9 A-1-b (0)
12	39	SS-8	-									9 A-1-b (0)
8	24	SS-9	-									10 A-1-b (V)
9	24	SS-9	-									10 A-1-b (V)
8	24	SS-9	-									10 A-1-b (V)
9	24	SS-9	-									10 A-1-b (V)
50/5"	-	SS-10	-									9 Rock (V)
50/5"	-	SS-10	-									9 Rock (V)

0.3' - TOPSOIL (4.0")

HARD, BROWN SILT AND CLAY, LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.

MEDIUM DENSE, BROWN GRAVEL WITH SAND AND SILT, MOIST.

VERY STIFF TO HARD, GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP TO MOIST.

MEDIUM DENSE TO DENSE, GRAY GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 21.0' AND DRY UPON COMPLETION; CAVE-IN DEPTH @ 17.1'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/27/23 END: 10/27/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 816+46 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 974.3 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.089531, -82.837178

EXPLORATION ID  
**B-020-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)			ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
				GR	CS	FS	SI	CL	LL			
5	17	SS-1	4.5+									
7	17	SS-1	4.5+									16 A-6a (V)
10	36	SS-2	4.5+									13 A-6a (V)
15	36	SS-2	4.5+									13 A-6a (V)
10	35	SS-3	4.5+									12 A-6a (7)
14	35	SS-3	4.5+									12 A-6a (7)
9	27	SS-4	4.5+									11 A-6a (V)
10	27	SS-4	4.5+									11 A-6a (V)
4	20	SS-5	4.5+									11 A-6a (V)
6	20	SS-5	4.5+									11 A-6a (V)
8	20	SS-5	4.5+									11 A-6a (V)
4	20	SS-6	4.5+									10 A-6a (6)
6	20	SS-6	4.5+									10 A-6a (6)
8	20	SS-6	4.5+									10 A-6a (6)
4	45	SS-7	4.5+									11 A-6a (V)
15	45	SS-7	4.5+									11 A-6a (V)
50/5"	-	SS-8	-									9 Rock (V)
50/5"	-	SS-8	-									9 Rock (V)
50/5"	-	SS-9	-									4 Rock (V)
50/5"	-	SS-9	-									4 Rock (V)
50/6"	-	SS-10	-									4 Rock (V)
50/6"	-	SS-10	-									4 Rock (V)

0.4' - TOPSOIL (4.5")

HARD, BROWN TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE TO LITTLE FINE GRAVEL, DAMP TO MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 17.2'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
**41 66**  
 SHEET TOTAL  
**P.251 276**

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 8**  
**BORING LOGS B-019-0-23 AND B-020-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:54:01 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL014.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/27/23 END: 10/27/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 818+03 / 0'  
 ALIGNMENT: CL WALL 8  
 ELEVATION: 974.1 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.089729, -82.836617

EXPLORATION ID  
**B-021-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (3.0")  
 HARD, BROWN TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE TO LITTLE FINE GRAVEL, DAMP TO MOIST.

DEPTH	ELEV.	SPT / RQD	REC SAMPLE (%)	HP ID	GRADATION (%)							WC	ODOT CLASS (GI)	BACK FILL	
					GR	CS	FS	SI	CL	LL	PL				PI
1	974.1	6													
2	973.8	8	23	44	SS-1	4.5+								16	A-6a (V)
3		8													
4		17	55	64	SS-2	4.5+								10	A-6a (8)
5		19													
6		10	35	64	SS-3	4.5+								10	A-6a (V)
7		12													
8		9	30	72	SS-4	4.5+								10	A-6a (V)
9		12													
10		10	33	64	SS-5	4.5+								10	A-6a (V)
11		13													
12		6	23	72	SS-6	4.5+								11	A-6a (5)
13		7													
14		12	35	0	SS-7										
15		12													
16		12													
17		12													
18	955.9	12													
19		9													
20		50/3"												6	Rock (V)
21															
22		39												6	Rock (V)
23		50/2"													
24															
25	949.1	50/3"												5	Rock (V)

SHALE : GRAY, HIGHLY WEATHERED.

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 19.7'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/30/23 END: 10/30/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1100+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 975.0 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090031, -82.835639

EXPLORATION ID  
**B-022-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (4.0")  
 VERY STIFF TO HARD, BROWN SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP TO MOIST.

DEPTH	ELEV.	SPT / RQD	REC SAMPLE (%)	HP ID	GRADATION (%)							WC	ODOT CLASS (GI)	BACK FILL	
					GR	CS	FS	SI	CL	LL	PL				PI
1	974.7	9													
2		14	45	67	SS-1	4.5+								12	A-4a (V)
3		17													
4		11	45	44	SS-2	4.5+								11	A-4a (V)
5		17													
6		8	24	39	SS-3	4.5+								13	A-4a (V)
7		8													
8		9													
9		3	9	56	SS-4	3.00								13	A-4a (6)
10	965.3	3													
11		3	10	39	SS-5	2.50								13	A-4a (V)
12		4													
13															
14		5	22	78	SS-6									14	A-4a (V)
15		7													
16	959.0	7													
17		14	42	50	SS-7									9	A-4a (1)
18		15													
19		5	27	72	SS-8									10	A-4a (V)
20		10													
21	954.6	50/3"												5	Rock (V)
22															
23															
24		45												7	Rock (V)
25	950.0	50/3"													

SHALE : GRAY, HIGHLY WEATHERED.

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 16.0' AND UPON COMPLETION @ 9.7'; CAVE-IN DEPTH @ 17.6'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
 42 66  
 SHEET TOTAL  
 P.252 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALLS 8 AND 11**  
**BORING LOGS B-021-0-23 AND B-022-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:54:29 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\117607-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL015.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/30/23 END: 10/30/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1102+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 977.0 (MSL) EOB: 24.5 ft.  
 LAT / LONG: 40.090244, -82.835195

EXPLORATION ID  
**B-023-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTH (ft)	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)						WC	HOLE SEALED
					GR	FS	SI	CL	LL	PL		
1	7											
2	10	32	SS-1	4.5+	-	-	-	-	-	-	14	A-4a (V)
3	12											
4	6	17	SS-2	4.5+	8	11	16	39	26	16	9	A-4a (6)
5	6											
6	4	5	SS-3	4.00	-	-	-	-	-	-	10	A-4a (V)
7	8	19										
8												
9	4	5	SS-4	3.50	-	-	-	-	-	-	13	A-4a (V)
10	9	20										
11	42		SS-5	-	-	-	-	-	-	-	4	Rock (V)
12	50/3"											
13												
14	50/3"		SS-6	-	-	-	-	-	-	-	5	Rock (V)
15	0		NQ2-1									CORE
16												
17	0		NQ2-2									CORE
18												
19												
20												
21												
22	0		NQ2-3									CORE
23												
24												

0.3' - TOPSOIL (4.0')  
 VERY STIFF TO HARD, BROWN TO GRAY SANDY SILT, SOME CLAY, TRACE FINE GRAVEL, DAMP TO MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

SHALE : BLACK, HIGHLY WEATHERED, WEAK, VERY FINE GRAINED, LAMINATED, HIGHLY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, DISTURBED, SEAMY, VERY POOR SURFACE.

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 16.1'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<p><b>Photo No.</b> 6</p>	
<p><b>Boring:</b> B-023-0-23</p>	<p>RC-1: 14.4-15.0'                  REC (%):0                  RQD (%):0</p>
<p>RC-2: 15.0-19.5'                  REC (%):35                  RQD (%):0</p>	

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:54:49 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1016.dgn

**Project Name:** FRA-161-15.80

**Location:**  
Franklin County, Ohio

<p><b>Photo No.</b> 7</p>	<p><b>Boring:</b> B-023-0-23</p>	<p>RC-3: 19.5-24.5' REC (%):100 RQD (%):0</p>
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**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:54:55 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL017.dgn

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/31/23 END: 10/31/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1104+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 979.6 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090471, -82.834551

EXPLORATION ID  
**B-024-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				ODOT CLASS (GI)	BACK FILL		
				GR	CS	FS	SI	CL	LL	PL	PI			WC	
1	5														
2	5	19	47	SS-1	4.5+	-	-	-	-	-	-	-	19	A-7-6 (V)	
3	8														
4	10	37	78	SS-2	4.5+	3	4	10	35	48	42	20	22	17	A-7-6 (13)
5	16														
6	17	28	78	SS-3	4.5+	-	-	-	-	-	-	-	-	9	A-6a (V)
7	26														
8															
9	28	18	43	SS-4	4.5+	-	-	-	-	-	-	-	-	13	A-6a (V)
10	12														
11	5	6	16	SS-5	2.50	-	-	-	-	-	-	-	-	10	A-6a (V)
12	5														
13															
14	10	17	55	SS-6	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)
15	21														
16	10	14	42	SS-7	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
17	15														
18															
19	6	14	45	SS-8	-	40	14	12	21	13	25	18	7	11	A-2-4 (0)
20	17														
21	6	11	-	SS-9	-	-	-	-	-	-	-	-	-	10	A-2-4 (V)
22	50/4"														
23															
24	50/6"			SS-10	-	-	-	-	-	-	-	-	-	3	Rock (V)
25															

SHALE : GRAY, HIGHLY WEATHERED.

TR

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 18.5'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/31/23 END: 10/31/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1106+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 980.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090688, -82.833893

EXPLORATION ID  
**B-025-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**


SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				ODOT CLASS (GI)	BACK FILL		
				GR	CS	FS	SI	CL	LL	PL	PI			WC	
1	4														
2	5	17	50	SS-1	4.5+	-	-	-	-	-	-	-	-	20	A-6a (V)
3	7														
4	8	12	42	SS-2	4.5+	-	-	-	-	-	-	-	-	14	A-6a (V)
5	17														
6	12	17	55	SS-3	4.5+	10	16	34	30	27	16	11	8	8	A-6a (6)
7	21														
8															
9	10	13	39	SS-4	4.5+	-	-	-	-	-	-	-	-	10	A-6a (V)
10	14														
11	18	21	69	SS-5	-	-	-	-	-	-	-	-	-	8	A-2-4 (V)
12	27														
13															
14	9	12	39	SS-6	-	38	23	12	17	10	27	20	7	6	A-2-4 (0)
15	15														
16	14	21	71	SS-7	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
17	28														
18															
19	12	22	75	SS-8	-	-	-	-	-	-	-	-	-	7	A-2-4 (V)
20	30														
21	12	16	42	SS-9	-	-	-	-	-	-	-	-	-	14	A-2-4 (V)
22	13														
23															
24	8	15	46	SS-10	-	-	-	-	-	-	-	-	-	11	A-2-4 (V)
25	17														

-SHALE FRAGMENTS PRESENT THROUGHOUT

TR

EOB

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 21.0' AND DRY UPON COMPLETION; CAVE-IN DEPTH @ 15.3'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
 45 66  
 SHEET TOTAL  
 P.255 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 11**  
**BORING LOGS B-024-0-23 AND B-025-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:55:24 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL018.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 10/31/23 END: 10/31/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1108+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 979.8 (MSL) EOB: 25.5 ft.  
 LAT / LONG: 40.090906, -82.833225

EXPLORATION ID  
**B-026-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' TOPSOIL (4.0")  
 VERY STIFF TO HARD, LIGHT BROWN SILTY CLAY,  
 "AND" FINE TO COARSE SAND, LITTLE FINE GRAVEL,  
 DAMP TO MOIST.

ELEV. 979.8

DEPTHS

SPT / RQD

GRADATION (%)

ATTERBERG

WATER CONTENT (%)

BACK FILL

DEPTH (ft)	SPT / RQD	ELEV.	GRADATION (%)	ATTERBERG	WATER CONTENT (%)	BACK FILL
1	4	979.5				
2	5					
3	13					
4	26					17 A-6b (V)
5	13					
6	18					
7	18					19 A-6b (V)
8	16					
9	40					12 A-6b (V)
10	13					
11	15					
12	4					
13	4					
14	5					
15	3					
16	4					
17	4					
18	4					
19	4					
20	4					
21	4					
22	4					
23	4					
24	4					
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87	4					
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90	4					
91	4					
92	4					
93	4					
94	4					
95	4					
96	4					
97	4					
98	4					
99	4					
100	4					

MEDIUM DENSE TO DENSE, BROWN TO DARK GRAY  
 GRAVEL WITH SAND AND SILT, TRACE CLAY, MOIST.

ELEV. 969.3

DEPTHS

SPT / RQD

GRADATION (%)

ATTERBERG

WATER CONTENT (%)

BACK FILL

DEPTH (ft)	SPT / RQD	ELEV.	GRADATION (%)	ATTERBERG	WATER CONTENT (%)	BACK FILL
1	9					
2	14					
3	14					
4	33					
5	0					
6	100					14 A-1-b (V)
7	46					
8	75					10 A-1-b (0)
9	39					
10	0					
11	100					15 A-1-b (V)
12	8					
13	8					
14	8					
15	8					
16	8					
17	8					
18	8					
19	8					
20	8					
21	8					
22	8					
23	8					
24	8					
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87	8					
88	8					
89	8					
90	8					
91	8					
92	8					
93	8					
94	8					
95	8					
96	8					
97	8					
98	8					
99	8					
100	8					

DENSE, GRAY TO BLACK GRAVEL WITH SAND, LITTLE  
 SILT, TRACE CLAY, MOIST.

ELEV. 961.8

DEPTHS

SPT / RQD

GRADATION (%)

ATTERBERG

WATER CONTENT (%)

BACK FILL

DEPTH (ft)	SPT / RQD	ELEV.	GRADATION (%)	ATTERBERG	WATER CONTENT (%)	BACK FILL
1	9					
2	14					
3	14					
4	33					
5	0					
6	100					14 A-1-b (V)
7	46					
8	75					10 A-1-b (0)
9	39					
10	0					
11	100					15 A-1-b (V)
12	8					
13	8					
14	8					
15	8					
16	8					
17	8					
18	8					
19	8					
20	8					
21	8					
22	8					
23	8					
24	8					
25	8					
26	8					
27	8					
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40	8					
41	8					
42	8					
43	8					
44	8					
45	8					
46	8					
47	8					
48	8					
49	8					
50	8					
51	8					
52	8					
53	8					
54	8					
55	8					
56	8					
57	8					
58	8					
59	8					
60	8					
61	8					
62	8					
63	8					
64						

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:55:54 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL019.dgn

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/1/23 END: 11/1/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (#313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1112+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 982.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091197, -82.831841

EXPLORATION ID  
**B-028-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' - TOPSOIL (4.0")  
 VERY STIFF TO HARD, BROWNISH GRAY TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP TO MOIST.

MEDIUM DENSE TO DENSE, GRAY TO BROWN COARSE AND FINE SAND, SOME SILT, TRACE CLAY, TRACE FINE GRAVEL, DAMP TO MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

DEPTH	ELEV.	SPT/ RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	ODOT CLASS (GI)	BACK FILL	
					GR	CS	FS	SI	CL	LL	PL				PI
1	982.2	6													
2	981.9	8	SS-1	4.5+										18	A-6a (V)
3		10													
4		11													
5		15	SS-2	4.5+										11	A-6a (V)
6		18													
7		10													
8		11													
9		14													
10		6													
11	971.7	10													
12		4													
13		6													
14		23													
15		13													
16		15													
17		5													
18		8													
19		23													
20		10													
21		8													
22		5													
23		8													
24		23													
25		10													
TR	966.2	40													
		50/2"													
		50/5"													
		33													
		50/2"													
		0													
		50/2"													
		50/0"													
EOB	957.2														

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 15.2'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/1/23 END: 11/1/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (#313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1114+00 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 983.0 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091321, -82.831138

EXPLORATION ID  
**B-029-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' - TOPSOIL (4.0")  
 HARD TO VERY STIFF BROWN TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP TO MOIST.


MEDIUM STIFF TO VERY STIFF, BLACK TO GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP TO MOIST.

VERY DENSE DARK GRAY GRAVEL WITH SAND AND SILT, TRACE CLAY, MOIST.  
 -SHALE FRAGMENTS IN SS-10

DEPTH	ELEV.	SPT/ RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	ODOT CLASS (GI)	BACK FILL	
					GR	CS	FS	SI	CL	LL	PL				PI
1	982.7	3													
2		5													
3		9													
4		4													
5		6													
6		4													
7		7													
8		10													
9		4													
10		5													
11		3													
12		7													
13		3													
14		2													
15		4													
16	967.5	4													
17		7													
18		9													
19		2													
20		7													
21		1													
22		4													
23		8													
24		19													
25		23													
EOB	958.0														

NOTES: SEEPAGE @ 22.4' - 25.0' AND DRY UPON COMPLETION; CAVE-IN DEPTH @ 13.0'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 47 66  
 SHEET TOTAL  
 P.257 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 11**  
**BORING LOGS B-028-0-23 AND B-029-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:56:21 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL020.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/1/23 END: 11/1/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1115+84 / 0'  
 ALIGNMENT: CL WALL 11  
 ELEVATION: 983.0 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091378, -82.830480

EXPLORATION ID  
**B-030-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0')  
 VERY STIFF TO HARD, BROWN TO DARK BROWN TO GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE TO LITTLE FINE GRAVEL, DAMP TO MOIST.

ELEV. 983.0

DEPTHS

SPT / RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT / RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	ODOT CLASS (GI)	BACK FILL
1	3					
2	6	SS-1	4.5+		15	A-6a (V)
3	9					
4	5	SS-2	4.5+	30 17 13	15	A-6a (7)
5	8					
6	4	SS-3	4.5+		14	A-6a (V)
7	12					
8						
9	4	SS-4	4.5+		11	A-6a (V)
10	5					
11	2	SS-5	3.25		13	A-6a (V)
12	3					
13	5					
14	2	SS-6	2.00	27 15 12	14	A-6a (5)
15	5					
16	2	SS-7	3.00		13	A-6a (V)
17	4					
18	8	SS-8	-		7	A-2-4 (V)
19	20					
20	20					
21	34	SS-9	-		5	Rock (V)
22	50/2'					
23	50/3'	SS-10	-			Rock (V)
24						
25						

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 22.3'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/16/23 END: 11/16/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 900+16 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 974.5 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090580, -82.836109

EXPLORATION ID  
**B-031-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' TOPSOIL (5.5')  
 HARD BROWN TO GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP TO MOIST.

ELEV. 974.5

DEPTHS

SPT / RQD

REC SAMPLE ID

GRADATION (%)

ATTERBERG

ODOT CLASS (GI)

BACK FILL

DEPTH	SPT / RQD	REC SAMPLE ID	GRADATION (%)	ATTERBERG	ODOT CLASS (GI)	BACK FILL
1	4					
2	5	SS-1	4.5+		19	A-4a (V)
3	7					
4	18	SS-2	-			
5	9					
6	30	2S-2A	-			
7	16	SS-3	4.5+		10	A-4a (V)
8	12					
9	13	SS-4	4.5+		11	A-4a (V)
10	10					
11	6	SS-5	4.5+	25 15 10	12	A-4a (6)
12	7					
13						
14	6	SS-6	-			
15	7					
16	12	2S-6A	4.5+		13	A-4a (V)
17	4	SS-7	4.5+		12	A-4a (V)
18	5					
19	3	SS-8	4.5+		13	A-4a (V)
20	4					
21	8	SS-9	-	6 NP NP	16	A-1-b (0)
22	10					
23						
24	8	SS-10	-		16	A-1-b (V)
25	12					

EOB

MEDIUM DENSE, DARK GRAY GRAVEL WITH SAND, TRACE SILT, TRACE CLAY, MOIST.  
 -SHALE FRAGMENTS PRESENT THROUGHOUT  
 -1.5' OF HEAVING SANDS @23.5'

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 19.8' AND UPON COMPLETION @ 20.5'; CAVE-IN DEPTH @ 13.8'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 48 66  
 SHEET TOTAL  
 P.258 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALLS 11 AND 9**  
**BORING LOGS B-030-0-23 AND B-031-0-23**



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:56:46 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1021.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/16/23 END: 11/16/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 902+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 975.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090809, -82.835481

EXPLORATION ID  
**B-032-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0")  
 HARD, BROWN SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP.

ELEV. 975.2  
 974.8

DEPTH	SPT / RQD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	9	14	40	SS-1	4.5+	-	-	-	-	-	-	12	A-6a (V)	>>>
2	14													>>>
3														>>>
4	8	24	61	SS-2	4.5+	9	10	19	34	28	11	11	A-6a (6)	>>>
5	9													>>>
6	7	20	49	SS-3	4.5+	-	-	-	-	-	-	12	A-6a (V)	>>>
7	14													>>>
8														>>>
9	5	8	24	SS-4	4.5+	-	-	-	-	-	-	11	A-6a (V)	>>>
10	9													>>>
11	5	7	22	SS-5	-	-	-	-	-	-	-	-	-	>>>
12	8													>>>
13	12	-	67	2S-5A	4.5+	-	-	-	-	-	-	13	A-6a (V)	>>>
14	6	8	24	SS-6	-	-	-	-	-	-	-	-	-	>>>
15	12	-	33	2S-6A	4.5+	-	-	-	-	-	-	13	A-6a (V)	>>>
16	4	9	26	SS-7	-	41	14	12	21	12	24	16	8	A-2-4 (0)
17	9													>>>
18														>>>
19	8	10	30	SS-8	-	-	-	-	-	-	-	15	A-2-4 (V)	>>>
20	11													>>>
21	15	22	58	SS-9	-	-	-	-	-	-	-	16	A-2-4 (V)	>>>
22	18													>>>
23														>>>
24	5	8	29	SS-10	-	-	-	-	-	-	-	13	A-2-4 (V)	>>>
25	12													>>>

ELEV. 959.5

W 956.7  
 V 954.7

ELEV. 950.2

MEDIUM DENSE TO DENSE, GRAY GRAVEL WITH SAND AND SILT, LITTLE CLAY, MOIST.

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 18.5' AND UPON COMPLETION @ 20.5'; CAVE-IN DEPTH @ 15.1'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/16/23 END: 11/16/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 904+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 977.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091043, -82.834836

EXPLORATION ID  
**B-033-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' TOPSOIL (5.0")  
 HARD, BROWN TO GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP.

ELEV. 977.2  
 976.8

DEPTH	SPT / RQD	N <sub>60</sub>	REC SAMPLE (%)	HP ID	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	BACK FILL
1	7	12	37	SS-1	4.5+	-	-	-	-	-	-	12	A-4a (V)	>>>
2	14													>>>
3														>>>
4	10	29	81	SS-2	4.5+	-	-	-	-	-	-	12	A-4a (V)	>>>
5	10													>>>
6	8	20	49	SS-3	4.5+	-	-	-	-	-	-	12	A-4a (V)	>>>
7	14													>>>
8														>>>
9	6	9	27	SS-4	4.5+	12	9	16	39	24	15	10	11	A-4a (6)
10	10													>>>
11	6	7	22	SS-5	4.5+	-	-	-	-	-	-	12	A-4a (V)	>>>
12	8													>>>
13														>>>
14	7	13	36	SS-6	-	-	-	-	-	-	-	4	A-1-a (V)	>>>
15	12													>>>
16	8	12	33	SS-7	-	59	21	9	-	11	-	7	A-1-a (0)	>>>
17	11													>>>
18														>>>
19	9	13	36	SS-8	-	-	-	-	-	-	-	12	A-2-4 (V)	>>>
20	12													>>>
21	17	15	43	SS-9	-	-	-	-	-	-	-	12	A-2-4 (V)	>>>
22	15													>>>
23														>>>
24	12	10	29	SS-10	-	-	-	-	-	-	-	18	A-2-4 (V)	>>>
25	10													>>>

ELEV. 964.2

W 958.7  
 V 956.7

ELEV. 959.2

DENSE, GRAY TO BLACK GRAVEL, SOME FINE TO COARSE SAND, LITTLE SILT, MOIST.  
 -LIMESTONE FRAGMENTS IN SS-6

MEDIUM DENSE TO DENSE, DARK GRAY GRAVEL WITH SAND AND SILT, TRACE CLAY, MOIST.  
 -SHALE FRAGMENTS PRESENT THROUGHOUT

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 18.5' AND UPON COMPLETION @ 20.5'; CAVE-IN DEPTH @ 14.5'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 49 66  
 SHEET TOTAL  
 P.259 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 9**  
**BORING LOGS B-032-0-23 AND B-033-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:57:14 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL022.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/16/23 END: 11/16/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 906+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 979.3 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091273, -82.834170

EXPLORATION ID  
**B-034-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' - TOPSOIL (5.0")  
 HARD, BROWN SILT AND CLAY, LITTLE GRAVEL AND SAND, DAMP.

-ROOT FIBERS IN SS-4

DENSE TO VERY DENSE, GRAY GRAVEL, LITTLE COARSE TO FINE SAND, TRACE SILT, DAMP.

MEDIUM DENSE TO VERY DENSE, BLACK GRAVEL WITH SAND AND SILT, MOIST.  
 -SHALE FRAGMENTS PRESENT THROUGHOUT

ELEV.  
 979.3

978.9

968.8

958.8

954.3

EOB

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

SPT / RQD

6

10

13

7

8

10

10

12

14

9

10

7

15

20

18

20

14

14

10

10

12

14

7

10

8

11

42

REC SAMPLE ID

SS-1

SS-2

SS-3

SS-4

SS-5

2S-5A

SS-6

SS-7

SS-8

SS-9

SS-10

GRADATION (%)

GR

FS

CS

SI

CL

LL

PL

PI

ATTERBERG

LL

PL

PI

ODOT CLASS (GI)

WC

12

14

17

15

6

4

6

16

11

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/15/23 END: 11/15/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 908+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 981.4 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091443, -82.833496

EXPLORATION ID  
**B-035-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.4' - TOPSOIL (5.0")  
 HARD, BROWN TO GRAY SILTY CLAY, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP.

-CHERT FRAGMENTS IN SS-5

MEDIUM DENSE, BROWN TO BLACK GRAVEL WITH SAND AND SILT, TRACE CLAY, DAMP.  
 -SHALE FRAGMENTS IN SS-6

DENSE, GRAY COARSE AND FINE SAND, LITTLE GRAVEL, TRACE SILT, DAMP.

DENSE TO VERY DENSE, DARK GRAY GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, MOIST.

ELEV.  
 981.4

981.0

968.4

965.9

963.4

956.4

EOB

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

SPT / RQD

7

9

12

10

15

17

13

18

20

6

12

14

8

9

9

6

7

6

13

18

10

14

5

11

12

18

24

20

REC SAMPLE ID

SS-1

SS-2

SS-3

SS-4

SS-5

SS-6

SS-7

SS-8

SS-9

SS-10

GRADATION (%)

GR

FS

CS

SI

CL

LL

PL

PI

ATTERBERG

LL

PL

PI

ODOT CLASS (GI)

WC

17

12

13

11

16

8

12

13

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 19.7' AND DRY UPON COMPLETION. CAVE-IN DEPTH @ 14.3'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 50 66  
 SHEET TOTAL  
 P.260 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 9**  
**BORING LOGS B-034-0-23 AND B-035-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:57:41 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL023.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/15/23 END: 11/15/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 910+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 983.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091597, -82.832807

EXPLORATION ID  
**B-036-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTH (ft)	ELEV.	SPT / RQD	REC SAMPLE ID	HP (tsf)	GR	GRADATION (%)						WC	ODOT CLASS (GI)	BACK FILL	
						FS	CS	SI	CL	LL	PL				PI
1	983.2	9													
2	982.8	10	SS-1	-											
3		11													
4		12	2S-1A	4.5+								20	A-6a (V)		
5		6													
6		11	SS-2	4.25								23	A-6a (V)		
7		9										16	A-6a (V)		
8		9													
9		7													
10		7													
11		7													
12	970.2	7													
13		7													
14		5			33	15	13	29	10	38	21	17	12	A-6b (2)	
15		7													
16		10													
17		10	SS-7	-											
18	964.7	17													
19		20	2S-7A	-									11	A-6b (V)	
20		11			31	31	16	20	2	23	17	6	11	A-1-b (0)	
21	962.7	10													
22		18													
23		35	SS-9	-											
24		12											23	A-2-6 (V)	
25	958.2	10													
26		17													
27		17	SS-10	-									20	A-2-6 (V)	

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 21.0' AND DRY UPON COMPLETION; CAVE-IN DEPTH @ 14.3'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/15/23 END: 11/15/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 912+00 / 0'  
 ALIGNMENT: CL WALL 9  
 ELEVATION: 984.9 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091724, -82.832101

EXPLORATION ID  
**B-037-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTH (ft)	ELEV.	SPT / RQD	REC SAMPLE ID	HP (tsf)	GR	GRADATION (%)						WC	ODOT CLASS (GI)	BACK FILL	
						FS	CS	SI	CL	LL	PL				PI
1	984.9	5													
2	984.5	7													
3		9	SS-1	4.5+											
4		4													
5		5													
6		4													
7		5													
8		9													
9		4													
10		6													
11		4													
12		4													
13	971.9	4													
14		4													
15		7													
16		3													
17		9													
18	966.7	13													
19		16			28	16	12	33	11	28	19	9	13	A-4a (2)	
20	964.4	16													
21		13													
22		16	SS-8	-									9	A-1-b (V)	
23		9													
24		14													
25		15													
26	959.9	12													
27		12													
28		15	SS-10	-									13	A-2-4 (V)	

NOTES: GROUNDWATER INITIALLY ENCOUNTERED @ 19.8' AND UPON COMPLETION @ 18.2'; CAVE-IN DEPTH @ 19.0'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 6350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
 51 66  
 SHEET TOTAL  
 P.261 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 9**  
**BORING LOGS B-036-0-23 AND B-037-0-23**

FRA-161-15.80 NOISE WALLS

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:58:10 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1024.dgn

RESOURCE INTERNATIONAL, INC.



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 12/5/23 END: 12/5/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 120+00 / 0'  
 ALIGNMENT: CL WALL 12  
 ELEVATION: 979.3 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091445, -82.828386

EXPLORATION ID  
**B-038-0-23**

PAGE  
 1 OF 1

MATERIAL DESCRIPTION AND NOTES

0.3' - ASPHALT (3.0")  
 0.5' - CONCRETE (6.5")  
 0.3' - AGGREGATE BASE (3.5")  
 VERY STIFF TO HARD, BROWN TO GRAY SILTY CLAY,  
 LITTLE COARSE TO FINE SAND, TRACE FINE GRAVEL,  
 MOIST.

ELEV.	DEPTH	SPT/ RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GR	CS	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)
979.3	1														
978.5	2	6	20	SS-1	-										
978.2	3	9		2S-1A	4.5+									15	A-6b (V)
	4	7	43	SS-2	4.5+									14	A-6b (V)
	5	20													
	6	6	22	SS-3	-										
	7	9		2S-3A	4.5+										
	8	14					9	10	32	32	39	18	21	14	A-6b (10)
	9	5	22	SS-4	4.5+									12	A-6b (V)
	10	9													
	11	4	14	SS-5	4.00									20	A-6b (V)
966.3	12	5		SS-6	-									9	A-4a (V)
	13	7	13	48	50										
	14	20													
963.8	15	14	36	39	4.5+									8	A-2-4 (0)
	16	15	10												
	17	9	18	33	81									18	A-2-4 (V)
	18	5													
958.8	19	6	20	56	SS-9	-								23	A-2-4 (V)
	20	8													
956.3	21	14	11	32	72										
	22	11													
954.3	23	11													
	24	11													
	25	11													

LOOSE TO MEDIUM DENSE, BROWN SANDY SILT,  
 SOME FINE GRAVEL, LITTLE CLAY, MOIST.

LOOSE TO MEDIUM DENSE, GRAY GRAVEL WITH SAND  
 AND SILT, TRACE CLAY, MOIST.

VERY STIFF, BROWN SILT AND CLAY, LITTLE COARSE  
 TO FINE SAND, TRACE FINE GRAVEL, MOIST.

SHALE : BLACK, HIGHLY WEATHERED.

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 14.3'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS. PAVEMENT PATCHED WITH COLD PATCH ASPHALT.

000-23 RII STA ODOT BORING LOG (8.5X11) - OH DOT GDT - 1/11/24 07:57 - U:\G\8\PROJECTS\2023\W-23-107.GPJ

DESIGN AGENCY  
 RESOURCE INTERNATIONAL  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER: JAS  
 REVIEWER: DEK 1/19/24  
 PROJECT ID: 117607  
 SUBSET TOTAL: 52 / 66  
 SHEET TOTAL: P.262 / 276

GEOTECHNICAL PROFILE - NOISE WALLS  
 NOISE WALL 12  
 BORING LOGS B-038-0-23

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:58:25 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1025.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 12/4/23 END: 12/4/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 121+41.21 / 0'  
 ALIGNMENT: CL WALL 12  
 ELEVATION: 986.4 (MSL) EOB: 20.0 ft.  
 LAT / LONG: 40.091317, -82.827731

EXPLORATION ID  
**B-039-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' TOPSOIL (5.5')  
 HARD, BROWN CLAY, LITTLE COARSE TO FINE SAND,  
 TRACE FINE GRAVEL, MOIST.

SHALE : GRAY, HIGHLY WEATHERED.

SHALE : GRAY, MODERATELY WEATHERED, WEAK,  
 VERY FINE GRAINED, LAMINATED, FRACTURED,  
 NARROW APERTURES, SLIGHTLY ROUGH SURFACE,  
 BLOCKY, DISTURBED, SEAMY, POOR SURFACE.

DEPTH (ft)	SPT / RQD	N <sub>60</sub>	REC (%)	SAMPLE ID	HP (tsf)	GRADATION (%)						WC	HOLE SEALED		
						GR	FS	SI	CL	LL	PL			PI	
1	7														
2	5	16	0	SS-1	-	-	-	-	-	-	-	-			
3	9		100	2S-1A	4.5+	-	-	-	-	-	-	19	A-7.6 (V)		
4	4														
5	6	19	0	SS-2	-	-	-	-	-	-	-	-			
6	10		50	2S-2A	4.5+	-	-	-	-	-	-	18	A-7.6 (V)		
7	8	20	81	SS-3	4.5+	28	9	7	25	31	50	20	30	16	A-7.6 (13)
8															
9	9	27	75	SS-4	4.5+	-	-	-	-	-	-	-	-	14	A-7.6 (V)
10	10														
11	10/0"														Rock (V)
12															
13															
14	50/4"		0	SS-6	-	-	-	-	-	-	-	-	-		Rock (V)
15	0		0	NQ2-1											CORE
16															
17	43		100	NQ2-2											CORE
18															
19															
20															

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 11.2'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> 8			
<b>Boring:</b> B-039-0-23			
RC-1: 14.0'-15.0' REC (%):0 RQD (%):0			
RC-2: 15.0'-20.0' REC (%):100 RQD (%):43			

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:58:44 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1026.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 12/4/23 END: 12/4/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 123+26.79 / 0'  
 ALIGNMENT: CL WALL 12  
 ELEVATION: 987.0 (MSL) EOB: 21.0 ft.  
 LAT / LONG: 40.091207, -82.827079

EXPLORATION ID  
**B-040-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
0.4' - TOPSOIL (5.0')													
1	3												
2	6												
3	8												
4	7												
5	9												
6	6												
7	8												
8													
9	6												
10	8												
11													
12	15												
13	50/3'												
14	60/3'												
15	0												
16													
17													
18	0												
19													
20													
21													

**SHALE** : GRAY, HIGHLY WEATHERED.

**SANDSTONE** : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.  
 -@14.3' IRON STAINING IN FRACTURE  
 -@15.0' - 15.2' ZONE OF FRACTURES  
 -@15.7' CLAY SEAM

**SHALE** : GRAY, MODERATELY WEATHERED, WEAK, FINE GRAINED, LAMINATED, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, DISTURBED, SEAMY, POOR SURFACE.

**SILTSTONE** : GRAY, SLIGHTLY WEATHERED, MODERATELY STRONG, VERY FINE GRAINED, VERY THIN, HIGHLY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, DISTURBED, SEAMY, FAIR SURFACE.

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 94 LBS CEMENT / 25 LBS BENTONITE POWDER / 40 GAL WATER.

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> 9	
<b>Boring:</b> B-040-0-23	
RC-1: 14.0-16.0' REC (%):37 RQD (%):0	
RC-2: 16.0-21.0' REC (%):100 RQD (%):0	

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949

DESIGNER  
 JAS

REVIEWER  
 DEK 1/19/24

PROJECT ID  
 117607

SUBSET TOTAL  
 54 66

SHEET TOTAL  
 P.264 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 12**  
**BORING LOG & ROCK CORE PHOTO FOR B-040-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:59:04 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1027.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 12/4/23 END: 12/4/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 124+97.00 / 0'  
 ALIGNMENT: CL WALL 12  
 ELEVATION: 988.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.091033, -82.826474

EXPLORATION ID  
**B-041-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTHS	ELEV.	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)						WC	HOLE SEALED		
						GR	FS	SI	CL	LL	PL			PI	
1	988.2	4													
2	987.7	5	17	SS-1	3.50	-	-	-	-	-	-	16	A-6a (V)		
3		7													
4		5	22	SS-2	3.00	6	12	19	34	29	30	17	13	15	A-6a (7)
5	982.7	10													
6		13	32												
7		35	96	SS-3	-	-	-	-	-	-	-	-	8	A-2-4 (V)	
8	980.2														
9		10	21	SS-4	-	-	-	-	-	-	-	-	7	Rock (V)	
10		29													
11		50/6"		SS-5	-	-	-	-	-	-	-	-	6	Rock (V)	
12															
13															
14		36	50/5"	SS-6	-	-	-	-	-	-	-	-	4	Rock (V)	
15															
16	972.2														
17															
18		20		NQ2-1	68										CORE
19															
20															
21															
22		40		NQ2-2	100										CORE
23															
24															
25	963.2														

000-23 RII STA ODOT BORING LOG (8.5X11) - OH DOT GDT - 1/11/24 07:57 - U:\G18\PROJECTS\2023\W-23-107.GPJ

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 12.1'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 94 LBS CEMENT / 25 LBS BENTONITE POWDER / 40 GAL WATER.

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> <b>10</b>	
<b>Boring:</b> B-041-0-23	
RC-1: 16.0'-20.0' REC (%):68 RQD (%):20	
RC-2: 20.0'-25.0' REC (%):100 RQD (%):40	

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:59:24 AM USER: kevinj  
 J:\GEO\GEO\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1028.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/9/23 END: 11/9/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1500+29 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1030.3 (MSL) EOB: 24.0 ft.  
 LAT / LONG: 40.090577, -82.811738

EXPLORATION ID  
**B-042-0-23**  
 PAGE  
 1 OF 1

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	ODOT CLASS (GI)	HOLE SEALED			
				GR	FS	SI	CL	LL	PL	PI						
1	3															
2	8	23	4.5+								14	A-6a (V)				
3	8															
4	14	39														
5	13															
6	17		4.5+								13	A-6a (V)				
7	4	5	16	58	SS-3	4.5+	9	11	16	37	27	16	11	15	A-6a (6)	
8	6															
9	4	8	23	58	SS-4	4.5+								12	A-6a (V)	
10	8															
11	40															
12	42															
13	50/2'															
14	50/0"															
15																
16	50/3"															
17																
18																
19	58															
20																
21																
22	68															
23																
24																

0.6' TOPSOIL (6.5")  
 HARD, BROWN SILT AND CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.

SANDSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATLY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE.

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 16.9'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
11

**Boring:**  
B-042-0-23

RC-1: 18.0'-19.0'  
 REC (%):75  
 RQD (%):58

RC-2: 19.0'-24.0'  
 REC (%):92  
 RQD (%):68





**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 9:59:45 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_Z1029.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/9/23 END: 11/9/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1502+16 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1035.0 (MSL) EOB: 24.5 ft.  
 LAT / LONG: 40.090645, -82.811039

EXPLORATION ID  
**B-043-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTHS	ELEV.	SPT / RQD	REC SAMPLE ID	HP (tsf)	GR	FS	SI	CL	LL	PL	PI	WC	ODOT CLASS (GI)	HOLE SEALED
1	1034.5	3												
2		5												
3		9												
4		7												
5		8												
6		3												
7		5												
8		8												
9		4												
10		5												
11	1024.5	20												
12		50/5"												
13														
14		20												
15		30												
16		35												
17		50/4"												
18														
19	1016.5	0												
20														
21														
22	1013.4	33												
23	1012.5													
24	1010.5													

0.5' TOPSOIL (5.5')  
 HARD, BROWN SANDY SILT, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, MOIST TO DAMP.

SANDSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.

SHALE : GRAY, MODERATELY WEATHERED, WEAK, FINE GRAINED, LAMINATED, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, DISTURBED, SEAMY, POOR SURFACE.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 15.2'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> 12	
<b>Boring:</b> B-043-0-23	
RC-1: 18.5-19.5' REC (%):75 RQD (%):10	
RC-2: 19.5-24.5' REC (%):68 RQD (%):33	

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 57 66  
 SHEET TOTAL  
 P.267 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
 NOISE WALL 15  
 BORING LOG & ROCK CORE PHOTO FOR B-043-0-23

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:00:05 AM USER: kevinj  
 J:\GEO TECH\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL030.dgn

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/14/23 END: 11/14/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1504+27.0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.3 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090479, -82.810313

EXPLORATION ID  
**B-044-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION  
 AND NOTES**

0.3'-TOPSOIL (4.0")  
 HARD, LIGHT BROWN SILT AND CLAY, SOME COARSE  
 TO FINE SAND, LITTLE FINE GRAVEL, DAMP TO MOIST.

SPT/ RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)						ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
				GR	CS	FS	SI	CL	LL	PL	PI				
4	19	SS-1	4.5+	-	-	-	-	-	-	-	-	-	15	A-6a (V)	
6	6														
12	37	SS-2	-	-	-	-	-	-	-	-	-	-	9	A-6a (V)	
13	13														
10	35	SS-3	4.5+	15	10	14	39	22	30	17	13	14	A-6a (6)		
12	12														
8	32	SS-4	4.5+	-	-	-	-	-	-	-	-	-	14	A-6a (V)	
13	13														
6	27	SS-5	4.5+	-	-	-	-	-	-	-	-	-	11	A-6a (V)	
10	9														
50/4"	-	SS-6	-	-	-	-	-	-	-	-	-	-	7	Rock (V)	
14															
16	38	SS-7	-	-	-	-	-	-	-	-	-	-	10	Rock (V)	
50/4"	-														
18	-	SS-8	-	-	-	-	-	-	-	-	-	-	5	Rock (V)	
19															
20															
21	50/6"	SS-9	-	-	-	-	-	-	-	-	-	-	5	Rock (V)	
22															
23	50/6"	SS-10	-	-	-	-	-	-	-	-	-	-	5	Rock (V)	
24	50/5"														
25															

SANDSTONE : GRAY, HIGHLY WEATHERED.

ELEV.	DEPTHS
1038.3	
1038.0	
1025.3	TR
1013.3	EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 12.8'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

**RESOURCE INTERNATIONAL, INC.**

PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/14/23 END: 11/14/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1506+08.70'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.9 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090452, -82.809651

EXPLORATION ID  
**B-045-0-23**

PAGE  
 1 OF 1

**MATERIAL DESCRIPTION  
 AND NOTES**

0.3'-TOPSOIL (4.0")  
 HARD, LIGHT BROWN TO BROWN CLAY, "AND" SILT,  
 TRACE COARSE TO FINE SAND, DAMP.


SPT/ RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)						ATTERBERG			WC	ODOT CLASS (GI)	BACK FILL
				GR	CS	FS	SI	CL	LL	PL	PI				
5	16	SS-1	4.5+	0	3	8	51	38	48	20	28	17	A-7-6 (17)		
6	6														
9	32	SS-2	4.5+	-	-	-	-	-	-	-	-	-	14	A-7-6 (V)	
10	12														
10	37	SS-3	4.5+	-	-	-	-	-	-	-	-	-	14	A-7-6 (V)	
13	13														
8	36	SS-4	-	11	13	16	7	53	28	17	11	12	A-6a (5)		
12	13														
4	30	SS-5	-	-	-	-	-	-	-	-	-	-	13	A-6a (V)	
6	15														
50/4"	-	SS-6	-	-	-	-	-	-	-	-	-	-	6	Rock (V)	
13															
16	50/4"	SS-7	-	-	-	-	-	-	-	-	-	-	7	Rock (V)	
17															
18	50/4"	SS-8	-	-	-	-	-	-	-	-	-	-	6	Rock (V)	
19	50/4"														
20															
21	50/2"	SS-9	-	-	-	-	-	-	-	-	-	-	6	Rock (V)	
22															
23															
24	50/0"	SS-10	-	-	-	-	-	-	-	-	-	-	-	Rock (V)	
25															

SILTSTONE : GRAY TO DARK GRAY, HIGHLY WEATHERED.

ELEV.	DEPTHS
1038.9	
1038.9	
1025.9	TR
1013.9	EOB

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER; CAVE-IN DEPTH @ 13.9'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 58 66  
 SHEET TOTAL  
 P.268 276

**GEOTECHNICAL PROFILE - NOISE WALLS  
 NOISE WALL 15  
 BORING LOGS B-044-0-23 AND B-045-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL: Sheet PAPER: 34x22 (in.) DATE: 1/19/2024 TIME: 10:00:35 AM USER: kevinj  
 J:\GEO TECH\Geotech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL031.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/10/23 END: 11/10/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1508+10 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1039.1 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090415, -82.808921

EXPLORATION ID  
**B-046-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' - TOPSOIL (5.5')

HARD, BROWNISH GRAY CLAY, "AND" SILT, LITTLE FINE GRAVEL, LITTLE COARSE TO FINE SAND, DAMP.

HARD, BROWNISH GRAY SILT AND CLAY, SOME COARSE TO FINE SAND, SOME FINE GRAVEL, MOIST.

SANDSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE.  
 -@21.3' - 21.5' SHALE  
 -@22.5' CLAY SEAM

-@ 24.5'-25.0' SHALE

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
				GR	CS	FS	SI	CL	LL	PL		
1	5											
2	7											
3	8											
4	12											
5	14											
6	15											
7	16											
8	10											
9	8											
10	12											
11	15											
12	11											
13	18											
14	16											
15	32											
16	50/4"											
17												
18	50/4"											
19	0											
20												
21												
22												
23												
24												
25												

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 15.2'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

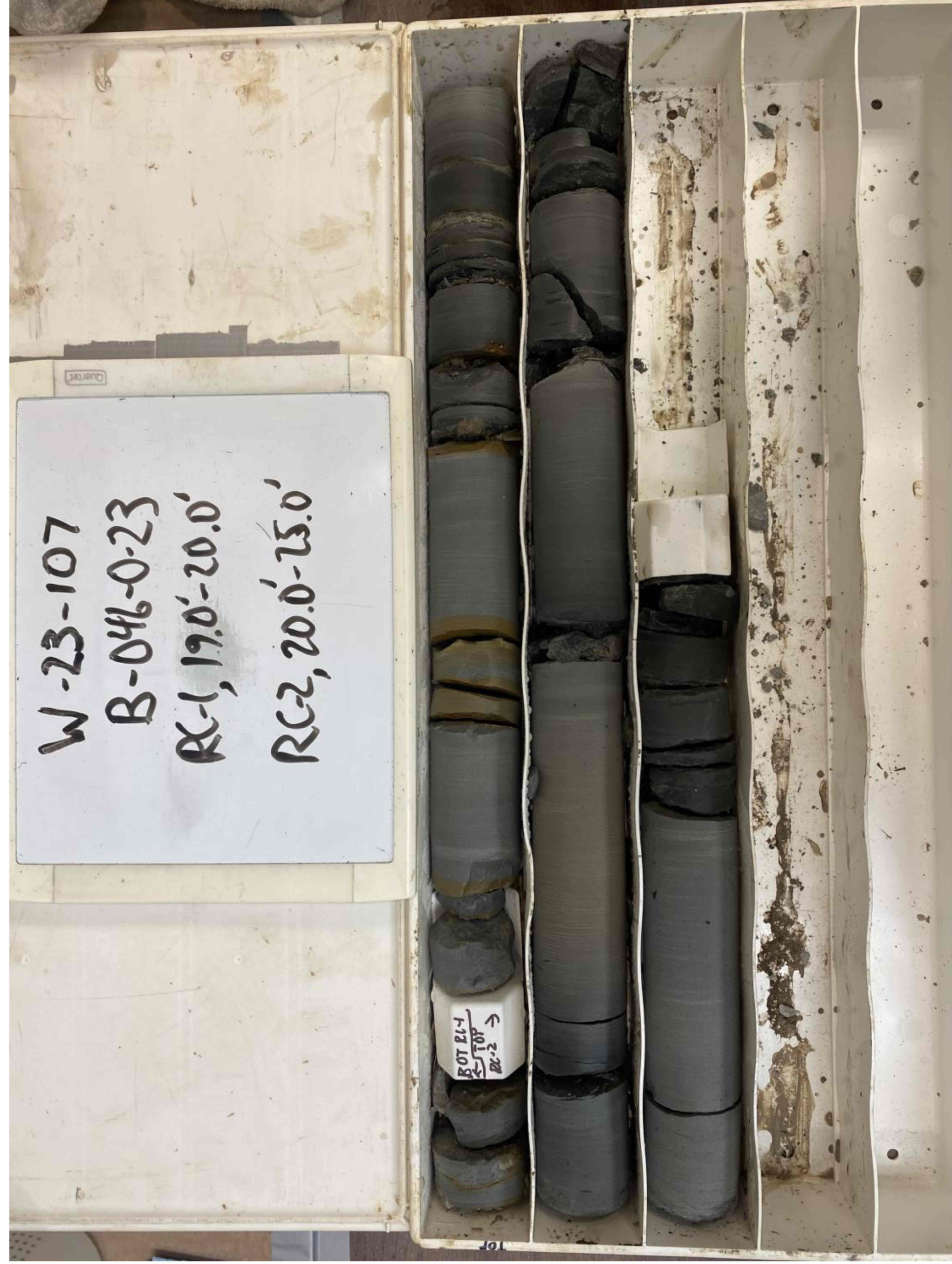
**Location:**  
 Franklin County, Ohio

**Photo No.**  
 13

**Boring:**  
 B-046-0-23

RC-1: 19.0'-20.0'  
 REC (%):33  
 RQD (%):10

RC-2: 20.0'-25.0'  
 REC (%):93  
 RQD (%):37



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:00:56 AM USER: kevinj  
 J:\GEO\GEO\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL032.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/10/23 END: 11/10/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1510+10 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1039.2 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090391, -82.808171

EXPLORATION ID  
**B-047-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' TOPSOIL (6.0")  
 HARD, BROWN SILT AND CLAY, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP.

HARD, BROWN SANDY SILT, LITTLE CLAY, SOME FINE GRAVEL, DAMP.

SILTSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE.

-@22.4' CLAY SEAM  
 -@ 19.0' - 25.0' RED IRON STAINING THROUGHOUT

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
				GR	FS	SI	CL	LL	PL	PI		
1	4											
2	8	27	4.5+								22	A-6a (V)
3	11											
4	17	52	4.5+	11	13	36	31	31	17	14	11	A-6a (8)
5	19											
6	5	20	4.5+								14	A-6a (V)
7	8											
8												
9	7	22	4.5+								14	A-6a (V)
10	8											
11	12	37	4.5+	23	14	32	18	26	17	9	11	A-4a (3)
12	14											
13	12											
14	15	52									6	Rock (V)
15	20											
16	19										8	Rock (V)
17	15											
18	50/4"										13	Rock (V)
19	0											CORE
20	42	NQ2-1										
21												
22												
23	55	NQ2-2										CORE
24												
25												

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 14.9'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
 14

**Boring:**  
 B-047-0-23

RC-1: 19.0-20.0'  
 REC (%):42  
 RQD (%):10

RC-2: 20.0-25.0'  
 REC (%):92  
 RQD (%):55



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:01:16 AM USER: kevinj  
 J:\GEO\GEO\Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL033.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/10/23 END: 11/10/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA  
 SAMPLING METHOD: SPT

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1512+10 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1037.4 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090360, -82.807478

EXPLORATION ID  
**B-048-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' - TOPSOIL (6.0')

HARD, BROWN TO GRAY SILTY CLAY, SOME COARSE TO FINE SAND, TRACE FINE GRAVEL, DAMP TO MOIST.

VERY STIFF TO HARD, GRAY SANDY SILT, SOME CLAY, LITTLE FINE GRAVEL, DAMP.

SHALE : BROWN, SEVERELY WEATHERED.

DEPTH	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)				ATTERBERG				WC	ODOT CLASS (GI)	BACK FILL	
				FS	SI	CL	PI	LL	PL	PI	PI				
1	3														
2	3	12	4.5+	-	-	-	-	-	-	-	-	-	19	A-6b (V)	
3	5														
4	6	20	4.5+	10	5	19	32	34	36	17	19	14	A-6b (10)		
5	7														
6	6	24	4.5+	-	-	-	-	-	-	-	-	-	17	A-6b (V)	
7	11														
8															
9	6	26	4.5+	-	-	-	-	-	-	-	-	-	12	A-6b (V)	
10	10														
11	5	22	4.5+	18	11	14	33	24	26	16	10	11	A-4a (4)		
12	6	9													
13															
14	3	4	13	64	3.00	-	-	-	-	-	-	-	12	A-4a (V)	
15	5														
16	28														
17	35	-	40	SS-7	-	-	-	-	-	-	-	-	0	Rock (V)	
18	50/3"														
19	15	24	72	83	SS-8	-	-	-	-	-	-	-	13	Rock (V)	
20	26														
21	60/3"	-	0	SS-9	-	-	-	-	-	-	-	-	-	Rock (V)	
22															
23															
24	11	10	36	50	SS-10	-	-	-	-	-	-	-	20	Rock (V)	
25	15														

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING; CAVE-IN DEPTH @ 16.1'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: BACKFILLED WITH 50 LBS. BENTONITE CHIPS AND SOIL CUTTINGS.

000-23 RII STA ODOT BORING LOG (8.5X11) - OH DOT GDT - 1/11/24 07:57 - U:\G\8\PROJECTS\2023\W-23-107.GPJ

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
**JAS**  
 REVIEWER  
**DEK 1/19/24**  
 PROJECT ID  
**117607**  
 SUBSET TOTAL  
**61 66**  
 SHEET TOTAL  
**P.271 276**

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 15**  
**BORING LOG B-048-0-23**

**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:01:31 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL034.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/10/23 END: 11/10/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1514+10 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.9 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090327, -82.806756

EXPLORATION ID  
**B-049-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' TOPSOIL (5.5')  
 VERY STIFF TO HARD, BROWN CLAY, SOME SILT,  
 SOME FINE GRAVEL, TRACE COARSE TO FINE SAND,  
 MOIST TO DAMP.

HARD, GRAY SANDY SILT, TRACE GRAVEL, MOIST TO DAMP.

SILTSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED,  
 STRONG, FINE GRAINED, THIN BEDDED, MODERATELY  
 FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH  
 SURFACES, BLOCKY, GOOD SURFACE.

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED	
				GR	FS	SI	CL	LL	PL	PI			
1	1												
2	3												
3	4												
4	5												
5	6												
6	8												
7	3												
8	4												
9	6												
10	13												
11	16												
12	8												
13	10												
14	5												
15	7												
16	14												
17	50/3"												
18	50/0"												
19	0												
20	0												
21													
22													
23	28												
24													
25													

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 17.1'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
 15

**Boring:**  
 B-049-0-23

RC-1: 19.0-20.0'  
 REC (%):0  
 RQD (%):0

RC-2: 20.0-25.0'  
 REC (%):42  
 RQD (%):28



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:01:51 AM USER: kevinj  
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**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/13/23 END: 11/13/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1516+10 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.0 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090286, -82.806054

EXPLORATION ID  
**B-050-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' TOPSOIL (5.5')  
 VERY STIFF TO HARD, BROWN TO GRAY SILTY CLAY, SOME COARSE TO FINE SAND, LITTLE FINE GRAVEL, DAMP TO MOIST.

DENSE, BROWN GRAVEL WITH SAND AND SILT, TRACE CLAY, DAMP.

SILTSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACES, BLOCKY, GOOD SURFACE.  
 -@21.0' RED STAINING

DEPTH (ft)	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)					WC	HOLE SEALED
					GR	FS	SI	CL	PI		
1	2										
2	4	13	SS-1	4.00	-	-	-	-	-	20	A-6b (V)
3	5										
4	7	19	SS-2	3.25	13	8	13	39	27	18	A-6b (9)
5	6										
6	8	29	SS-3	4.00	-	-	-	-	-	15	A-6b (V)
7	10										
8	10										
9	4	23	SS-4	4.5+	-	-	-	-	-	9	A-6b (V)
10	11										
11	18	39	SS-5	-	-	-	-	-	-	9	A-2.4 (V)
12	15										
13	12										
14	6	69	SS-6	-	-	-	-	-	-	8	Rock (V)
15	16	32									
16	50/5"	-	SS-7	-	-	-	-	-	-	12	Rock (V)
17											
18	50/4"	-	SS-8	-	-	-	-	-	-	7	Rock (V)
19	0		NQ2-1	25							CORE
20											
21											
22	82		NQ2-2	100							CORE
23											
24											
25											

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 13.0'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
 16

**Boring:**  
 B-050-0-23

RC-1: 19.0-20.0'  
 REC (%):0  
 RQD (%):25

RC-2: 20.0-25.0'  
 REC (%):100  
 RQD (%):82



**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:02:12 AM USER: kevinj  
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**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/13/23 END: 11/13/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1519+10.6 / 8.77' LT  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.1 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090226, -82.806530

EXPLORATION ID  
**B-051-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.5' - TOPSOIL (5.5")  
 HARD, BROWN SILTY CLAY, LITTLE GRAVEL AND SAND, DAMP.

VERY DENSE, BROWN TO GRAY GRAVEL WITH SAND AND SILT, DAMP.

-@ 6.0' - 8.0' COBBLES

SILTSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.

-VERTICAL FRACTURE @ 20.3', 20.9', 23.2' AND 24.7'

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
				GR	FS	SI	CL	LL	PL	PI		
1	3											
2	6	19	4.5+								19	A-6b (V)
3	7											
4	10	32	4.5+	7	12	43	32	40	19	21	13	A-6b (12)
5	12											
6	36											
7	26	69	61								6	A-2.4 (V)
8	22											
9	17	73	72								6	A-2.4 (V)
10	32											
11	14	66	44								8	A-2.4 (V)
12	17	29										
13												
14	50/3"										17	Rock (V)
15												
16	50/4"										5	A-2.4 (V)
17												
18												
19	50											CORE
20												
21												
22	50											CORE
23												
24												
25												

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 14.8'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 94 LBS CEMENT / 25 LBS BENTONITE POWDER / 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
 17

**Boring:**  
 B-051-0-23

RC-1: 19.0'-20.0'  
 REC (%):75  
 RQD (%):50

RC-2: 20.0'-25.0'  
 REC (%):97  
 RQD (%):50





**FRA-161-15.80 NOISE WALLS**

MODEL SHEET PAPER SIZE: 34x22 (in.) DATE: 1/19/2024 TIME: 10:02:34 AM USER: kevinj  
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**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/13/23 END: 11/13/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1520+41 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1038.6 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090130, -82.804859

EXPLORATION ID  
**B-052-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

0.3' - TOPSOIL (4.0')  
 HARD, BROWN SILT AND CLAY, LITTLE GRAVEL AND SAND, DAMP.

MEDIUM DENSE, BROWN GRAVEL WITH SAND AND SILT, DAMP.  
 -COBBLES @ 6.5'-8.0'

SILTSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED, STRONG, FINE GRAINED, THIN BEDDED, MODERATELY FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH SURFACE, BLOCKY, GOOD SURFACE.

-SHALE SEAMS @ 22.6', 23.0, 24.2'

DEPTH (ft)	SPT / RQD	N <sub>60</sub>	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	ODOT CLASS (GI)	HOLE SEALED
					GR	CS	FS	SI	CL	LL	PL			
1	6													
2	7	24	SS-1	4.5+								14	A-6a (V)	
3	10													
4	12	37	SS-2	4.5+	7	8	13	43	29	33	18	15	13	A-6a (9)
5	13													
6	18	50/4"												
7			SS-3	4.5+									13	A-6a (V)
8														
9	12	26	SS-4	-	44	16	11	21	8	27	17	10	7	A-2-4 (0)
10	8													
11														
12	10	86	SS-5	-									8	Rock (V)
13	35													
14	28	88	SS-6	-									7	Rock (V)
15	19	42												
16	50/3"		SS-7	-									8	Rock (V)
17														
18	50/3"		SS-8	-									9	Rock (V)
19	92		NQ2-1											CORE
20														
21														
22			NQ2-2											CORE
23	77													
24														
25														

TR

EOB

1038.6

1038.3

1031.8

1028.1

1019.6

1013.6

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 13.8'

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

**Photo No.**  
 18

**Boring:**  
 B-052-0-23

RC-1: 19.0-20.0'  
 REC (%):92  
 RQD (%):92

RC-2: 20.0-25.0'  
 REC (%):93  
 RQD (%):77



**FRA-161-15.80 NOISE WALLS**

MODEL: Sheet PAPER: 34x22 (in.) DATE: 1/19/2024 TIME: 10:02:55 AM USER: kevinj  
 J:\GEO\GEO\GEOtech Connect Projects\2023\W-23-107 FRA-161-15.80 NOISE WALLS\117607\400-Engineering\Geotechnical\Sheets\117607\_ZL038.dgn

**RESOURCE INTERNATIONAL, INC.**



PROJECT: FRA-161-15.80  
 TYPE: NOISE WALLS  
 PID: 117607 SFN: NA  
 START: 11/14/23 END: 11/14/23

DRILLING FIRM / OPERATOR: RII / TG  
 SAMPLING FIRM / LOGGER: RII / MJ  
 DRILLING METHOD: 3.25" HSA / NQ2  
 SAMPLING METHOD: SPT / NQ2

DRILL RIG: DIETRICH D-50 (# 313)  
 HAMMER: AUTOMATIC  
 CALIBRATION DATE: 3/21/22  
 ENERGY RATIO (%): 86.4

STATION / OFFSET: 1522+26 / 0'  
 ALIGNMENT: CL WALL 15  
 ELEVATION: 1036.5 (MSL) EOB: 25.0 ft.  
 LAT / LONG: 40.090039, -82.804245

EXPLORATION ID  
**B-053-0-23**  
 PAGE  
 1 OF 1

**MATERIAL DESCRIPTION AND NOTES**

DEPTH (ft)	SPT / RQD	REC SAMPLE ID	HP (tsf)	GRADATION (%)							WC	HOLE SEALED
				GR	FS	SI	CL	LL	PL	PI		
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	25											
TR												
1028.5												
1022.4												
1017.5												
1011.5												

0.5' - TOPSOIL (6.0")  
 VERY STIFF TO HARD, BROWN TO GRAY SILTY CLAY,  
 SOME TO TRACE SAND, TRACE GRAVEL, MOIST.

HARD, BROWN TO BROWN GRAY SANDY SILT, TRACE  
 GRAVEL, DAMP TO MOIST.

SANDSTONE : GRAY, HIGHLY WEATHERED.

SANDSTONE : GRAY, SLIGHTLY WEATHERED,  
 STRONG, FINE GRAINED, THIN BEDDED, MODERATELY  
 FRACTURED, NARROW APERTURES, SLIGHTLY ROUGH  
 SURFACE, BLOCKY, GOOD SURFACE.

-@22.2' FRACTURE  
 -@22.8' SHALE SEAM  
 -@24.0 CLAY SEAM

NOTES: GROUNDWATER NOT MEASURED UPON COMPLETION DUE TO INFLUENCE OF CORE WATER. CAVE-IN DEPTH @ 15.8'  
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 47 LBS CEMENT, 25 LBS BENTONITE POWDER AND 40 GAL WATER

**Project Name:** FRA-161-15.80

**Location:**  
 Franklin County, Ohio

<b>Photo No.</b> 19	
<b>Boring:</b> B-053-0-23	
RC-1: 19.0-20.0' REC (%):50 RQD (%):50	
RC-2: 20.0-25.0' REC (%):100 RQD (%):68	

DESIGN AGENCY  
  
 8350 PRESIDENTIAL GATEWAY  
 COLUMBUS, OHIO 43231  
 (614) 823-4949  
 DESIGNER  
 JAS  
 REVIEWER  
 DEK 1/19/24  
 PROJECT ID  
 117607  
 SUBSET TOTAL  
 66 66  
 SHEET TOTAL  
 P.276 276

**GEOTECHNICAL PROFILE - NOISE WALLS**  
**NOISE WALL 15**  
**BORING LOG & ROCK CORE PHOTO FOR B-053-0-23**