

To: Brandon McNeal, PE
Columbus, Ohio

From: James Samples, EIT
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Cincinnati, Ohio

Project: 173609006

Date: October 15, 2024

Reference: Report of Geotechnical Findings, LAW-7-2.17 (Chesapeake Bypass) Noise Walls

The Ohio Department of Transportation (ODOT) plans to reroute State Route (SR) 7 in Lawrence County, Ohio around the town of Chesapeake. The project consists of the construction of a new two-lane divided highway with truck climbing lanes, traveling north of the town of Chesapeake, Ohio. This new road will connect the existing four-lane section of SR 7 on the east side of Chesapeake to the existing SR 7 north of the town of Proctorville, near SR 775. The beginning and ending stations for the project are 114+57.60 and 437+16.83, respectively, for an alignment length of 6.1 miles.

This memo summarizes the results of the exploration and analyses performed for the noise wall design portion of the project. Two noise walls, referred to as Wall B and Wall D, are planned. Wall B is split into two sections, with the first (Noise Wall B1) beginning and ending at Stations 156+35 (wall stationing 10+00) and 194+87 (48+52) and the second section (Noise Wall B2) beginning at Station 206+14 (10+00) and ending at Station 224+38 (20+48). Wall B was split to avoid placing drilled shafts on top of Mechanical Stabilized Earth walls or moment slabs of the bridge. Wall D begins at Station 381+55 and ends at Station 406+23.

It was determined that additional borings would be necessary along the alignments of the noise walls to better define soil and bedrock conditions. Stantec contracted National Engineering and Architectural Services, Inc. (NEAS) to perform 15 additional soil borings along the planned locations of the walls, which were advanced between April and June of 2024. A summary of these borings is shown in Table 1. Boring locations and graphical logs are shown in the geotechnical profile drawings for the project. The locations and elevations of the boring locations were surveyed by NEAS.

Table 1. Boring Summary

| Boring No. | Boring Purpose | Station* (feet) | Offset* (feet) | Ground Surface Elevation (feet) | Top of Bedrock Elevation (feet) | Bottom of Boring Elevation (feet) |
|------------|----------------|-----------------|----------------|---------------------------------|---------------------------------|-----------------------------------|
| B-007-2-23 | Noise Wall B1 | 28+63 | 18 Rt. | 631.5 | 626.0 | 614.0 |
| B-007-3-23 | Noise Wall B1 | 31+33 | 15 Lt. | 659.2 | 653.2 | 646.7 |
| B-007-4-23 | Noise Wall B1 | 33+74 | 10 Lt. | 669.0 | 655.5 | 645.0 |
| B-007-5-23 | Noise Wall B1 | 35+70 | 38 Rt. | 645.2 | 632.7 | 621.2 |
| B-009-1-23 | Noise Wall B1 | 39+76 | 22 Rt. | 623.7 | 613.2 | 599.2 |
| B-009-2-23 | Noise Wall B1 | 42+39 | 39 Rt. | 583.9 | 560.4 | 559.4 |
| B-014-1-23 | Noise Wall B2 | 16+03 | 53 Rt. | 581.4 | N/A | 556.4 |
| B-014-2-23 | Noise Wall B2 | 17+61 | 30 Rt. | 609.0 | 590.5 | 585.0 |
| B-014-3-23 | Noise Wall B2 | 20+24 | 21 Rt. | 628.0 | 618.0 | 612.5 |
| B-076-2-23 | Noise Wall D | 24+49 | 28 Rt. | 587.7 | N/A | 562.7 |
| B-076-3-23 | Noise Wall D | 26+46 | 39 Rt. | 589.9 | N/A | 564.9 |
| B-077-2-23 | Noise Wall D | 28+44 | 42 Rt. | 592.6 | N/A | 567.6 |
| B-077-3-23 | Noise Wall D | 30+45 | 50 Rt. | 588.8 | N/A | 563.8 |
| B-078-2-23 | Noise Wall D | 32+48 | 44 Rt. | 595.3 | N/A | 570.3 |
| B-078-3-23 | Noise Wall D | 34+47 | 34 Rt. | 602.4 | N/A | 577.4 |

* References noise wall alignment

Borings were advanced with a track-mounted CME 55 drill rig using 3¼-inch inside diameter (ID) hollow stem augers to advance the borings through soil. Standard Penetration Test (SPT) sampling was performed at 2.5-foot intervals until the bedrock was encountered. The energy ratio (ER) of the drill rig automatic hammer and drill rod system were measured to be 79.9 percent on March 8, 2024. The depths and elevations of the SPTs with the corresponding N_{60} -values are shown on the boring logs.

If fairly competent bedrock was encountered during drilling, approximately 5 to 10 feet of rock coring was performed using NQ2-size equipment. Recovery, core loss, and rock quality designation (RQD) values were recorded as percentages for each coring run. These values are shown on the boring logs.

The materials encountered were logged by NEAS with attention given to soil type, consistency, and moisture content. The borings were checked for the presence of groundwater during drilling and at its conclusion with the depth of water recorded. Boring abandonment methods are also shown on the boring logs.

The soil samples obtained from the borings were returned to NEAS's geotechnical laboratory for visual classification and tested for water content. Engineering classification testing was performed on samples reflecting each of the main soil horizons. The engineering classification tests conducted on the samples were sieve and hydrometer analysis (ASTM D 422) and Atterberg limits (ASTM D 4318). The samples were classified according to the ODOT classification method. Results from classification and moisture content testing are shown on the boring logs.

Findings

Wall B

Soils encountered along Wall B were primarily plastic, classifying as sandy silt (A-4a), silt (A-4b), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as soft to hard (N_{60} values ranging from 4 to 95 blows per foot (bpf) with an average of 26 bpf) and damp (natural moisture contents ranging from 7 to 27 percent with an average of 19 percent). A small amount of non-plastic soil was observed in the Wall B borings, classifying as gravel and stone fragments with sand (A-1-b) or gravel and stone fragments with sand and silt (A-2-4). These soils were encountered near the bedrock interface and were described as very dense (N_{60} values ranging from 52 to 77 bpf with an average of 67 bpf) and damp (natural moisture contents ranging from 5 to 7 percent with an average of 6 percent).

Bedrock was encountered in 8 of the 9 borings advanced for Wall B. Bedrock was not encountered at boring B-014-1-23. Bedrock depth varies from 5.5 feet in B-007-2-23 to 23.5 feet in B-009-2-23. Bedrock was primarily described as severely to highly weathered shale, which made core recoveries lower than normal. The shale was also described as brown and maroonish brown to gray, very weak to slightly strong, and very thin to thin bedded. Between 3 and 4.5 feet of shale was cored in three borings. Core recoveries ranged from 24 to 95 percent and RQD values varied from 0 to 26. Siltstone was encountered in B-007-5-23, B-009-2-23, B-014-2-23, and B-014-3-23. The siltstone was described as gray and yellowish brown to brown, highly to moderately weathered, and slightly strong. Five feet of core was obtained from B-014-3-23, which resulted in 100 percent recovery and an RQD value of 80.

Groundwater was not observed while drilling borings for Wall B; however, this may have been obscured by the addition of water during rock coring. It is likely that groundwater is present within the bedrock at these locations. Boring logs are provided in the attachments.

Wall D

The surficial materials of borings completed on road surfaces varied from 12 to 13 inches of asphalt followed by 5 to 6 inches of granular base. Below the roadway materials, soils were primarily plastic with alternating layers of non-plastic soil. Plastic soils classified as sandy silt (A-4a), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as medium stiff to hard (N_{60} values ranging from 8 to 37 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 8 to 20 percent with an average of 14 percent). Non-plastic soils classified as gravel and stone fragments with sand (A-1-b), gravel and stone fragments with sand and silt (A-2-4), fine sand (A-3), coarse and fine sand (A-3a), and sandy silt (A-4a). These soils were further described as medium dense (N_{60} values ranging from 12 to 21 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 3 to 12 percent with an average of 7 percent).

Bedrock and groundwater were not encountered in any of the borings advanced for Wall D. Boring logs are provided in the attachments.

Analysis and Recommendations

The recommendations that follow are based on the information discussed in this report and the interpretation of the subsurface conditions encountered at the site during our fieldwork. If future design changes are made, Stantec should be notified so that such changes can be reviewed, and the recommendations amended as necessary.

These conclusions and recommendations are based on data and subsurface conditions from the borings advanced during this exploration using the degree of care and skill ordinarily exercised under similar circumstances by competent members of the engineering profession. No warranties can be made regarding the continuity of conditions.

ODOT's Geotechnical Design Manual (GDM) section 1600 provides guidelines for design of noise barrier foundations. The standard foundation design used by ODOT was applied to the analysis for Walls B and D. ODOT's Office of Geotechnical Engineering (OGE) has developed a spreadsheet to perform the standard drilled shaft design, which was used for the foundation design of the walls. These spreadsheets are attached.

Noise wall barrier height, post spacing, and top of shaft elevation were provided by the structural engineer. Survey data for borings completed by NEAS was used for boring elevations. Noise wall profile and cross-section drawings were used to estimate existing ground elevation and cross slope respectively. Cut or fill depths were determined by calculations within the spreadsheet using existing ground elevation, top of shaft elevation, and boring elevation. Borings were not completed along the noise wall alignments in areas where fill depths are expected to exceed 25 feet. In these areas, artificial "borings" assuming typical material parameters for fill were used to provide design recommendations throughout the entire wall alignment. These artificial "borings" were designated "B-00X".

Noise Wall B1

Table 2 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 3 summarizes the artificial "borings" used for the analysis.

Table 2. Noise Wall B1 Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|-----|---|
| From | To | From | To | |
| 10+00 | 48+52 | 1 | 163 | 6.5 |

Table 3. Artificial "Borings" Used for Wall B1 Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-001 | Artificial | 10+00 | 574.8 |
| B-002 | Artificial | 19+00 | 595.1 |
| B-003 | Artificial | 23+00 | 618.5 |
| B-004 | Artificial | 38+00 | 655.4 |
| B-005 | Artificial | 48+52 | 600.4 |

* References noise wall alignment

Noise Wall B2

Table 4 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 5 summarizes the artificial "borings" used for the analysis.

Table 4. Noise Wall B2 Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|----|---|
| From | To | From | To | |
| 10+00 | 28+48 | 1 | 78 | 8.0 |

Table 5. Artificial "Borings" Used for Wall B2 Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-006 | Artificial | 10+00 | 569.0 |
| B-007 | Artificial | 28+48 | 635.0 |

* References noise wall alignment

Noise Wall D

Table 4 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 5 summarizes the artificial "borings" used for the analysis.

Table 6. Noise Wall D Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|-----|---|
| From | To | From | To | |
| 10+00 | 25+36 | 1 | 65 | 6.5 |
| 25+60 | 34+72 | 66 | 104 | 8.0 |

Table 7. Artificial "Borings" Used for Wall D Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-008 | Artificial | 10+00 | 574.0 |
| B-009 | Artificial | 22+00 | 582.0 |

* References noise wall alignment

Reference: Report of Geotechnical Findings, LAW-7-2.17 (Chesapeake Bypass) Noise Walls

Regards,

STANTEC CONSULTING SERVICES INC.



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ATTACHMENT: Noise Wall Boring Logs, Noise Wall Foundation Calculations

ATTACHMENTS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:41 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|--|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>28+63, 18' RT.</u> | EXPLORATION ID <u>B-007-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>631.5 (MSL)</u> EOB: <u>17.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>4/24/24</u> END: <u>5/1/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.443989, -82.442227</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 2.0" ASPHALT (DRILLERS DESCRIPTION) VERY STIFF, MAROONISH BROWN, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, MOIST | 631.5 | | | | | | | | | | | | | | | | | | |
| | 631.3 | | | | | | | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | | | | |
| | | | 3 | 4 | 2 | 9 | 39 | SS-1 | 3.00 | 3 | 4 | 12 | 26 | 55 | 50 | 22 | 28 | 23 | A-7-6 (17) |
| SHALE, MAROONISH BROWN AND BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY THIN BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITY: 12.5'-13.5', FRACTURED TO HIGHLY FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTIGRATED, POOR SURFACE CONDITION; RQD 7%, REC 57%. | 626.0 | TR | | | | | | | | | | | | | | | | | |
| | | | 4 | | | | | | | | | | | | | | | | |
| | | | 5 | 5 | | - | 83 | SS-2 | - | - | - | - | - | - | - | - | - | 10 | Rock (V) |
| | | | 6 | | | | | | | | | | | | | | | | |
| | | | 7 | | | | | | | | | | | | | | | | |
| | | | 8 | 50 | | - | 67 | SS-3 | - | - | - | - | - | - | - | - | - | 9 | Rock (V) |
| | | | 9 | | | | | | | | | | | | | | | | |
| | | | 10 | 16 | | - | 78 | SS-4 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) |
| | | | 11 | | | | | | | | | | | | | | | | |
| | | | 12 | 50 | | - | 67 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | | 13 | | | | | | | | | | | | | | | | |
| | | | 14 | | | | | | | | | | | | | | | | |
| | | 15 | 7 | | | 57 | NQ2-1 | | | | | | | | | | | CORE | |
| | | 16 | | | | | | | | | | | | | | | | | |
| | 614.0 | EOB | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. OFFSET 2.0' SOUTH.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH.DOT.GDT - 9/18/24 08:41 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>31+33, 15' LT.</u> | EXPLORATION ID: <u>B-007-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>659.2 (MSL)</u> EOB: <u>12.5 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/1/24</u> END: <u>5/1/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444310, -82.441429</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC |
| VERY STIFF, MAROONISH BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 659.2 | 1 | | | | | | | | | | | | | | | | |
| | | 2 | | | | | | | | | | | | | | | | |
| | | 3 | 2 | 3 | 15 | 50 | SS-1 | 3.50 | 2 | 1 | 4 | 39 | 54 | 42 | 21 | 21 | 17 | A-7-6 (13) |
| | 654.7 | 4 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, RESIDUAL ROCK, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 653.2 | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 13 | - | 100 | SS-2 | - | 12 | 11 | 11 | 39 | 27 | 35 | 21 | 14 | 11 | A-6a (8) |
| | | 7 | | | | | | | | | | | | | | | | |
| SHALE , BROWN AND MAROONISH BROWN, SEVERELY TO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, VERY THIN TO THIN BEDDED, CONTAINS SIDERITE NODULES, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: 8.7'-9.3', 10.0'-10.6', 11.5'-12.5', HIGHLY FRACTURED TO MODERATELY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, DISINTIGRATED TO BLOCKY/DISTURBED/SEAMY, POOR SURFACE CONDITION; RQD 26%, REC 95%. | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | | | | | | | | | | | | | | | | |
| | | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 26 | | | 95 | NQ2-1 | | | | | | | | | | | CORE |
| | 646.7 | 12 | | | | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA075923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>33+74, 10' LT.</u> | EXPLORATION ID: <u>B-007-4-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>669.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/2/24</u> END: <u>5/2/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444573, -82.440641</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | HOLE SEALED | | | | | | |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|--------------------|----------------|-----|------------|----------|----------|----------|-----|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | | | | | |
| VERY STIFF, ORANGISH BROWN, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, DAMP | 669.0 | 1 | | | | | | | | | | | | | | | < > | | | | | | |
| | | 2 | | | | | | | | | | | | | | | < > | | | | | | |
| | | 3 | 2 | 3 | 9 | 61 | SS-1 | 3.50 | - | - | - | - | - | - | - | 13 | A-4a (V) | < > | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 664.5 | 4 | | | | | | | | | | | | | | | < > | | | | | | |
| | | 5 | 3 | 5 | 10 | 20 | 100 | SS-2 | 4.50 | 1 | 1 | 5 | 33 | 60 | 44 | 22 | 22 | 19 | A-7-6 (14) | < > | | | |
| | | 6 | | | | | | | | | | | | | | | | | | < > | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , TRACE STONE FRAGMENTS, TRACE SAND, RESIDUAL ROCK, DAMP | 659.5 | 7 | | | | | | | | | | | | | | | | | | | | | |
| | | 8 | 7 | 10 | 13 | 31 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) | < > | | | |
| | | 9 | | | | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , TRACE STONE FRAGMENTS, TRACE SAND, RESIDUAL ROCK, DAMP | 655.5 | 10 | | | | | | | | | | | | | | | | | | | | | |
| | | 11 | 10 | 18 | 13 | 41 | 100 | SS-4 | 4.50 | 9 | 1 | 2 | 38 | 50 | 39 | 21 | 18 | 11 | A-6b (11) | < > | | | |
| | | 12 | | | | | | | | | | | | | | | | | | | | | |
| SHALE , GRAY BECOMING BROWN AND GRAY, SEVERELY WEATHERED, VERY WEAK, BEDDING DISCONTINUITIES: LOW ANGLE, FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTIGRATED, POOR SURFACE CONDITION; RQD 0%, REC 24%. | 655.5 | 13 | 10 | 25 | 50/3" | - | 93 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | - | 7 | A-6b (V) | < > | | |
| | | 14 | | | | | | | | | | | | | | | | | | | | | |
| | | 15 | 50/4" | | | | | | | | | | | | | | | | | 8 | Rock (V) | < > | |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 16 | | | | | | | | | | | | | | | | | | | | | |
| | | 17 | | | | | | | | | | | | | | | | | | | | | |
| | | 18 | 50 | | | | | | | | | | | | | | | | | 6 | Rock (V) | < > | |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 19 | 50/2" | | | | | | | | | | | | | | | | | 4 | Rock (V) | < > | |
| | | 20 | | | | | | | | | | | | | | | | | | | | | |
| | | 21 | 0 | | | | | | | | | | | | | | | | | | | | |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 22 | | | | | | | | | | | | | | | | | | | | | |
| | | 23 | 50 | | | | | | | | | | | | | | | | | | 12 | Rock (V) | < > |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 24 | 50 | | | | | | | | | | | | | | | | | | 8 | Rock (V) | < > |
| | | 24 | | | | | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>35+70, 38' RT.</u> | EXPLORATION ID: <u>B-007-5-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>645.2 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444725, -82.439943</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | WC | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|-----------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | | |
| STIFF TO VERY STIFF, MAROONISH BROWN, CLAY , SOME SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST TO DAMP | 645.2 | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | 2 | 1 | 4 | 44 | SS-1 | 1.50 | 6 | 4 | 9 | 25 | 56 | 65 | 26 | 39 | 27 | A-7-6 (20) | |
| | | | 3 | | | | | | | | | | | | | | | | |
| | | | 4 | 4 | 6 | 19 | 50 | SS-2 | 3.75 | - | - | - | - | - | - | - | - | 21 | A-7-6 (V) |
| | | | 5 | | | | | | | | | | | | | | | | |
| | | | 6 | 7 | 10 | 25 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | - | 18 | A-7-6 (V) |
| | | | 7 | | | | | | | | | | | | | | | | |
| 8 | 637.2 | | | | | | | | | | | | | | | | | | |
| VERY STIFF, YELLOWISH BROWN AND BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 634.7 | | | | | | | | | | | | | | | | | | |
| 9 | | | 6 | 10 | 23 | 100 | SS-4 | 3.50 | 1 | 1 | 4 | 48 | 46 | 48 | 28 | 20 | 20 | A-7-6 (14) | |
| 10 | | | | | | | | | | | | | | | | | | | |
| VERY DENSE, BROWN, STONE FRAGMENTS WITH SAND , TRACE SILT, TRACE CLAY, RESIDUAL ROCK, DAMP | 632.7 | | | | | | | | | | | | | | | | | | |
| 11 | | | 8 | 15 | 52 | 28 | SS-5 | - | 55 | 17 | 8 | 10 | 10 | NP | NP | NP | 5 | A-1-b (0) | |
| 12 | 632.7 | TR | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | |
| SHALE , GRAY AND YELLOWISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | 627.2 | | | | | | | | | | | | | | | | | | |
| 14 | | | 9 | 19 | 60 | 33 | SS-6 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | |
| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | 6 | 23 | 73 | 28 | SS-7 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | |
| 17 | | | | | | | | | | | | | | | | | | | |
| 18 | 627.2 | | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND YELLOWISH BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | | | | | | | | | | | | | | | | | | | |
| 19 | | | 17 | 50 | - | 33 | SS-8 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) | |
| 20 | | | | | | | | | | | | | | | | | | | |
| 21 | | | 38 | 50/4" | - | 30 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | |
| 22 | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | |
| 24 | 621.2 | EOB | 50 | - | 50 | | SS-10 | - | - | - | - | - | - | - | - | - | 7 | Rock (V) | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>39+76, 22' RT.</u> | EXPLORATION ID: <u>B-009-1-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>623.7 (MSL)</u> EOB: <u>24.5 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.445433, -82.438781</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. 623.7 | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|---|----------------|-------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----------|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, YELLOWISH BROWN, CLAY , SOME GRAVEL, SOME SILT, LITTLE SAND, DAMP | 620.7 | 1 | 5 | | | | | | | | | | | | | | | | |
| | | 2 | 9 12 | 28 | 100 | SS-1 | 4.50 | 32 | 11 | 6 | 30 | 21 | 42 | 24 | 18 | 11 | A-7-6 (6) | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 618.2 | 4 | 7 16 12 | 37 | 100 | SS-2 | - | 20 | 14 | 18 | 30 | 18 | 34 | 20 | 14 | 15 | A-6a (4) | | |
| | | 5 | | | | | | | | | | | | | | | | | |
| VERY DENSE, YELLOWISH BROWN, STONE FRAGMENTS WITH SAND AND SILT , TRACE CLAY, RESIDUAL ROCK, DAMP | 613.2 | 6 | 6 16 38 | 72 | 89 | SS-3 | - | 45 | 17 | 9 | 22 | 7 | 30 | 21 | 9 | 6 | A-2-4 (0) | | |
| | | 7 | | | | | | | | | | | | | | | | | |
| SHALE , GRAY AND YELLOWISH BROWN BECOMING MAROONISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | 613.2 | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 21 22 36 | 77 | 100 | SS-4 | - | - | - | - | - | - | - | - | - | 7 | A-2-4 (V) | | |
| | | 10 | | | | | | | | | | | | | | | | | |
| | | 11 | 50 | - | 100 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 12 | 10 50 | - | 75 | SS-6 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 25 50/5" | - | 45 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 22 50/5" | - | 36 | SS-8 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 17 | | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | |
| 19 | 50 | - | 83 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | | | |
| 20 | | | | | | | | | | | | | | | | | | | |
| 21 | 50/5" | - | 80 | SS-10 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | | | |
| 22 | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | |
| 24 | 21 50 | - | 67 | SS-11 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

| | | | | | | | | | |
|---|--|---|--|---------------------------------|--|--|--|----------------|--|
| PROJECT: <u>LAW-7-2.17</u> | | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | | DRILL RIG: <u>CME 55X</u> | | STATION / OFFSET: <u>42+39, 39' RT.</u> | | EXPLORATION ID | |
| TYPE: <u>NOISE WALL</u> | | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | | HAMMER: <u>CME AUTOMATIC</u> | | ALIGNMENT: <u>NOISE WALL B1</u> | | B-009-2-23 | |
| PID: <u>75923</u> SFN: <u>N/A</u> | | DRILLING METHOD: <u>3.25" HSA</u> | | CALIBRATION DATE: <u>3/8/24</u> | | ELEVATION: <u>583.9 (MSL)</u> EOB: <u>24.5 ft.</u> | | PAGE | |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | | SAMPLING METHOD: <u>SPT</u> | | ENERGY RATIO (%): <u>80</u> | | LAT / LONG: <u>38.446815, -82.436821</u> | | 1 OF 1 | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | | |
| VERY STIFF, BROWN AND ORANGISH BROWN, CLAY , SOME TO "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP | 583.9 | | | | | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 7 | 100 | SS-1 | 3.50 | - | - | - | - | - | - | - | - | 26 | A-7-6 (V) | | |
| | | | 2 | 3 | | | | | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | | | | | | |
| | | | 4 | 2 | 6 | 17 | 100 | SS-2 | 3.00 | 1 | 4 | 9 | 35 | 51 | 51 | 24 | 27 | 21 | A-7-6 (17) | |
| | | | 5 | 7 | | | | | | | | | | | | | | | | |
| | | | 6 | 4 | 5 | 17 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 7 | 8 | | | | | | | | | | | | | | | | |
| | | | 8 | | | | | | | | | | | | | | | | | |
| | | | 9 | 4 | 6 | 20 | 100 | SS-4 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 10 | 9 | | | | | | | | | | | | | | | | |
| | | | 11 | 5 | 8 | 29 | 78 | SS-5 | 3.75 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 12 | 14 | | | | | | | | | | | | | | | | |
| | | | 13 | | | | | | | | | | | | | | | | | |
| | | | 14 | 6 | 9 | 24 | 33 | SS-6 | 3.75 | - | - | - | - | - | - | - | - | 18 | A-7-6 (V) | |
| | 568.4 | 15 | 9 | | | | | | | | | | | | | | | | | |
| VERY STIFF TO HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , "AND" SILT, LITTLE SAND, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP TO MOIST | | 16 | 5 | 9 | 27 | 100 | SS-7 | 4.50 | 13 | 8 | 5 | 38 | 36 | 42 | 24 | 18 | 15 | A-7-6 (11) | | |
| | | | 17 | 11 | | | | | | | | | | | | | | | | |
| | | | 18 | | | | | | | | | | | | | | | | | |
| | | | 19 | 6 | 9 | 28 | 72 | SS-8 | 3.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | |
| | | | 20 | 12 | | | | | | | | | | | | | | | | |
| | | | 21 | 5 | 10 | 31 | 100 | SS-9 | 3.00 | - | - | - | - | - | - | - | - | 19 | A-7-6 (V) | |
| | | 22 | 13 | | | | | | | | | | | | | | | | | |
| | 560.4 | 23 | | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG. | 559.4 | TR | 27 | | | | | | | | | | | | | | | | | |
| | | EOB | 50 | | - | 33 | SS-10 | - | - | - | - | - | - | - | - | - | 4 | Rock (V) | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>16+03, 53' RT.</u> | EXPLORATION ID: <u>B-014-1-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>581.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449475, -82.431502</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| HARD, MAROONISH BROWN, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING AND ROOTS, DAMP | 581.4 | | | | | | | | | | | | | | | | | |
| | | 1 | 4 | | | | | | | | | | | | | | | |
| HARD, YELLOWISH BROWN AND BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 578.4 | | | | | | | | | | | | | | | | | |
| | | 2 | 5 | 13 | 100 | SS-1 | 4.50 | 1 | 5 | 6 | 40 | 48 | 46 | 24 | 22 | 22 | A-7-6 (14) | |
| | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 4 | 19 | 100 | SS-2 | 4.50 | 0 | 0 | 1 | 24 | 75 | 59 | 27 | 32 | 22 | A-7-6 (20) | |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 24 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | 7 | 7 | 11 | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 27 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | |
| | | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 5 | 24 | 100 | SS-5 | 4.50 | 0 | 0 | 1 | 30 | 69 | 45 | 26 | 19 | 24 | A-7-6 (13) | |
| | | 12 | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 5 | 21 | 100 | SS-6 | 4.50 | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | |
| | | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 6 | 24 | 78 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 23 | A-7-6 (V) | |
| | | 17 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 4 | 17 | 89 | SS-8 | 4.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 3 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 8 | 36 | 100 | SS-10 | 4.25 | - | - | - | - | - | - | - | - | 24 | A-7-6 (V) | |
| | 556.4 | | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>17+61, 30' RT.</u> | EXPLORATION ID: <u>B-014-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>609.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449658, -82.431007</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| STIFF, BROWN AND MAROONISH BROWN, SILTY CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 609.0 | 1 | 8 | | | | | | | | | | | | | | | | |
| | | 2 | 6 | 4 | 13 | 83 | SS-1 | - | 16 | 11 | 23 | 24 | 26 | 36 | 20 | 16 | 14 | A-6b (5) | |
| HARD, BROWN AND MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 606.0 | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 3 | 7 | 13 | 100 | SS-2 | 4.50 | 7 | 11 | 6 | 29 | 47 | 50 | 26 | 24 | 18 | A-7-6 (16) | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, DAMP | 603.5 | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 9 | 16 | 21 | 49 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | 9 | A-6a (V) | |
| SS-4 CONTAINS GYPSUM | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 9 | 25 | 31 | 75 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | 15 | A-6a (V) | |
| SS-5 CONTAINS GYPSUM | | 10 | | | | | | | | | | | | | | | | | |
| | | 11 | 13 | 19 | 22 | 55 | 100 | SS-5 | 4.50 | 2 | 12 | 19 | 36 | 31 | 40 | 25 | 15 | A-6a (8) | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 11 | 28 | 39 | 89 | 89 | SS-6 | 4.50 | - | - | - | - | - | - | - | 18 | A-6a (V) | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 9 | 31 | 40 | 95 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | 15 | A-6a (V) | |
| | | 17 | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | 590.5 | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 12 | 29 | 42 | 95 | 33 | SS-8 | - | - | - | - | - | - | - | - | 8 | Rock (V) | |
| | | 20 | | | | | | | | | | | | | | | | | |
| | | 21 | 10 | 35 | 44 | 105 | 39 | SS-9 | - | - | - | - | - | - | - | - | 5 | Rock (V) | |
| | | 22 | | | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | | |
| | 585.0 | 24 | 50 | - | 83 | | SS-10 | - | - | - | - | - | - | - | - | - | 7 | Rock (V) | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>20+24, 21' RT.</u> | EXPLORATION ID <u>B-014-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>628.0 (MSL)</u> EOB: <u>15.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449877, -82.430131</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | HOLE SEALED | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP | 628.0 | 1 | 3 | | | | | | | | | | | | | | | <L> >L> <L> >L> | |
| | | 2 | 3 | 11 | 100 | SS-1 | 4.25 | 1 | 0 | 1 | 23 | 75 | 53 | 24 | 29 | 18 | A-7-6 (18) | <L> >L> <L> >L> | |
| | | 3 | | | | | | | | | | | | | | | | | |
| HARD, REDDISH BROWN AND YELLOWISH BROWN BECOMING ORANGISH BROWN, CLAY , SOME TO "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL AND STONE FRAGMENTS, IRON STAINING, RESIDUAL ROCK, DAMP | 625.0 | 4 | 8 | 44 | 100 | SS-2 | 4.50 | 2 | 7 | 8 | 38 | 45 | 41 | 20 | 21 | 9 | A-7-6 (13) | | |
| | | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 6 | 32 | 33 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 11 | A-7-6 (V) | | |
| SILTSTONE , GRAY AND BROWN, SLIGHTLY TO MODERATELY WEATHERED, SLIGHTLY STRONG TO MODERATELY STRONG, VERY THIN TO MEDIUM BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, PARTIALLY CLAY FILLED HIGH ANGLE JOINT DISCONTINUITIES FROM 12.3'-12.9' AND 14.7'-15.2', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, BLOCKY, GOOD TO FAIR SURFACE CONDITION; RQD 80%, REC 100%. | 618.0 | 7 | 11 | 37 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 11 | A-7-6 (V) | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 8 | 12 | 16 | | | | | | | | | | | | | | |
| | 612.5 | 10 | 50 | - | 83 | SS-5 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) | | |
| | | 11 | | | | | | | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | 80 | | 100 | NQ2-1 | | | | | | | | | | | CORE | | |
| | | 14 | | | | | | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>24+49, 28' RT.</u> | EXPLORATION ID <u>B-076-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>587.7 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448656, -82.373197</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 587.7 | | | | | | | | | | | | | | | | | |
| HARD, BROWN, SANDY SILT , SOME STONE FRAGMENTS, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.1 | 1 | 7 | | | | | | | | | | | | | | | |
| | 584.7 | 2 | 18 11 | 39 | 100 | SS-1 | - | 26 | 19 | 13 | 28 | 14 | 30 | 20 | 10 | 7 | A-4a (1) | |
| HARD, MAROONISH BROWN BECOMING DARK BROWN, CLAY , SOME SILT, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 584.7 | 3 | | | | | | | | | | | | | | | | |
| | 584.7 | 4 | 5 | 15 | 89 | SS-2 | 4.50 | 15 | 7 | 12 | 30 | 36 | 44 | 24 | 20 | 20 | A-7-6 (11) | |
| | 584.7 | 5 | 6 | | | | | | | | | | | | | | | |
| | 584.7 | 6 | 7 | | | | | | | | | | | | | | | |
| | 584.7 | 7 | 7 | 20 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) | |
| | 584.7 | 8 | 8 | | | | | | | | | | | | | | | |
| | 584.7 | 9 | 6 | 15 | 72 | SS-4 | 4.50 | 7 | 9 | 15 | 31 | 38 | 42 | 23 | 19 | 19 | A-7-6 (11) | |
| | 584.7 | 10 | 5 | 6 | | | | | | | | | | | | | | |
| | 584.7 | 11 | 3 | 13 | 100 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) | |
| | 584.7 | 12 | 5 | 5 | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN BECOMING MAROONISH BROWN, GRAVEL WITH SAND , TRACE SILT, TRACE CLAY, DAMP | 574.7 | 13 | | | | | | | | | | | | | | | | |
| | 574.7 | 14 | 4 | 15 | 28 | SS-6 | - | 32 | 32 | 26 | 5 | 5 | NP | NP | NP | 6 | A-1-b (0) | |
| | 574.7 | 15 | 6 | | | | | | | | | | | | | | | |
| | 574.7 | 16 | 3 | 20 | 33 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | 574.7 | 17 | 7 | 8 | | | | | | | | | | | | | | |
| | 574.7 | 18 | | | | | | | | | | | | | | | | |
| | 574.7 | 19 | 5 | 16 | 44 | SS-8 | - | - | - | - | - | - | - | - | - | 5 | A-1-b (V) | |
| | 574.7 | 20 | 5 | 7 | | | | | | | | | | | | | | |
| | 574.7 | 21 | | | | | | | | | | | | | | | | |
| | 574.7 | 22 | 4 | 20 | 100 | SS-9 | - | - | - | - | - | - | - | - | - | 7 | A-1-b (V) | |
| | 574.7 | 23 | | | | | | | | | | | | | | | | |
| | 574.7 | 24 | 4 | 21 | 83 | SS-10 | - | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| | 562.7 | 24 | 7 | 9 | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>26+46, 39' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | B-076-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>589.9 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448837, -82.372539</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|-----------|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 12.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 589.9 | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , LITTLE TO SOME SAND, LITTLE STONE FRAGMENTS, DAMP | 588.4 | 1 | 4 | | | | | | | | | | | | | | | | |
| | | 2 | 3 | 13 | 67 | SS-1 | 4.25 | 12 | 15 | 11 | 31 | 31 | 36 | 20 | 16 | 12 | A-6b (8) | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 7 | 23 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| HARD, BROWN, SILT AND CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE STONE FRAGMENTS, DAMP | 584.4 | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 6 | 23 | 100 | SS-3 | 4.50 | 16 | 12 | 13 | 31 | 28 | 34 | 20 | 14 | 13 | A-6a (6) | | |
| | | 7 | 8 | 9 | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , TRACE CLAY, TRACE SILT, IRON STAINING, DAMP | 577.4 | 9 | 5 | 19 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-6a (V) | | |
| | | 10 | 6 | 8 | | | | | | | | | | | | | | | |
| | | 11 | 6 | 15 | 78 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 18 | A-6a (V) | | |
| | | 12 | 5 | 6 | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, COARSE AND FINE SAND , TRACE CLAY, TRACE SILT, TRACE GRAVEL, IRON STAINING, DAMP | 574.4 | 13 | 5 | 19 | 100 | SS-6 | - | 22 | 29 | 30 | 9 | 10 | NP | NP | NP | 8 | A-1-b (0) | | |
| | | 14 | 6 | 8 | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, IRON STAINING, DAMP | 571.9 | 15 | 4 | 21 | 39 | SS-7 | - | 4 | 23 | 59 | 5 | 9 | NP | NP | NP | 7 | A-3a (0) | | |
| | | 16 | 8 | 8 | | | | | | | | | | | | | | | |
| | 564.9 | 17 | 4 | 15 | 50 | SS-8 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | | |
| | | 18 | 5 | 6 | | | | | | | | | | | | | | | |
| | | 19 | 4 | 6 | 16 | 44 | SS-9 | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | | |
| | | 20 | 6 | 6 | | | | | | | | | | | | | | | |
| | | 21 | 2 | | | | | | | | | | | | | | | | |
| | | 22 | 6 | | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | | |
| | | 24 | 4 | 7 | 21 | 100 | SS-10 | - | - | - | - | - | - | - | 5 | A-1-b (V) | | | |
| | | | 9 | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>28+44, 42' RT.</u> | EXPLORATION ID <u>B-077-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>592.6 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449043, -82.371899</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 12.0" ASPHALT AND 5.5" BASE (DRILLERS DESCRIPTION) | 592.6 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 591.1 | 1 | 4 | | | | | | | | | | | | | | | |
| | 589.6 | 2 | 5 | 13 | 72 | SS-1 | 4.50 | 7 | 9 | 8 | 34 | 42 | 44 | 21 | 23 | 15 | A-7-6 (14) | |
| VERY STIFF, BROWN AND GRAY, SANDY SILT , "AND" GRAVEL, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 587.1 | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 5 | 12 | 24 | 94 | SS-2 | - | 35 | 9 | 8 | 33 | 15 | 30 | 20 | 10 | 8 | A-4a (3) |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 582.1 | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 8 | 23 | 100 | SS-3 | 4.50 | 18 | 13 | 10 | 31 | 28 | 38 | 21 | 17 | 13 | A-6b (8) |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 577.1 | 7 | 8 | 9 | | | | | | | | | | | | | | |
| | | 9 | 5 | 5 | 16 | 89 | SS-4 | 4.25 | - | - | - | - | - | - | - | - | 13 | A-6b (V) |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 574.6 | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 4 | 5 | 19 | 39 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-7-6 (V) |
| HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 574.6 | 12 | | | | | | | | | | | | | | | | |
| | | 14 | 5 | 6 | 17 | 72 | SS-6 | 4.25 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) |
| HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 574.6 | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 5 | 5 | 17 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) |
| MEDIUM DENSE, ORANGISH BROWN, FINE SAND , SOME COARSE SAND, LITTLE GRAVEL, TRACE SILT, TRACE CLAY, IRON STAINING, DAMP | 567.6 | 17 | | | | | | | | | | | | | | | | |
| | | 18 | 5 | 5 | 16 | 78 | SS-8 | - | 14 | 27 | 53 | 5 | 1 | NP | NP | NP | 3 | A-3 (0) |
| | 567.6 | 19 | | | | | | | | | | | | | | | | |
| | | 20 | 6 | 6 | 15 | 33 | SS-9 | - | - | - | - | - | - | - | - | - | 3 | A-3 (V) |
| | 567.6 | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 2 | 5 | 21 | 89 | SS-10 | - | - | - | - | - | - | - | - | - | 4 | A-3 (V) |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>30+45, 50' RT.</u> | EXPLORATION ID: <u>B-077-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>588.8 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449237, -82.371242</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | WC | ODOT CLASS (GI) | BACK FILL |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | |
| 13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION) | 588.8 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, MAROONISH BROWN AND BROWN, SANDY SILT, "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP | 587.3 | 1 | 6 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN BECOMING BROWN, SILTY CLAY, SOME SAND, LITTLE TO SOME GRAVEL, DAMP | 585.8 | 2 | 4 | 21 | 22 | SS-1 | - | 47 | 7 | 9 | 21 | 16 | NP | NP | NP | 10 | A-4a (0) | |
| | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 6 | | | | | | | | | | | | | | | |
| | | 5 | 5 | 20 | 100 | SS-2 | 4.50 | 21 | 12 | 10 | 32 | 25 | 38 | 22 | 16 | 13 | A-6b (7) | |
| | | 6 | | | | | | | | | | | | | | | | |
| | | 7 | 6 | 8 | 25 | 17 | SS-3 | 4.50 | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 6 | 16 | 100 | SS-4 | 4.50 | 17 | 12 | 12 | 34 | 25 | 36 | 20 | 16 | 12 | A-6b (7) |
| | | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 6 | 5 | 16 | 33 | SS-5 | 4.50 | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 12 | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 5 | 4 | 16 | 44 | SS-6 | 4.25 | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 15 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND, LITTLE SILT, TRACE CLAY, DAMP | 573.3 | 16 | 6 | 7 | 20 | 44 | SS-7 | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| HARD, DARK BROWN, SILTY CLAY, "AND" SAND, TRACE GRAVEL, DAMP | 570.8 | 17 | | | | | | | | | | | | | | | | |
| | | 18 | 5 | 6 | 17 | 100 | SS-8 | 4.50 | 4 | 13 | 28 | 28 | 27 | 34 | 18 | 16 | 15 | A-6b (6) |
| | | 19 | | | | | | | | | | | | | | | | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | 4 | 5 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | 10 | A-6b (V) | |
| | | 22 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, GRAVEL WITH SAND, LITTLE SILT, TRACE CLAY, DAMP | 565.8 | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 5 | 7 | 19 | 100 | SS-10 | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | 563.8 | | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:43 - IUS0247.PPFSS011SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>32+48, 44' RT.</u> | EXPLORATION ID <u>B-078-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>595.3 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449462, -82.370599</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|--|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | | |
| 12.5" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 595.3 | | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, SILTY CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 593.8 | 1 | 3 | 15 | 100 | SS-1 | 4.25 | 19 | 9 | 9 | 35 | 28 | 38 | 21 | 17 | 13 | A-6b (8) | | | |
| | | 2 | 5 | 6 | | | | | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | | | | | | | |
| | | 4 | 6 | 7 | 6 | 17 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | 13 | A-6b (V) | | |
| | | 5 | | | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 5 | 7 | 16 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| | | 7 | | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 9 | 12 | 28 | 50 | SS-4 | 4.50 | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| | | 10 | | | | | | | | | | | | | | | | | | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME GRAVEL AND STONE FRAGMENTS, LITTLE SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 584.8 | 11 | 7 | 16 | 37 | 100 | SS-5 | - | 31 | 10 | 9 | 30 | 20 | 34 | 20 | 14 | 10 | A-6a (4) | | |
| | 582.3 | 12 | 16 | 12 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 574.8 | 13 | | | | | | | | | | | | | | | | | | |
| | | 14 | 6 | 7 | 10 | 23 | 28 | SS-6 | 4.50 | - | - | - | - | - | - | - | 17 | A-6b (V) | | |
| | | 15 | | | | | | | | | | | | | | | | | | |
| | | 16 | 6 | 6 | 7 | 17 | 44 | SS-7 | 4.50 | - | - | - | - | - | - | - | 17 | A-6b (V) | | |
| | | 17 | | | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT , LITTLE CLAY, DAMP | 574.8 | 19 | 6 | 8 | 17 | 22 | SS-8 | 4.50 | - | - | - | - | - | - | - | 14 | A-6b (V) | | | |
| | 572.3 | 20 | | | | | | | | | | | | | | | | | | |
| | 572.3 | 21 | 4 | 4 | 12 | 28 | SS-9 | - | - | - | - | - | - | - | - | 12 | A-2-4 (V) | | | |
| | 572.3 | 22 | | 5 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , "AND" SAND, LITTLE GRAVEL, DAMP | 570.3 | 23 | | | | | | | | | | | | | | | | | | |
| | 570.3 | 24 | 4 | 6 | 16 | 100 | SS-10 | 4.50 | 13 | 15 | 25 | 26 | 21 | 30 | 17 | 13 | 13 | A-6a (3) | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:43 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA075923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>34+47, 34' RT.</u> | EXPLORATION ID: <u>B-078-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>602.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449677, -82.369965</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 602.4 | | | | | | | | | | | | | | | | | |
| | 600.8 | 1 | 5 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, LITTLE GRAVEL, DAMP | 599.4 | 2 | 2 | 4 | 8 | 33 | SS-1 | 4.50 | 13 | 8 | 10 | 32 | 37 | 41 | 20 | 21 | 16 | A-7-6 (11) |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , LITTLE TO SOME GRAVEL, SOME SAND, DAMP | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 3 | 4 | 11 | 89 | SS-2 | 4.50 | 33 | 15 | 10 | 27 | 15 | 34 | 21 | 13 | 10 | A-6a (2) |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 5 | 5 | 23 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6a (V) |
| | 594.4 | 7 | 5 | 12 | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 591.9 | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 6 | 7 | 21 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) |
| | | 10 | | | | | | | | | | | | | | | | |
| VERY STIFF, BROWN, SILT AND CLAY , SOME STONE FRAGMENTS, SOME SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.9 | 11 | 5 | 12 | 27 | 94 | SS-5 | - | 33 | 16 | 10 | 23 | 18 | 36 | 22 | 14 | 10 | A-6a (2) |
| | | 12 | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 6 | 7 | 20 | 22 | SS-6 | - | - | - | - | - | - | - | - | - | 9 | A-6a (V) |
| | | 15 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE TO LITTLE GRAVEL, DAMP | | 16 | 4 | 4 | 15 | 17 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) |
| | | 17 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 | 8 | 21 | 100 | SS-8 | 4.50 | 11 | 12 | 7 | 33 | 37 | 41 | 21 | 20 | 13 | A-7-6 (11) |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 6 | 9 | 31 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-7-6 (V) |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 6 | 10 | 35 | 100 | SS-10 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) |
| | 577.4 | | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

Noise Wall Design

**LAW-7-2.17
75923**

Noise Wall Along SR-7

Barrier B1

Stantec Consulting

Prepared By: James Samples
Date prepared: Tuesday, September 10, 2024

Checked By: Eric Kistner
Date Checked: Tuesday, September 17, 2024

No. of Borings: 11

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+00.00 | 1 | 14.00 | 24.00 | 574.82 |
| 10+24.00 | 2 | 14.00 | 24.00 | 574.82 |
| 10+48.00 | 3 | 14.00 | 24.00 | 574.82 |
| 10+72.00 | 4 | 14.00 | 24.00 | 574.82 |
| 10+96.00 | 5 | 14.00 | 24.00 | 575.82 |
| 11+20.00 | 6 | 14.00 | 24.00 | 575.82 |
| 11+44.00 | 7 | 14.00 | 24.00 | 575.82 |
| 11+68.00 | 8 | 14.00 | 24.00 | 576.82 |
| 11+92.00 | 9 | 14.00 | 24.00 | 576.82 |
| 12+16.00 | 10 | 14.00 | 24.00 | 576.82 |
| 12+40.00 | 11 | 14.00 | 24.00 | 577.82 |
| 12+64.00 | 12 | 14.00 | 24.00 | 577.82 |
| 12+88.00 | 13 | 14.00 | 24.00 | 577.82 |
| 13+12.00 | 14 | 14.00 | 24.00 | 577.82 |
| 13+36.00 | 15 | 14.00 | 24.00 | 578.82 |
| 13+60.00 | 16 | 14.00 | 24.00 | 578.82 |
| 13+84.00 | 17 | 14.00 | 24.00 | 578.82 |
| 14+08.00 | 18 | 14.00 | 24.00 | 579.82 |
| 14+32.00 | 19 | 14.00 | 24.00 | 579.82 |
| 14+56.00 | 20 | 14.00 | 24.00 | 580.82 |
| 14+80.00 | 21 | 14.00 | 24.00 | 580.82 |
| 15+04.00 | 22 | 14.00 | 24.00 | 581.82 |
| 15+28.00 | 23 | 14.00 | 24.00 | 581.82 |
| 15+52.00 | 24 | 14.00 | 24.00 | 582.82 |
| 15+76.00 | 25 | 14.00 | 24.00 | 582.82 |
| 16+00.00 | 26 | 14.00 | 24.00 | 583.82 |
| 16+24.00 | 27 | 14.00 | 24.00 | 584.82 |
| 16+48.00 | 28 | 14.00 | 24.00 | 585.62 |
| 16+72.00 | 29 | 14.00 | 24.00 | 586.62 |
| 16+96.00 | 30 | 14.00 | 24.00 | 587.22 |
| 17+20.00 | 31 | 14.00 | 24.00 | 588.12 |
| 17+44.00 | 32 | 14.00 | 24.00 | 588.92 |
| 17+68.00 | 33 | 14.00 | 24.00 | 589.92 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 17+92.00 | 34 | 14.00 | 24.00 | 590.82 |
| 18+16.00 | 35 | 14.00 | 24.00 | 591.82 |
| 18+40.00 | 36 | 14.00 | 24.00 | 592.92 |
| 18+64.00 | 37 | 14.00 | 24.00 | 594.02 |
| 18+88.00 | 38 | 14.00 | 24.00 | 595.12 |
| 19+12.00 | 39 | 14.00 | 24.00 | 596.22 |
| 19+36.00 | 40 | 14.00 | 24.00 | 597.42 |
| 19+60.00 | 41 | 14.00 | 24.00 | 598.72 |
| 19+84.00 | 42 | 14.00 | 24.00 | 599.92 |
| 20+08.00 | 43 | 14.00 | 24.00 | 601.32 |
| 20+32.00 | 44 | 14.00 | 24.00 | 602.68 |
| 20+56.00 | 45 | 14.00 | 24.00 | 604.08 |
| 20+80.00 | 46 | 14.00 | 24.00 | 605.50 |
| 21+04.00 | 47 | 14.00 | 24.00 | 606.93 |
| 21+28.00 | 48 | 14.00 | 24.00 | 608.37 |
| 21+52.00 | 49 | 14.00 | 24.00 | 609.81 |
| 21+76.00 | 50 | 14.00 | 24.00 | 611.25 |
| 22+00.00 | 51 | 14.00 | 24.00 | 612.69 |
| 22+24.00 | 52 | 14.00 | 24.00 | 614.13 |
| 22+48.00 | 53 | 14.00 | 24.00 | 615.57 |
| 22+72.00 | 54 | 14.00 | 24.00 | 617.01 |
| 22+96.00 | 55 | 14.00 | 24.00 | 618.45 |
| 23+20.00 | 56 | 14.00 | 24.00 | 619.89 |
| 23+44.00 | 57 | 14.00 | 24.00 | 621.28 |
| 23+68.00 | 58 | 14.00 | 24.00 | 622.50 |
| 23+92.00 | 59 | 14.00 | 24.00 | 623.95 |
| 24+04.00 | 60 | 14.00 | 12.00 | 624.91 |
| 24+28.00 | 61 | 14.00 | 24.00 | 625.89 |
| 24+40.00 | 62 | 14.00 | 12.00 | 626.86 |
| 24+64.00 | 63 | 14.00 | 24.00 | 628.30 |
| 24+88.00 | 64 | 14.00 | 24.00 | 629.74 |
| 25+12.00 | 65 | 14.00 | 24.00 | 631.17 |
| 25+36.00 | 66 | 14.00 | 24.00 | 632.59 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 25+60.00 | 67 | 14.00 | 24.00 | 633.95 |
| 25+84.00 | 68 | 14.00 | 24.00 | 635.30 |
| 26+08.00 | 69 | 14.00 | 24.00 | 636.58 |
| 26+32.00 | 70 | 14.00 | 24.00 | 637.85 |
| 26+56.00 | 71 | 14.00 | 24.00 | 639.07 |
| 26+80.00 | 72 | 14.00 | 24.00 | 640.26 |
| 27+04.00 | 73 | 14.00 | 24.00 | 641.26 |
| 27+28.00 | 74 | 14.00 | 24.00 | 642.26 |
| 27+52.00 | 75 | 14.00 | 24.00 | 643.26 |
| 27+76.00 | 76 | 14.00 | 24.00 | 644.26 |
| 28+00.00 | 77 | 14.00 | 24.00 | 645.26 |
| 28+24.00 | 78 | 14.00 | 24.00 | 646.26 |
| 28+48.00 | 79 | 14.00 | 24.00 | 647.26 |
| 28+72.00 | 80 | 14.00 | 24.00 | 648.26 |
| 28+96.00 | 81 | 14.00 | 24.00 | 649.46 |
| 29+20.00 | 82 | 14.00 | 24.00 | 650.66 |
| 29+44.00 | 83 | 14.00 | 24.00 | 651.71 |
| 29+68.00 | 84 | 14.00 | 24.00 | 652.56 |
| 29+92.00 | 85 | 14.00 | 24.00 | 653.56 |
| 30+16.00 | 86 | 14.00 | 24.00 | 654.36 |
| 30+40.00 | 87 | 14.00 | 24.00 | 654.36 |
| 30+64.00 | 88 | 14.00 | 24.00 | 655.36 |
| 30+88.00 | 89 | 14.00 | 24.00 | 656.36 |
| 31+12.00 | 90 | 14.00 | 24.00 | 656.36 |
| 31+36.00 | 91 | 14.00 | 24.00 | 657.36 |
| 31+60.00 | 92 | 14.00 | 24.00 | 657.36 |
| 31+84.00 | 93 | 14.00 | 24.00 | 658.36 |
| 32+08.00 | 94 | 14.00 | 24.00 | 658.36 |
| 32+32.00 | 95 | 14.00 | 24.00 | 658.36 |
| 32+56.00 | 96 | 14.00 | 24.00 | 659.36 |
| 32+80.00 | 97 | 14.00 | 24.00 | 659.36 |
| 33+04.00 | 98 | 14.00 | 24.00 | 659.36 |
| 33+28.00 | 99 | 14.00 | 24.00 | 659.36 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 33+52.00 | 100 | 14.00 | 24.00 | 659.36 |
| 33+76.00 | 101 | 14.00 | 24.00 | 659.36 |
| 34+00.00 | 102 | 14.00 | 24.00 | 659.36 |
| 34+24.00 | 103 | 14.00 | 24.00 | 659.36 |
| 34+48.00 | 104 | 14.00 | 24.00 | 659.36 |
| 34+72.00 | 105 | 14.00 | 24.00 | 659.36 |
| 34+96.00 | 106 | 14.00 | 24.00 | 659.36 |
| 35+20.00 | 107 | 14.00 | 24.00 | 659.36 |
| 35+44.00 | 108 | 14.00 | 24.00 | 659.36 |
| 35+68.00 | 109 | 14.00 | 24.00 | 659.36 |
| 35+92.00 | 110 | 14.00 | 24.00 | 658.36 |
| 36+16.00 | 111 | 14.00 | 24.00 | 658.36 |
| 36+40.00 | 112 | 14.00 | 24.00 | 658.36 |
| 36+64.00 | 113 | 14.00 | 24.00 | 657.36 |
| 36+88.00 | 114 | 14.00 | 24.00 | 657.36 |
| 37+12.00 | 115 | 14.00 | 24.00 | 656.36 |
| 37+36.00 | 116 | 14.00 | 24.00 | 656.36 |
| 37+60.00 | 117 | 14.00 | 24.00 | 655.36 |
| 37+84.00 | 118 | 14.00 | 24.00 | 655.36 |
| 38+08.00 | 119 | 14.00 | 24.00 | 654.36 |
| 38+32.00 | 120 | 14.00 | 24.00 | 653.56 |
| 38+56.00 | 121 | 14.00 | 24.00 | 652.76 |
| 38+80.00 | 122 | 14.00 | 24.00 | 652.06 |
| 39+04.00 | 123 | 14.00 | 24.00 | 651.26 |
| 39+28.00 | 124 | 14.00 | 24.00 | 650.46 |
| 39+52.00 | 125 | 14.00 | 24.00 | 649.66 |
| 39+76.00 | 126 | 14.00 | 24.00 | 648.86 |
| 40+00.00 | 127 | 14.00 | 24.00 | 647.96 |
| 40+24.00 | 128 | 14.00 | 24.00 | 646.96 |
| 40+48.00 | 129 | 14.00 | 24.00 | 645.76 |
| 40+72.00 | 130 | 14.00 | 24.00 | 644.66 |
| 40+96.00 | 131 | 14.00 | 24.00 | 643.46 |
| 41+20.00 | 132 | 14.00 | 24.00 | 642.16 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 41+44.00 | 133 | 14.00 | 24.00 | 640.96 |
| 41+68.00 | 134 | 14.00 | 24.00 | 639.66 |
| 41+92.00 | 135 | 14.00 | 24.00 | 638.66 |
| 42+16.00 | 136 | 14.00 | 24.00 | 636.98 |
| 42+40.00 | 137 | 14.00 | 24.00 | 635.56 |
| 42+64.00 | 138 | 14.00 | 24.00 | 633.94 |
| 42+88.00 | 139 | 14.00 | 24.00 | 632.33 |
| 43+12.00 | 140 | 14.00 | 24.00 | 630.72 |
| 43+36.00 | 141 | 14.00 | 24.00 | 629.16 |
| 43+60.00 | 142 | 14.00 | 24.00 | 627.63 |
| 43+84.00 | 143 | 14.00 | 24.00 | 626.09 |
| 44+08.00 | 144 | 14.00 | 24.00 | 624.52 |
| 44+32.00 | 145 | 14.00 | 24.00 | 622.67 |
| 44+56.00 | 146 | 14.00 | 24.00 | 621.10 |
| 44+80.00 | 147 | 14.00 | 24.00 | 619.53 |
| 45+04.00 | 148 | 14.00 | 24.00 | 617.97 |
| 45+28.00 | 149 | 14.00 | 24.00 | 616.57 |
| 45+52.00 | 150 | 14.00 | 24.00 | 615.57 |
| 45+76.00 | 151 | 14.00 | 24.00 | 614.57 |
| 46+00.00 | 152 | 14.00 | 24.00 | 613.47 |
| 46+24.00 | 153 | 14.00 | 24.00 | 612.27 |
| 46+48.00 | 154 | 14.00 | 24.00 | 610.88 |
| 46+72.00 | 155 | 14.00 | 24.00 | 609.46 |
| 46+96.00 | 156 | 14.00 | 24.00 | 608.10 |
| 47+20.00 | 157 | 14.00 | 24.00 | 606.73 |
| 47+44.00 | 158 | 14.00 | 24.00 | 605.43 |
| 47+68.00 | 159 | 14.00 | 24.00 | 604.13 |
| 47+92.00 | 160 | 14.00 | 24.00 | 602.83 |
| 48+16.00 | 161 | 14.00 | 24.00 | 601.63 |
| 48+40.00 | 162 | 14.00 | 24.00 | 600.35 |
| 48+52.00 | 163 | 14.00 | 12.00 | 600.35 |

**Boring Information and
Design Recommendation**

**LAW-7-2.17
PID: 75923**

Foundation Design

Noise Wall ID: Barrier B1

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| | | | | | | | | | | | | | | | | | | |
| B-001 | SPT | 10+00.00 | 14+50.00 | 574.82 | 574.82 | 567.00 | | | 24 | 14.00 | 3.0 | 3:1 | 10+00.00 | 14+32.00 | 1 | 19 | 6.50 | 568.32 |
| B-002 | SPT | 19+00.00 | 21+00.00 | 595.12 | 595.12 | 578.00 | | | 24 | 14.00 | 3.0 | 3:1 | 14+56.00 | 20+80.00 | 20 | 46 | 6.50 | 588.62 |
| B-003 | SPT | 23+00.00 | 25+81.50 | 618.45 | 618.45 | 598.50 | | | 24 | 14.00 | 3.0 | 3:1 | 21+04.00 | 25+60.00 | 47 | 67 | 6.50 | 611.95 |
| B-007-2-23 | SPT | 28+63.00 | 29+98.00 | 631.51 | 647.26 | 647.00 | 626.01 | | 24 | 14.00 | 3.0 | 3:1 | 25+84.00 | 29+92.00 | 68 | 85 | 6.50 | 640.76 |
| B-007-3-23 | SPT | 31+33.00 | 32+53.50 | 659.25 | 656.36 | 655.00 | 653.25 | | 24 | 14.00 | 3.0 | 3:1 | 30+16.00 | 32+32.00 | 86 | 95 | 6.50 | 649.86 |
| B-007-4-23 | SPT | 33+74.00 | 34+72.00 | 668.96 | 659.36 | 655.00 | 655.46 | | 24 | 14.00 | 3.0 | 3:1 | 32+56.00 | 34+72.00 | 96 | 105 | 6.50 | 652.86 |
| B-007-5-23 | SPT | 35+70.00 | 36+85.00 | 645.20 | 659.36 | 651.00 | 632.70 | | 24 | 14.00 | 3.0 | 3:1 | 34+96.00 | 36+64.00 | 106 | 113 | 6.50 | 652.86 |
| B-004 | SPT | 38+00.00 | 38+88.00 | 655.36 | 655.36 | 610.00 | | | 24 | 14.00 | 3.0 | 3:1 | 36+88.00 | 38+80.00 | 114 | 122 | 6.50 | 648.86 |
| B-009-1-23 | SPT | 39+76.00 | 41+07.50 | 623.70 | 648.86 | 639.00 | 613.20 | | 24 | 14.00 | 3.0 | 3:1 | 39+04.00 | 40+96.00 | 123 | 131 | 6.50 | 642.36 |
| B-009-2-23 | SPT | 42+39.00 | 45+45.50 | 583.90 | 636.98 | 578.00 | 560.40 | | 24 | 14.00 | 3.0 | 3:1 | 41+20.00 | 45+28.00 | 132 | 149 | 6.50 | 630.48 |
| B-005 | SPT | 48+52.00 | 48+52.00 | 600.35 | 600.35 | 562.00 | | | 24 | 14.00 | 3.0 | 3:1 | 45+52.00 | 48+52.00 | 150 | 163 | 6.50 | 593.85 |

B-001
 Layer Thick. (ft) = 2.50
 Fill (ft) = 7.82
 Shaft Top Elev. (ft) = 574.82
 Boring Top Elev. (ft) = 574.82 Ex. Ground Elev. = 567.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 568.32' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 574.82 | 572.32 | 2.50 | | | 20 | | | | 574.50 | | | | | | 0.32 | 20 | Cohesive |
| 2 | 572.32 | 569.82 | 5.00 | | | 20 | | | | 572.00 | | | | | | 2.82 | 20 | Cohesive |
| 3 | 569.82 | 567.32 | 7.50 | | | 20 | | | | 569.50 | | | | | | 5.32 | 20 | Cohesive |
| 4 | 567.32 | 567.00 | 7.82 | | | 20 | | | | 567.00 | | | | | | 7.82 | 20 | Cohesive |
| | | | | | | | | | | 564.50 | | | | | | 10.32 | 20 | Cohesive |
| | | | | | | | | | | 562.00 | | | | | | 12.82 | 20 | Cohesive |
| | | | | | | | | | | 559.50 | | | | | | 15.32 | 20 | Cohesive |
| | | | | | | | | | | 557.00 | | | | | | 17.82 | | Cohesive |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-002

Layer Thick. (ft) = 2.50
 Fill (ft) = 17.12
 Shaft Top Elev. (ft) = 595.12
 Boring Top Elev. (ft) = 595.12 Ex. Ground Elev. = 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 588.62' | | | | | | | | | |

CCT.: 2
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 595.12 | 592.62 | 2.50 | | | | | | | 593.00 | | | | | | 2.12 | 20 | Cohesive |
| 2 | 592.62 | 590.12 | 5.00 | | | | | | | 590.50 | | | | | | 4.62 | 20 | Cohesive |
| 3 | 590.12 | 587.62 | 7.50 | | | | | | | 588.00 | | | | | | 7.12 | 20 | Cohesive |
| 4 | 587.62 | 585.12 | 10.00 | | | | | | | 585.50 | | | | | | 9.62 | 20 | Cohesive |
| 5 | 585.12 | 582.62 | 12.50 | | | | | | | 583.00 | | | | | | 12.12 | 20 | Cohesive |
| 6 | 582.62 | 580.12 | 15.00 | | | | | | | 580.50 | | | | | | 14.62 | 20 | Cohesive |
| 7 | 580.12 | 577.62 | 17.50 | | | | | | | 578.00 | | | | | | 17.12 | 20 | Cohesive |
| | | | | | | | | | | 575.50 | | | | | | 19.62 | 20 | Cohesive |
| | | | | | | | | | | 573.00 | | | | | | 22.12 | 20 | Cohesive |
| | | | | | | | | | | 570.50 | | | | | | 24.62 | 20 | Cohesive |
| | | | | | | | | | | 568.00 | | | | | | 27.12 | 20 | Cohesive |
| | | | | | | | | | | 565.50 | | | | | | 29.62 | 20 | Cohesive |
| | | | | | | | | | | 563.00 | | | | | | 32.12 | 20 | Cohesive |

B-003
 Layer Thick. (ft) = 2.50
 Fill (ft) = 19.95
 Shaft Top Elev. (ft) = 618.45
 Boring Top Elev. (ft) = 618.45 Ex. Ground Elev. = 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 611.95' | | | | | | | | | |

C CT.: 1
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 618.45 | 598.50 | 19.95 | | | | | | | 616.00 | | | | | | 2.45 | 20 | Cohesive |
| | | | | | | | | | | 613.50 | | | | | | 4.95 | 20 | Cohesive |
| | | | | | | | | | | 611.00 | | | | | | 7.45 | 20 | Cohesive |
| | | | | | | | | | | 608.50 | | | | | | 9.95 | 20 | Cohesive |
| | | | | | | | | | | 606.00 | | | | | | 12.45 | 20 | Cohesive |
| | | | | | | | | | | 603.50 | | | | | | 14.95 | 20 | Cohesive |
| | | | | | | | | | | 601.00 | | | | | | 17.45 | 20 | Cohesive |
| | | | | | | | | | | 598.50 | | | | | | 19.95 | 20 | Cohesive |
| | | | | | | | | | | 596.00 | | | | | | 22.45 | | Cohesive |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-007-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.26 Rock Elev. (ft)= 626.01
 Shaft Top Elev. (ft) = 647.26 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 631.51 Ex. Ground Elev.= 647.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 640.76' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 16

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 631.51 | 626.01 | 5.50 | A-7-6 | Cohesive | 9 | 1.86 | 9 | 9 | 647.00 | 118 | 56 | 56 | 306 | 153 | 0.26 | 20 | Cohesive |
| 2 | 626.01 | 624.01 | 7.50 | Rock | | 50 | | | | 644.50 | | | | | | 2.76 | 20 | Cohesive |
| 3 | 624.01 | 621.51 | 10.00 | Rock | | 50 | | | | 642.00 | | | | | | 5.26 | 9 | Cohesive |
| 4 | 621.51 | 619.01 | 12.50 | Rock | | 50 | | | | 639.50 | | | | | | 7.76 | | |
| 5 | 619.01 | 616.51 | 15.00 | Rock | | 50 | | | | 637.00 | | | | | | 10.26 | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-007-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 1.36 Rock Elev. (ft)= 653.25
 Shaft Top Elev. (ft) = 656.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 659.25 Ex. Ground Elev.= 655.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 649.86' | | | | | | | | | |

C CT.: 4
 G CT.: 0
 N dsgn: 26

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 659.25 | 654.75 | 4.50 | A-7-6 | Cohesive | 15 | 1.91 | 15 | 15 | 655.00 | 122 | 60 | 60 | 268 | 134 | 1.36 | 20 | Cohesive |
| 2 | 654.75 | 653.25 | 6.00 | A-6a | Cohesive | 50 | 1.61 | 50 | 32 | 652.50 | 135 | 73 | 73 | 109 | 323 | 3.86 | 32 | Cohesive |
| 3 | 653.25 | 651.75 | 7.50 | Rock | | 50 | | | | 653.25 | | | | | | 3.11 | | Cohesive |
| 4 | 651.75 | 649.25 | 10.00 | Rock | | 50 | | | | 651.75 | | | | | | 4.61 | | Cohesive |
| 5 | 649.25 | 646.75 | 12.50 | Rock | | 50 | | | | 649.25 | | | | | | 7.11 | | |
| | | | | | | | | | | 646.75 | | | | | | 9.61 | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-007-4-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 4.36 Rock Elev. (ft)= 655.46
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 668.96 Ex. Ground Elev.= 655.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 652.86' | | | | | | | | | |

C CT.: 2
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 668.96 | 664.46 | 4.50 | A-4a P | Cohesive | 9 | 1.93 | 9 | 9 | 657.50 | 118 | 56 | 56 | 250 | 125 | 1.86 | 20 | Cohesive |
| 2 | 664.46 | 661.96 | 7.00 | A-7-6 | Cohesive | 20 | 1.61 | 20 | 20 | 655.00 | 125 | 63 | 63 | 157 | 328 | 4.36 | 20 | Cohesive |
| 3 | 661.96 | 659.46 | 9.50 | A-7-6 | Cohesive | 31 | 1.47 | 31 | 31 | 652.50 | 128 | 66 | 66 | 164 | 489 | 6.86 | 20 | Cohesive |
| 4 | 659.46 | 656.96 | 12.00 | A-6b | Cohesive | 41 | 1.37 | 41 | 32 | 650.00 | 130 | 68 | 68 | 169 | 655 | 9.36 | 20 | Cohesive |
| 5 | 656.96 | 655.46 | 13.50 | A-6b | Cohesive | 50 | 1.31 | 50 | 32 | 647.50 | 135 | 73 | 73 | 109 | 794 | 11.86 | 20 | Cohesive |
| 6 | 655.46 | 653.96 | 15.00 | Rock | | 50 | | | | 645.00 | | | | | | 14.36 | 20 | Cohesive |
| 7 | 653.96 | 651.46 | 17.50 | Rock | | 50 | | | | 642.50 | | | | | | 16.86 | 20 | Cohesive |
| 8 | 651.46 | 648.96 | 20.00 | Rock | | 50 | | | | 640.00 | | | | | | 19.36 | 20 | Cohesive |
| 9 | 648.96 | 646.46 | 22.50 | Rock | | 50 | | | | 651.46 | | | | | | 7.90 | 31 | Cohesive |
| 10 | 646.46 | 643.96 | 25.00 | Rock | | 50 | | | | 648.96 | | | | | | 10.40 | 32 | Cohesive |
| | | | | | | | | | | 646.46 | | | | | | 12.90 | 32 | Cohesive |
| | | | | | | | | | | 643.96 | | | | | | 15.40 | | Cohesive |

B-007-5-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 8.36 Rock Elev. (ft)= 632.70
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 645.20 Ex. Ground Elev.= 651.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 652.86' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 645.20 | 642.20 | 3.00 | A-7-6 | Cohesive | 4 | 2.00 | 4 | 4 | 658.50 | 112 | 50 | 50 | 149 | 74 | 0.86 | 20 | Cohesive |
| 2 | 642.20 | 639.70 | 5.50 | A-7-6 | Cohesive | 19 | 1.73 | 19 | 19 | 656.00 | 122 | 60 | 60 | 149 | 223 | 3.36 | 20 | Cohesive |
| 3 | 639.70 | 637.20 | 8.00 | A-7-6 | Cohesive | 25 | 1.56 | 25 | 25 | 653.50 | 125 | 63 | 63 | 157 | 376 | 5.86 | 20 | Cohesive |
| 4 | 637.20 | 634.70 | 10.50 | A-7-6 | Cohesive | 23 | 1.44 | 23 | 23 | 651.00 | 125 | 63 | 63 | 157 | 533 | 8.36 | 20 | Cohesive |
| 5 | 634.70 | 632.70 | 12.50 | A-1-b | Granular | 52 | 1.36 | 71 | 60 | 648.50 | 132 | 70 | 70 | 139 | 680 | 10.86 | 20 | Cohesive |
| 6 | 632.70 | 629.70 | 15.50 | Rock | | 60 | | | | 646.00 | | | | | | 13.36 | 4 | Cohesive |
| 7 | 629.70 | 627.20 | 18.00 | Rock | | 73 | | | | 643.50 | | | | | | 15.86 | 19 | Cohesive |
| 8 | 627.20 | 625.20 | 20.00 | Rock | | 50 | | | | 641.50 | | | | | | 17.86 | 25 | Cohesive |
| 9 | 625.20 | 622.70 | 22.50 | Rock | | 50 | | | | 638.50 | | | | | | 20.86 | 23 | Cohesive |
| 10 | 622.70 | 620.20 | 25.00 | Rock | | 50 | | | | 636.00 | | | | | | 23.36 | 60 | Granular |
| | | | | | | | | | | 634.00 | | | | | | 25.36 | | |
| | | | | | | | | | | 631.50 | | | | | | 27.86 | | |
| | | | | | | | | | | 629.00 | | | | | | 30.36 | | |

B-004

Layer Thick. (ft) = 2.50
 Fill (ft) = 45.36
 Shaft Top Elev. (ft) = 655.36
 Boring Top Elev. (ft) = 655.36 Ex. Ground Elev. = 610.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 648.86' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 655.36 | 652.86 | 2.50 | | | | | | | 655.00 | | | | | | 0.36 | 20 | Cohesive |
| 2 | 652.86 | 650.36 | 5.00 | | | | | | | 652.50 | | | | | | 2.86 | 20 | Cohesive |
| 3 | 650.36 | 647.86 | 7.50 | | | | | | | 650.00 | | | | | | 5.36 | 20 | Cohesive |
| 4 | 647.86 | 645.36 | 10.00 | | | | | | | 647.50 | | | | | | 7.86 | 20 | Cohesive |
| 5 | 645.36 | 642.86 | 12.50 | | | | | | | 645.00 | | | | | | 10.36 | 20 | Cohesive |
| 6 | 642.86 | 640.36 | 15.00 | | | | | | | 642.50 | | | | | | 12.86 | 20 | Cohesive |
| 7 | 640.36 | 637.86 | 17.50 | | | | | | | 640.00 | | | | | | 15.36 | 20 | Cohesive |
| 8 | 637.86 | 635.36 | 20.00 | | | | | | | 637.50 | | | | | | 17.86 | 20 | Cohesive |
| 9 | 635.36 | 632.86 | 22.50 | | | | | | | 635.00 | | | | | | 20.36 | 20 | Cohesive |
| 10 | 632.86 | 630.36 | 25.00 | | | | | | | 632.50 | | | | | | 22.86 | 20 | Cohesive |
| | | | | | | | | | | 630.00 | | | | | | 25.36 | 20 | Cohesive |
| | | | | | | | | | | 627.50 | | | | | | 27.86 | 20 | Cohesive |
| | | | | | | | | | | 625.00 | | | | | | 30.36 | 20 | Cohesive |

B-009-1-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 9.86 Rock Elev. (ft)= 613.20
 Shaft Top Elev. (ft) = 648.86 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 623.70 Ex. Ground Elev.= 639.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 642.36' | | | | | | | | | |

C CT.: 2
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 623.70 | 620.70 | 3.00 | A-7-6 | Cohesive | 28 | 2.00 | 28 | 28 | 646.50 | 128 | 66 | 66 | 197 | 98 | 2.36 | 20 | Cohesive |
| 2 | 620.70 | 618.20 | 5.50 | A-6a | Cohesive | 37 | 1.66 | 37 | 32 | 644.00 | 130 | 68 | 68 | 169 | 281 | 4.86 | 20 | Cohesive |
| 3 | 618.20 | 615.70 | 8.00 | A-2-4 | Granular | 72 | 1.49 | 107 | 60 | 641.50 | 140 | 78 | 78 | 194 | 463 | 7.36 | 20 | Cohesive |
| 4 | 615.70 | 613.20 | 10.50 | A-2-4 | Granular | 77 | 1.37 | 106 | 60 | 639.00 | 140 | 78 | 78 | 194 | 657 | 9.86 | 20 | Cohesive |
| 5 | 613.20 | 612.20 | 11.50 | Rock | | 50 | | | | 636.50 | | | | | | 12.36 | 20 | Cohesive |
| 6 | 612.20 | 610.70 | 13.00 | Rock | | 50 | | | | 634.00 | | | | | | 14.86 | 28 | Cohesive |
| 7 | 610.70 | 608.20 | 15.50 | Rock | | 50 | | | | 631.50 | | | | | | 17.36 | 32 | Cohesive |
| 8 | 608.20 | 606.20 | 17.50 | Rock | | 50 | | | | 630.50 | | | | | | 18.36 | 60 | Granular |
| 9 | 606.20 | 603.70 | 20.00 | Rock | | 50 | | | | 629.00 | | | | | | 19.86 | 60 | Granular |
| 10 | 603.70 | 601.20 | 22.50 | Rock | | 50 | | | | 626.50 | | | | | | 22.36 | | |
| | | | | | | | | | | 622.00 | | | | | | 26.86 | | |
| | | | | | | | | | | 619.50 | | | | | | 29.36 | | |

B-009-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 58.98 Rock Elev. (ft)= 560.40
 Shaft Top Elev. (ft) = 636.98 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 583.90 Ex. Ground Elev.= 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 630.48' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 583.90 | 580.90 | 3.00 | A-7-6 | Cohesive | 7 | 2.00 | 7 | 7 | 635.50 | 118 | 56 | 56 | 167 | 83 | 1.48 | 20 | Cohesive |
| 2 | 580.90 | 578.40 | 5.50 | A-7-6 | Cohesive | 17 | 1.71 | 17 | 17 | 633.00 | 122 | 60 | 60 | 149 | 241 | 3.98 | 20 | Cohesive |
| 3 | 578.40 | 575.90 | 8.00 | A-7-6 | Cohesive | 17 | 1.55 | 17 | 17 | 630.50 | 122 | 60 | 60 | 149 | 390 | 6.48 | 20 | Cohesive |
| 4 | 575.90 | 573.40 | 10.50 | A-7-6 | Cohesive | 20 | 1.44 | 20 | 20 | 628.00 | 125 | 63 | 63 | 157 | 543 | 8.98 | 20 | Cohesive |
| 5 | 573.40 | 570.90 | 13.00 | A-7-6 | Cohesive | 29 | 1.35 | 29 | 29 | 625.50 | 128 | 66 | 66 | 164 | 703 | 11.48 | 20 | Cohesive |
| 6 | 570.90 | 568.40 | 15.50 | A-7-6 | Cohesive | 24 | 1.28 | 24 | 24 | 623.00 | 125 | 63 | 63 | 157 | 864 | 13.98 | 20 | Cohesive |
| 7 | 568.40 | 565.90 | 18.00 | A-7-6 | Cohesive | 27 | 1.23 | 27 | 27 | 620.50 | 125 | 63 | 63 | 157 | 1020 | 16.48 | 20 | Cohesive |
| 8 | 565.90 | 562.40 | 21.50 | A-7-6 | Cohesive | 28 | 1.17 | 28 | 28 | 618.00 | 128 | 66 | 66 | 230 | 1213 | 18.98 | 20 | Cohesive |
| 9 | 562.40 | 560.40 | 23.50 | A-7-6 | Cohesive | 31 | 1.12 | 31 | 31 | 615.50 | 128 | 66 | 66 | 131 | 1394 | 21.48 | 20 | Cohesive |
| 10 | 560.40 | 559.40 | 24.50 | Rock | | 50 | | | | 613.00 | | | | | | 23.98 | 20 | Cohesive |
| | | | | | | | | | | 610.50 | | | | | | 26.48 | 20 | Cohesive |
| | | | | | | | | | | 608.00 | | | | | | 28.98 | 20 | Cohesive |
| | | | | | | | | | | 605.50 | | | | | | 31.48 | 20 | Cohesive |

B-005
 Layer Thick. (ft) = 2.50
 Fill (ft) = 38.35
 Shaft Top Elev. (ft) = 600.35
 Boring Top Elev. (ft) = 600.35 Ex. Ground Elev. = 562.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 593.85' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 600.35 | 597.85 | 2.50 | | | | | | | 599.50 | | | | | | 0.85 | 20 | Cohesive |
| 2 | 597.85 | 595.35 | 5.00 | | | | | | | 597.00 | | | | | | 3.35 | 20 | Cohesive |
| 3 | 595.35 | 592.85 | 7.50 | | | | | | | 594.50 | | | | | | 5.85 | 20 | Cohesive |
| 4 | 592.85 | 590.35 | 10.00 | | | | | | | 592.00 | | | | | | 8.35 | 20 | Cohesive |
| 5 | 590.35 | 587.85 | 12.50 | | | | | | | 589.50 | | | | | | 10.85 | 20 | Cohesive |
| 6 | 587.85 | 585.35 | 15.00 | | | | | | | 587.00 | | | | | | 13.35 | 20 | Cohesive |
| 7 | 585.35 | 582.85 | 17.50 | | | | | | | 584.50 | | | | | | 15.85 | 20 | Cohesive |
| 8 | 582.85 | 580.35 | 20.00 | | | | | | | 582.00 | | | | | | 18.35 | 20 | Cohesive |
| 9 | 580.35 | 577.85 | 22.50 | | | | | | | 579.50 | | | | | | 20.85 | 20 | Cohesive |
| 10 | 577.85 | 575.35 | 25.00 | | | | | | | 577.00 | | | | | | 23.35 | 20 | Cohesive |
| | | | | | | | | | | 574.50 | | | | | | 25.85 | 20 | Cohesive |
| | | | | | | | | | | 572.00 | | | | | | 28.35 | 20 | Cohesive |
| | | | | | | | | | | 569.50 | | | | | | 30.85 | 20 | Cohesive |

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****Noise Wall Design****LAW-7-2.17
75923****Noise Wall Along SR-7****Noise Wall B2****Stantec Consulting****Prepared By:** James Samples
Date prepared: Wednesday, September 11, 2024**Checked By:** Eric Kistner
Date Checked: Tuesday, September 17, 2024**No. of Borings:** 5

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+24.00 | 1 | 14.00 | 24.00 | 584.14 |
| 10+48.00 | 2 | 14.00 | 24.00 | 584.14 |
| 10+72.00 | 3 | 14.00 | 24.00 | 585.14 |
| 10+96.00 | 4 | 14.00 | 24.00 | 585.14 |
| 11+20.00 | 5 | 14.00 | 24.00 | 586.44 |
| 11+44.00 | 6 | 14.00 | 24.00 | 586.44 |
| 11+68.00 | 7 | 14.00 | 24.00 | 587.44 |
| 11+92.00 | 8 | 14.00 | 24.00 | 588.44 |
| 12+16.00 | 9 | 14.00 | 24.00 | 589.34 |
| 12+40.00 | 10 | 14.00 | 24.00 | 590.24 |
| 12+64.00 | 11 | 14.00 | 24.00 | 591.04 |
| 12+88.00 | 12 | 14.00 | 24.00 | 591.94 |
| 13+12.00 | 13 | 14.00 | 24.00 | 592.94 |
| 13+36.00 | 14 | 14.00 | 24.00 | 593.84 |
| 13+60.00 | 15 | 14.00 | 24.00 | 594.84 |
| 13+84.00 | 16 | 14.00 | 24.00 | 595.84 |
| 14+08.00 | 17 | 14.00 | 24.00 | 596.59 |
| 14+32.00 | 18 | 14.00 | 24.00 | 597.79 |
| 14+56.00 | 19 | 14.00 | 24.00 | 598.46 |
| 14+80.00 | 20 | 14.00 | 24.00 | 599.96 |
| 15+04.00 | 21 | 14.00 | 24.00 | 601.22 |
| 15+28.00 | 22 | 14.00 | 24.00 | 602.42 |
| 15+52.00 | 23 | 14.00 | 24.00 | 603.72 |
| 15+76.00 | 24 | 14.00 | 24.00 | 605.08 |
| 16+00.00 | 25 | 14.00 | 24.00 | 606.51 |
| 16+24.00 | 26 | 14.00 | 24.00 | 607.90 |
| 16+36.00 | 27 | 14.00 | 12.00 | 609.41 |
| 16+60.00 | 28 | 14.00 | 24.00 | 610.22 |
| 16+72.00 | 29 | 14.00 | 12.00 | 611.87 |
| 16+96.00 | 30 | 14.00 | 24.00 | 612.63 |
| 17+20.00 | 31 | 14.00 | 24.00 | 614.13 |
| 17+44.00 | 32 | 14.00 | 24.00 | 615.60 |
| 17+68.00 | 33 | 14.00 | 24.00 | 617.06 |
| 17+92.00 | 34 | 14.00 | 24.00 | 618.50 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 18+16.00 | 35 | 14.00 | 24.00 | 619.99 |
| 18+40.00 | 36 | 14.00 | 24.00 | 621.34 |
| 18+64.00 | 37 | 14.00 | 24.00 | 622.69 |
| 18+88.00 | 38 | 14.00 | 24.00 | 623.94 |
| 19+12.00 | 39 | 14.00 | 24.00 | 625.17 |
| 19+36.00 | 40 | 14.00 | 24.00 | 626.17 |
| 19+60.00 | 41 | 14.00 | 24.00 | 627.35 |
| 19+84.00 | 42 | 14.00 | 24.00 | 628.50 |
| 20+08.00 | 43 | 14.00 | 24.00 | 629.60 |
| 20+32.00 | 44 | 14.00 | 24.00 | 630.60 |
| 20+56.00 | 45 | 14.00 | 24.00 | 631.70 |
| 20+80.00 | 46 | 14.00 | 24.00 | 632.80 |
| 21+04.00 | 47 | 14.00 | 24.00 | 633.80 |
| 21+28.00 | 48 | 14.00 | 24.00 | 634.90 |
| 21+52.00 | 49 | 14.00 | 24.00 | 635.90 |
| 21+76.00 | 50 | 14.00 | 24.00 | 636.90 |
| 22+00.00 | 51 | 14.00 | 24.00 | 637.90 |
| 22+24.00 | 52 | 14.00 | 24.00 | 638.90 |
| 22+48.00 | 53 | 14.00 | 24.00 | 639.90 |
| 22+72.00 | 54 | 14.00 | 24.00 | 640.80 |
| 22+96.00 | 55 | 14.00 | 24.00 | 641.70 |
| 23+20.00 | 56 | 14.00 | 24.00 | 642.60 |
| 23+44.00 | 57 | 14.00 | 24.00 | 643.50 |
| 23+68.00 | 58 | 14.00 | 24.00 | 644.40 |
| 23+92.00 | 59 | 14.00 | 24.00 | 645.30 |
| 24+16.00 | 60 | 14.00 | 24.00 | 646.10 |
| 24+40.00 | 61 | 14.00 | 24.00 | 646.90 |
| 24+64.00 | 62 | 14.00 | 24.00 | 647.77 |
| 24+88.00 | 63 | 14.00 | 24.00 | 648.52 |
| 25+12.00 | 64 | 14.00 | 24.00 | 649.32 |
| 25+36.00 | 65 | 14.00 | 24.00 | 649.32 |
| 25+60.00 | 66 | 14.00 | 24.00 | 650.80 |
| 25+84.00 | 67 | 14.00 | 24.00 | 650.80 |
| 26+08.00 | 68 | 14.00 | 24.00 | 652.22 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|----------------------|-----------------|--------------------------------|------------------------------|--|
| 26+32.00 | 69 | 14.00 | 24.00 | 652.22 |
| 26+56.00 | 70 | 14.00 | 24.00 | 653.57 |
| 26+80.00 | 71 | 14.00 | 24.00 | 653.57 |
| 27+04.00 | 72 | 14.00 | 24.00 | 654.86 |
| 27+28.00 | 73 | 14.00 | 24.00 | 654.86 |
| 27+52.00 | 74 | 14.00 | 24.00 | 656.06 |
| 27+76.00 | 75 | 14.00 | 24.00 | 656.06 |
| 28+00.00 | 76 | 14.00 | 24.00 | 657.16 |
| 28+24.00 | 77 | 14.00 | 24.00 | 657.16 |
| 28+48.00 | 78 | 14.00 | 24.00 | 658.16 |

**Boring Information and
Design Recommendation**

**LAW-7-2.17
PID: 75923**

Foundation Design

Noise Wall ID: Noise Wall B2

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| B-006 | SPT | 10+00.00 | 13+01.50 | 569.00 | 584.14 | 569.00 | | | 24 | 14.00 | 2.0 | 2:1 | 10+24.00 | 12+88.00 | 1 | 12 | 6.50 | 577.64 |
| B-014-1-23 | SPT | 16+03.00 | 16+82.00 | 581.40 | 606.51 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 13+12.00 | 16+72.00 | 13 | 29 | 6.50 | 600.01 |
| B-014-2-23 | SPT | 17+61.00 | 18+92.50 | 609.00 | 615.60 | 630.00 | 590.50 | | 24 | 14.00 | 3.0 | 3:1 | 16+96.00 | 18+88.00 | 30 | 38 | 8.00 | 607.60 |
| B-014-3-23 | SPT | 20+24.00 | 24+36.00 | 628.02 | 629.60 | 626.00 | 618.02 | | 24 | 14.00 | 3.0 | 3:1 | 19+12.00 | 24+16.00 | 39 | 60 | 6.50 | 623.10 |
| B-007 | SPT | 28+48.00 | 28+48.00 | 635.00 | 658.16 | 635.00 | | | 24 | 14.00 | 3.0 | 3:1 | 24+40.00 | 28+48.00 | 61 | 78 | 6.50 | 651.66 |

B-006
 Layer Thick. (ft)= 2.50
 Fill (ft) = 15.14
 Shaft Top Elev. (ft) = 584.14
 Boring Top Elev. (ft) = 569.00 Ex. Ground Elev.= 569.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 577.64' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 569.00 | 566.50 | 2.50 | | | | | | | 584.00 | | | | | | 0.14 | 20 | Cohesive |
| 2 | 566.50 | 564.00 | 5.00 | | | | | | | 581.50 | | | | | | 2.64 | 20 | Cohesive |
| 3 | 564.00 | 561.50 | 7.50 | | | | | | | 579.00 | | | | | | 5.14 | 20 | Cohesive |
| 4 | 561.50 | 559.00 | 10.00 | | | | | | | 576.50 | | | | | | 7.64 | 20 | Cohesive |
| 5 | 559.00 | 556.50 | 12.50 | | | | | | | 574.00 | | | | | | 10.14 | 20 | Cohesive |
| 6 | 556.50 | 554.00 | 15.00 | | | | | | | 571.50 | | | | | | 12.64 | 20 | Cohesive |
| | | | | | | | | | | 569.00 | | | | | | 15.14 | 20 | Cohesive |
| | | | | | | | | | | 566.50 | | | | | | 17.64 | | |
| | | | | | | | | | | 564.00 | | | | | | 20.14 | | |
| | | | | | | | | | | 561.50 | | | | | | 22.64 | | |
| | | | | | | | | | | 559.00 | | | | | | 25.14 | | |
| | | | | | | | | | | 556.50 | | | | | | 27.64 | | |
| | | | | | | | | | | 554.00 | | | | | | 30.14 | | |

B-014-1-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 8.51
 Shaft Top Elev. (ft) = 606.51
 Boring Top Elev. (ft) = 581.40 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 600.01' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 581.40 | 578.40 | 3.00 | A-7-6 | Cohesive | 13 | 2.00 | 13 | 13 | 605.50 | 120 | 58 | 58 | 173 | 86 | 1.01 | 20 | Cohesive |
| 2 | 578.40 | 575.90 | 5.50 | A-7-6 | Cohesive | 19 | 1.70 | 19 | 19 | 603.00 | 122 | 60 | 60 | 149 | 247 | 3.51 | 20 | Cohesive |
| 3 | 575.90 | 573.40 | 8.00 | A-7-6 | Cohesive | 24 | 1.54 | 24 | 24 | 600.50 | 125 | 63 | 63 | 157 | 400 | 6.01 | 20 | Cohesive |
| 4 | 573.40 | 570.90 | 10.50 | A-7-6 | Cohesive | 27 | 1.43 | 27 | 27 | 598.00 | 125 | 63 | 63 | 157 | 557 | 8.51 | 20 | Cohesive |
| 5 | 570.90 | 568.40 | 13.00 | A-7-6 | Cohesive | 24 | 1.35 | 24 | 24 | 595.50 | 125 | 63 | 63 | 157 | 713 | 11.01 | 20 | Cohesive |
| 6 | 568.40 | 565.90 | 15.50 | A-7-6 | Cohesive | 21 | 1.28 | 21 | 21 | 593.00 | 125 | 63 | 63 | 157 | 870 | 13.51 | 13 | Cohesive |
| 7 | 565.90 | 563.40 | 18.00 | A-7-6 | Cohesive | 24 | 1.22 | 24 | 24 | 590.50 | 125 | 63 | 63 | 157 | 1026 | 16.01 | 19 | Cohesive |
| 8 | 563.40 | 559.90 | 21.50 | A-7-6 | Cohesive | 17 | 1.17 | 17 | 17 | 588.00 | 122 | 60 | 60 | 209 | 1209 | 18.51 | 24 | Cohesive |
| 9 | 559.90 | 558.40 | 23.00 | A-7-6 | Cohesive | 17 | 1.13 | 17 | 17 | 585.50 | 122 | 60 | 60 | 89 | 1358 | 21.01 | 27 | Cohesive |
| 10 | 558.40 | 556.40 | 25.00 | A-7-6 | Cohesive | 36 | 1.10 | 36 | 32 | 583.00 | 130 | 68 | 68 | 135 | 1470 | 23.51 | 24 | Cohesive |
| | | | | | | | | | | 579.50 | | | | | | 27.01 | 21 | Cohesive |
| | | | | | | | | | | 578.00 | | | | | | 28.51 | 24 | Cohesive |
| | | | | | | | | | | 576.00 | | | | | | 30.51 | 17 | Cohesive |

B-014-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -14.40 Rock Elev. (ft)= 590.50
 Shaft Top Elev. (ft) = 615.60 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 609.00 Ex. Ground Elev.= 630.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 609.10' | 607.60' | | | | | | | | |

C CT.: 3 C CT.: 3
 G CT.: 0 G CT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 609.00 | 606.00 | 3.00 | A-6b | Cohesive | 13 | 2.00 | 13 | 13 | 612.60 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 606.00 | 603.50 | 5.50 | A-7-6 | Cohesive | 13 | 1.70 | 13 | 13 | 612.60 | 120 | 58 | 58 | 144 | 245 | 3.00 | 13 | Cohesive |
| 3 | 603.50 | 601.00 | 8.00 | A-6a | Cohesive | 49 | 1.53 | 49 | 32 | 612.60 | 135 | 73 | 73 | 182 | 408 | 3.00 | 13 | Cohesive |
| 4 | 601.00 | 598.50 | 10.50 | A-6a | Cohesive | 75 | 1.41 | 75 | 32 | 602.60 | 140 | 78 | 78 | 194 | 595 | 13.00 | 13 | Cohesive |
| 5 | 598.50 | 596.00 | 13.00 | A-6a | Cohesive | 55 | 1.31 | 55 | 32 | 602.60 | 140 | 78 | 78 | 194 | 789 | 13.00 | 13 | Cohesive |
| 6 | 596.00 | 593.50 | 15.50 | A-6a | Cohesive | 89 | 1.24 | 89 | 32 | 583.60 | 140 | 78 | 78 | 194 | 983 | 32.00 | 32 | Cohesive |
| 7 | 593.50 | 590.50 | 18.50 | A-6a | Cohesive | 95 | 1.17 | 95 | 32 | 583.60 | 140 | 78 | 78 | 233 | 1197 | 32.00 | 32 | Cohesive |
| 8 | 590.50 | 588.50 | 20.50 | Rock | | 95 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |
| 9 | 588.50 | 586.00 | 23.00 | Rock | | 105 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |
| 10 | 586.00 | 585.00 | 24.00 | Rock | | 50 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |

B-014-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 3.60 Rock Elev. (ft)= 618.02
 Shaft Top Elev. (ft) = 629.60 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 628.02 Ex. Ground Elev.= 626.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 623.10' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 24

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 628.02 | 625.02 | 3.00 | A-7-6 | Cohesive | 11 | 2.00 | 11 | 11 | 628.50 | 120 | 58 | 58 | 173 | 86 | 1.10 | 20 | Cohesive |
| 2 | 625.02 | 622.52 | 5.50 | A-7-6 | Cohesive | 44 | 1.68 | 44 | 32 | 626.00 | 135 | 73 | 73 | 182 | 264 | 3.60 | 20 | Cohesive |
| 3 | 622.52 | 620.02 | 8.00 | A-7-6 | Cohesive | 32 | 1.51 | 32 | 32 | 623.50 | 128 | 66 | 66 | 164 | 436 | 6.10 | 32 | Cohesive |
| 4 | 620.02 | 618.02 | 10.00 | A-7-6 | Cohesive | 37 | 1.41 | 37 | 32 | 622.52 | 130 | 68 | 68 | 135 | 586 | 7.08 | 32 | Cohesive |
| 5 | 618.02 | 615.52 | 12.50 | Rock | | 50 | | | | 620.02 | | | | | | 9.58 | 32 | Cohesive |
| | | | | | | | | | | 618.02 | | | | | | 11.58 | | Cohesive |
| | | | | | | | | | | 615.52 | | | | | | 14.08 | | Cohesive |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-007

Layer Thick. (ft)= 2.50
 Fill (ft) = 23.16
 Shaft Top Elev. (ft) = 658.16
 Boring Top Elev. (ft) = 635.00 Ex. Ground Elev.= 635.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 651.66' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 635.00 | 632.50 | 2.50 | | | | | | | 657.50 | | | | | | 0.66 | 20 | Cohesive |
| 2 | 632.50 | 630.00 | 5.00 | | | | | | | 655.00 | | | | | | 3.16 | 20 | Cohesive |
| 3 | 630.00 | 627.50 | 7.50 | | | | | | | 652.50 | | | | | | 5.66 | 20 | Cohesive |
| 4 | 627.50 | 625.00 | 10.00 | | | | | | | 650.00 | | | | | | 8.16 | 20 | Cohesive |
| 5 | 625.00 | 622.50 | 12.50 | | | | | | | 647.50 | | | | | | 10.66 | 20 | Cohesive |
| 6 | 622.50 | 620.00 | 15.00 | | | | | | | 645.00 | | | | | | 13.16 | 20 | Cohesive |
| 7 | 620.00 | 617.50 | 17.50 | | | | | | | 642.50 | | | | | | 15.66 | 20 | Cohesive |
| 8 | 617.50 | 615.00 | 20.00 | | | | | | | 640.00 | | | | | | 18.16 | 20 | Cohesive |
| 9 | 615.00 | 612.50 | 22.50 | | | | | | | 637.50 | | | | | | 20.66 | 20 | Cohesive |
| | | | | | | | | | | 635.00 | | | | | | 23.16 | 20 | Cohesive |
| | | | | | | | | | | 632.50 | | | | | | 25.66 | | |
| | | | | | | | | | | 630.00 | | | | | | 28.16 | | |
| | | | | | | | | | | 627.50 | | | | | | 30.66 | | |

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****Noise Wall Design****LAW-7-2017
75923****Noise Wall Along SR-7****Noise Wall D****Stantec Consulting****Prepared By:** James Samples
Date prepared: Wednesday, September 11, 2024**Checked By:** Eric Kistner
Date Checked: Tuesday, September 17, 2024**No. of Borings:** 8

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+00.00 | 1 | 14.00 | 24.00 | 610.70 |
| 10+24.00 | 2 | 14.00 | 24.00 | 609.60 |
| 10+48.00 | 3 | 14.00 | 24.00 | 608.30 |
| 10+72.00 | 4 | 14.00 | 24.00 | 607.20 |
| 10+96.00 | 5 | 14.00 | 24.00 | 605.90 |
| 11+20.00 | 6 | 14.00 | 24.00 | 604.70 |
| 11+44.00 | 7 | 14.00 | 24.00 | 603.50 |
| 11+68.00 | 8 | 14.00 | 24.00 | 602.50 |
| 11+92.00 | 9 | 14.00 | 24.00 | 601.20 |
| 12+16.00 | 10 | 14.00 | 24.00 | 600.10 |
| 12+40.00 | 11 | 14.00 | 24.00 | 598.80 |
| 12+64.00 | 12 | 14.00 | 24.00 | 597.60 |
| 12+88.00 | 13 | 14.00 | 24.00 | 596.50 |
| 13+12.00 | 14 | 14.00 | 24.00 | 595.30 |
| 13+36.00 | 15 | 14.00 | 24.00 | 594.20 |
| 13+60.00 | 16 | 14.00 | 24.00 | 593.20 |
| 13+84.00 | 17 | 14.00 | 24.00 | 592.20 |
| 14+08.00 | 18 | 14.00 | 24.00 | 591.30 |
| 14+32.00 | 19 | 14.00 | 24.00 | 590.40 |
| 14+56.00 | 20 | 14.00 | 24.00 | 589.70 |
| 14+80.00 | 21 | 14.00 | 24.00 | 588.34 |
| 15+04.00 | 22 | 14.00 | 24.00 | 588.34 |
| 15+28.00 | 23 | 14.00 | 24.00 | 586.76 |
| 15+52.00 | 24 | 14.00 | 24.00 | 586.76 |
| 15+76.00 | 25 | 14.00 | 24.00 | 586.76 |
| 16+00.00 | 26 | 14.00 | 24.00 | 585.49 |
| 16+24.00 | 27 | 14.00 | 24.00 | 585.49 |
| 16+48.00 | 28 | 14.00 | 24.00 | 585.49 |
| 16+72.00 | 29 | 14.00 | 24.00 | 585.49 |
| 16+96.00 | 30 | 14.00 | 24.00 | 585.49 |
| 17+20.00 | 31 | 14.00 | 24.00 | 585.49 |
| 17+44.00 | 32 | 14.00 | 24.00 | 585.49 |
| 17+68.00 | 33 | 14.00 | 24.00 | 585.49 |
| 17+92.00 | 34 | 14.00 | 24.00 | 585.49 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 18+16.00 | 35 | 14.00 | 24.00 | 585.49 |
| 18+40.00 | 36 | 14.00 | 24.00 | 585.49 |
| 18+64.00 | 37 | 14.00 | 24.00 | 585.49 |
| 18+88.00 | 38 | 14.00 | 24.00 | 585.49 |
| 19+12.00 | 39 | 14.00 | 24.00 | 586.39 |
| 19+36.00 | 40 | 14.00 | 24.00 | 586.39 |
| 19+60.00 | 41 | 14.00 | 24.00 | 586.99 |
| 19+84.00 | 42 | 14.00 | 24.00 | 588.02 |
| 20+08.00 | 43 | 14.00 | 24.00 | 588.02 |
| 20+32.00 | 44 | 14.00 | 24.00 | 588.92 |
| 20+56.00 | 45 | 14.00 | 24.00 | 588.92 |
| 20+80.00 | 46 | 14.00 | 24.00 | 588.92 |
| 21+04.00 | 47 | 14.00 | 24.00 | 589.92 |
| 21+28.00 | 48 | 14.00 | 24.00 | 591.12 |
| 21+52.00 | 49 | 14.00 | 24.00 | 591.12 |
| 21+76.00 | 50 | 14.00 | 24.00 | 591.12 |
| 22+00.00 | 51 | 14.00 | 24.00 | 591.12 |
| 22+24.00 | 52 | 14.00 | 24.00 | 592.32 |
| 22+48.00 | 53 | 14.00 | 24.00 | 592.32 |
| 22+72.00 | 54 | 14.00 | 24.00 | 592.32 |
| 22+96.00 | 55 | 14.00 | 24.00 | 593.62 |
| 23+20.00 | 56 | 14.00 | 24.00 | 593.62 |
| 23+44.00 | 57 | 14.00 | 24.00 | 593.62 |
| 23+68.00 | 58 | 14.00 | 24.00 | 593.62 |
| 23+92.00 | 59 | 14.00 | 24.00 | 593.62 |
| 24+16.00 | 60 | 14.00 | 24.00 | 593.62 |
| 24+40.00 | 61 | 14.00 | 24.00 | 593.62 |
| 24+64.00 | 62 | 14.00 | 24.00 | 594.54 |
| 24+88.00 | 63 | 14.00 | 24.00 | 594.54 |
| 25+12.00 | 64 | 14.00 | 24.00 | 594.54 |
| 25+36.00 | 65 | 14.00 | 24.00 | 594.54 |
| 25+60.00 | 66 | 14.00 | 24.00 | 594.54 |
| 25+84.00 | 67 | 14.00 | 24.00 | 594.54 |
| 26+08.00 | 68 | 14.00 | 24.00 | 594.54 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 26+32.00 | 69 | 14.00 | 24.00 | 595.54 |
| 26+56.00 | 70 | 14.00 | 24.00 | 595.54 |
| 26+80.00 | 71 | 14.00 | 24.00 | 595.54 |
| 27+04.00 | 72 | 14.00 | 24.00 | 595.54 |
| 27+28.00 | 73 | 14.00 | 24.00 | 596.54 |
| 27+52.00 | 74 | 14.00 | 24.00 | 596.54 |
| 27+76.00 | 75 | 14.00 | 24.00 | 597.54 |
| 28+00.00 | 76 | 14.00 | 24.00 | 597.54 |
| 28+24.00 | 77 | 14.00 | 24.00 | 597.54 |
| 28+48.00 | 78 | 14.00 | 24.00 | 598.54 |
| 28+72.00 | 79 | 14.00 | 24.00 | 598.54 |
| 28+96.00 | 80 | 14.00 | 24.00 | 599.54 |
| 29+20.00 | 81 | 14.00 | 24.00 | 599.54 |
| 29+44.00 | 82 | 14.00 | 24.00 | 600.44 |
| 29+68.00 | 83 | 14.00 | 24.00 | 600.44 |
| 29+92.00 | 84 | 14.00 | 24.00 | 600.44 |
| 30+16.00 | 85 | 14.00 | 24.00 | 601.44 |
| 30+40.00 | 86 | 14.00 | 24.00 | 601.44 |
| 30+64.00 | 87 | 14.00 | 24.00 | 602.44 |
| 30+88.00 | 88 | 14.00 | 24.00 | 602.44 |
| 31+12.00 | 89 | 14.00 | 24.00 | 602.44 |
| 31+36.00 | 90 | 14.00 | 24.00 | 603.44 |
| 31+60.00 | 91 | 14.00 | 24.00 | 603.44 |
| 31+84.00 | 92 | 14.00 | 24.00 | 603.44 |
| 32+08.00 | 93 | 14.00 | 24.00 | 604.44 |
| 32+32.00 | 94 | 14.00 | 24.00 | 604.44 |
| 32+56.00 | 95 | 14.00 | 24.00 | 604.44 |
| 32+80.00 | 96 | 14.00 | 24.00 | 605.44 |
| 33+04.00 | 97 | 14.00 | 24.00 | 605.44 |
| 33+28.00 | 98 | 14.00 | 24.00 | 605.44 |
| 33+52.00 | 99 | 14.00 | 24.00 | 605.44 |
| 33+76.00 | 100 | 14.00 | 24.00 | 605.44 |
| 34+00.00 | 101 | 14.00 | 24.00 | 606.44 |
| 34+24.00 | 102 | 14.00 | 24.00 | 606.44 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|----------------------|-----------------|--------------------------------|------------------------------|--|
| 34+48.00 | 103 | 14.00 | 24.00 | 606.44 |
| 34+72.00 | 104 | 14.00 | 24.00 | 606.44 |

**Boring Information and
Design Recommendation**

**LAW-7-2017
PID: 75923**

Foundation Design

Noise Wall ID: Noise Wall D

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| B-008 | SPT | 10+00.00 | 16+00.00 | 574.00 | 610.70 | 574.00 | | | 24 | 14.00 | 2.0 | 2:1 | 10+00.00 | 16+00.00 | 1 | 26 | 6.50 | 604.20 |
| B-009 | SPT | 22+00.00 | 23+24.50 | 582.00 | 591.12 | 582.00 | | | 24 | 14.00 | 3.0 | 3:1 | 16+24.00 | 23+20.00 | 27 | 56 | 6.50 | 584.62 |
| B-076-2-23 | SPT | 24+49.00 | 25+47.50 | 587.67 | 593.62 | 591.00 | | | 24 | 14.00 | 3.0 | 3:1 | 23+44.00 | 25+36.00 | 57 | 65 | 6.50 | 587.12 |
| B-076-3-23 | SPT | 26+46.00 | 27+45.00 | 589.87 | 595.54 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 25+60.00 | 27+28.00 | 66 | 73 | 8.00 | 587.54 |
| B-077-2-23 | SPT | 28+44.00 | 29+44.50 | 592.64 | 597.54 | 598.50 | | | 24 | 14.00 | 3.0 | 3:1 | 27+52.00 | 29+44.00 | 74 | 82 | 8.00 | 589.54 |
| B-077-3-23 | SPT | 30+45.00 | 31+46.50 | 588.81 | 601.44 | 601.00 | | | 24 | 14.00 | 2.0 | 2:1 | 29+68.00 | 31+36.00 | 83 | 90 | 6.50 | 594.94 |
| B-078-2-23 | SPT | 32+48.00 | 33+47.50 | 595.30 | 604.44 | 607.00 | | | 24 | 14.00 | 2.0 | 2:1 | 31+60.00 | 33+28.00 | 91 | 98 | 8.00 | 596.44 |
| B-078-3-23 | SPT | 34+47.00 | 34+47.00 | 602.38 | 606.44 | 606.00 | | | 24 | 14.00 | 3.0 | 3:1 | 33+52.00 | 34+72.00 | 99 | 104 | 6.50 | 599.94 |

B-008

Layer Thick. (ft)= 2.50
 Fill (ft) = 36.70
 Shaft Top Elev. (ft) = 610.70
 Boring Top Elev. (ft) = 574.00 Ex. Ground Elev.= 574.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 604.20' | | | | | | | | | |

CCT.: 2
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 574.00 | 571.50 | 2.50 | | | | | | | 609.00 | | | | | | 1.70 | 20 | Cohesive |
| 2 | 571.50 | 569.00 | 5.00 | | | | | | | 606.50 | | | | | | 4.20 | 20 | Cohesive |
| 3 | 569.00 | 566.50 | 7.50 | | | | | | | 604.00 | | | | | | 6.70 | 20 | Cohesive |
| 4 | 566.50 | 564.00 | 10.00 | | | | | | | 601.50 | | | | | | 9.20 | 20 | Cohesive |
| 5 | 564.00 | 561.50 | 12.50 | | | | | | | 599.00 | | | | | | 11.70 | 20 | Cohesive |
| 6 | 561.50 | 559.00 | 15.00 | | | | | | | 596.50 | | | | | | 14.20 | 20 | Cohesive |
| 7 | 559.00 | 556.50 | 17.50 | | | | | | | 594.00 | | | | | | 16.70 | 20 | Cohesive |
| 8 | 556.50 | 554.00 | 20.00 | | | | | | | 591.50 | | | | | | 19.20 | 20 | Cohesive |
| 9 | 554.00 | 551.50 | 22.50 | | | | | | | 589.00 | | | | | | 21.70 | 20 | Cohesive |
| 10 | 551.50 | 549.00 | 25.00 | | | | | | | 586.50 | | | | | | 24.20 | 20 | Cohesive |
| | | | | | | | | | | 584.00 | | | | | | 26.70 | 20 | Cohesive |
| | | | | | | | | | | 581.50 | | | | | | 29.20 | 20 | Cohesive |
| | | | | | | | | | | 579.00 | | | | | | 31.70 | 20 | Cohesive |

B-009
 Layer Thick. (ft)= 2.50
 Fill (ft) = 9.12
 Shaft Top Elev. (ft) = 591.12
 Boring Top Elev. (ft) = 582.00 Ex. Ground Elev.= 582.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 584.62' | | | | | | | | | |

C CT.: 2
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 582.00 | 579.50 | 2.50 | | | | | | | 589.50 | | | | | | 1.62 | 20 | Cohesive |
| 2 | 579.50 | 577.00 | 5.00 | | | | | | | 587.00 | | | | | | 4.12 | 20 | Cohesive |
| 3 | 577.00 | 574.50 | 7.50 | | | | | | | 584.50 | | | | | | 6.62 | 20 | Cohesive |
| 4 | 574.50 | 572.00 | 10.00 | | | | | | | 582.00 | | | | | | 9.12 | 20 | Cohesive |
| 5 | 572.00 | 569.50 | 12.50 | | | | | | | 579.50 | | | | | | 11.62 | | |
| 6 | 569.50 | 567.00 | 15.00 | | | | | | | 577.00 | | | | | | 14.12 | | |
| 7 | 567.00 | 564.50 | 17.50 | | | | | | | 574.50 | | | | | | 16.62 | | |
| 8 | 564.50 | 562.00 | 20.00 | | | | | | | 572.00 | | | | | | 19.12 | | |
| 9 | 562.00 | 559.50 | 22.50 | | | | | | | 569.50 | | | | | | 21.62 | | |
| 10 | 559.50 | 557.00 | 25.00 | | | | | | | 567.00 | | | | | | 24.12 | | |
| | | | | | | | | | | 564.50 | | | | | | 26.62 | | |
| | | | | | | | | | | 562.00 | | | | | | 29.12 | | |
| | | | | | | | | | | 559.50 | | | | | | 31.62 | | |

B-076-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 2.62
 Shaft Top Elev. (ft) = 593.62
 Boring Top Elev. (ft) = 587.67 Ex. Ground Elev.= 591.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 587.12' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 587.67 | 584.67 | 3.00 | A-4a P | Cohesive | 39 | 2.00 | 39 | 32 | 593.50 | 130 | 68 | 68 | 203 | 101 | 0.12 | 20 | Cohesive |
| 2 | 584.67 | 582.17 | 5.50 | A-7-6 | Cohesive | 15 | 1.66 | 15 | 15 | 591.00 | 122 | 60 | 60 | 149 | 277 | 2.62 | 20 | Cohesive |
| 3 | 582.17 | 579.67 | 8.00 | A-7-6 | Cohesive | 20 | 1.52 | 20 | 20 | 588.50 | 125 | 63 | 63 | 157 | 430 | 5.12 | 20 | Cohesive |
| 4 | 579.67 | 577.17 | 10.50 | A-7-6 | Cohesive | 15 | 1.41 | 15 | 15 | 586.00 | 122 | 60 | 60 | 149 | 583 | 7.62 | 32 | Cohesive |
| 5 | 577.17 | 574.67 | 13.00 | A-7-6 | Cohesive | 13 | 1.34 | 13 | 13 | 583.50 | 120 | 58 | 58 | 144 | 729 | 10.12 | 15 | Cohesive |
| 6 | 574.67 | 572.17 | 15.50 | A-1-b | Granular | 15 | 1.28 | 19 | 19 | 581.00 | 125 | 63 | 63 | 157 | 880 | 12.62 | 20 | Cohesive |
| 7 | 572.17 | 569.67 | 18.00 | A-1-b | Granular | 20 | 1.22 | 24 | 24 | 578.50 | 125 | 63 | 63 | 157 | 1036 | 15.12 | 15 | Cohesive |
| 8 | 569.67 | 567.17 | 20.50 | A-1-b | Granular | 16 | 1.17 | 19 | 19 | 576.00 | 125 | 63 | 63 | 157 | 1193 | 17.62 | 13 | Cohesive |
| 9 | 567.17 | 564.67 | 23.00 | A-1-b | Granular | 20 | 1.13 | 23 | 23 | 573.50 | 125 | 63 | 63 | 157 | 1349 | 20.12 | 19 | Granular |
| 10 | 564.67 | 562.67 | 25.00 | A-1-b | Granular | 21 | 1.10 | 23 | 23 | 571.00 | 125 | 63 | 63 | 125 | 1490 | 22.62 | 24 | Granular |
| | | | | | | | | | | 569.00 | | | | | | 24.62 | 19 | Granular |

B-076-3-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -2.46
 Shaft Top Elev. (ft) = 595.54
 Boring Top Elev. (ft) = 589.87 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 589.04' | 587.54' | | | | | | | | |

C CT.: 3 C CT.: 3
 G CT.: 0 G CT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 589.87 | 586.87 | 3.00 | A-6b | Cohesive | 13 | 2.00 | 13 | 13 | 592.54 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 586.87 | 584.37 | 5.50 | A-6b | Cohesive | 23 | 1.70 | 23 | 23 | 592.54 | 125 | 63 | 63 | 157 | 251 | 3.00 | 13 | Cohesive |
| 3 | 584.37 | 581.87 | 8.00 | A-6a | Cohesive | 23 | 1.53 | 23 | 23 | 592.54 | 125 | 63 | 63 | 157 | 408 | 3.00 | 13 | Cohesive |
| 4 | 581.87 | 579.37 | 10.50 | A-6a | Cohesive | 19 | 1.43 | 19 | 19 | 582.54 | 122 | 60 | 60 | 149 | 560 | 13.00 | 13 | Cohesive |
| 5 | 579.37 | 576.87 | 13.00 | A-6a | Cohesive | 15 | 1.35 | 15 | 15 | 572.54 | 122 | 60 | 60 | 149 | 709 | 23.00 | 23 | Cohesive |
| 6 | 576.87 | 574.37 | 15.50 | A-1-b | Granular | 19 | 1.28 | 24 | 24 | 572.54 | 125 | 63 | 63 | 157 | 862 | 23.00 | 23 | Cohesive |
| 7 | 574.37 | 571.87 | 18.00 | A-3a | Granular | 21 | 1.23 | 26 | 26 | 576.54 | 125 | 63 | 63 | 157 | 1019 | 19.00 | 19 | Cohesive |
| 8 | 571.87 | 569.37 | 20.50 | A-1-b | Granular | 15 | 1.18 | 18 | 18 | 580.54 | 125 | 63 | 63 | 157 | 1175 | 15.00 | 15 | Cohesive |
| 9 | 569.37 | 566.87 | 23.00 | A-1-b | Granular | 16 | 1.14 | 18 | 18 | 571.54 | 125 | 63 | 63 | 157 | 1332 | 24.00 | 24 | Granular |
| 10 | 566.87 | 564.87 | 25.00 | A-1-b | Granular | 21 | 1.10 | 23 | 23 | 569.54 | 125 | 63 | 63 | 125 | 1472 | 26.00 | 26 | Granular |
| | | | | | | | | | | 577.54 | | | | | | 18.00 | 18 | Granular |
| | | | | | | | | | | 577.54 | | | | | | 18.00 | 18 | Granular |
| | | | | | | | | | | 572.54 | | | | | | 23.00 | 23 | Granular |

B-077-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -0.96
 Shaft Top Elev. (ft) = 597.54
 Boring Top Elev. (ft) = 592.64 Ex. Ground Elev.= 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 591.04' | 589.54' | | | | | | | | |

C CT.: 2 C CT.: 2
 G CT.: 0 G CT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 592.64 | 589.64 | 3.00 | A-7-6 | Cohesive | 13 | 2.00 | 13 | 13 | 594.54 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 589.64 | 587.14 | 5.50 | A-4a P | Cohesive | 24 | 1.70 | 24 | 24 | 594.54 | 125 | 63 | 63 | 157 | 251 | 3.00 | 13 | Cohesive |
| 3 | 587.14 | 584.64 | 8.00 | A-6b | Cohesive | 23 | 1.53 | 23 | 23 | 584.54 | 125 | 63 | 63 | 157 | 408 | 13.00 | 13 | Cohesive |
| 4 | 584.64 | 582.14 | 10.50 | A-6b | Cohesive | 16 | 1.43 | 16 | 16 | 573.54 | 122 | 60 | 60 | 149 | 560 | 24.00 | 24 | Cohesive |
| 5 | 582.14 | 579.64 | 13.00 | A-7-6 | Cohesive | 19 | 1.35 | 19 | 19 | 574.54 | 122 | 60 | 60 | 149 | 709 | 23.00 | 23 | Cohesive |
| 6 | 579.64 | 577.14 | 15.50 | A-7-6 | Cohesive | 17 | 1.28 | 17 | 17 | 581.54 | 122 | 60 | 60 | 149 | 858 | 16.00 | 16 | Cohesive |
| 7 | 577.14 | 574.64 | 18.00 | A-6b | Cohesive | 17 | 1.23 | 17 | 17 | 578.54 | 122 | 60 | 60 | 149 | 1007 | 19.00 | 19 | Cohesive |
| 8 | 574.64 | 572.14 | 20.50 | A-3 | Granular | 16 | 1.18 | 19 | 19 | 580.54 | 125 | 63 | 63 | 157 | 1160 | 17.00 | 17 | Cohesive |
| 9 | 572.14 | 569.64 | 23.00 | A-3 | Granular | 15 | 1.14 | 17 | 17 | 580.54 | 125 | 63 | 63 | 157 | 1317 | 17.00 | 17 | Cohesive |
| 10 | 569.64 | 567.64 | 25.00 | A-3 | Granular | 21 | 1.11 | 23 | 23 | 578.54 | 125 | 63 | 63 | 125 | 1457 | 19.00 | 19 | Granular |
| | | | | | | | | | | 580.54 | | | | | | 17.00 | 17 | Granular |
| | | | | | | | | | | 574.54 | | | | | | 23.00 | 23 | Granular |

B-077-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.44
 Shaft Top Elev. (ft) = 601.44
 Boring Top Elev. (ft) = 588.81 Ex. Ground Elev.= 601.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 594.94' | | | | | | | | | |

CCT.: 2
 GCT.: 1
 N dsgn: 27

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 588.81 | 586.31 | 2.50 | A-4a NP | Granular | 21 | 2.00 | 42 | 42 | 601.00 | 125 | 63 | 63 | 157 | 78 | 0.44 | 20 | Cohesive |
| 2 | 586.31 | 583.81 | 5.00 | A-6b | Cohesive | 20 | 1.72 | 20 | 20 | 598.50 | 125 | 63 | 63 | 157 | 235 | 2.94 | 20 | Cohesive |
| 3 | 583.81 | 581.31 | 7.50 | A-6b | Cohesive | 25 | 1.55 | 25 | 25 | 596.00 | 125 | 63 | 63 | 157 | 391 | 5.44 | 42 | Granular |
| 4 | 581.31 | 578.81 | 10.00 | A-6b | Cohesive | 16 | 1.44 | 16 | 16 | 593.50 | 122 | 60 | 60 | 149 | 544 | 7.94 | 20 | Cohesive |
| 5 | 578.81 | 576.31 | 12.50 | A-6b | Cohesive | 16 | 1.36 | 16 | 16 | 591.00 | 122 | 60 | 60 | 149 | 693 | 10.44 | 25 | Cohesive |
| 6 | 576.31 | 573.81 | 15.00 | A-6b | Cohesive | 16 | 1.29 | 16 | 16 | 588.50 | 122 | 60 | 60 | 149 | 842 | 12.94 | 16 | Cohesive |
| 7 | 573.81 | 571.31 | 17.50 | A-1-b | Granular | 20 | 1.24 | 25 | 25 | 586.00 | 125 | 63 | 63 | 157 | 995 | 15.44 | 16 | Cohesive |
| 8 | 571.31 | 568.81 | 20.00 | A-6b | Cohesive | 17 | 1.19 | 17 | 17 | 583.50 | 122 | 60 | 60 | 149 | 1148 | 17.94 | 16 | Cohesive |
| 9 | 568.81 | 566.31 | 22.50 | A-6b | Cohesive | 17 | 1.15 | 17 | 17 | 581.00 | 122 | 60 | 60 | 149 | 1297 | 20.44 | 25 | Granular |
| 10 | 566.31 | 563.81 | 25.00 | A-1-b | Granular | 19 | 1.11 | 21 | 21 | 578.50 | 125 | 63 | 63 | 157 | 1449 | 22.94 | 17 | Cohesive |
| | | | | | | | | | | | | | | | | | | |

B-078-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -2.56
 Shaft Top Elev. (ft) = 604.44
 Boring Top Elev. (ft) = 595.30 Ex. Ground Elev.= 607.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 597.94' | 596.44' | | | | | | | | |

CCT.: 4 CCT.: 4
 GCT.: 0 GCT.: 0
 N dsgn: 15 N dsgn: 15

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 595.30 | 592.30 | 3.00 | A-6b | Cohesive | 15 | 2.00 | 15 | 15 | 601.44 | 122 | 60 | 60 | 179 | 89 | 3.00 | 15 | Cohesive |
| 2 | 592.30 | 589.80 | 5.50 | A-6b | Cohesive | 17 | 1.69 | 17 | 17 | 601.44 | 122 | 60 | 60 | 149 | 253 | 3.00 | 15 | Cohesive |
| 3 | 589.80 | 587.30 | 8.00 | A-6b | Cohesive | 16 | 1.54 | 16 | 16 | 601.44 | 122 | 60 | 60 | 149 | 402 | 3.00 | 15 | Cohesive |
| 4 | 587.30 | 584.80 | 10.50 | A-6b | Cohesive | 28 | 1.43 | 28 | 28 | 601.44 | 128 | 66 | 66 | 164 | 559 | 3.00 | 15 | Cohesive |
| 5 | 584.80 | 582.30 | 13.00 | A-6a | Cohesive | 37 | 1.34 | 37 | 32 | 589.44 | 130 | 68 | 68 | 169 | 725 | 15.00 | 15 | Cohesive |
| 6 | 582.30 | 579.80 | 15.50 | A-6b | Cohesive | 23 | 1.27 | 23 | 23 | 587.44 | 125 | 63 | 63 | 157 | 888 | 17.00 | 17 | Cohesive |
| 7 | 579.80 | 577.30 | 18.00 | A-6b | Cohesive | 17 | 1.22 | 17 | 17 | 588.44 | 122 | 60 | 60 | 149 | 1041 | 16.00 | 16 | Cohesive |
| 8 | 577.30 | 574.80 | 20.50 | A-6b | Cohesive | 17 | 1.18 | 17 | 17 | 576.44 | 122 | 60 | 60 | 149 | 1190 | 28.00 | 28 | Cohesive |
| 9 | 574.80 | 572.30 | 23.00 | A-2-4 | Granular | 12 | 1.14 | 14 | 14 | 572.44 | 122 | 60 | 60 | 149 | 1339 | 32.00 | 32 | Cohesive |
| 10 | 572.30 | 570.30 | 25.00 | A-6a | Cohesive | 16 | 1.10 | 16 | 16 | 581.44 | 122 | 60 | 60 | 119 | 1473 | 23.00 | 23 | Cohesive |
| | | | | | | | | | | 587.44 | | | | | | 17.00 | 17 | Cohesive |
| | | | | | | | | | | 587.44 | | | | | | 17.00 | 17 | Cohesive |
| | | | | | | | | | | 590.44 | | | | | | 14.00 | 14 | Granular |

B-078-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.44
 Shaft Top Elev. (ft) = 606.44
 Boring Top Elev. (ft) = 602.38 Ex. Ground Elev.= 606.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 599.94' | | | | | | | | | |

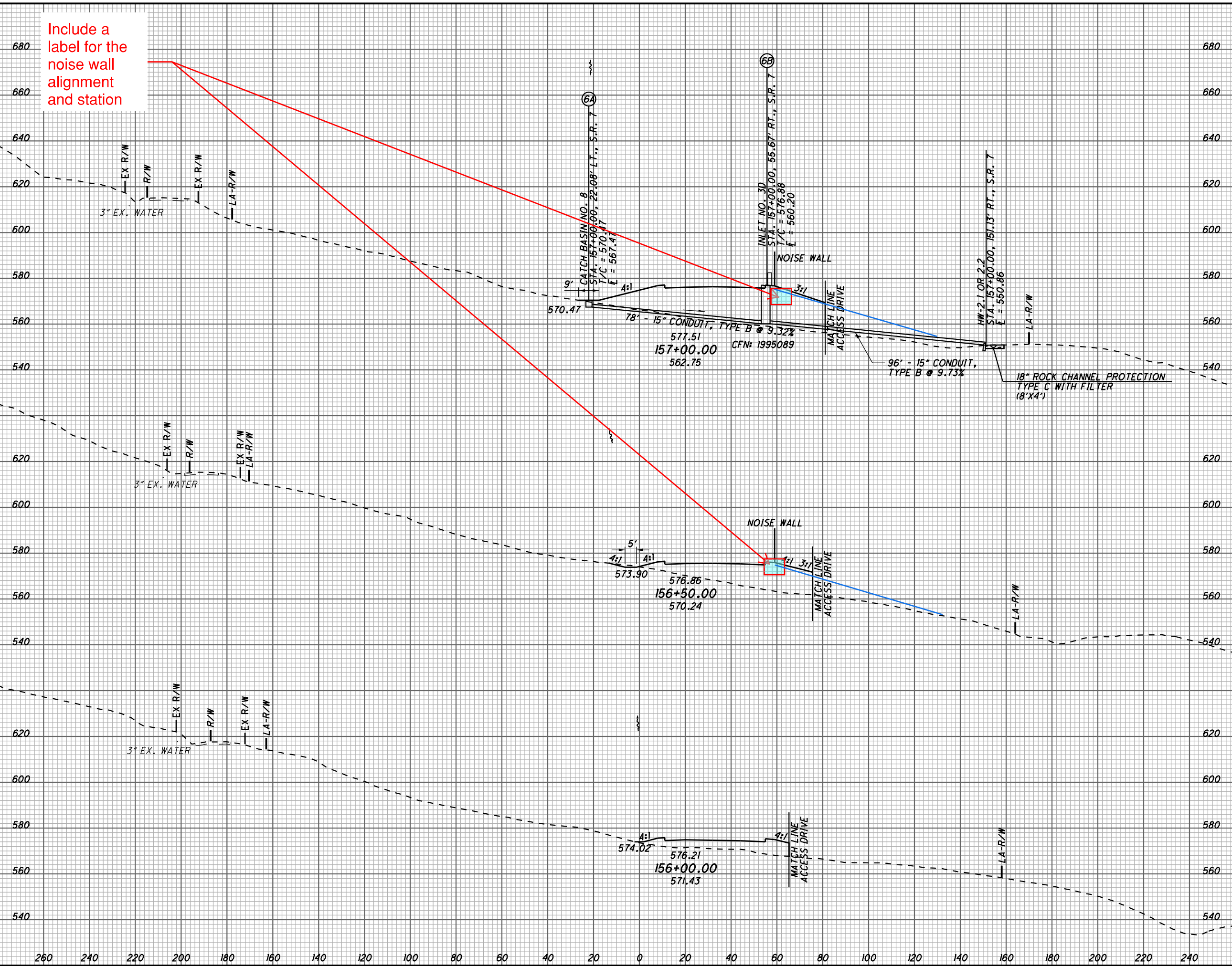
CCT.: 3
 GCT.: 0
 N dsgn: 16

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 602.38 | 599.38 | 3.00 | A-7-6 | Cohesive | 8 | 2.00 | 8 | 8 | 606.00 | 118 | 56 | 56 | 167 | 83 | 0.44 | 20 | Cohesive |
| 2 | 599.38 | 596.88 | 5.50 | A-6a | Cohesive | 11 | 1.71 | 11 | 11 | 603.50 | 120 | 58 | 58 | 144 | 239 | 2.94 | 20 | Cohesive |
| 3 | 596.88 | 594.38 | 8.00 | A-6a | Cohesive | 23 | 1.55 | 23 | 23 | 601.00 | 125 | 63 | 63 | 157 | 389 | 5.44 | 8 | Cohesive |
| 4 | 594.38 | 591.88 | 10.50 | A-7-6 | Cohesive | 21 | 1.44 | 21 | 21 | 598.50 | 125 | 63 | 63 | 157 | 546 | 7.94 | 11 | Cohesive |
| 5 | 591.88 | 589.38 | 13.00 | A-6a | Cohesive | 27 | 1.35 | 27 | 27 | 596.00 | 125 | 63 | 63 | 157 | 702 | 10.44 | 23 | Cohesive |
| 6 | 589.38 | 586.88 | 15.50 | A-6a | Cohesive | 20 | 1.28 | 20 | 20 | 593.50 | 125 | 63 | 63 | 157 | 859 | 12.94 | 21 | Cohesive |
| 7 | 586.88 | 584.38 | 18.00 | A-7-6 | Cohesive | 15 | 1.23 | 15 | 15 | 591.00 | 122 | 60 | 60 | 149 | 1011 | 15.44 | 27 | Cohesive |
| 8 | 584.38 | 581.88 | 20.50 | A-7-6 | Cohesive | 21 | 1.18 | 21 | 21 | 588.50 | 125 | 63 | 63 | 157 | 1164 | 17.94 | 20 | Cohesive |
| 9 | 581.88 | 579.38 | 23.00 | A-7-6 | Cohesive | 31 | 1.14 | 31 | 31 | 586.00 | 128 | 66 | 66 | 164 | 1324 | 20.44 | 15 | Cohesive |
| 10 | 579.38 | 577.38 | 25.00 | A-7-6 | Cohesive | 35 | 1.10 | 35 | 32 | 584.00 | 128 | 66 | 66 | 131 | 1472 | 22.44 | 21 | Cohesive |
| | | | | | | | | | | | | | | | | | | |

U:\173608714_LAW\75923\roadway_sheets\75923XS1028-2B.dgn 5/21/2024 4:51:48 PM SLParker

| SEEDING | END | | SO. | VOLUME | CALCULATED | CHECKED | ALB |
|---------|-------|-----|-----|--------|------------|---------|-----|
| | WIDTH | SO. | | | | | |
| 145 | | | | 0 | 1275 | | |
| 547 | | | | 7 | 1725 | | |
| 52 | | | | 7 | 588 | | |
| 228 | | | | 7 | 784 | | |
| 30 | | | | 0 | 258 | | |
| 137 | 912 | 260 | 240 | 220 | 200 | 180 | 160 |
| | | 140 | 120 | 100 | 80 | 60 | 40 |
| | | 20 | 0 | 20 | 40 | 60 | 80 |
| | | 100 | 120 | 140 | 160 | 180 | 200 |
| | | 220 | 240 | 260 | | | |

Include a label for the noise wall alignment and station



| END AREA | VOLUME | CALCULATED | CHECKED | ALB |
|----------|--------|------------|---------|-----|
| | | | | |
| 0 | 1275 | | | |
| 7 | 1725 | | | |
| 7 | 588 | | | |
| 7 | 784 | | | |
| 0 | 258 | | | |
| 0 | 469 | 187 | 1247 | |
| 14 | 2978 | | | |

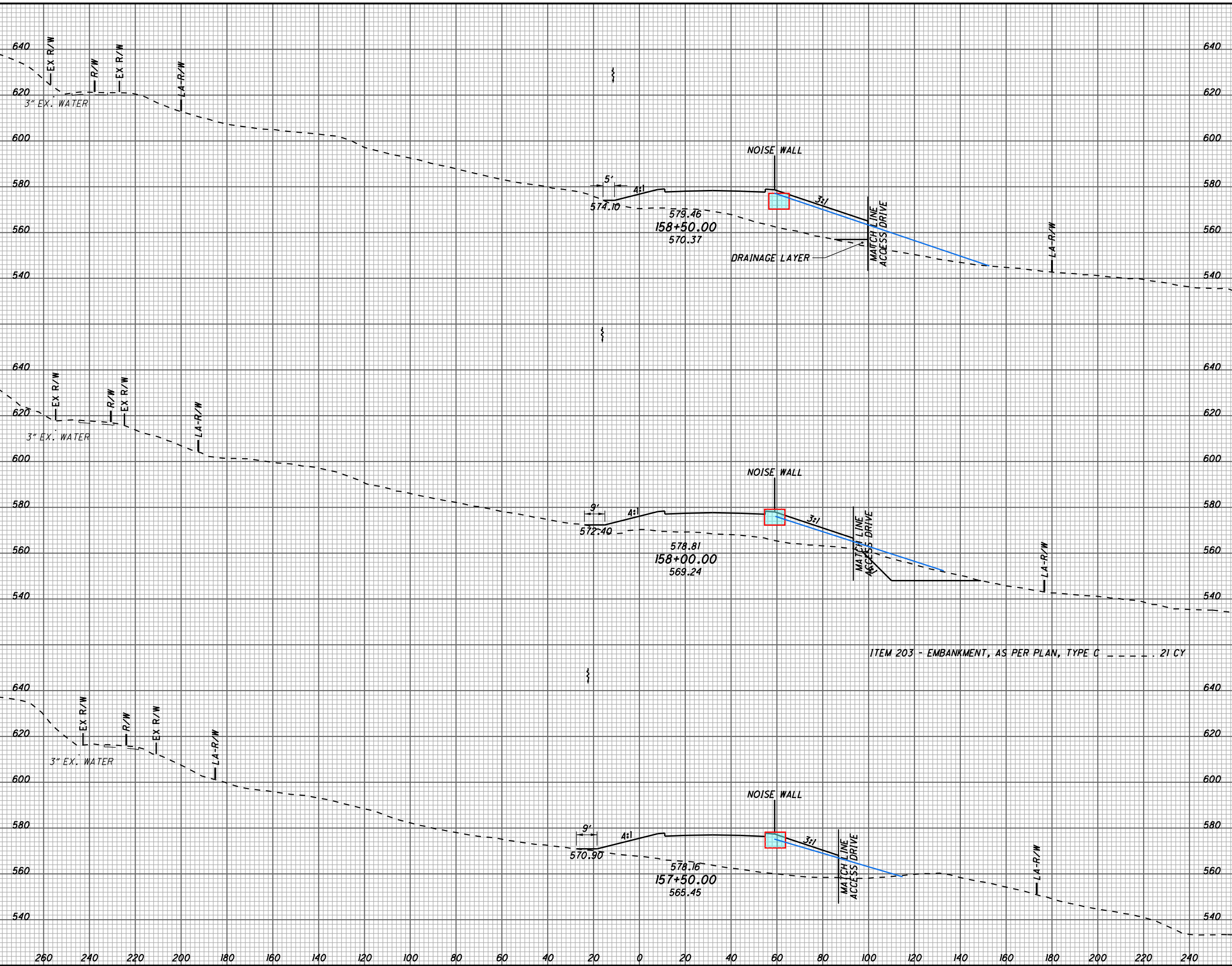
CROSS SECTIONS S.R. 7
STA. 156+00.00 TO STA. 157+00.00

LAW - 7 - 2.17

187
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51029-2B.dgn 5/21/2024 4:51:49 PM SLParker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 80 | 1520 | 621 | 0 | 1159 | | |
| 452 | 260 | 620 | 231 | 2152 | | |
| 82 | 1520 | 620 | 249 | 1165 | | |
| 447 | 260 | 620 | 231 | 2222 | | |
| 79 | 1520 | 621 | 0 | 1234 | | |
| 621 | 1520 | 621 | 0 | 2324 | 188 | 1247 |

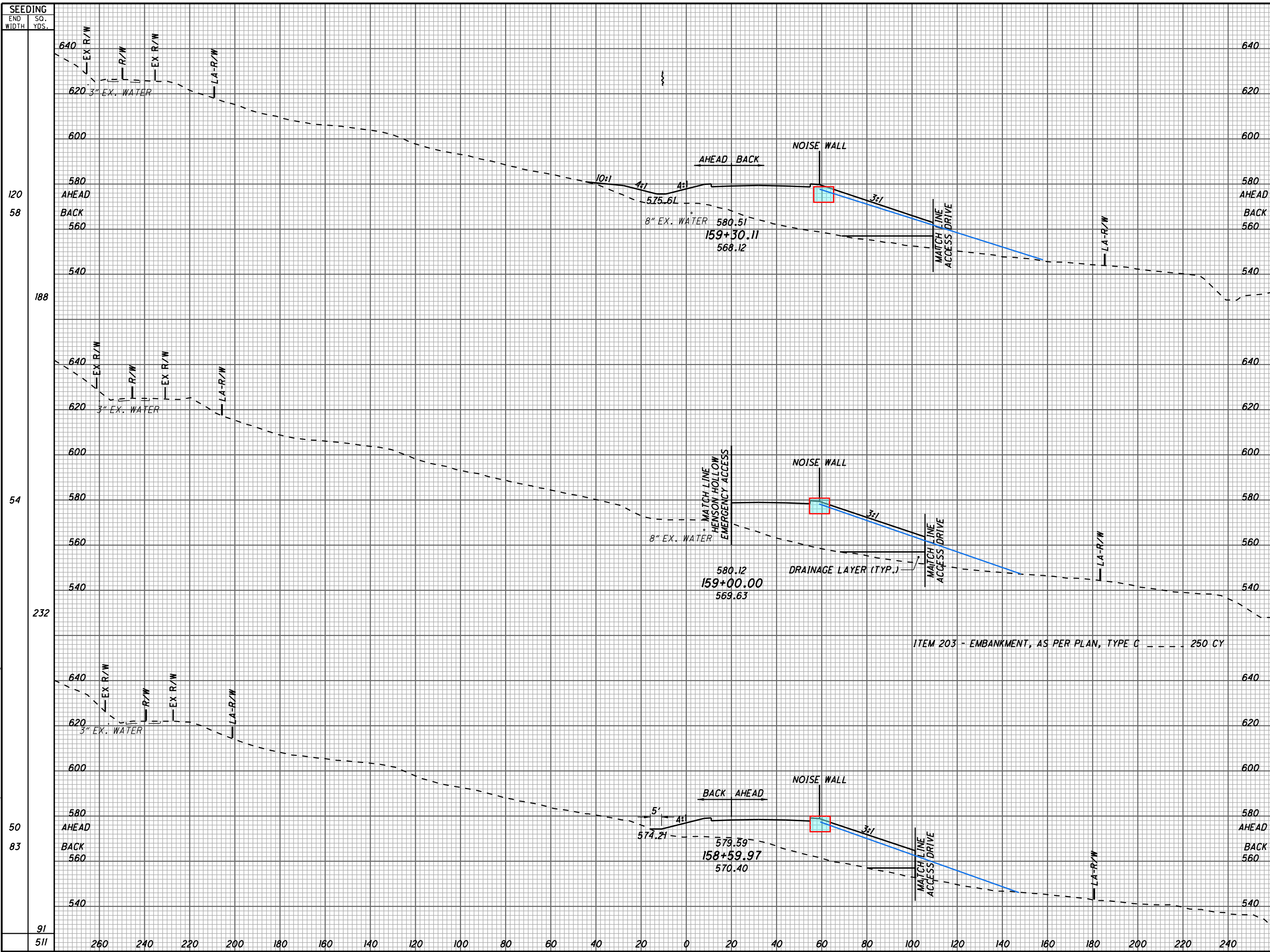


ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C - - - - 21 CY

CROSS SECTIONS S.R. 7
STA. 157+50.00 TO STA. 158+50.00

LAW - 7 - 2.17

U:\173608714_LAW\75923\roadway_sheets\75923\X1030-2B.dgn 5/21/2024 4:51:50 PM SLParker



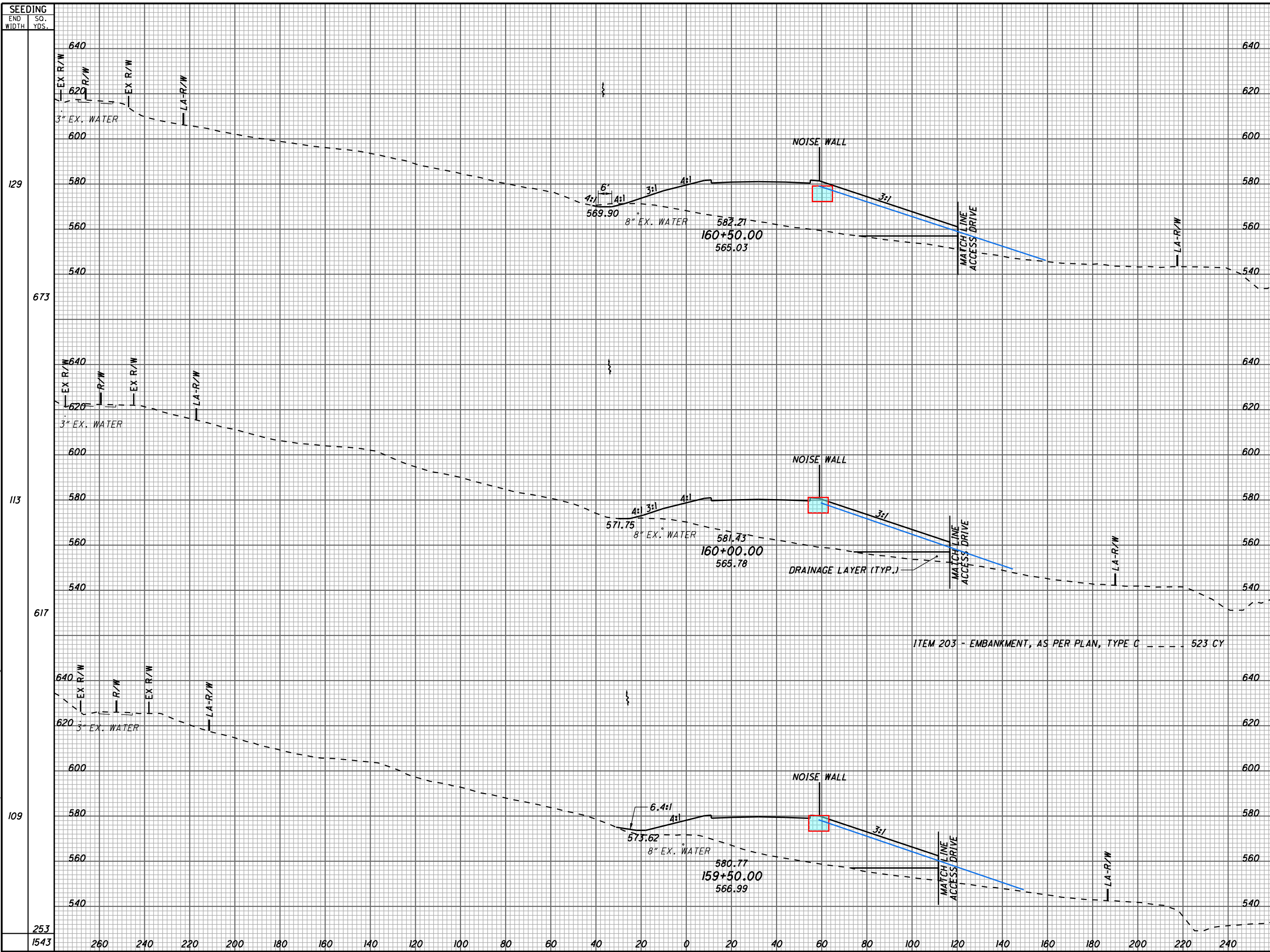
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 120 | 260 | 58 | 0 | 1699 | | |
| 58 | 240 | 560 | 0 | 1358 | | |
| 188 | 220 | 540 | 0 | 1462 | | |
| 54 | 200 | 580 | 0 | 1263 | | |
| 232 | 180 | 560 | 0 | 1707 | | |
| 50 | 160 | 580 | 0 | 1038 | | |
| 83 | 140 | 560 | 0 | 1242 | | |
| 91 | 120 | 540 | 0 | 444 | | |
| 511 | 100 | 520 | 0 | 3613 | | |

CROSS SECTIONS S.R. 7
STA. 158+59.97 TO STA. 159+30.11

LAW - 7 - 2.17

189
1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1031-2B.dgn 5/21/2024 4:51:51 PM SLForker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 129 | | | 12 | 2014 | | |
| 673 | | | 11 | 3551 | | |
| 113 | | | 1 | 1820 | | |
| 617 | | | 1 | 3249 | | |
| 109 | | | 0 | 1688 | | |
| 253 | | | 0 | 1248 | 190 | |
| 1543 | | | 12 | 8048 | 1247 | |

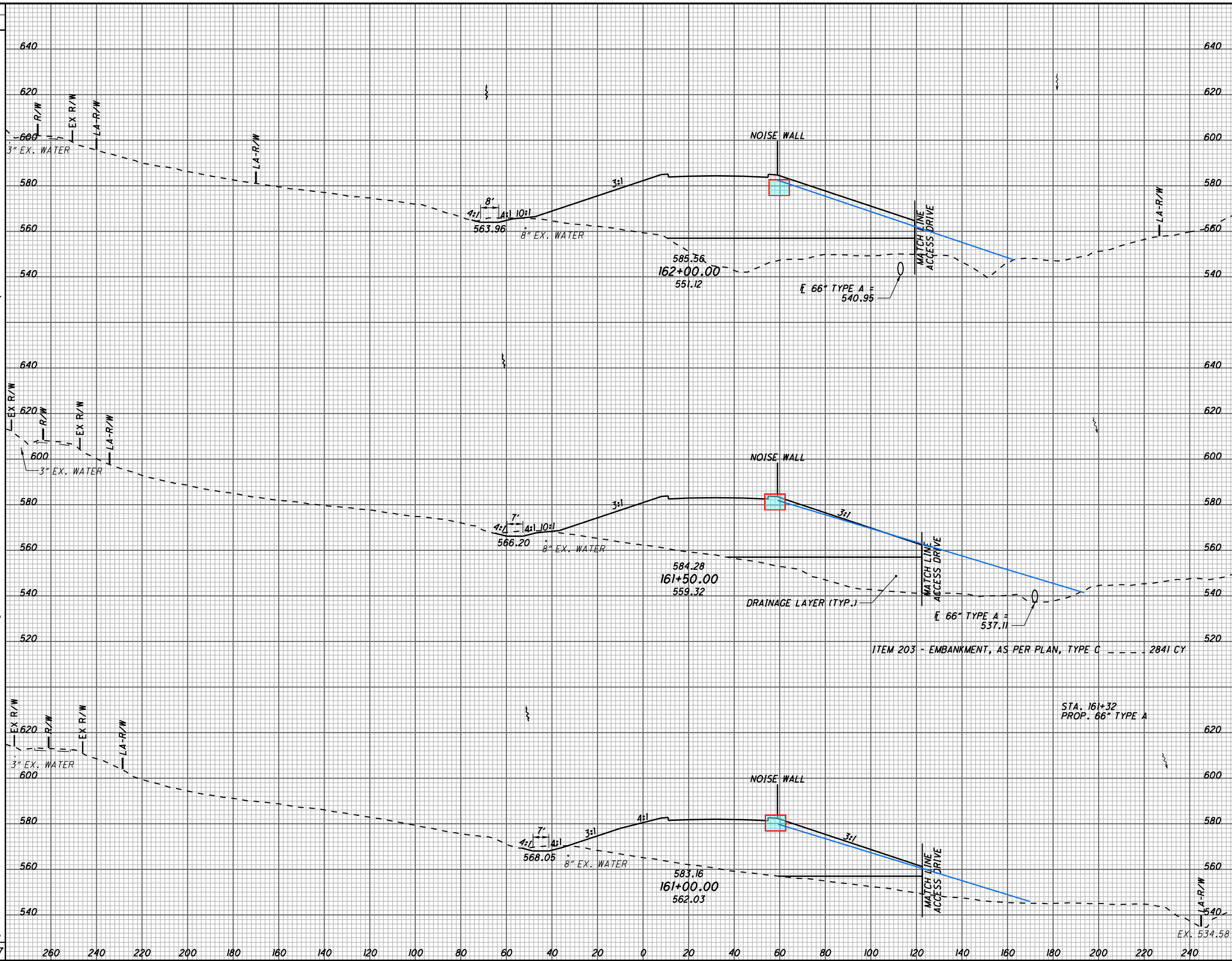
CROSS SECTIONS S.R. 7
STA. 159+50.00 TO STA. 160+50.00

LAW-7-2.17

ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C --- 523 CY

U:\173608714_LAW\75923\roadway_sheets\75923\X51032-2B.dgn 5/21/2024 4:51:52 PM SL Parker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 163 | 260 | 640 | 22 | 3217 | | |
| 887 | 260 | 640 | 50 | 5575 | | |
| 156 | 260 | 640 | 31 | 2803 | | |
| 832 | 260 | 640 | 54 | 4853 | | |
| 144 | 260 | 640 | 27 | 2438 | | |
| 758 | 2477 | 640 | 36 | 4123 | 191 | 1247 |



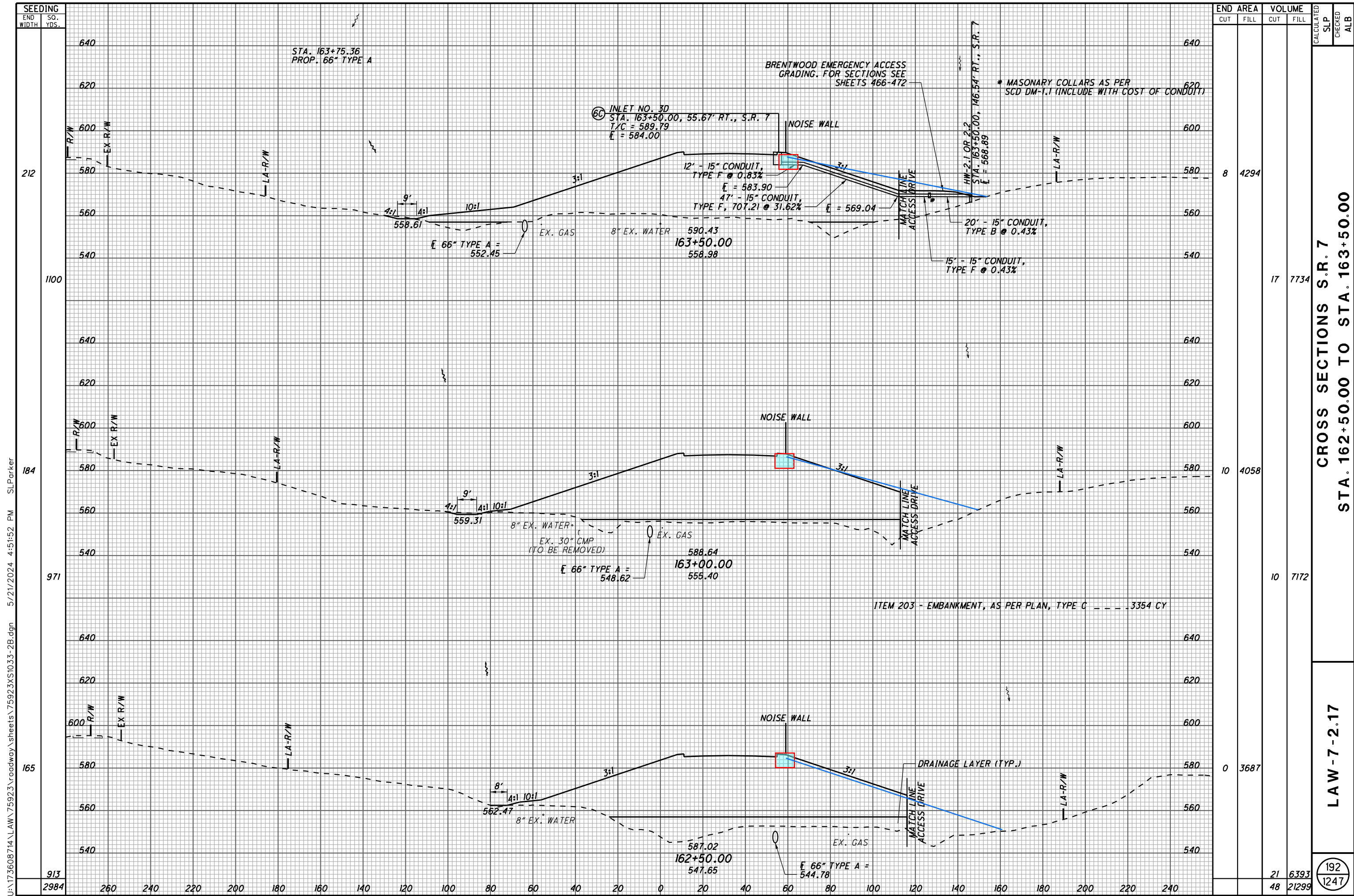
ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C - 2841 CY

STA. 161+32
PROP. 66" TYPE A

CROSS SECTIONS S.R. 7
STA. 161+00.00 TO STA. 162+00.00

LAW - 7 - 2.17

191
1247



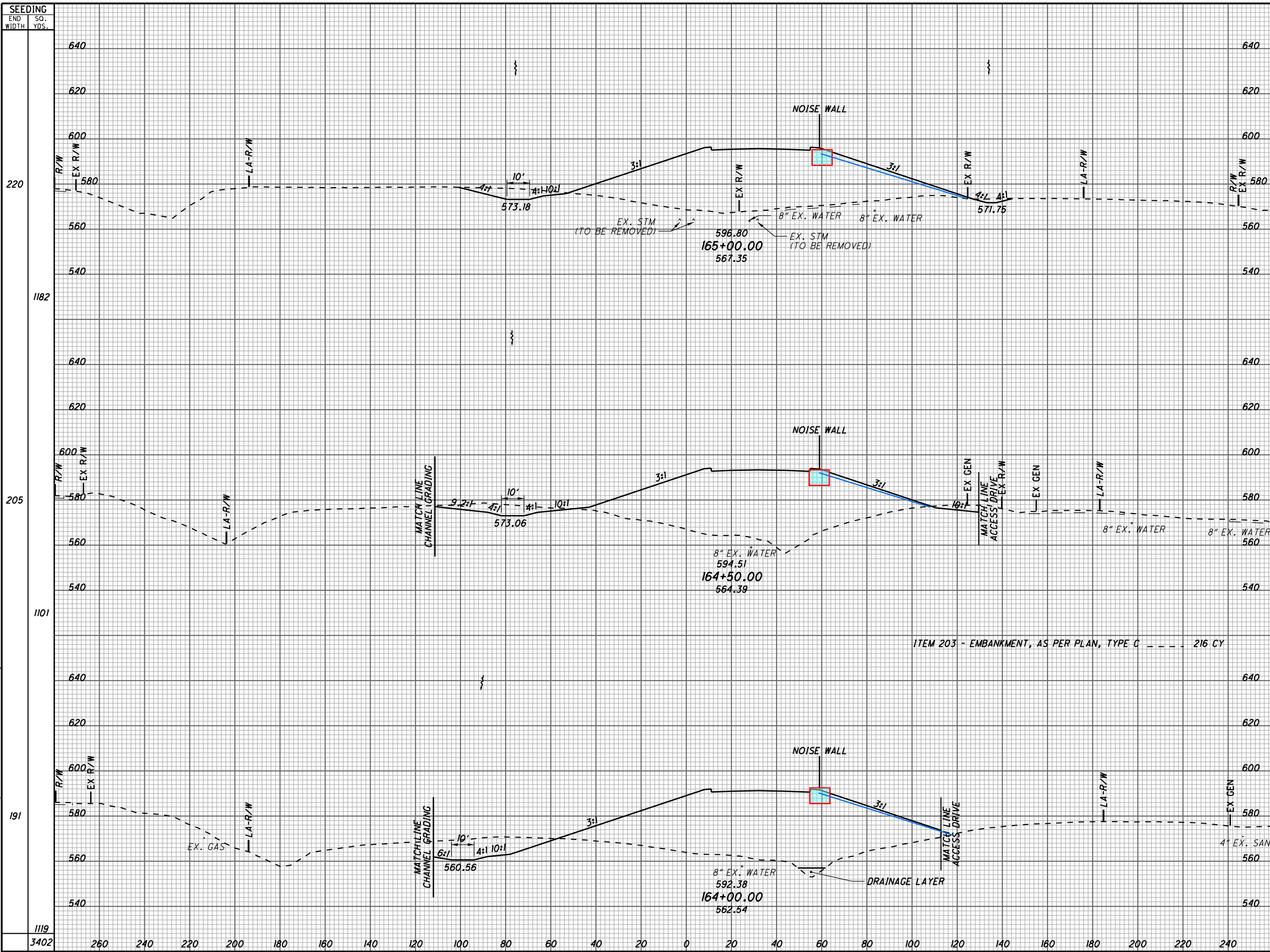
U:\173608714_LAW\75923\roadway_sheets\75923\X51033-2B.dgn 5/21/2024 4:51:52 PM SLParker

**CROSS SECTIONS S.R. 7
STA. 162+50.00 TO STA. 163+50.00**

LAW - 7 - 2.17

192
1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1034-2B.dgn 5/21/2024 4:51:53 PM SLParker



| SEEDING | | END AREA | | VOLUME | | CALCULATED | |
|-----------|----------|----------|-------|--------|------|------------|---------|
| END WIDTH | SO. YDS. | CUT | FILL | CUT | FILL | SLP | CHECKED |
| 220 | 1182 | 154 | 3003 | 333 | 5530 | | |
| 205 | 1101 | 205 | 2969 | 529 | 5911 | | |
| 191 | 1119 | 367 | 3415 | 347 | 7138 | | |
| | 3402 | 1209 | 18579 | | | | |

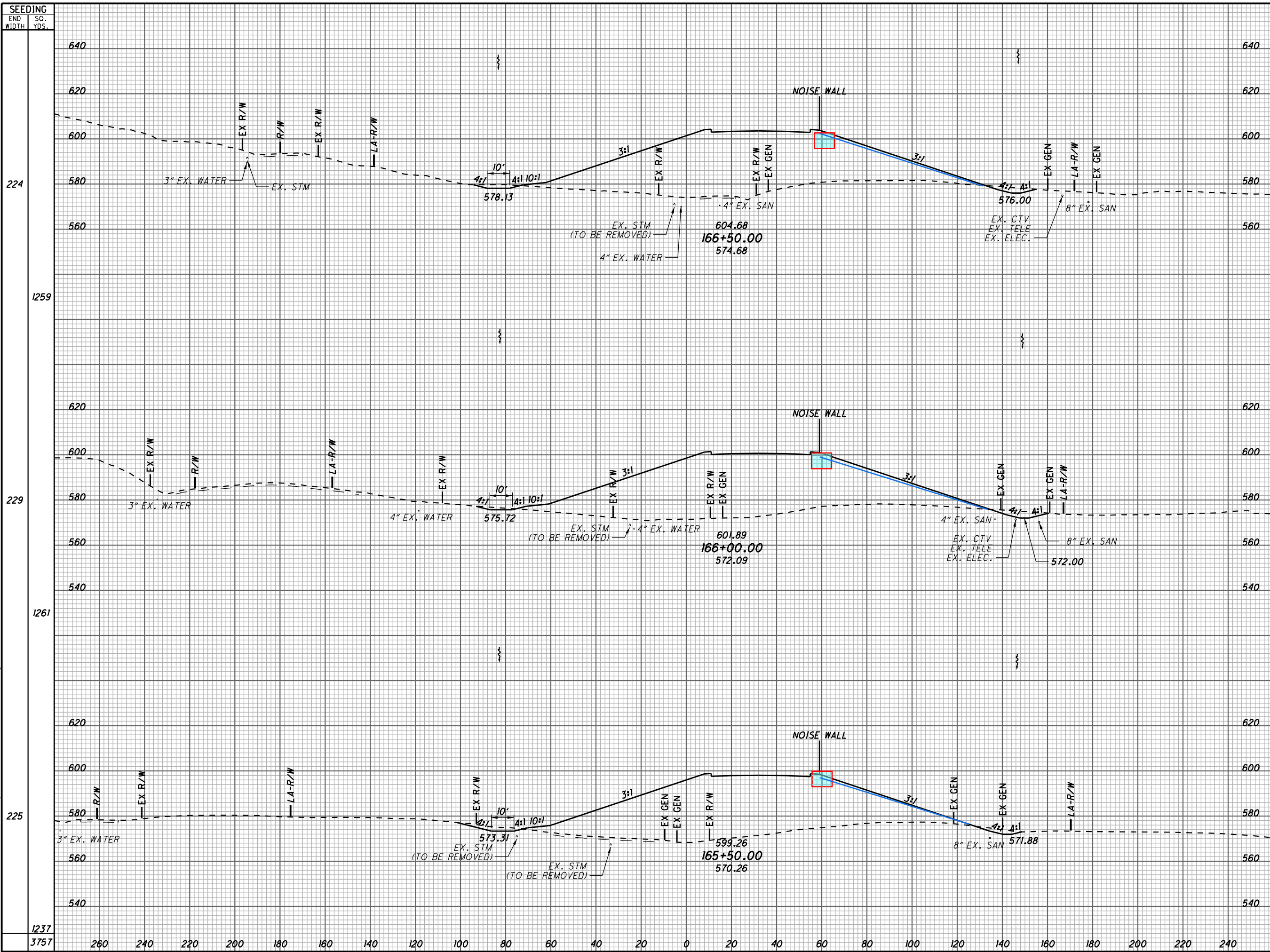
ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C --- 216 CY

CROSS SECTIONS S.R. 7
STA. 164+00.00 TO STA. 165+00.00

LAW - 7 - 2.17

193
1247

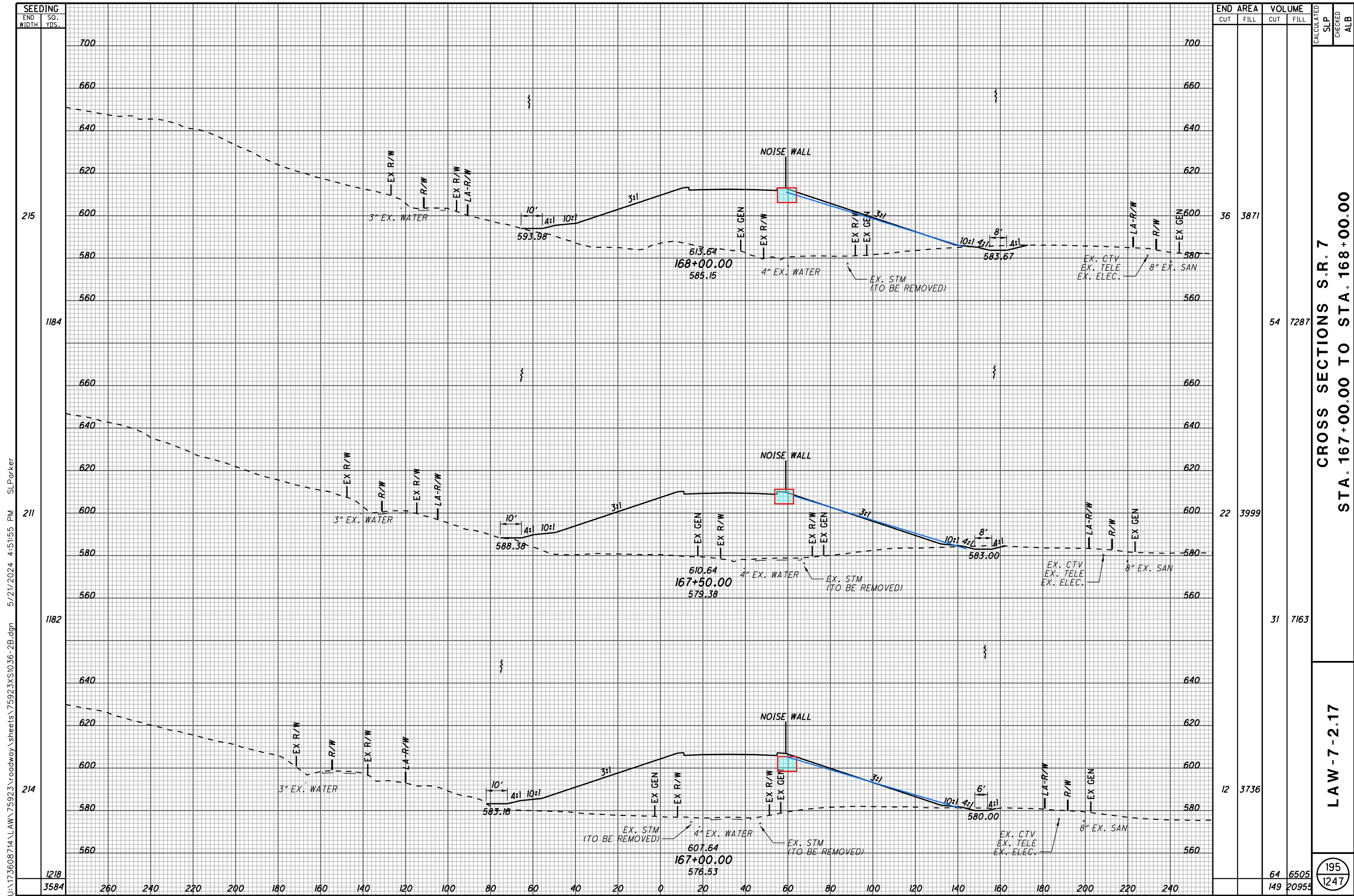
U:\173608714_LAW\75923\roadway_sheets\75923XS1035-2B.dgn 5/21/2024 4:51:54 PM SLParker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|----------|-------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 166+50.00 | 57 | 3288 | | | | |
| 166+00.00 | 58 | 3444 | 106 | 6234 | | |
| 165+50.00 | 60 | 3240 | 109 | 6189 | | |
| 1237 | 199 | 5781 | | | 194 | |
| 3757 | 414 | 18204 | | | 1247 | |

CROSS SECTIONS S.R. 7
STA. 165+50.00 TO STA. 166+50.00

LAW-7-2.17



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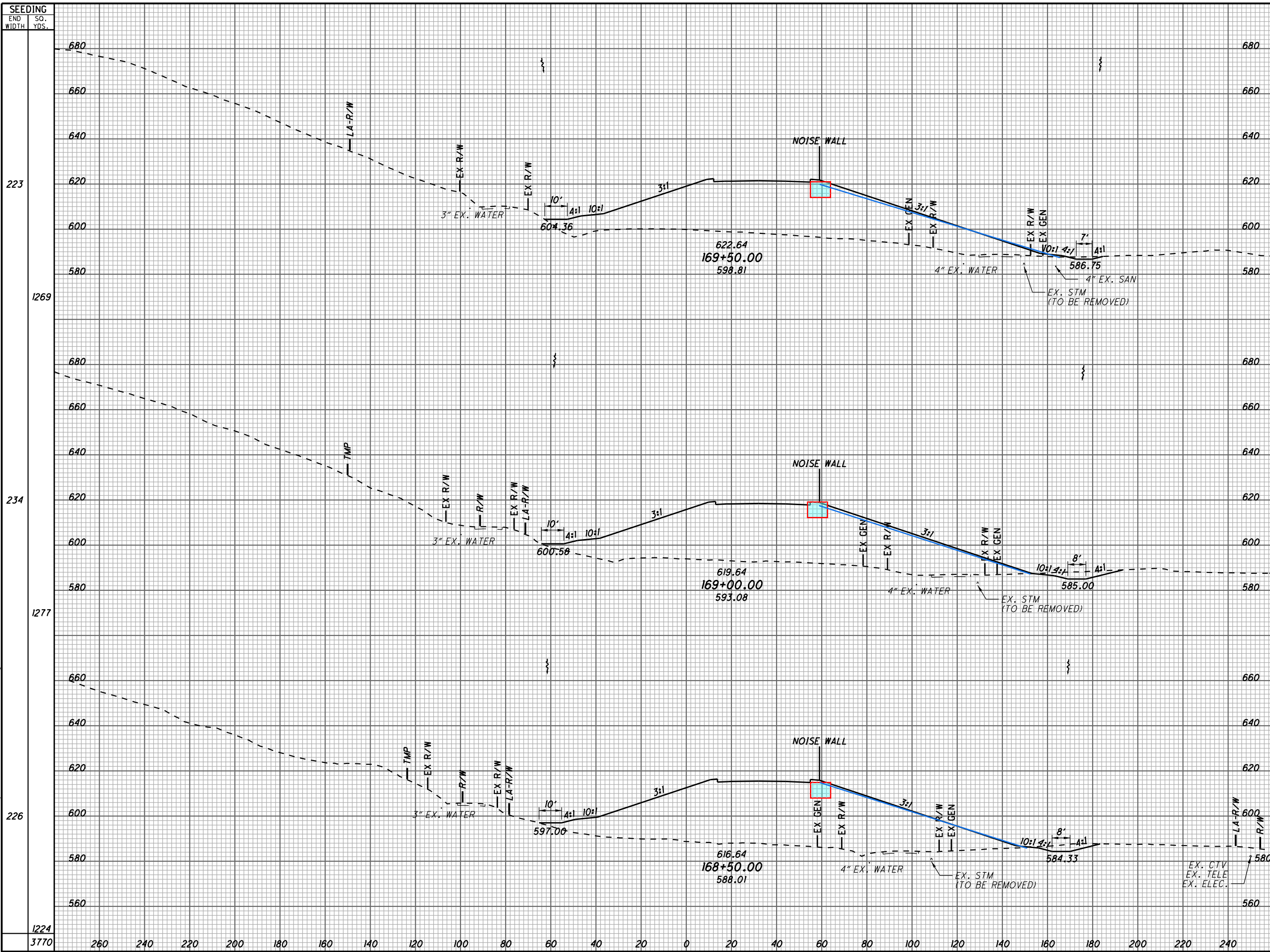
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|-------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 215 | | | 36 | 3871 | | |
| 1184 | | | 54 | 7287 | | |
| 211 | | | 22 | 3999 | | |
| 1182 | | | 31 | 7163 | | |
| 214 | | | 12 | 3736 | | |
| 1218 | 3584 | | 64 | 6505 | 195 | 1247 |
| | | | 149 | 20958 | | |

CROSS SECTIONS S.R. 7
 STA. 167+00.00 TO STA. 168+00.00

LAW - 7 - 2.17

195
1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1037-2B.dgn 5/21/2024 4:51:56 PM SLParker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|----------|-------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 169+50.00 | 11 | 3342 | | | | |
| 169+00.00 | 72 | 3601 | | | | |
| 168+50.00 | 56 | 3821 | | | | |
| TOTAL | 139 | 10764 | | | | |

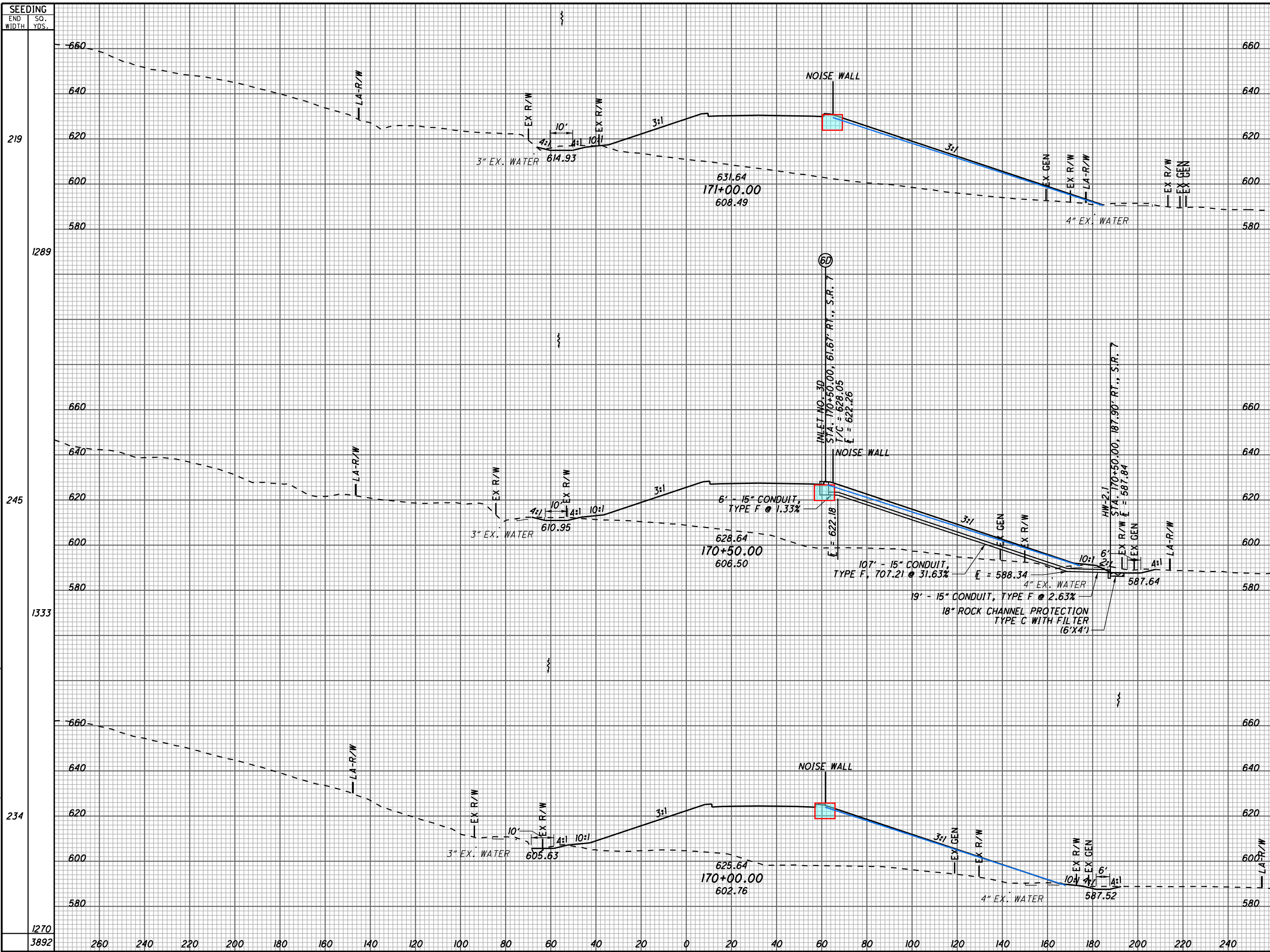
| STATION | CUT | FILL | TOTAL |
|-----------|-----|-------|-------|
| | | | |
| 169+00.00 | 72 | 3601 | 3673 |
| 168+50.00 | 56 | 3821 | 3877 |
| TOTAL | 139 | 10764 | 10903 |

CROSS SECTIONS S.R. 7
STA. 168+50.00 TO STA. 169+50.00

LAW - 7 - 2.17

196
 1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1038-2B.dgn 5/21/2024 4:51:57 PM SLParker

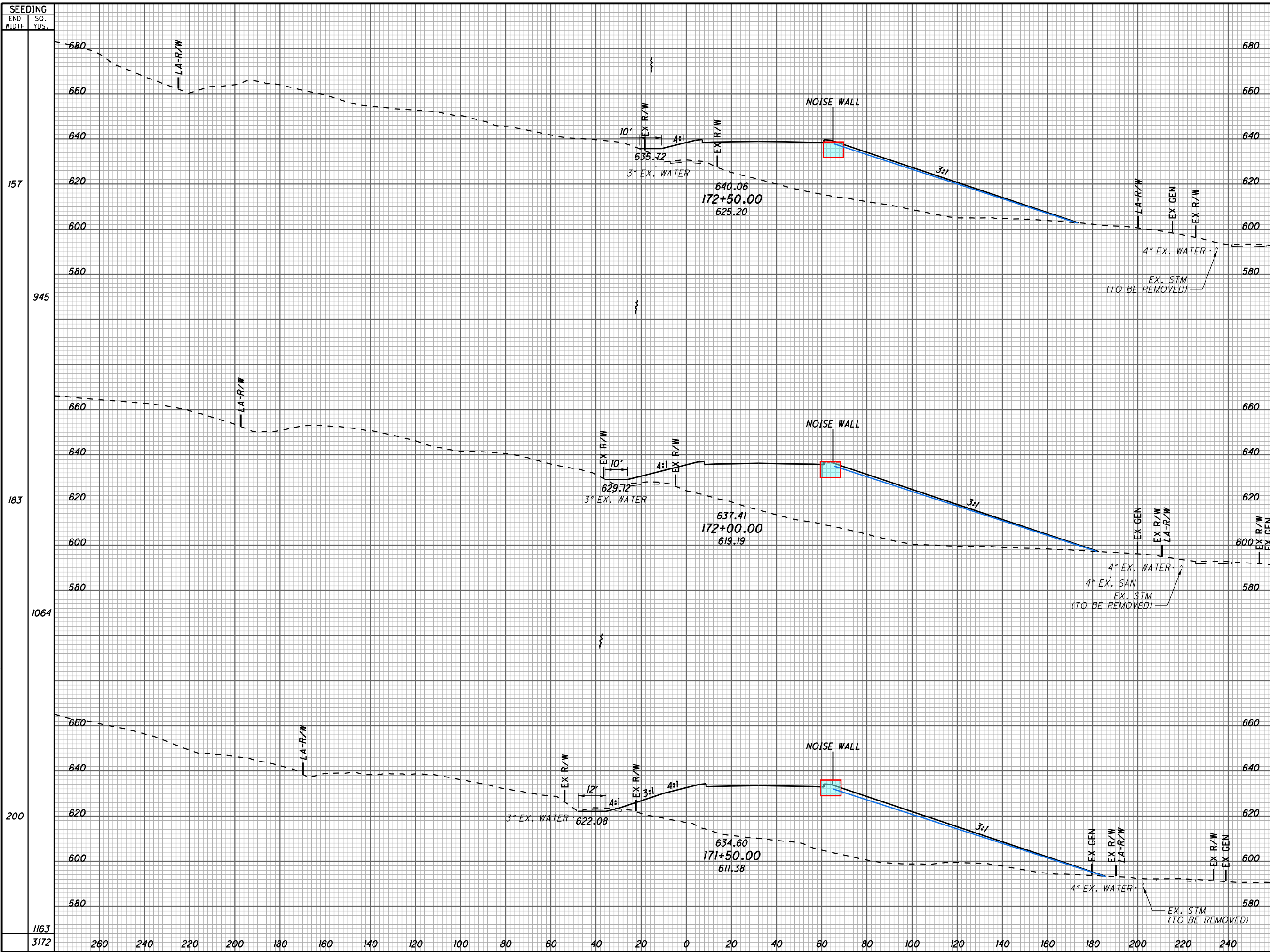


| END STA. | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 219 | | | | | | |
| 1289 | | | 121 | 6545 | | |
| 245 | | | | | | |
| 1333 | | | 114 | 6219 | | |
| 234 | | | | | | |
| 1270 | | | 30 | 6135 | | |
| 3892 | 260 | 240 | 265 | 18899 | 197 | 1247 |

CROSS SECTIONS S.R. 7
STA. 170+00.00 TO STA. 171+00.00

LAW - 7 - 2.17

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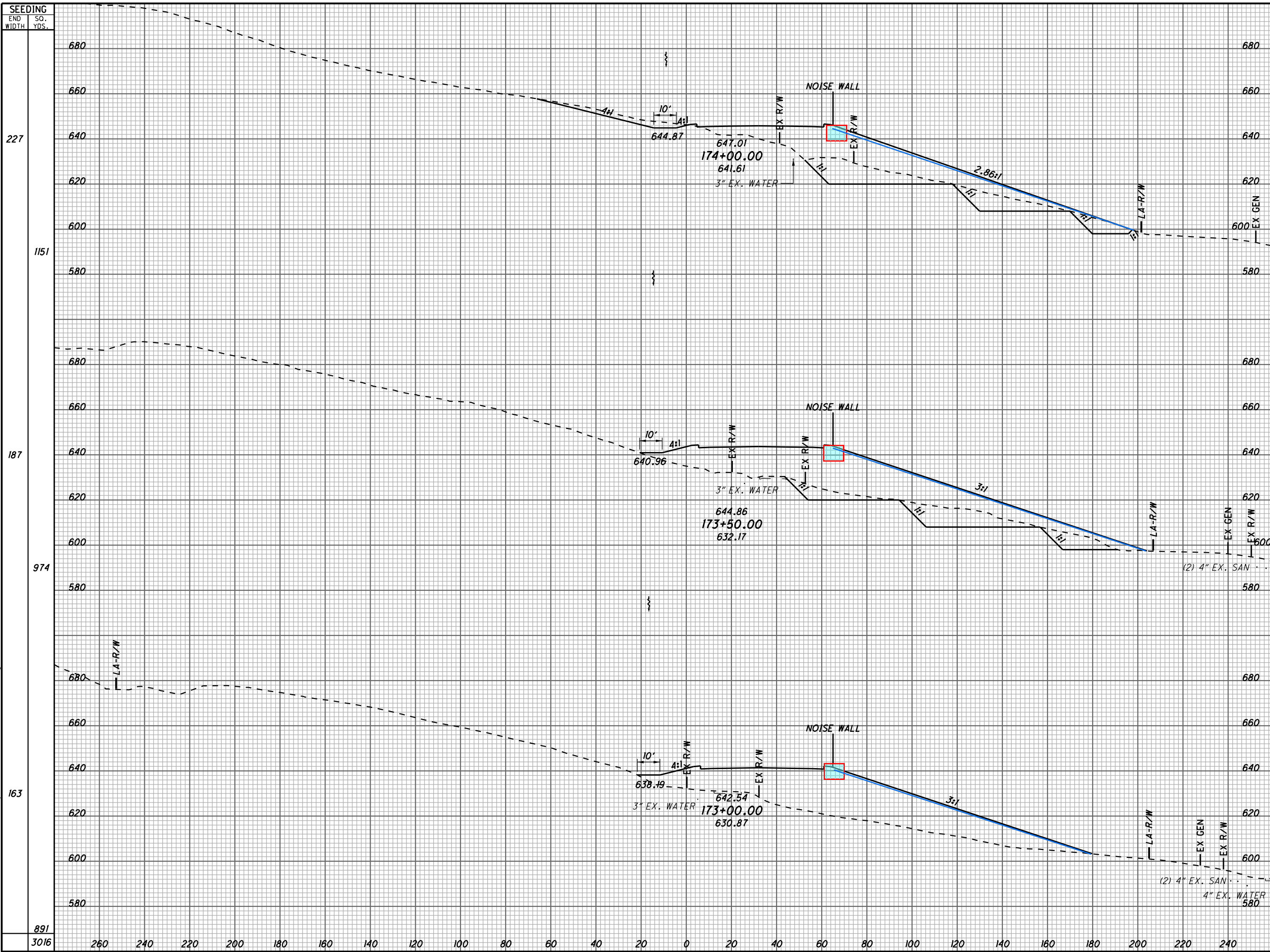
| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|--------------|
| | CUT | FILL | | |
| 0 | 2681 | 0 | 0 | 5638 |
| 0 | 3408 | 8 | 8 | 6527 |
| 8 | 3641 | 34 | 42 | 6738 / 18903 |

CROSS SECTIONS S.R. 7
STA. 171+50.00 TO STA. 172+50.00

LAW-7-2.17

198
1247

U:\173608714_LAW\759233\roadway_sheets\759233XS1040-2B.dgn 5/21/2024 4:51:58 PM SLParker



| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|--------------|-------------|-------------|-------------|-------------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 174+00.00 | 836 | 2024 | | | | |
| 173+50.00 | 641 | 2823 | | | | |
| 173+00.00 | 0 | 2375 | | | | |
| TOTAL | 1477 | 7222 | 1368 | 4489 | | |

| | |
|------|-------|
| 0 | 4682 |
| 1962 | 13984 |

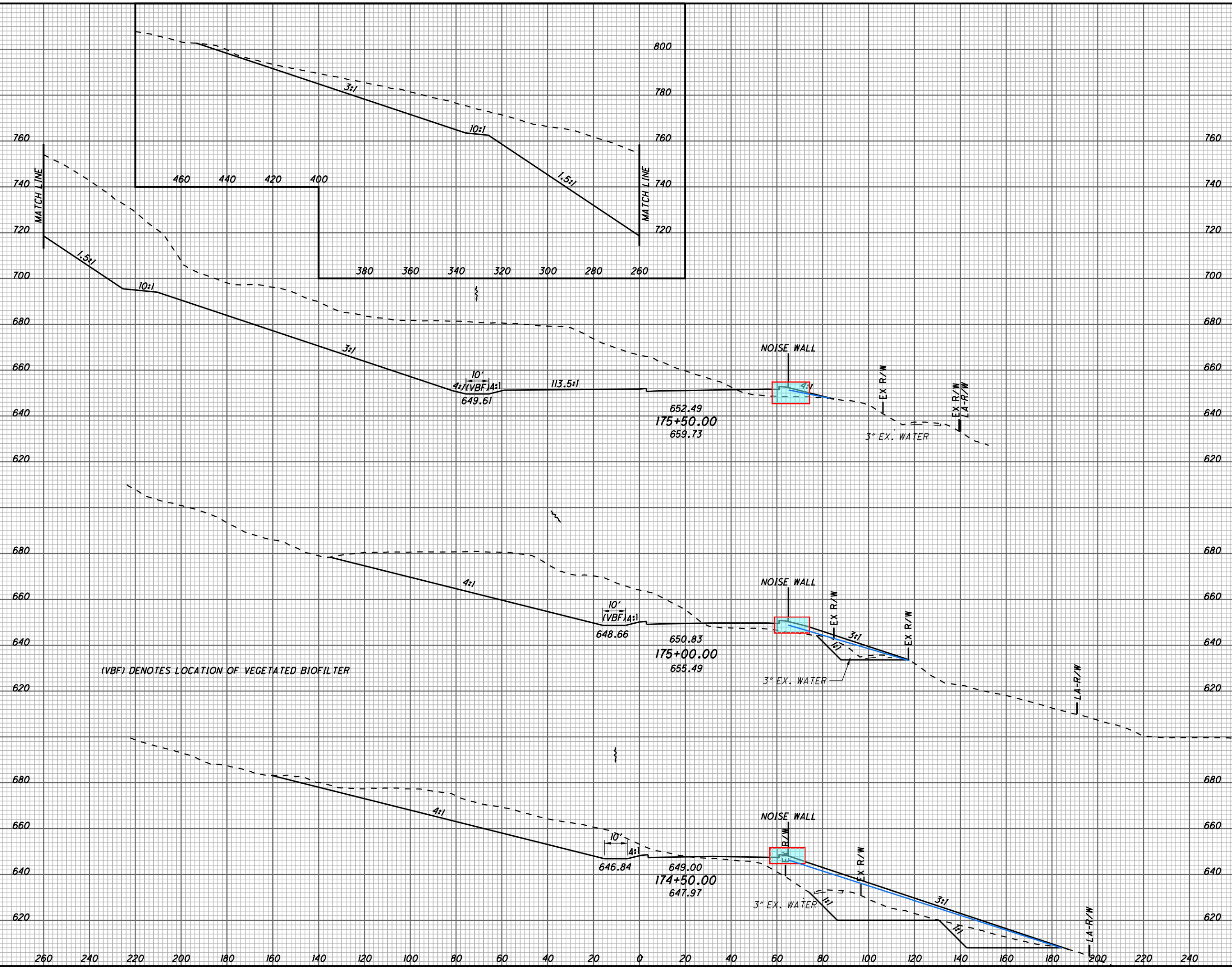
CROSS SECTIONS S.R. 7
 STA. 173+00.00 TO STA. 174+00.00

LAW - 7 - 2.17

199
1247

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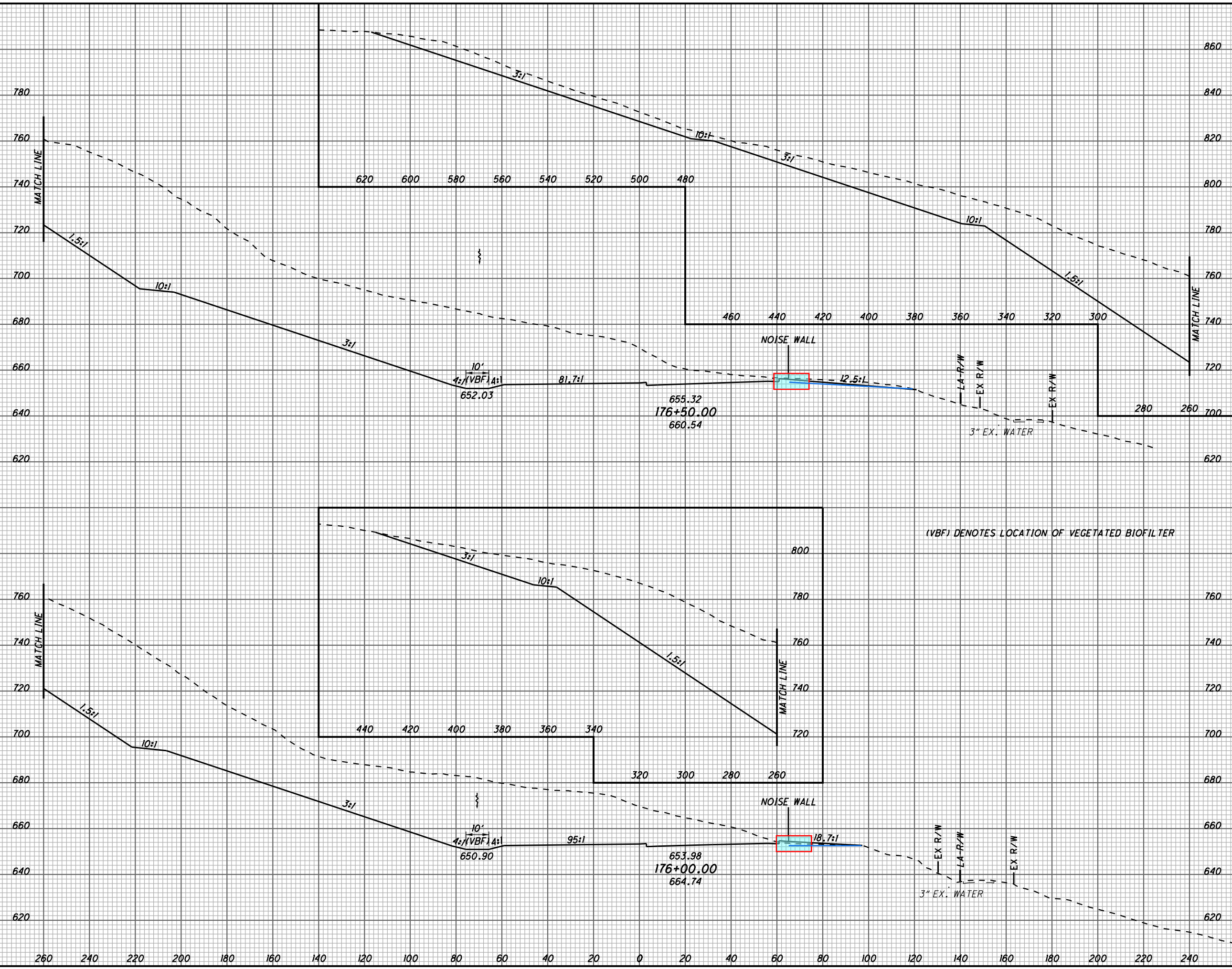
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|-------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 525 | | 9165 | 92 | | | |
| 2047 | | 10718 | 408 | | | |
| 211 | | 2411 | 349 | | | |
| 1455 | | 4060 | 1655 | | | |
| 312 | | 1973 | 1438 | | | |
| 1499 | 260 | 2601 | 3207 | | 200 | |
| 5001 | 5001 | 17379 | 5270 | 1247 | | |



CROSS SECTIONS S.R. 7
STA. 174+50.00 TO STA. 175+50.00
LAW - 7 - 2.17
200
1247

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| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 737 | 12615 | 0 | 22117 | 17 | | |
| 3500 | | | | | | |
| 523 | 11272 | 18 | 18923 | 102 | | |
| 2911 | 6411 | | 41040 | 119 | | |



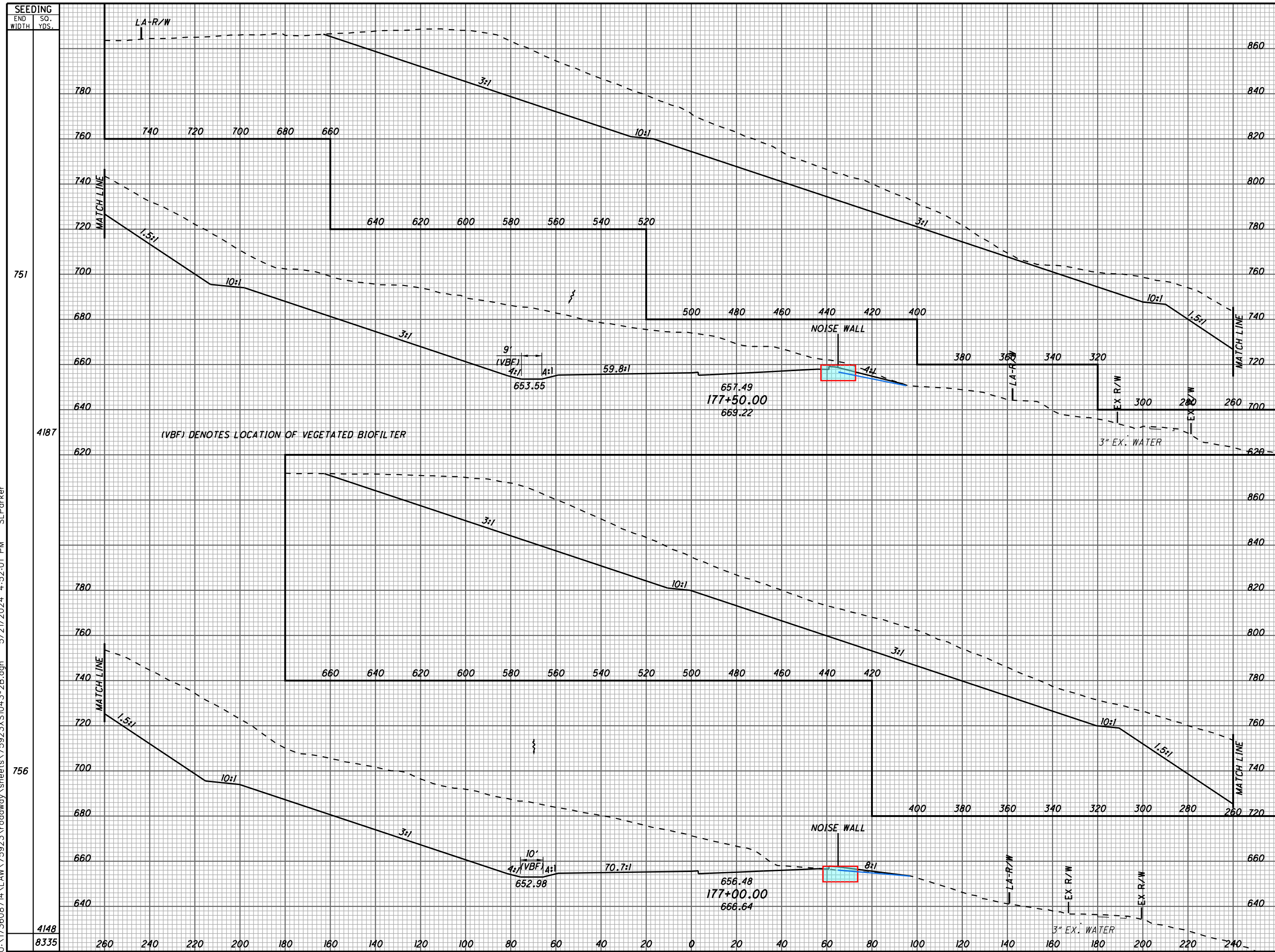
(VBF) DENOTES LOCATION OF VEGETATED BIOFILTER

CROSS SECTIONS S.R. 7
STA. 176+00.00 TO STA. 176+50.00

LAW - 7 - 2.17

201
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X1043-2B.dgn 5/21/2024 4:52:01 PM SLParker



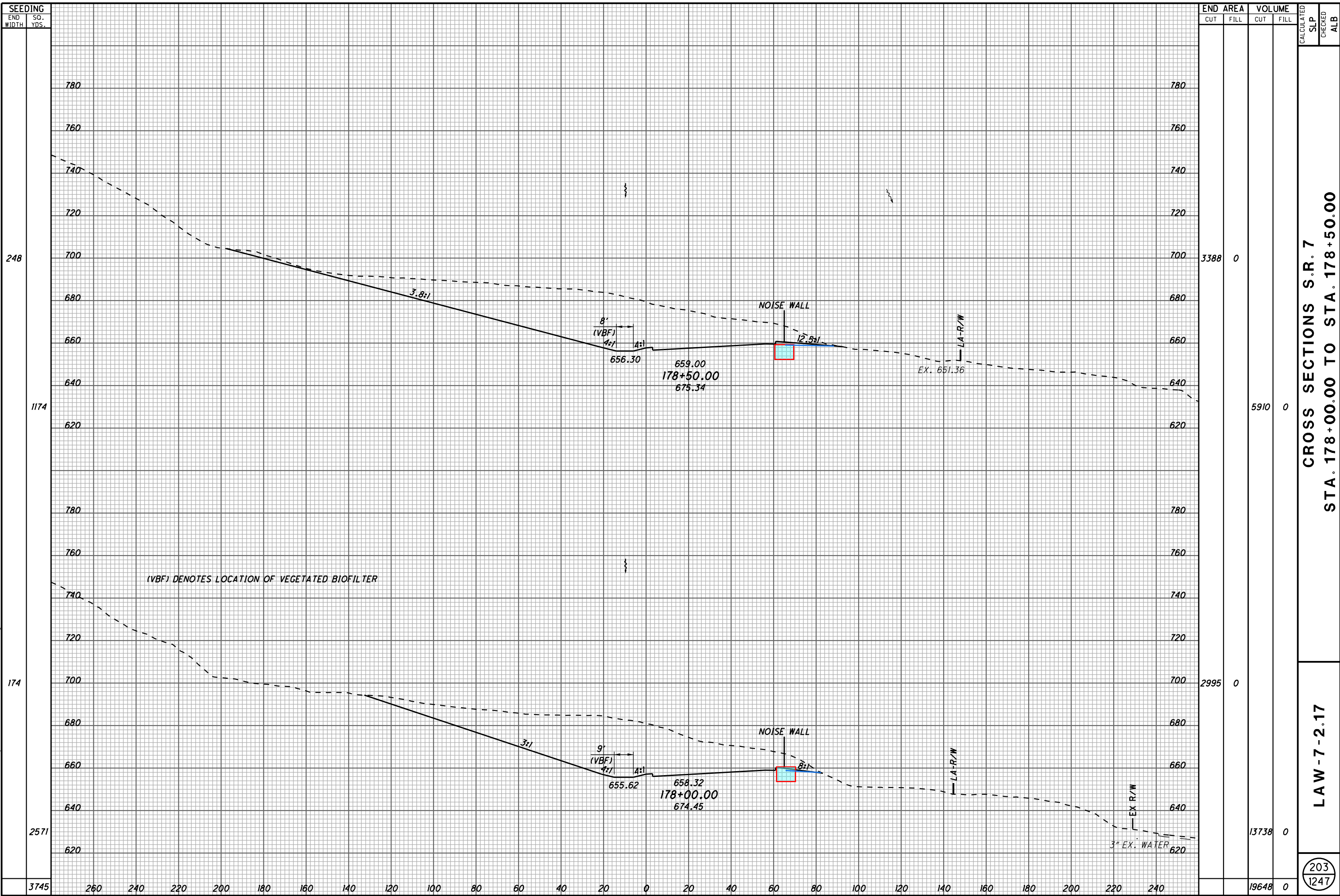
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 751 | 11841 | 0 | 23937 | 23 | | |
| 4187 | | | | | | |
| 756 | 14010 | 24 | 24653 | 23 | | |
| 4148 | | | | | | |
| 8335 | | | | 46 | | |

CROSS SECTIONS S.R. 7
STA. 177+00.00 TO STA. 177+50.00

LAW - 7 - 2.17

202
1247

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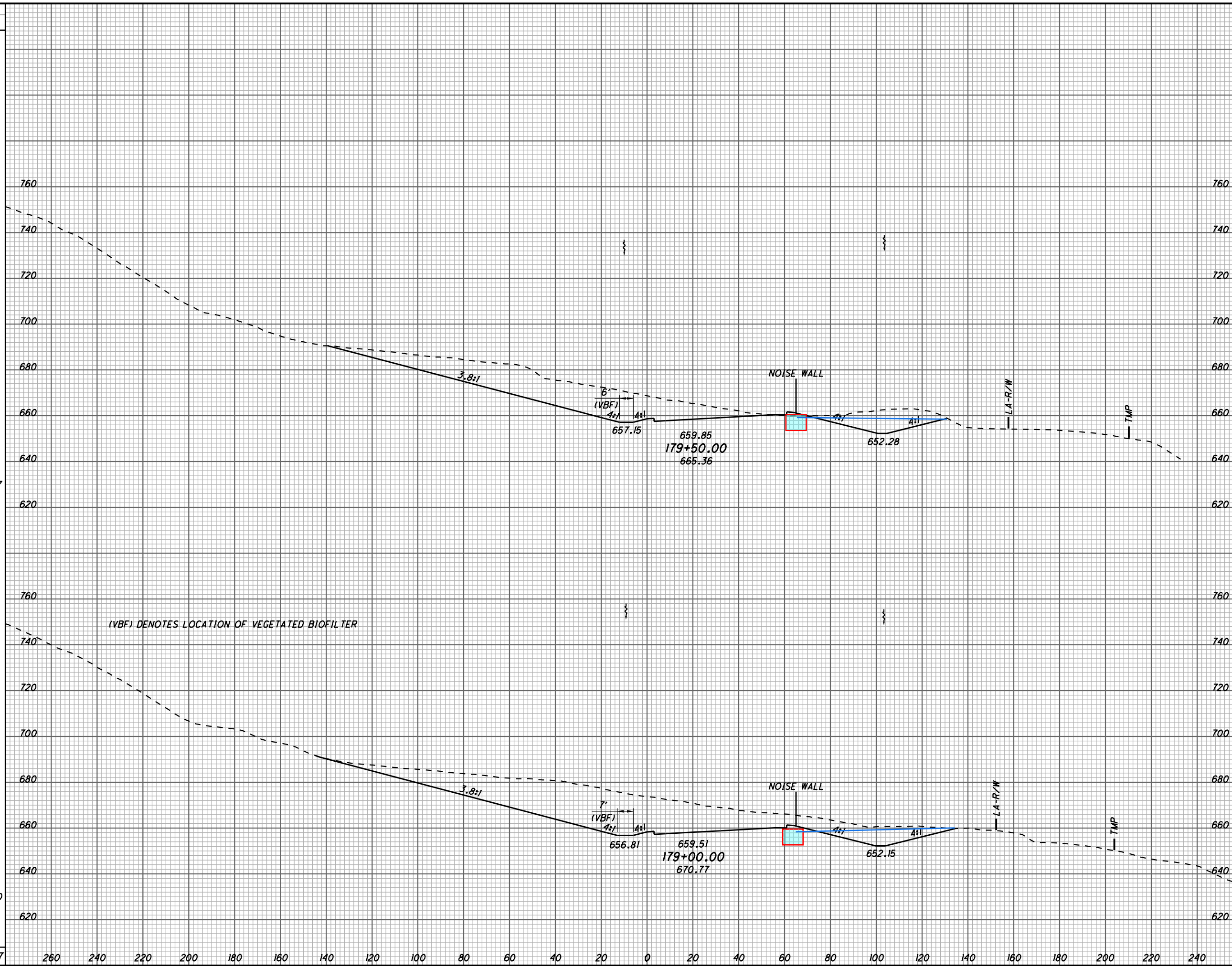
**CROSS SECTIONS S.R. 7
STA. 178+00.00 TO STA. 178+50.00**

LAW - 7 - 2.17

203
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51045-2B.dgn 5/21/2024 4:52:03 PM SLForker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 2647 | 229 |
| 2647 | 1297 |
| 2647 | 238 |
| 2647 | 1350 |



| END AREA | VOLUME | CALCULATED | |
|----------|--------|------------|------|
| | | CUT | FILL |
| 1901 | 11 | | |
| 4126 | 10 | | |
| 2555 | 0 | | |
| 5504 | 0 | | |
| 9630 | 10 | | |

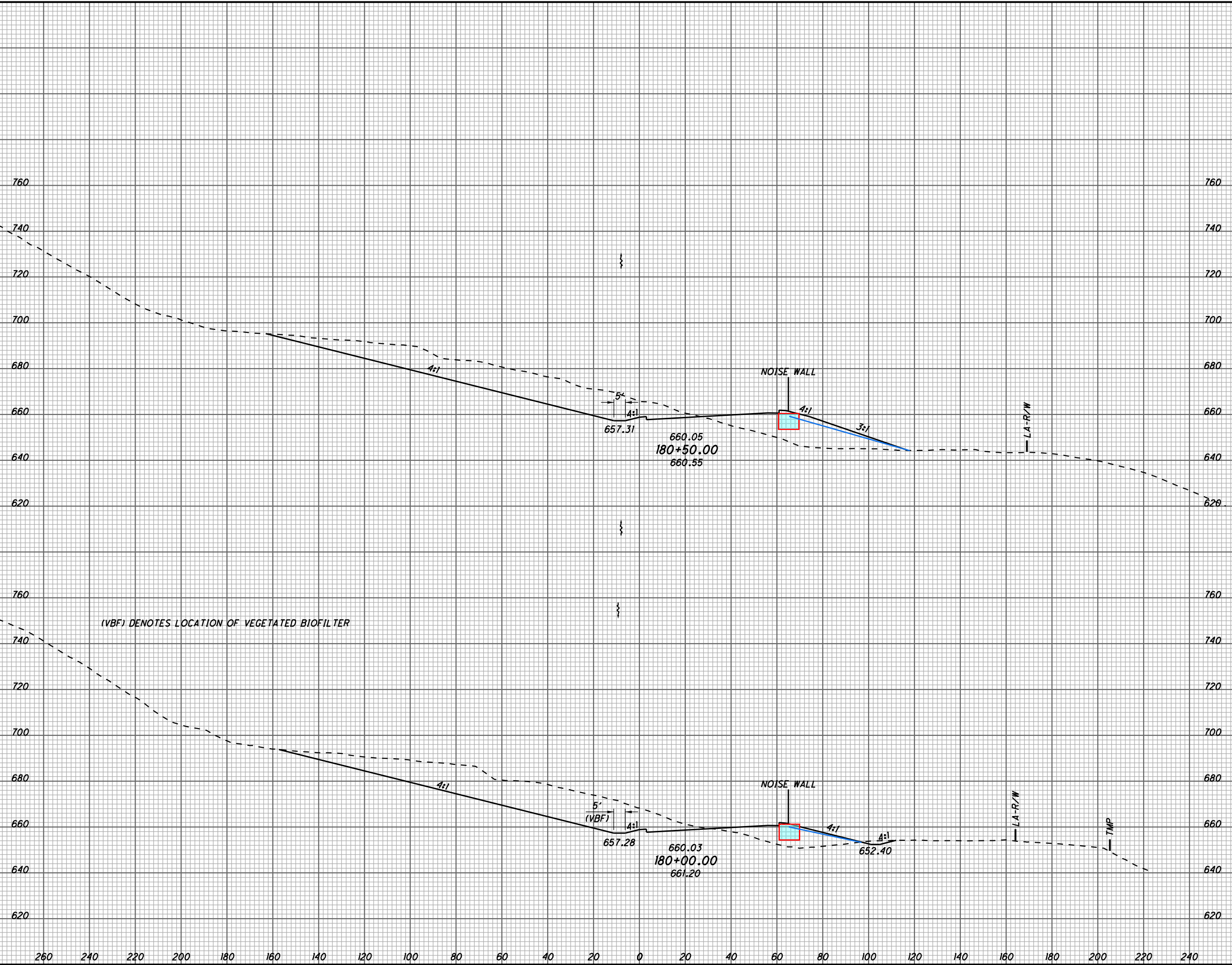
CROSS SECTIONS S.R. 7
 STA. 179+00.00 TO STA. 179+50.00

LAW - 7 - 2.17

204
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51046-2B.dgn 5/21/2024 4:52:04 PM SLForker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 2567 | |
| 260 | |
| 240 | |
| 220 | |
| 200 | |
| 180 | |
| 160 | |
| 140 | |
| 120 | |
| 100 | |
| 80 | |
| 60 | |
| 40 | |
| 20 | |
| 0 | |
| 20 | |
| 40 | |
| 60 | |
| 80 | |
| 100 | |
| 120 | |
| 140 | |
| 160 | |
| 180 | |
| 200 | |
| 220 | |
| 240 | |



| END AREA | | VOLUME | | CALCULATED SLP | |
|----------|------|--------|------|----------------|-------------|
| CUT | FILL | CUT | FILL | SLP | CHECKED SLP |
| 1542 | 1542 | 3014 | 1736 | | |
| 1712 | 332 | 3346 | 318 | | |
| | | 6360 | 2054 | 205 | 1247 |

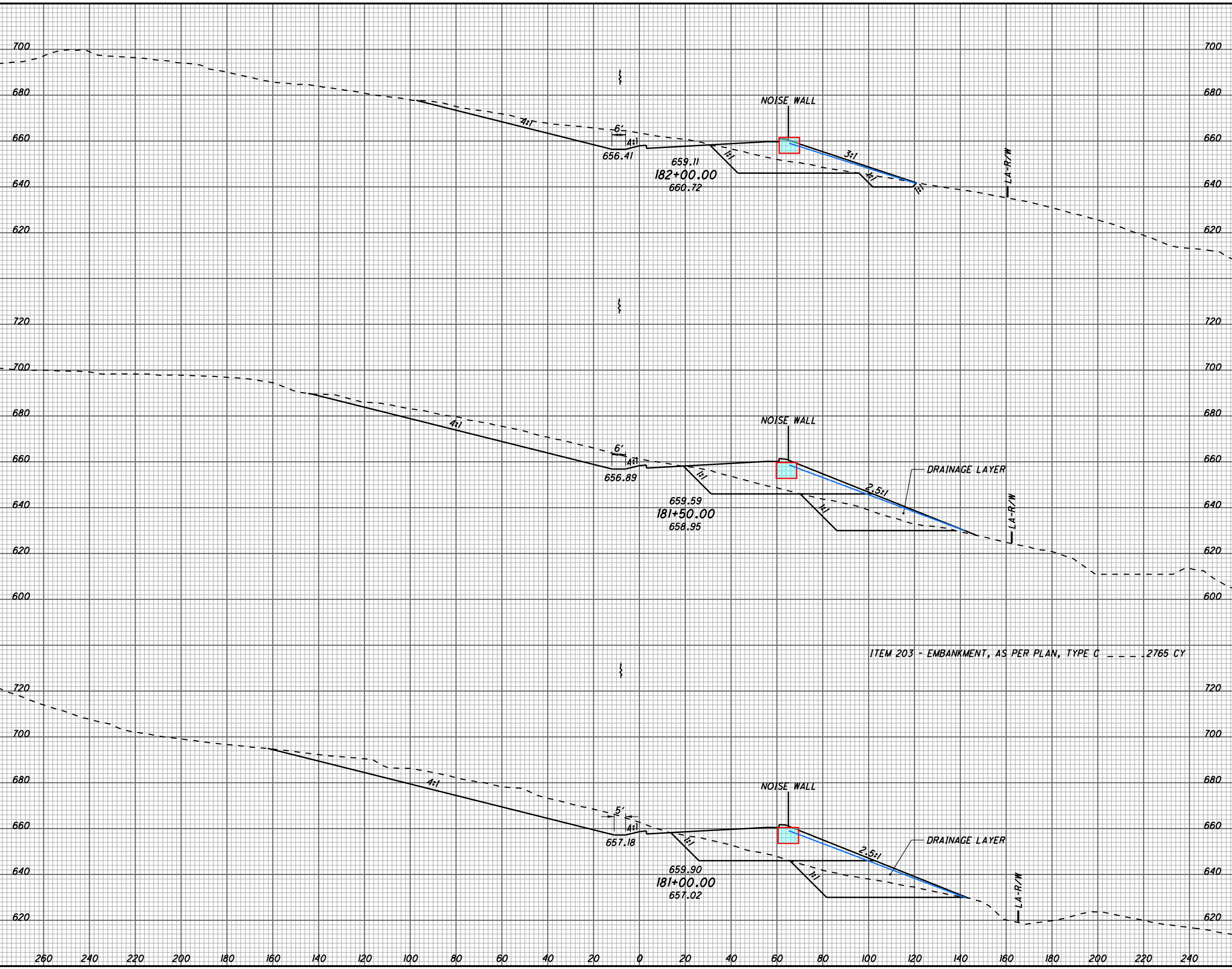
CROSS SECTIONS S.R. 7
STA. 180+00.00 TO STA. 180+50.00

LAW - 7 - 2.17

205
1247

U:\173608714_LAW\759233\roadway_sheets\759233XS1047-2B.dgn 5/21/2024 4:52:05 PM SLForker

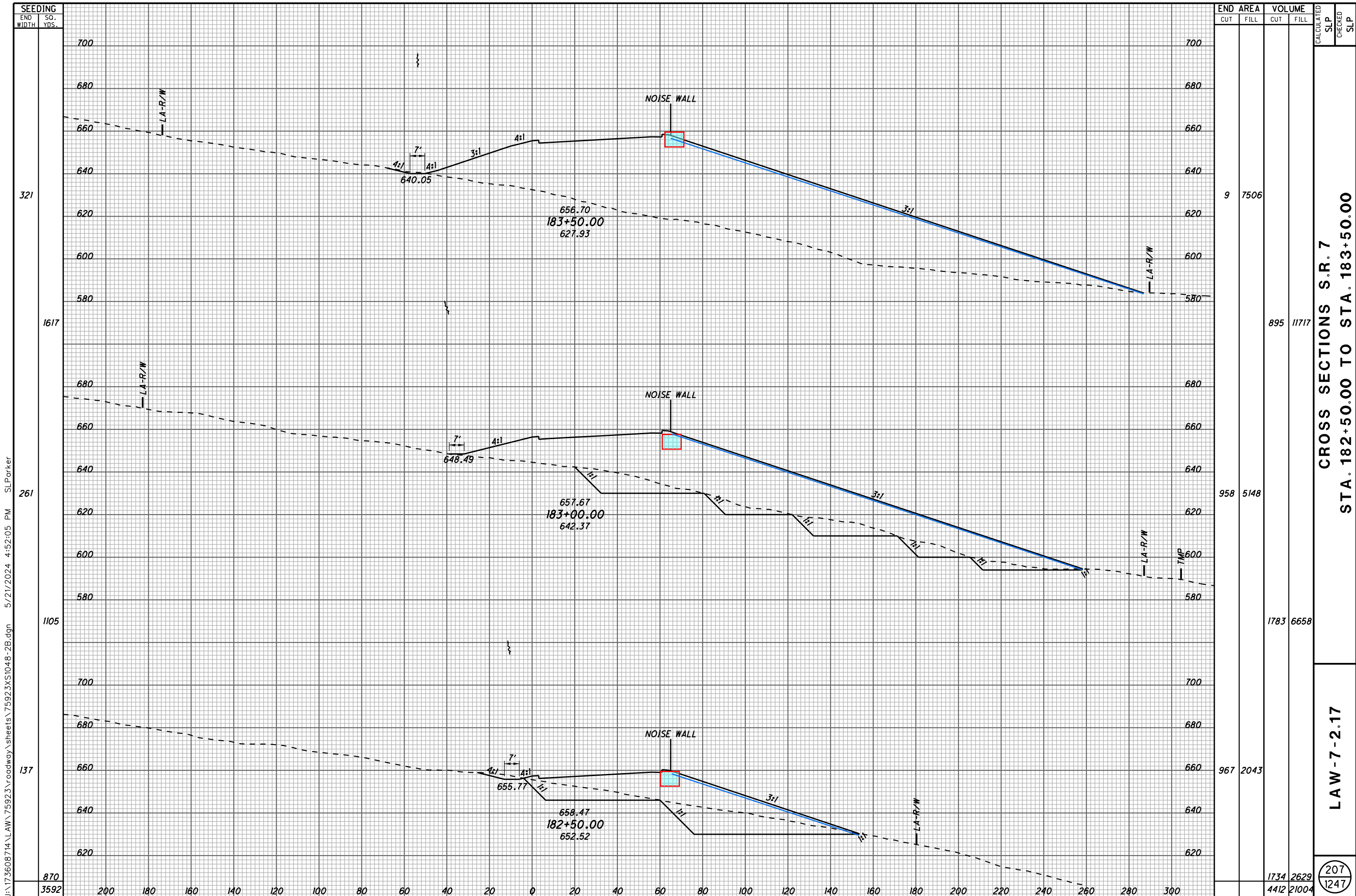
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED SLP |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 176 | | | 905 | 796 | | |
| 1197 | | | 2150 | 1494 | | |
| 254 | | | 1416 | 818 | | |
| 1454 | | | 2985 | 1601 | | |
| 269 | | | 1808 | 911 | | |
| 1414 | 4065 | | 3102 | 2271 | 206 | 1247 |



CROSS SECTIONS S.R. 7
STA. 181+00.00 TO STA. 182+00.00

LAW - 7 - 2.17

206
1247



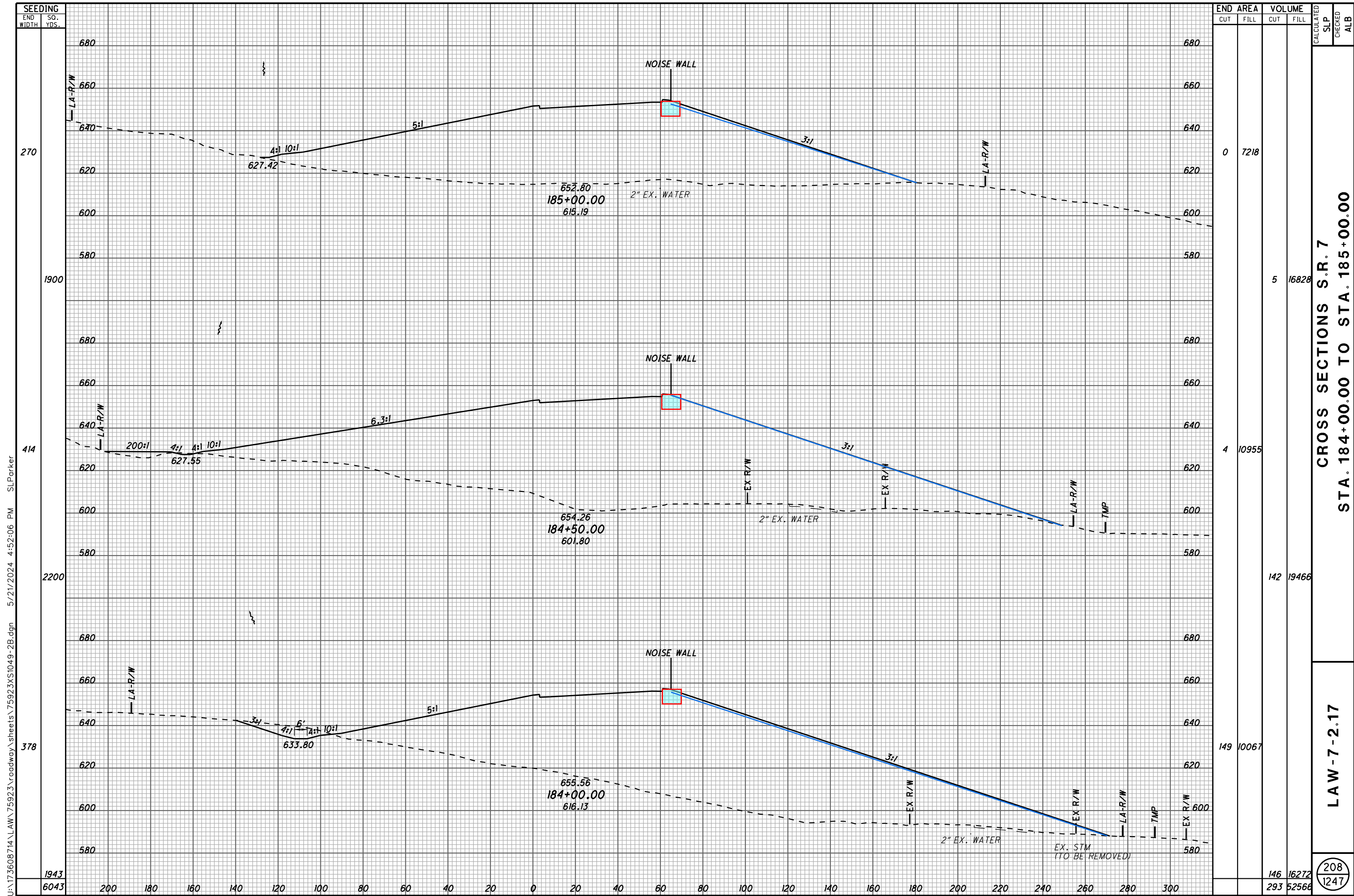
SEEDING
END WIDTH SO. YDS.
321
1617
261
1105
137
870
3592

| END AREA | VOLUME | CALCULATED | | CHECKED | |
|----------|--------|------------|-------|---------|------|
| | | CUT | FILL | SLP | SLP |
| 9 | 7506 | | | | |
| 958 | 5148 | | | | |
| 967 | 2043 | | | | |
| 1734 | 2629 | 4412 | 21004 | 207 | 1247 |

CROSS SECTIONS S.R. 7
STA. 182+50.00 TO STA. 183+50.00

LAW - 7 - 2.17

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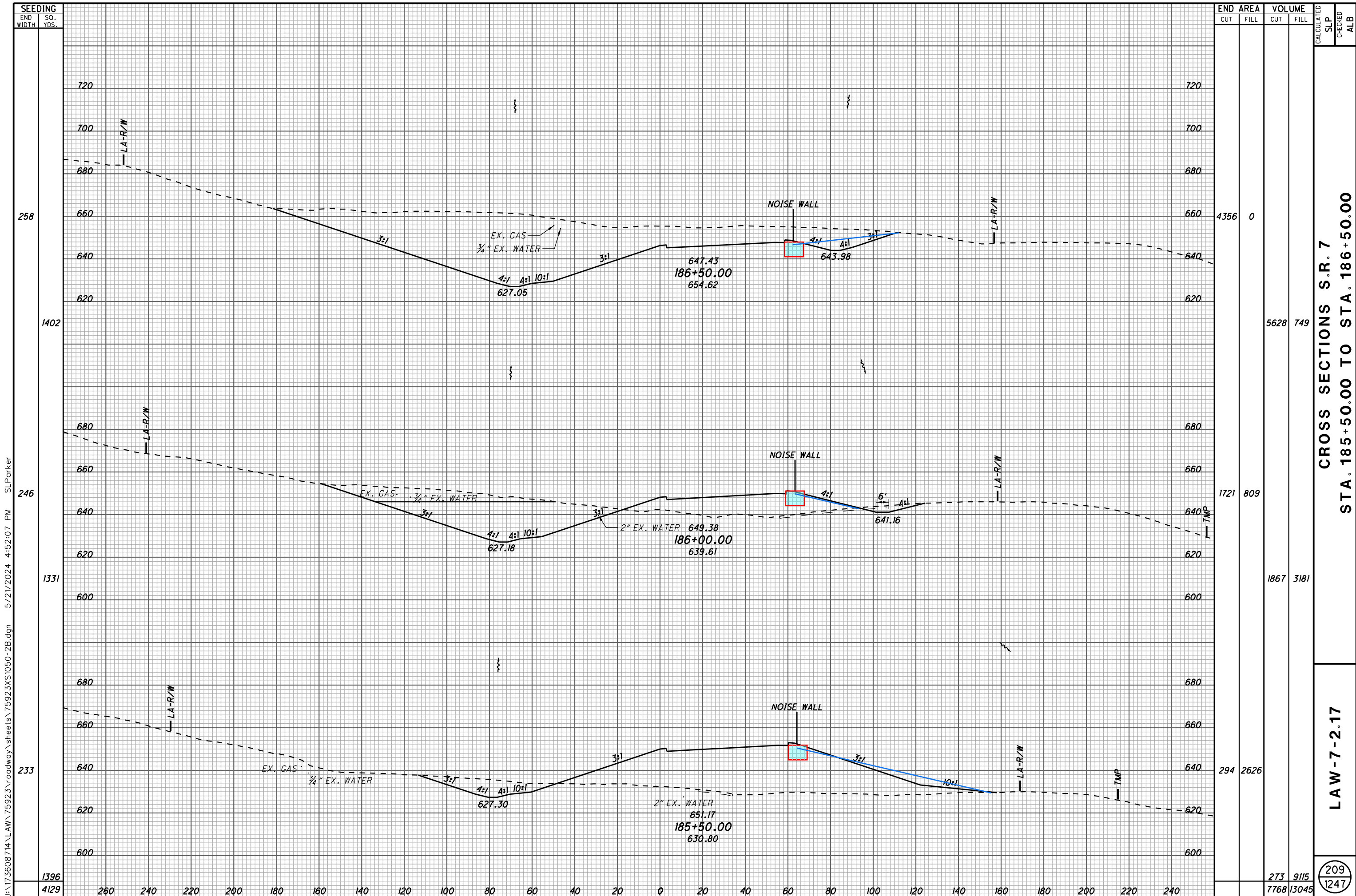
U:\173608714_LAW\75923\roadway_sheets\75923\XS1049-2B.dgn 5/21/2024 4:52:06 PM SLParker

| END STA. | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|-------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 270 | 0 | 7218 | | | | |
| 1900 | | | 5 | 16828 | | |
| 414 | 4 | 10955 | | | | |
| 2200 | | | 142 | 19466 | | |
| 378 | 149 | 10067 | | | | |
| 1943 | | | 146 | 16272 | | |
| 6043 | | | 293 | 52566 | | |

CROSS SECTIONS S.R. 7
STA. 184+00.00 TO STA. 185+00.00

LAW - 7 - 2.17

208
1247



U:\173608714 LAW\75923\roadway_sheets\75923XS1050-2B.dgn 5/21/2024 4:52:07 PM SLPorker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|-------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| | 260 | 240 | 273 | 915 | 209 | 1247 |
| | 1331 | 1396 | 1867 | 3181 | | |
| | 246 | 258 | 1721 | 809 | | |
| | 1402 | 1429 | 4356 | 0 | | |
| | 1396 | 4129 | 7768 | 13045 | | |

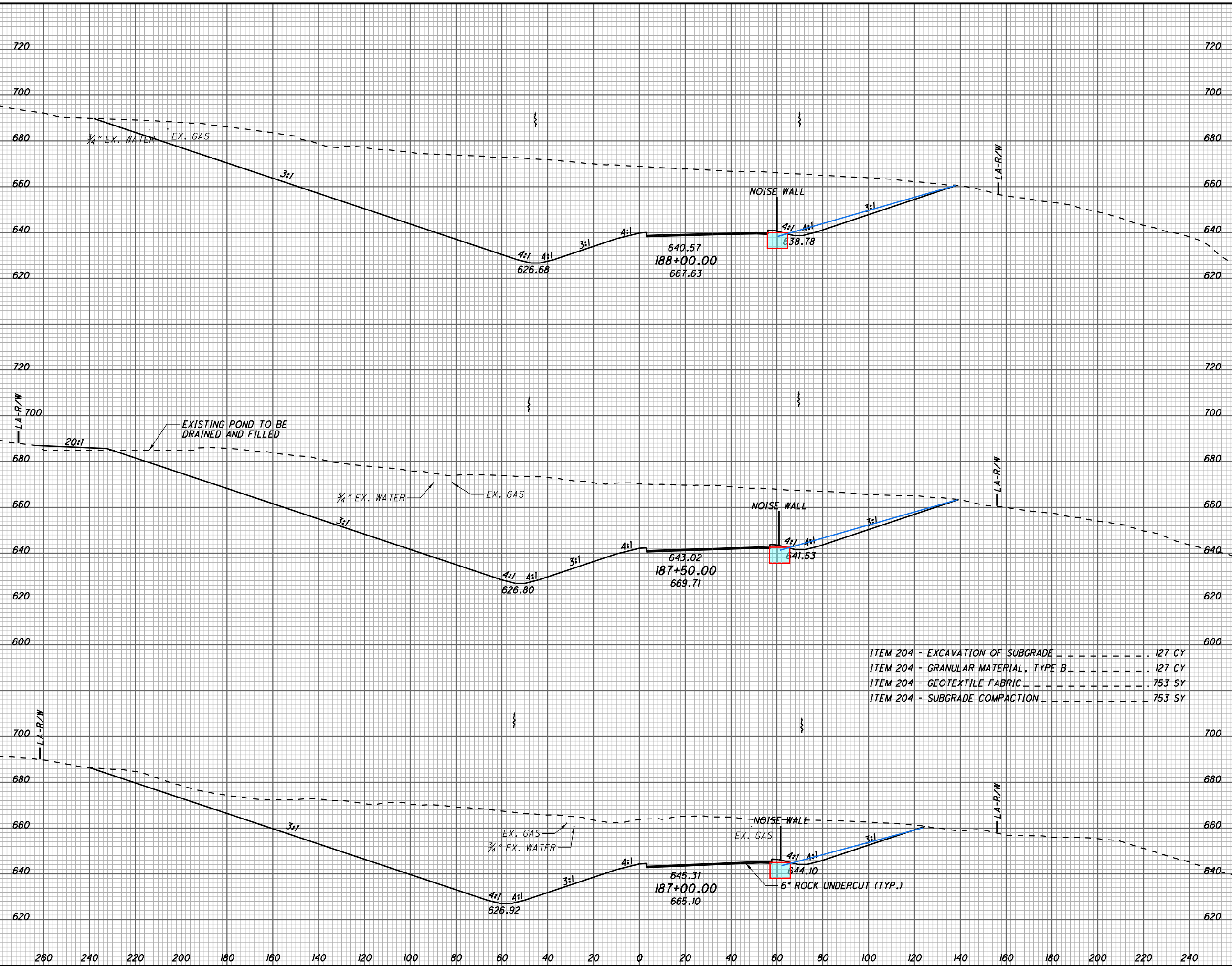
CROSS SECTIONS S.R. 7
STA. 185+50.00 TO STA. 186+50.00

LAW-7-2.17

209
1247

U:\173608714_LAW\75923\roadway_sheets\75923\S1051-2B.dgn 5/21/2024 4:52:08 PM SLParker

| SEEDING | END AREA | | VOLUME | | CALCULATED | CHECKED |
|---------|----------|----------|--------|------|------------|---------|
| | WIDTH | SO. YDS. | CUT | FILL | | |
| 349 | | | 9033 | 0 | | |
| 2011 | | | 16932 | 40 | | |
| 374 | | | 9253 | 42 | | |
| 1970 | | | 15051 | 40 | | |
| 335 | | | 7001 | 0 | | |
| 1648 | | | 10516 | 0 | | |
| 5629 | 260 | 240 | 42499 | 80 | | |

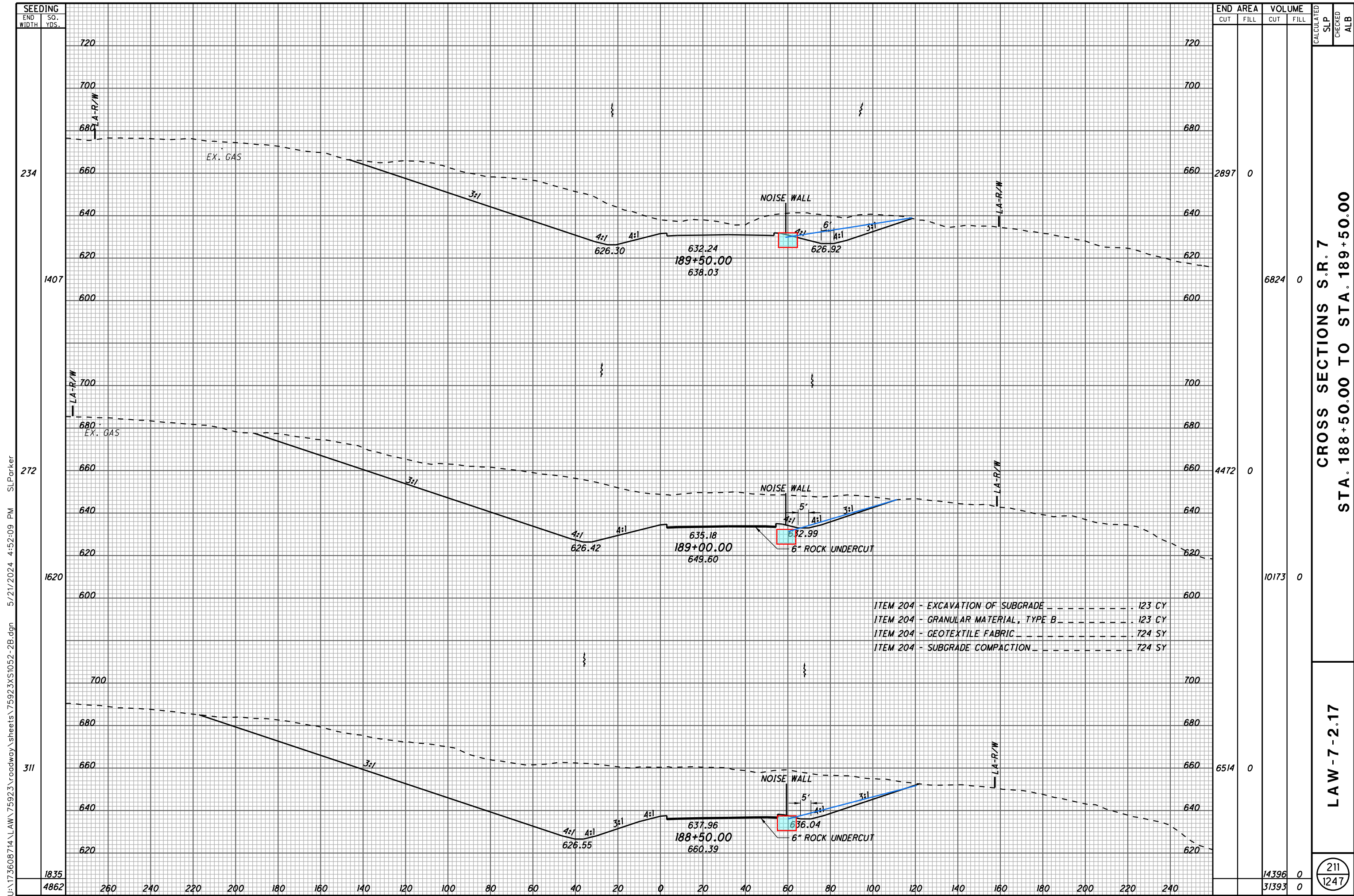


- ITEM 204 - EXCAVATION OF SUBGRADE ----- 127 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 127 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 753 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 753 SY

CROSS SECTIONS S.R. 7
STA. 187+00.00 TO STA. 188+00.00

LAW - 7 - 2.17

210
1247

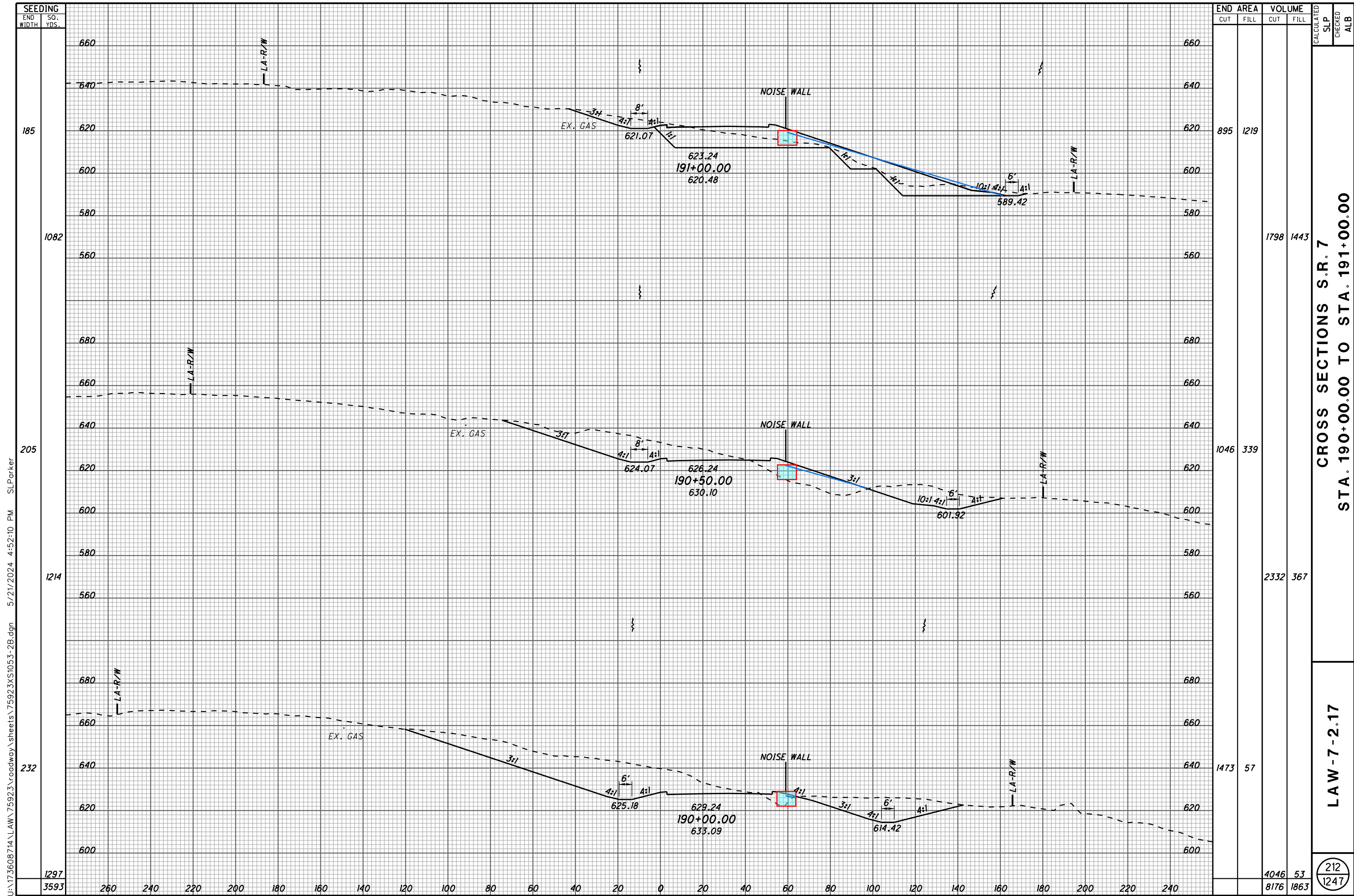


CROSS SECTIONS S.R. 7
STA. 188+50.00 TO STA. 189+50.00

LAW - 7 - 2.17

211
 1247

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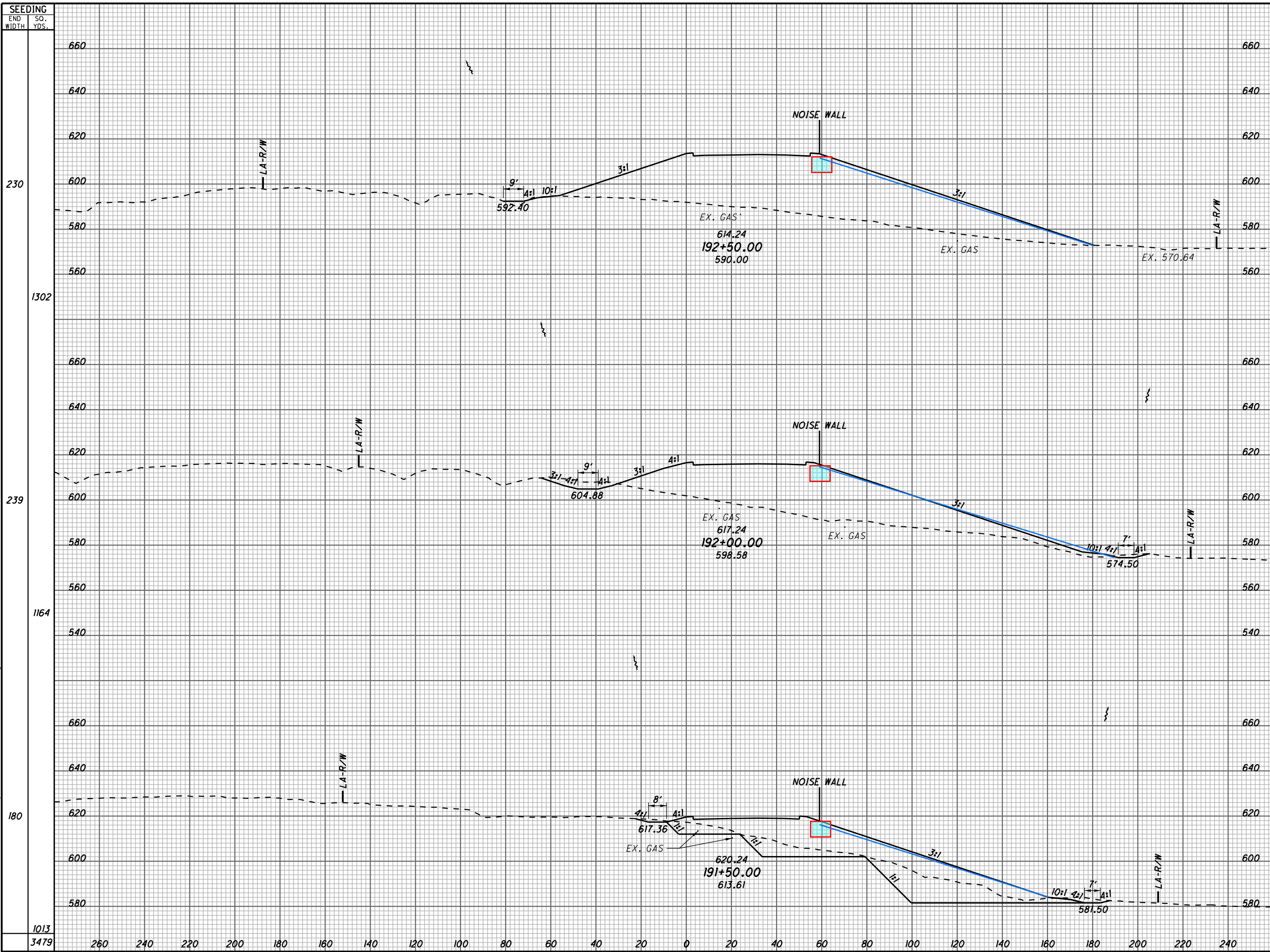
| END AREA | VOLUME | CALCULATED | | CHECKED | |
|----------|--------|------------|------|---------|-----|
| | | CUT | FILL | SLP | ALB |
| 895 | 1219 | | | | |
| 1046 | 339 | | | | |
| 1473 | 57 | | | | |
| 4046 | 53 | | | | |
| 1798 | 1443 | | | | |
| 2332 | 367 | | | | |
| 8176 | 1863 | | | | |

CROSS SECTIONS S.R. 7
 STA. 190+00.00 TO STA. 191+00.00

LAW - 7 - 2.17

212
 1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1054-2B.dgn 5/21/2024 4:52:11 PM SLParker

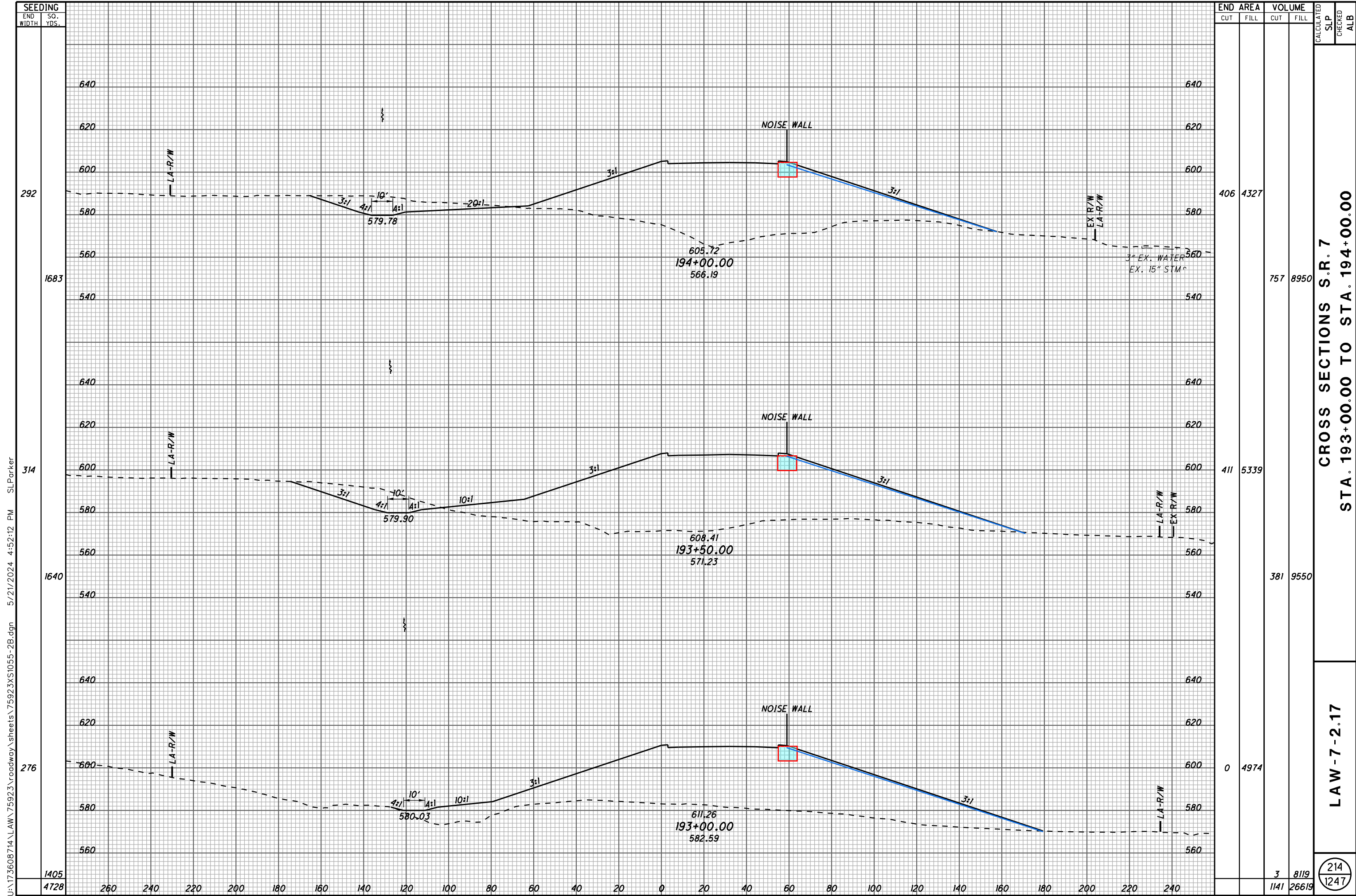


| SEEDING | | END AREA | | VOLUME | | CALCULATED | |
|-----------|----------|----------|------|--------|-------|------------|-----|
| END WIDTH | SO. YDS. | CUT | FILL | CUT | FILL | SLP | ALB |
| 230 | 1302 | 3 | 3794 | 91 | 5951 | | |
| 239 | 1164 | 95 | 2633 | 967 | 4407 | | |
| 180 | 1013 | 948 | 2126 | 1707 | 3097 | | |
| | 3479 | | | 2765 | 13455 | | |

CROSS SECTIONS S.R. 7
STA. 191+50.00 TO STA. 192+50.00

LAW - 7 - 2.17

213
1247



| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 406 | 4327 | 757 | 8950 | |
| 411 | 5339 | 381 | 9550 | |
| 0 | 4974 | 3 | 819 | |
| | | 1141 | 26619 | |

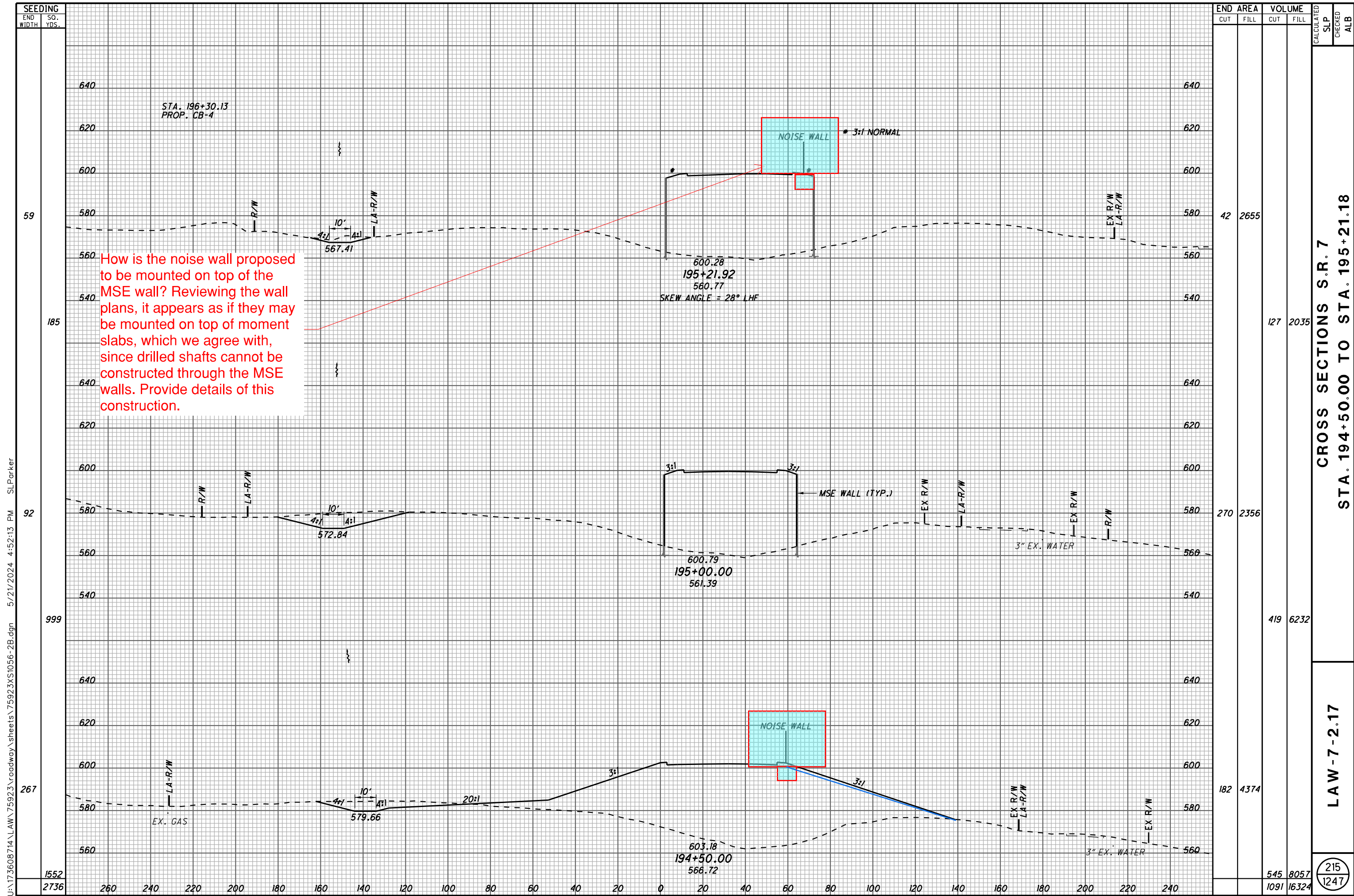
CROSS SECTIONS S.R. 7
 STA. 193+00.00 TO STA. 194+00.00

LAW - 7 - 2.17

214
1247

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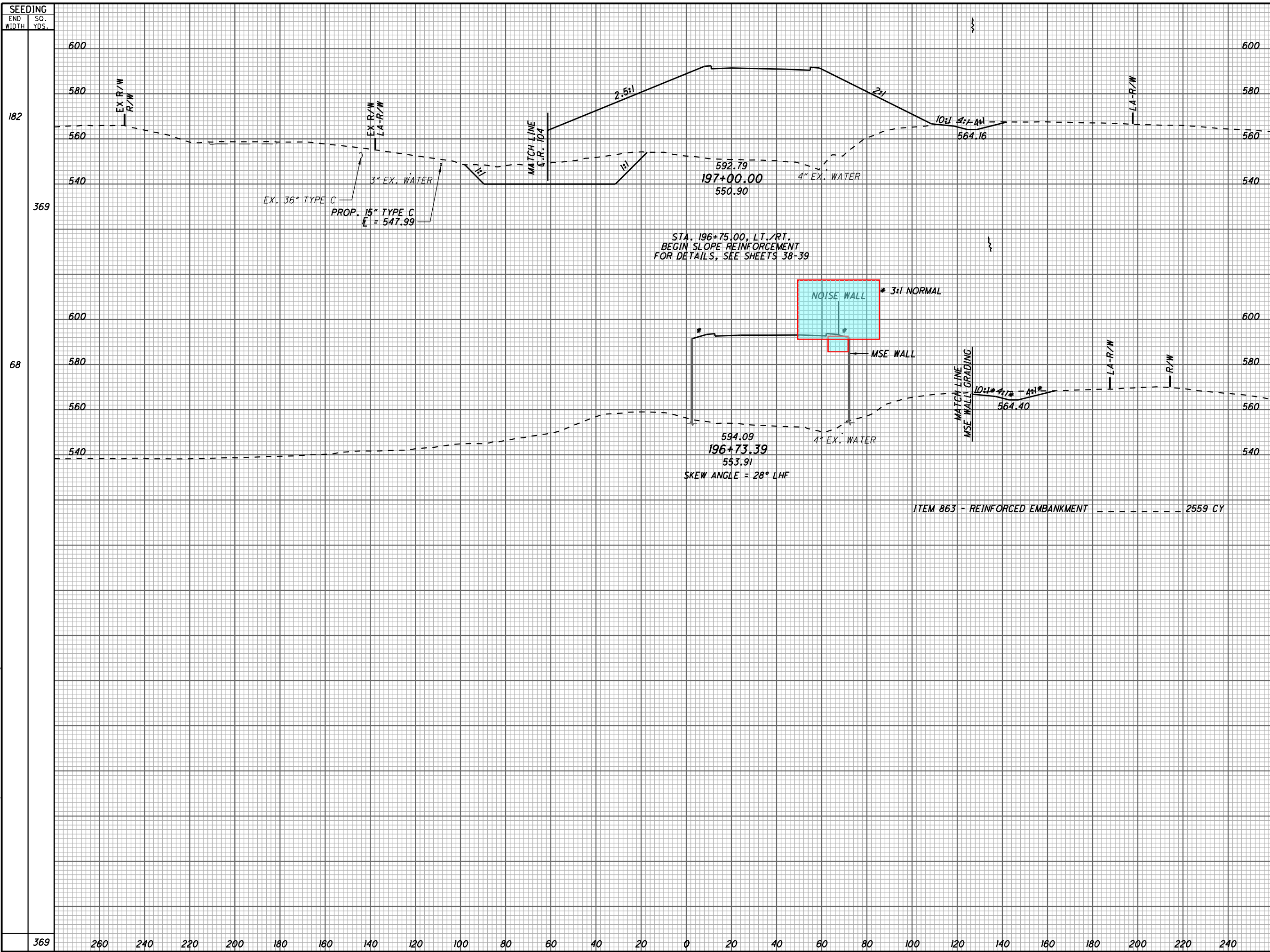
| SEEDING | END WIDTH | SO. YDS. |
|---------|-----------|----------|
| | 4728 | 1405 |



How is the noise wall proposed to be mounted on top of the MSE wall? Reviewing the wall plans, it appears as if they may be mounted on top of moment slabs, which we agree with, since drilled shafts cannot be constructed through the MSE walls. Provide details of this construction.

U:\173608714_LAW\75923\roadway_sheets\75923\XS1056-2B.dgn 5/21/2024 4:52:13 PM SL Parker

U:\173608714_LAW\75923\roadway\sheets\75923XS1057-2B.dgn 5/21/2024 4:52:13 PM SLParker



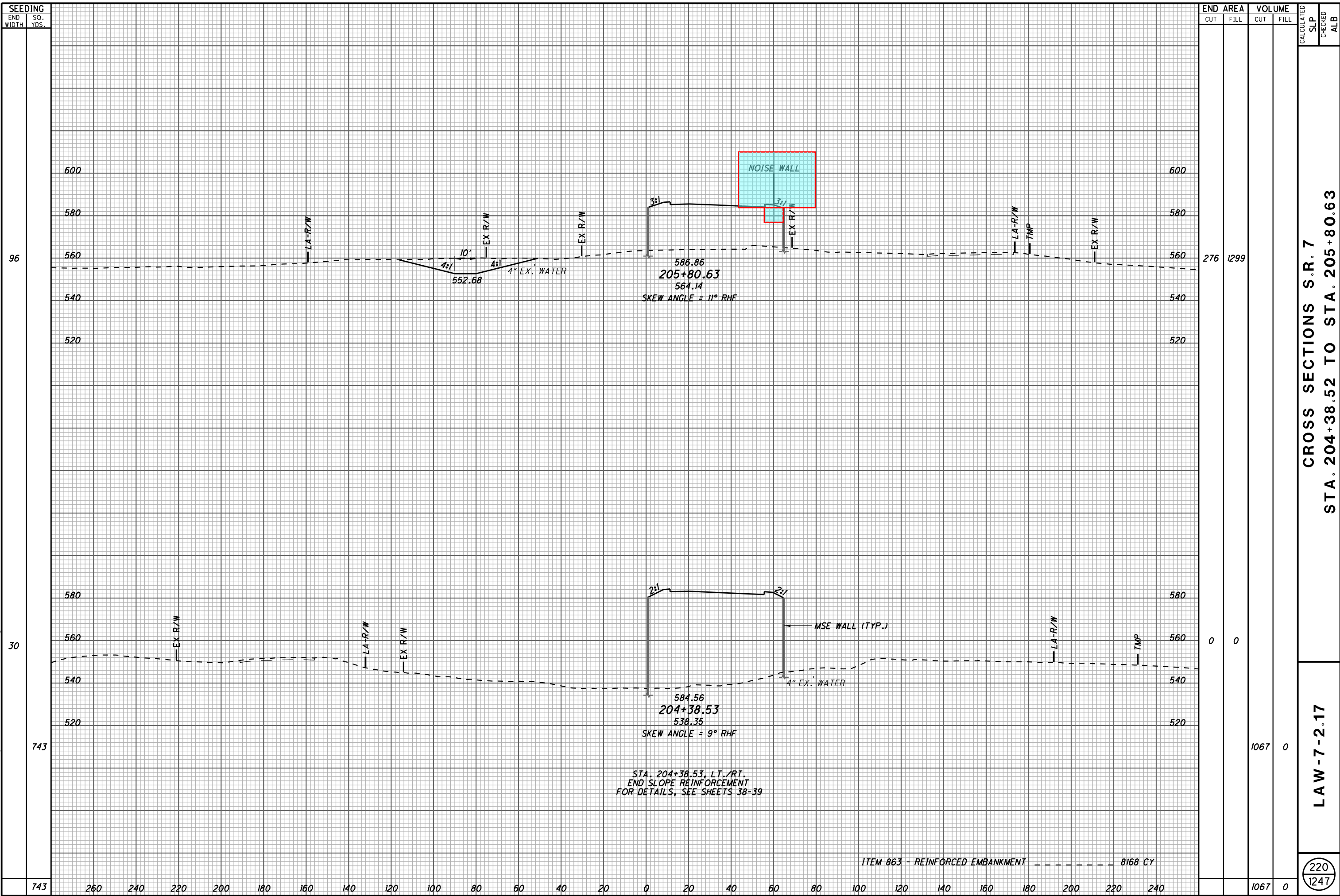
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 182 | | | 754 | 0 | | |
| 369 | | | 410 | 1365 | | |
| 68 | | | 78 | 2768 | | |
| 369 | 260 | | 410 | 1365 | | |

CROSS SECTIONS S.R. 7
STA. 196+73.39 TO STA. 197+00.00

LAW - 7 - 2.17

216
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1061-2B.dgn 5/21/2024 4:52:17 PM SLParker



96

30

743

743

600

580

560

540

520

580

560

540

520

260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240

276

0

1299

1067

0

586.86
 205+80.63
 564.14
 SKEW ANGLE = 11° RHF

584.56
 204+38.53
 538.35
 SKEW ANGLE = 9° RHF

STA. 204+38.53, LT./RT.
 END SLOPE REINFORCEMENT
 FOR DETAILS, SEE SHEETS 38-39

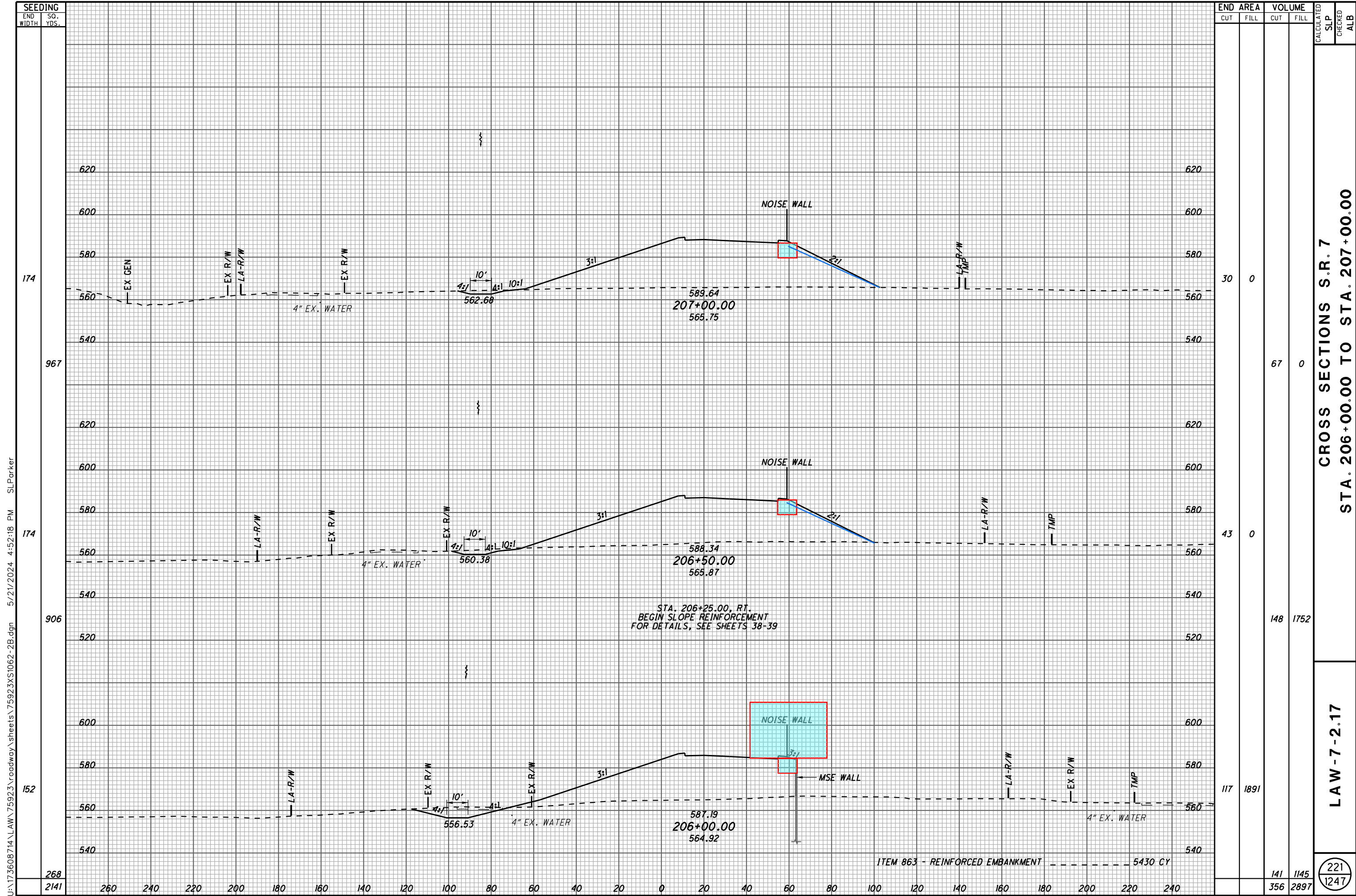
NOISE WALL

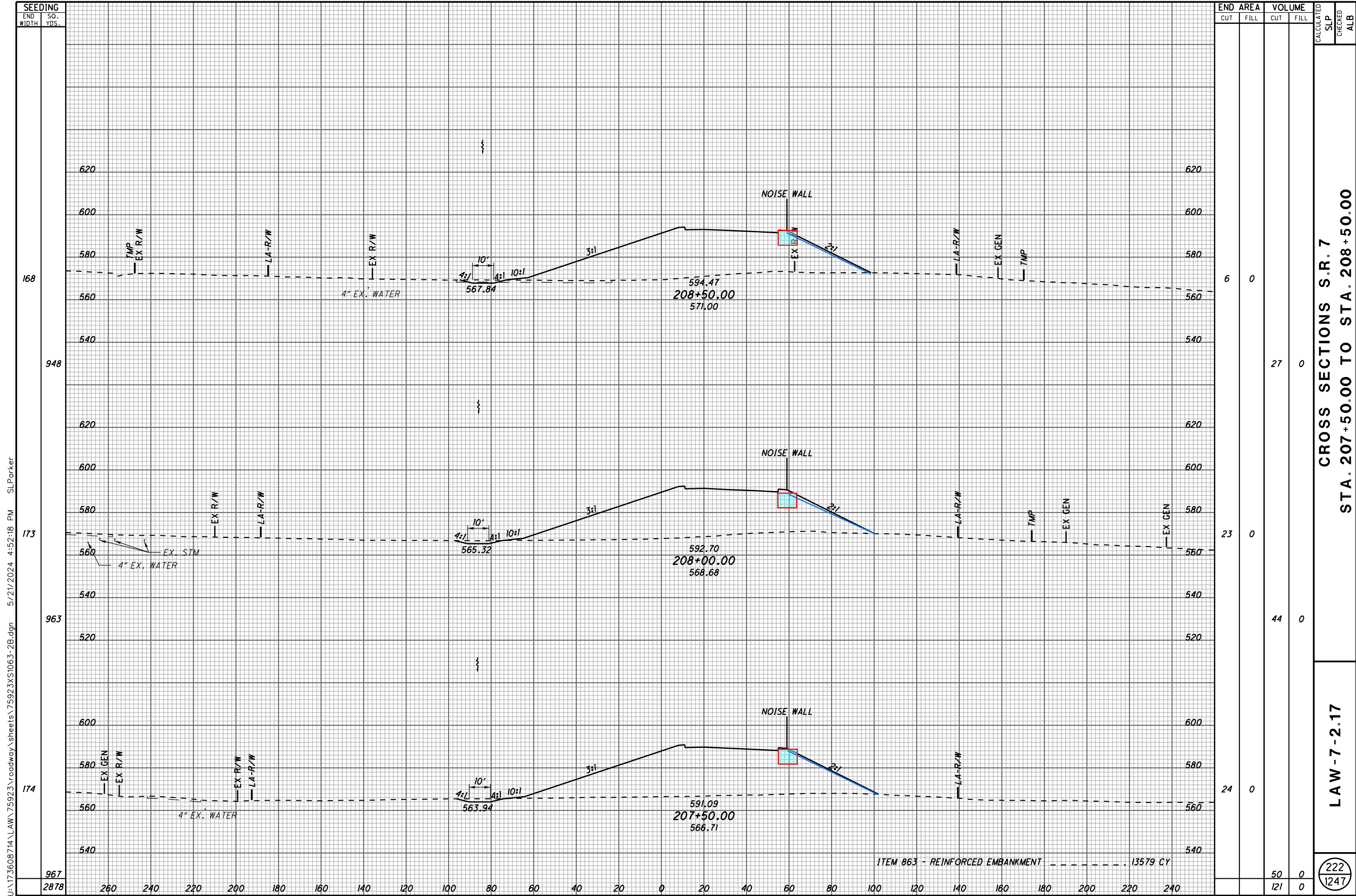
MSE WALL (TYP.)

4" EX. WATER

4:1 10' 4:1
 552.68 4" EX. WATER

ITEM 863 - REINFORCED EMBANKMENT 8168 CY





| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 6 | 0 | 0 | | |
| 23 | 0 | 0 | | |
| 24 | 0 | 0 | | |
| 50 | 0 | 0 | | |
| 121 | 0 | 0 | | |

CROSS SECTIONS S.R. 7
 STA. 207+50.00 TO STA. 208+50.00

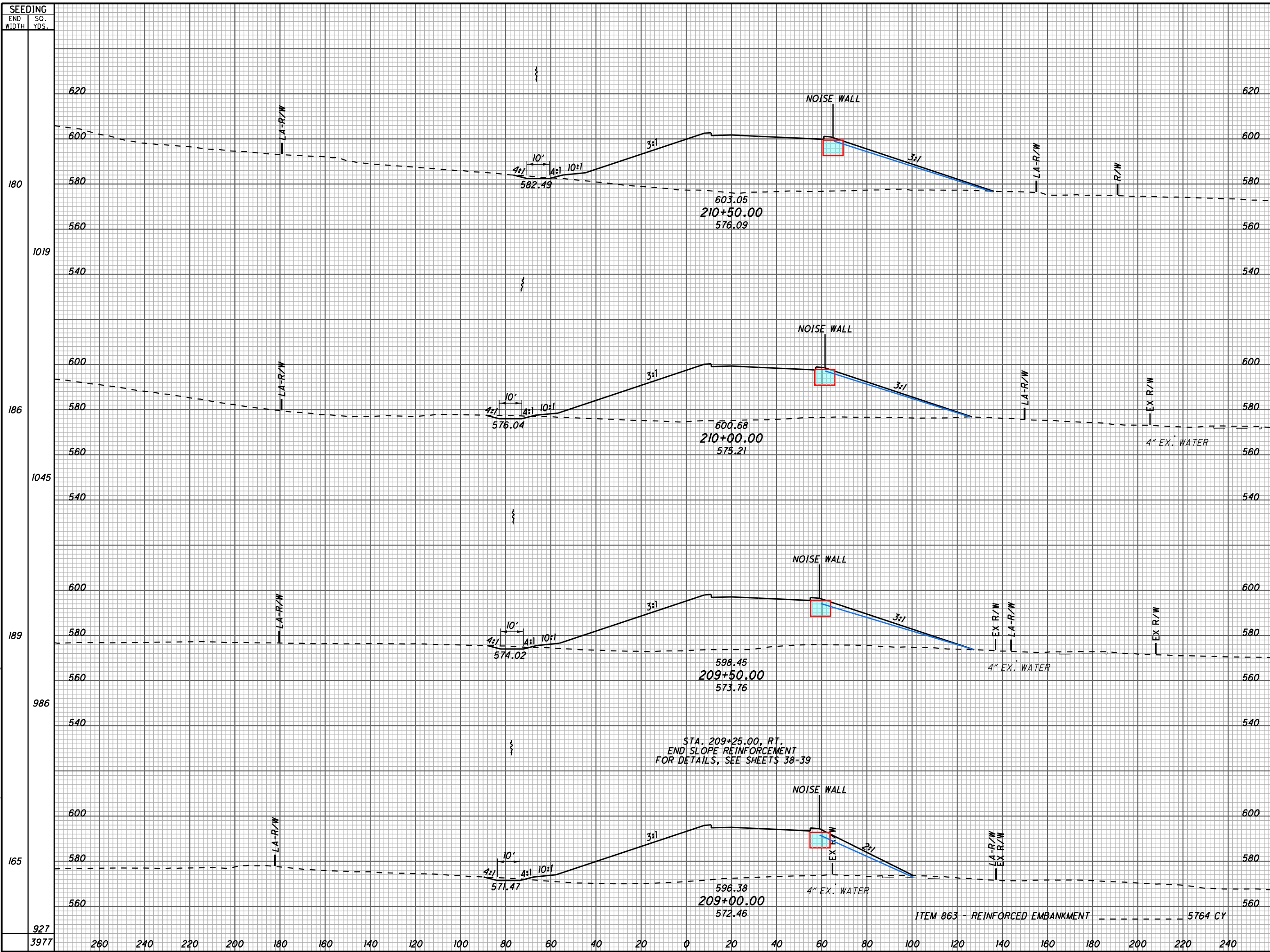
LAW - 7 - 2.17

222
1247

U:\173608714\Law\75923\roadway_sheets\75923\X51063-2B.dgn 5/21/2024 4:52:18 PM SL Parker

ITEM 863 - REINFORCED EMBANKMENT 13579 CY

U:\173608714\LA\75923\roadway\sheets\75923XS1064-2B.dgn 5/21/2024 4:52:19 PM SLParker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|----------|------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 210+50.00 | 10 | 3014 | 28 | 5439 | | |
| 210+00.00 | 20 | 2859 | 34 | 5168 | | |
| 209+50.00 | 16 | 2721 | 28 | 2520 | | |
| 209+00.00 | 14 | 0 | 18 | 0 | | |
| TOTAL | 60 | 5794 | 100 | 13127 | | |

CROSS SECTIONS S.R. 7
STA. 209+00.00 TO STA. 210+50.00

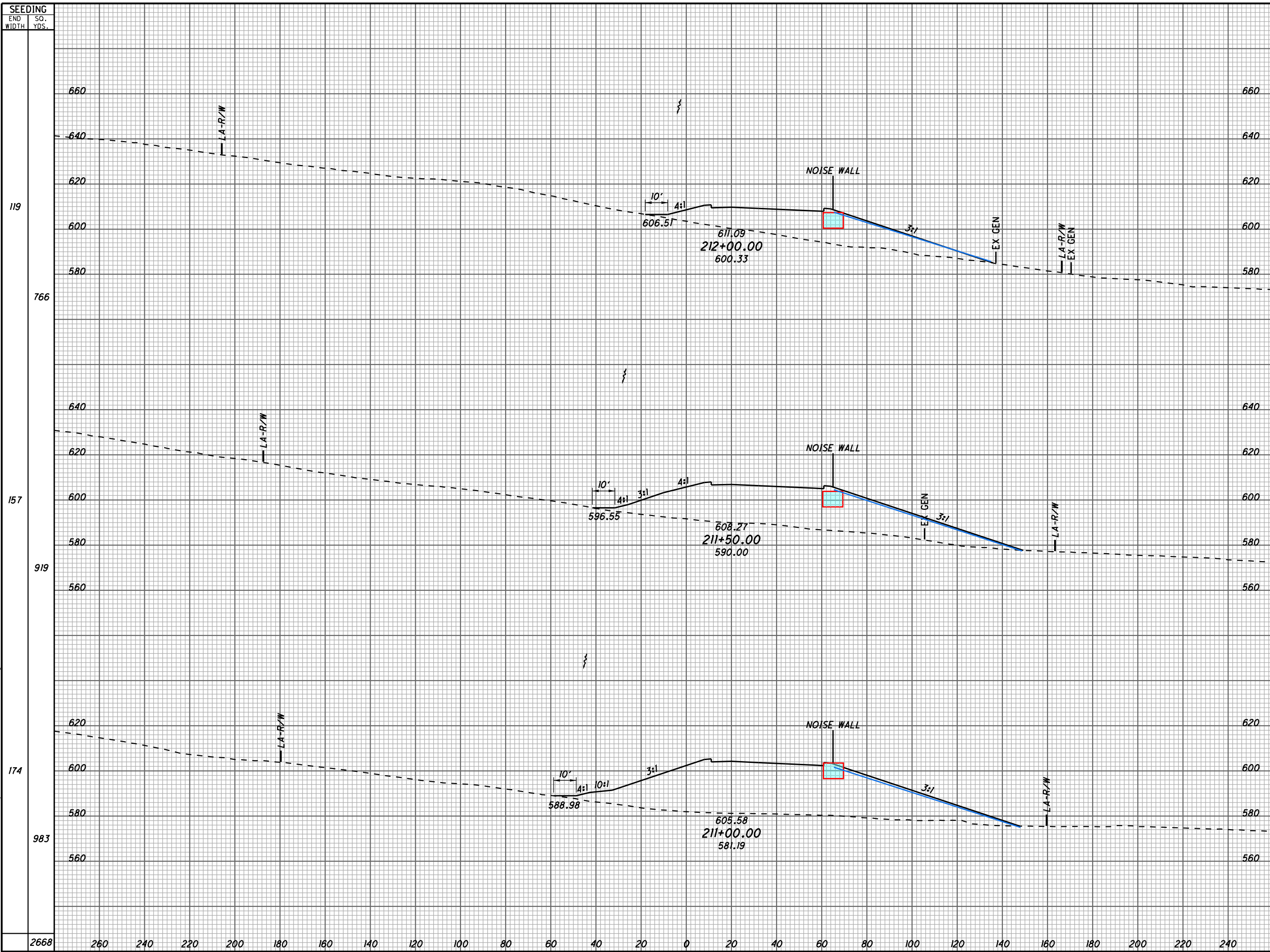
LAW - 7 - 2.17

223
1247

ITEM 863 - REINFORCED EMBANKMENT 5764 CY

STA. 209+25.00, RT.
END SLOPE REINFORCEMENT
FOR DETAILS, SEE SHEETS 38-39

U:\173608714_LAW\75923\roadway_sheets\75923\XS1065-2B.dgn 5/21/2024 4:52:20 PM SLParke



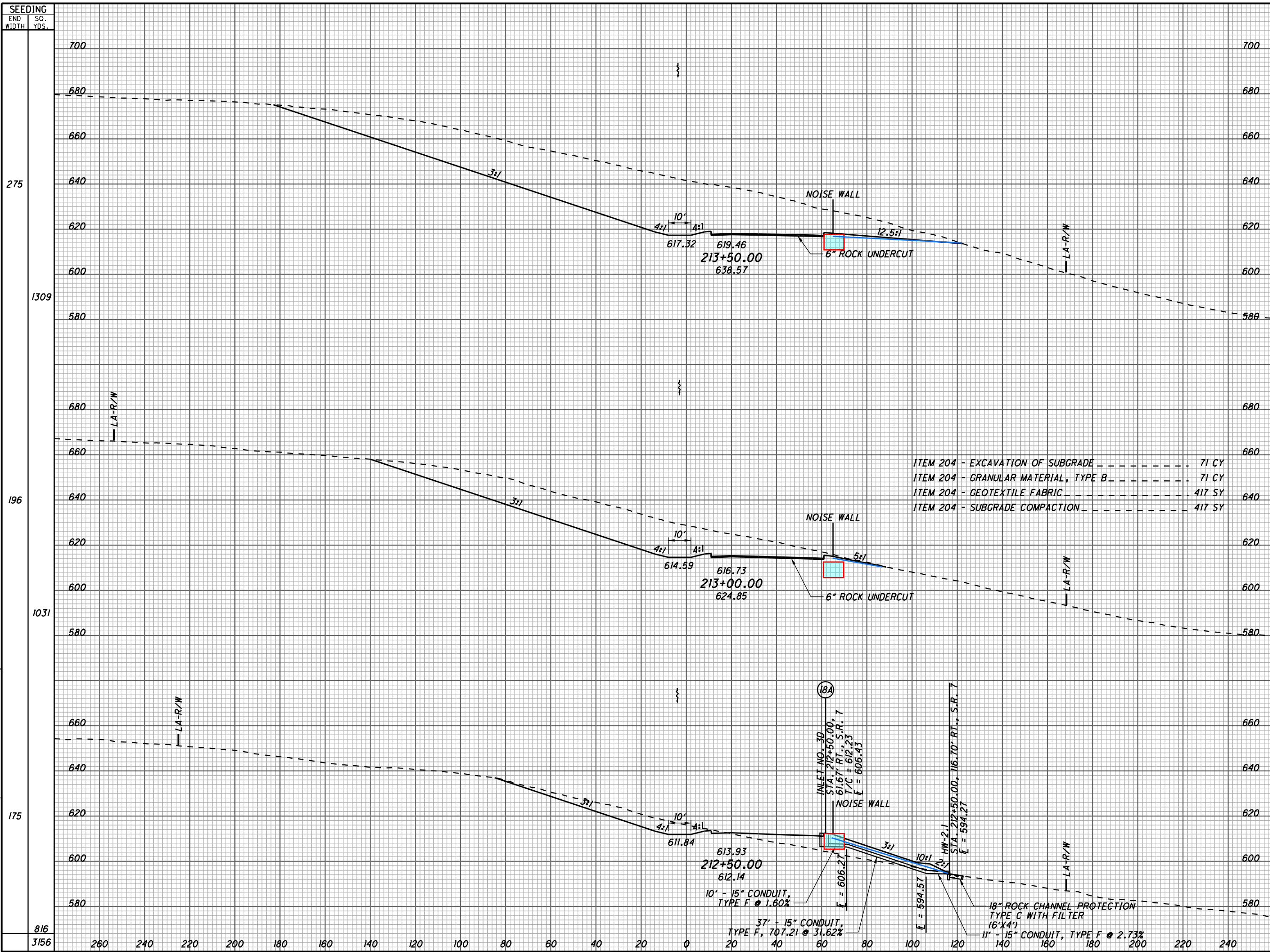
| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 0 | 1254 | 0 | | |
| 0 | 3192 | 0 | | |
| 0 | 2193 | 0 | | |
| 0 | 4740 | 0 | | |
| 0 | 2926 | 10 | | |
| 10 | 13433 | 10 | 224 | 1247 |

CROSS SECTIONS S.R. 7
STA. 211+00.00 TO STA. 212+00.00

LAW - 7 - 2.17

224
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1066-2B.dgn 5/21/2024 4:52:29 PM SLParker



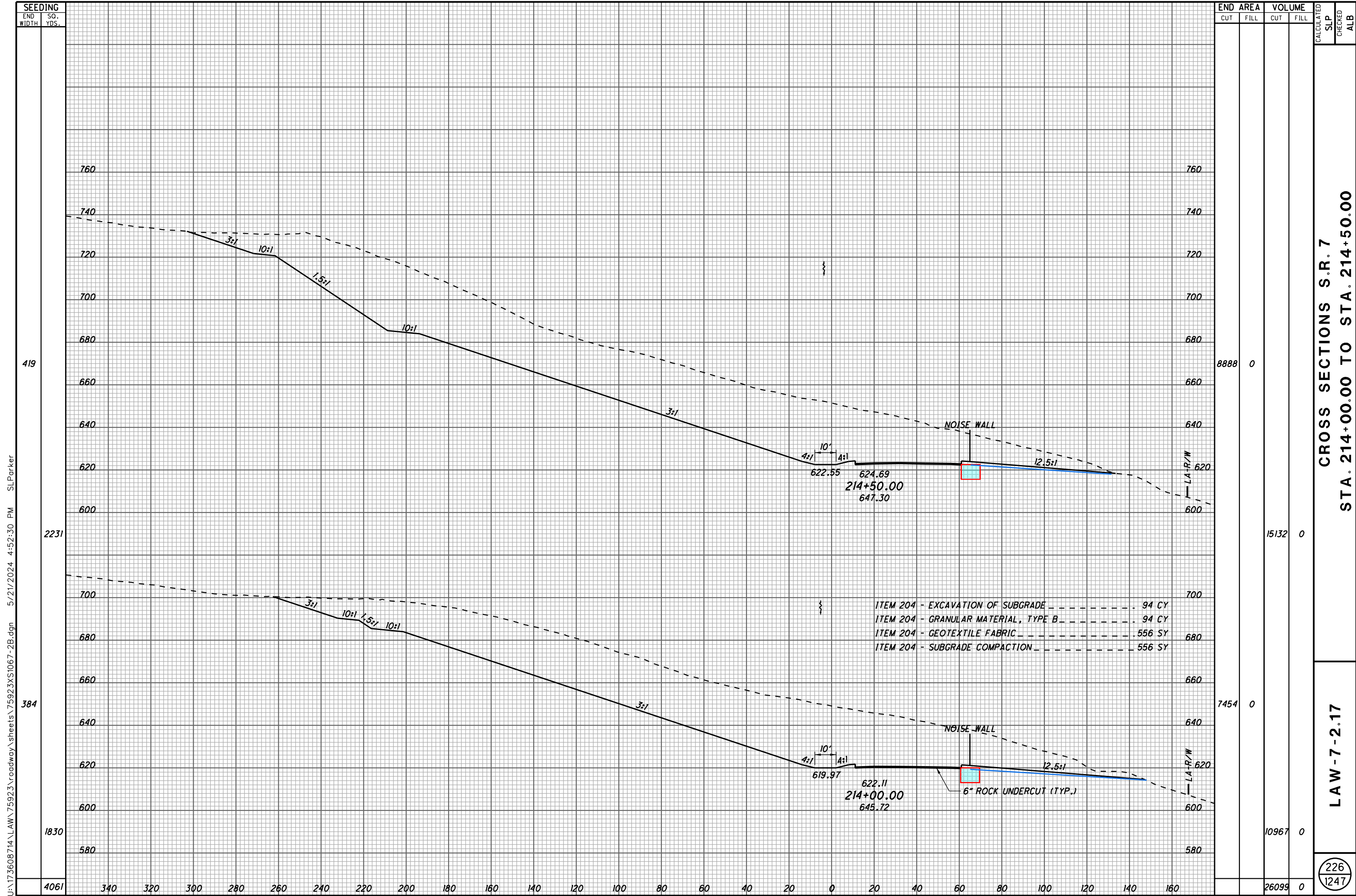
- ITEM 204 - EXCAVATION OF SUBGRADE ----- 71 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 71 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 417 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 417 SY

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 275 | | 700 | 4389 | 0 | | |
| 1309 | | 580 | | | | |
| 196 | | 680 | 2002 | 0 | | |
| 1031 | | 580 | | | | |
| 175 | | 680 | 322 | 410 | | |
| 816 | | 580 | | | | |
| 3156 | 260 | 580 | 298 | 1542 | | |
| | | | 8367 | 1922 | | |

CROSS SECTIONS S.R. 7
STA. 212+50.00 TO STA. 213+50.00

LAW - 7 - 2.17

225
1247



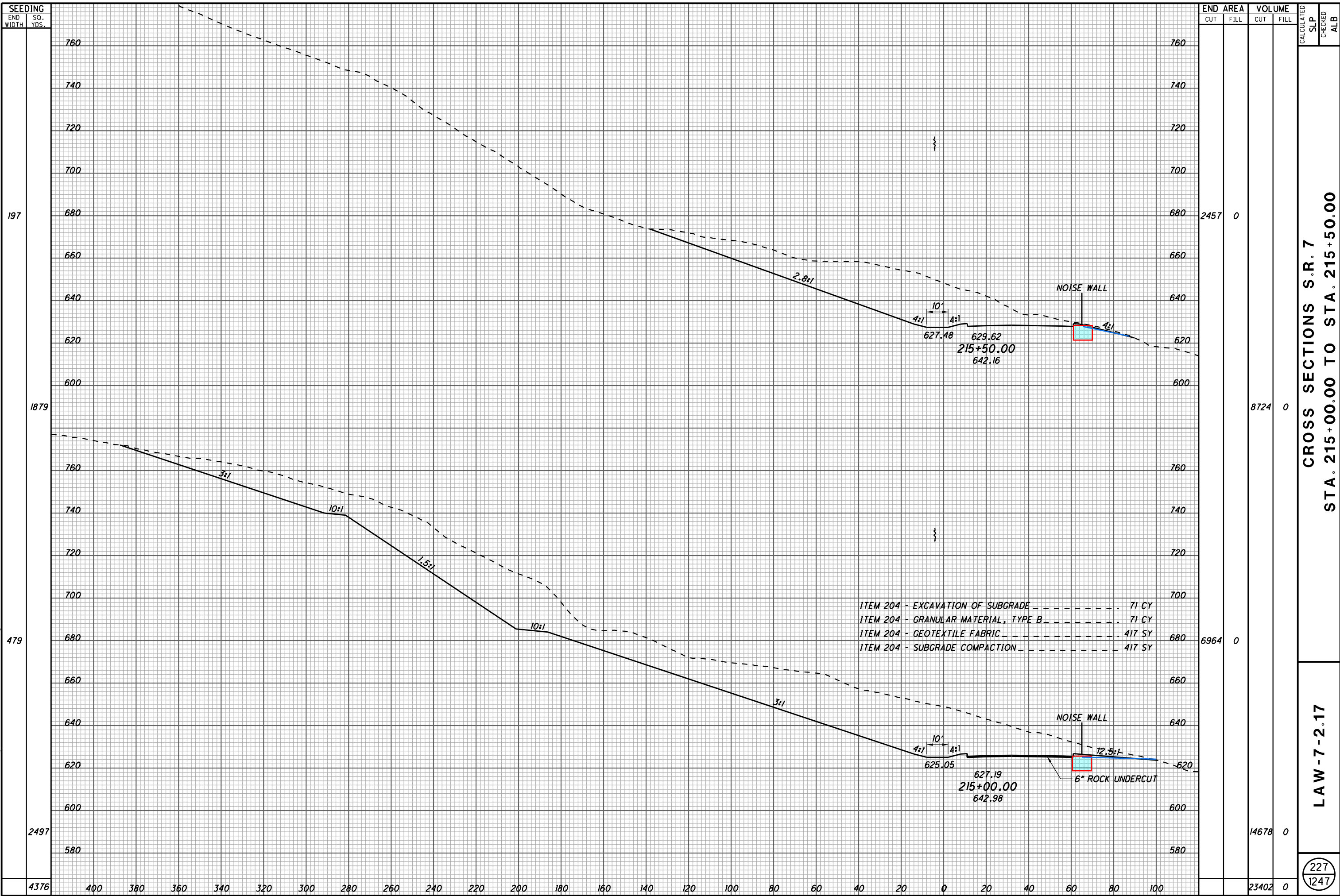
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CROSS SECTIONS S.R. 7
 STA. 214+00.00 TO STA. 214+50.00

LAW - 7 - 2.17

226
1247

U:\173608714_LAW\759233\roadway_sheets\759233\SI068-2B.dgn 5/21/2024 4:52:31 PM SLParker



| END AREA | VOLUME | CALCULATED | | CHECKED | |
|----------|--------|------------|------|---------|-----|
| | | CUT | FILL | SLP | ALB |
| 2457 | 0 | | | | |
| 8724 | 0 | | | | |
| 6964 | 0 | | | | |
| 14678 | 0 | | | | |
| 23402 | 0 | | | | |

CROSS SECTIONS S.R. 7
STA. 215+00.00 TO STA. 215+50.00

LAW - 7 - 2.17

227
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XSI069-2B.dgn 5/21/2024 4:52:32 PM SLPorker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 246 | 760 |
| 1420 | 580 |
| 265 | 740 |
| 1284 | 580 |
| 2704 | 260 |



| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 1908 | 528 | 3961 | 1208 | | |
| 2369 | 776 | 4469 | 719 | 228 | 1247 |
| | | 8430 | 1927 | | |

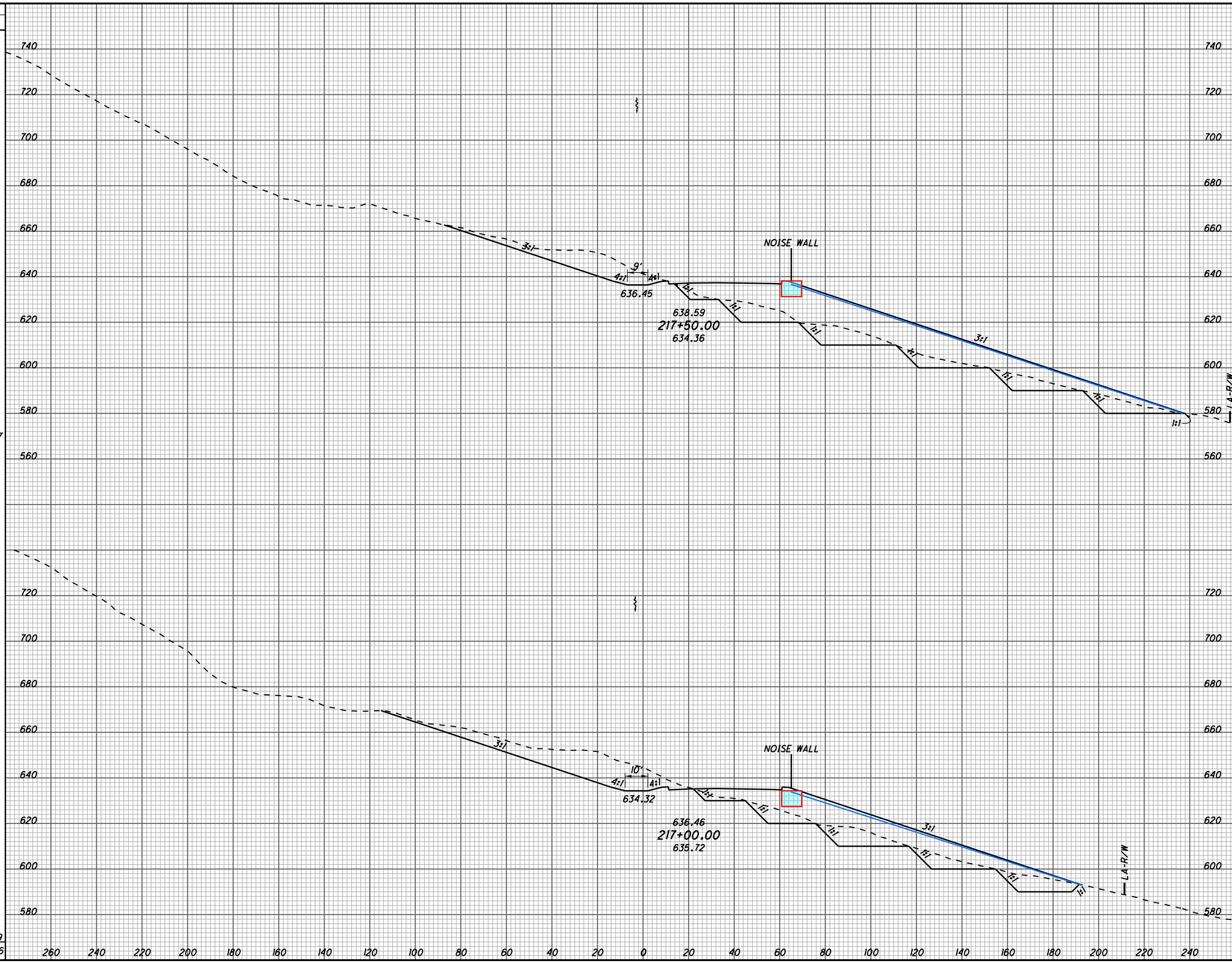
**CROSS SECTIONS S.R. 7
 STA. 216+00.00 TO STA. 216+50.00**

LAW - 7 - 2.17

228
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1070-2B.dgn 5/21/2024 4:52:32 PM SLPorker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 299 | 1607 |
| 279 | 1459 |
| 3066 | 260 |
| | 240 |
| | 220 |
| | 200 |
| | 180 |
| | 160 |
| | 140 |
| | 120 |
| | 100 |
| | 80 |
| | 60 |
| | 40 |
| | 20 |
| | 0 |
| | 20 |
| | 40 |
| | 60 |
| | 80 |
| | 100 |
| | 120 |
| | 140 |
| | 160 |
| | 180 |
| | 200 |
| | 220 |
| | 240 |



| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|------|------------|------|
| CUT | FILL | CUT | FILL | SLP | ALB |
| 1327 | 2754 | 2616 | 4189 | | |
| 1498 | 1770 | 3154 | 2129 | | |
| | | 5770 | 6318 | | |
| | | | | 229 | 1247 |

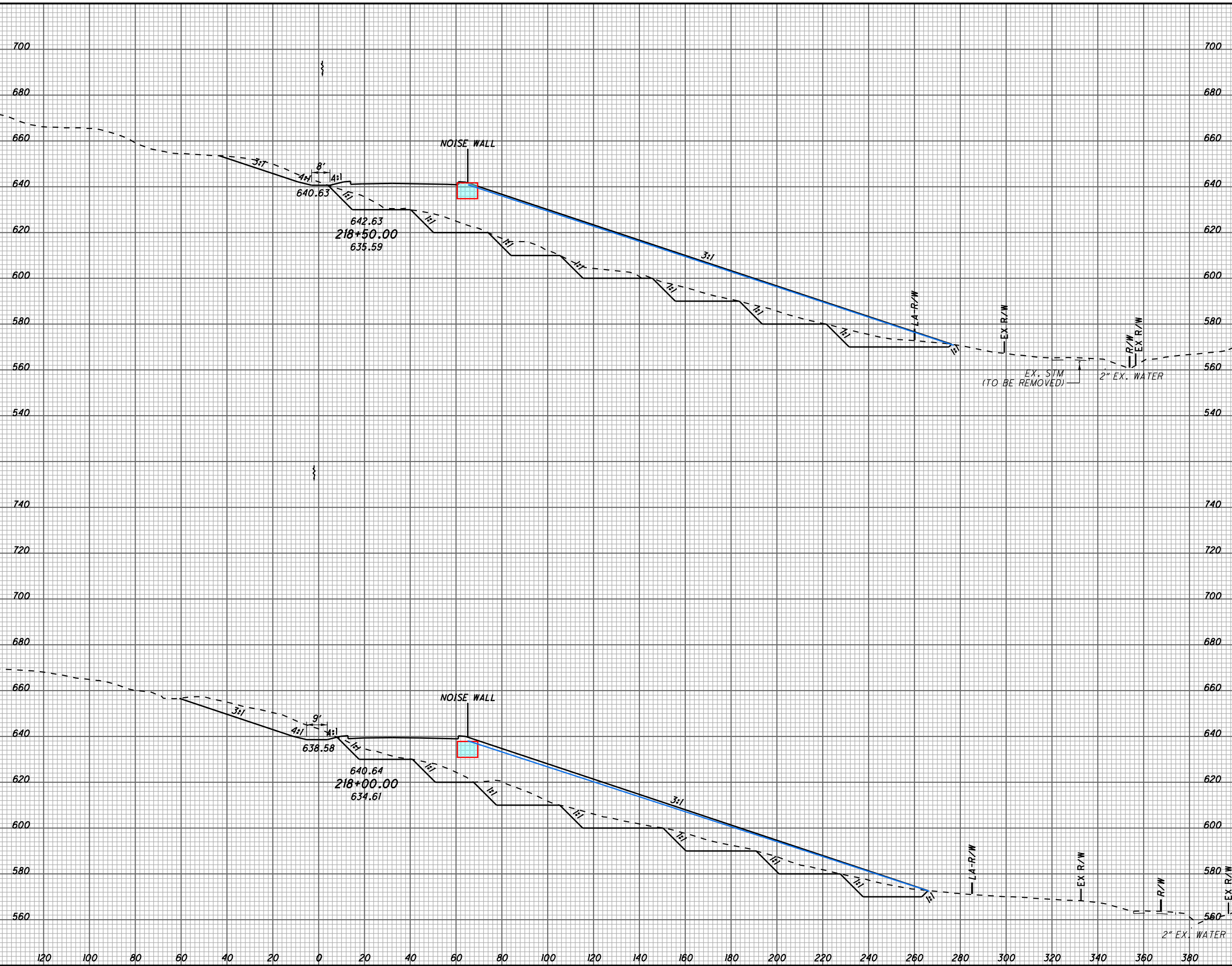
CROSS SECTIONS S.R. 7
STA. 217+00.00 TO STA. 217+50.00

LAW - 7 - 2.17

229
1247

U:\173608714_LAW\75923\roadway_sheets\75923\S1071-2B.dgn 5/21/2024 4:52:33 PM SLParker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 296 | 700 |
| 1663 | 560 |
| 302 | 660 |
| 1670 | 560 |
| 3333 | 120 |



| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|-------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 1077 | 4232 | 2250 | 7185 | | |
| 1353 | 3527 | 2482 | 5816 | | |
| | | 4732 | 13001 | | |

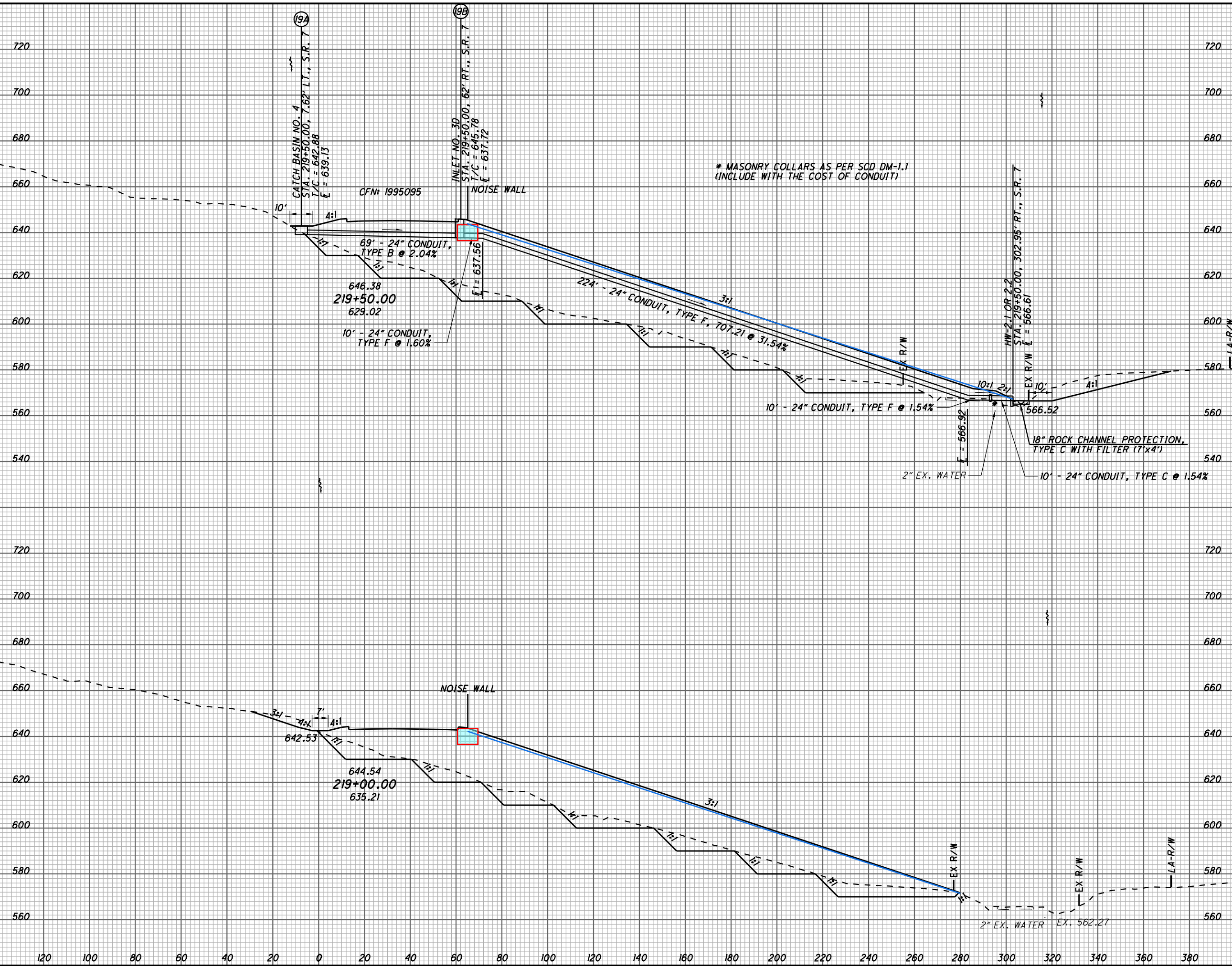
CROSS SECTIONS S.R. 7
STA. 218+00.00 TO STA. 218+50.00

LAW - 7 - 2.17

230
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1072-2B.dgn 5/21/2024 4:52:34 PM SLForker

| SEEDING | END AREA | | VOLUME | | CALCULATED | CHECKED |
|-----------|----------|------|--------|-------|------------|---------|
| | CUT | FILL | CUT | FILL | | |
| END WIDTH | 361 | 1792 | 284 | 1613 | 2013 | 8453 |
| SO. YDS. | 3405 | 120 | 4218 | 19120 | 1247 | 231 |



| END AREA | | VOLUME | | CALCULATED | CHECKED |
|----------|------|--------|-------|------------|---------|
| CUT | FILL | CUT | FILL | | |
| 1284 | 6623 | 2205 | 10667 | 1097 | 4897 |
| 2013 | 8453 | 1247 | 231 | | |

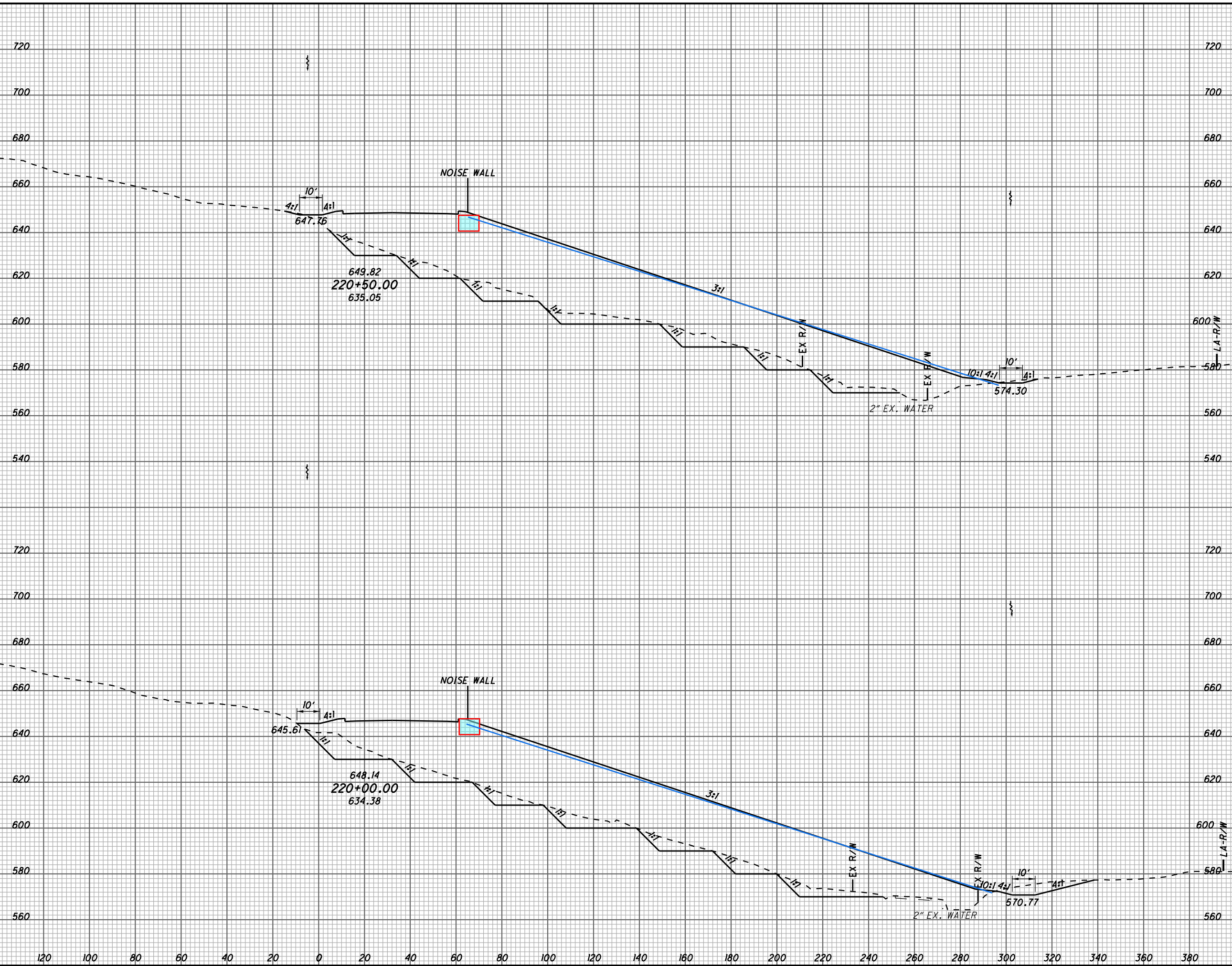
CROSS SECTIONS S.R. 7
STA. 219+00.00 TO STA. 219+50.00

LAW - 7 - 2.17

231
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1073-2B.dgn 5/21/2024 4:52:35 PM SLPorker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|-------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 301 | 1896 | 3626 | 879 | 6608 | | |
| 322 | 1896 | 3626 | 1003 | 6665 | | |
| 1730 | 2118 | 12304 | 1743 | 12290 | | |

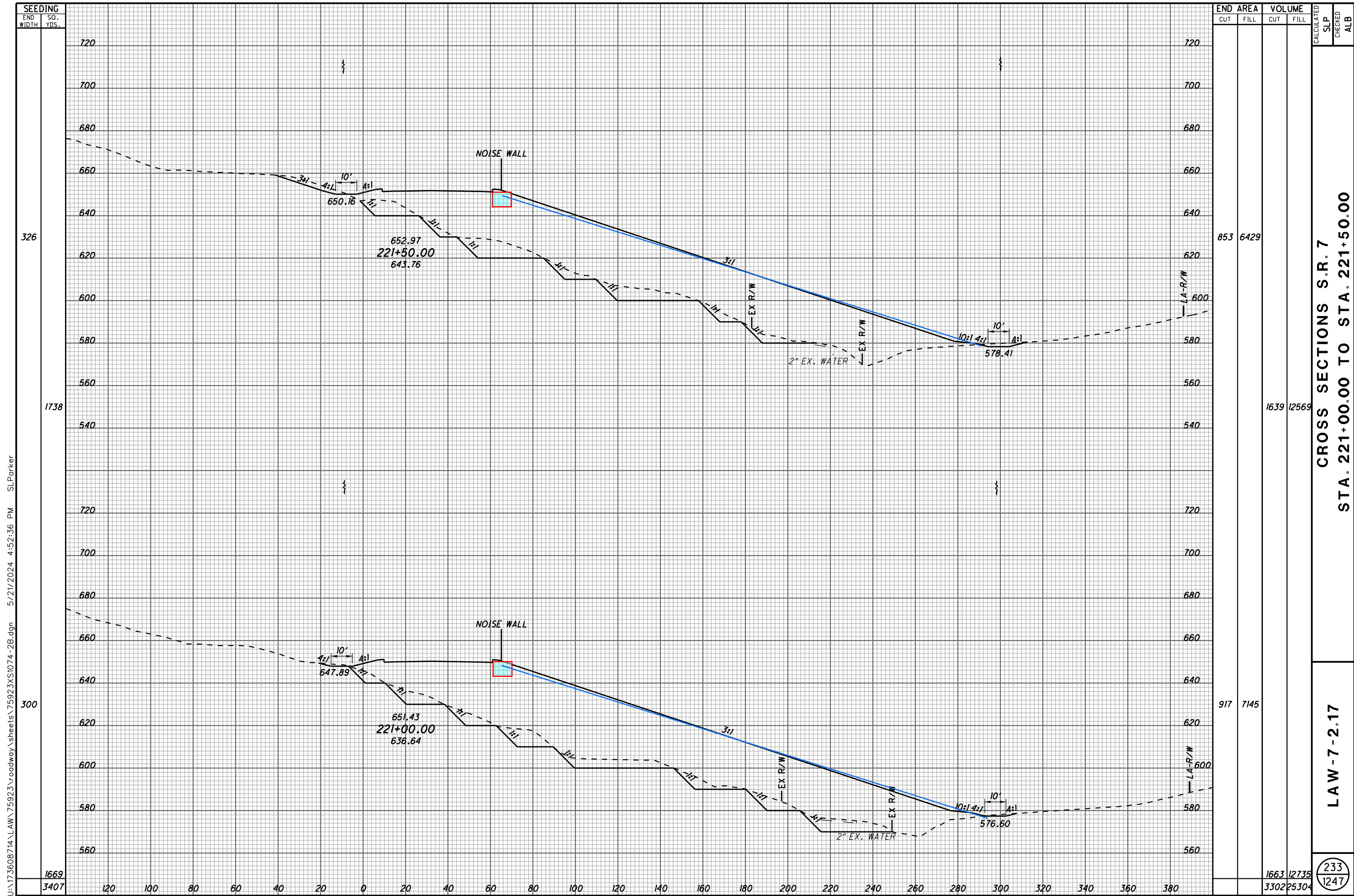


| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 879 | 6608 | | | |
| 1003 | 6665 | | | |
| 2118 | 12304 | 1743 | 12290 | |

CROSS SECTIONS S.R. 7
STA. 220+00.00 TO STA. 220+50.00

LAW - 7 - 2.17

232
1247



SEEDING
 END WIDTH SO. YDS.
 326
 1738
 300
 1669
 3407

| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|-------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 853 | 6429 | 1639 | 12569 | | ALB |
| 917 | 7145 | 1663 | 12735 | 233 | 1247 |

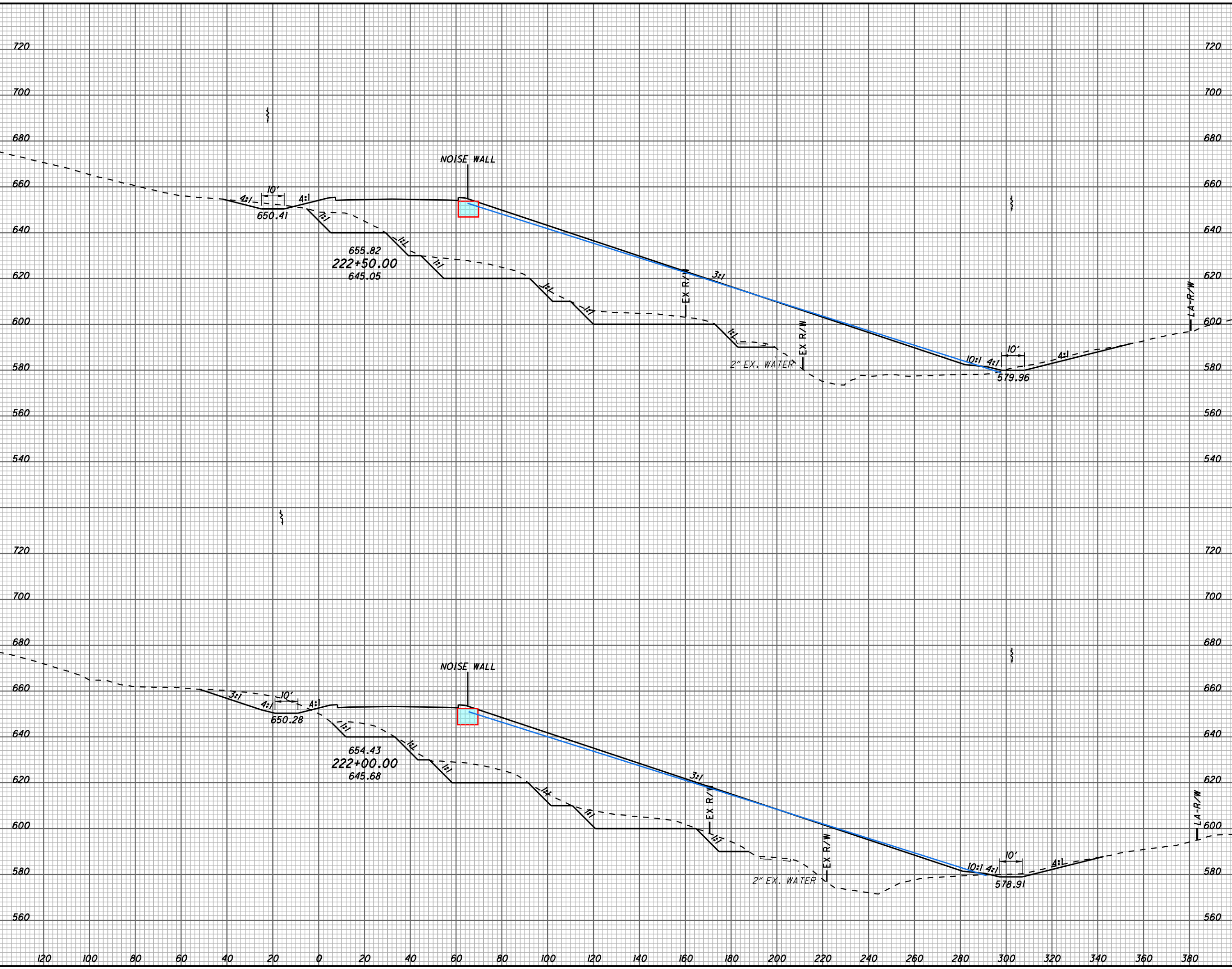
CROSS SECTIONS S.R. 7
 STA. 221+00.00 TO STA. 221+50.00

LAW - 7 - 2.17

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U:\173608714_LAW\75923\roadway_sheets\75923\XS1075-2B.dgn 5/21/2024 4:52:37 PM SLParker

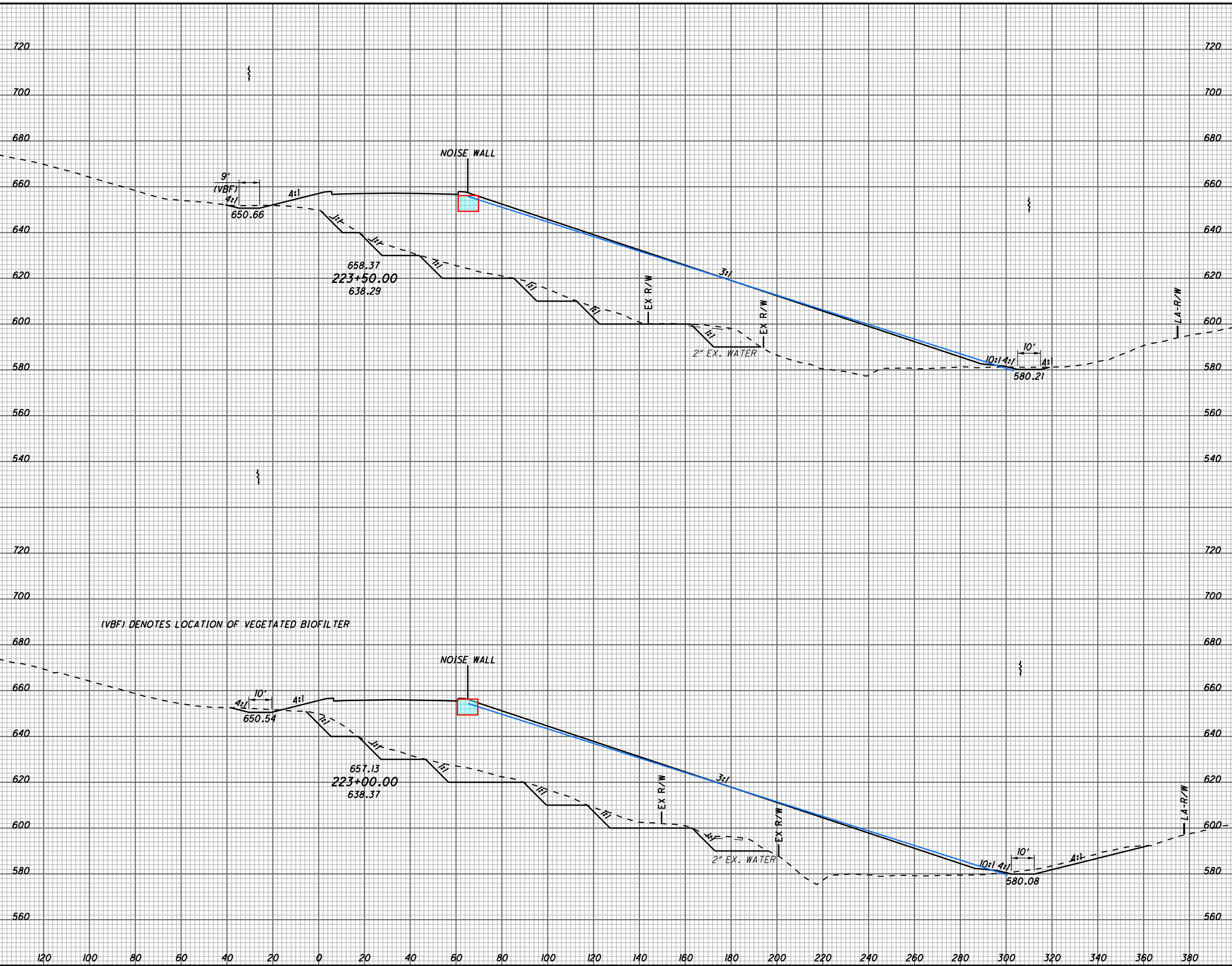
| SEEDING | END AREA | | VOLUME | | CALCULATED | |
|---------|----------|------|--------|-------|------------|------|
| | CUT | FILL | CUT | FILL | ALB | TCM |
| 367 | 890 | 6722 | 1753 | 12035 | | |
| 2040 | | | | | | |
| 367 | 1003 | 6276 | 1720 | 11764 | | |
| 1924 | 3964 | | 3473 | 23799 | 234 | 1247 |



CROSS SECTIONS S.R. 7
STA. 222+00.00 TO STA. 222+50.00
LAW - 7 - 2.17

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| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| 328 | | |
| 1941 | | |
| 371 | | |
| 2050 | | |
| 3991 | 120 | 380 |

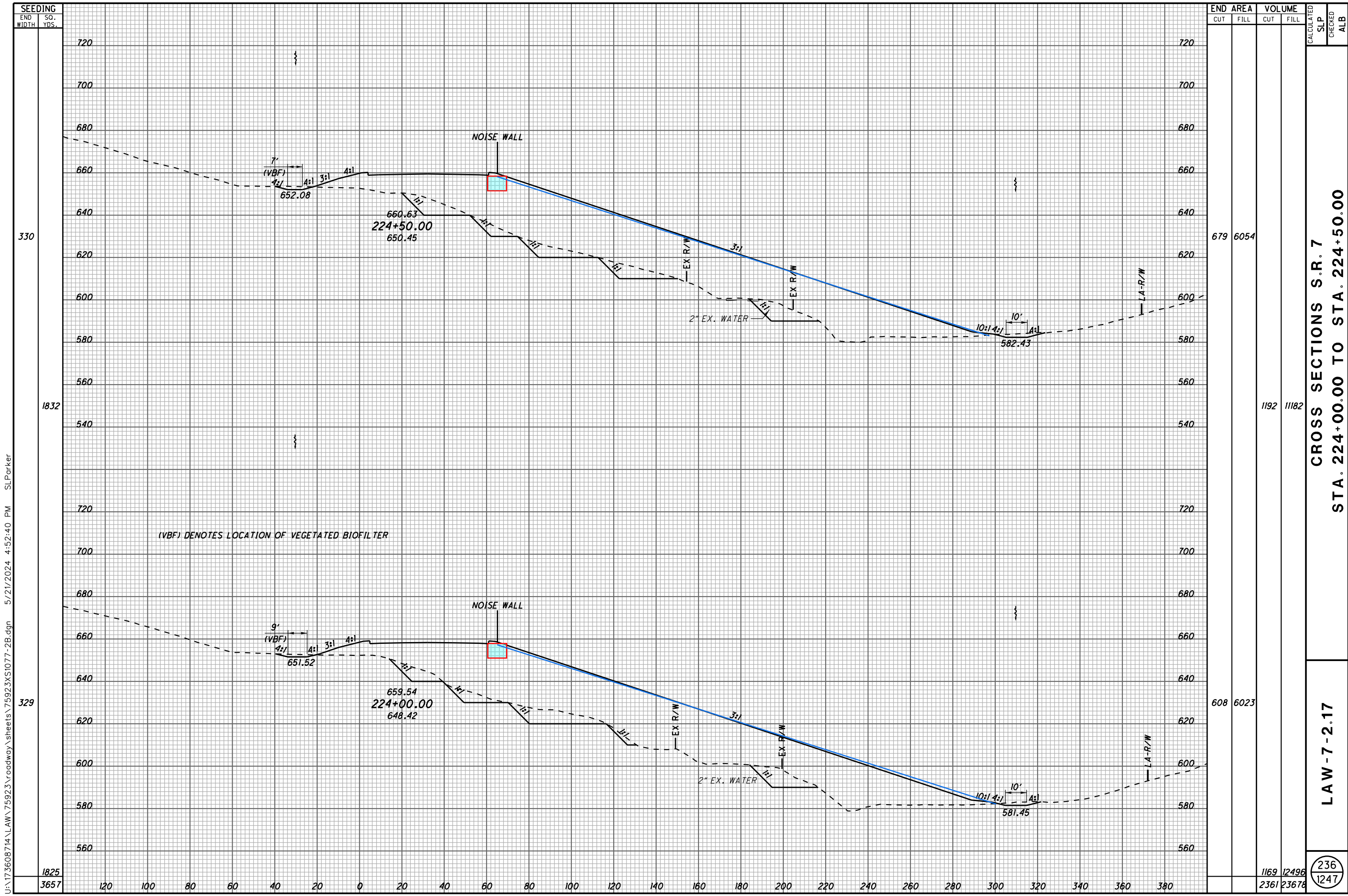


| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|-------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 654 | 7472 | 1382 | 13524 | | |
| 839 | 7134 | 1601 | 12829 | | |
| | | 2983 | 26353 | | |

CROSS SECTIONS S.R. 7
STA. 223+00.00 TO STA. 223+50.00

LAW - 7 - 2.17

235
1247



| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 3657 | 1825 |

| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|-------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 679 | 6054 | 1192 | 11182 | 236 | 1247 |
| 608 | 6023 | 1169 | 12496 | 236 | 1247 |

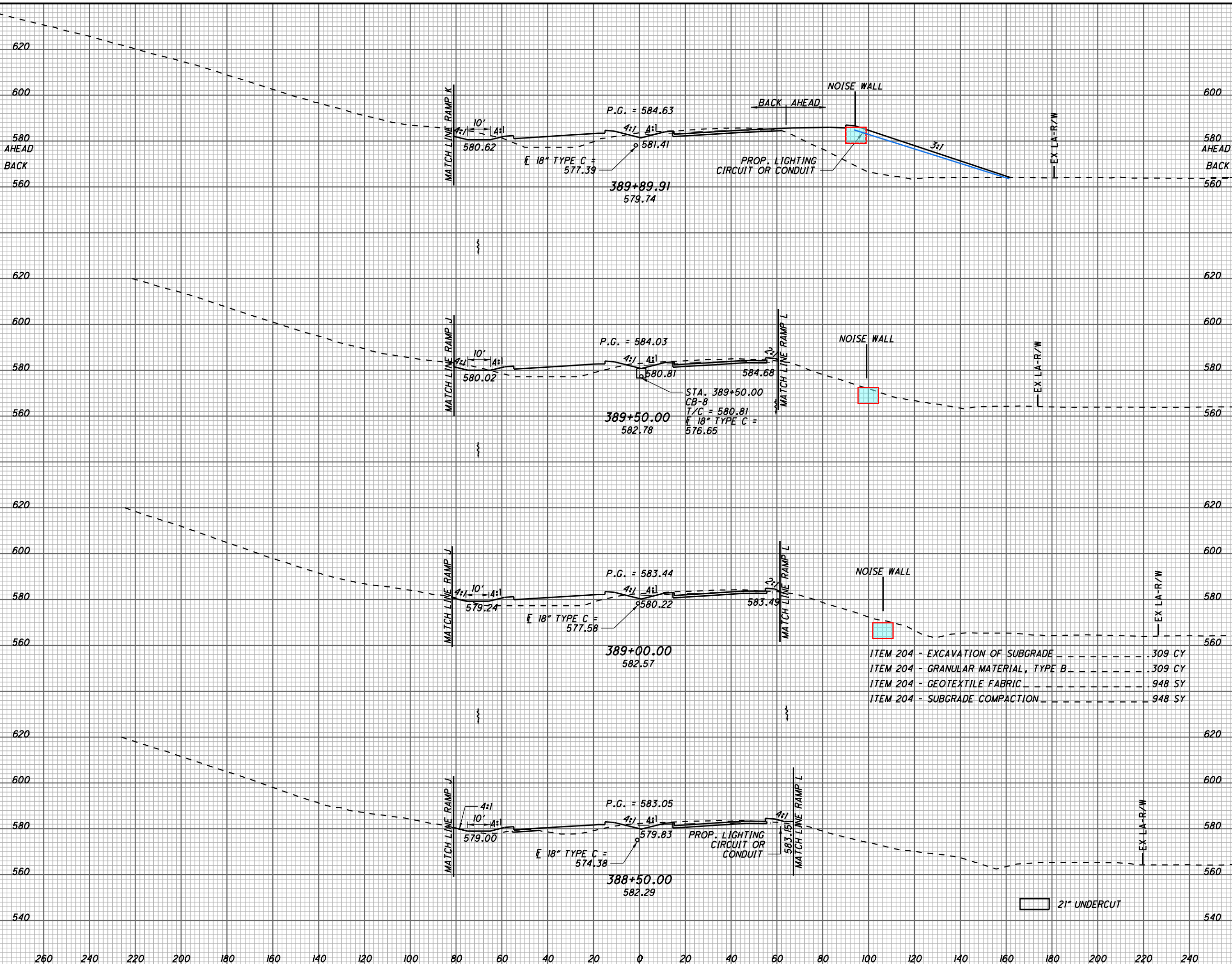
CROSS SECTIONS S.R. 7
 STA. 224+00.00 TO STA. 224+50.00

LAW - 7 - 2.17

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U:\173608714_LAW\75923\roadway_sheets\75923\XS1223-2B.dgn 5/21/2024 4:54:54 PM SLParker

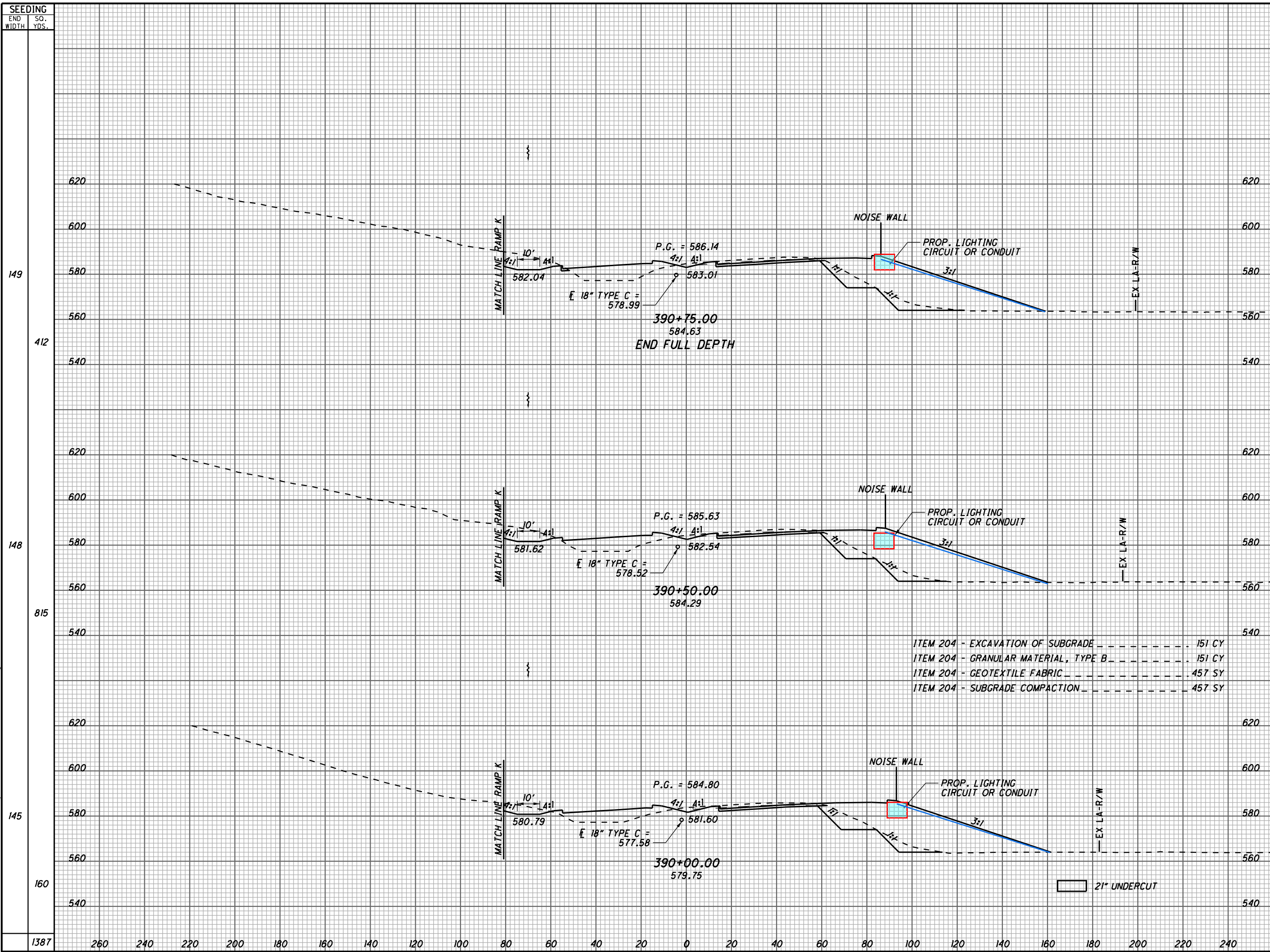
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 140 | 60 | 580 | 76 | 1215 | | |
| 60 | 560 | 580 | 76 | 209 | | |
| 299 | | | | 90 | 317 | |
| 75 | 420 | 580 | 45 | 218 | | |
| 420 | 560 | 580 | 64 | 399 | | |
| 76 | 439 | 580 | 23 | 212 | | |
| 560 | 560 | 580 | 40 | 321 | | |
| 82 | 461 | 580 | 20 | 134 | | |
| 560 | 540 | 580 | 39 | 397 | | |
| 1619 | 260 | 540 | 233 | 1434 | | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 309 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 309 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 948 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 948 SY

CROSS SECTIONS S.R. 7
STA. 338+50.00 TO STA. 389+89.91
LAW - 7 - 2.17
383
1247

U:\173608714 LAW\75923\roadway_sheets\75923\XS1224-2B.dgn 5/21/2024 4:54:55 PM SLParker



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 151 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 151 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 457 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 457 SY

21" UNDERCUT

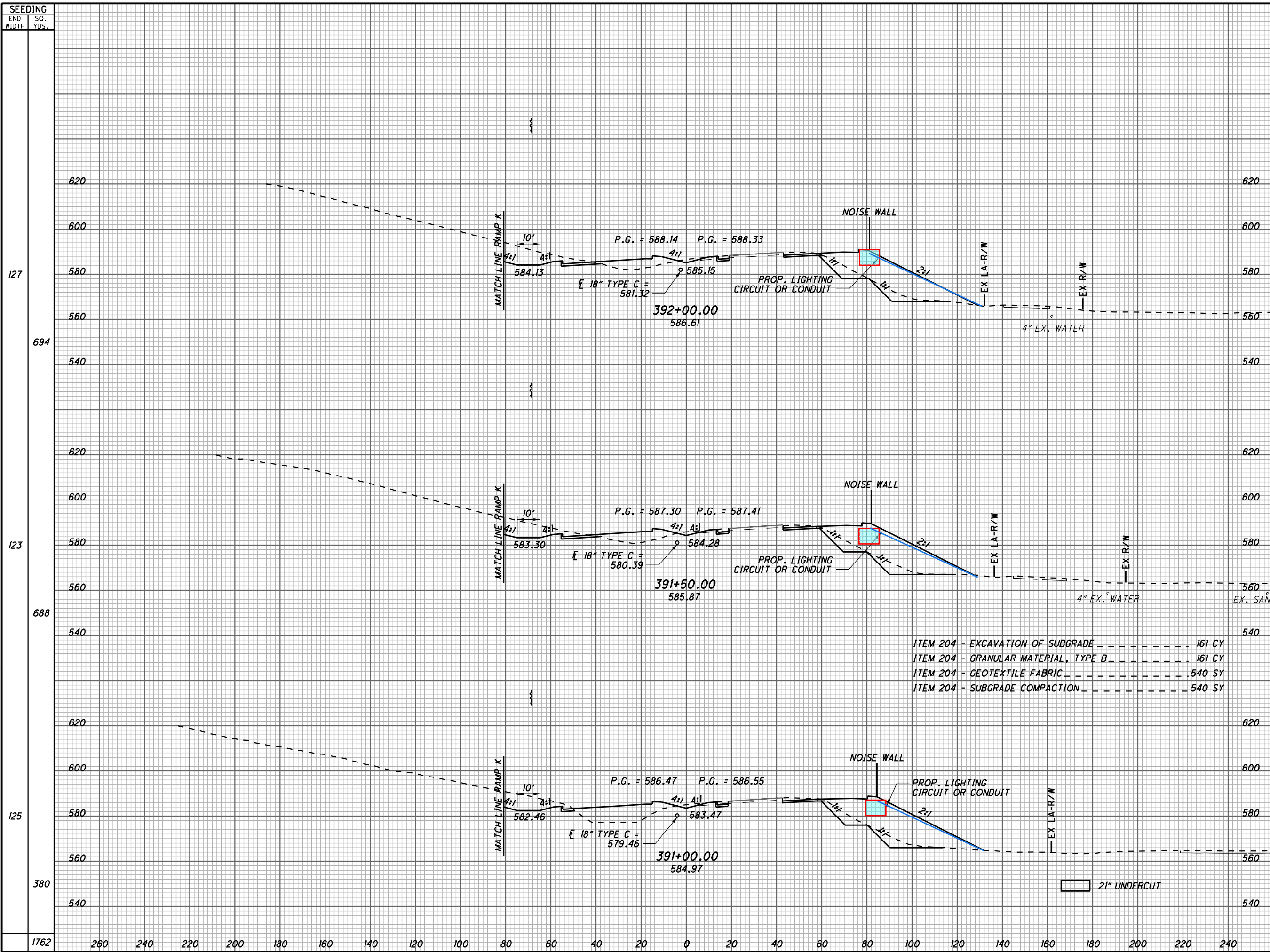
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 149 | 260 | 149 | 321 | 1373 | | |
| 148 | 260 | 148 | 284 | 1373 | | |
| 145 | 260 | 145 | 253 | 1395 | | |
| 160 | 260 | 160 | 62 | 488 | | |
| 1387 | 260 | 1387 | 840 | 4324 | | |

CROSS SECTIONS S.R. 7
 STA. 390+00.00 TO STA. 390+75.00

LAW - 7 - 2.17

384
 1247

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- ITEM 204 - EXCAVATION OF SUBGRADE 161 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B 161 CY
- ITEM 204 - GEOTEXTILE FABRIC 540 SY
- ITEM 204 - SUBGRADE COMPACTION 540 SY

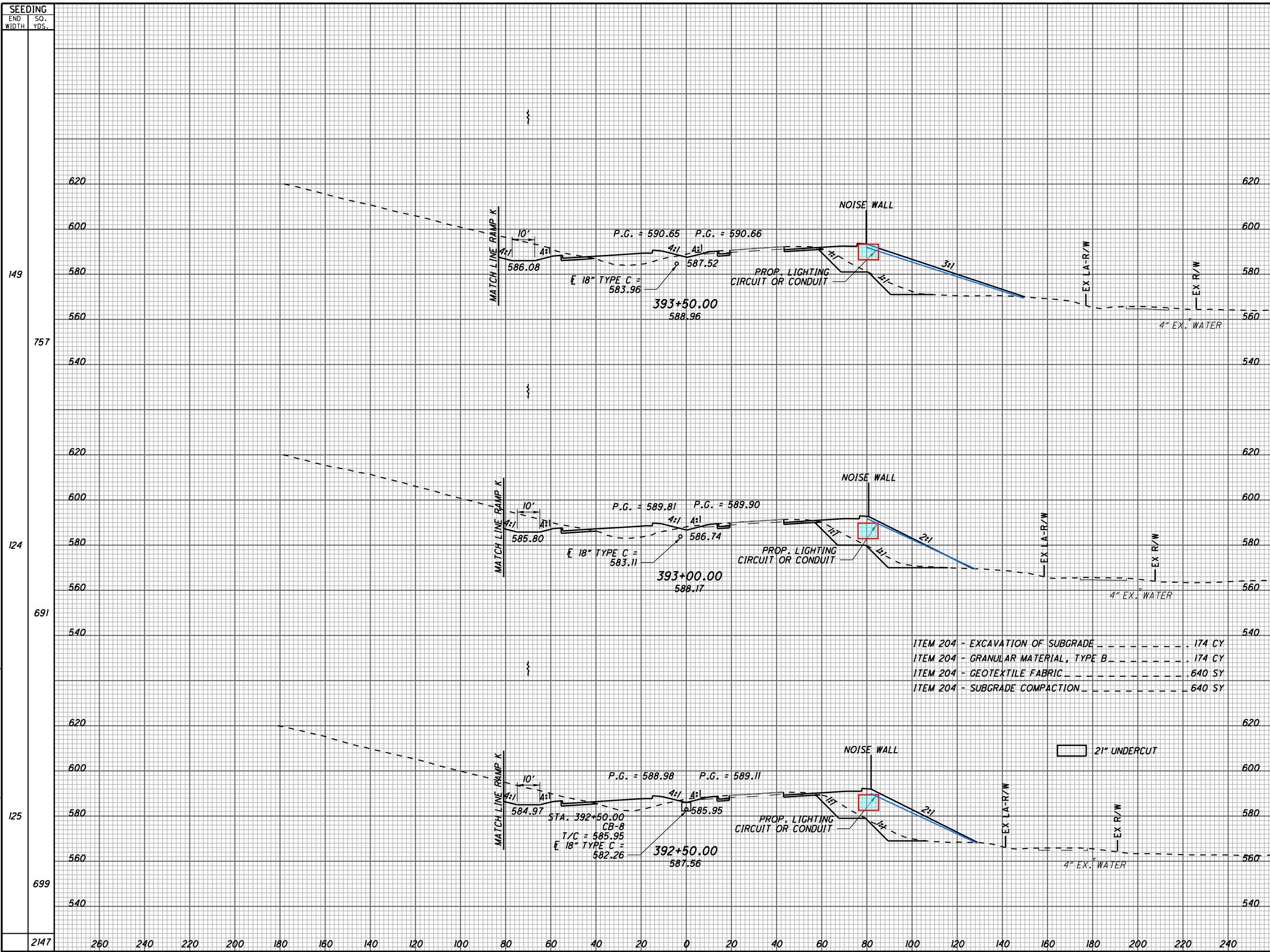
21" UNDERCUT

| SEEDING | END AREA | | VOLUME | | CALCULATED | ALB | CHECKED | TCM | | | | | | | | | | | | | | | | | | | | | | |
|---------|-----------|----------|--------|------|------------|------|---------|-----|-----|------|----|----|----|---|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| | END WIDTH | SO. YDS. | CUT | FILL | | | | | CUT | FILL | | | | | | | | | | | | | | | | | | | | |
| 127 | | | 317 | 790 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 694 | | | | | 567 | 1488 | | | | | | | | | | | | | | | | | | | | | | | | |
| 123 | | | 295 | 817 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 688 | | | | | 526 | 1676 | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | | | 273 | 993 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 380 | | | | | 275 | 1096 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1762 | 260 | 240 | 220 | 200 | 180 | 160 | 140 | 120 | 100 | 80 | 60 | 40 | 20 | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 1368 | 4260 | 385 | 1247 |

CROSS SECTIONS S.R. 7
STA. 391+00.00 TO STA. 392+00.00

LAW - 7 - 2.17

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| | |
|--------------------------------------|--------|
| ITEM 204 - EXCAVATION OF SUBGRADE | 174 CY |
| ITEM 204 - GRANULAR MATERIAL, TYPE B | 174 CY |
| ITEM 204 - GEOTEXTILE FABRIC | 640 SY |
| ITEM 204 - SUBGRADE COMPACTION | 640 SY |

21" UNDERCUT

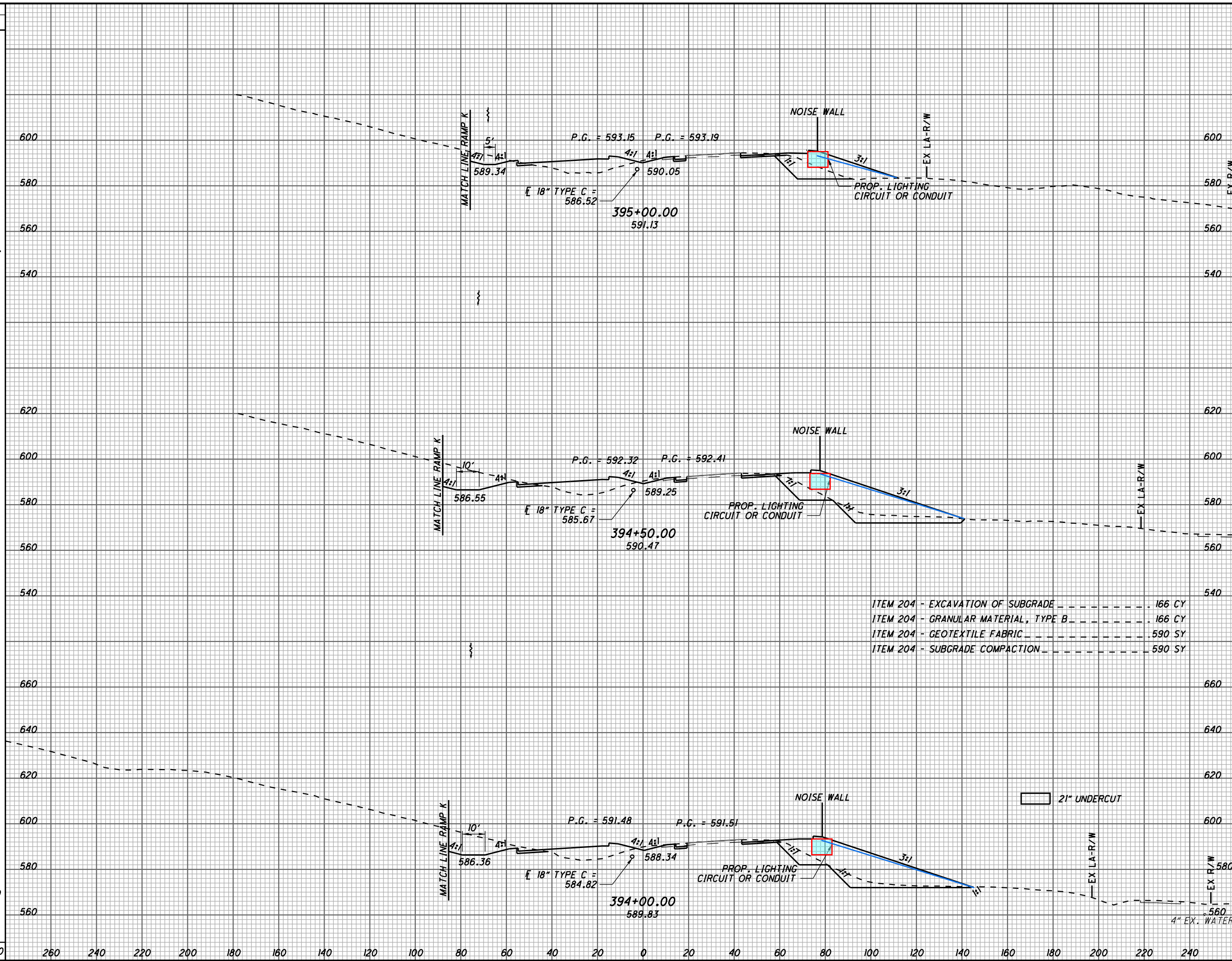
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|----------|------|--------|------|----------------|-------------|-----|-----|-----|----|----|----|----|---|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| | CUT | FILL | CUT | FILL | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 149 | | | 353 | 1048 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 757 | | | 615 | 1755 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 124 | | | 311 | 846 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 691 | | | 593 | 1600 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | | | 330 | 881 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 699 | | | 599 | 1548 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2147 | 260 | 240 | 220 | 200 | 180 | 160 | 140 | 120 | 100 | 80 | 60 | 40 | 20 | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 1807 | 4903 | 386 | 1247 |

CROSS SECTIONS S.R. 7
STA. 392+50.00 TO STA. 393+50.00

LAW - 7 - 2.17

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| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| | 2330 | |
| | 260 | |
| | 240 | |
| | 220 | |
| | 200 | |
| | 180 | |
| | 160 | |
| | 140 | |
| | 120 | |
| | 100 | |
| | 80 | |
| | 60 | |
| | 40 | |
| | 20 | |
| | 0 | |
| | 20 | |
| | 40 | |
| | 60 | |
| | 80 | |
| | 100 | |
| | 120 | |
| | 140 | |
| | 160 | |
| | 180 | |
| | 200 | |
| | 220 | |
| | 240 | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 166 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 166 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 590 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 590 SY

21" UNDERCUT

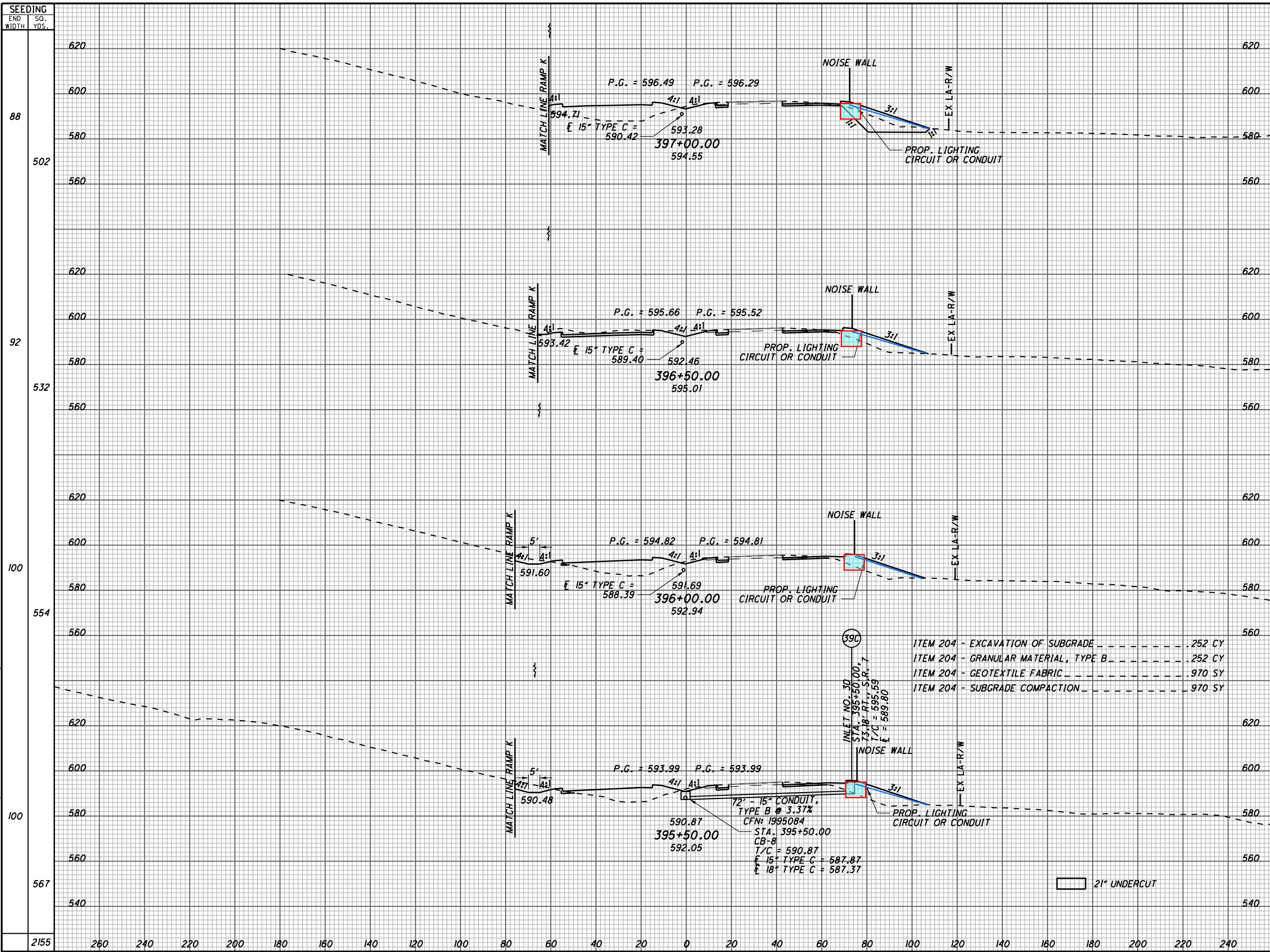
| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 220 | | | | |
| 580 | | | | |
| 667 | 1500 | | | |
| 500 | 1040 | | | |
| 830 | 1902 | | | |
| 396 | 1013 | | | |
| 694 | 1909 | | | |
| 2191 | 5311 | | | |

CROSS SECTIONS S.R. 7
STA. 394+00.00 TO STA. 395+00.00

LAW - 7 - 2.17

387
1247

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| END STA. | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|--------------|------------|-------------|------------|-------------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 88 | 158 | 556 | 217 | 653 | | |
| 92 | 76 | 149 | 108 | 506 | | |
| 100 | 40 | 397 | 91 | 723 | | |
| 100 | 58 | 383 | 258 | 892 | | |
| TOTAL | 274 | 1385 | 574 | 2774 | | |

- ITEM 204 - EXCAVATION OF SUBGRADE ----- 252 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 252 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 970 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 970 SY

INLET NO. 30
 STA. 395+50.00,
 73.18' RT., S.R. 7
 T/C = 595.59
 E = 589.80

72" - 15" CONDUIT,
 TYPE B @ 3.37%
 CFN: 1995084
 STA. 395+50.00
 CB-8
 T/C = 590.87
 E 15" TYPE C = 587.87
 E 18" TYPE C = 587.37

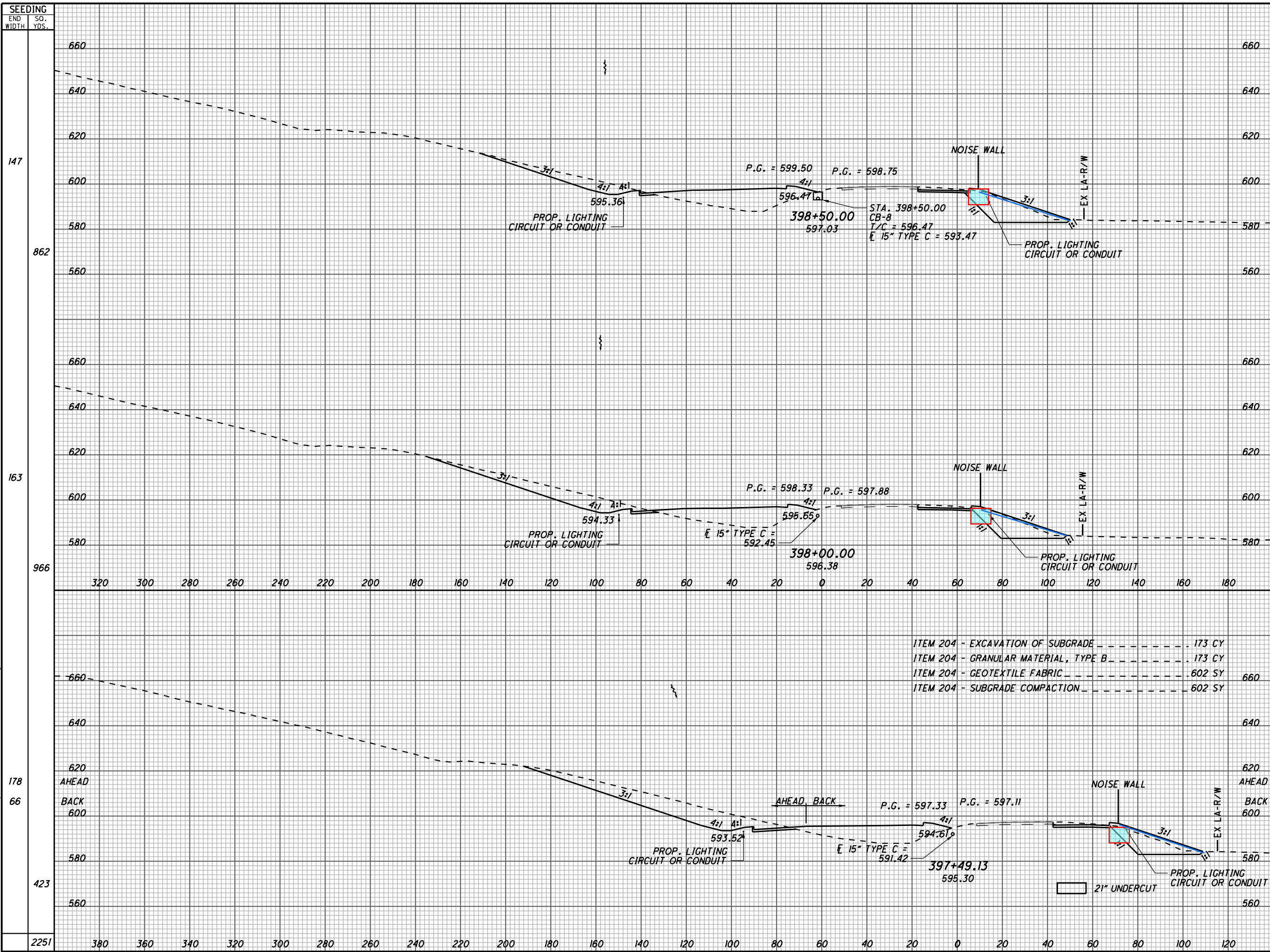
21" UNDERCUT

**CROSS SECTIONS S.R. 7
 STA. 395+50.00 TO STA. 397+00.00**

LAW - 7 - 2.17

388
 1247

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| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 147 | 194 | 491 | 713 | 1071 | | |
| 163 | 576 | 665 | 1259 | 1219 | | |
| 178 | 760 | 629 | 323 | 1071 | | |
| 2251 | 2295 | 3361 | | | | |

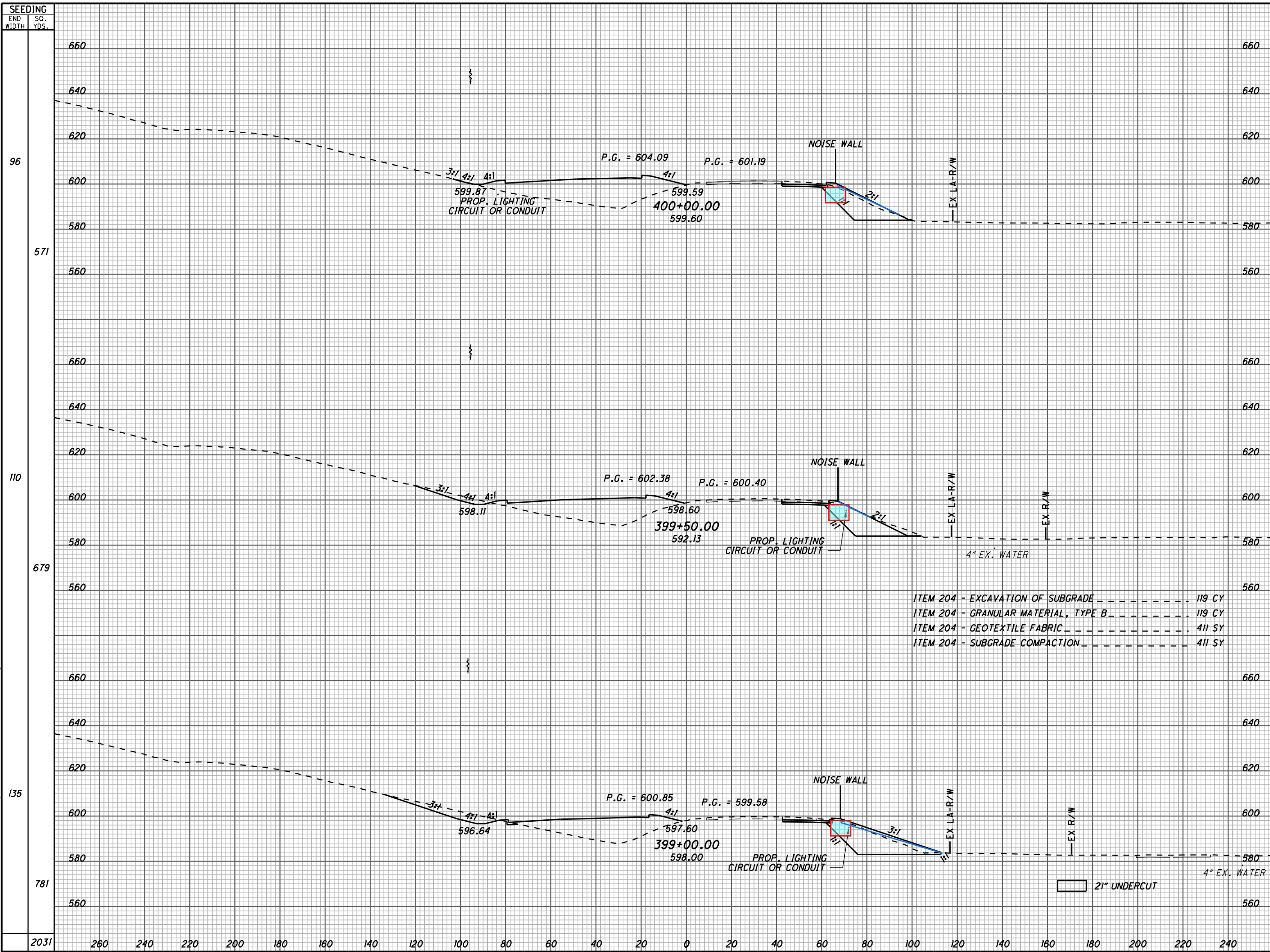
- ITEM 204 - EXCAVATION OF SUBGRADE ----- 173 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 173 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 602 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 602 SY

CROSS SECTIONS S.R. 7
STA. 397+49.13 TO STA. 398+50.00

LAW - 7 - 2.17

389
1247

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| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|--------------|-------------|-------------|-------------|-------------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 400+00.00 | 226 | 979 | 541 | 1662 | | |
| 399+50.00 | 358 | 815 | 714 | 1546 | | |
| 399+00.00 | 413 | 855 | 563 | 1247 | | |
| TOTAL | 1097 | 2649 | 1818 | 4455 | | |

- ITEM 204 - EXCAVATION OF SUBGRADE ----- 119 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 119 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 411 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 411 SY

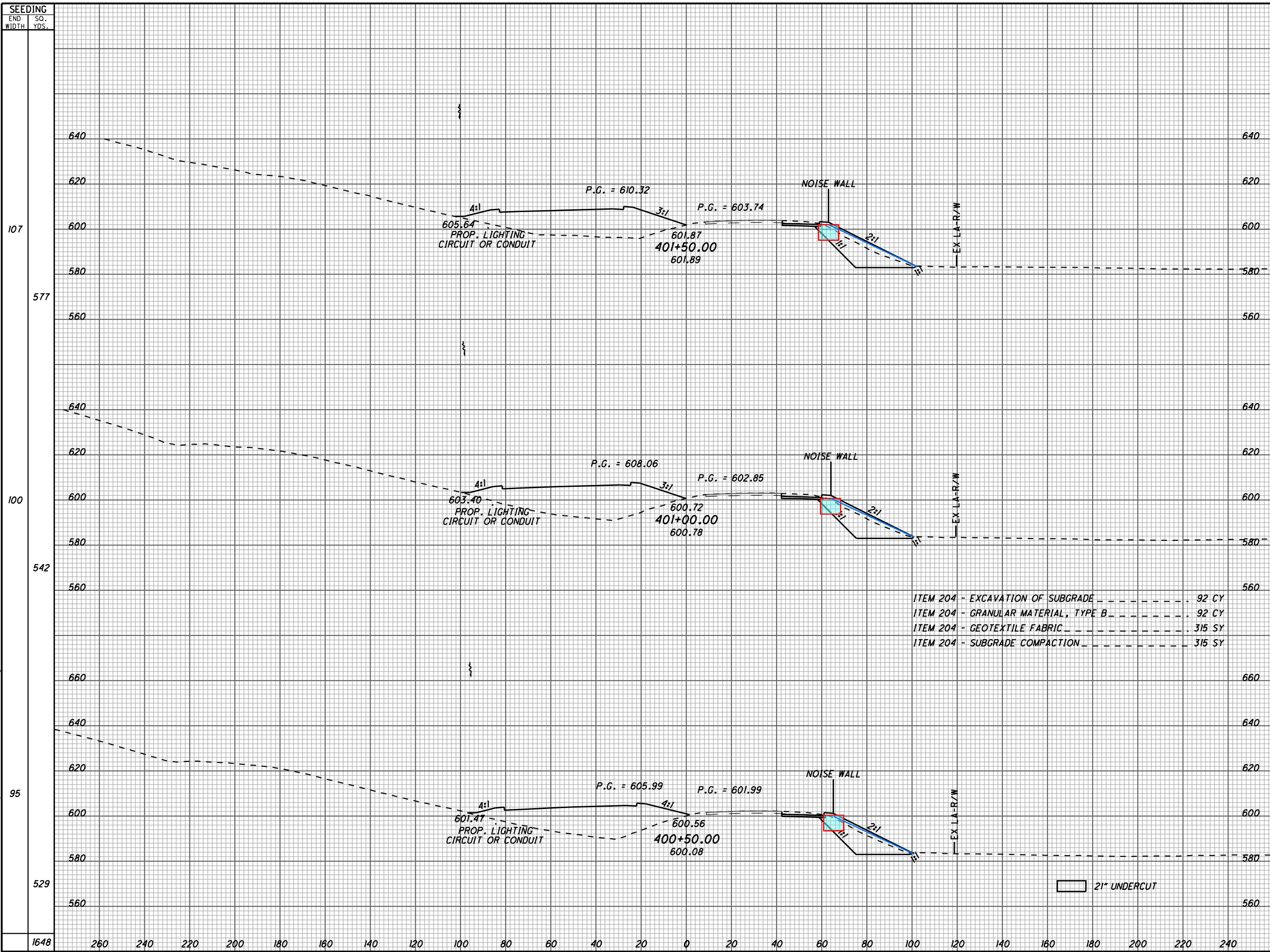
21" UNDERCUT

CROSS SECTIONS S.R. 7
STA. 399+00.00 TO STA. 400+00.00

LAW - 7 - 2.17

390
1247

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- ITEM 204 - EXCAVATION OF SUBGRADE ----- 92 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 92 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 315 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 315 SY

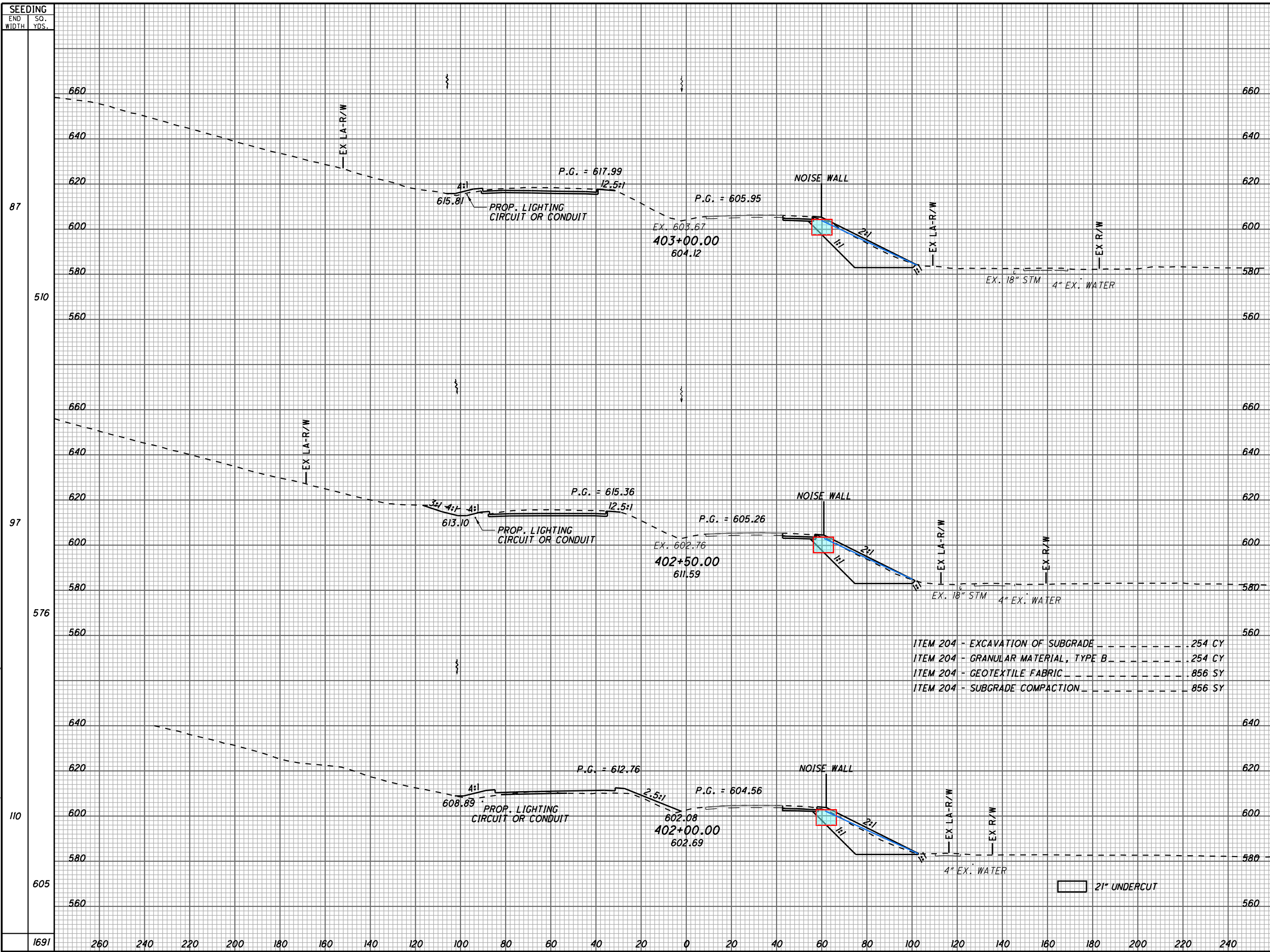
21" UNDERCUT

| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 107 | 263 | 1233 | 475 | 2328 | | |
| 100 | 250 | 1281 | 453 | 2256 | | |
| 95 | 239 | 1155 | | | | |
| 529 | | | 431 | 1977 | | |
| 1648 | | | 1359 | 6561 | 391 | 1247 |

CROSS SECTIONS S.R. 7
STA. 400+50.00 TO STA. 401+50.00

LAW - 7 - 2.17

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| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 424 | 427 | 823 | 760 | |
| 465 | 393 | 713 | 819 | |
| 305 | 490 | 526 | 1596 | |
| | | 2062 | 3175 | |

| | |
|--------------------------------------|--------|
| ITEM 204 - EXCAVATION OF SUBGRADE | 254 CY |
| ITEM 204 - GRANULAR MATERIAL, TYPE B | 254 CY |
| ITEM 204 - GEOTEXTILE FABRIC | 856 SY |
| ITEM 204 - SUBGRADE COMPACTION | 856 SY |

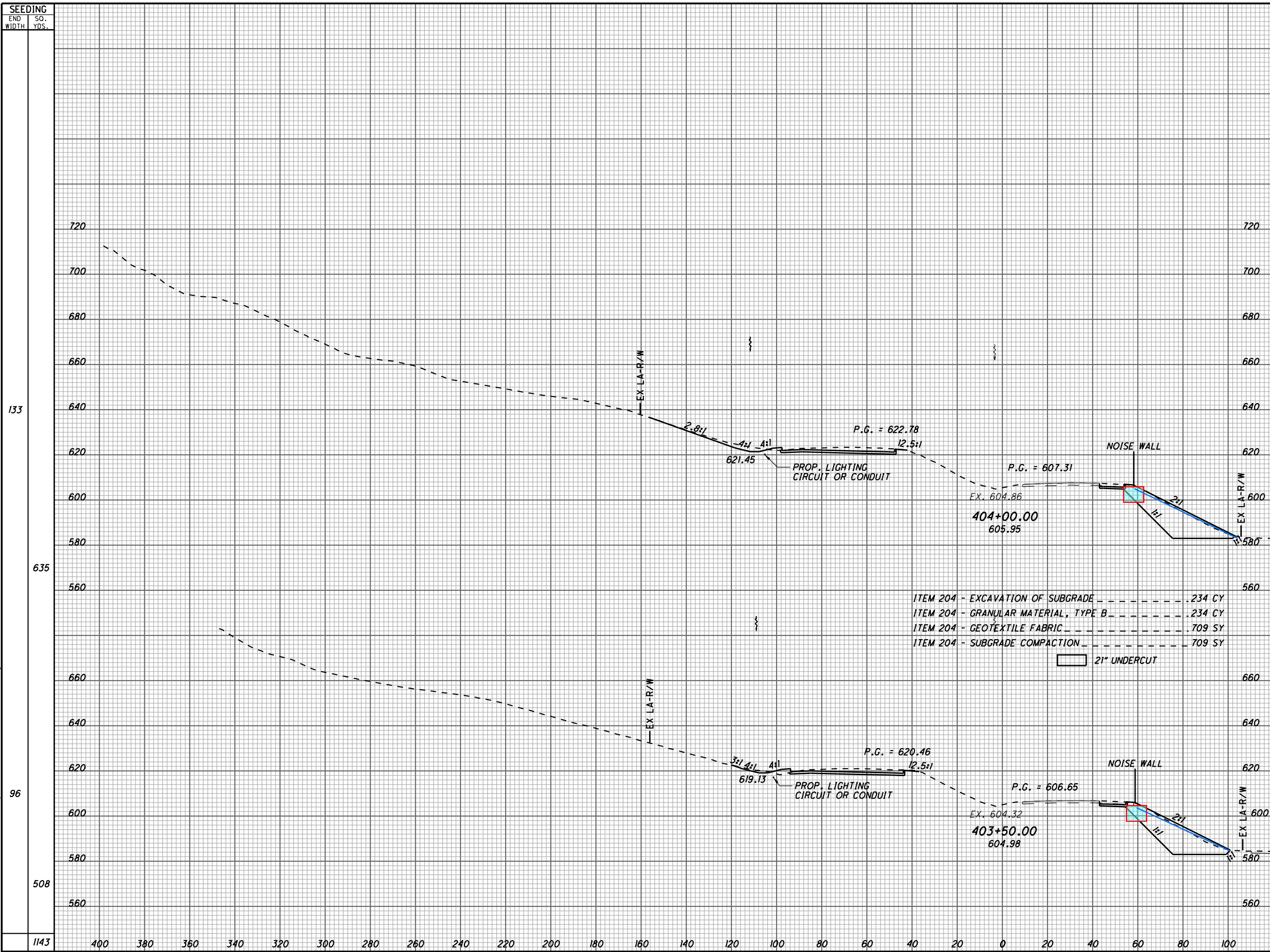
| |
|--------------|
| 21" UNDERCUT |
|--------------|

| |
|------|
| 392 |
| 1247 |

CROSS SECTIONS S.R. 7
STA. 402+00.00 TO STA. 403+00.00

LAW - 7 - 2.17

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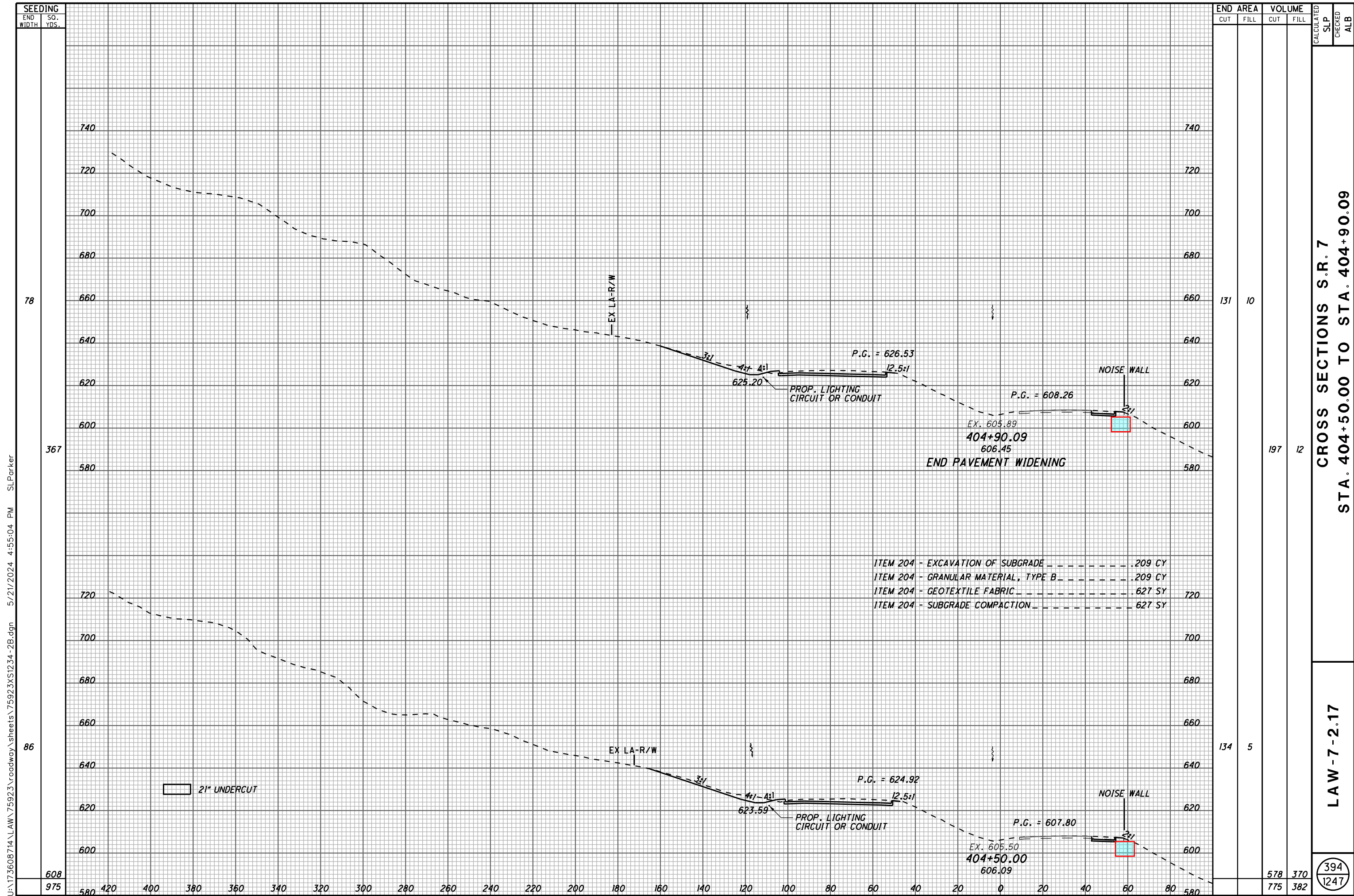


| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 133 | 490 | 393 | 848 | 742 | | |
| 635 | 426 | 408 | 787 | 773 | | |
| 96 | | | | | | |
| 508 | | | | | | |
| 1143 | | | 1635 | 1515 | | |

CROSS SECTIONS S.R. 7
STA. 403+50.00 TO STA. 404+00.00

LAW - 7 - 2.17

393
1247

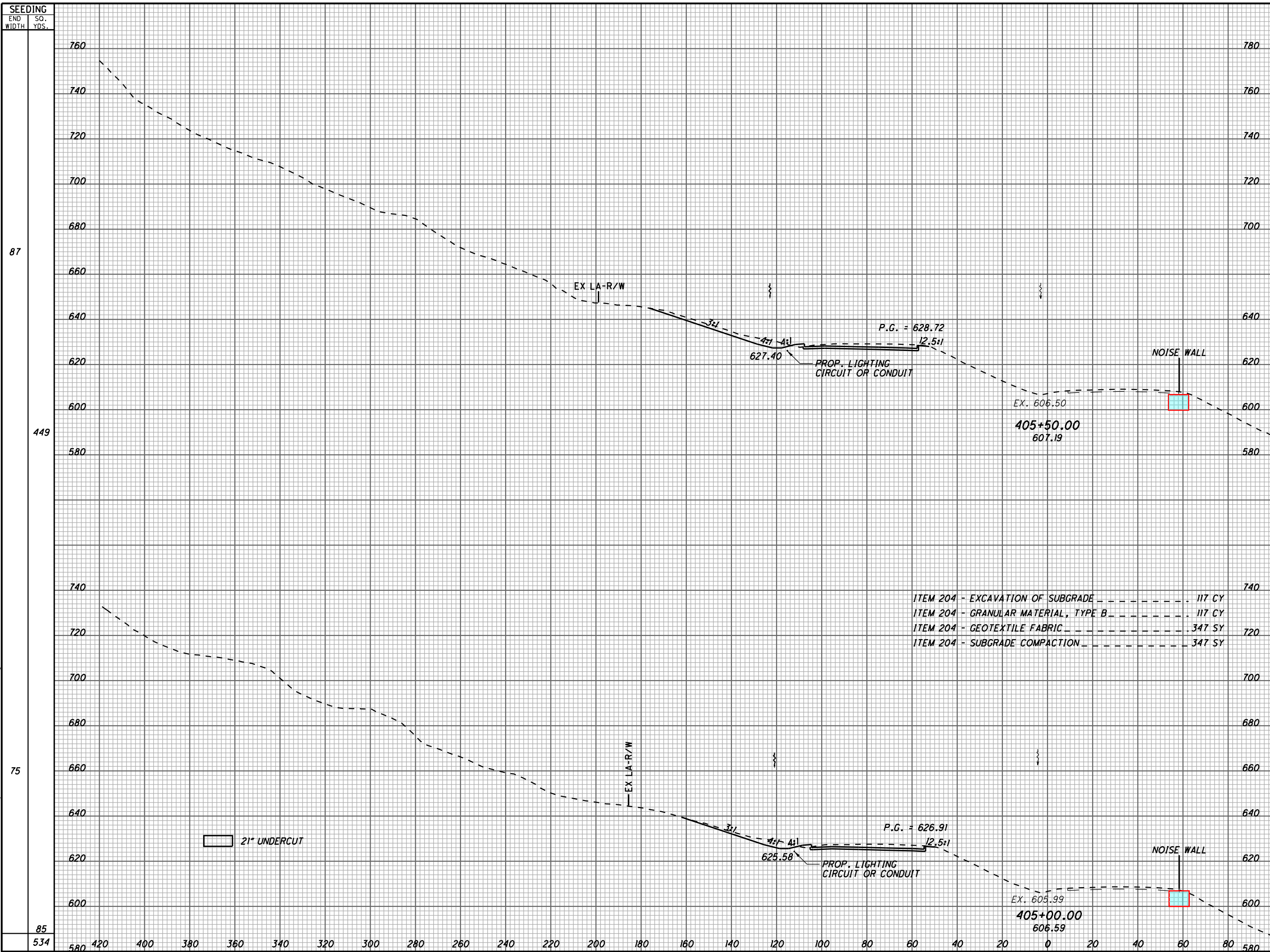


**CROSS SECTIONS S.R. 7
 STA. 404+50.00 TO STA. 404+90.09**

LAW - 7 - 2.17

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| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 87 | | 168 | 6 | | | |
| 449 | | 278 | 11 | | | |
| 75 | | 131 | 6 | | | |
| 85 | | 49 | 3 | | | |
| 534 | | 327 | 14 | | | |

CROSS SECTIONS S.R. 7
STA. 405+00.00 TO STA. 405+50.00
LAW - 7 - 2.17

395
 1247

To: Brandon McNeal, PE
Columbus, Ohio

From: James Samples, EIT
Eric Kistner, PE
Cincinnati, Ohio

Project: 173609006

Date: September 20, 2024

Reference: Report of Geotechnical Findings, LAW-7-2.17 (Chesapeake Bypass) Noise Walls

The Ohio Department of Transportation (ODOT) plans to reroute State Route (SR) 7 in Lawrence County, Ohio around the town of Chesapeake. The project consists of the construction of a new two-lane divided highway with truck climbing lanes, traveling north of the town of Chesapeake, Ohio. This new road will connect the existing four-lane section of SR 7 on the east side of Chesapeake to the existing SR 7 north of the town of Proctorville, near SR 775. The beginning and ending stations for the project are 114+57.60 and 437+16.83, respectively, for an alignment length of 6.1 miles.

This memo summarizes the results of the exploration and analyses performed for the noise wall design portion of the project. Two noise walls, referred to as Wall B and Wall D, are planned. Wall B is split into two sections, with the first (Noise Wall B1) beginning and ending at Stations 156+35 (wall stationing 10+00) and 194+87 (48+52) and the second section (Noise Wall B2) beginning at Station 206+14 (10+00) and ending at Station 224+38 (20+48). Wall B was split to avoid placing drilled shafts on top of Mechanical Stabilized Earth walls or moment slabs of the bridge. Wall D begins at Station 381+55 and ends at Station 406+23.

It was determined that additional borings would be necessary along the alignments of the noise walls to better define soil and bedrock conditions. Stantec contracted National Engineering and Architectural Services, Inc. (NEAS) to perform 15 additional soil borings along the planned locations of the walls, which were advanced between April and June of 2024. A summary of these borings is shown in Table 1. Boring locations and graphical logs are shown in the geotechnical profile drawings for the project. The locations and elevations of the boring locations were surveyed by NEAS.

Table 1. Boring Summary

| Boring No. | Boring Purpose | Station* (feet) | Offset* (feet) | Ground Surface Elevation (feet) | Top of Bedrock Elevation (feet) | Bottom of Boring Elevation (feet) |
|------------|----------------|-----------------|----------------|---------------------------------|---------------------------------|-----------------------------------|
| B-007-2-23 | Noise Wall B1 | 28+63 | 18 Rt. | 631.5 | 626.0 | 614.0 |
| B-007-3-23 | Noise Wall B1 | 31+33 | 15 Lt. | 659.2 | 653.2 | 646.7 |
| B-007-4-23 | Noise Wall B1 | 33+74 | 10 Lt. | 669.0 | 655.5 | 645.0 |
| B-007-5-23 | Noise Wall B1 | 35+70 | 38 Rt. | 645.2 | 632.7 | 621.2 |
| B-009-1-23 | Noise Wall B1 | 39+76 | 22 Rt. | 623.7 | 613.2 | 599.2 |
| B-009-2-23 | Noise Wall B1 | 42+39 | 39 Rt. | 583.9 | 560.4 | 559.4 |
| B-014-1-23 | Noise Wall B2 | 16+03 | 53 Rt. | 581.4 | N/A | 556.4 |
| B-014-2-23 | Noise Wall B2 | 17+61 | 30 Rt. | 609.0 | 590.5 | 585.0 |
| B-014-3-23 | Noise Wall B2 | 20+24 | 21 Rt. | 628.0 | 618.0 | 612.5 |
| B-076-2-23 | Noise Wall D | 24+49 | 28 Rt. | 587.7 | N/A | 562.7 |
| B-076-3-23 | Noise Wall D | 26+46 | 39 Rt. | 589.9 | N/A | 564.9 |
| B-077-2-23 | Noise Wall D | 28+44 | 42 Rt. | 592.6 | N/A | 567.6 |
| B-077-3-23 | Noise Wall D | 30+45 | 50 Rt. | 588.8 | N/A | 563.8 |
| B-078-2-23 | Noise Wall D | 32+48 | 44 Rt. | 595.3 | N/A | 570.3 |
| B-078-3-23 | Noise Wall D | 34+47 | 34 Rt. | 602.4 | N/A | 577.4 |

* References noise wall alignment

Borings were advanced with a track-mounted CME 55 drill rig using 3¼-inch inside diameter (ID) hollow stem augers to advance the borings through soil. Standard Penetration Test (SPT) sampling was performed at 2.5-foot intervals until the bedrock was encountered. The energy ratio (ER) of the drill rig automatic hammer and drill rod system were measured to be 79.9 percent on March 8, 2024. The depths and elevations of the SPTs with the corresponding N_{60} -values are shown on the boring logs.

If fairly competent bedrock was encountered during drilling, approximately 5 to 10 feet of rock coring was performed using NQ2-size equipment. Recovery, core loss, and rock quality designation (RQD) values were recorded as percentages for each coring run. These values are shown on the boring logs.

The materials encountered were logged by NEAS with attention given to soil type, consistency, and moisture content. The borings were checked for the presence of groundwater during drilling and at its conclusion with the depth of water recorded. Boring abandonment methods are also shown on the boring logs.

The soil samples obtained from the borings were returned to NEAS's geotechnical laboratory for visual classification and tested for water content. Engineering classification testing was performed on samples reflecting each of the main soil horizons. The engineering classification tests conducted on the samples were sieve and hydrometer analysis (ASTM D 422) and Atterberg limits (ASTM D 4318). The samples were classified according to the ODOT classification method. Results from classification and moisture content testing are shown on the boring logs.

Findings

Wall B

Soils encountered along Wall B were primarily plastic, classifying as sandy silt (A-4a), silt (A-4b), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as soft to hard (N_{60} values ranging from 4 to 95 blows per foot (bpf) with an average of 26 bpf) and damp (natural moisture contents ranging from 7 to 27 percent with an average of 19 percent). A small amount of non-plastic soil was observed in the Wall B borings, classifying as gravel and stone fragments with sand (A-1-b) or gravel and stone fragments with sand and silt (A-2-4). These soils were encountered near the bedrock interface and were described as very dense (N_{60} values ranging from 52 to 77 bpf with an average of 67 bpf) and damp (natural moisture contents ranging from 5 to 7 percent with an average of 6 percent).

Bedrock was encountered in 8 of the 9 borings advanced for Wall B. Bedrock was not encountered at boring B-014-1-23. Bedrock depth varies from 5.5 feet in B-007-2-23 to 23.5 feet in B-009-2-23. Bedrock was primarily described as severely to highly weathered shale, which made core recoveries lower than normal. The shale was also described as brown and maroonish brown to gray, very weak to slightly strong, and very thin to thin bedded. Between 3 and 4.5 feet of shale was cored in three borings. Core recoveries ranged from 24 to 95 percent and RQD values varied from 0 to 26. Siltstone was encountered in B-007-5-23, B-009-2-23, B-014-2-23, and B-014-3-23. The siltstone was described as gray and yellowish brown to brown, highly to moderately weathered, and slightly strong. Five feet of core was obtained from B-014-3-23, which resulted in 100 percent recovery and an RQD value of 80.

Groundwater was not observed while drilling borings for Wall B; however, this may have been obscured by the addition of water during rock coring. It is likely that groundwater is present within the bedrock at these locations. Boring logs are provided in the attachments.

Wall D

The surficial materials of borings completed on road surfaces varied from 12 to 13 inches of asphalt followed by 5 to 6 inches of granular base. Below the roadway materials, soils were primarily plastic with alternating layers of non-plastic soil. Plastic soils classified as sandy silt (A-4a), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as medium stiff to hard (N_{60} values ranging from 8 to 37 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 8 to 20 percent with an average of 14 percent). Non-plastic soils classified as gravel and stone fragments with sand (A-1-b), gravel and stone fragments with sand and silt (A-2-4), fine sand (A-3), coarse and fine sand (A-3a), and sandy silt (A-4a). These soils were further described as medium dense (N_{60} values ranging from 12 to 21 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 3 to 12 percent with an average of 7 percent).

Bedrock and groundwater were not encountered in any of the borings advanced for Wall D. Boring logs are provided in the attachments.

Analysis and Recommendations

The recommendations that follow are based on the information discussed in this report and the interpretation of the subsurface conditions encountered at the site during our fieldwork. If future design changes are made, Stantec should be notified so that such changes can be reviewed, and the recommendations amended as necessary.

These conclusions and recommendations are based on data and subsurface conditions from the borings advanced during this exploration using the degree of care and skill ordinarily exercised under similar circumstances by competent members of the engineering profession. No warranties can be made regarding the continuity of conditions.

ODOT's Geotechnical Design Manual (GDM) section 1600 provides guidelines for design of noise barrier foundations. The standard foundation design used by ODOT was applied to the analysis for Walls B and D. ODOT's Office of Geotechnical Engineering (OGE) has developed a spreadsheet to perform the standard drilled shaft design, which was used for the foundation design of the walls. These spreadsheets are attached.

Noise wall barrier height, post spacing, and top of shaft elevation were provided by the structural engineer. Survey data for borings completed by NEAS was used for boring elevations. Noise wall profile and cross-section drawings were used to estimate existing ground elevation and cross slope respectively. Cut or fill depths were determined by calculations within the spreadsheet using existing ground elevation, top of shaft elevation, and boring elevation. Borings were not completed along the noise wall alignments in areas where fill depths are expected to exceed 25 feet. In these areas, artificial "borings" assuming typical material parameters for fill were used to provide design recommendations throughout the entire wall alignment. These artificial "borings" were designated "B-00X".

Noise Wall B1

Table 2 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 3 summarizes the artificial "borings" used for the analysis.

Table 2. Noise Wall B1 Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|-----|---|
| From | To | From | To | |
| 10+00 | 48+52 | 1 | 163 | 6.5 |

Table 3. Artificial "Borings" Used for Wall B1 Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-001 | Artificial | 10+00 | 574.8 |
| B-002 | Artificial | 19+00 | 595.1 |
| B-003 | Artificial | 23+00 | 618.5 |
| B-004 | Artificial | 38+00 | 655.4 |
| B-005 | Artificial | 48+52 | 600.4 |

* References noise wall alignment

Noise Wall B2

Table 4 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 5 summarizes the artificial "borings" used for the analysis.

Table 4. Noise Wall B2 Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|----|---|
| From | To | From | To | |
| 10+00 | 28+48 | 1 | 78 | 8.0 |

Table 5. Artificial "Borings" Used for Wall B2 Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-006 | Artificial | 10+00 | 569.0 |
| B-007 | Artificial | 28+48 | 635.0 |

* References noise wall alignment

Noise Wall D

Table 4 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers. Recommended drilled shaft lengths are provided to reduce varying plan length for drilled shafts. Table 5 summarizes the artificial "borings" used for the analysis.

Table 6. Noise Wall D Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Recommended Drilled Shaft Length (feet) |
|----------------|-------|-------------|-----|---|
| From | To | From | To | |
| 10+00 | 25+36 | 1 | 65 | 6.5 |
| 25+60 | 34+72 | 66 | 104 | 8.0 |

Table 7. Artificial "Borings" Used for Wall D Analysis

| Boring No. | Boring Purpose | Station* (feet) | Assumed Ground Surface Elevation (feet) |
|------------|----------------|-----------------|---|
| B-008 | Artificial | 10+00 | 574.0 |
| B-009 | Artificial | 22+00 | 582.0 |

* References noise wall alignment

Reference: Report of Geotechnical Findings, LAW-7-2.17 (Chesapeake Bypass) Noise Walls

Regards,

STANTEC CONSULTING SERVICES INC.



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ATTACHMENT: Noise Wall Boring Logs, Noise Wall Foundation Calculations

ATTACHMENTS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:41 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|--|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>28+63, 18' RT.</u> | EXPLORATION ID <u>B-007-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>631.5 (MSL)</u> EOB: <u>17.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>4/24/24</u> END: <u>5/1/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.443989, -82.442227</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 2.0" ASPHALT (DRILLERS DESCRIPTION) VERY STIFF, MAROONISH BROWN, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, MOIST | 631.5 | | | | | | | | | | | | | | | | | | |
| | 631.3 | | | | | | | | | | | | | | | | | | |
| | | | 1 | | | | | | | | | | | | | | | | |
| | | | 2 | | | | | | | | | | | | | | | | |
| | | | 3 | 4 | 2 | 9 | 39 | SS-1 | 3.00 | 3 | 4 | 12 | 26 | 55 | 50 | 22 | 28 | 23 | A-7-6 (17) |
| SHALE, MAROONISH BROWN AND BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY THIN BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITY: 12.5'-13.5', FRACTURED TO HIGHLY FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTIGRATED, POOR SURFACE CONDITION; RQD 7%, REC 57%. | 626.0 | TR | | | | | | | | | | | | | | | | | |
| | | | 4 | | | | | | | | | | | | | | | | |
| | | | 5 | 5 | | - | 83 | SS-2 | - | - | - | - | - | - | - | - | - | 10 | Rock (V) |
| | | | 6 | | | | | | | | | | | | | | | | |
| | | | 7 | | | | | | | | | | | | | | | | |
| | | | 8 | 50 | | - | 67 | SS-3 | - | - | - | - | - | - | - | - | - | 9 | Rock (V) |
| | | | 9 | | | | | | | | | | | | | | | | |
| | | | 10 | 16 | | - | 78 | SS-4 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) |
| | | | 11 | | | | | | | | | | | | | | | | |
| | | | 12 | 50 | | - | 67 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | | 13 | | | | | | | | | | | | | | | | |
| | | | 14 | | | | | | | | | | | | | | | | |
| | | 15 | 7 | | | 57 | NQ2-1 | | | | | | | | | | | CORE | |
| | | 16 | | | | | | | | | | | | | | | | | |
| | 614.0 | EOB | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. OFFSET 2.0' SOUTH.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH.DOT.GDT - 9/18/24 08:41 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>31+33, 15' LT.</u> | EXPLORATION ID <u>B-007-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>659.2 (MSL)</u> EOB: <u>12.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/1/24</u> END: <u>5/1/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444310, -82.441429</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| VERY STIFF, MAROONISH BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 659.2 | 1 | | | | | | | | | | | | | | | | |
| | | 2 | | | | | | | | | | | | | | | | |
| | | 3 | 2 | 3 | 15 | 50 | SS-1 | 3.50 | 2 | 1 | 4 | 39 | 54 | 42 | 21 | 21 | 17 | A-7-6 (13) |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, RESIDUAL ROCK, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 654.7 | 4 | | | | | | | | | | | | | | | | |
| | 653.2 | 5 | 4 | 13 | - | 100 | SS-2 | - | 12 | 11 | 11 | 39 | 27 | 35 | 21 | 14 | 11 | A-6a (8) |
| SHALE , BROWN AND MAROONISH BROWN, SEVERELY TO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, VERY THIN TO THIN BEDDED, CONTAINS SIDERITE NODULES, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: 8.7'-9.3', 10.0'-10.6', 11.5'-12.5', HIGHLY FRACTURED TO MODERATELY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, DISINTIGRATED TO BLOCKY/DISTURBED/SEAMY, POOR SURFACE CONDITION; RQD 26%, REC 95%. | 646.7 | 6 | | | | | | | | | | | | | | | | |
| | | 7 | 50/4" | | - | 100 | SS-3 | - | - | - | - | - | - | - | - | - | 1 | Rock (V) |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | | | | | | | | | | | | | | | | |
| | | 10 | 26 | | 95 | | NQ2-1 | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA075923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>33+74, 10' LT.</u> | EXPLORATION ID: <u>B-007-4-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>669.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/2/24</u> END: <u>5/2/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444573, -82.440641</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | HOLE SEALED | | | |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|--------------------|----------------|-----|------------|------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | | |
| VERY STIFF, ORANGISH BROWN, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, DAMP | 669.0 | 1 | | | | | | | | | | | | | | | < > | | | |
| | | 2 | | | | | | | | | | | | | | | < > | | | |
| | | 3 | 2 | 3 | 9 | 61 | SS-1 | 3.50 | - | - | - | - | - | - | - | 13 | A-4a (V) | < > | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 664.5 | 4 | | | | | | | | | | | | | | | < > | | | |
| | | 5 | 3 | 5 | 10 | 20 | 100 | SS-2 | 4.50 | 1 | 1 | 5 | 33 | 60 | 44 | 22 | 22 | 19 | A-7-6 (14) | < > |
| | | 6 | | | | | | | | | | | | | | | | | | < > |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , TRACE STONE FRAGMENTS, TRACE SAND, RESIDUAL ROCK, DAMP | 659.5 | 7 | | | | | | | | | | | | | | | | | | |
| | | 8 | 7 | 10 | 13 | 31 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) | < > |
| | | 9 | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , TRACE STONE FRAGMENTS, TRACE SAND, RESIDUAL ROCK, DAMP | 655.5 | 10 | | | | | | | | | | | | | | | | | | |
| | | 11 | 10 | 18 | 13 | 41 | 100 | SS-4 | 4.50 | 9 | 1 | 2 | 38 | 50 | 39 | 21 | 18 | 11 | A-6b (11) | < > |
| | | 12 | | | | | | | | | | | | | | | | | | |
| SHALE , GRAY BECOMING BROWN AND GRAY, SEVERELY WEATHERED, VERY WEAK, BEDDING DISCONTINUITIES: LOW ANGLE, FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTIGRATED, POOR SURFACE CONDITION; RQD 0%, REC 24%. | 655.5 | 13 | 10 | 25 | 50/3" | - | 93 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 7 | A-6b (V) | < > |
| | | 14 | | | | | | | | | | | | | | | | | | |
| | | 15 | 50/4" | | | | 100 | SS-6 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | < > |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 16 | | | | | | | | | | | | | | | | | | |
| | | 17 | | | | | | | | | | | | | | | | | | |
| | | 18 | 50 | | | | 100 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | < > |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 19 | 50/2" | | | | 50 | SS-8 | - | - | - | - | - | - | - | - | - | 4 | Rock (V) | < > |
| | | 20 | | | | | | | | | | | | | | | | | | |
| | | 21 | 0 | | | | 24 | NQ2-1 | | | | | | | | | | | | CORE |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 22 | | | | | | | | | | | | | | | | | | |
| | | 23 | 50 | | | | 83 | SS-9 | - | - | - | - | - | - | - | - | - | 12 | Rock (V) | < > |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 655.5 | 24 | 50 | | | | 67 | SS-10 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | < > |
| | | EOB | | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>35+70, 38' RT.</u> | EXPLORATION ID: <u>B-007-5-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>645.2 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444725, -82.439943</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | WC | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | | |
| STIFF TO VERY STIFF, MAROONISH BROWN, CLAY , SOME SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST TO DAMP | 645.2 | 1 | 1 | | | | | | | | | | | | | | | | |
| | | | 2 | 1 | 4 | 44 | SS-1 | 1.50 | 6 | 4 | 9 | 25 | 56 | 65 | 26 | 39 | 27 | A-7-6 (20) | |
| | | | 3 | | | | | | | | | | | | | | | | |
| | | | 4 | 4 | 6 | 19 | 50 | SS-2 | 3.75 | - | - | - | - | - | - | - | - | 21 | A-7-6 (V) |
| | | | 5 | | | | | | | | | | | | | | | | |
| | | | 6 | 7 | 10 | 25 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | - | 18 | A-7-6 (V) |
| | | | 7 | | | | | | | | | | | | | | | | |
| VERY STIFF, YELLOWISH BROWN AND BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 637.2 | 8 | | | | | | | | | | | | | | | | | |
| | | | 9 | 6 | 10 | 23 | 100 | SS-4 | 3.50 | 1 | 1 | 4 | 48 | 46 | 48 | 28 | 20 | 20 | A-7-6 (14) |
| VERY DENSE, BROWN, STONE FRAGMENTS WITH SAND , TRACE SILT, TRACE CLAY, RESIDUAL ROCK, DAMP | 634.7 | 10 | | | | | | | | | | | | | | | | | |
| | | | 11 | 8 | 15 | 52 | 28 | SS-5 | - | 55 | 17 | 8 | 10 | 10 | NP | NP | NP | 5 | A-1-b (0) |
| SHALE , GRAY AND YELLOWISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | 632.7 | 12 | | | | | | | | | | | | | | | | | |
| | | | 13 | | | | | | | | | | | | | | | | |
| | | | 14 | 9 | 19 | 26 | 60 | 33 | SS-6 | - | - | - | - | - | - | - | - | 8 | Rock (V) |
| | | | 15 | | | | | | | | | | | | | | | | |
| | | | 16 | 6 | 23 | 32 | 73 | 28 | SS-7 | - | - | - | - | - | - | - | - | 8 | Rock (V) |
| | | | 17 | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND YELLOWISH BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | 627.2 | 18 | | | | | | | | | | | | | | | | | |
| | | | 19 | 17 | 50 | - | 33 | SS-8 | - | - | - | - | - | - | - | - | 5 | Rock (V) | |
| | | | 20 | | | | | | | | | | | | | | | | |
| | | | 21 | 38 | 50/4" | - | 30 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | | 22 | | | | | | | | | | | | | | | | |
| EOB | 621.2 | 23 | | | | | | | | | | | | | | | | | |
| | | | 24 | 50 | - | 50 | SS-10 | - | - | - | - | - | - | - | - | 7 | Rock (V) | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>39+76, 22' RT.</u> | EXPLORATION ID: <u>B-009-1-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>623.7 (MSL)</u> EOB: <u>24.5 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.445433, -82.438781</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. 623.7 | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|---|----------------|--------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----------|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, YELLOWISH BROWN, CLAY , SOME GRAVEL, SOME SILT, LITTLE SAND, DAMP | 620.7 | 1 | 5 | | | | | | | | | | | | | | | | |
| | | 2 | 9 12 | 28 | 100 | SS-1 | 4.50 | 32 | 11 | 6 | 30 | 21 | 42 | 24 | 18 | 11 | A-7-6 (6) | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 618.2 | 4 | 7 16 12 | 37 | 100 | SS-2 | - | 20 | 14 | 18 | 30 | 18 | 34 | 20 | 14 | 15 | A-6a (4) | | |
| | | 5 | | | | | | | | | | | | | | | | | |
| VERY DENSE, YELLOWISH BROWN, STONE FRAGMENTS WITH SAND AND SILT , TRACE CLAY, RESIDUAL ROCK, DAMP | 613.2 | 6 | 6 16 38 | 72 | 89 | SS-3 | - | 45 | 17 | 9 | 22 | 7 | 30 | 21 | 9 | 6 | A-2-4 (0) | | |
| | | 7 | | | | | | | | | | | | | | | | | |
| SHALE , GRAY AND YELLOWISH BROWN BECOMING MAROONISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | 613.2 | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 21 22 36 | 77 | 100 | SS-4 | - | - | - | - | - | - | - | - | - | 7 | A-2-4 (V) | | |
| | | 10 | | | | | | | | | | | | | | | | | |
| | | 11 | 50 | - | 100 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 12 | 10 50 | - | 75 | SS-6 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 25 50/5" | - | 45 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 22 50/5" | - | 36 | SS-8 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | |
| | | 17 | | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | |
| 19 | 50 | - | 83 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | | | |
| 20 | | | | | | | | | | | | | | | | | | | |
| 21 | 50/5" | - | 80 | SS-10 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | | | | |
| 22 | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | |
| 24 | 21 50 | - | 67 | SS-11 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH.DOT.GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>42+39, 39' RT.</u> | EXPLORATION ID <u>B-009-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B1</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>583.9 (MSL)</u> EOB: <u>24.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.446815, -82.436821</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | | |
| VERY STIFF, BROWN AND ORANGISH BROWN, CLAY , SOME TO "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP | 583.9 | | | | | | | | | | | | | | | | | | | |
| | | | 1 | 2 | 7 | 100 | SS-1 | 3.50 | - | - | - | - | - | - | - | - | - | 26 | A-7-6 (V) | |
| | | | 2 | 3 | | | | | | | | | | | | | | | | |
| | | | 3 | | | | | | | | | | | | | | | | | |
| | | | 4 | 2 | 6 | 17 | 100 | SS-2 | 3.00 | 1 | 4 | 9 | 35 | 51 | 51 | 24 | 27 | 21 | A-7-6 (17) | |
| | | | 5 | 7 | | | | | | | | | | | | | | | | |
| | | | 6 | 4 | 5 | 17 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 7 | 8 | | | | | | | | | | | | | | | | |
| | | | 8 | | | | | | | | | | | | | | | | | |
| | | | 9 | 4 | 6 | 20 | 100 | SS-4 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 10 | 9 | | | | | | | | | | | | | | | | |
| | | | 11 | 5 | 8 | 29 | 78 | SS-5 | 3.75 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | | 12 | 14 | | | | | | | | | | | | | | | | |
| | | | 13 | | | | | | | | | | | | | | | | | |
| | | | 14 | 6 | 9 | 24 | 33 | SS-6 | 3.75 | - | - | - | - | - | - | - | - | 18 | A-7-6 (V) | |
| | 568.4 | 15 | 9 | | | | | | | | | | | | | | | | | |
| VERY STIFF TO HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , "AND" SILT, LITTLE SAND, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP TO MOIST | | 16 | 5 | 9 | 27 | 100 | SS-7 | 4.50 | 13 | 8 | 5 | 38 | 36 | 42 | 24 | 18 | 15 | A-7-6 (11) | | |
| | | | 17 | 11 | | | | | | | | | | | | | | | | |
| | | | 18 | | | | | | | | | | | | | | | | | |
| | | | 19 | 6 | 9 | 28 | 72 | SS-8 | 3.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | |
| | | | 20 | 12 | | | | | | | | | | | | | | | | |
| | | 21 | 5 | 10 | 31 | 100 | SS-9 | 3.00 | - | - | - | - | - | - | - | - | 19 | A-7-6 (V) | | |
| | | 22 | 13 | | | | | | | | | | | | | | | | | |
| | 560.4 | 23 | | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG. | 559.4 | 24 | 27 | 50 | - | 33 | SS-10 | - | - | - | - | - | - | - | - | - | 4 | Rock (V) | | |
| | | EOB | | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>16+03, 53' RT.</u> | EXPLORATION ID: <u>B-014-1-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>581.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449475, -82.431502</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|-----------|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, MAROONISH BROWN, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING AND ROOTS, DAMP | 581.4 | 1 | 4 | | | | | | | | | | | | | | | | |
| | | 2 | 5 | 13 | 100 | SS-1 | 4.50 | 1 | 5 | 6 | 40 | 48 | 46 | 24 | 22 | 22 | A-7-6 (14) | | |
| HARD, YELLOWISH BROWN AND BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 578.4 | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 4 | 19 | 100 | SS-2 | 4.50 | 0 | 0 | 1 | 24 | 75 | 59 | 27 | 32 | 22 | A-7-6 (20) | | |
| | | 5 | 5 | 9 | | | | | | | | | | | | | | | |
| | | 6 | 4 | | | | | | | | | | | | | | | | |
| | | 7 | 7 | 24 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 27 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | | |
| | | 10 | 8 | 12 | | | | | | | | | | | | | | | |
| | | 11 | 5 | | | | | | | | | | | | | | | | |
| | | 12 | 7 | 24 | 100 | SS-5 | 4.50 | 0 | 0 | 1 | 30 | 69 | 45 | 26 | 19 | 24 | A-7-6 (13) | | |
| | 13 | | | | | | | | | | | | | | | | | | |
| | 14 | 5 | 21 | 100 | SS-6 | 4.50 | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | | | |
| | 15 | 7 | 9 | | | | | | | | | | | | | | | | |
| | 16 | 6 | | | | | | | | | | | | | | | | | |
| | 17 | 7 | 24 | 78 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 23 | A-7-6 (V) | | | |
| | 18 | | | | | | | | | | | | | | | | | | |
| | 19 | 4 | 17 | 89 | SS-8 | 4.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | | | |
| | 20 | 6 | 7 | | | | | | | | | | | | | | | | |
| | 21 | 3 | | | | | | | | | | | | | | | | | |
| | 22 | 5 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | | | |
| | 23 | 8 | | | | | | | | | | | | | | | | | |
| | 556.4 | 24 | 11 | 36 | 100 | SS-10 | 4.25 | - | - | - | - | - | - | - | 24 | A-7-6 (V) | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>17+61, 30' RT.</u> | EXPLORATION ID: <u>B-014-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>609.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449658, -82.431007</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| STIFF, BROWN AND MAROONISH BROWN, SILTY CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 609.0 | 1 | 8 | | | | | | | | | | | | | | | | |
| | | 2 | 6 | 4 | 13 | 83 | SS-1 | - | 16 | 11 | 23 | 24 | 26 | 36 | 20 | 16 | 14 | A-6b (5) | |
| HARD, BROWN AND MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 606.0 | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 3 | 7 | 13 | 100 | SS-2 | 4.50 | 7 | 11 | 6 | 29 | 47 | 50 | 26 | 24 | 18 | A-7-6 (16) | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, DAMP | 603.5 | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 9 | 16 | 21 | 49 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | 9 | A-6a (V) | |
| SS-4 CONTAINS GYPSUM | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 9 | 25 | 31 | 75 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | 15 | A-6a (V) | |
| SS-5 CONTAINS GYPSUM | | 10 | | | | | | | | | | | | | | | | | |
| | | 11 | 13 | 19 | 22 | 55 | 100 | SS-5 | 4.50 | 2 | 12 | 19 | 36 | 31 | 40 | 25 | 15 | A-6a (8) | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 11 | 28 | 39 | 89 | 89 | SS-6 | 4.50 | - | - | - | - | - | - | - | 18 | A-6a (V) | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 9 | 31 | 40 | 95 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | 15 | A-6a (V) | |
| | | 17 | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | 590.5 | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 12 | 29 | 42 | 95 | 33 | SS-8 | - | - | - | - | - | - | - | - | 8 | Rock (V) | |
| | | 20 | | | | | | | | | | | | | | | | | |
| | | 21 | 10 | 35 | 44 | 105 | 39 | SS-9 | - | - | - | - | - | - | - | - | 5 | Rock (V) | |
| | | 22 | | | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | | |
| | 585.0 | 24 | 50 | - | 83 | SS-10 | - | - | - | - | - | - | - | - | - | 7 | Rock (V) | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

| | | | | |
|---|---|---------------------------------|--|-------------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>20+24, 21' RT.</u> | EXPLORATION ID <u>B-014-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL B2</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>628.0 (MSL)</u> EOB: <u>15.5 ft.</u> | PAGE 1 OF 1 |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449877, -82.430131</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | HOLE SEALED | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|--------------------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP | 628.0 | 1 | 3 | | | | | | | | | | | | | | | <L> >L> <L> >L> | |
| | | 2 | 3 | 11 | 100 | SS-1 | 4.25 | 1 | 0 | 1 | 23 | 75 | 53 | 24 | 29 | 18 | A-7-6 (18) | <L> >L> <L> >L> | |
| | | 3 | | | | | | | | | | | | | | | | | |
| HARD, REDDISH BROWN AND YELLOWISH BROWN BECOMING ORANGISH BROWN, CLAY , SOME TO "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL AND STONE FRAGMENTS, IRON STAINING, RESIDUAL ROCK, DAMP | 625.0 | 4 | 8 | 44 | 100 | SS-2 | 4.50 | 2 | 7 | 8 | 38 | 45 | 41 | 20 | 21 | 9 | A-7-6 (13) | | |
| | | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 6 | | | | | | | | | | | | | | | | |
| SILTSTONE, GRAY AND BROWN, SLIGHTLY TO MODERATELY WEATHERED, SLIGHTLY STRONG TO MODERATELY STRONG, VERY THIN TO MEDIUM BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, PARTIALLY CLAY FILLED HIGH ANGLE JOINT DISCONTINUITIES FROM 12.3'-12.9' AND 14.7'-15.2', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, BLOCKY, GOOD TO FAIR SURFACE CONDITION; RQD 80%, REC 100%. | 618.0 | 7 | 11 | 32 | 33 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 11 | A-7-6 (V) | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 8 | 12 | 37 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | 11 | A-7-6 (V) | | |
| SILTSTONE, GRAY AND BROWN, SLIGHTLY TO MODERATELY WEATHERED, SLIGHTLY STRONG TO MODERATELY STRONG, VERY THIN TO MEDIUM BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, PARTIALLY CLAY FILLED HIGH ANGLE JOINT DISCONTINUITIES FROM 12.3'-12.9' AND 14.7'-15.2', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, BLOCKY, GOOD TO FAIR SURFACE CONDITION; RQD 80%, REC 100%. | 612.5 | 10 | 50 | - | 83 | SS-5 | - | - | - | - | - | - | - | - | 5 | Rock (V) | | | |
| | | 11 | | | | | | | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | 80 | | 100 | NQ2-1 | | | | | | | | | | | CORE | | |
| | | 14 | | | | | | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA075923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>24+49, 28' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | B-076-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>587.7 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448656, -82.373197</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|---|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 587.7 | | | | | | | | | | | | | | | | | |
| HARD, BROWN, SANDY SILT , SOME STONE FRAGMENTS, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.1 | 1 | 7 | | | | | | | | | | | | | | | |
| | 584.7 | 2 | 18 11 | 39 | 100 | SS-1 | - | 26 | 19 | 13 | 28 | 14 | 30 | 20 | 10 | 7 | A-4a (1) | |
| HARD, MAROONISH BROWN BECOMING DARK BROWN, CLAY , SOME SILT, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 5 | 15 | 89 | SS-2 | 4.50 | 15 | 7 | 12 | 30 | 36 | 44 | 24 | 20 | 20 | A-7-6 (11) | |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 7 | | | | | | | | | | | | | | | |
| | | 7 | 7 8 | 20 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 6 | 15 | 72 | SS-4 | 4.50 | 7 | 9 | 15 | 31 | 38 | 42 | 23 | 19 | 19 | A-7-6 (11) | |
| | | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 3 | 13 | 100 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) | |
| | | 12 | | | | | | | | | | | | | | | | |
| | 574.7 | 13 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN BECOMING MAROONISH BROWN, GRAVEL WITH SAND , TRACE SILT, TRACE CLAY, DAMP | | 14 | 4 | 15 | 28 | SS-6 | - | 32 | 32 | 26 | 5 | 5 | NP | NP | NP | 6 | A-1-b (0) | |
| | | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 3 | 20 | 33 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | | 17 | 7 8 | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 | 16 | 44 | SS-8 | - | - | - | - | - | - | - | - | - | 5 | A-1-b (V) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | 4 | 20 | 100 | SS-9 | - | - | - | - | - | - | - | - | - | 7 | A-1-b (V) | |
| | | 22 | 6 9 | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | |
| | 562.7 | 24 | 4 | 21 | 83 | SS-10 | - | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| | | | 7 9 | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>26+46, 39' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | B-076-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>589.9 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448837, -82.372539</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|-----------|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 12.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 589.9 | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , LITTLE TO SOME SAND, LITTLE STONE FRAGMENTS, DAMP | 588.4 | 1 | 4 | | | | | | | | | | | | | | | | |
| | | 2 | 3 | 13 | 67 | SS-1 | 4.25 | 12 | 15 | 11 | 31 | 31 | 36 | 20 | 16 | 12 | A-6b (8) | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 7 | 23 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| HARD, BROWN, SILT AND CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE STONE FRAGMENTS, DAMP | 584.4 | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 6 | | | | | | | | | | | | | | | | |
| | | 7 | 8 | 23 | 100 | SS-3 | 4.50 | 16 | 12 | 13 | 31 | 28 | 34 | 20 | 14 | 13 | A-6a (6) | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , TRACE CLAY, TRACE SILT, IRON STAINING, DAMP | 577.4 | 9 | 5 | 19 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-6a (V) | | |
| | | 10 | 6 | | | | | | | | | | | | | | | | |
| | | 11 | 6 | 15 | 78 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 18 | A-6a (V) | | |
| | | 12 | 5 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , TRACE CLAY, TRACE SILT, IRON STAINING, DAMP | 574.4 | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 5 | 19 | 100 | SS-6 | - | 22 | 29 | 30 | 9 | 10 | NP | NP | NP | 8 | A-1-b (0) | | |
| MEDIUM DENSE, ORANGISH BROWN, COARSE AND FINE SAND , TRACE CLAY, TRACE SILT, TRACE GRAVEL, IRON STAINING, DAMP | 571.9 | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 4 | 21 | 39 | SS-7 | - | 4 | 23 | 59 | 5 | 9 | NP | NP | NP | 7 | A-3a (0) | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, IRON STAINING, DAMP | 564.9 | 17 | 8 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 4 | 15 | 50 | SS-8 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | | |
| | | 20 | 5 | | | | | | | | | | | | | | | | |
| EOB | 564.9 | 21 | 2 | 16 | 44 | SS-9 | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | | | |
| | | 22 | 6 | | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | | |
| | | 24 | 4 | 21 | 100 | SS-10 | - | - | - | - | - | - | - | - | - | 5 | A-1-b (V) | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>28+44, 42' RT.</u> | EXPLORATION ID: <u>B-077-2-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>592.6 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449043, -82.371899</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 12.0" ASPHALT AND 5.5" BASE (DRILLERS DESCRIPTION) | 592.6 | | | | | | | | | | | | | | | | | |
| | 591.1 | 1 | 4 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 589.6 | 2 | 5 | 13 | 72 | SS-1 | 4.50 | 7 | 9 | 8 | 34 | 42 | 44 | 21 | 23 | 15 | A-7-6 (14) | |
| | | 3 | | | | | | | | | | | | | | | | |
| VERY STIFF, BROWN AND GRAY, SANDY SILT , "AND" GRAVEL, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 587.1 | 4 | 5 | 24 | 94 | SS-2 | - | 35 | 9 | 8 | 33 | 15 | 30 | 20 | 10 | 8 | A-4a (3) | |
| | | 5 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 582.1 | 6 | 4 | | | | | | | | | | | | | | | |
| | | 7 | 8 | 23 | 100 | SS-3 | 4.50 | 18 | 13 | 10 | 31 | 28 | 38 | 21 | 17 | 13 | A-6b (8) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | | | | | | | | | | | | | | | |
| | | 10 | 5 | 16 | 89 | SS-4 | 4.25 | - | - | - | - | - | - | - | - | 13 | A-6b (V) | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 582.1 | 11 | 4 | | | | | | | | | | | | | | | |
| | | 12 | 5 | 19 | 39 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-7-6 (V) | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 5 | | | | | | | | | | | | | | | |
| | | 15 | 6 | 17 | 72 | SS-6 | 4.25 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) | |
| HARD, BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 577.1 | 16 | | | | | | | | | | | | | | | | |
| | | 17 | 5 | 17 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 18 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, FINE SAND , SOME COARSE SAND, LITTLE GRAVEL, TRACE SILT, TRACE CLAY, IRON STAINING, DAMP | 574.6 | 19 | 5 | 16 | 78 | SS-8 | - | 14 | 27 | 53 | 5 | 1 | NP | NP | NP | 3 | A-3 (0) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 6 | 15 | 33 | SS-9 | - | - | - | - | - | - | - | - | - | 3 | A-3 (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 2 | 21 | 89 | SS-10 | - | - | - | - | - | - | - | - | - | 4 | A-3 (V) | |
| | 567.6 | | 5 | 11 | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:42 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>30+45, 50' RT.</u> | EXPLORATION ID: <u>B-077-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>588.8 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449237, -82.371242</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | WC | ODOT CLASS (GI) | BACK FILL |
|---|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | |
| 13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION) | 588.8 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, MAROONISH BROWN AND BROWN, SANDY SILT , "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP | 585.8 | 1 | 6 | 21 | 22 | SS-1 | - | 47 | 7 | 9 | 21 | 16 | NP | NP | NP | 10 | A-4a (0) | |
| HARD, MAROONISH BROWN BECOMING BROWN, SILTY CLAY , SOME SAND, LITTLE TO SOME GRAVEL, DAMP | | 2 | | | | | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 6 | 20 | 100 | SS-2 | 4.50 | 21 | 12 | 10 | 32 | 25 | 38 | 22 | 16 | 13 | A-6b (7) | |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 6 | | | | | | | | | | | | | | | |
| | | 7 | 8 | 25 | 17 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | | | | | | | | | | | | | | | |
| | | 10 | 6 | 16 | 100 | SS-4 | 4.50 | 17 | 12 | 12 | 34 | 25 | 36 | 20 | 16 | 12 | A-6b (7) | |
| | | 11 | | | | | | | | | | | | | | | | |
| | | 12 | 6 | 16 | 33 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 5 | 16 | 44 | SS-6 | 4.25 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 15 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND , LITTLE SILT, TRACE CLAY, DAMP | 573.3 | 16 | 6 | 20 | 44 | SS-7 | - | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| | | 17 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| HARD, DARK BROWN, SILTY CLAY , "AND" SAND, TRACE GRAVEL, DAMP | 570.8 | 19 | 5 | 17 | 100 | SS-8 | 4.50 | 4 | 13 | 28 | 28 | 27 | 34 | 18 | 16 | 15 | A-6b (6) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 4 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 10 | A-6b (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, DAMP | 565.8 | 24 | 5 | 19 | 100 | SS-10 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | | 25 | | | | | | | | | | | | | | | | |
| | 563.8 | | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:43 - IUS0247.PPFSS011SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>32+48, 44' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | B-078-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>595.3 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449462, -82.370599</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 12.5" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 595.3 | | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, SILTY CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 593.8 | 1 | 3 | 15 | 100 | SS-1 | 4.25 | 19 | 9 | 9 | 35 | 28 | 38 | 21 | 17 | 13 | A-6b (8) | | |
| | | 2 | 5 | 6 | | | | | | | | | | | | | | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 6 | 7 | 6 | 17 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | 13 | A-6b (V) | |
| | | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 5 | 7 | 16 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 7 | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 9 | 12 | 28 | 50 | SS-4 | 4.50 | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 10 | | | | | | | | | | | | | | | | | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME GRAVEL AND STONE FRAGMENTS, LITTLE SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 584.8 | 11 | 7 | 16 | 37 | 100 | SS-5 | - | 31 | 10 | 9 | 30 | 20 | 34 | 20 | 14 | 10 | A-6a (4) | |
| | 582.3 | 12 | | 12 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 6 | 7 | 10 | 23 | 28 | SS-6 | 4.50 | - | - | - | - | - | - | - | 17 | A-6b (V) | |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 6 | 6 | 7 | 17 | 44 | SS-7 | 4.50 | - | - | - | - | - | - | - | 17 | A-6b (V) | |
| | | 17 | | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 6 | 8 | 5 | 17 | 22 | SS-8 | 4.50 | - | - | - | - | - | - | - | 14 | A-6b (V) | |
| | | 20 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT , LITTLE CLAY, DAMP | 574.8 | 21 | 4 | | | | | | | | | | | | | | | | |
| | 572.3 | 22 | 4 | 5 | 12 | 28 | SS-9 | - | - | - | - | - | - | - | - | 12 | A-2-4 (V) | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , "AND" SAND, LITTLE GRAVEL, DAMP | 570.3 | 23 | | | | | | | | | | | | | | | | | |
| | 570.3 | 24 | 4 | 6 | 16 | 100 | SS-10 | 4.50 | 13 | 15 | 25 | 26 | 21 | 30 | 17 | 13 | 13 | A-6a (3) | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 9/18/24 08:43 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA075923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>34+47, 34' RT.</u> | EXPLORATION ID: <u>B-078-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>NOISE WALL D</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>602.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449677, -82.369965</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 602.4 | | | | | | | | | | | | | | | | | |
| | 600.8 | 1 | 5 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, LITTLE GRAVEL, DAMP | 599.4 | 2 | 2 | 4 | 8 | 33 | SS-1 | 4.50 | 13 | 8 | 10 | 32 | 37 | 41 | 20 | 21 | 16 | A-7-6 (11) |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , LITTLE TO SOME GRAVEL, SOME SAND, DAMP | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 3 | 4 | 11 | 89 | SS-2 | 4.50 | 33 | 15 | 10 | 27 | 15 | 34 | 21 | 13 | 10 | A-6a (2) |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 5 | 5 | 23 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6a (V) |
| | 594.4 | 7 | 5 | 12 | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 591.9 | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 6 | 7 | 21 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) |
| | | 10 | | | | | | | | | | | | | | | | |
| VERY STIFF, BROWN, SILT AND CLAY , SOME STONE FRAGMENTS, SOME SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.9 | 11 | 5 | 12 | 27 | 94 | SS-5 | - | 33 | 16 | 10 | 23 | 18 | 36 | 22 | 14 | 10 | A-6a (2) |
| | | 12 | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 6 | 7 | 20 | 22 | SS-6 | - | - | - | - | - | - | - | - | - | 9 | A-6a (V) |
| | | 15 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE TO LITTLE GRAVEL, DAMP | | 16 | 4 | 4 | 15 | 17 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) |
| | | 17 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 | 8 | 21 | 100 | SS-8 | 4.50 | 11 | 12 | 7 | 33 | 37 | 41 | 21 | 20 | 13 | A-7-6 (11) |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 6 | 9 | 31 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-7-6 (V) |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 6 | 10 | 35 | 100 | SS-10 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) |
| | 577.4 | | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****Noise Wall Design****LAW-7-2.17
75923****Noise Wall Along SR-7****Barrier B1****Stantec Consulting****Prepared By:** James Samples
Date prepared: Tuesday, September 10, 2024**Checked By:** Eric Kistner
Date Checked: Tuesday, September 17, 2024**No. of Borings:** 11

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+00.00 | 1 | 14.00 | 24.00 | 574.82 |
| 10+24.00 | 2 | 14.00 | 24.00 | 574.82 |
| 10+48.00 | 3 | 14.00 | 24.00 | 574.82 |
| 10+72.00 | 4 | 14.00 | 24.00 | 574.82 |
| 10+96.00 | 5 | 14.00 | 24.00 | 575.82 |
| 11+20.00 | 6 | 14.00 | 24.00 | 575.82 |
| 11+44.00 | 7 | 14.00 | 24.00 | 575.82 |
| 11+68.00 | 8 | 14.00 | 24.00 | 576.82 |
| 11+92.00 | 9 | 14.00 | 24.00 | 576.82 |
| 12+16.00 | 10 | 14.00 | 24.00 | 576.82 |
| 12+40.00 | 11 | 14.00 | 24.00 | 577.82 |
| 12+64.00 | 12 | 14.00 | 24.00 | 577.82 |
| 12+88.00 | 13 | 14.00 | 24.00 | 577.82 |
| 13+12.00 | 14 | 14.00 | 24.00 | 577.82 |
| 13+36.00 | 15 | 14.00 | 24.00 | 578.82 |
| 13+60.00 | 16 | 14.00 | 24.00 | 578.82 |
| 13+84.00 | 17 | 14.00 | 24.00 | 578.82 |
| 14+08.00 | 18 | 14.00 | 24.00 | 579.82 |
| 14+32.00 | 19 | 14.00 | 24.00 | 579.82 |
| 14+56.00 | 20 | 14.00 | 24.00 | 580.82 |
| 14+80.00 | 21 | 14.00 | 24.00 | 580.82 |
| 15+04.00 | 22 | 14.00 | 24.00 | 581.82 |
| 15+28.00 | 23 | 14.00 | 24.00 | 581.82 |
| 15+52.00 | 24 | 14.00 | 24.00 | 582.82 |
| 15+76.00 | 25 | 14.00 | 24.00 | 582.82 |
| 16+00.00 | 26 | 14.00 | 24.00 | 583.82 |
| 16+24.00 | 27 | 14.00 | 24.00 | 584.82 |
| 16+48.00 | 28 | 14.00 | 24.00 | 585.62 |
| 16+72.00 | 29 | 14.00 | 24.00 | 586.62 |
| 16+96.00 | 30 | 14.00 | 24.00 | 587.22 |
| 17+20.00 | 31 | 14.00 | 24.00 | 588.12 |
| 17+44.00 | 32 | 14.00 | 24.00 | 588.92 |
| 17+68.00 | 33 | 14.00 | 24.00 | 589.92 |
| 17+92.00 | 34 | 14.00 | 24.00 | 590.82 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 18+16.00 | 35 | 14.00 | 24.00 | 591.82 |
| 18+40.00 | 36 | 14.00 | 24.00 | 592.92 |
| 18+64.00 | 37 | 14.00 | 24.00 | 594.02 |
| 18+88.00 | 38 | 14.00 | 24.00 | 595.12 |
| 19+12.00 | 39 | 14.00 | 24.00 | 596.22 |
| 19+36.00 | 40 | 14.00 | 24.00 | 597.42 |
| 19+60.00 | 41 | 14.00 | 24.00 | 598.72 |
| 19+84.00 | 42 | 14.00 | 24.00 | 599.92 |
| 20+08.00 | 43 | 14.00 | 24.00 | 601.32 |
| 20+32.00 | 44 | 14.00 | 24.00 | 602.68 |
| 20+56.00 | 45 | 14.00 | 24.00 | 604.08 |
| 20+80.00 | 46 | 14.00 | 24.00 | 605.50 |
| 21+04.00 | 47 | 14.00 | 24.00 | 606.93 |
| 21+28.00 | 48 | 14.00 | 24.00 | 608.37 |
| 21+52.00 | 49 | 14.00 | 24.00 | 609.81 |
| 21+76.00 | 50 | 14.00 | 24.00 | 611.25 |
| 22+00.00 | 51 | 14.00 | 24.00 | 612.69 |
| 22+24.00 | 52 | 14.00 | 24.00 | 614.13 |
| 22+48.00 | 53 | 14.00 | 24.00 | 615.57 |
| 22+72.00 | 54 | 14.00 | 24.00 | 617.01 |
| 22+96.00 | 55 | 14.00 | 24.00 | 618.45 |
| 23+20.00 | 56 | 14.00 | 24.00 | 619.89 |
| 23+44.00 | 57 | 14.00 | 24.00 | 621.28 |
| 23+68.00 | 58 | 14.00 | 24.00 | 622.50 |
| 23+92.00 | 59 | 14.00 | 24.00 | 623.95 |
| 24+04.00 | 60 | 14.00 | 12.00 | 624.91 |
| 24+28.00 | 61 | 14.00 | 24.00 | 625.89 |
| 24+40.00 | 62 | 14.00 | 12.00 | 626.86 |
| 24+64.00 | 63 | 14.00 | 24.00 | 628.30 |
| 24+88.00 | 64 | 14.00 | 24.00 | 629.74 |
| 25+12.00 | 65 | 14.00 | 24.00 | 631.17 |
| 25+36.00 | 66 | 14.00 | 24.00 | 632.59 |
| 25+60.00 | 67 | 14.00 | 24.00 | 633.95 |
| 25+84.00 | 68 | 14.00 | 24.00 | 635.30 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 26+08.00 | 69 | 14.00 | 24.00 | 636.58 |
| 26+32.00 | 70 | 14.00 | 24.00 | 637.85 |
| 26+56.00 | 71 | 14.00 | 24.00 | 639.07 |
| 26+80.00 | 72 | 14.00 | 24.00 | 640.26 |
| 27+04.00 | 73 | 14.00 | 24.00 | 641.26 |
| 27+28.00 | 74 | 14.00 | 24.00 | 642.26 |
| 27+52.00 | 75 | 14.00 | 24.00 | 643.26 |
| 27+76.00 | 76 | 14.00 | 24.00 | 644.26 |
| 28+00.00 | 77 | 14.00 | 24.00 | 645.26 |
| 28+24.00 | 78 | 14.00 | 24.00 | 646.26 |
| 28+48.00 | 79 | 14.00 | 24.00 | 647.26 |
| 28+72.00 | 80 | 14.00 | 24.00 | 648.26 |
| 28+96.00 | 81 | 14.00 | 24.00 | 649.46 |
| 29+20.00 | 82 | 14.00 | 24.00 | 650.66 |
| 29+44.00 | 83 | 14.00 | 24.00 | 651.71 |
| 29+68.00 | 84 | 14.00 | 24.00 | 652.56 |
| 29+92.00 | 85 | 14.00 | 24.00 | 653.56 |
| 30+16.00 | 86 | 14.00 | 24.00 | 654.36 |
| 30+40.00 | 87 | 14.00 | 24.00 | 654.36 |
| 30+64.00 | 88 | 14.00 | 24.00 | 655.36 |
| 30+88.00 | 89 | 14.00 | 24.00 | 656.36 |
| 31+12.00 | 90 | 14.00 | 24.00 | 656.36 |
| 31+36.00 | 91 | 14.00 | 24.00 | 657.36 |
| 31+60.00 | 92 | 14.00 | 24.00 | 657.36 |
| 31+84.00 | 93 | 14.00 | 24.00 | 658.36 |
| 32+08.00 | 94 | 14.00 | 24.00 | 658.36 |
| 32+32.00 | 95 | 14.00 | 24.00 | 658.36 |
| 32+56.00 | 96 | 14.00 | 24.00 | 659.36 |
| 32+80.00 | 97 | 14.00 | 24.00 | 659.36 |
| 33+04.00 | 98 | 14.00 | 24.00 | 659.36 |
| 33+28.00 | 99 | 14.00 | 24.00 | 659.36 |
| 33+52.00 | 100 | 14.00 | 24.00 | 659.36 |
| 33+76.00 | 101 | 14.00 | 24.00 | 659.36 |
| 34+00.00 | 102 | 14.00 | 24.00 | 659.36 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 34+24.00 | 103 | 14.00 | 24.00 | 659.36 |
| 34+48.00 | 104 | 14.00 | 24.00 | 659.36 |
| 34+72.00 | 105 | 14.00 | 24.00 | 659.36 |
| 34+96.00 | 106 | 14.00 | 24.00 | 659.36 |
| 35+20.00 | 107 | 14.00 | 24.00 | 659.36 |
| 35+44.00 | 108 | 14.00 | 24.00 | 659.36 |
| 35+68.00 | 109 | 14.00 | 24.00 | 659.36 |
| 35+92.00 | 110 | 14.00 | 24.00 | 658.36 |
| 36+16.00 | 111 | 14.00 | 24.00 | 658.36 |
| 36+40.00 | 112 | 14.00 | 24.00 | 658.36 |
| 36+64.00 | 113 | 14.00 | 24.00 | 657.36 |
| 36+88.00 | 114 | 14.00 | 24.00 | 657.36 |
| 37+12.00 | 115 | 14.00 | 24.00 | 656.36 |
| 37+36.00 | 116 | 14.00 | 24.00 | 656.36 |
| 37+60.00 | 117 | 14.00 | 24.00 | 655.36 |
| 37+84.00 | 118 | 14.00 | 24.00 | 655.36 |
| 38+08.00 | 119 | 14.00 | 24.00 | 654.36 |
| 38+32.00 | 120 | 14.00 | 24.00 | 653.56 |
| 38+56.00 | 121 | 14.00 | 24.00 | 652.76 |
| 38+80.00 | 122 | 14.00 | 24.00 | 652.06 |
| 39+04.00 | 123 | 14.00 | 24.00 | 651.26 |
| 39+28.00 | 124 | 14.00 | 24.00 | 650.46 |
| 39+52.00 | 125 | 14.00 | 24.00 | 649.66 |
| 39+76.00 | 126 | 14.00 | 24.00 | 648.86 |
| 40+00.00 | 127 | 14.00 | 24.00 | 647.96 |
| 40+24.00 | 128 | 14.00 | 24.00 | 646.96 |
| 40+48.00 | 129 | 14.00 | 24.00 | 645.76 |
| 40+72.00 | 130 | 14.00 | 24.00 | 644.66 |
| 40+96.00 | 131 | 14.00 | 24.00 | 643.46 |
| 41+20.00 | 132 | 14.00 | 24.00 | 642.16 |
| 41+44.00 | 133 | 14.00 | 24.00 | 640.96 |
| 41+68.00 | 134 | 14.00 | 24.00 | 639.66 |
| 41+92.00 | 135 | 14.00 | 24.00 | 638.66 |
| 42+16.00 | 136 | 14.00 | 24.00 | 636.98 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 42+40.00 | 137 | 14.00 | 24.00 | 635.56 |
| 42+64.00 | 138 | 14.00 | 24.00 | 633.94 |
| 42+88.00 | 139 | 14.00 | 24.00 | 632.33 |
| 43+12.00 | 140 | 14.00 | 24.00 | 630.72 |
| 43+36.00 | 141 | 14.00 | 24.00 | 629.16 |
| 43+60.00 | 142 | 14.00 | 24.00 | 627.63 |
| 43+84.00 | 143 | 14.00 | 24.00 | 626.09 |
| 44+08.00 | 144 | 14.00 | 24.00 | 624.52 |
| 44+32.00 | 145 | 14.00 | 24.00 | 622.67 |
| 44+56.00 | 146 | 14.00 | 24.00 | 621.10 |
| 44+80.00 | 147 | 14.00 | 24.00 | 619.53 |
| 45+04.00 | 148 | 14.00 | 24.00 | 617.97 |
| 45+28.00 | 149 | 14.00 | 24.00 | 616.57 |
| 45+52.00 | 150 | 14.00 | 24.00 | 615.57 |
| 45+76.00 | 151 | 14.00 | 24.00 | 614.57 |
| 46+00.00 | 152 | 14.00 | 24.00 | 613.47 |
| 46+24.00 | 153 | 14.00 | 24.00 | 612.27 |
| 46+48.00 | 154 | 14.00 | 24.00 | 610.88 |
| 46+72.00 | 155 | 14.00 | 24.00 | 609.46 |
| 46+96.00 | 156 | 14.00 | 24.00 | 608.10 |
| 47+20.00 | 157 | 14.00 | 24.00 | 606.73 |
| 47+44.00 | 158 | 14.00 | 24.00 | 605.43 |
| 47+68.00 | 159 | 14.00 | 24.00 | 604.13 |
| 47+92.00 | 160 | 14.00 | 24.00 | 602.83 |
| 48+16.00 | 161 | 14.00 | 24.00 | 601.63 |
| 48+40.00 | 162 | 14.00 | 24.00 | 600.35 |
| 48+52.00 | 163 | 14.00 | 12.00 | 600.35 |

**Boring Information and
Design Recommendation**

**LAW-7-2.17
PID: 75923**

Foundation Design

Noise Wall ID: Barrier B1

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| | | | | | | | | | | | | | | | | | | |
| B-001 | SPT | 10+00.00 | 14+50.00 | 574.82 | 574.82 | 567.00 | | | 24 | 14.00 | 3.0 | 3:1 | 10+00.00 | 14+32.00 | 1 | 19 | 6.50 | 568.32 |
| B-002 | SPT | 19+00.00 | 21+00.00 | 595.12 | 595.12 | 578.00 | | | 24 | 14.00 | 3.0 | 3:1 | 14+56.00 | 20+80.00 | 20 | 46 | 6.50 | 588.62 |
| B-003 | SPT | 23+00.00 | 25+81.50 | 618.45 | 618.45 | 598.50 | | | 24 | 14.00 | 3.0 | 3:1 | 21+04.00 | 25+60.00 | 47 | 67 | 6.50 | 611.95 |
| B-007-2-23 | SPT | 28+63.00 | 29+98.00 | 631.51 | 647.26 | 647.00 | 626.01 | | 24 | 14.00 | 3.0 | 3:1 | 25+84.00 | 29+92.00 | 68 | 85 | 6.50 | 640.76 |
| B-007-3-23 | SPT | 31+33.00 | 32+53.50 | 659.25 | 656.36 | 655.00 | 653.25 | | 24 | 14.00 | 3.0 | 3:1 | 30+16.00 | 32+32.00 | 86 | 95 | 6.50 | 649.86 |
| B-007-4-23 | SPT | 33+74.00 | 34+72.00 | 668.96 | 659.36 | 655.00 | 655.46 | | 24 | 14.00 | 3.0 | 3:1 | 32+56.00 | 34+72.00 | 96 | 105 | 6.50 | 652.86 |
| B-007-5-23 | SPT | 35+70.00 | 36+85.00 | 645.20 | 659.36 | 651.00 | 632.70 | | 24 | 14.00 | 3.0 | 3:1 | 34+96.00 | 36+64.00 | 106 | 113 | 6.50 | 652.86 |
| B-004 | SPT | 38+00.00 | 38+88.00 | 655.36 | 655.36 | 610.00 | | | 24 | 14.00 | 3.0 | 3:1 | 36+88.00 | 38+80.00 | 114 | 122 | 6.50 | 648.86 |
| B-009-1-23 | SPT | 39+76.00 | 41+07.50 | 623.70 | 648.86 | 639.00 | 613.20 | | 24 | 14.00 | 3.0 | 3:1 | 39+04.00 | 40+96.00 | 123 | 131 | 6.50 | 642.36 |
| B-009-2-23 | SPT | 42+39.00 | 45+45.50 | 583.90 | 636.98 | 578.00 | 560.40 | | 24 | 14.00 | 3.0 | 3:1 | 41+20.00 | 45+28.00 | 132 | 149 | 6.50 | 630.48 |
| B-005 | SPT | 48+52.00 | 48+52.00 | 600.35 | 600.35 | 562.00 | | | 24 | 14.00 | 3.0 | 3:1 | 45+52.00 | 48+52.00 | 150 | 163 | 6.50 | 593.85 |

B-001
 Layer Thick. (ft)= 2.50
 Fill (ft) = 7.82
 Shaft Top Elev. (ft) = 574.82
 Boring Top Elev. (ft) = 574.82 Ex. Ground Elev.= 567.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 568.32' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 574.82 | 572.32 | 2.50 | | | 20 | | | | 574.50 | | | | | | 0.32 | 20 | Cohesive |
| 2 | 572.32 | 569.82 | 5.00 | | | 20 | | | | 572.00 | | | | | | 2.82 | 20 | Cohesive |
| 3 | 569.82 | 567.32 | 7.50 | | | 20 | | | | 569.50 | | | | | | 5.32 | 20 | Cohesive |
| 4 | 567.32 | 567.00 | 7.82 | | | 20 | | | | 567.00 | | | | | | 7.82 | 20 | Cohesive |
| | | | | | | | | | | 564.50 | | | | | | 10.32 | 20 | Cohesive |
| | | | | | | | | | | 562.00 | | | | | | 12.82 | 20 | Cohesive |
| | | | | | | | | | | 559.50 | | | | | | 15.32 | 20 | Cohesive |
| | | | | | | | | | | 557.00 | | | | | | 17.82 | | Cohesive |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-002

Layer Thick. (ft)= 2.50
 Fill (ft) = 17.12
 Shaft Top Elev. (ft) = 595.12
 Boring Top Elev. (ft) = 595.12 Ex. Ground Elev.= 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 588.62' | | | | | | | | | |

C CT.: 2
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 595.12 | 592.62 | 2.50 | | | | | | | 593.00 | | | | | | 2.12 | 20 | Cohesive |
| 2 | 592.62 | 590.12 | 5.00 | | | | | | | 590.50 | | | | | | 4.62 | 20 | Cohesive |
| 3 | 590.12 | 587.62 | 7.50 | | | | | | | 588.00 | | | | | | 7.12 | 20 | Cohesive |
| 4 | 587.62 | 585.12 | 10.00 | | | | | | | 585.50 | | | | | | 9.62 | 20 | Cohesive |
| 5 | 585.12 | 582.62 | 12.50 | | | | | | | 583.00 | | | | | | 12.12 | 20 | Cohesive |
| 6 | 582.62 | 580.12 | 15.00 | | | | | | | 580.50 | | | | | | 14.62 | 20 | Cohesive |
| 7 | 580.12 | 577.62 | 17.50 | | | | | | | 578.00 | | | | | | 17.12 | 20 | Cohesive |
| | | | | | | | | | | 575.50 | | | | | | 19.62 | 20 | Cohesive |
| | | | | | | | | | | 573.00 | | | | | | 22.12 | 20 | Cohesive |
| | | | | | | | | | | 570.50 | | | | | | 24.62 | 20 | Cohesive |
| | | | | | | | | | | 568.00 | | | | | | 27.12 | 20 | Cohesive |
| | | | | | | | | | | 565.50 | | | | | | 29.62 | 20 | Cohesive |
| | | | | | | | | | | 563.00 | | | | | | 32.12 | 20 | Cohesive |

B-003
 Layer Thick. (ft)= 2.50
 Fill (ft) = 19.95
 Shaft Top Elev. (ft) = 618.45
 Boring Top Elev. (ft) = 618.45 Ex. Ground Elev.= 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 611.95' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 618.45 | 598.50 | 19.95 | | | | | | | 616.00 | | | | | | 2.45 | 20 | Cohesive |
| | | | | | | | | | | 613.50 | | | | | | 4.95 | 20 | Cohesive |
| | | | | | | | | | | 611.00 | | | | | | 7.45 | 20 | Cohesive |
| | | | | | | | | | | 608.50 | | | | | | 9.95 | 20 | Cohesive |
| | | | | | | | | | | 606.00 | | | | | | 12.45 | 20 | Cohesive |
| | | | | | | | | | | 603.50 | | | | | | 14.95 | 20 | Cohesive |
| | | | | | | | | | | 601.00 | | | | | | 17.45 | 20 | Cohesive |
| | | | | | | | | | | 598.50 | | | | | | 19.95 | 20 | Cohesive |
| | | | | | | | | | | 596.00 | | | | | | 22.45 | | Cohesive |

B-007-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.26 Rock Elev. (ft)= 626.01
 Shaft Top Elev. (ft) = 647.26 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 631.51 Ex. Ground Elev.= 647.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 640.76' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 16

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 631.51 | 626.01 | 5.50 | A-7-6 | Cohesive | 9 | 1.86 | 9 | 9 | 647.00 | 118 | 56 | 56 | 306 | 153 | 0.26 | 20 | Cohesive |
| 2 | 626.01 | 624.01 | 7.50 | Rock | | 50 | | | | 644.50 | | | | | | 2.76 | 20 | Cohesive |
| 3 | 624.01 | 621.51 | 10.00 | Rock | | 50 | | | | 642.00 | | | | | | 5.26 | 9 | Cohesive |
| 4 | 621.51 | 619.01 | 12.50 | Rock | | 50 | | | | 639.50 | | | | | | 7.76 | | |
| 5 | 619.01 | 616.51 | 15.00 | Rock | | 50 | | | | 637.00 | | | | | | 10.26 | | |
| | | | | | | | | | | | | | | | | | | |
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B-007-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 1.36 Rock Elev. (ft)= 653.25
 Shaft Top Elev. (ft) = 656.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 659.25 Ex. Ground Elev.= 655.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 649.86' | | | | | | | | | |

CCT.: 4
 GCT.: 0
 N dsgn: 26

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 659.25 | 654.75 | 4.50 | A-7-6 | Cohesive | 15 | 1.91 | 15 | 15 | 655.00 | 122 | 60 | 60 | 268 | 134 | 1.36 | 20 | Cohesive |
| 2 | 654.75 | 657.75 | 1.36 | A-6a | Cohesive | 50 | 1.85 | 50 | 32 | 652.50 | 135 | 73 | 73 | -218 | 159 | 3.86 | 32 | Cohesive |
| 3 | 657.75 | 651.75 | 7.5 | Rock | | 50 | | | | 657.75 | | | | | | -1.39 | | Cohesive |
| 4 | 651.75 | 649.25 | 10.00 | Rock | | 50 | | | | 651.75 | | | | | | 4.61 | | Cohesive |
| 5 | 649.25 | 646.75 | 12.50 | Rock | | 50 | | | | 649.25 | | | | | | 7.11 | | |
| | | | | | | | | | | 646.75 | | | | | | 9.61 | | |
| | | | | | | | | | | | | | | | | | | |
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This should be input as 6.0 ft.

B-007-4-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 4.36 Rock Elev. (ft)= 655.46
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 668.96 Ex. Ground Elev.= 655.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 652.86' | | | | | | | | | |

CCT.: 2
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 668.96 | 664.46 | 4.50 | A-4a P | Cohesive | 9 | 1.93 | 9 | 9 | 657.50 | 118 | 56 | 56 | 250 | 125 | 1.86 | 20 | Cohesive |
| 2 | 664.46 | 661.96 | 7.00 | A-7-6 | Cohesive | 20 | 1.61 | 20 | 20 | 655.00 | 125 | 63 | 63 | 157 | 328 | 4.36 | 20 | Cohesive |
| 3 | 661.96 | 659.46 | 9.50 | A-7-6 | Cohesive | 31 | 1.47 | 31 | 31 | 652.50 | 128 | 66 | 66 | 164 | 489 | 6.86 | 20 | Cohesive |
| 4 | 659.46 | 656.96 | 12.00 | A-6b | Cohesive | 41 | 1.37 | 41 | 32 | 650.00 | 130 | 68 | 68 | 169 | 655 | 9.36 | 20 | Cohesive |
| 5 | 656.96 | 655.46 | 13.50 | A-6b | Cohesive | 50 | 1.31 | 50 | 32 | 647.50 | 135 | 73 | 73 | 109 | 794 | 11.86 | 20 | Cohesive |
| 6 | 655.46 | 653.96 | 15.00 | Rock | | 50 | | | | 645.00 | | | | | | 14.36 | 20 | Cohesive |
| 7 | 653.96 | 651.46 | 17.50 | Rock | | 50 | | | | 642.50 | | | | | | 16.86 | 20 | Cohesive |
| 8 | 651.46 | 648.96 | 20.00 | Rock | | 50 | | | | 640.00 | | | | | | 19.36 | 20 | Cohesive |
| 9 | 648.96 | 646.46 | 22.50 | Rock | | 50 | | | | 651.46 | | | | | | 7.90 | 31 | Cohesive |
| 10 | 646.46 | 643.96 | 25.00 | Rock | | 50 | | | | 648.96 | | | | | | 10.40 | 32 | Cohesive |
| | | | | | | | | | | 646.46 | | | | | | 12.90 | 32 | Cohesive |
| | | | | | | | | | | 643.96 | | | | | | 15.40 | | Cohesive |

B-007-5-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 8.36 Rock Elev. (ft)= 632.70
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 645.20 Ex. Ground Elev.= 651.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 652.86' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 645.20 | 642.20 | 3.00 | A-7-6 | Cohesive | 4 | 2.00 | 4 | 4 | 658.50 | 112 | 50 | 50 | 149 | 74 | 0.86 | 20 | Cohesive |
| 2 | 642.20 | 639.70 | 5.50 | A-7-6 | Cohesive | 19 | 1.73 | 19 | 19 | 656.00 | 122 | 60 | 60 | 149 | 223 | 3.36 | 20 | Cohesive |
| 3 | 639.70 | 637.20 | 8.00 | A-7-6 | Cohesive | 25 | 1.56 | 25 | 25 | 653.50 | 125 | 63 | 63 | 157 | 376 | 5.86 | 20 | Cohesive |
| 4 | 637.20 | 634.70 | 10.50 | A-7-6 | Cohesive | 23 | 1.44 | 23 | 23 | 651.00 | 125 | 63 | 63 | 157 | 533 | 8.36 | 20 | Cohesive |
| 5 | 634.70 | 632.70 | 12.50 | A-1-b | Granular | 52 | 1.36 | 71 | 60 | 648.50 | 132 | 70 | 70 | 139 | 680 | 10.86 | 20 | Cohesive |
| 6 | 632.70 | 629.70 | 15.50 | Rock | | 60 | | | | 646.00 | | | | | | 13.36 | 4 | Cohesive |
| 7 | 629.70 | 627.20 | 18.00 | Rock | | 73 | | | | 643.50 | | | | | | 15.86 | 19 | Cohesive |
| 8 | 627.20 | 625.20 | 20.00 | Rock | | 50 | | | | 641.50 | | | | | | 17.86 | 25 | Cohesive |
| 9 | 625.20 | 622.70 | 22.50 | Rock | | 50 | | | | 638.50 | | | | | | 20.86 | 23 | Cohesive |
| 10 | 622.70 | 620.20 | 25.00 | Rock | | 50 | | | | 636.00 | | | | | | 23.36 | 60 | Granular |
| | | | | | | | | | | 634.00 | | | | | | 25.36 | | |
| | | | | | | | | | | 631.50 | | | | | | 27.86 | | |
| | | | | | | | | | | 629.00 | | | | | | 30.36 | | |

B-004

Layer Thick. (ft)= 2.50
 Fill (ft) = 45.36
 Shaft Top Elev. (ft) = 655.36
 Boring Top Elev. (ft) = 655.36 Ex. Ground Elev.= 610.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 648.86' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 655.36 | 652.86 | 2.50 | | | | | | | 655.00 | | | | | | 0.36 | 20 | Cohesive |
| 2 | 652.86 | 650.36 | 5.00 | | | | | | | 652.50 | | | | | | 2.86 | 20 | Cohesive |
| 3 | 650.36 | 647.86 | 7.50 | | | | | | | 650.00 | | | | | | 5.36 | 20 | Cohesive |
| 4 | 647.86 | 645.36 | 10.00 | | | | | | | 647.50 | | | | | | 7.86 | 20 | Cohesive |
| 5 | 645.36 | 642.86 | 12.50 | | | | | | | 645.00 | | | | | | 10.36 | 20 | Cohesive |
| 6 | 642.86 | 640.36 | 15.00 | | | | | | | 642.50 | | | | | | 12.86 | 20 | Cohesive |
| 7 | 640.36 | 637.86 | 17.50 | | | | | | | 640.00 | | | | | | 15.36 | 20 | Cohesive |
| 8 | 637.86 | 635.36 | 20.00 | | | | | | | 637.50 | | | | | | 17.86 | 20 | Cohesive |
| 9 | 635.36 | 632.86 | 22.50 | | | | | | | 635.00 | | | | | | 20.36 | 20 | Cohesive |
| 10 | 632.86 | 630.36 | 25.00 | | | | | | | 632.50 | | | | | | 22.86 | 20 | Cohesive |
| | | | | | | | | | | 630.00 | | | | | | 25.36 | 20 | Cohesive |
| | | | | | | | | | | 627.50 | | | | | | 27.86 | 20 | Cohesive |
| | | | | | | | | | | 625.00 | | | | | | 30.36 | 20 | Cohesive |

B-009-1-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 9.86 Rock Elev. (ft)= 613.20
 Shaft Top Elev. (ft) = 648.86 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 623.70 Ex. Ground Elev.= 639.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 642.36' | | | | | | | | | |

CCT.: 2
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 623.70 | 620.70 | 3.00 | A-7-6 | Cohesive | 28 | 2.00 | 28 | 28 | 646.50 | 128 | 66 | 66 | 197 | 98 | 2.36 | 20 | Cohesive |
| 2 | 620.70 | 618.20 | 5.50 | A-6a | Cohesive | 37 | 1.66 | 37 | 32 | 644.00 | 130 | 68 | 68 | 169 | 281 | 4.86 | 20 | Cohesive |
| 3 | 618.20 | 615.70 | 8.00 | A-2-4 | Granular | 72 | 1.49 | 107 | 60 | 641.50 | 140 | 78 | 78 | 194 | 463 | 7.36 | 20 | Cohesive |
| 4 | 615.70 | 613.20 | 10.50 | A-2-4 | Granular | 77 | 1.37 | 106 | 60 | 639.00 | 140 | 78 | 78 | 194 | 657 | 9.86 | 20 | Cohesive |
| 5 | 613.20 | 612.20 | 11.50 | Rock | | 50 | | | | 636.50 | | | | | | 12.36 | 20 | Cohesive |
| 6 | 612.20 | 610.70 | 13.00 | Rock | | 50 | | | | 634.00 | | | | | | 14.86 | 28 | Cohesive |
| 7 | 610.70 | 608.20 | 15.50 | Rock | | 50 | | | | 631.50 | | | | | | 17.36 | 32 | Cohesive |
| 8 | 608.20 | 606.20 | 17.50 | Rock | | 50 | | | | 630.50 | | | | | | 18.36 | 60 | Granular |
| 9 | 606.20 | 603.70 | 20.00 | Rock | | 50 | | | | 629.00 | | | | | | 19.86 | 60 | Granular |
| 10 | 603.70 | 601.20 | 22.50 | Rock | | 50 | | | | 626.50 | | | | | | 22.36 | | |
| 11 | 601.20 | 599.20 | 24.50 | Rock | | 50 | | | | 624.50 | | | | | | 24.36 | | |
| | | | | | | | | | | 622.00 | | | | | | 26.86 | | |
| | | | | | | | | | | 619.50 | | | | | | 29.36 | | |

B-009-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 58.98 Rock Elev. (ft)= 560.40
 Shaft Top Elev. (ft) = 636.98 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 583.90 Ex. Ground Elev.= 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 630.48' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 583.90 | 580.90 | 3.00 | A-7-6 | Cohesive | 7 | 2.00 | 7 | 7 | 635.50 | 118 | 56 | 56 | 167 | 83 | 1.48 | 20 | Cohesive |
| 2 | 580.90 | 578.40 | 5.50 | A-7-6 | Cohesive | 17 | 1.71 | 17 | 17 | 633.00 | 122 | 60 | 60 | 149 | 241 | 3.98 | 20 | Cohesive |
| 3 | 578.40 | 575.90 | 8.00 | A-7-6 | Cohesive | 17 | 1.55 | 17 | 17 | 630.50 | 122 | 60 | 60 | 149 | 390 | 6.48 | 20 | Cohesive |
| 4 | 575.90 | 573.40 | 10.50 | A-7-6 | Cohesive | 20 | 1.44 | 20 | 20 | 628.00 | 125 | 63 | 63 | 157 | 543 | 8.98 | 20 | Cohesive |
| 5 | 573.40 | 570.90 | 13.00 | A-7-6 | Cohesive | 29 | 1.35 | 29 | 29 | 625.50 | 128 | 66 | 66 | 164 | 703 | 11.48 | 20 | Cohesive |
| 6 | 570.90 | 568.40 | 15.50 | A-7-6 | Cohesive | 24 | 1.28 | 24 | 24 | 623.00 | 125 | 63 | 63 | 157 | 864 | 13.98 | 20 | Cohesive |
| 7 | 568.40 | 565.90 | 18.00 | A-7-6 | Cohesive | 27 | 1.23 | 27 | 27 | 620.50 | 125 | 63 | 63 | 157 | 1020 | 16.48 | 20 | Cohesive |
| 8 | 565.90 | 562.40 | 21.50 | A-7-6 | Cohesive | 28 | 1.17 | 28 | 28 | 618.00 | 128 | 66 | 66 | 230 | 1213 | 18.98 | 20 | Cohesive |
| 9 | 562.40 | 560.40 | 23.50 | A-7-6 | Cohesive | 31 | 1.12 | 31 | 31 | 615.50 | 128 | 66 | 66 | 131 | 1394 | 21.48 | 20 | Cohesive |
| 10 | 560.40 | 559.40 | 24.50 | Rock | | 50 | | | | 613.00 | | | | | | 23.98 | 20 | Cohesive |
| | | | | | | | | | | 610.50 | | | | | | 26.48 | 20 | Cohesive |
| | | | | | | | | | | 608.00 | | | | | | 28.98 | 20 | Cohesive |
| | | | | | | | | | | 605.50 | | | | | | 31.48 | 20 | Cohesive |

B-005

Layer Thick. (ft)= 2.50
 Fill (ft) = 38.35
 Shaft Top Elev. (ft) = 600.35
 Boring Top Elev. (ft) = 600.35 Ex. Ground Elev.= 562.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 593.85' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 600.35 | 597.85 | 2.50 | | | | | | | 599.50 | | | | | | 0.85 | 20 | Cohesive |
| 2 | 597.85 | 595.35 | 5.00 | | | | | | | 597.00 | | | | | | 3.35 | 20 | Cohesive |
| 3 | 595.35 | 592.85 | 7.50 | | | | | | | 594.50 | | | | | | 5.85 | 20 | Cohesive |
| 4 | 592.85 | 590.35 | 10.00 | | | | | | | 592.00 | | | | | | 8.35 | 20 | Cohesive |
| 5 | 590.35 | 587.85 | 12.50 | | | | | | | 589.50 | | | | | | 10.85 | 20 | Cohesive |
| 6 | 587.85 | 585.35 | 15.00 | | | | | | | 587.00 | | | | | | 13.35 | 20 | Cohesive |
| 7 | 585.35 | 582.85 | 17.50 | | | | | | | 584.50 | | | | | | 15.85 | 20 | Cohesive |
| 8 | 582.85 | 580.35 | 20.00 | | | | | | | 582.00 | | | | | | 18.35 | 20 | Cohesive |
| 9 | 580.35 | 577.85 | 22.50 | | | | | | | 579.50 | | | | | | 20.85 | 20 | Cohesive |
| 10 | 577.85 | 575.35 | 25.00 | | | | | | | 577.00 | | | | | | 23.35 | 20 | Cohesive |
| | | | | | | | | | | 574.50 | | | | | | 25.85 | 20 | Cohesive |
| | | | | | | | | | | 572.00 | | | | | | 28.35 | 20 | Cohesive |
| | | | | | | | | | | 569.50 | | | | | | 30.85 | 20 | Cohesive |

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****Noise Wall Design****LAW-7-2.17
75923****Noise Wall Along SR-7****Noise Wall B2****Stantec Consulting****Prepared By:** James Samples
Date prepared: Wednesday, September 11, 2024**Checked By:** Eric Kistner
Date Checked: Tuesday, September 17, 2024**No. of Borings:** 5

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+24.00 | 1 | 14.00 | 24.00 | 584.14 |
| 10+48.00 | 2 | 14.00 | 24.00 | 584.14 |
| 10+72.00 | 3 | 14.00 | 24.00 | 585.14 |
| 10+96.00 | 4 | 14.00 | 24.00 | 585.14 |
| 11+20.00 | 5 | 14.00 | 24.00 | 586.44 |
| 11+44.00 | 6 | 14.00 | 24.00 | 586.44 |
| 11+68.00 | 7 | 14.00 | 24.00 | 587.44 |
| 11+92.00 | 8 | 14.00 | 24.00 | 588.44 |
| 12+16.00 | 9 | 14.00 | 24.00 | 589.34 |
| 12+40.00 | 10 | 14.00 | 24.00 | 590.24 |
| 12+64.00 | 11 | 14.00 | 24.00 | 591.04 |
| 12+88.00 | 12 | 14.00 | 24.00 | 591.94 |
| 13+12.00 | 13 | 14.00 | 24.00 | 592.94 |
| 13+36.00 | 14 | 14.00 | 24.00 | 593.84 |
| 13+60.00 | 15 | 14.00 | 24.00 | 594.84 |
| 13+84.00 | 16 | 14.00 | 24.00 | 595.84 |
| 14+08.00 | 17 | 14.00 | 24.00 | 596.59 |
| 14+32.00 | 18 | 14.00 | 24.00 | 597.79 |
| 14+56.00 | 19 | 14.00 | 24.00 | 598.46 |
| 14+80.00 | 20 | 14.00 | 24.00 | 599.96 |
| 15+04.00 | 21 | 14.00 | 24.00 | 601.22 |
| 15+28.00 | 22 | 14.00 | 24.00 | 602.42 |
| 15+52.00 | 23 | 14.00 | 24.00 | 603.72 |
| 15+76.00 | 24 | 14.00 | 24.00 | 605.08 |
| 16+00.00 | 25 | 14.00 | 24.00 | 606.51 |
| 16+24.00 | 26 | 14.00 | 24.00 | 607.90 |
| 16+36.00 | 27 | 14.00 | 12.00 | 609.41 |
| 16+60.00 | 28 | 14.00 | 24.00 | 610.22 |
| 16+72.00 | 29 | 14.00 | 12.00 | 611.87 |
| 16+96.00 | 30 | 14.00 | 24.00 | 612.63 |
| 17+20.00 | 31 | 14.00 | 24.00 | 614.13 |
| 17+44.00 | 32 | 14.00 | 24.00 | 615.60 |
| 17+68.00 | 33 | 14.00 | 24.00 | 617.06 |
| 17+92.00 | 34 | 14.00 | 24.00 | 618.50 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 18+16.00 | 35 | 14.00 | 24.00 | 619.99 |
| 18+40.00 | 36 | 14.00 | 24.00 | 621.34 |
| 18+64.00 | 37 | 14.00 | 24.00 | 622.69 |
| 18+88.00 | 38 | 14.00 | 24.00 | 623.94 |
| 19+12.00 | 39 | 14.00 | 24.00 | 625.17 |
| 19+36.00 | 40 | 14.00 | 24.00 | 626.17 |
| 19+60.00 | 41 | 14.00 | 24.00 | 627.35 |
| 19+84.00 | 42 | 14.00 | 24.00 | 628.50 |
| 20+08.00 | 43 | 14.00 | 24.00 | 629.60 |
| 20+32.00 | 44 | 14.00 | 24.00 | 630.60 |
| 20+56.00 | 45 | 14.00 | 24.00 | 631.70 |
| 20+80.00 | 46 | 14.00 | 24.00 | 632.80 |
| 21+04.00 | 47 | 14.00 | 24.00 | 633.80 |
| 21+28.00 | 48 | 14.00 | 24.00 | 634.90 |
| 21+52.00 | 49 | 14.00 | 24.00 | 635.90 |
| 21+76.00 | 50 | 14.00 | 24.00 | 636.90 |
| 22+00.00 | 51 | 14.00 | 24.00 | 637.90 |
| 22+24.00 | 52 | 14.00 | 24.00 | 638.90 |
| 22+48.00 | 53 | 14.00 | 24.00 | 639.90 |
| 22+72.00 | 54 | 14.00 | 24.00 | 640.80 |
| 22+96.00 | 55 | 14.00 | 24.00 | 641.70 |
| 23+20.00 | 56 | 14.00 | 24.00 | 642.60 |
| 23+44.00 | 57 | 14.00 | 24.00 | 643.50 |
| 23+68.00 | 58 | 14.00 | 24.00 | 644.40 |
| 23+92.00 | 59 | 14.00 | 24.00 | 645.30 |
| 24+16.00 | 60 | 14.00 | 24.00 | 646.10 |
| 24+40.00 | 61 | 14.00 | 24.00 | 646.90 |
| 24+64.00 | 62 | 14.00 | 24.00 | 647.77 |
| 24+88.00 | 63 | 14.00 | 24.00 | 648.52 |
| 25+12.00 | 64 | 14.00 | 24.00 | 649.32 |
| 25+36.00 | 65 | 14.00 | 24.00 | 649.32 |
| 25+60.00 | 66 | 14.00 | 24.00 | 650.80 |
| 25+84.00 | 67 | 14.00 | 24.00 | 650.80 |
| 26+08.00 | 68 | 14.00 | 24.00 | 652.22 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 26+32.00 | 69 | 14.00 | 24.00 | 652.22 |
| 26+56.00 | 70 | 14.00 | 24.00 | 653.57 |
| 26+80.00 | 71 | 14.00 | 24.00 | 653.57 |
| 27+04.00 | 72 | 14.00 | 24.00 | 654.86 |
| 27+28.00 | 73 | 14.00 | 24.00 | 654.86 |
| 27+52.00 | 74 | 14.00 | 24.00 | 656.06 |
| 27+76.00 | 75 | 14.00 | 24.00 | 656.06 |
| 28+00.00 | 76 | 14.00 | 24.00 | 657.16 |
| 28+24.00 | 77 | 14.00 | 24.00 | 657.16 |
| 28+48.00 | 78 | 14.00 | 24.00 | 658.16 |

**Boring Information and
Design Recommendation**

**LAW-7-2.17
PID: 75923**

Foundation Design

Noise Wall ID: Noise Wall B2

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| | | | | | | | | | | | | | | | | | | |
| B-006 | SPT | 10+00.00 | 13+01.50 | 569.00 | 584.14 | 569.00 | | | 24 | 14.00 | 2.0 | 2:1 | 10+24.00 | 12+88.00 | 1 | 12 | 6.50 | 577.64 |
| B-014-1-23 | SPT | 16+03.00 | 16+82.00 | 581.40 | 606.51 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 13+12.00 | 16+72.00 | 13 | 29 | 6.50 | 600.01 |
| B-014-2-23 | SPT | 17+61.00 | 18+92.50 | 609.00 | 615.60 | 630.00 | 590.50 | | 24 | 14.00 | 3.0 | 3:1 | 16+96.00 | 18+88.00 | 30 | 38 | 8.00 | 607.60 |
| B-014-3-23 | SPT | 20+24.00 | 24+36.00 | 628.02 | 629.60 | 626.00 | 618.02 | | 24 | 14.00 | 3.0 | 3:1 | 19+12.00 | 24+16.00 | 39 | 60 | 6.50 | 623.10 |
| B-007 | SPT | 28+48.00 | 28+48.00 | 635.00 | 658.16 | 635.00 | | | 24 | 14.00 | 3.0 | 3:1 | 24+40.00 | 28+48.00 | 61 | 78 | 6.50 | 651.66 |

B-006
 Layer Thick. (ft)= 2.50
 Fill (ft) = 15.14
 Shaft Top Elev. (ft) = 584.14
 Boring Top Elev. (ft) = 569.00 Ex. Ground Elev.= 569.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 577.64' | | | | | | | | | |

C CT.: 3
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 569.00 | 566.50 | 2.50 | | | | | | | 584.00 | | | | | | 0.14 | 20 | Cohesive |
| 2 | 566.50 | 564.00 | 5.00 | | | | | | | 581.50 | | | | | | 2.64 | 20 | Cohesive |
| 3 | 564.00 | 561.50 | 7.50 | | | | | | | 579.00 | | | | | | 5.14 | 20 | Cohesive |
| 4 | 561.50 | 559.00 | 10.00 | | | | | | | 576.50 | | | | | | 7.64 | 20 | Cohesive |
| 5 | 559.00 | 556.50 | 12.50 | | | | | | | 574.00 | | | | | | 10.14 | 20 | Cohesive |
| 6 | 556.50 | 554.00 | 15.00 | | | | | | | 571.50 | | | | | | 12.64 | 20 | Cohesive |
| | | | | | | | | | | 569.00 | | | | | | 15.14 | 20 | Cohesive |
| | | | | | | | | | | 566.50 | | | | | | 17.64 | | |
| | | | | | | | | | | 564.00 | | | | | | 20.14 | | |
| | | | | | | | | | | 561.50 | | | | | | 22.64 | | |
| | | | | | | | | | | 559.00 | | | | | | 25.14 | | |
| | | | | | | | | | | 556.50 | | | | | | 27.64 | | |
| | | | | | | | | | | 554.00 | | | | | | 30.14 | | |

B-014-1-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 8.51
 Shaft Top Elev. (ft) = 606.51
 Boring Top Elev. (ft) = 581.40 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 600.01' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 581.40 | 578.40 | 3.00 | A-7-6 | Cohesive | 13 | 2.00 | 13 | 13 | 605.50 | 120 | 58 | 58 | 173 | 86 | 1.01 | 20 | Cohesive |
| 2 | 578.40 | 575.90 | 5.50 | A-7-6 | Cohesive | 19 | 1.70 | 19 | 19 | 603.00 | 122 | 60 | 60 | 149 | 247 | 3.51 | 20 | Cohesive |
| 3 | 575.90 | 573.40 | 8.00 | A-7-6 | Cohesive | 24 | 1.54 | 24 | 24 | 600.50 | 125 | 63 | 63 | 157 | 400 | 6.01 | 20 | Cohesive |
| 4 | 573.40 | 570.90 | 10.50 | A-7-6 | Cohesive | 27 | 1.43 | 27 | 27 | 598.00 | 125 | 63 | 63 | 157 | 557 | 8.51 | 20 | Cohesive |
| 5 | 570.90 | 568.40 | 13.00 | A-7-6 | Cohesive | 24 | 1.35 | 24 | 24 | 595.50 | 125 | 63 | 63 | 157 | 713 | 11.01 | 20 | Cohesive |
| 6 | 568.40 | 565.90 | 15.50 | A-7-6 | Cohesive | 21 | 1.28 | 21 | 21 | 593.00 | 125 | 63 | 63 | 157 | 870 | 13.51 | 13 | Cohesive |
| 7 | 565.90 | 563.40 | 18.00 | A-7-6 | Cohesive | 24 | 1.22 | 24 | 24 | 590.50 | 125 | 63 | 63 | 157 | 1026 | 16.01 | 19 | Cohesive |
| 8 | 563.40 | 559.90 | 21.50 | A-7-6 | Cohesive | 17 | 1.17 | 17 | 17 | 588.00 | 122 | 60 | 60 | 209 | 1209 | 18.51 | 24 | Cohesive |
| 9 | 559.90 | 558.40 | 23.00 | A-7-6 | Cohesive | 17 | 1.13 | 17 | 17 | 585.50 | 122 | 60 | 60 | 89 | 1358 | 21.01 | 27 | Cohesive |
| 10 | 558.40 | 556.40 | 25.00 | A-7-6 | Cohesive | 36 | 1.10 | 36 | 32 | 583.00 | 130 | 68 | 68 | 135 | 1470 | 23.51 | 24 | Cohesive |
| | | | | | | | | | | 579.50 | | | | | | 27.01 | 21 | Cohesive |
| | | | | | | | | | | 578.00 | | | | | | 28.51 | 24 | Cohesive |
| | | | | | | | | | | 576.00 | | | | | | 30.51 | 17 | Cohesive |

B-014-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -14.40 Rock Elev. (ft)= 590.50
 Shaft Top Elev. (ft) = 615.60 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 609.00 Ex. Ground Elev.= 630.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 609.10' | 607.60' | | | | | | | | |

C CT.: 3 C CT.: 3
 G CT.: 0 G CT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 609.00 | 606.00 | 3.00 | A-6b | Cohesive | 13 | 2.00 | 13 | 13 | 612.60 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 606.00 | 603.50 | 5.50 | A-7-6 | Cohesive | 13 | 1.70 | 13 | 13 | 612.60 | 120 | 58 | 58 | 144 | 245 | 3.00 | 13 | Cohesive |
| 3 | 603.50 | 601.00 | 8.00 | A-6a | Cohesive | 49 | 1.53 | 49 | 32 | 612.60 | 135 | 73 | 73 | 182 | 408 | 3.00 | 13 | Cohesive |
| 4 | 601.00 | 598.50 | 10.50 | A-6a | Cohesive | 75 | 1.41 | 75 | 32 | 602.60 | 140 | 78 | 78 | 194 | 595 | 13.00 | 13 | Cohesive |
| 5 | 598.50 | 596.00 | 13.00 | A-6a | Cohesive | 55 | 1.31 | 55 | 32 | 602.60 | 140 | 78 | 78 | 194 | 789 | 13.00 | 13 | Cohesive |
| 6 | 596.00 | 593.50 | 15.50 | A-6a | Cohesive | 89 | 1.24 | 89 | 32 | 583.60 | 140 | 78 | 78 | 194 | 983 | 32.00 | 32 | Cohesive |
| 7 | 593.50 | 590.50 | 18.50 | A-6a | Cohesive | 95 | 1.17 | 95 | 32 | 583.60 | 140 | 78 | 78 | 233 | 1197 | 32.00 | 32 | Cohesive |
| 8 | 590.50 | 588.50 | 20.50 | Rock | | 95 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |
| 9 | 588.50 | 586.00 | 23.00 | Rock | | 105 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |
| 10 | 586.00 | 585.00 | 24.00 | Rock | | 50 | | | | 583.60 | | | | | | 32.00 | 32 | Cohesive |

B-014-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 3.60 Rock Elev. (ft)= 618.02
 Shaft Top Elev. (ft) = 629.60 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 628.02 Ex. Ground Elev.= 626.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 623.10' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 24

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 628.02 | 625.02 | 3.00 | A-7-6 | Cohesive | 11 | 2.00 | 11 | 11 | 628.50 | 120 | 58 | 58 | 173 | 86 | 1.10 | 20 | Cohesive |
| 2 | 625.02 | 622.52 | 5.50 | A-7-6 | Cohesive | 44 | 1.68 | 44 | 32 | 626.00 | 135 | 73 | 73 | 182 | 264 | 3.60 | 20 | Cohesive |
| 3 | 622.52 | 620.02 | 8.00 | A-7-6 | Cohesive | 32 | 1.51 | 32 | 32 | 623.50 | 128 | 66 | 66 | 164 | 436 | 6.10 | 32 | Cohesive |
| 4 | 620.02 | 618.02 | 10.00 | A-7-6 | Cohesive | 37 | 1.41 | 37 | 32 | 622.52 | 130 | 68 | 68 | 135 | 586 | 7.08 | 32 | Cohesive |
| 5 | 618.02 | 615.52 | 12.50 | Rock | | 50 | | | | 620.02 | | | | | | 9.58 | 32 | Cohesive |
| | | | | | | | | | | 618.02 | | | | | | 11.58 | | Cohesive |
| | | | | | | | | | | 615.52 | | | | | | 14.08 | | Cohesive |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

B-007

Layer Thick. (ft)= 2.50
 Fill (ft) = 23.16
 Shaft Top Elev. (ft) = 658.16
 Boring Top Elev. (ft) = 635.00 Ex. Ground Elev.= 635.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 651.66' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 635.00 | 632.50 | 2.50 | | | | | | | 657.50 | | | | | | 0.66 | 20 | Cohesive |
| 2 | 632.50 | 630.00 | 5.00 | | | | | | | 655.00 | | | | | | 3.16 | 20 | Cohesive |
| 3 | 630.00 | 627.50 | 7.50 | | | | | | | 652.50 | | | | | | 5.66 | 20 | Cohesive |
| 4 | 627.50 | 625.00 | 10.00 | | | | | | | 650.00 | | | | | | 8.16 | 20 | Cohesive |
| 5 | 625.00 | 622.50 | 12.50 | | | | | | | 647.50 | | | | | | 10.66 | 20 | Cohesive |
| 6 | 622.50 | 620.00 | 15.00 | | | | | | | 645.00 | | | | | | 13.16 | 20 | Cohesive |
| 7 | 620.00 | 617.50 | 17.50 | | | | | | | 642.50 | | | | | | 15.66 | 20 | Cohesive |
| 8 | 617.50 | 615.00 | 20.00 | | | | | | | 640.00 | | | | | | 18.16 | 20 | Cohesive |
| 9 | 615.00 | 612.50 | 22.50 | | | | | | | 637.50 | | | | | | 20.66 | 20 | Cohesive |
| | | | | | | | | | | 635.00 | | | | | | 23.16 | 20 | Cohesive |
| | | | | | | | | | | 632.50 | | | | | | 25.66 | | |
| | | | | | | | | | | 630.00 | | | | | | 28.16 | | |
| | | | | | | | | | | 627.50 | | | | | | 30.66 | | |

OHIO DEPARTMENT OF TRANSPORTATION**OFFICE OF GEOTECHNICAL ENGINEERING****Noise Wall Design****LAW-7-2017
75923****Noise Wall Along SR-7****Noise Wall D****Stantec Consulting****Prepared By:** James Samples
Date prepared: Wednesday, September 11, 2024**Checked By:** Eric Kistner
Date Checked: Tuesday, September 17, 2024**No. of Borings:** 8

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 10+00.00 | 1 | 14.00 | 24.00 | 610.70 |
| 10+24.00 | 2 | 14.00 | 24.00 | 609.60 |
| 10+48.00 | 3 | 14.00 | 24.00 | 608.30 |
| 10+72.00 | 4 | 14.00 | 24.00 | 607.20 |
| 10+96.00 | 5 | 14.00 | 24.00 | 605.90 |
| 11+20.00 | 6 | 14.00 | 24.00 | 604.70 |
| 11+44.00 | 7 | 14.00 | 24.00 | 603.50 |
| 11+68.00 | 8 | 14.00 | 24.00 | 602.50 |
| 11+92.00 | 9 | 14.00 | 24.00 | 601.20 |
| 12+16.00 | 10 | 14.00 | 24.00 | 600.10 |
| 12+40.00 | 11 | 14.00 | 24.00 | 598.80 |
| 12+64.00 | 12 | 14.00 | 24.00 | 597.60 |
| 12+88.00 | 13 | 14.00 | 24.00 | 596.50 |
| 13+12.00 | 14 | 14.00 | 24.00 | 595.30 |
| 13+36.00 | 15 | 14.00 | 24.00 | 594.20 |
| 13+60.00 | 16 | 14.00 | 24.00 | 593.20 |
| 13+84.00 | 17 | 14.00 | 24.00 | 592.20 |
| 14+08.00 | 18 | 14.00 | 24.00 | 591.30 |
| 14+32.00 | 19 | 14.00 | 24.00 | 590.40 |
| 14+56.00 | 20 | 14.00 | 24.00 | 589.70 |
| 14+80.00 | 21 | 14.00 | 24.00 | 588.34 |
| 15+04.00 | 22 | 14.00 | 24.00 | 588.34 |
| 15+28.00 | 23 | 14.00 | 24.00 | 586.76 |
| 15+52.00 | 24 | 14.00 | 24.00 | 586.76 |
| 15+76.00 | 25 | 14.00 | 24.00 | 586.76 |
| 16+00.00 | 26 | 14.00 | 24.00 | 585.49 |
| 16+24.00 | 27 | 14.00 | 24.00 | 585.49 |
| 16+48.00 | 28 | 14.00 | 24.00 | 585.49 |
| 16+72.00 | 29 | 14.00 | 24.00 | 585.49 |
| 16+96.00 | 30 | 14.00 | 24.00 | 585.49 |
| 17+20.00 | 31 | 14.00 | 24.00 | 585.49 |
| 17+44.00 | 32 | 14.00 | 24.00 | 585.49 |
| 17+68.00 | 33 | 14.00 | 24.00 | 585.49 |
| 17+92.00 | 34 | 14.00 | 24.00 | 585.49 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 18+16.00 | 35 | 14.00 | 24.00 | 585.49 |
| 18+40.00 | 36 | 14.00 | 24.00 | 585.49 |
| 18+64.00 | 37 | 14.00 | 24.00 | 585.49 |
| 18+88.00 | 38 | 14.00 | 24.00 | 585.49 |
| 19+12.00 | 39 | 14.00 | 24.00 | 586.39 |
| 19+36.00 | 40 | 14.00 | 24.00 | 586.39 |
| 19+60.00 | 41 | 14.00 | 24.00 | 586.99 |
| 19+84.00 | 42 | 14.00 | 24.00 | 588.02 |
| 20+08.00 | 43 | 14.00 | 24.00 | 588.02 |
| 20+32.00 | 44 | 14.00 | 24.00 | 588.92 |
| 20+56.00 | 45 | 14.00 | 24.00 | 588.92 |
| 20+80.00 | 46 | 14.00 | 24.00 | 588.92 |
| 21+04.00 | 47 | 14.00 | 24.00 | 589.92 |
| 21+28.00 | 48 | 14.00 | 24.00 | 591.12 |
| 21+52.00 | 49 | 14.00 | 24.00 | 591.12 |
| 21+76.00 | 50 | 14.00 | 24.00 | 591.12 |
| 22+00.00 | 51 | 14.00 | 24.00 | 591.12 |
| 22+24.00 | 52 | 14.00 | 24.00 | 592.32 |
| 22+48.00 | 53 | 14.00 | 24.00 | 592.32 |
| 22+72.00 | 54 | 14.00 | 24.00 | 592.32 |
| 22+96.00 | 55 | 14.00 | 24.00 | 593.62 |
| 23+20.00 | 56 | 14.00 | 24.00 | 593.62 |
| 23+44.00 | 57 | 14.00 | 24.00 | 593.62 |
| 23+68.00 | 58 | 14.00 | 24.00 | 593.62 |
| 23+92.00 | 59 | 14.00 | 24.00 | 593.62 |
| 24+16.00 | 60 | 14.00 | 24.00 | 593.62 |
| 24+40.00 | 61 | 14.00 | 24.00 | 593.62 |
| 24+64.00 | 62 | 14.00 | 24.00 | 594.54 |
| 24+88.00 | 63 | 14.00 | 24.00 | 594.54 |
| 25+12.00 | 64 | 14.00 | 24.00 | 594.54 |
| 25+36.00 | 65 | 14.00 | 24.00 | 594.54 |
| 25+60.00 | 66 | 14.00 | 24.00 | 594.54 |
| 25+84.00 | 67 | 14.00 | 24.00 | 594.54 |
| 26+08.00 | 68 | 14.00 | 24.00 | 594.54 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|-----------|----------|---------------------|-------------------|-----------------------------|
| 26+32.00 | 69 | 14.00 | 24.00 | 595.54 |
| 26+56.00 | 70 | 14.00 | 24.00 | 595.54 |
| 26+80.00 | 71 | 14.00 | 24.00 | 595.54 |
| 27+04.00 | 72 | 14.00 | 24.00 | 595.54 |
| 27+28.00 | 73 | 14.00 | 24.00 | 596.54 |
| 27+52.00 | 74 | 14.00 | 24.00 | 596.54 |
| 27+76.00 | 75 | 14.00 | 24.00 | 597.54 |
| 28+00.00 | 76 | 14.00 | 24.00 | 597.54 |
| 28+24.00 | 77 | 14.00 | 24.00 | 597.54 |
| 28+48.00 | 78 | 14.00 | 24.00 | 598.54 |
| 28+72.00 | 79 | 14.00 | 24.00 | 598.54 |
| 28+96.00 | 80 | 14.00 | 24.00 | 599.54 |
| 29+20.00 | 81 | 14.00 | 24.00 | 599.54 |
| 29+44.00 | 82 | 14.00 | 24.00 | 600.44 |
| 29+68.00 | 83 | 14.00 | 24.00 | 600.44 |
| 29+92.00 | 84 | 14.00 | 24.00 | 600.44 |
| 30+16.00 | 85 | 14.00 | 24.00 | 601.44 |
| 30+40.00 | 86 | 14.00 | 24.00 | 601.44 |
| 30+64.00 | 87 | 14.00 | 24.00 | 602.44 |
| 30+88.00 | 88 | 14.00 | 24.00 | 602.44 |
| 31+12.00 | 89 | 14.00 | 24.00 | 602.44 |
| 31+36.00 | 90 | 14.00 | 24.00 | 603.44 |
| 31+60.00 | 91 | 14.00 | 24.00 | 603.44 |
| 31+84.00 | 92 | 14.00 | 24.00 | 603.44 |
| 32+08.00 | 93 | 14.00 | 24.00 | 604.44 |
| 32+32.00 | 94 | 14.00 | 24.00 | 604.44 |
| 32+56.00 | 95 | 14.00 | 24.00 | 604.44 |
| 32+80.00 | 96 | 14.00 | 24.00 | 605.44 |
| 33+04.00 | 97 | 14.00 | 24.00 | 605.44 |
| 33+28.00 | 98 | 14.00 | 24.00 | 605.44 |
| 33+52.00 | 99 | 14.00 | 24.00 | 605.44 |
| 33+76.00 | 100 | 14.00 | 24.00 | 605.44 |
| 34+00.00 | 101 | 14.00 | 24.00 | 606.44 |
| 34+24.00 | 102 | 14.00 | 24.00 | 606.44 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|----------------------|-----------------|--------------------------------|------------------------------|--|
| 34+48.00 | 103 | 14.00 | 24.00 | 606.44 |
| 34+72.00 | 104 | 14.00 | 24.00 | 606.44 |

**Boring Information and
Design Recommendation**

**LAW-7-2017
PID: 75923**

Foundation Design

Noise Wall ID: Noise Wall D

| Boring ID | Testing Method | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|----------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| | | | | | | | | | | | | | | | | | | |
| B-008 | SPT | 10+00.00 | 16+00.00 | 574.00 | 610.70 | 574.00 | | | 24 | 14.00 | 2.0 | 2:1 | 10+00.00 | 16+00.00 | 1 | 26 | 6.50 | 604.20 |
| B-009 | SPT | 22+00.00 | 23+24.50 | 582.00 | 591.12 | 582.00 | | | 24 | 14.00 | 3.0 | 3:1 | 16+24.00 | 23+20.00 | 27 | 56 | 6.50 | 584.62 |
| B-076-2-23 | SPT | 24+49.00 | 25+47.50 | 587.67 | 593.62 | 591.00 | | | 24 | 14.00 | 3.0 | 3:1 | 23+44.00 | 25+36.00 | 57 | 65 | 6.50 | 587.12 |
| B-076-3-23 | SPT | 26+46.00 | 27+45.00 | 589.87 | 595.54 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 25+60.00 | 27+28.00 | 66 | 73 | 8.00 | 587.54 |
| B-077-2-23 | SPT | 28+44.00 | 29+44.50 | 592.64 | 597.54 | 598.50 | | | 24 | 14.00 | 3.0 | 3:1 | 27+52.00 | 29+44.00 | 74 | 82 | 8.00 | 589.54 |
| B-077-3-23 | SPT | 30+45.00 | 31+46.50 | 588.81 | 601.44 | 601.00 | | | 24 | 14.00 | 2.0 | 2:1 | 29+68.00 | 31+36.00 | 83 | 90 | 6.50 | 594.94 |
| B-078-2-23 | SPT | 32+48.00 | 33+47.50 | 595.30 | 604.44 | 607.00 | | | 24 | 14.00 | 2.0 | 2:1 | 31+60.00 | 33+28.00 | 91 | 98 | 8.00 | 596.44 |
| B-078-3-23 | SPT | 34+47.00 | 34+47.00 | 602.38 | 606.44 | 606.00 | | | 24 | 14.00 | 3.0 | 3:1 | 33+52.00 | 34+72.00 | 99 | 104 | 6.50 | 599.94 |

B-008

Layer Thick. (ft)= 2.50
 Fill (ft) = 36.70
 Shaft Top Elev. (ft) = 610.70
 Boring Top Elev. (ft) = 574.00 Ex. Ground Elev.= 574.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 604.20' | | | | | | | | | |

CCT.: 2
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 574.00 | 571.50 | 2.50 | | | | | | | 609.00 | | | | | | 1.70 | 20 | Cohesive |
| 2 | 571.50 | 569.00 | 5.00 | | | | | | | 606.50 | | | | | | 4.20 | 20 | Cohesive |
| 3 | 569.00 | 566.50 | 7.50 | | | | | | | 604.00 | | | | | | 6.70 | 20 | Cohesive |
| 4 | 566.50 | 564.00 | 10.00 | | | | | | | 601.50 | | | | | | 9.20 | 20 | Cohesive |
| 5 | 564.00 | 561.50 | 12.50 | | | | | | | 599.00 | | | | | | 11.70 | 20 | Cohesive |
| 6 | 561.50 | 559.00 | 15.00 | | | | | | | 596.50 | | | | | | 14.20 | 20 | Cohesive |
| 7 | 559.00 | 556.50 | 17.50 | | | | | | | 594.00 | | | | | | 16.70 | 20 | Cohesive |
| 8 | 556.50 | 554.00 | 20.00 | | | | | | | 591.50 | | | | | | 19.20 | 20 | Cohesive |
| 9 | 554.00 | 551.50 | 22.50 | | | | | | | 589.00 | | | | | | 21.70 | 20 | Cohesive |
| 10 | 551.50 | 549.00 | 25.00 | | | | | | | 586.50 | | | | | | 24.20 | 20 | Cohesive |
| | | | | | | | | | | 584.00 | | | | | | 26.70 | 20 | Cohesive |
| | | | | | | | | | | 581.50 | | | | | | 29.20 | 20 | Cohesive |
| | | | | | | | | | | 579.00 | | | | | | 31.70 | 20 | Cohesive |

B-009
 Layer Thick. (ft)= 2.50
 Fill (ft) = 9.12
 Shaft Top Elev. (ft) = 591.12
 Boring Top Elev. (ft) = 582.00 Ex. Ground Elev.= 582.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 584.62' | | | | | | | | | |

C CT.: 2
 G CT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 582.00 | 579.50 | 2.50 | | | | | | | 589.50 | | | | | | 1.62 | 20 | Cohesive |
| 2 | 579.50 | 577.00 | 5.00 | | | | | | | 587.00 | | | | | | 4.12 | 20 | Cohesive |
| 3 | 577.00 | 574.50 | 7.50 | | | | | | | 584.50 | | | | | | 6.62 | 20 | Cohesive |
| 4 | 574.50 | 572.00 | 10.00 | | | | | | | 582.00 | | | | | | 9.12 | 20 | Cohesive |
| 5 | 572.00 | 569.50 | 12.50 | | | | | | | 579.50 | | | | | | 11.62 | | |
| 6 | 569.50 | 567.00 | 15.00 | | | | | | | 577.00 | | | | | | 14.12 | | |
| 7 | 567.00 | 564.50 | 17.50 | | | | | | | 574.50 | | | | | | 16.62 | | |
| 8 | 564.50 | 562.00 | 20.00 | | | | | | | 572.00 | | | | | | 19.12 | | |
| 9 | 562.00 | 559.50 | 22.50 | | | | | | | 569.50 | | | | | | 21.62 | | |
| 10 | 559.50 | 557.00 | 25.00 | | | | | | | 567.00 | | | | | | 24.12 | | |
| | | | | | | | | | | 564.50 | | | | | | 26.62 | | |
| | | | | | | | | | | 562.00 | | | | | | 29.12 | | |
| | | | | | | | | | | 559.50 | | | | | | 31.62 | | |

B-076-2-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 2.62
 Shaft Top Elev. (ft) = 593.62
 Boring Top Elev. (ft) = 587.67 Ex. Ground Elev.= 591.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 587.12' | | | | | | | | | |

CCT.: 3
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 587.67 | 584.67 | 3.00 | A-4a P | Cohesive | 39 | 2.00 | 39 | 32 | 593.50 | 130 | 68 | 68 | 203 | 101 | 0.12 | 20 | Cohesive |
| 2 | 584.67 | 582.17 | 5.50 | A-7-6 | Cohesive | 15 | 1.66 | 15 | 15 | 591.00 | 122 | 60 | 60 | 149 | 277 | 2.62 | 20 | Cohesive |
| 3 | 582.17 | 579.67 | 8.00 | A-7-6 | Cohesive | 20 | 1.52 | 20 | 20 | 588.50 | 125 | 63 | 63 | 157 | 430 | 5.12 | 20 | Cohesive |
| 4 | 579.67 | 577.17 | 10.50 | A-7-6 | Cohesive | 15 | 1.41 | 15 | 15 | 586.00 | 122 | 60 | 60 | 149 | 583 | 7.62 | 32 | Cohesive |
| 5 | 577.17 | 574.67 | 13.00 | A-7-6 | Cohesive | 13 | 1.34 | 13 | 13 | 583.50 | 120 | 58 | 58 | 144 | 729 | 10.12 | 15 | Cohesive |
| 6 | 574.67 | 572.17 | 15.50 | A-1-b | Granular | 15 | 1.28 | 19 | 19 | 581.00 | 125 | 63 | 63 | 157 | 880 | 12.62 | 20 | Cohesive |
| 7 | 572.17 | 569.67 | 18.00 | A-1-b | Granular | 20 | 1.22 | 24 | 24 | 578.50 | 125 | 63 | 63 | 157 | 1036 | 15.12 | 15 | Cohesive |
| 8 | 569.67 | 567.17 | 20.50 | A-1-b | Granular | 16 | 1.17 | 19 | 19 | 576.00 | 125 | 63 | 63 | 157 | 1193 | 17.62 | 13 | Cohesive |
| 9 | 567.17 | 564.67 | 23.00 | A-1-b | Granular | 20 | 1.13 | 23 | 23 | 573.50 | 125 | 63 | 63 | 157 | 1349 | 20.12 | 19 | Granular |
| 10 | 564.67 | 562.67 | 25.00 | A-1-b | Granular | 21 | 1.10 | 23 | 23 | 571.00 | 125 | 63 | 63 | 125 | 1490 | 22.62 | 24 | Granular |
| | | | | | | | | | | 569.00 | | | | | | 24.62 | 19 | Granular |

B-076-3-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -2.46
 Shaft Top Elev. (ft) = 595.54
 Boring Top Elev. (ft) = 589.87 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 589.04' | 587.54' | | | | | | | | |

C CT.: 3 C CT.: 3
 G CT.: 0 G CT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 589.87 | 586.87 | 3.00 | A-6b | Cohesive | 13 | 2.00 | 13 | 13 | 592.54 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 586.87 | 584.37 | 5.50 | A-6b | Cohesive | 23 | 1.70 | 23 | 23 | 592.54 | 125 | 63 | 63 | 157 | 251 | 3.00 | 13 | Cohesive |
| 3 | 584.37 | 581.87 | 8.00 | A-6a | Cohesive | 23 | 1.53 | 23 | 23 | 592.54 | 125 | 63 | 63 | 157 | 408 | 3.00 | 13 | Cohesive |
| 4 | 581.87 | 579.37 | 10.50 | A-6a | Cohesive | 19 | 1.43 | 19 | 19 | 582.54 | 122 | 60 | 60 | 149 | 560 | 13.00 | 13 | Cohesive |
| 5 | 579.37 | 576.87 | 13.00 | A-6a | Cohesive | 15 | 1.35 | 15 | 15 | 572.54 | 122 | 60 | 60 | 149 | 709 | 23.00 | 23 | Cohesive |
| 6 | 576.87 | 574.37 | 15.50 | A-1-b | Granular | 19 | 1.28 | 24 | 24 | 572.54 | 125 | 63 | 63 | 157 | 862 | 23.00 | 23 | Cohesive |
| 7 | 574.37 | 571.87 | 18.00 | A-3a | Granular | 21 | 1.23 | 26 | 26 | 576.54 | 125 | 63 | 63 | 157 | 1019 | 19.00 | 19 | Cohesive |
| 8 | 571.87 | 569.37 | 20.50 | A-1-b | Granular | 15 | 1.18 | 18 | 18 | 580.54 | 125 | 63 | 63 | 157 | 1175 | 15.00 | 15 | Cohesive |
| 9 | 569.37 | 566.87 | 23.00 | A-1-b | Granular | 16 | 1.14 | 18 | 18 | 571.54 | 125 | 63 | 63 | 157 | 1332 | 24.00 | 24 | Granular |
| 10 | 566.87 | 564.87 | 25.00 | A-1-b | Granular | 21 | 1.10 | 23 | 23 | 569.54 | 125 | 63 | 63 | 125 | 1472 | 26.00 | 26 | Granular |
| | | | | | | | | | | 577.54 | | | | | | 18.00 | 18 | Granular |
| | | | | | | | | | | 577.54 | | | | | | 18.00 | 18 | Granular |
| | | | | | | | | | | 572.54 | | | | | | 23.00 | 23 | Granular |

B-077-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -0.96
 Shaft Top Elev. (ft) = 597.54
 Boring Top Elev. (ft) = 592.64 Ex. Ground Elev.= 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 591.04' | 589.54' | | | | | | | | |

CCT.: 2 CCT.: 2
 GCT.: 0 GCT.: 0
 N dsgn: 13 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 592.64 | 589.64 | 3.00 | A-7-6 | Cohesive | 13 | 2.00 | 13 | 13 | 594.54 | 120 | 58 | 58 | 173 | 86 | 3.00 | 13 | Cohesive |
| 2 | 589.64 | 587.14 | 5.50 | A-4a P | Cohesive | 24 | 1.70 | 24 | 24 | 594.54 | 125 | 63 | 63 | 157 | 251 | 3.00 | 13 | Cohesive |
| 3 | 587.14 | 584.64 | 8.00 | A-6b | Cohesive | 23 | 1.53 | 23 | 23 | 584.54 | 125 | 63 | 63 | 157 | 408 | 13.00 | 13 | Cohesive |
| 4 | 584.64 | 582.14 | 10.50 | A-6b | Cohesive | 16 | 1.43 | 16 | 16 | 573.54 | 122 | 60 | 60 | 149 | 560 | 24.00 | 24 | Cohesive |
| 5 | 582.14 | 579.64 | 13.00 | A-7-6 | Cohesive | 19 | 1.35 | 19 | 19 | 574.54 | 122 | 60 | 60 | 149 | 709 | 23.00 | 23 | Cohesive |
| 6 | 579.64 | 577.14 | 15.50 | A-7-6 | Cohesive | 17 | 1.28 | 17 | 17 | 581.54 | 122 | 60 | 60 | 149 | 858 | 16.00 | 16 | Cohesive |
| 7 | 577.14 | 574.64 | 18.00 | A-6b | Cohesive | 17 | 1.23 | 17 | 17 | 578.54 | 122 | 60 | 60 | 149 | 1007 | 19.00 | 19 | Cohesive |
| 8 | 574.64 | 572.14 | 20.50 | A-3 | Granular | 16 | 1.18 | 19 | 19 | 580.54 | 125 | 63 | 63 | 157 | 1160 | 17.00 | 17 | Cohesive |
| 9 | 572.14 | 569.64 | 23.00 | A-3 | Granular | 15 | 1.14 | 17 | 17 | 580.54 | 125 | 63 | 63 | 157 | 1317 | 17.00 | 17 | Cohesive |
| 10 | 569.64 | 567.64 | 25.00 | A-3 | Granular | 21 | 1.11 | 23 | 23 | 578.54 | 125 | 63 | 63 | 125 | 1457 | 19.00 | 19 | Granular |
| | | | | | | | | | | 580.54 | | | | | | 17.00 | 17 | Granular |
| | | | | | | | | | | 574.54 | | | | | | 23.00 | 23 | Granular |

B-077-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.44
 Shaft Top Elev. (ft) = 601.44
 Boring Top Elev. (ft) = 588.81 Ex. Ground Elev.= 601.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 594.94' | | | | | | | | | |

CCT.: 2
 GCT.: 1
 N dsgn: 27

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 588.81 | 586.31 | 2.50 | A-4a NP | Granular | 21 | 2.00 | 42 | 42 | 601.00 | 125 | 63 | 63 | 157 | 78 | 0.44 | 20 | Cohesive |
| 2 | 586.31 | 583.81 | 5.00 | A-6b | Cohesive | 20 | 1.72 | 20 | 20 | 598.50 | 125 | 63 | 63 | 157 | 235 | 2.94 | 20 | Cohesive |
| 3 | 583.81 | 581.31 | 7.50 | A-6b | Cohesive | 25 | 1.55 | 25 | 25 | 596.00 | 125 | 63 | 63 | 157 | 391 | 5.44 | 42 | Granular |
| 4 | 581.31 | 578.81 | 10.00 | A-6b | Cohesive | 16 | 1.44 | 16 | 16 | 593.50 | 122 | 60 | 60 | 149 | 544 | 7.94 | 20 | Cohesive |
| 5 | 578.81 | 576.31 | 12.50 | A-6b | Cohesive | 16 | 1.36 | 16 | 16 | 591.00 | 122 | 60 | 60 | 149 | 693 | 10.44 | 25 | Cohesive |
| 6 | 576.31 | 573.81 | 15.00 | A-6b | Cohesive | 16 | 1.29 | 16 | 16 | 588.50 | 122 | 60 | 60 | 149 | 842 | 12.94 | 16 | Cohesive |
| 7 | 573.81 | 571.31 | 17.50 | A-1-b | Granular | 20 | 1.24 | 25 | 25 | 586.00 | 125 | 63 | 63 | 157 | 995 | 15.44 | 16 | Cohesive |
| 8 | 571.31 | 568.81 | 20.00 | A-6b | Cohesive | 17 | 1.19 | 17 | 17 | 583.50 | 122 | 60 | 60 | 149 | 1148 | 17.94 | 16 | Cohesive |
| 9 | 568.81 | 566.31 | 22.50 | A-6b | Cohesive | 17 | 1.15 | 17 | 17 | 581.00 | 122 | 60 | 60 | 149 | 1297 | 20.44 | 25 | Granular |
| 10 | 566.31 | 563.81 | 25.00 | A-1-b | Granular | 19 | 1.11 | 21 | 21 | 578.50 | 125 | 63 | 63 | 157 | 1449 | 22.94 | 17 | Cohesive |
| | | | | | | | | | | | | | | | | | | |

B-078-2-23

Layer Thick. (ft)= 2.50
 Cut (ft) = -2.56
 Shaft Top Elev. (ft) = 604.44
 Boring Top Elev. (ft) = 595.30 Ex. Ground Elev.= 607.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 8.0 ft | | | | | | | | |
| 597.94' | 596.44' | | | | | | | | |

CCT.: 4 CCT.: 4
 GCT.: 0 GCT.: 0
 N dsgn: 15 N dsgn: 15

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 595.30 | 592.30 | 3.00 | A-6b | Cohesive | 15 | 2.00 | 15 | 15 | 601.44 | 122 | 60 | 60 | 179 | 89 | 3.00 | 15 | Cohesive |
| 2 | 592.30 | 589.80 | 5.50 | A-6b | Cohesive | 17 | 1.69 | 17 | 17 | 601.44 | 122 | 60 | 60 | 149 | 253 | 3.00 | 15 | Cohesive |
| 3 | 589.80 | 587.30 | 8.00 | A-6b | Cohesive | 16 | 1.54 | 16 | 16 | 601.44 | 122 | 60 | 60 | 149 | 402 | 3.00 | 15 | Cohesive |
| 4 | 587.30 | 584.80 | 10.50 | A-6b | Cohesive | 28 | 1.43 | 28 | 28 | 601.44 | 128 | 66 | 66 | 164 | 559 | 3.00 | 15 | Cohesive |
| 5 | 584.80 | 582.30 | 13.00 | A-6a | Cohesive | 37 | 1.34 | 37 | 32 | 589.44 | 130 | 68 | 68 | 169 | 725 | 15.00 | 15 | Cohesive |
| 6 | 582.30 | 579.80 | 15.50 | A-6b | Cohesive | 23 | 1.27 | 23 | 23 | 587.44 | 125 | 63 | 63 | 157 | 888 | 17.00 | 17 | Cohesive |
| 7 | 579.80 | 577.30 | 18.00 | A-6b | Cohesive | 17 | 1.22 | 17 | 17 | 588.44 | 122 | 60 | 60 | 149 | 1041 | 16.00 | 16 | Cohesive |
| 8 | 577.30 | 574.80 | 20.50 | A-6b | Cohesive | 17 | 1.18 | 17 | 17 | 576.44 | 122 | 60 | 60 | 149 | 1190 | 28.00 | 28 | Cohesive |
| 9 | 574.80 | 572.30 | 23.00 | A-2-4 | Granular | 12 | 1.14 | 14 | 14 | 572.44 | 122 | 60 | 60 | 149 | 1339 | 32.00 | 32 | Cohesive |
| 10 | 572.30 | 570.30 | 25.00 | A-6a | Cohesive | 16 | 1.10 | 16 | 16 | 581.44 | 122 | 60 | 60 | 119 | 1473 | 23.00 | 23 | Cohesive |
| | | | | | | | | | | 587.44 | | | | | | 17.00 | 17 | Cohesive |
| | | | | | | | | | | 587.44 | | | | | | 17.00 | 17 | Cohesive |
| | | | | | | | | | | 590.44 | | | | | | 14.00 | 14 | Granular |

B-078-3-23

Layer Thick. (ft)= 2.50
 Fill (ft) = 0.44
 Shaft Top Elev. (ft) = 606.44
 Boring Top Elev. (ft) = 602.38 Ex. Ground Elev.= 606.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 599.94' | | | | | | | | | |

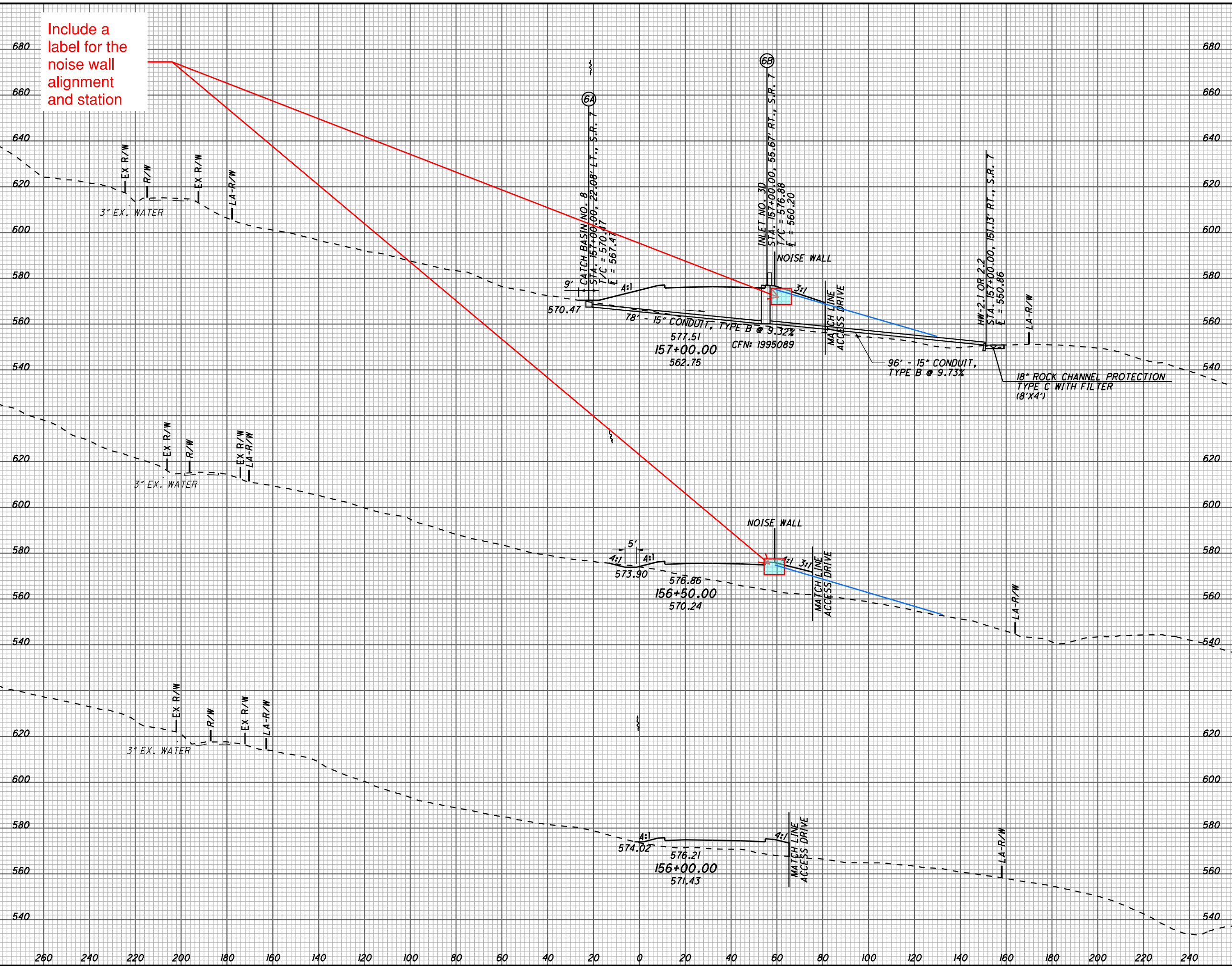
CCT.: 3
 GCT.: 0
 N dsgn: 16

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Elev. Cut Fill (ft) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|---------------------|-------------------------|-------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 602.38 | 599.38 | 3.00 | A-7-6 | Cohesive | 8 | 2.00 | 8 | 8 | 606.00 | 118 | 56 | 56 | 167 | 83 | 0.44 | 20 | Cohesive |
| 2 | 599.38 | 596.88 | 5.50 | A-6a | Cohesive | 11 | 1.71 | 11 | 11 | 603.50 | 120 | 58 | 58 | 144 | 239 | 2.94 | 20 | Cohesive |
| 3 | 596.88 | 594.38 | 8.00 | A-6a | Cohesive | 23 | 1.55 | 23 | 23 | 601.00 | 125 | 63 | 63 | 157 | 389 | 5.44 | 8 | Cohesive |
| 4 | 594.38 | 591.88 | 10.50 | A-7-6 | Cohesive | 21 | 1.44 | 21 | 21 | 598.50 | 125 | 63 | 63 | 157 | 546 | 7.94 | 11 | Cohesive |
| 5 | 591.88 | 589.38 | 13.00 | A-6a | Cohesive | 27 | 1.35 | 27 | 27 | 596.00 | 125 | 63 | 63 | 157 | 702 | 10.44 | 23 | Cohesive |
| 6 | 589.38 | 586.88 | 15.50 | A-6a | Cohesive | 20 | 1.28 | 20 | 20 | 593.50 | 125 | 63 | 63 | 157 | 859 | 12.94 | 21 | Cohesive |
| 7 | 586.88 | 584.38 | 18.00 | A-7-6 | Cohesive | 15 | 1.23 | 15 | 15 | 591.00 | 122 | 60 | 60 | 149 | 1011 | 15.44 | 27 | Cohesive |
| 8 | 584.38 | 581.88 | 20.50 | A-7-6 | Cohesive | 21 | 1.18 | 21 | 21 | 588.50 | 125 | 63 | 63 | 157 | 1164 | 17.94 | 20 | Cohesive |
| 9 | 581.88 | 579.38 | 23.00 | A-7-6 | Cohesive | 31 | 1.14 | 31 | 31 | 586.00 | 128 | 66 | 66 | 164 | 1324 | 20.44 | 15 | Cohesive |
| 10 | 579.38 | 577.38 | 25.00 | A-7-6 | Cohesive | 35 | 1.10 | 35 | 32 | 584.00 | 128 | 66 | 66 | 131 | 1472 | 22.44 | 21 | Cohesive |
| | | | | | | | | | | | | | | | | | | |

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| SEEDING | END | | SO. | VOLUME | CALCULATED | CHECKED | ALB |
|---------|-------|-----|-----|--------|------------|---------|-----|
| | WIDTH | SO. | | | | | |
| 145 | | | | 0 | 1275 | | |
| 547 | | | | 7 | 1725 | | |
| 52 | | | | 7 | 588 | | |
| 228 | | | | 7 | 784 | | |
| 30 | | | | 0 | 258 | | |
| 137 | 912 | | | 0 | 469 | | |
| | | | | 14 | 2978 | | |

Include a label for the noise wall alignment and station



| END AREA | VOLUME | CALCULATED | CHECKED | ALB |
|----------|--------|------------|---------|-----|
| | | | | |
| 0 | 1275 | | | |
| 7 | 1725 | | | |
| 7 | 588 | | | |
| 7 | 784 | | | |
| 0 | 258 | | | |
| 0 | 469 | | | |
| 14 | 2978 | | | |

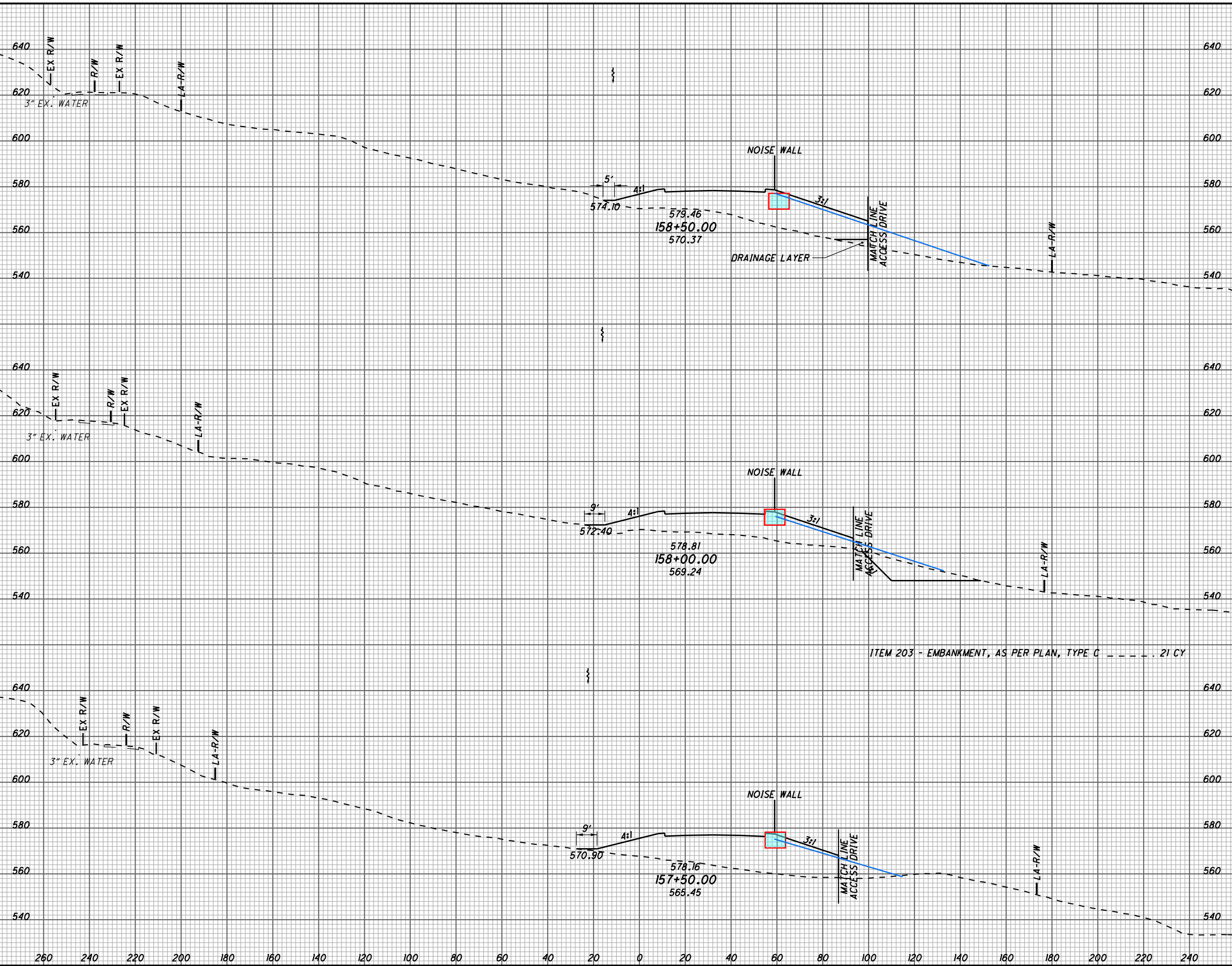
CROSS SECTIONS S.R. 7
STA. 156+00.00 TO STA. 157+00.00

LAW - 7 - 2.17

187
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51029-2B.dgn 5/21/2024 4:51:49 PM SLParker

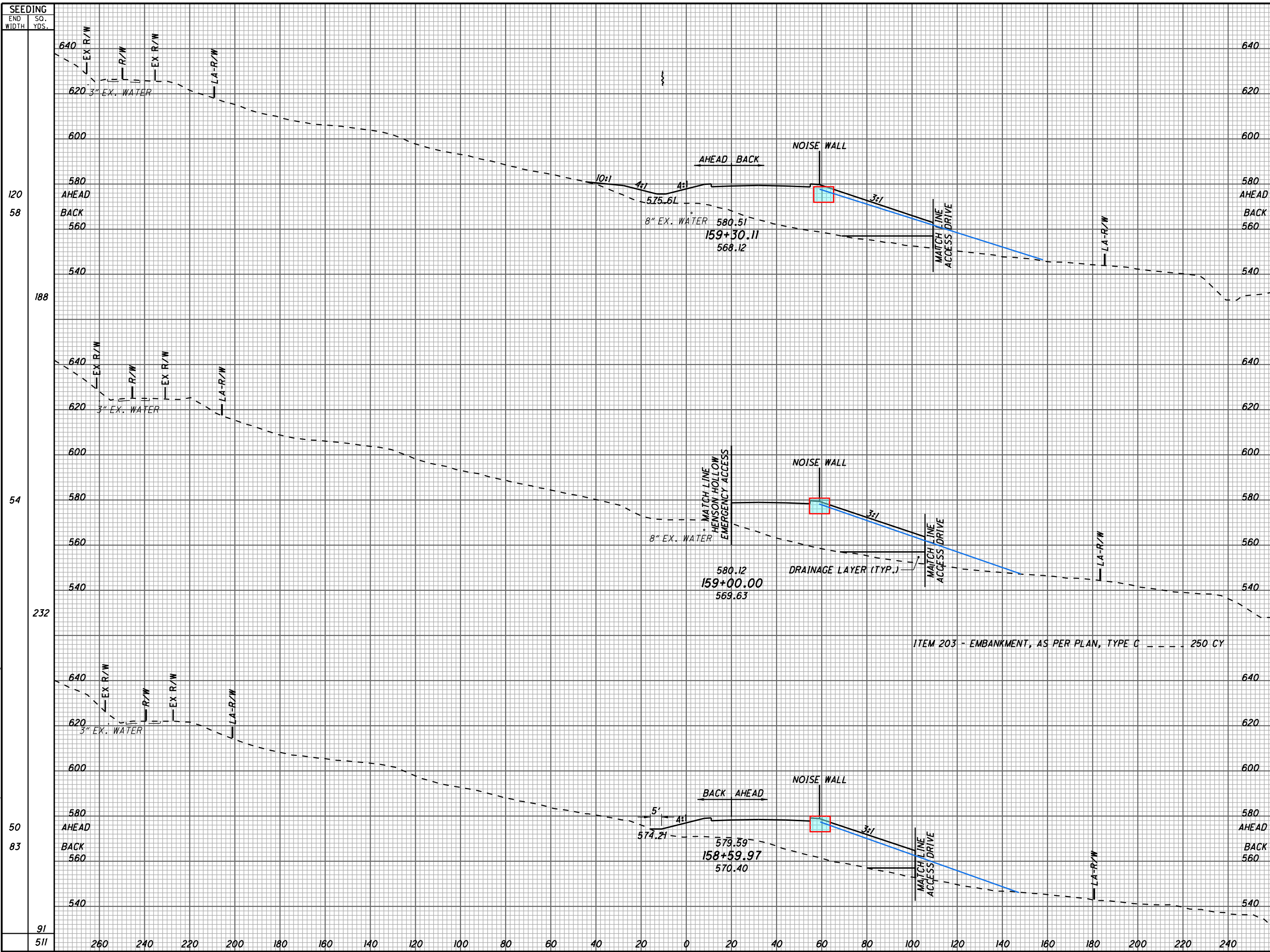
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 80 | 1520 | 621 | 0 | 1159 | | |
| 452 | 260 | 620 | 231 | 2152 | | |
| 82 | 1520 | 620 | 249 | 1165 | | |
| 447 | 260 | 620 | 231 | 2222 | | |
| 79 | 1520 | 621 | 0 | 1234 | | |
| 621 | 1520 | 621 | 0 | 2324 | 188 | 1247 |



CROSS SECTIONS S.R. 7
STA. 157+50.00 TO STA. 158+50.00

LAW - 7 - 2.17

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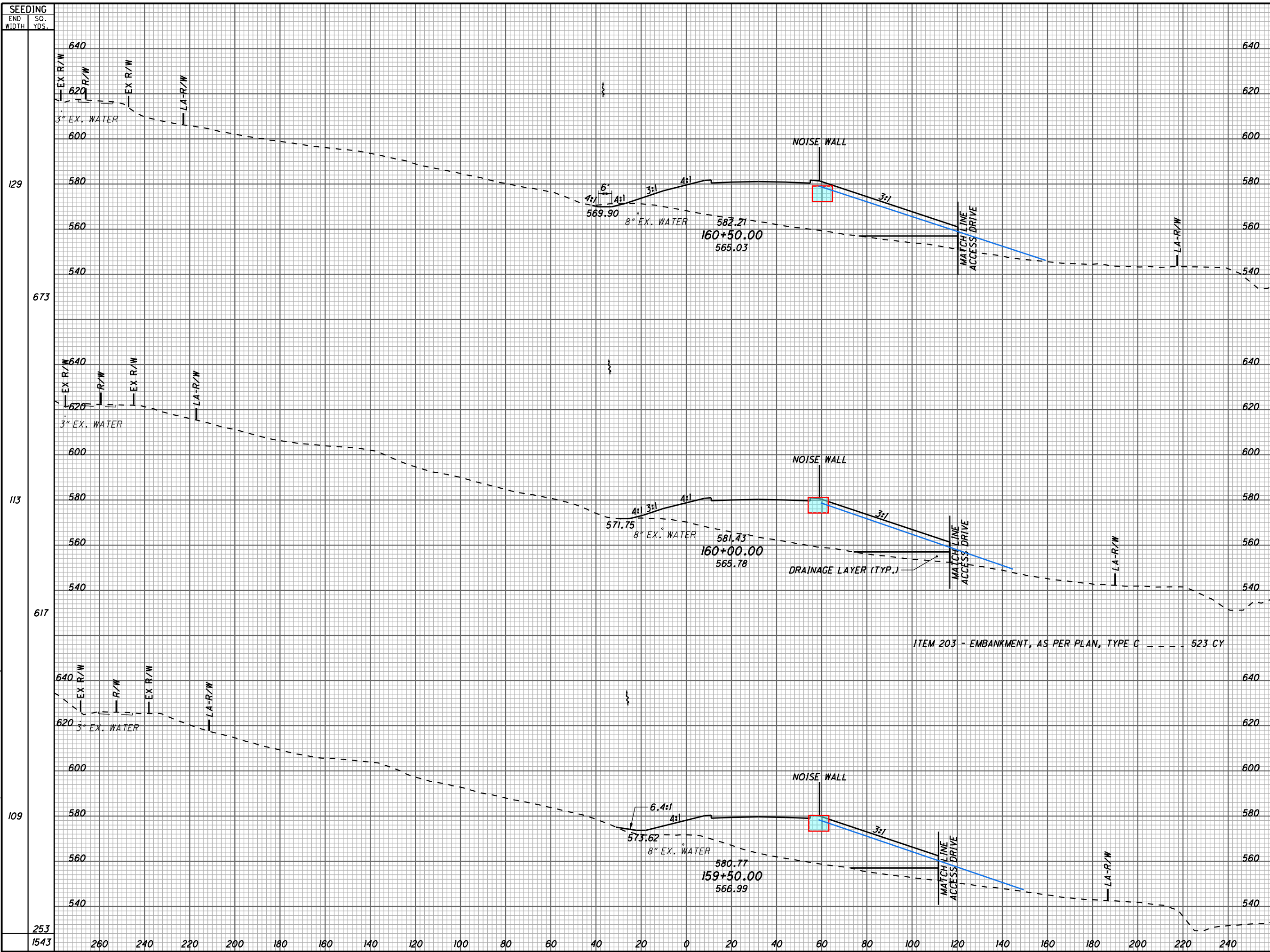
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 120 | 0 | 1699 | 0 | 1358 | | |
| 58 | | | | | | |
| 188 | | | 0 | 1462 | | |
| 54 | 0 | 1263 | | | | |
| 232 | | | 0 | 1707 | | |
| 50 | 0 | 1038 | | | | |
| 83 | 0 | 1242 | | | | |
| 91 | | | 0 | 444 | | |
| 511 | | | 0 | 3613 | | |

CROSS SECTIONS S.R. 7
STA. 158+59.97 TO STA. 159+30.11

LAW - 7 - 2.17

189
1247

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| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 129 | | | 12 | 2014 | | |
| 673 | | | 11 | 3551 | | |
| 113 | | | 1 | 1820 | | |
| 617 | | | 1 | 3249 | | |
| 109 | | | 0 | 1688 | | |
| 253 | | | 0 | 1248 | | |
| 1543 | | | 12 | 8048 | | |

CROSS SECTIONS S.R. 7
STA. 159+50.00 TO STA. 160+50.00

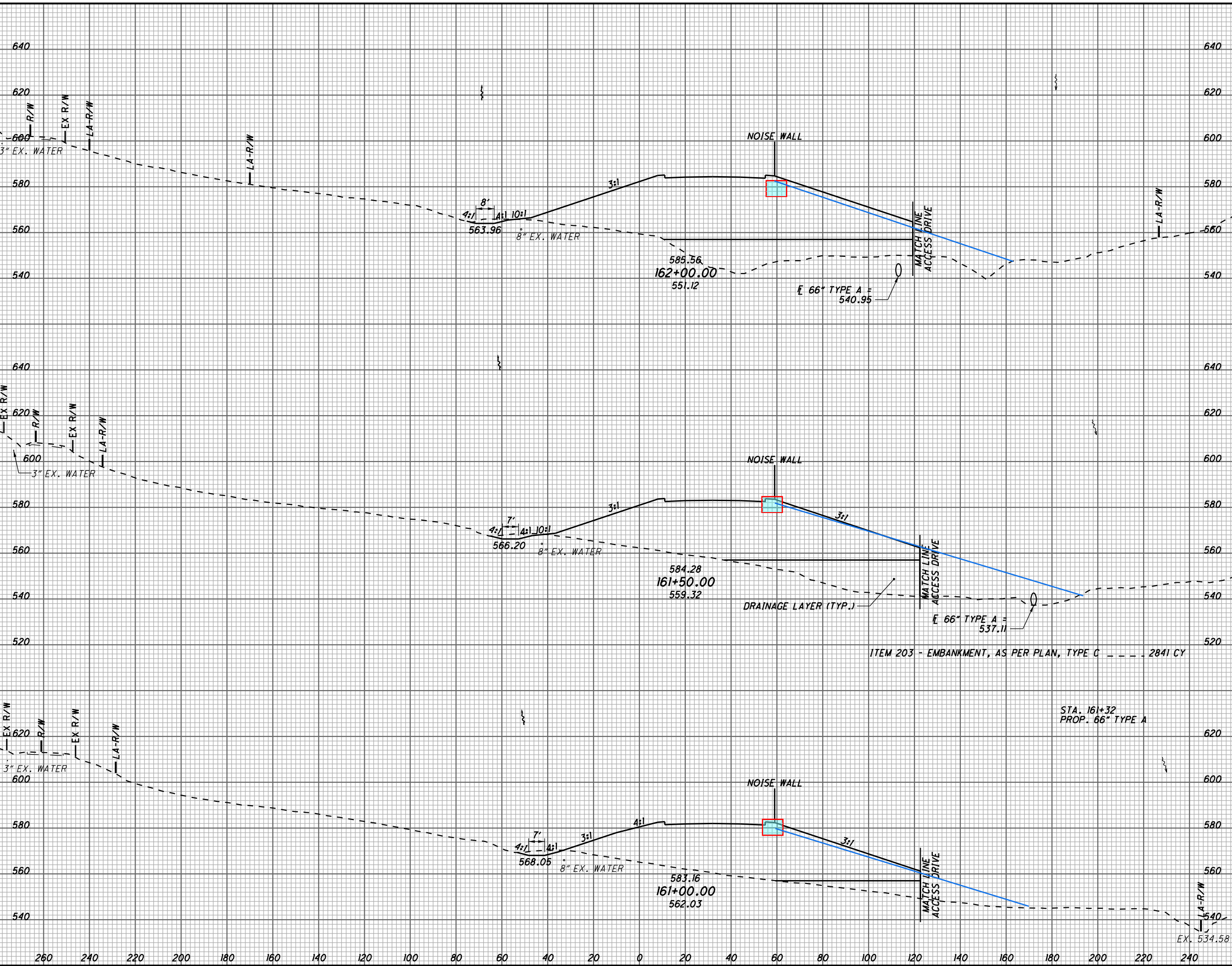
LAW-7-2.17

190
1247

ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C --- 523 CY

U:\173608714_LAW\75923\roadway_sheets\75923\X51032-2B.dgn 5/21/2024 4:51:52 PM SL Parker

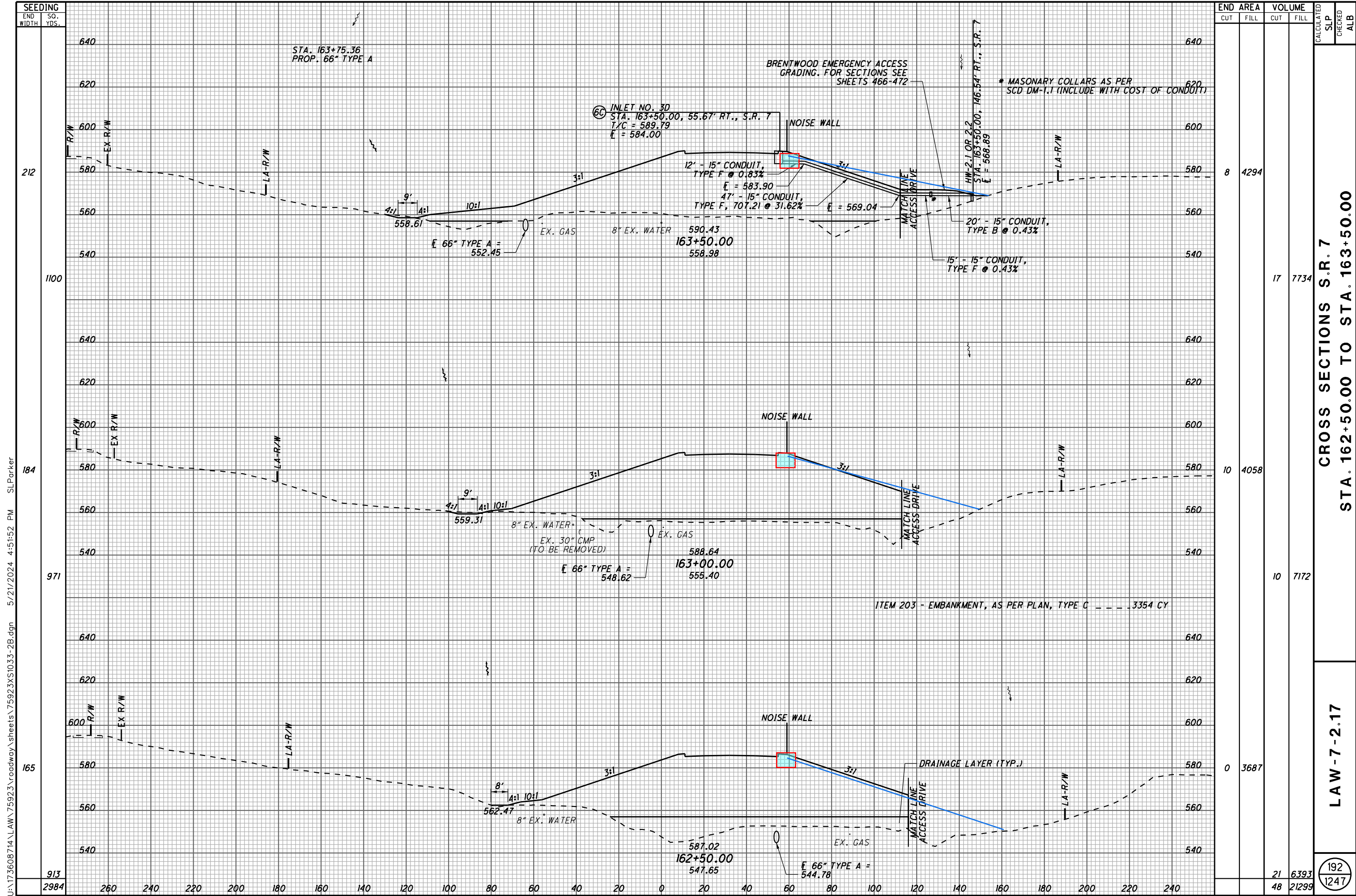
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 163 | 260 | 640 | 22 | 3217 | | |
| 887 | 260 | 640 | 50 | 5575 | | |
| 156 | 260 | 640 | 31 | 2803 | | |
| 832 | 260 | 640 | 54 | 4853 | | |
| 144 | 260 | 640 | 27 | 2438 | | |
| 758 | 2477 | 640 | 36 | 4123 | 191 | 1247 |



CROSS SECTIONS S.R. 7
STA. 161+00.00 TO STA. 162+00.00

LAW - 7 - 2.17

191
1247



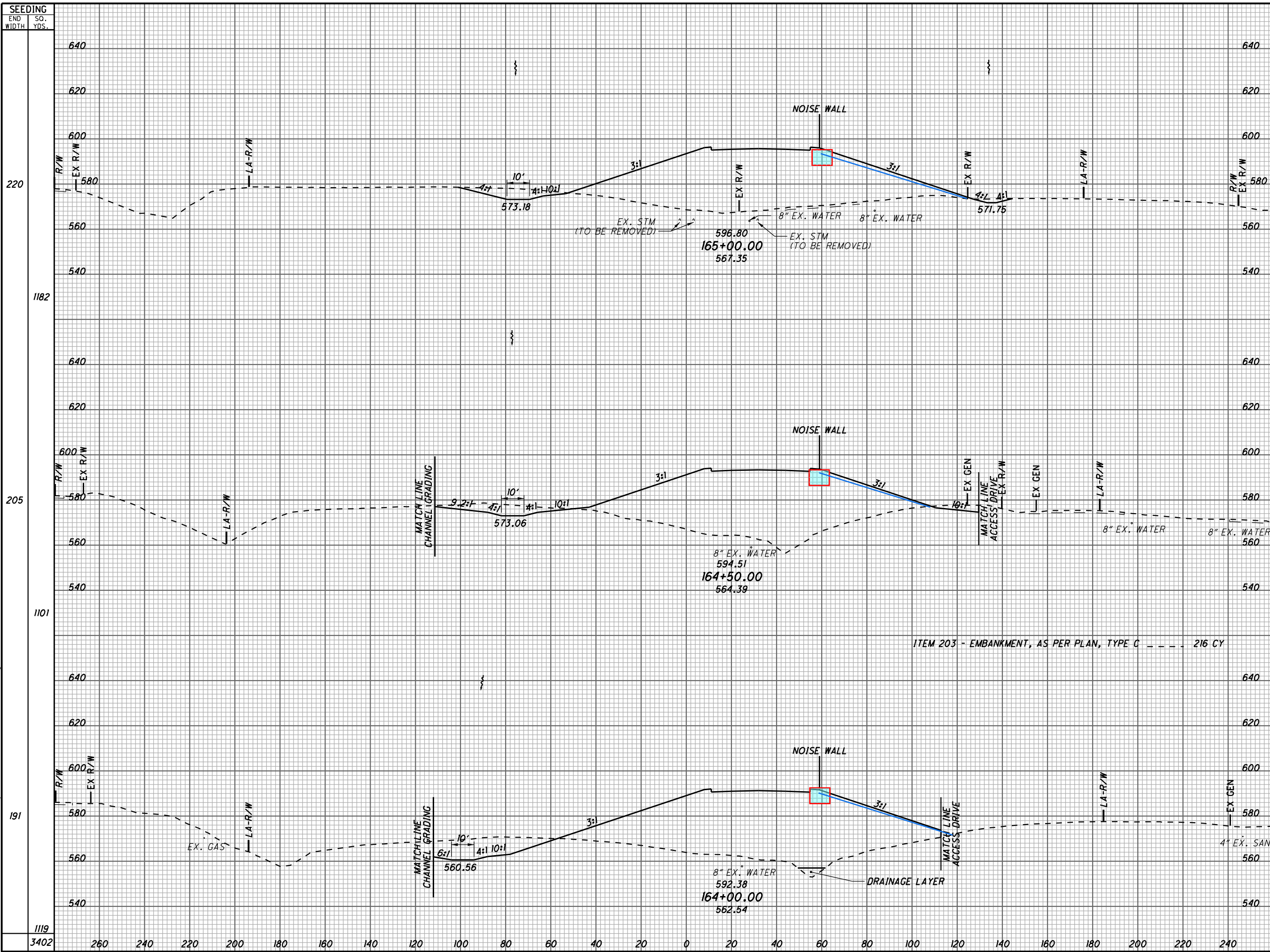
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**CROSS SECTIONS S.R. 7
STA. 162+50.00 TO STA. 163+50.00**

LAW - 7 - 2.17

192
1247

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| SEEDING | | END AREA | | VOLUME | | CALCULATED | |
|-----------|----------|----------|-------|--------|------|------------|---------|
| END WIDTH | SO. YDS. | CUT | FILL | CUT | FILL | SLP | CHECKED |
| 220 | 1182 | 154 | 3003 | 333 | 5530 | | |
| 205 | 1101 | 205 | 2969 | 529 | 5911 | | |
| 191 | 1119 | 367 | 3415 | 347 | 7138 | | |
| | 3402 | 1209 | 18579 | | | | |

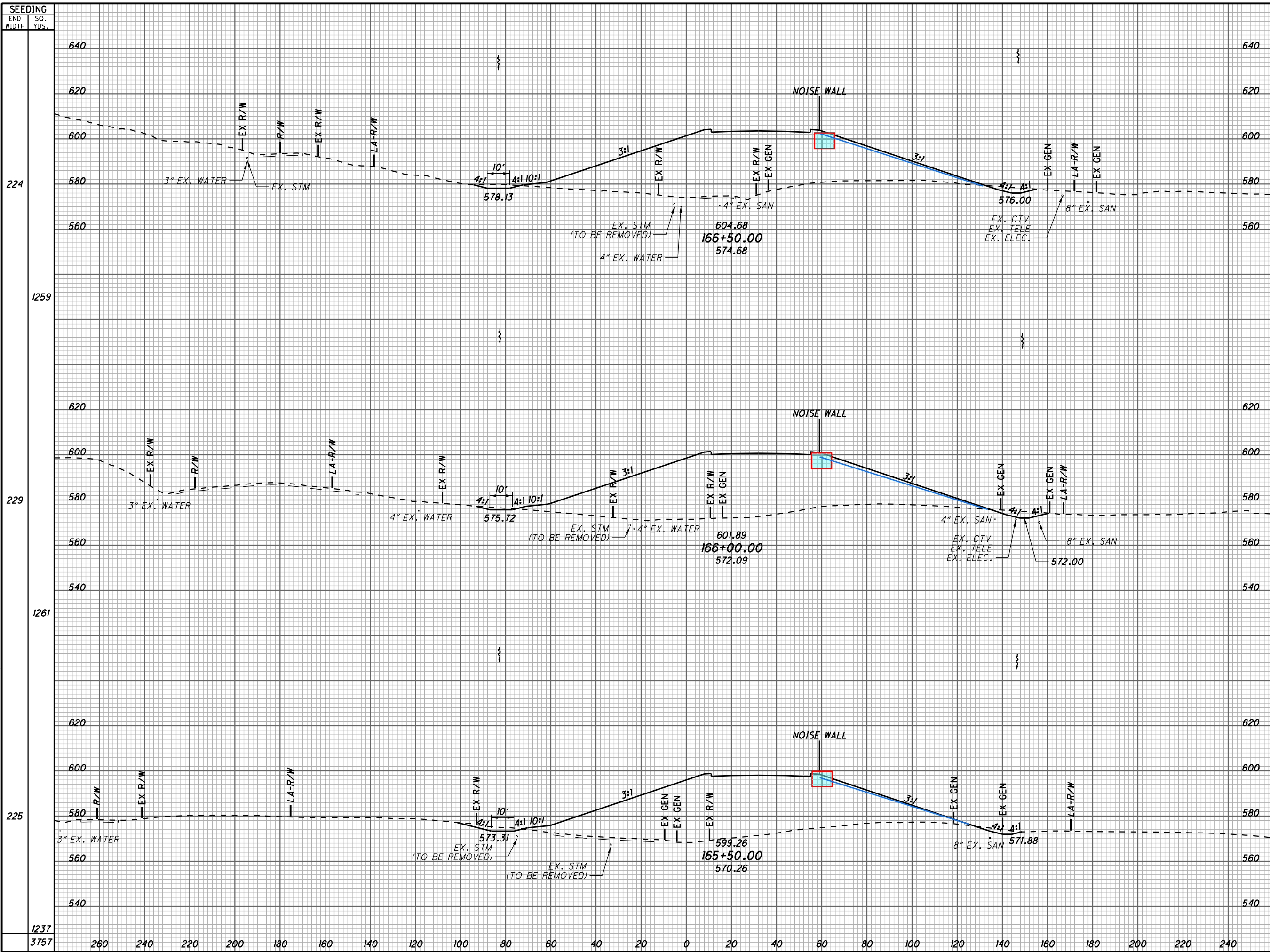
ITEM 203 - EMBANKMENT, AS PER PLAN, TYPE C --- 216 CY

CROSS SECTIONS S.R. 7
STA. 164+00.00 TO STA. 165+00.00

LAW - 7 - 2.17

193
1247

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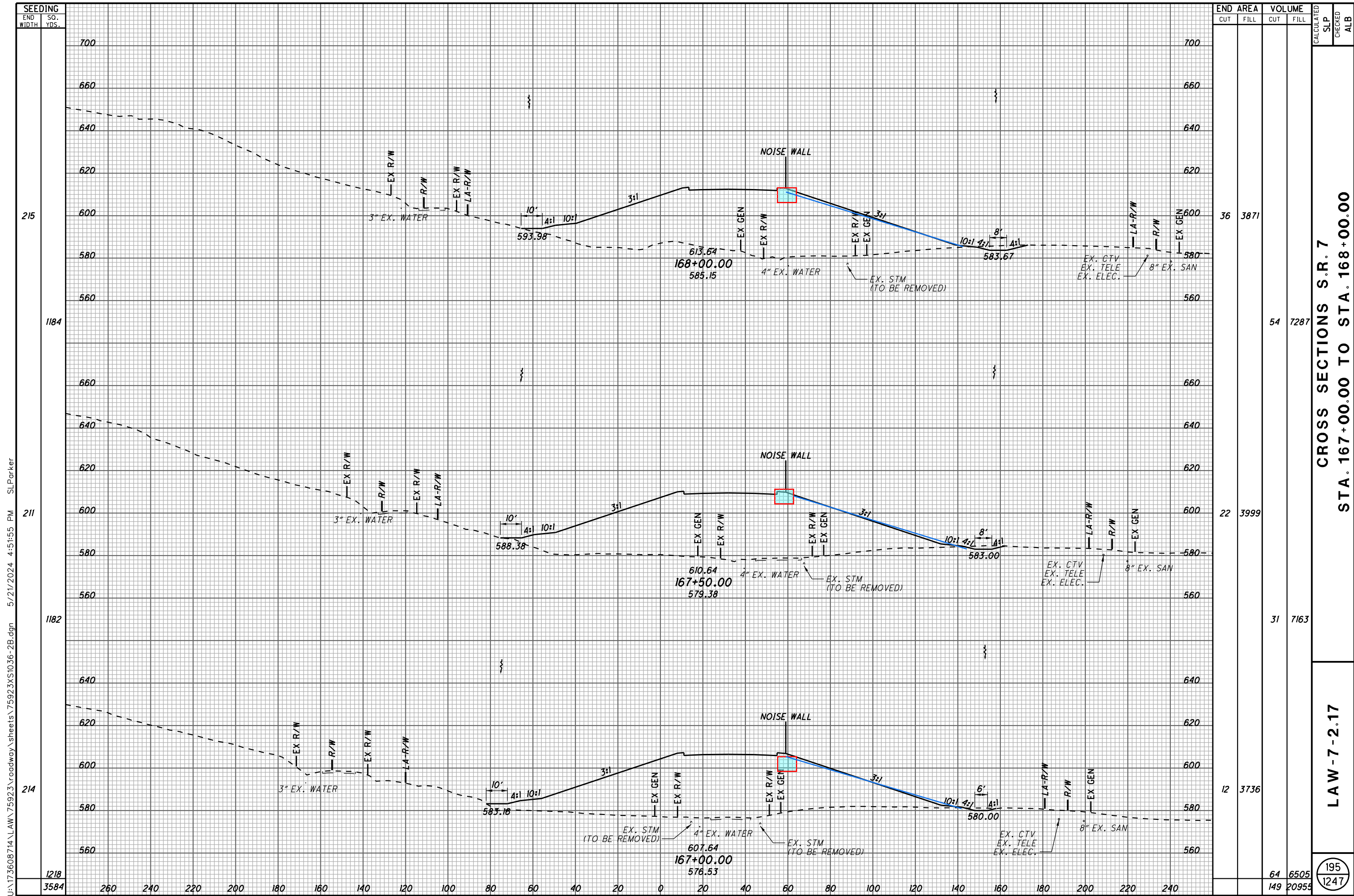


| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|----------|------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 224 | 57 | 3288 | | | | |
| 1259 | | | 106 | 6234 | | |
| 229 | 58 | 3444 | | | | |
| 1261 | | | 109 | 6189 | | |
| 225 | 60 | 3240 | | | | |
| 1237 | | | 199 | 5781 | | |
| 3757 | | | 414 | 18204 | | |

CROSS SECTIONS S.R. 7
STA. 165+50.00 TO STA. 166+50.00

LAW-7-2.17

194
1247



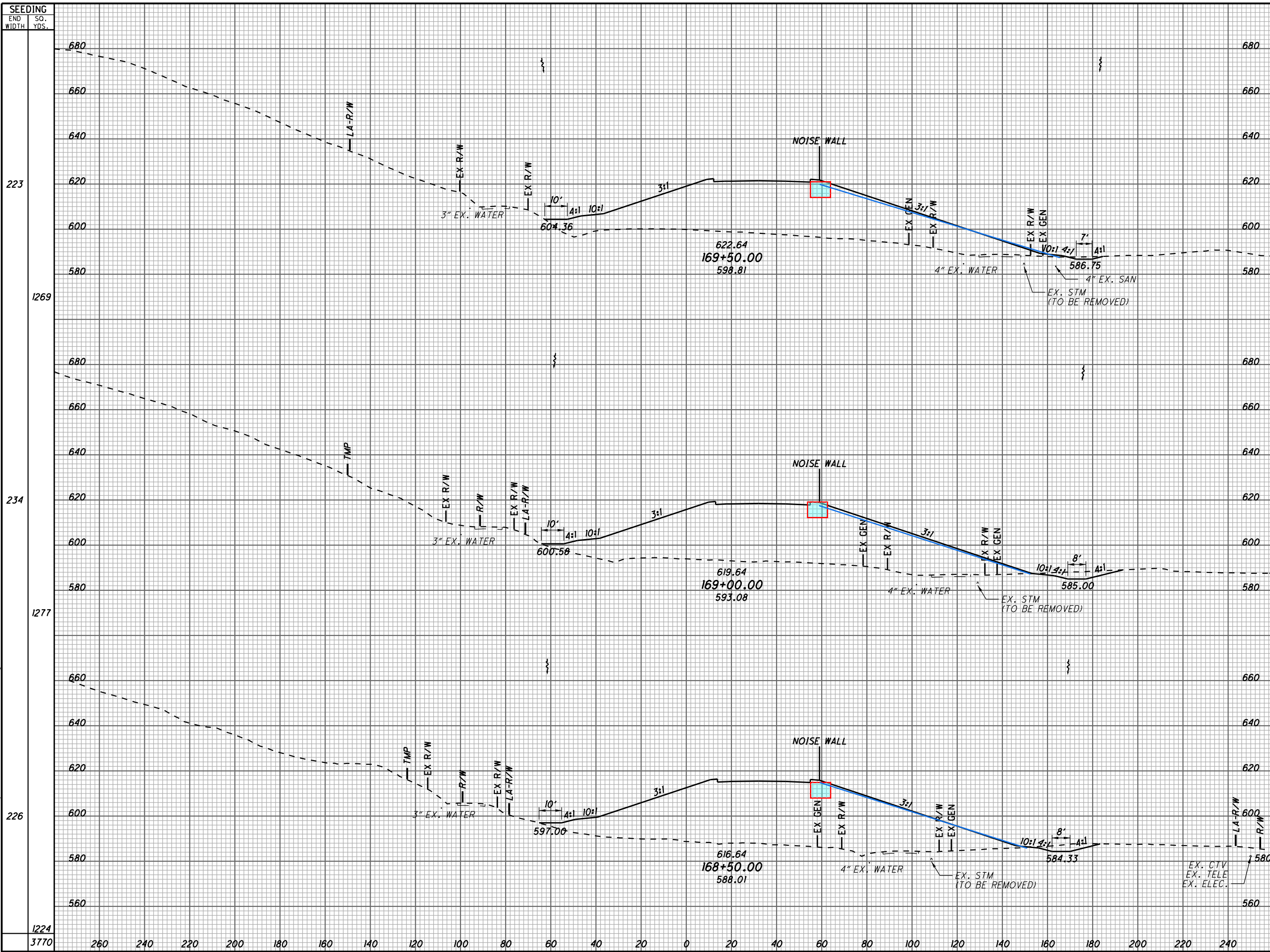
U:\173608714_LAW\75923\roadway_sheets\75923\X1036-2B.dgn 5/21/2024 4:51:55 PM SLParker

CROSS SECTIONS S.R. 7
 STA. 167+00.00 TO STA. 168+00.00

LAW - 7 - 2.17

195
1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1037-2B.dgn 5/21/2024 4:51:56 PM SLParker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|----------|-------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 169+50.00 | 11 | 3342 | | | | |
| 169+00.00 | 72 | 3601 | | | | |
| 168+50.00 | 56 | 3821 | | | | |
| TOTAL | 139 | 10764 | | | | |

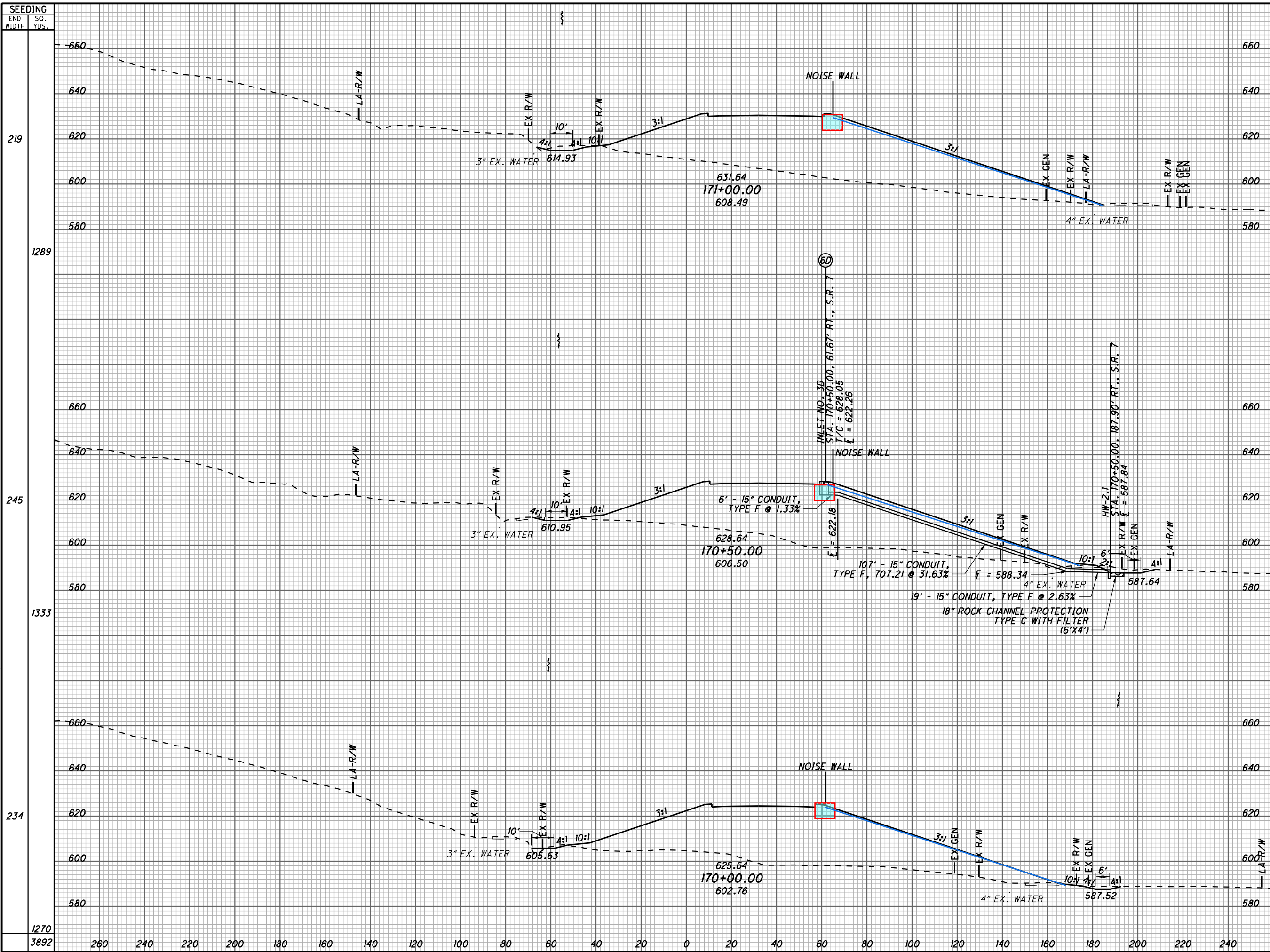
| STATION | END AREA | | VOLUME | |
|-----------|----------|-------|--------|------|
| | CUT | FILL | CUT | FILL |
| 169+50.00 | 11 | 3342 | | |
| 169+00.00 | 72 | 3601 | | |
| 168+50.00 | 56 | 3821 | | |
| TOTAL | 139 | 10764 | | |

CROSS SECTIONS S.R. 7
STA. 168+50.00 TO STA. 169+50.00

LAW - 7 - 2.17

196
 1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1038-2B.dgn 5/21/2024 4:51:57 PM SLParker



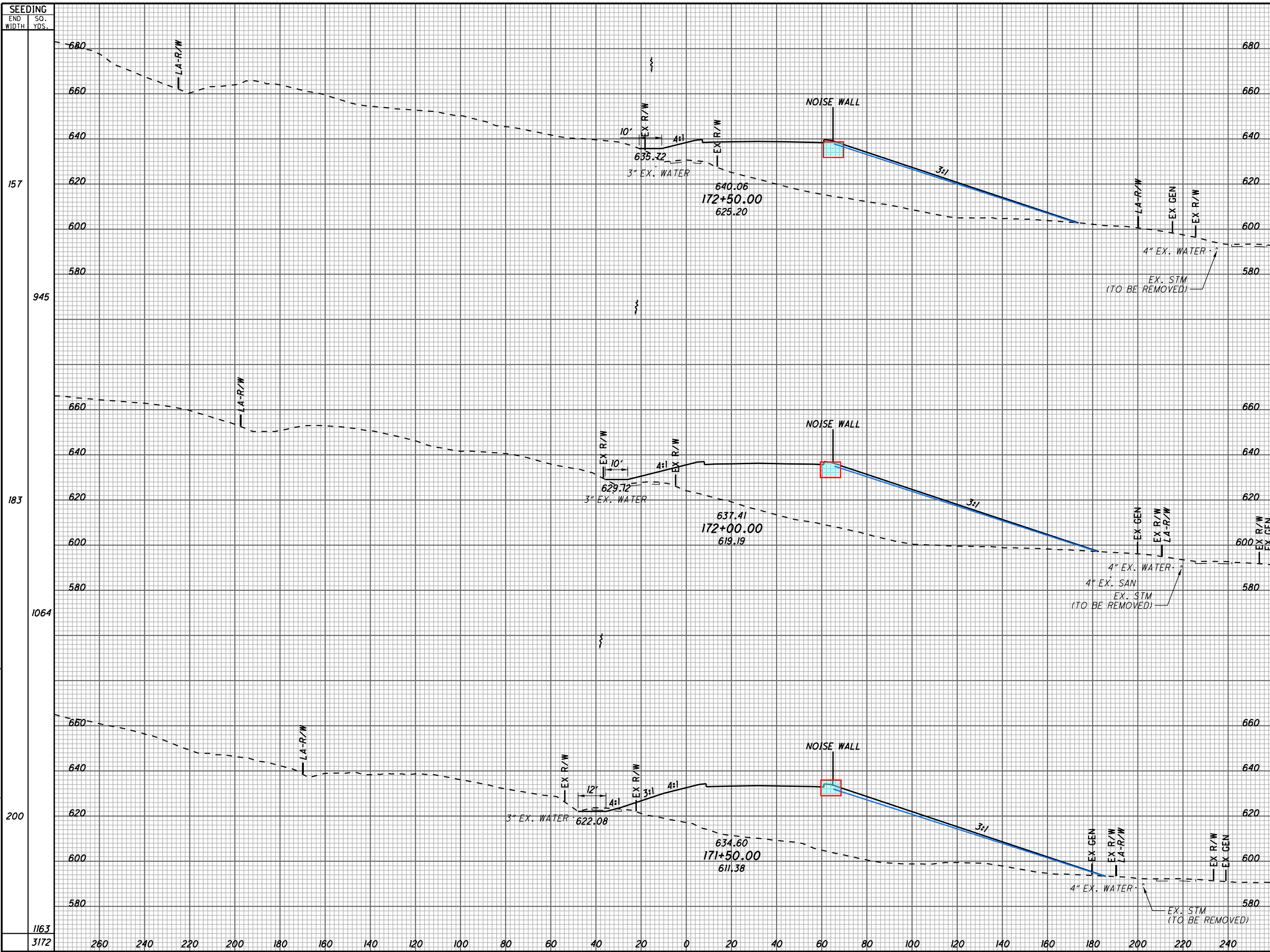
| END | AREA | | VOLUME | | CALCULATED | CHECKED |
|------|------|------|--------|-------|------------|---------|
| | CUT | FILL | CUT | FILL | | |
| 219 | | | | | | |
| 1289 | 28 | 3636 | 121 | 6545 | | |
| 245 | | | | | | |
| 1333 | 102 | 3432 | 114 | 6219 | | |
| 234 | | | | | | |
| 1270 | 21 | 3284 | 30 | 6135 | | |
| 3892 | 260 | 240 | 265 | 18899 | 197 | 1247 |

CROSS SECTIONS S.R. 7
STA. 170+00.00 TO STA. 171+00.00

LAW - 7 - 2.17

197
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51039-2B.dgn 5/21/2024 4:51:58 PM SLParker



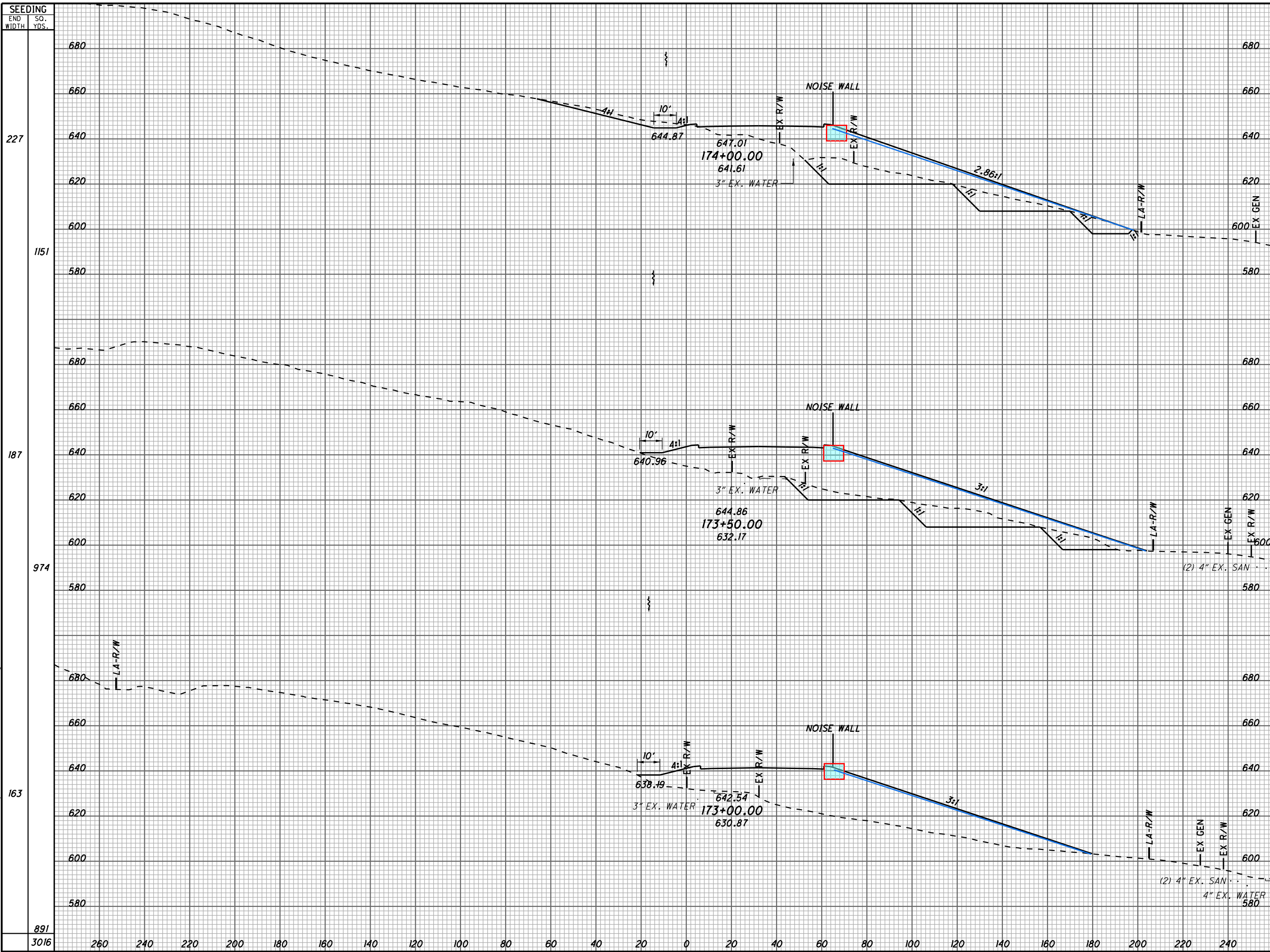
| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|-------|----------------|-------------|
| | CUT | FILL | | |
| 0 | 2681 | 0 | 5638 | |
| 0 | 3408 | 8 | 6527 | |
| 8 | 3641 | 34 | 6738 | |
| | 42 | 18903 | 1247 | |

CROSS SECTIONS S.R. 7
STA. 171+50.00 TO STA. 172+50.00

LAW-7-2.17

198
1247

U:\173608714_LAW\759233\roadway_sheets\759233XS1040-2B.dgn 5/21/2024 4:51:58 PM SLParker



| STATION | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 174+00.00 | 836 | 2024 | | | | |
| 173+50.00 | 641 | 2823 | 1368 | 4489 | | |
| 173+00.00 | 0 | 2375 | 594 | 4813 | | |
| TOTAL | | | 0 | 4682 | 199 | 1247 |

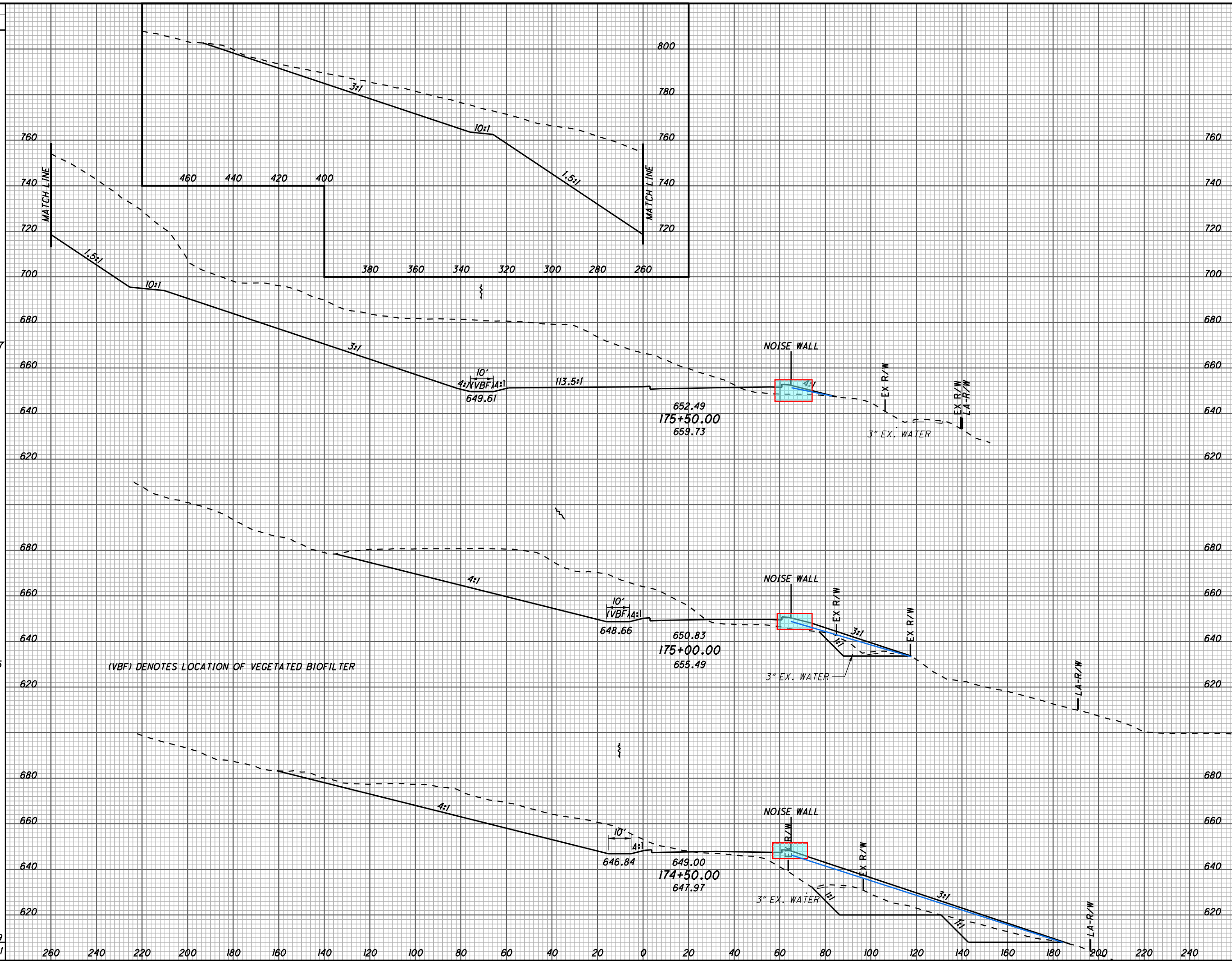
CROSS SECTIONS S.R. 7
STA. 173+00.00 TO STA. 174+00.00

LAW - 7 - 2.17

199
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1041-2B.dgn 5/21/2024 4:51:59 PM SLParker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 525 | |
| 2047 | |
| 211 | |
| 1455 | |
| 312 | |
| 1499 | |
| 5001 | |



| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 9165 | 92 | 10718 | 408 | | |
| 2411 | 349 | 4060 | 1655 | | |
| 1973 | 1438 | | | | |
| 2601 | 3207 | 17379 | 5270 | | |

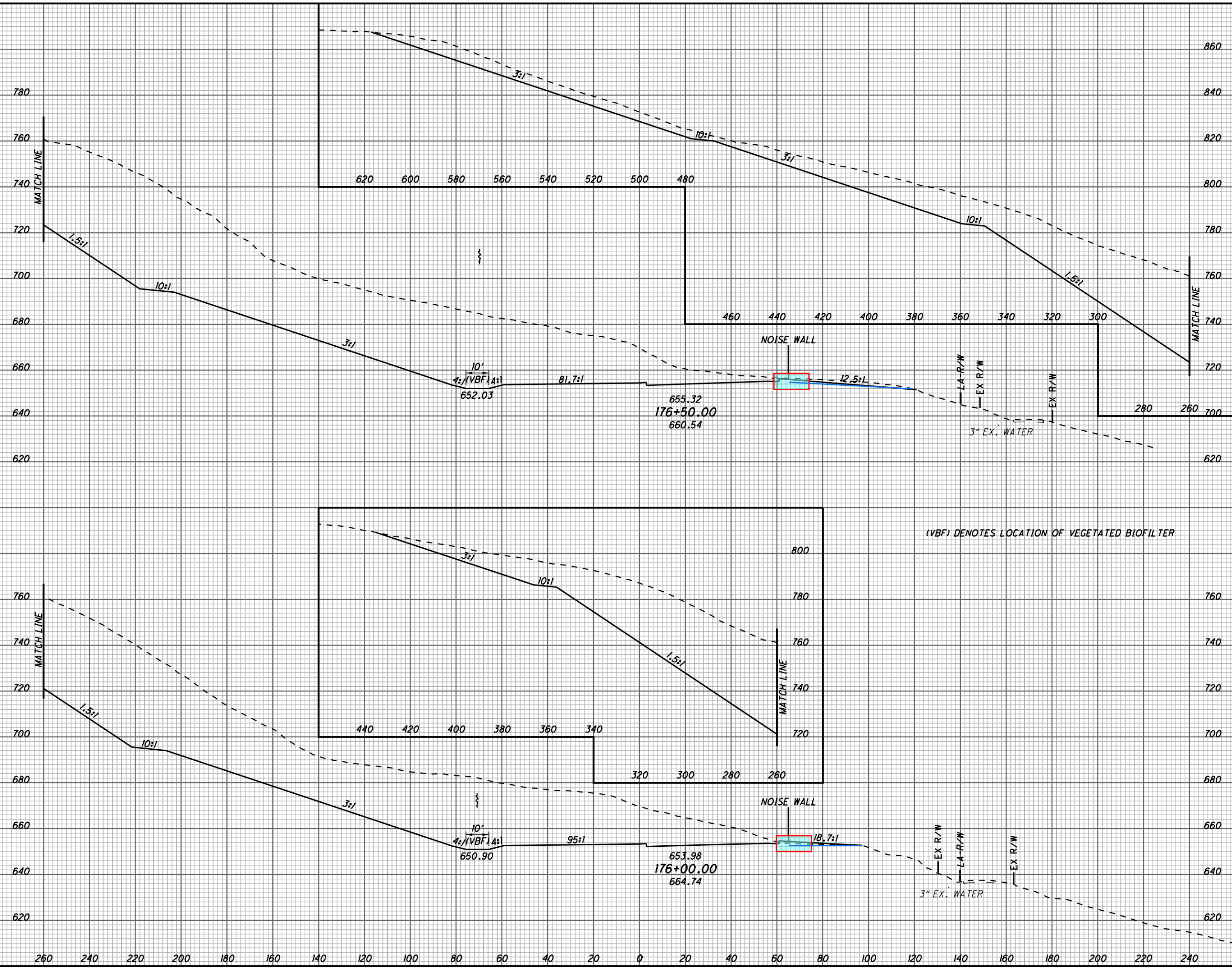
**CROSS SECTIONS S.R. 7
STA. 174+50.00 TO STA. 175+50.00**

LAW - 7 - 2.17

200
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51042-2B.dgn 5/21/2024 4:52:00 PM SLPorker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 737 | 12615 | 0 | 22117 | 17 | | |
| 3500 | | | | | | |
| 523 | 11272 | 18 | 18923 | 102 | | |
| 2911 | 6411 | | 41040 | 119 | | |



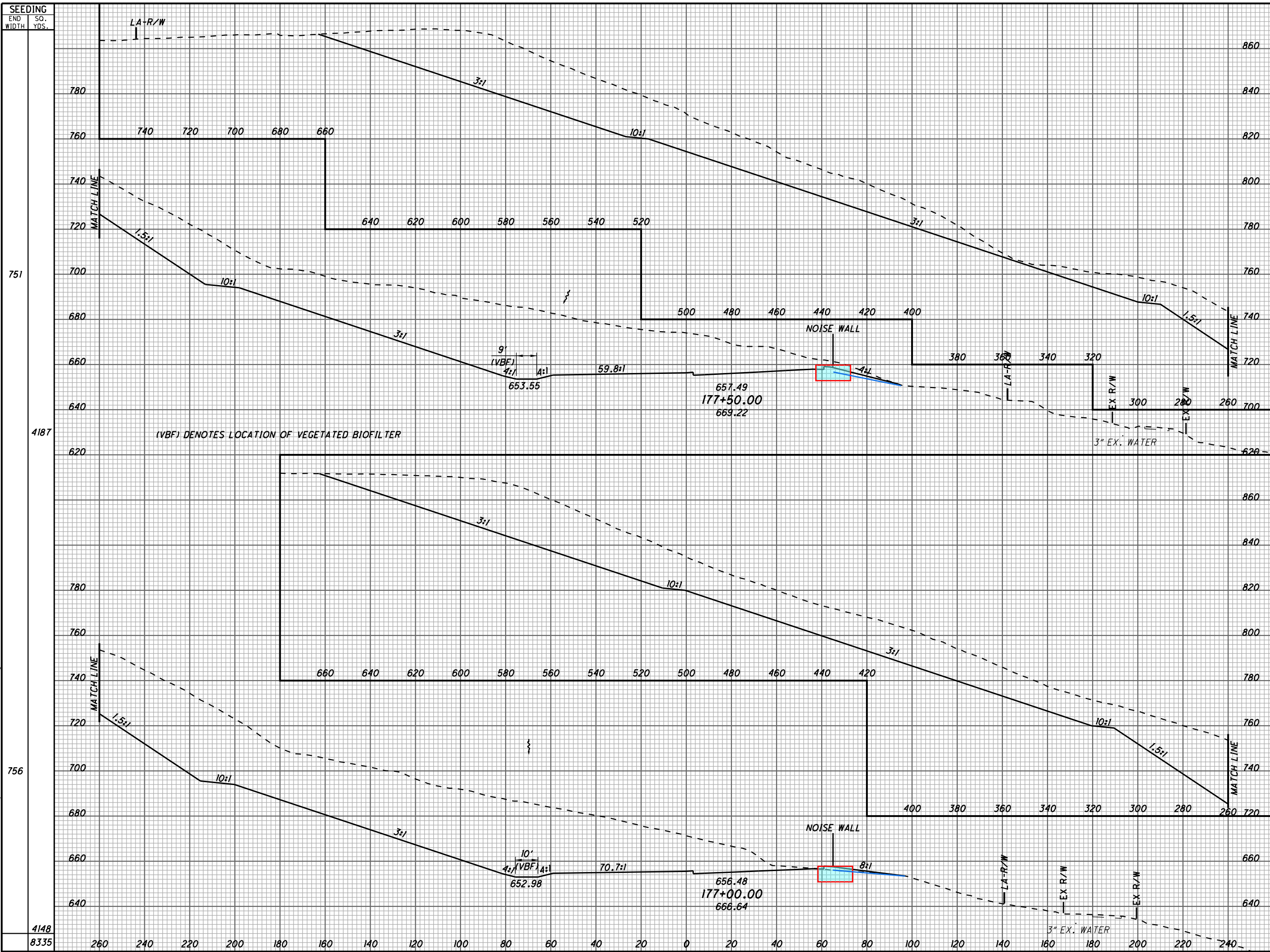
(VBF) DENOTES LOCATION OF VEGETATED BIOFILTER

CROSS SECTIONS S.R. 7
STA. 176+00.00 TO STA. 176+50.00

LAW - 7 - 2.17

201
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X1043-2B.dgn 5/21/2024 4:52:01 PM SLParker



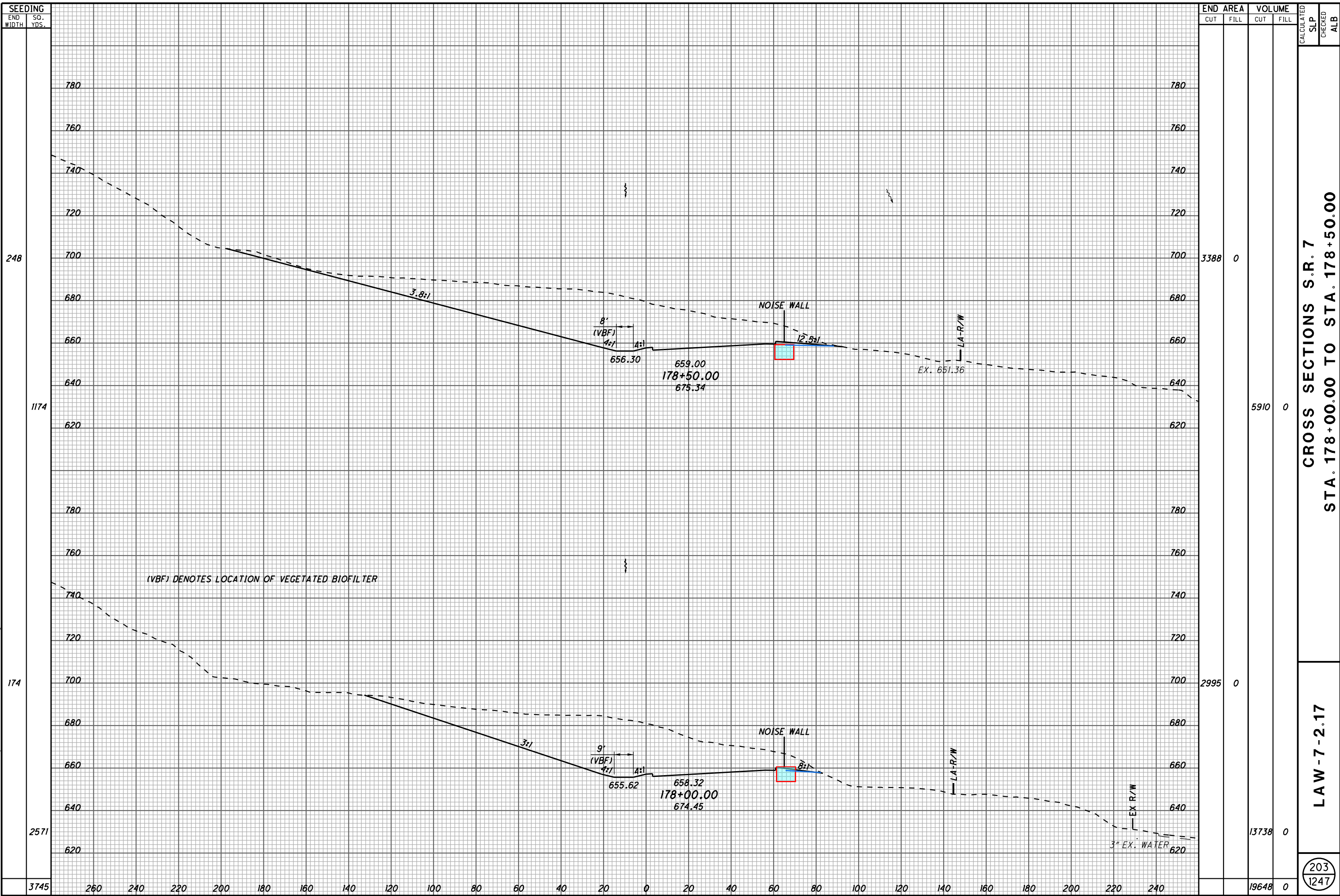
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 751 | 11841 | 0 | 23937 | 23 | | |
| 4187 | 14010 | 24 | 24653 | 23 | | |
| 756 | | | | | | |
| 4148 | | | | | | |
| 8335 | | | | | | |

CROSS SECTIONS S.R. 7
STA. 177+00.00 TO STA. 177+50.00

LAW - 7 - 2.17

202
1247

U:\173608714 LAW\75923\roadway\sheets\75923\X1044-2B.dgn 5/21/2024 4:52:02 PM SLParker



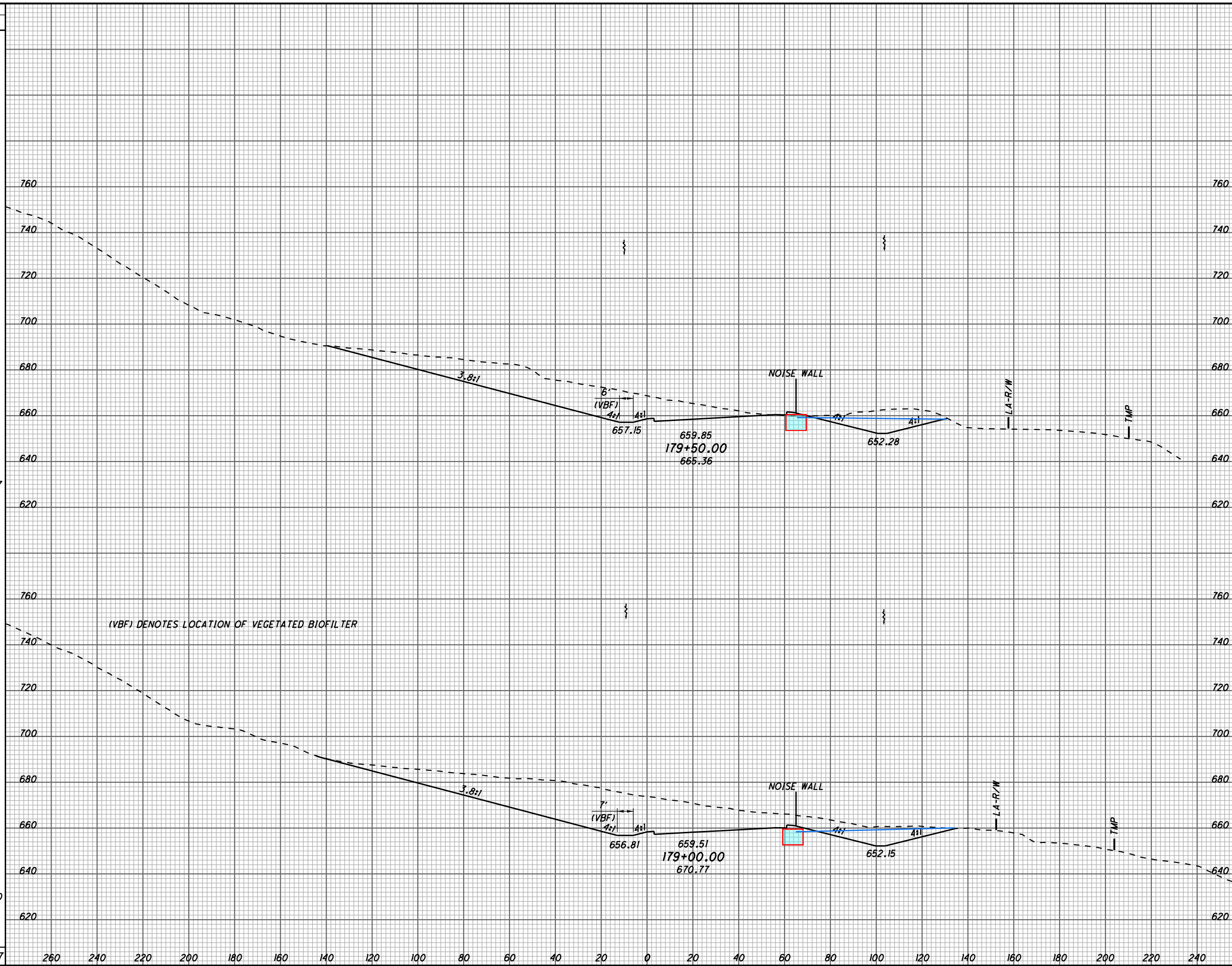
**CROSS SECTIONS S.R. 7
STA. 178+00.00 TO STA. 178+50.00**

LAW - 7 - 2.17

203
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51045-2B.dgn 5/21/2024 4:52:03 PM SLForker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 2647 | 229 |
| 2647 | 1297 |
| 2647 | 238 |
| 2647 | 1350 |

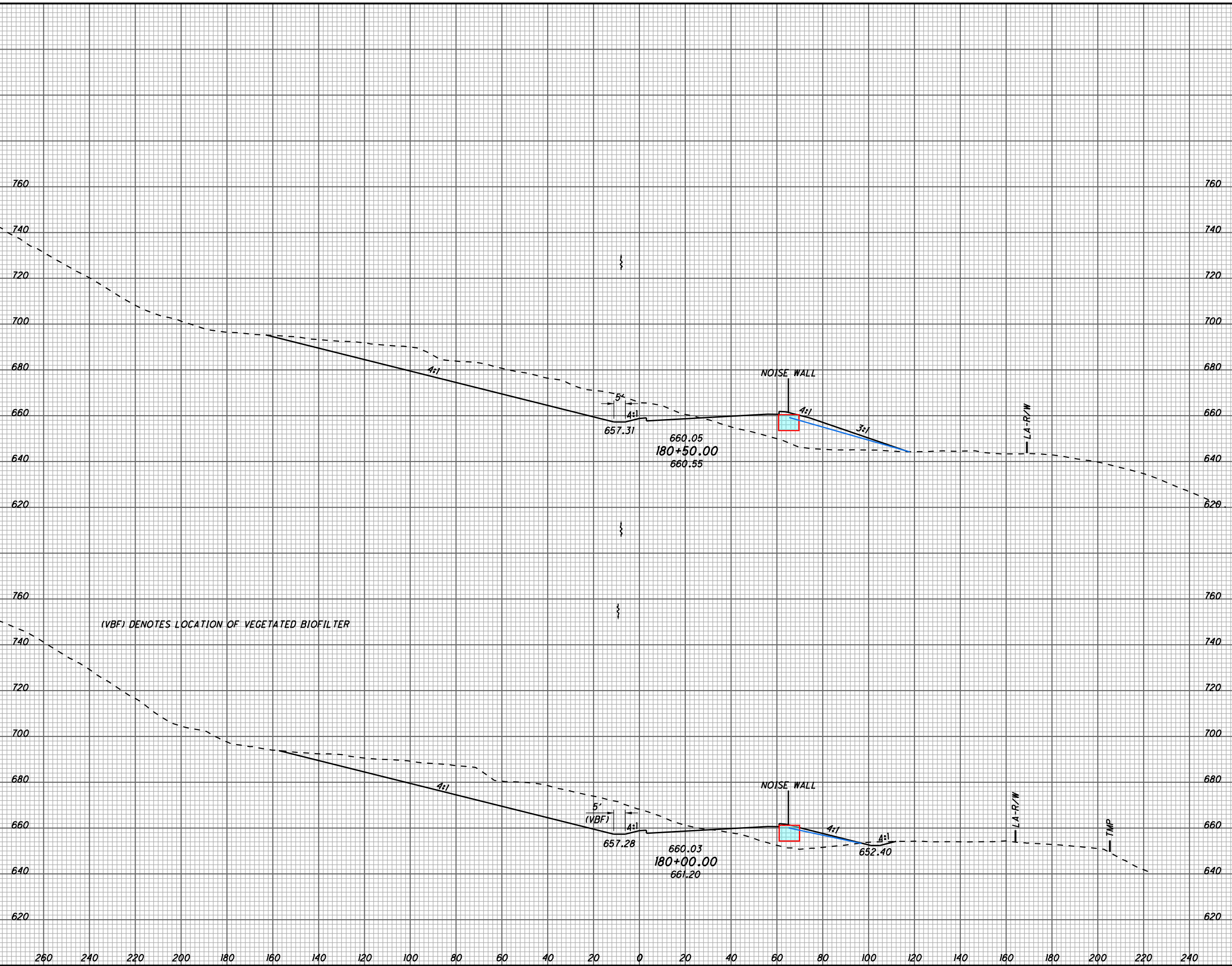


| END AREA | VOLUME | CALCULATED | | CHECKED | ALB |
|----------|--------|------------|------|---------|-----|
| | | CUT | FILL | | |
| 1901 | 11 | | | | |
| 4126 | 10 | | | | |
| 2555 | 0 | | | | |
| 5504 | 0 | | | | |
| 9630 | 10 | | | | |

CROSS SECTIONS S.R. 7
 STA. 179+00.00 TO STA. 179+50.00
 LAW - 7 - 2.17
 204
 1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51046-2B.dgn 5/21/2024 4:52:04 PM SLForker

| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 2567 | |
| 240 | |
| 1299 | |
| 227 | |
| 1268 | |



| END AREA | | VOLUME | | CALCULATED SLP | |
|----------|------|--------|------|----------------|-------------|
| CUT | FILL | CUT | FILL | SLP | CHECKED SLP |
| 1542 | 1542 | 3014 | 1736 | | |
| 1712 | 332 | 3346 | 318 | | |
| | | 6360 | 2054 | 205 | 1247 |

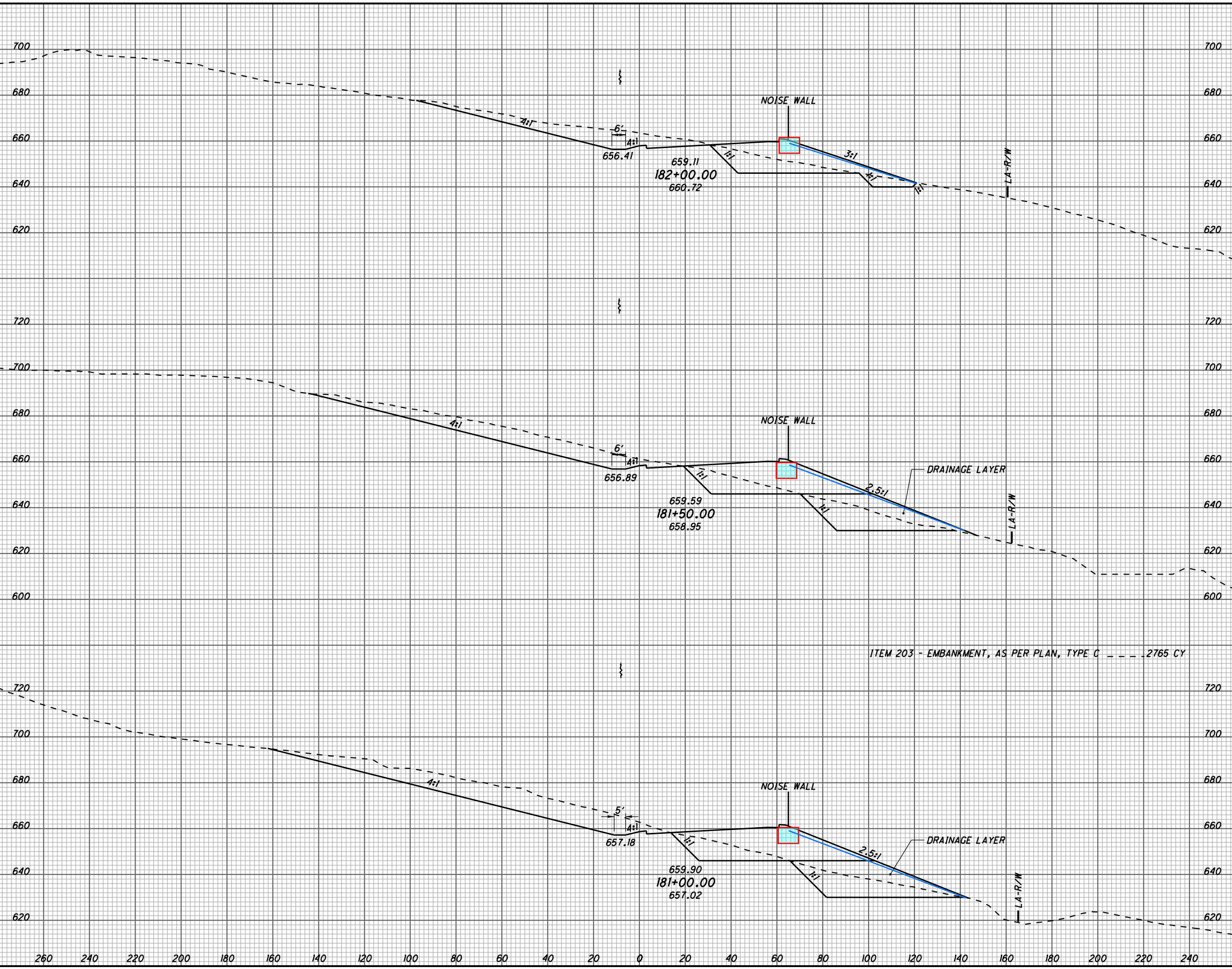
CROSS SECTIONS S.R. 7
STA. 180+00.00 TO STA. 180+50.00

LAW - 7 - 2.17

205
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1047-2B.dgn 5/21/2024 4:52:05 PM SLForker

| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| 176 | | |
| 1197 | | |
| 254 | | |
| 1454 | | |
| 269 | | |
| 1414 | | |
| 4065 | 260 | 240 |

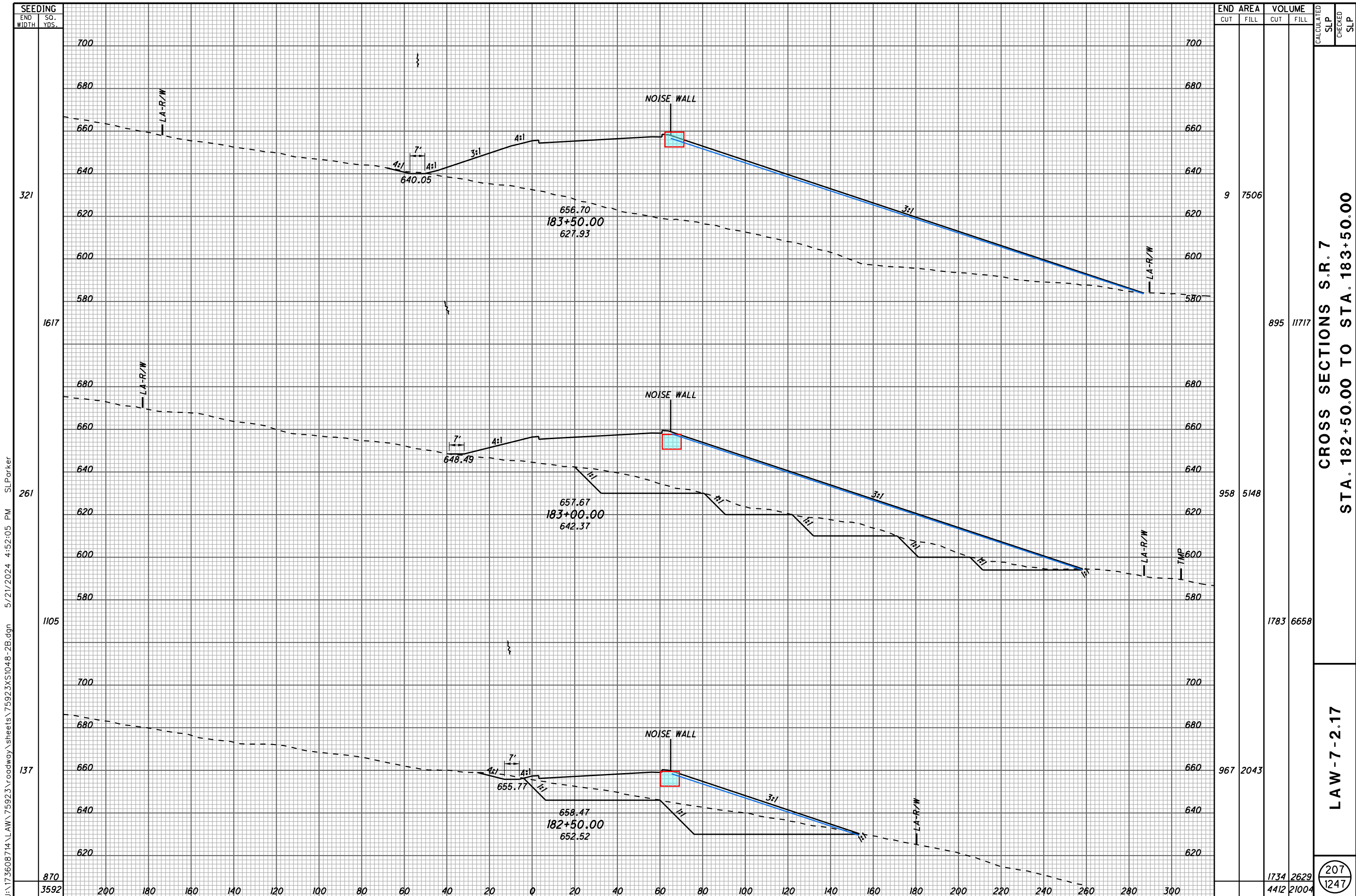


| END AREA | | VOLUME | | CALCULATED SLP | CHECKED SLP |
|----------|------|--------|------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 905 | 796 | | | | |
| | | 2150 | 1494 | | |
| 1416 | 818 | | | | |
| | | 2985 | 1601 | | |
| 1808 | 911 | | | | |
| | | 3102 | 2271 | | |
| | | 8237 | 5366 | | |

CROSS SECTIONS S.R. 7
STA. 181+00.00 TO STA. 182+00.00

LAW - 7 - 2.17

206
1247



SEEDING
 END SO. YDS.
 WIDTH YDS.

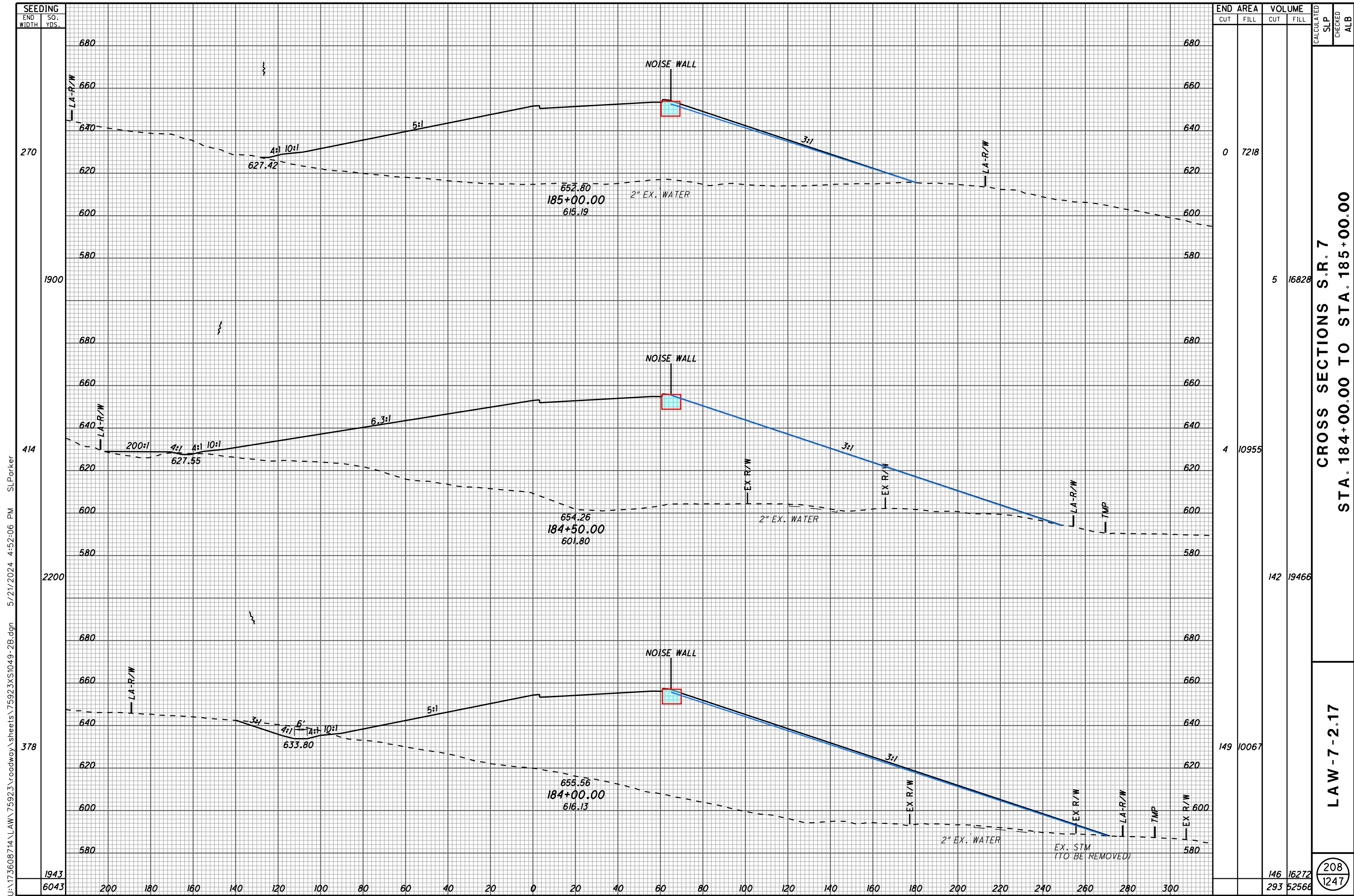
321
 1617
 261
 1105
 137
 870
 3592

U:\173608714_LAW\75923\roadway_sheets\75923\XS1048-2B.dgn 5/21/2024 4:52:05 PM SLForker

| END AREA | VOLUME | CALCULATED | | CHECKED | |
|----------|--------|------------|------|---------|------|
| | | CUT | FILL | SLP | SLP |
| 9 | 7506 | | | | |
| 958 | 5148 | | | | |
| 967 | 2043 | | | | |
| 1734 | 2629 | | | 207 | 1247 |
| 895 | 11717 | | | | |
| 1783 | 6658 | | | | |
| 4412 | 21004 | | | | |

CROSS SECTIONS S.R. 7
 STA. 182+50.00 TO STA. 183+50.00

LAW - 7 - 2.17



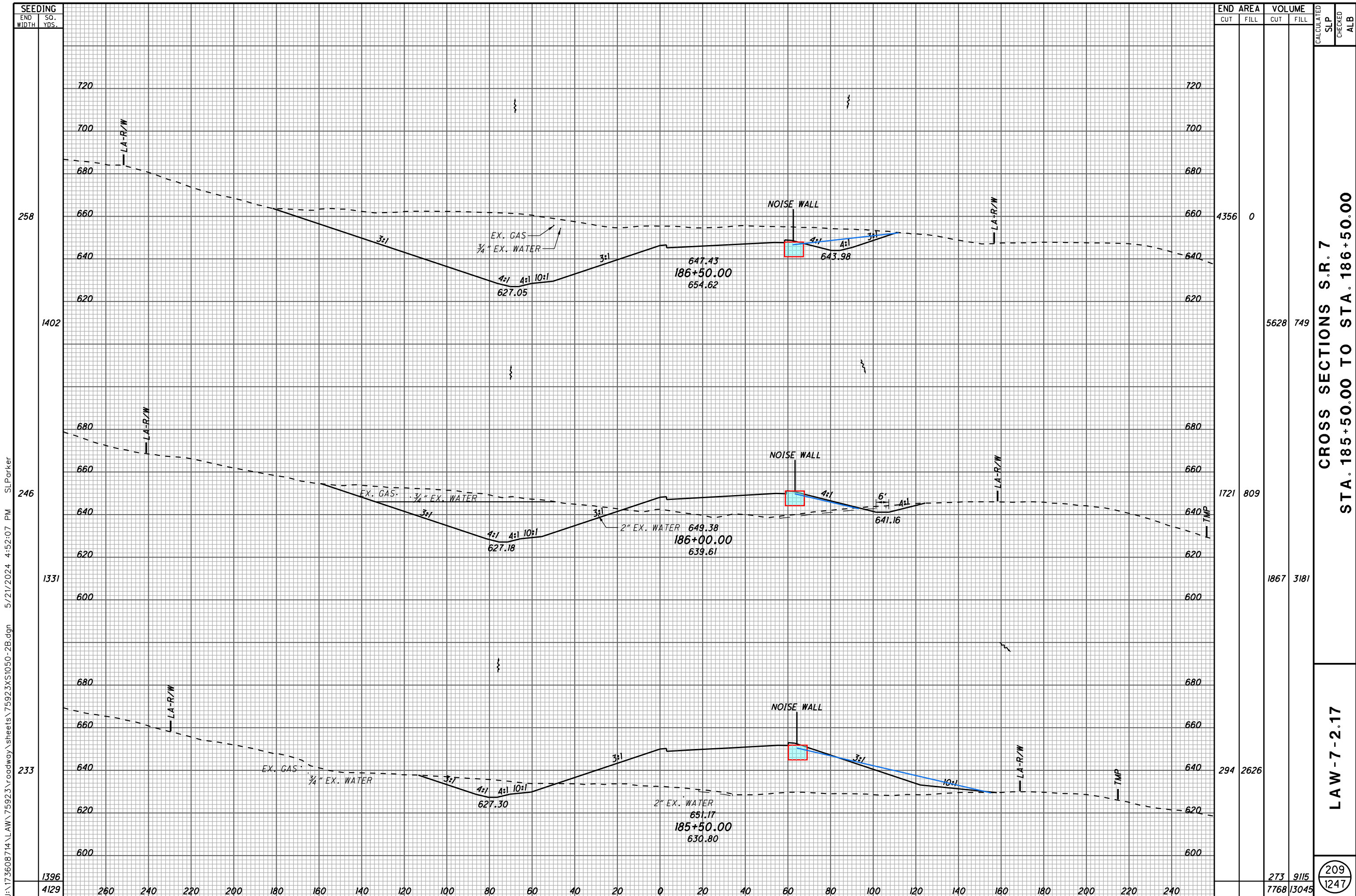
| END STA. | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|-----------|------|-------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 185+00.00 | 0 | 7218 | | | | |
| 184+50.00 | 4 | 10955 | 5 | 16828 | | |
| 184+00.00 | 149 | 10067 | 142 | 19466 | | |
| 1943 | 146 | 16272 | 146 | 16272 | | |
| 6043 | 293 | 52566 | 293 | 52566 | | |

CROSS SECTIONS S.R. 7
 STA. 184+00.00 TO STA. 185+00.00

LAW - 7 - 2.17

208
1247

U:\173608714 LAW\75923\roadway_sheets\75923\XS1049-2B.dgn 5/21/2024 4:52:06 PM SL Parker



| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 260 | 1396 |
| 240 | 4129 |
| 220 | |
| 200 | |
| 180 | |
| 160 | |
| 140 | |
| 120 | |
| 100 | |
| 80 | |
| 60 | |
| 40 | |
| 20 | |
| 0 | |
| 20 | |
| 40 | |
| 60 | |
| 80 | |
| 100 | |
| 120 | |
| 140 | |
| 160 | |
| 180 | |
| 200 | |
| 220 | |
| 240 | |

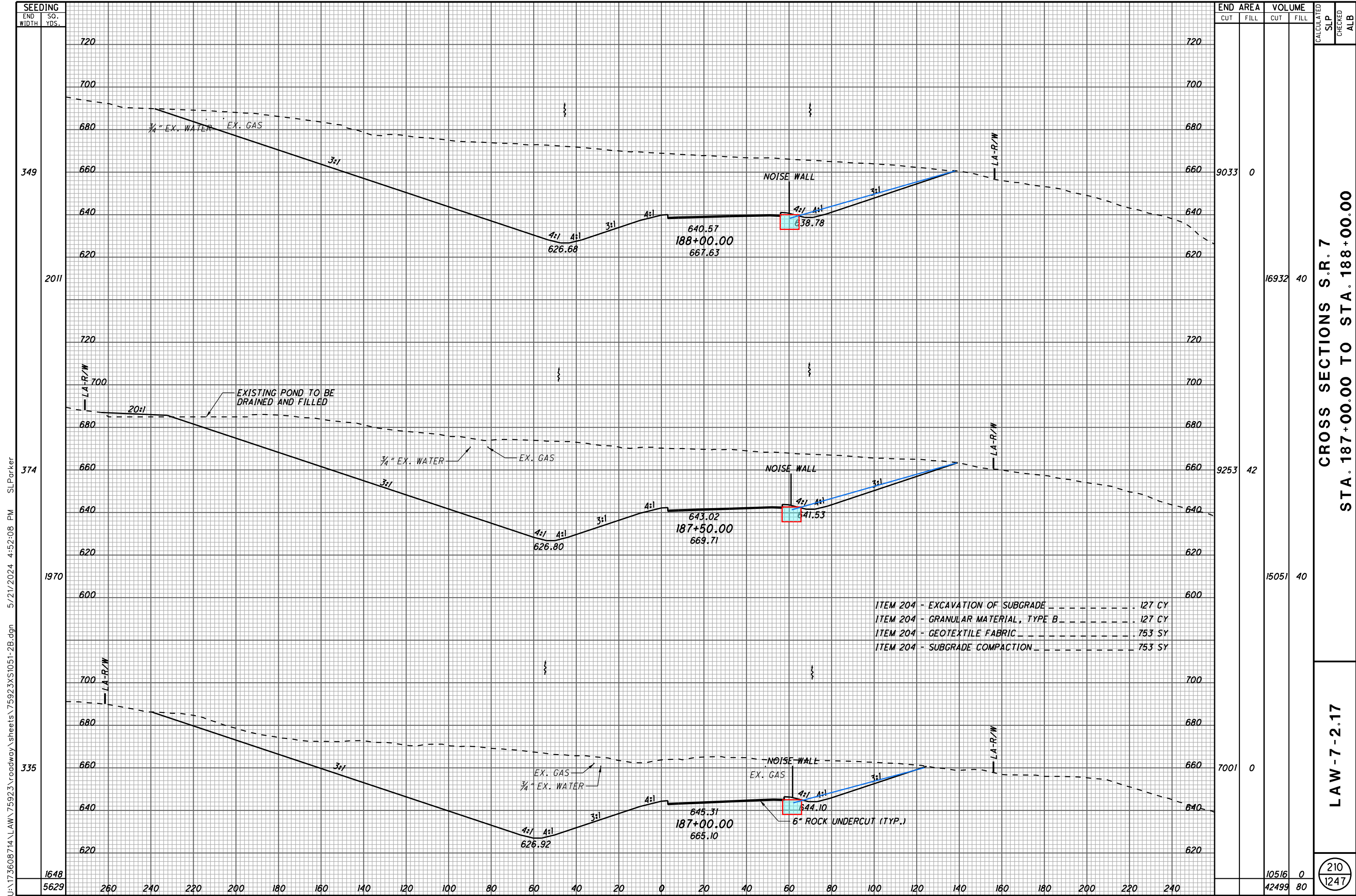
| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|-------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 4356 | 0 | 5628 | 749 | | |
| 1721 | 809 | 1867 | 3181 | | |
| 294 | 2626 | 273 | 915 | | |
| | | 7768 | 13045 | | |

CROSS SECTIONS S.R. 7
 STA. 185+50.00 TO STA. 186+50.00

LAW-7-2.17

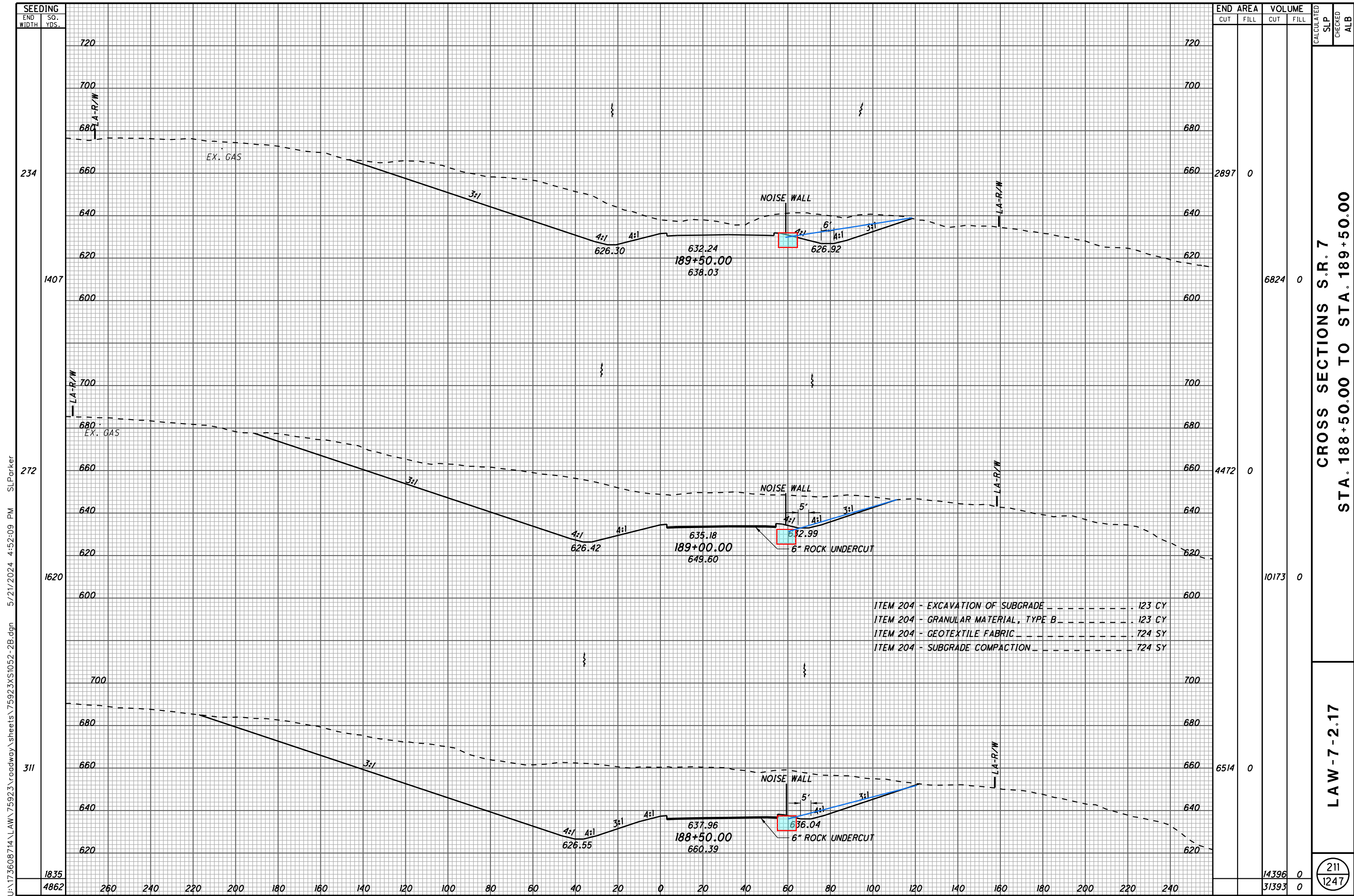
209
 1247

U:\173608714 LAW\75923\roadway\sheets\75923XS1050-2B.dgn 5/21/2024 4:52:07 PM SLPorker



U:\173608714 LAW\75923\roadway_sheets\75923\XS1051-2B.dgn 5/21/2024 4:52:08 PM SL Parker

210
1247

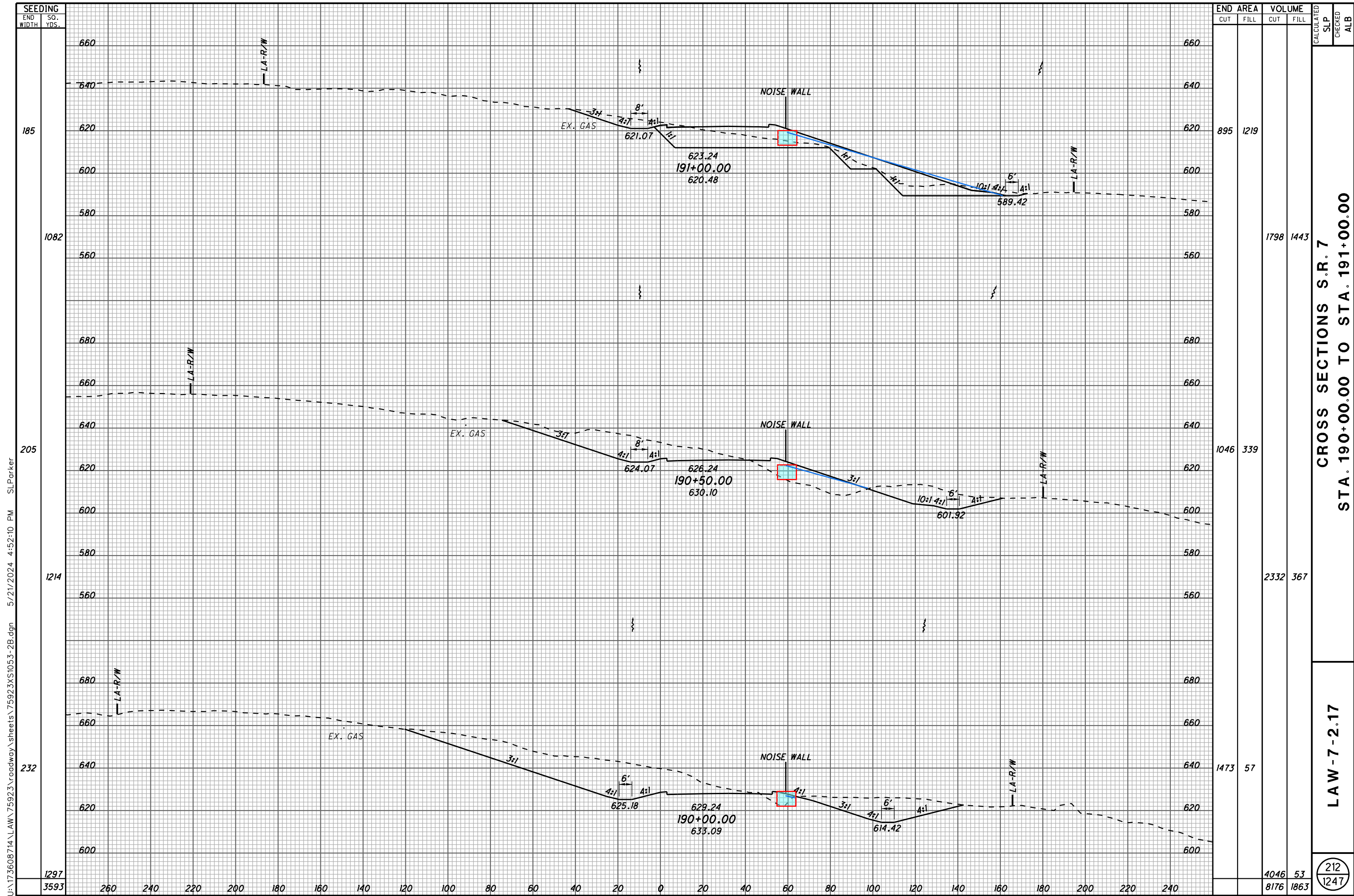


**CROSS SECTIONS S.R. 7
 STA. 188+50.00 TO STA. 189+50.00**

LAW - 7 - 2.17

211
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1052-2B.dgn 5/21/2024 4:52:09 PM SLParker



| END AREA | VOLUME | CALCULATED | CHECKED | SLP | ALB |
|----------|--------|------------|---------|-----|-----|
| | | | | | |
| 895 | 1219 | | | | |
| 1046 | 339 | | | | |
| 1473 | 57 | | | | |
| 1798 | 1443 | | | | |
| 2332 | 367 | | | | |
| 4046 | 53 | | | | |
| 8176 | 1863 | | | | |

CROSS SECTIONS S.R. 7
 STA. 190+00.00 TO STA. 191+00.00

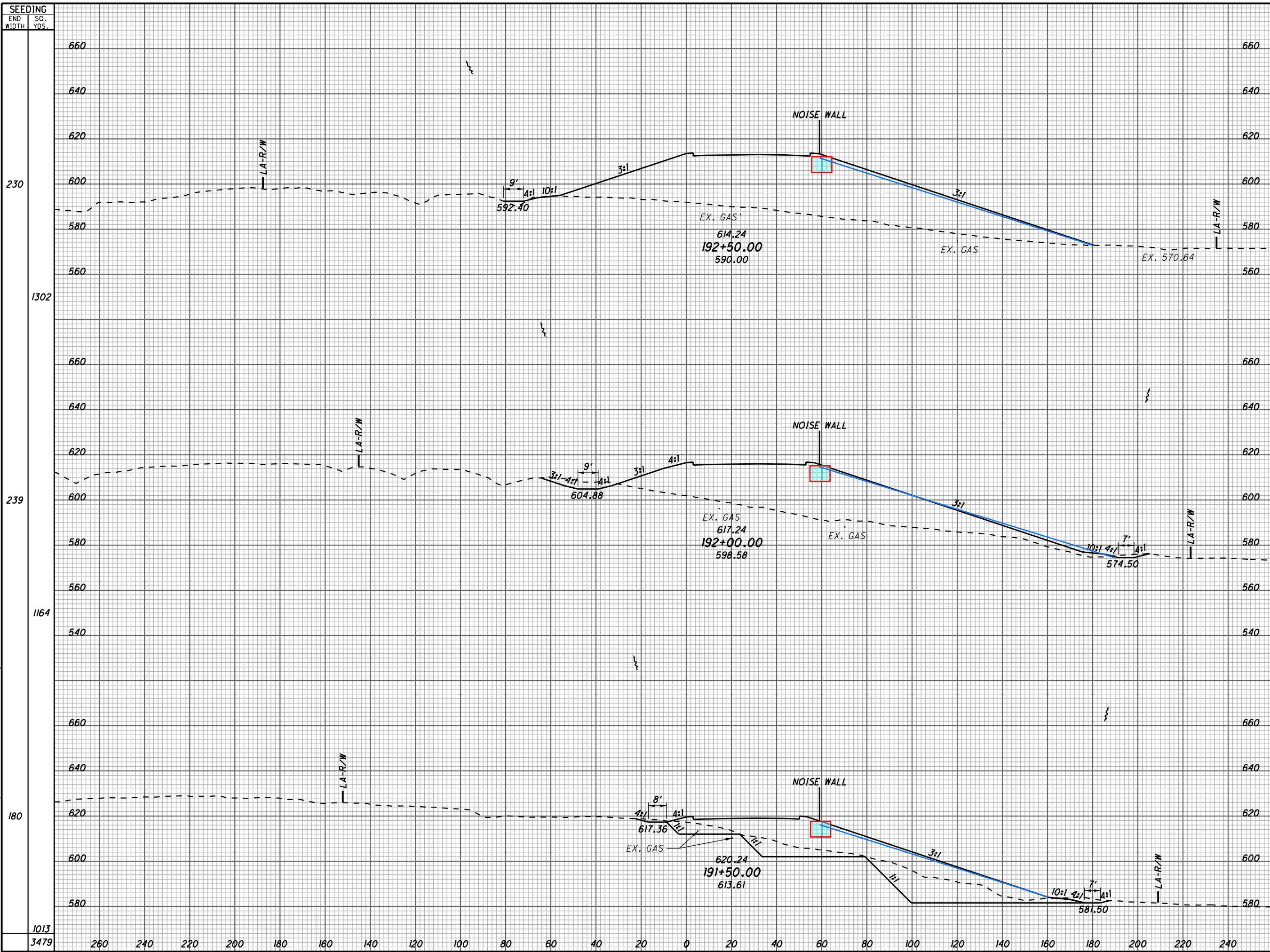
LAW - 7 - 2.17

212
 1247

U:\173608714 LAW\75923\roadway\sheets\75923\XS1053-2B.dgn 5/21/2024 4:52:10 PM SL Parker

| SEEDING | END WIDTH | SO. YDS. | | | | | | | | | | | | | | | | | | | | | | | | |
|---------|-----------|----------|-----|------|-----|------|-----|------|-----|----|----|----|----|---|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | 185 | 1082 | 205 | 1214 | 232 | 1297 | | | | | | | | | | | | | | | | | | |
| | 260 | 240 | 220 | 200 | 180 | 160 | 140 | 120 | 100 | 80 | 60 | 40 | 20 | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 |

U:\173608714_LAW\75923\roadway_sheets\75923\XS1054-2B.dgn 5/21/2024 4:52:11 PM SLParker

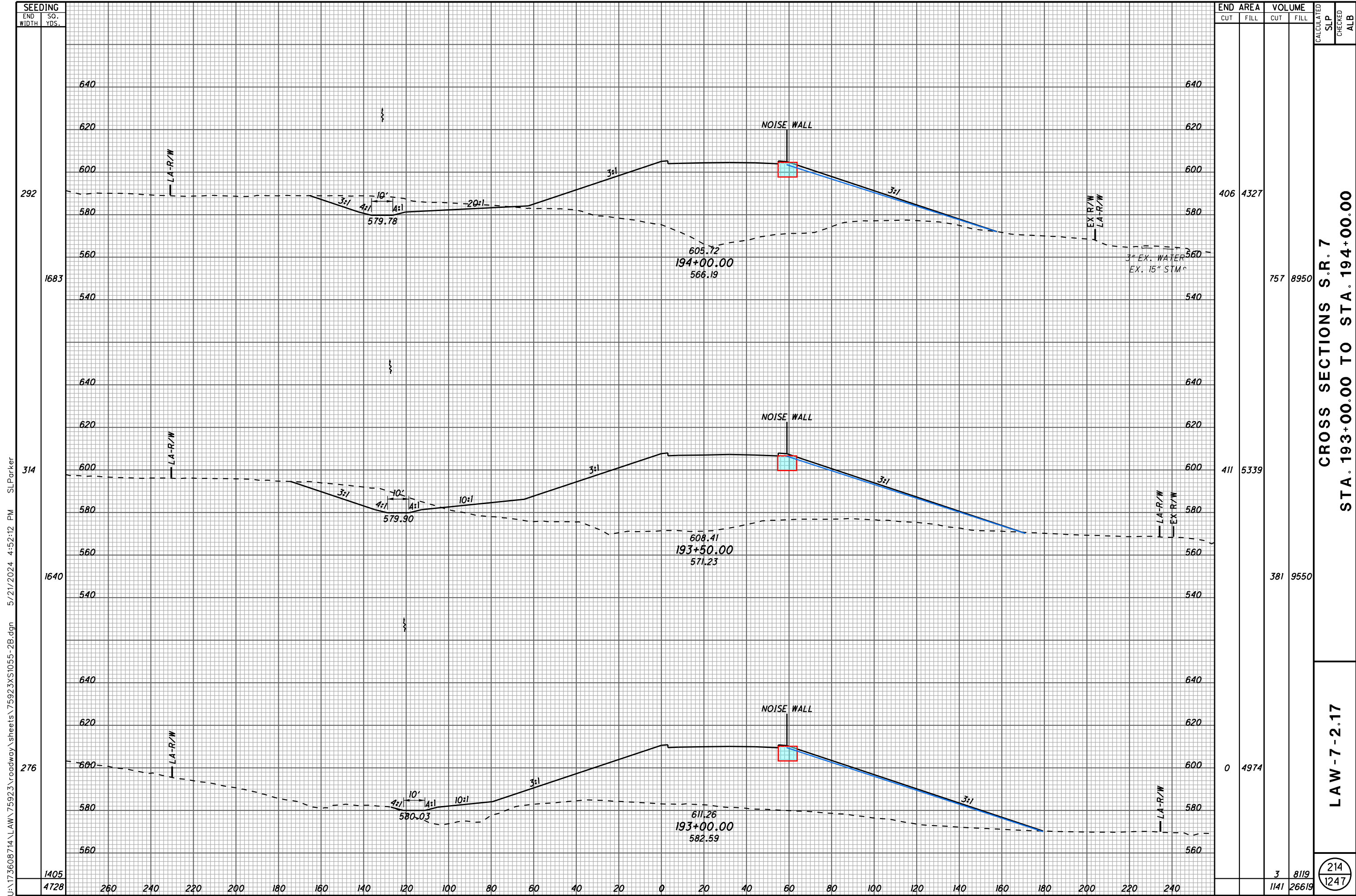


| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 230 | | | 3 | 3794 | | |
| 1302 | | | 91 | 5951 | | |
| 239 | | | 95 | 2633 | | |
| 1164 | | | 967 | 4407 | | |
| 180 | | | 948 | 2126 | | |
| 1013 | | | 1707 | 3097 | | |
| 3479 | | | 2765 | 13455 | | |

CROSS SECTIONS S.R. 7
STA. 191+50.00 TO STA. 192+50.00

LAW - 7 - 2.17

213
1247



| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 406 | 4327 | 757 | 8950 | |
| 411 | 5339 | 381 | 9550 | |
| 0 | 4974 | 3 | 819 | |
| | | 1141 | 26619 | |

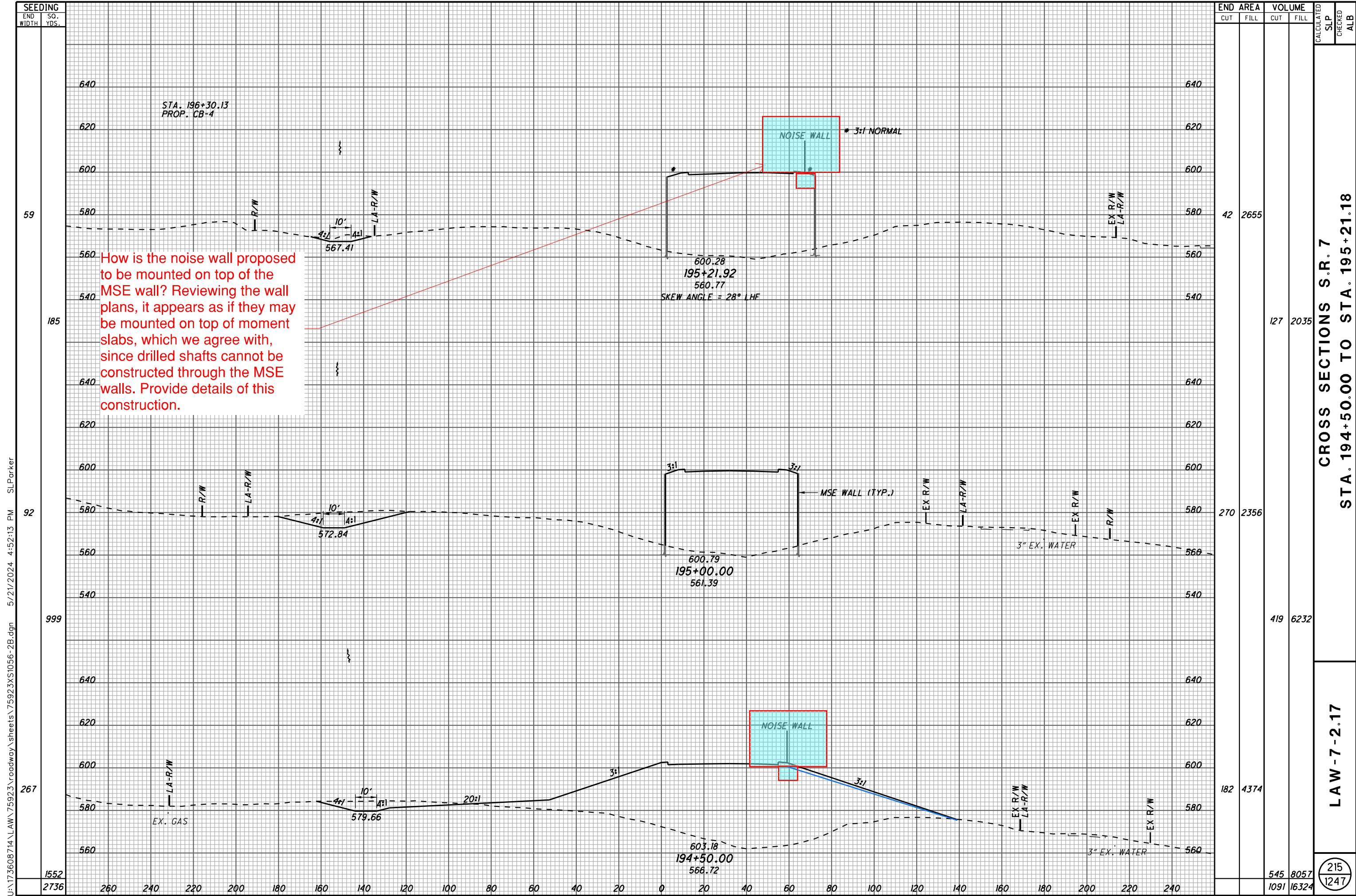
CROSS SECTIONS S.R. 7
 STA. 193+00.00 TO STA. 194+00.00

LAW - 7 - 2.17

214
1247

U:\173608714_LAW\75923\roadway_sheets\75923XS1055-2B.dgn 5/21/2024 4:52:12 PM SL Parker

| SEEDING | END WIDTH | SO. YDS. |
|---------|-----------|----------|
| | 4728 | 1405 |



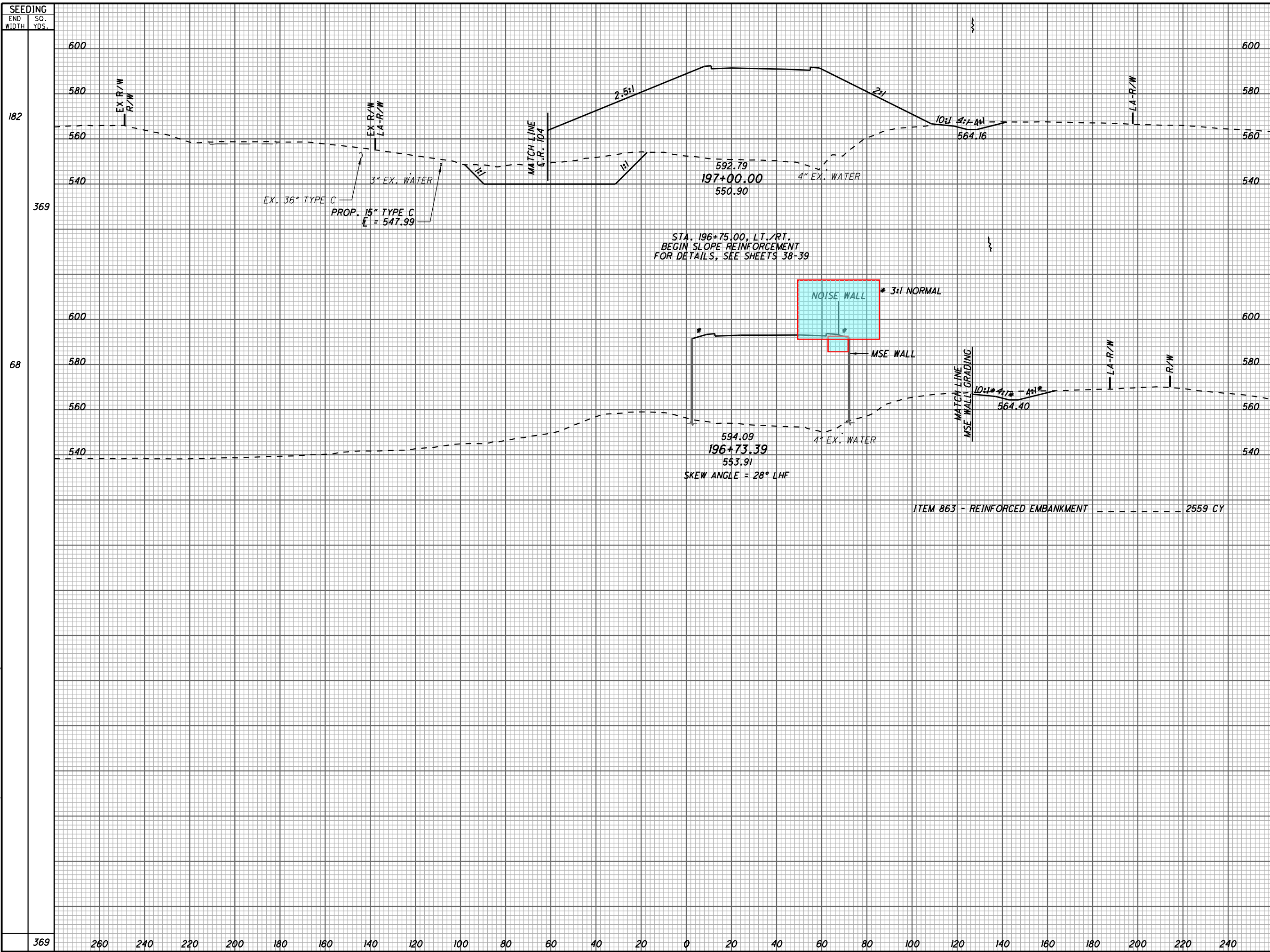
How is the noise wall proposed to be mounted on top of the MSE wall? Reviewing the wall plans, it appears as if they may be mounted on top of moment slabs, which we agree with, since drilled shafts cannot be constructed through the MSE walls. Provide details of this construction.

CROSS SECTIONS S.R. 7
STA. 194+50.00 TO STA. 195+21.18

LAW - 7 - 2.17

215
1247

U:\173608714_LAW\75923\roadway\sheets\75923XS1057-2B.dgn 5/21/2024 4:52:13 PM SLParker



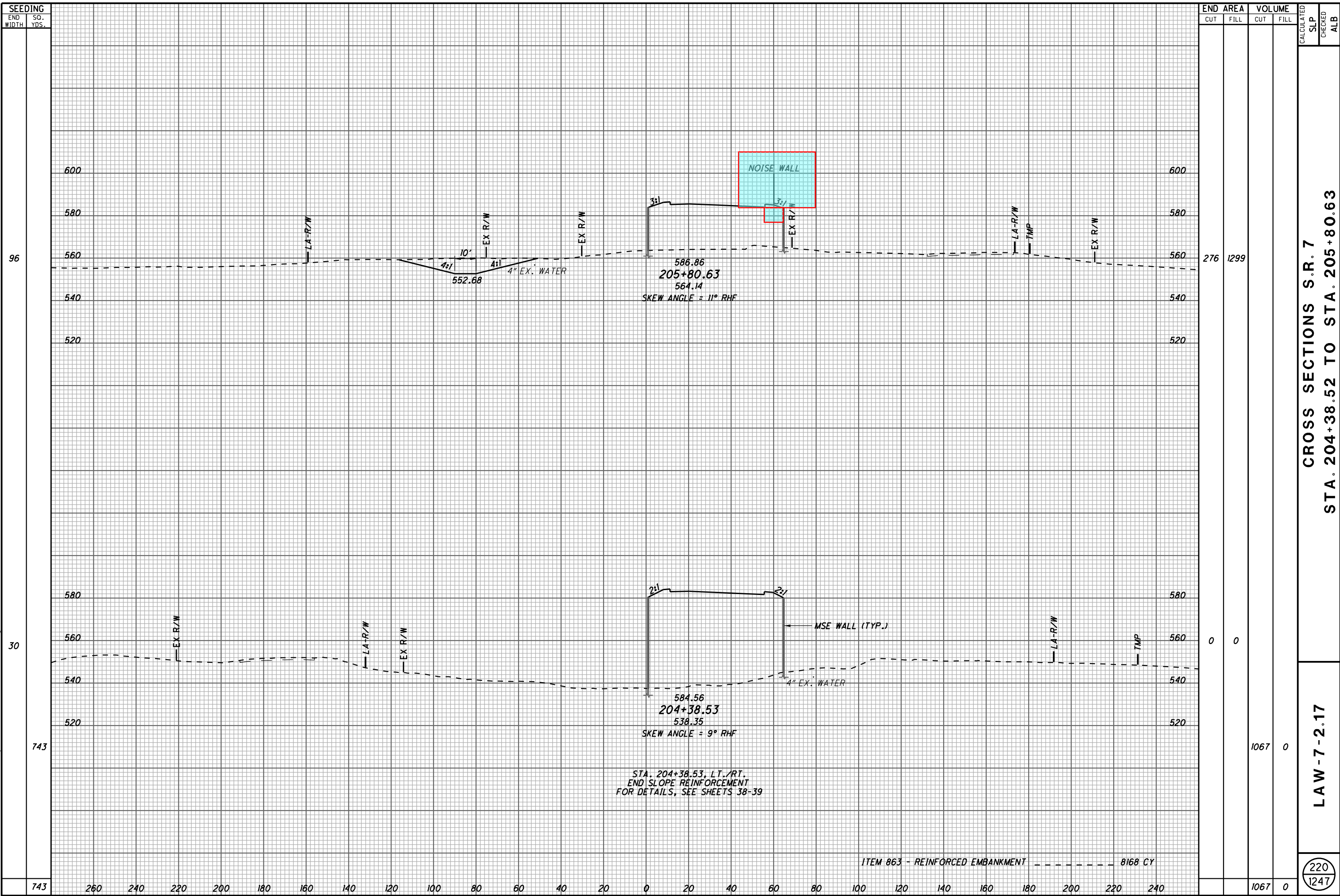
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 182 | | | 754 | 0 | | |
| 369 | | | 410 | 1365 | | |
| 68 | | | 78 | 2768 | | |
| 369 | 260 | | 410 | 1365 | | |

CROSS SECTIONS S.R. 7
STA. 196+73.39 TO STA. 197+00.00

LAW - 7 - 2.17

216
1247

U:\173608714_LAW\75923\roadway\sheets\75923\XS1061-2B.dgn 5/21/2024 4:52:17 PM SLParker



| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 96 | |
| 30 | |
| 743 | |

| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|------|------------|-----|
| CUT | FILL | CUT | FILL | SLP | ALB |
| 276 | 1299 | | | | |
| 0 | 0 | | | | |
| | | 1067 | 0 | | |

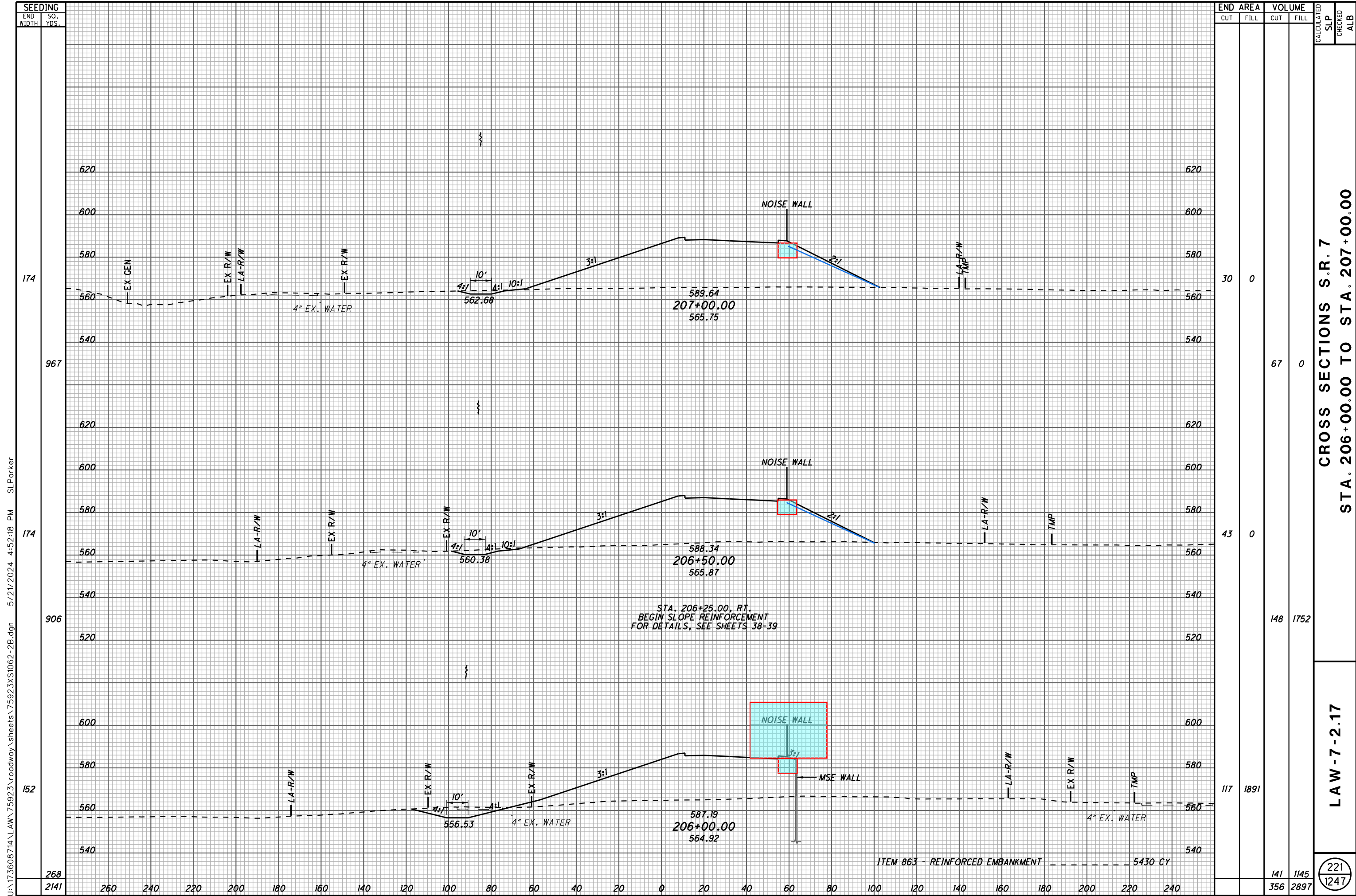
CROSS SECTIONS S.R. 7
 STA. 204+38.52 TO STA. 205+80.63

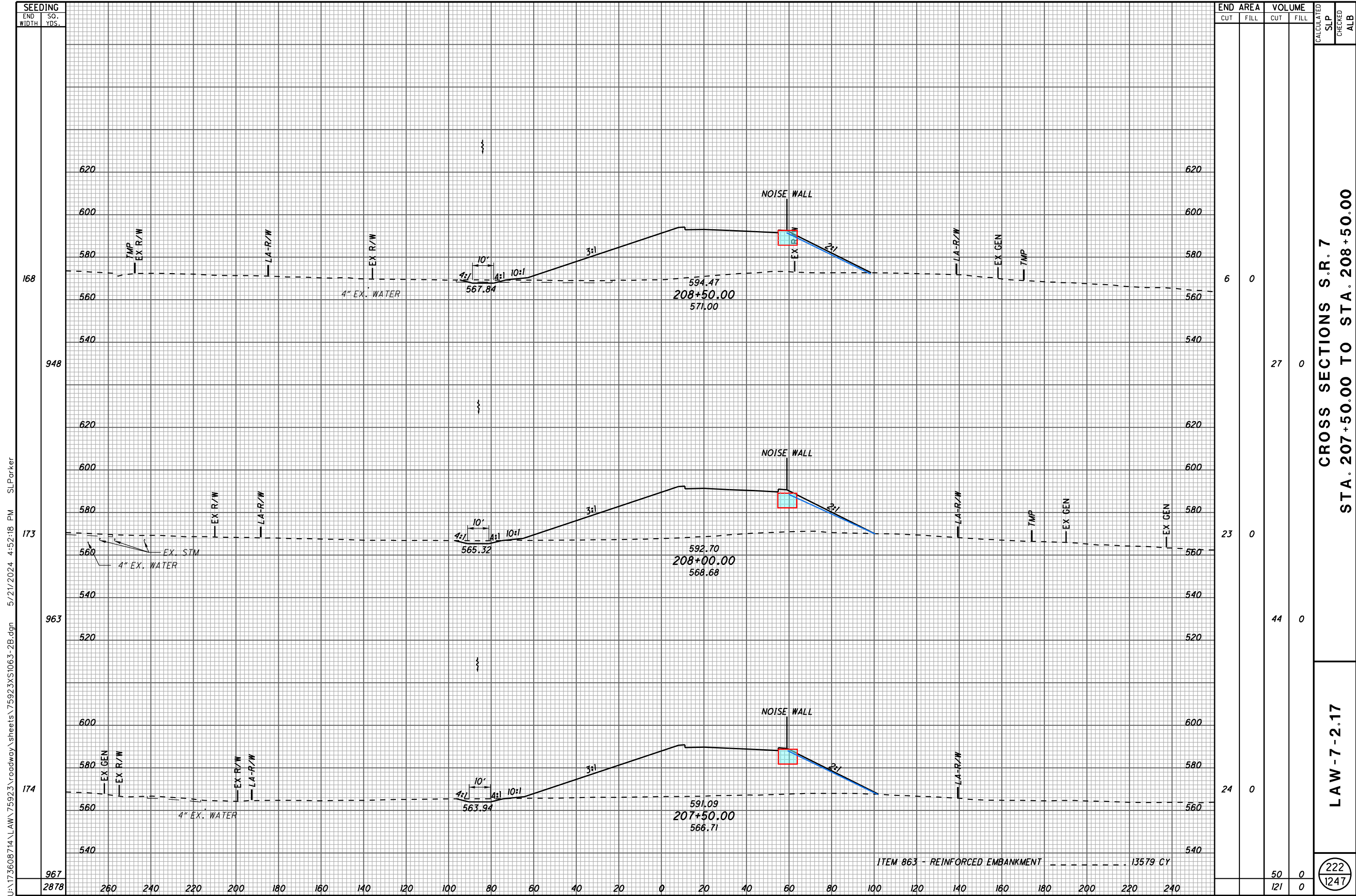
LAW - 7 - 2.17

220
1247

STA. 204+38.53, LT./RT.
 END SLOPE REINFORCEMENT
 FOR DETAILS, SEE SHEETS 38-39

ITEM 863 - REINFORCED EMBANKMENT --- 8168 CY





| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 6 | 0 | 0 | | |
| 23 | 0 | 0 | | |
| 24 | 0 | 0 | | |
| 50 | 0 | 0 | | |
| 121 | 0 | 0 | | |

CROSS SECTIONS S.R. 7
 STA. 207+50.00 TO STA. 208+50.00

LAW - 7 - 2.17

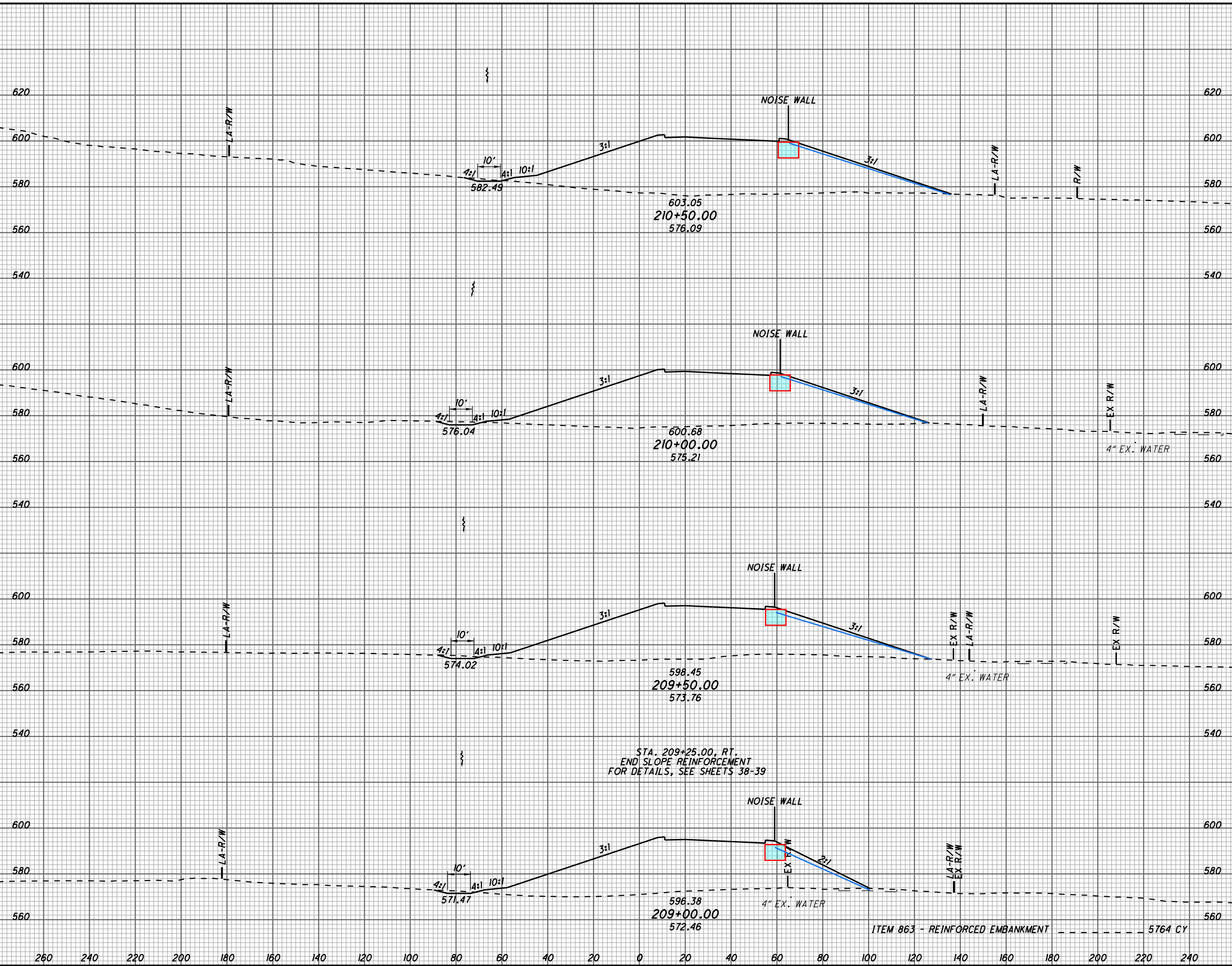
222
 1247

U:\173608714\Law\75923\roadway_sheets\75923\X51063-2B.dgn 5/21/2024 4:52:18 PM SL Parker

ITEM 863 - REINFORCED EMBANKMENT 13579 CY

U:\173608714_LAW\75923\roadway\sheets\75923XS1064-2B.dgn 5/21/2024 4:52:19 PM SLParker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|-------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 180 | | | 10 | 3014 | | |
| 1019 | | | 28 | 5439 | | |
| 186 | | | 20 | 2859 | | |
| 1045 | | | 34 | 5168 | | |
| 189 | | | 16 | 2721 | | |
| 986 | | | 28 | 2520 | | |
| 165 | | | 14 | 0 | | |
| 927 | | | 18 | 0 | | |
| 3977 | | | 108 | 13127 | | |

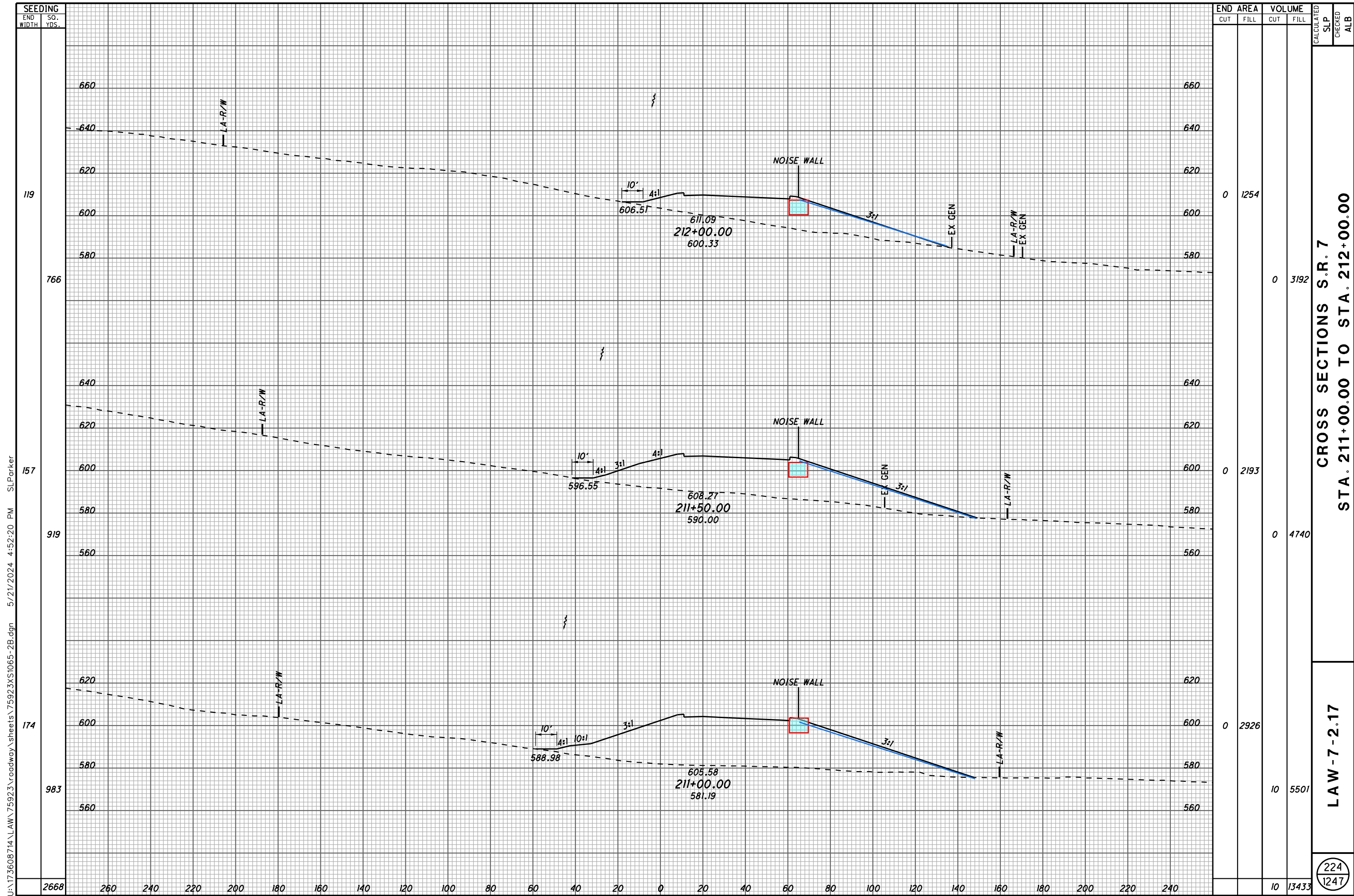


ITEM 863 - REINFORCED EMBANKMENT 5764 CY

CROSS SECTIONS S.R. 7
STA. 209+00.00 TO STA. 210+50.00

LAW - 7 - 2.17

223
1247



| END AREA | VOLUME | CALCULATED | CHECKED | | |
|----------|--------|------------|---------|-----|------|
| | | | | CUT | FILL |
| 0 | 1254 | | | | |
| 0 | 3192 | | | | |
| 0 | 2193 | | | | |
| 0 | 4740 | | | | |
| 0 | 2926 | | | | |
| 10 | 5501 | | | | |
| 10 | 13433 | | | | |

CROSS SECTIONS S.R. 7
 STA. 211+00.00 TO STA. 212+00.00

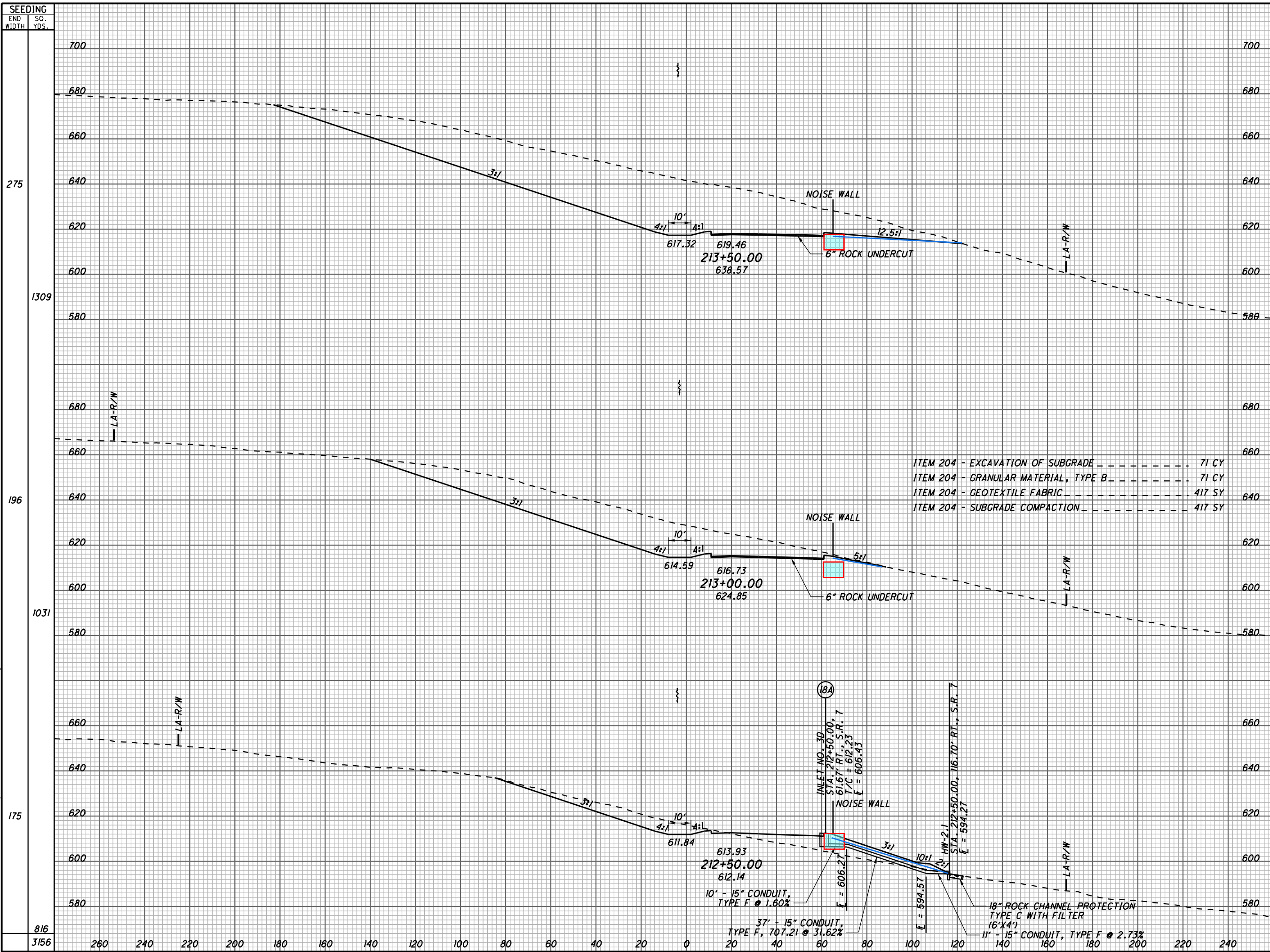
LAW - 7 - 2.17

224
 1247

| SEEDING | END WIDTH | SO. YDS. |
|---------|-----------|----------|
| | 2668 | |
| | 260 | |
| | 240 | |
| | 220 | |
| | 200 | |
| | 180 | |
| | 160 | |
| | 140 | |
| | 120 | |
| | 100 | |
| | 80 | |
| | 60 | |
| | 40 | |
| | 20 | |
| | 0 | |
| | 20 | |
| | 40 | |
| | 60 | |
| | 80 | |
| | 100 | |
| | 120 | |
| | 140 | |
| | 160 | |
| | 180 | |
| | 200 | |
| | 220 | |
| | 240 | |
| | 260 | |
| | 2668 | |

119
 766
 157
 919
 174
 983

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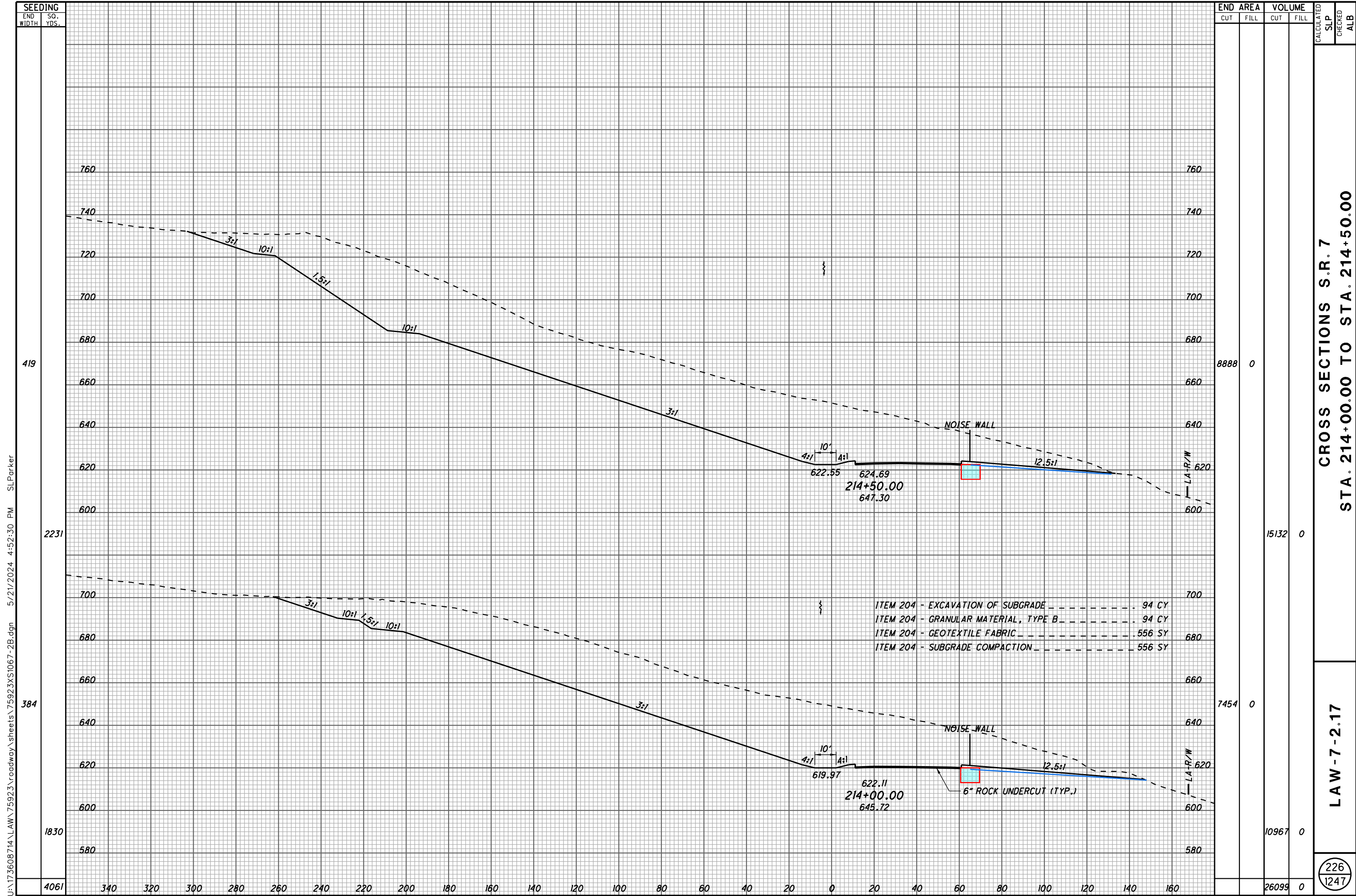
- ITEM 204 - EXCAVATION OF SUBGRADE ----- 71 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 71 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 417 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 417 SY

| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 700 | | | | | | |
| 275 | 4389 | 0 | | | | |
| 1309 | | | 5918 | 0 | | |
| 196 | 2002 | 0 | | | | |
| 1031 | | | 2151 | 380 | | |
| 175 | 322 | 410 | | | | |
| 816 | | | 298 | 1542 | | |
| 3156 | | | 8367 | 1922 | | |

CROSS SECTIONS S.R. 7
STA. 212+50.00 TO STA. 213+50.00

LAW - 7 - 2.17

225
 1247



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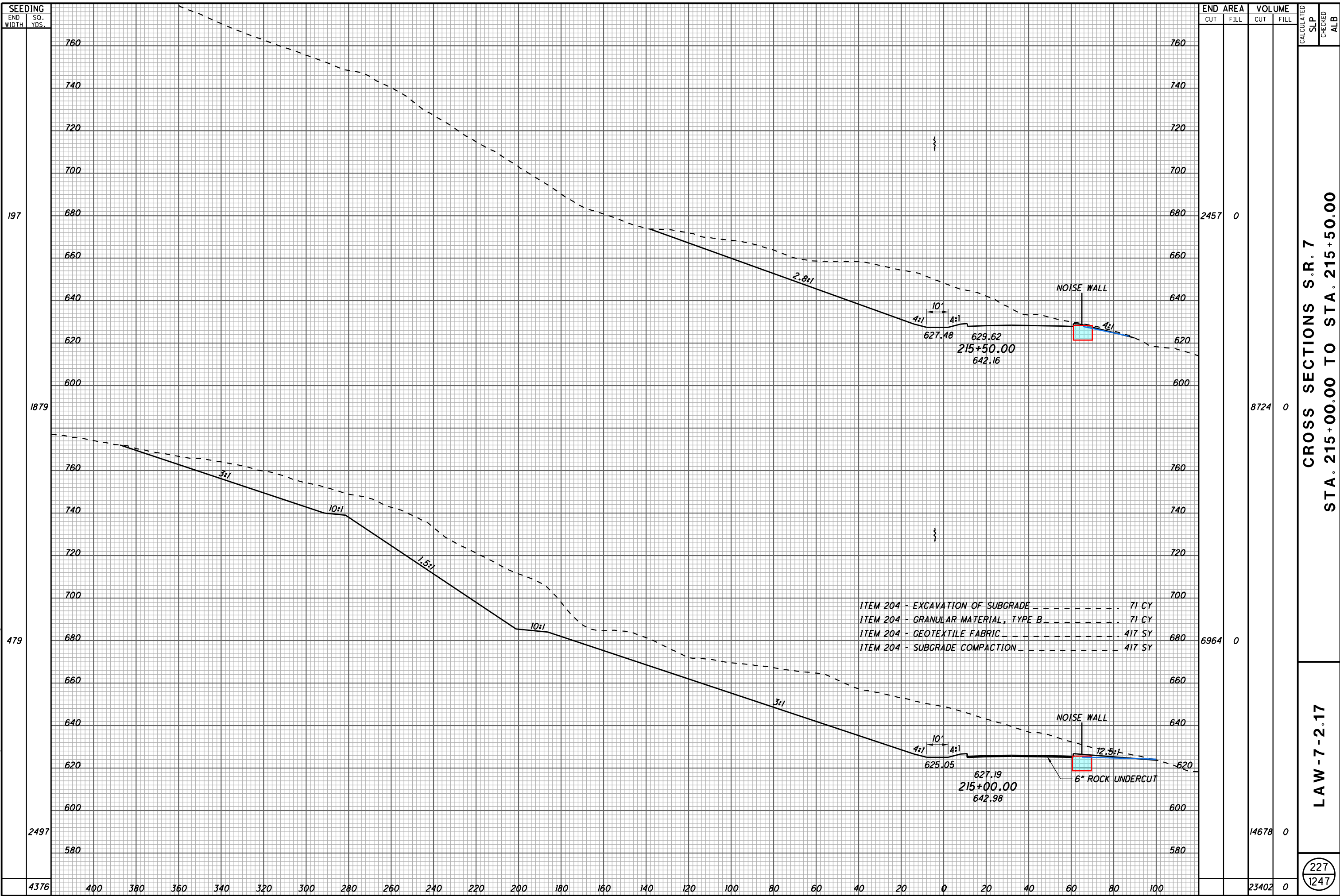
- ITEM 204 - EXCAVATION OF SUBGRADE ----- 94 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 94 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 556 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 556 SY

CROSS SECTIONS S.R. 7
STA. 214+00.00 TO STA. 214+50.00

LAW - 7 - 2.17

226
1247

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- ITEM 204 - EXCAVATION OF SUBGRADE ----- 71 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 71 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 417 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 417 SY

CROSS SECTIONS S.R. 7
STA. 215+00.00 TO STA. 215+50.00

LAW - 7 - 2.17

227
1247

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| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 246 | 760 |
| 1420 | 740 |
| 265 | 720 |
| 1284 | 700 |
| 2704 | 680 |
| 260 | 660 |
| 240 | 640 |
| 220 | 620 |
| 200 | 600 |
| 180 | 580 |
| 160 | |
| 140 | |
| 120 | |
| 100 | |
| 80 | |
| 60 | |
| 40 | |
| 20 | |
| 0 | |
| 20 | |
| 40 | |
| 60 | |
| 80 | |
| 100 | |
| 120 | |
| 140 | |
| 160 | |
| 180 | |
| 200 | |
| 220 | |
| 240 | |



| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 1908 | 528 | 3961 | 1208 | | ALB |
| 2369 | 776 | 4469 | 719 | 228 | 1247 |
| | | 8430 | 1927 | | |

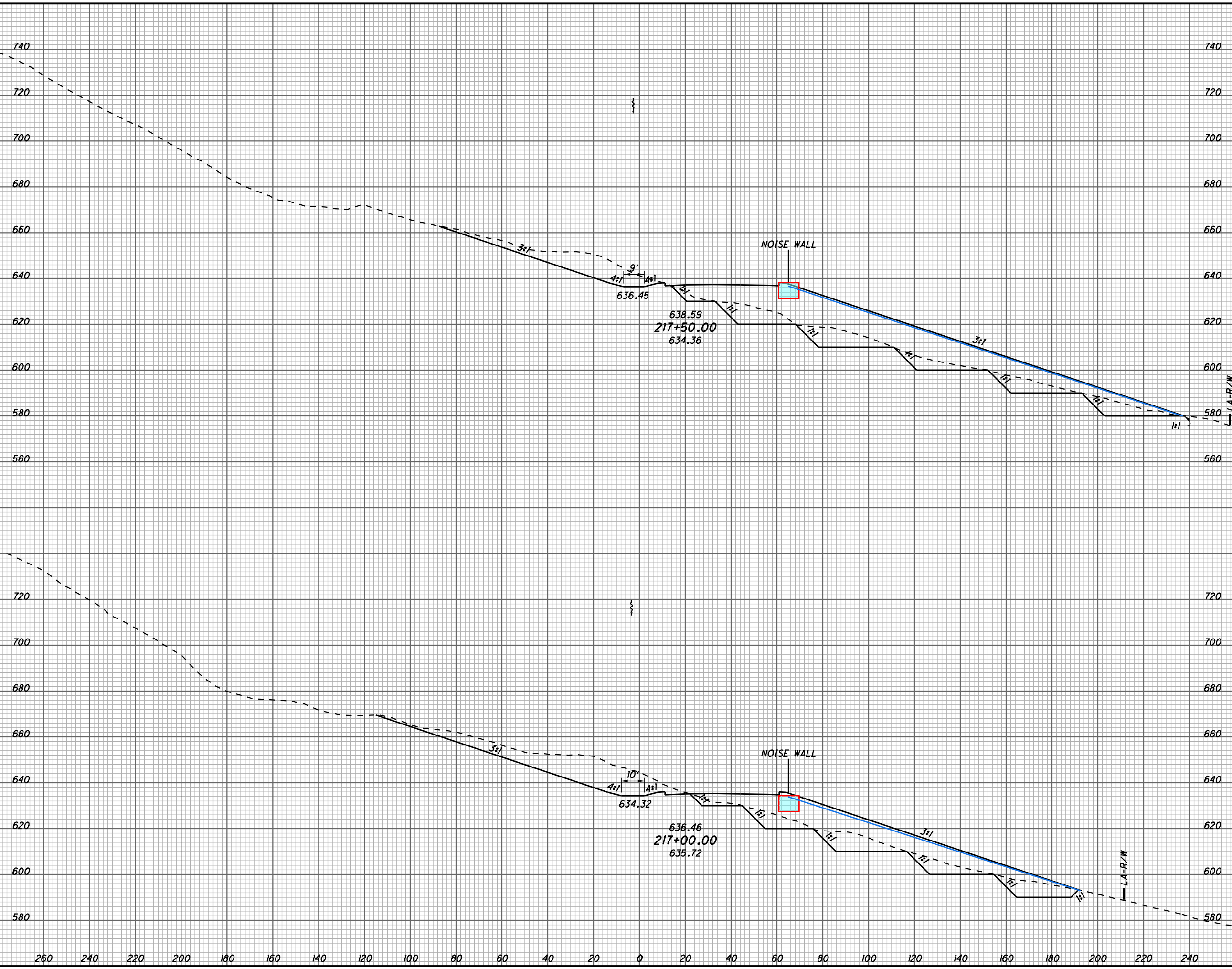
CROSS SECTIONS S.R. 7
STA. 216+00.00 TO STA. 216+50.00

LAW - 7 - 2.17

228
1247

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| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 3066 | 1459 |



| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 1327 | 2754 | 2616 | 4189 | 229 | 1247 |
| 1498 | 1770 | 3154 | 2129 | | |
| | | 5770 | 6318 | | |

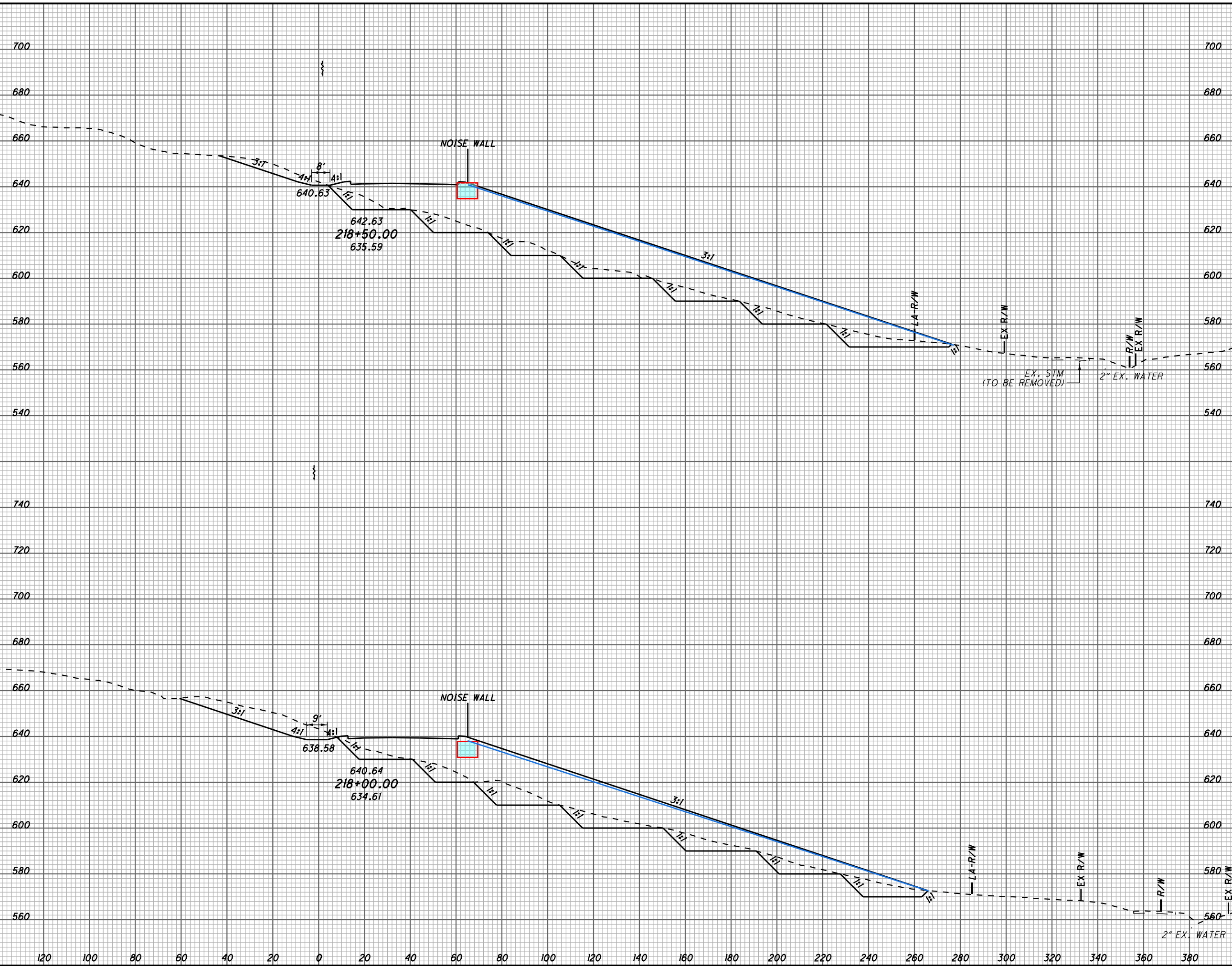
CROSS SECTIONS S.R. 7
STA. 217+00.00 TO STA. 217+50.00

LAW - 7 - 2.17

229
1247

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| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 296 | 700 |
| 1663 | 560 |
| 302 | 660 |
| 1670 | 560 |
| 3333 | 120 |



| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|-------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 1077 | 4232 | 2250 | 7185 | | |
| 1353 | 3527 | 2482 | 5816 | | |
| | | 4732 | 13001 | | |

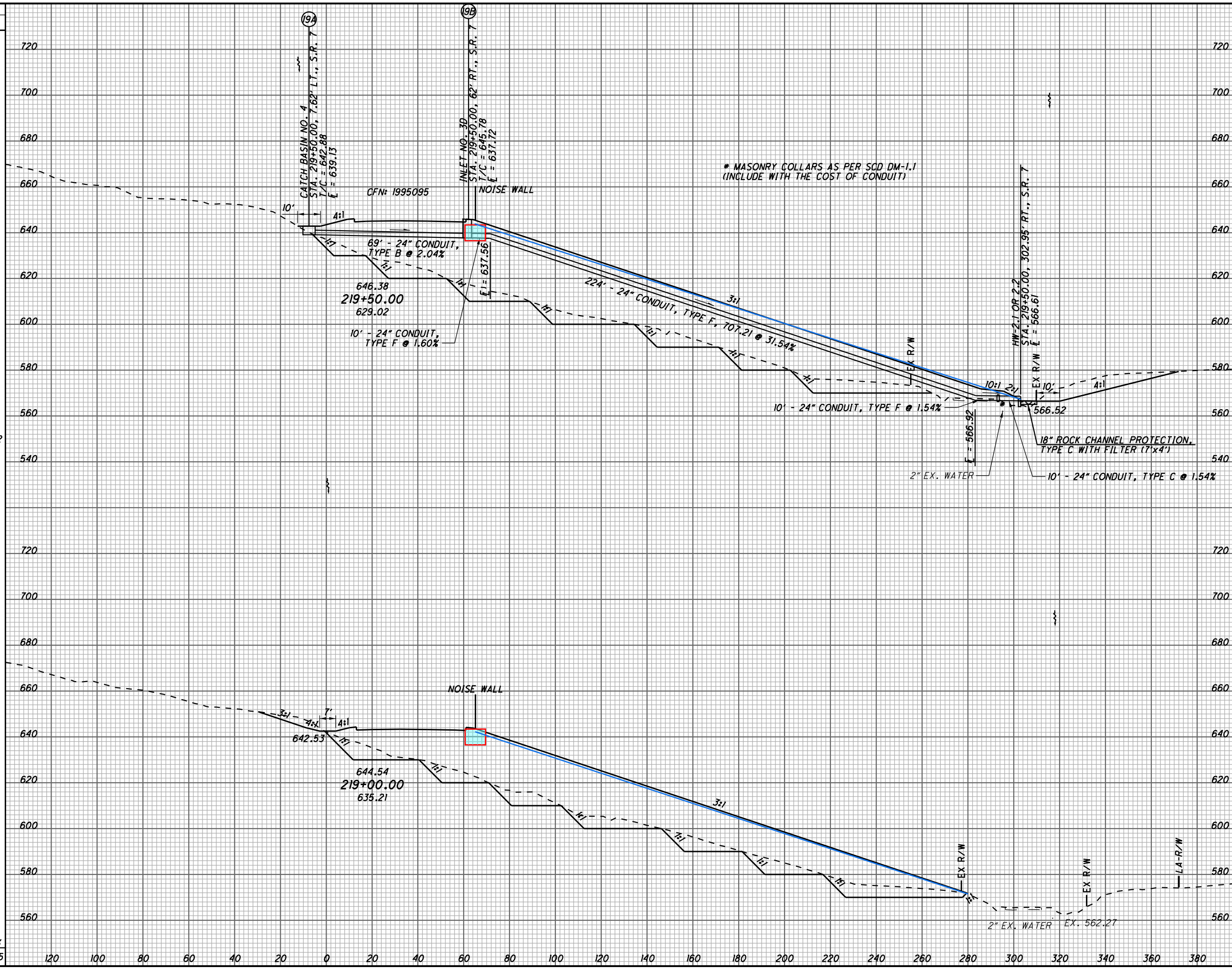
CROSS SECTIONS S.R. 7
STA. 218+00.00 TO STA. 218+50.00

LAW - 7 - 2.17

230
1247

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| SEEDING | END AREA | | VOLUME | | CALCULATED | CHECKED |
|---------|----------|------|--------|-------|------------|---------|
| | CUT | FILL | CUT | FILL | | |
| 361 | | | 1284 | 6623 | | |
| 1792 | | | 2205 | 10667 | | |
| 284 | | | 1097 | 4897 | | |
| 1613 | | | 2013 | 8453 | | |
| 3405 | | | 4218 | 19120 | | |



| END AREA | VOLUME | | CALCULATED | CHECKED |
|----------|--------|------|------------|---------|
| | CUT | FILL | | |
| 1284 | 6623 | | | |
| 2205 | 10667 | | | |
| 1097 | 4897 | | | |
| 2013 | 8453 | | | |
| 4218 | 19120 | | | |

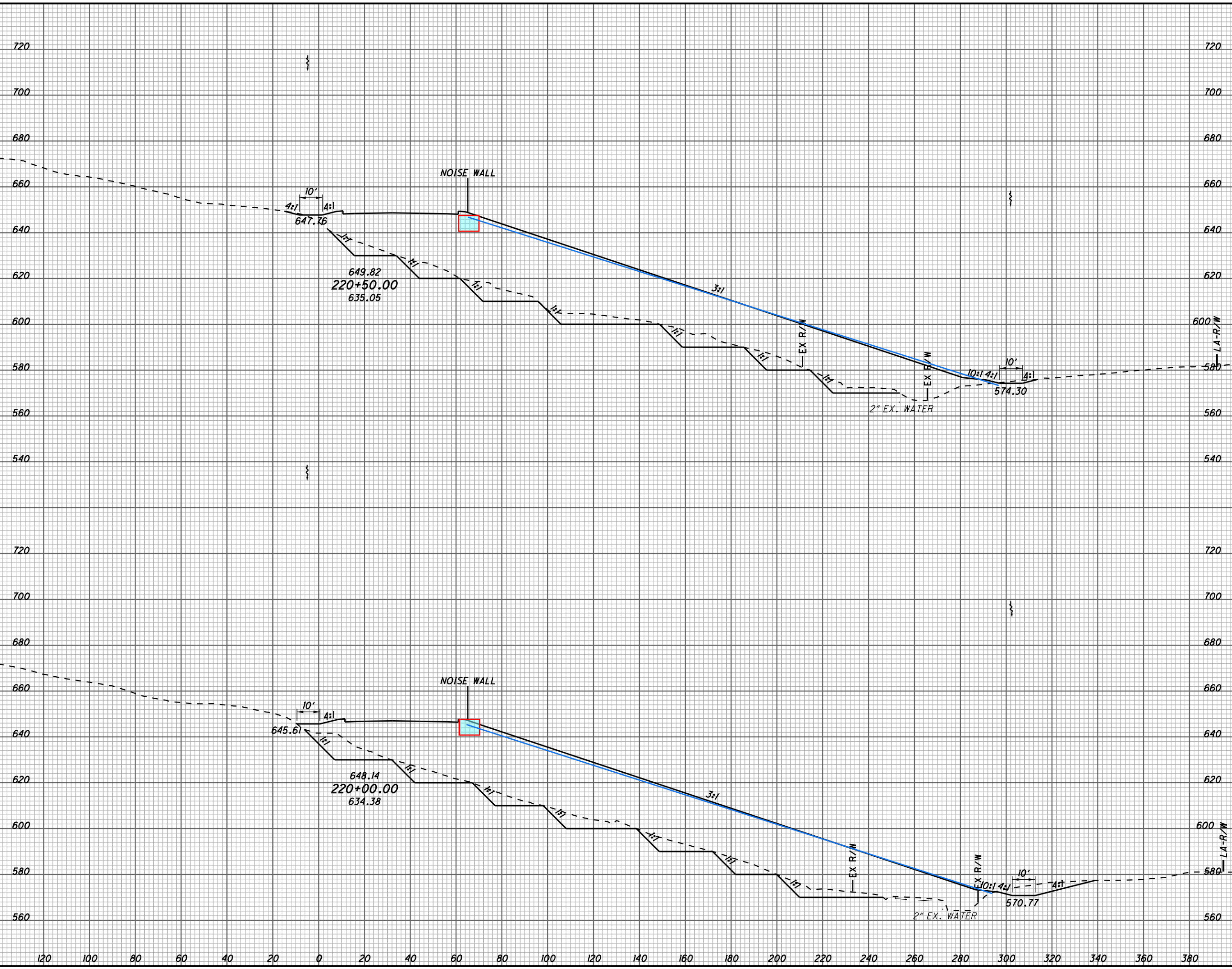
CROSS SECTIONS S.R. 7
STA. 219+00.00 TO STA. 219+50.00

LAW - 7 - 2.17

231
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1073-2B.dgn 5/21/2024 4:52:35 PM SLPorker

| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| 301 | | |
| 1730 | | |
| 322 | | |
| 1896 | | |
| 3626 | 120 | 380 |



| END | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|------|------|-------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 301 | 879 | 6608 | | | | |
| 1730 | 1743 | 12290 | | | | |
| 322 | 1003 | 6665 | | | | |
| 1896 | 2118 | 12304 | | | | |
| 3626 | 3861 | 24594 | | | | |

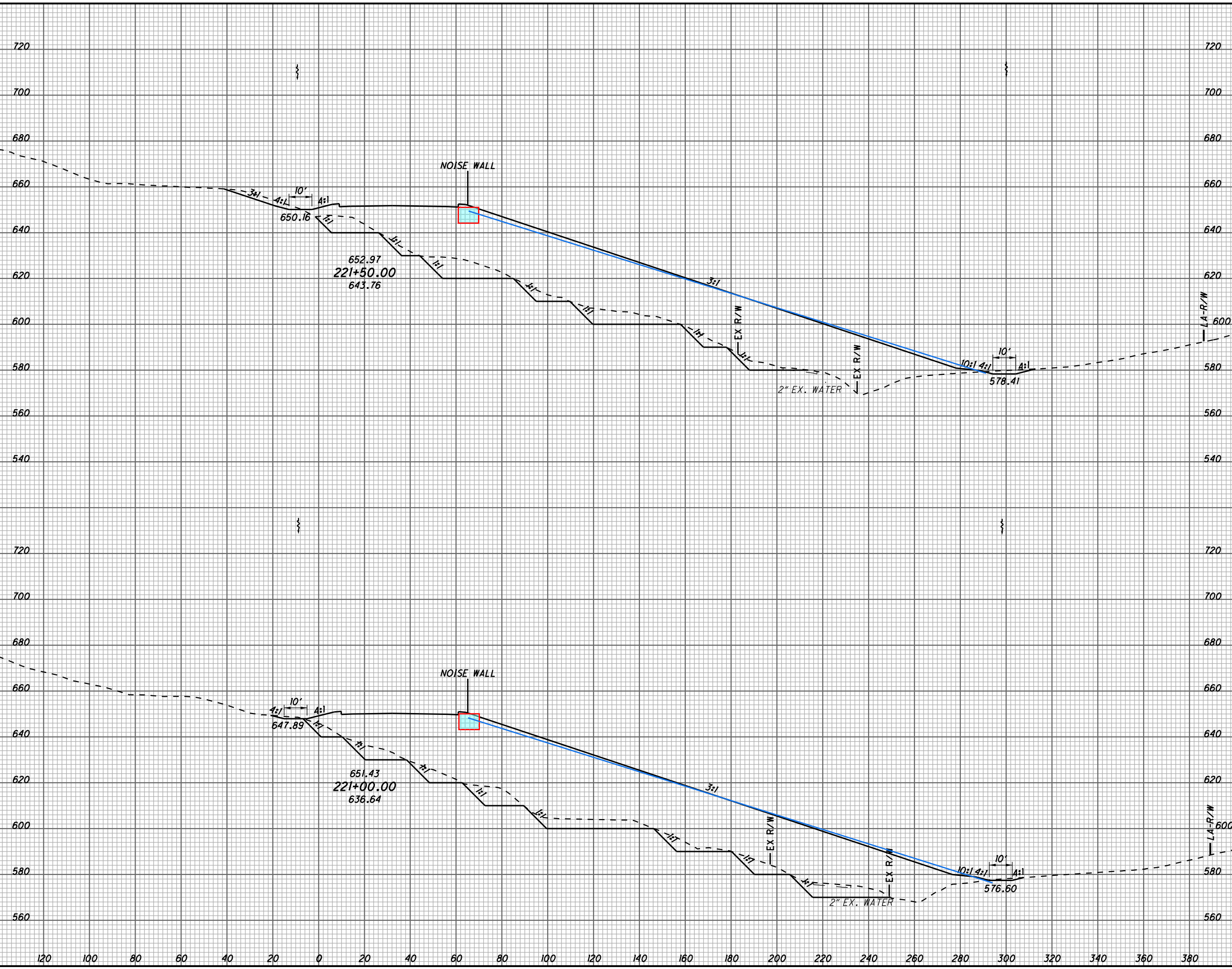
CROSS SECTIONS S.R. 7
STA. 220+00.00 TO STA. 220+50.00

LAW - 7 - 2.17

232
1247

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| SEEDING | END | | SO. | YDS. |
|---------|-------|-----|-----|------|
| | WIDTH | | | |
| | 326 | | | |
| | 1738 | | | |
| | 300 | | | |
| | 1669 | | | |
| | 3407 | 120 | 100 | 80 |
| | | 60 | 40 | 20 |
| | | 0 | 20 | 40 |
| | | 60 | 80 | 100 |
| | | 120 | 140 | 160 |
| | | 180 | 200 | 220 |
| | | 240 | 260 | 280 |
| | | 300 | 320 | 340 |
| | | 360 | 380 | |



| END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|--------|-------|----------------|-------------|
| CUT | FILL | CUT | FILL | | |
| 853 | 6429 | 1639 | 12569 | | |
| 917 | 7145 | 1663 | 12735 | | |
| | | 3302 | 25304 | | |

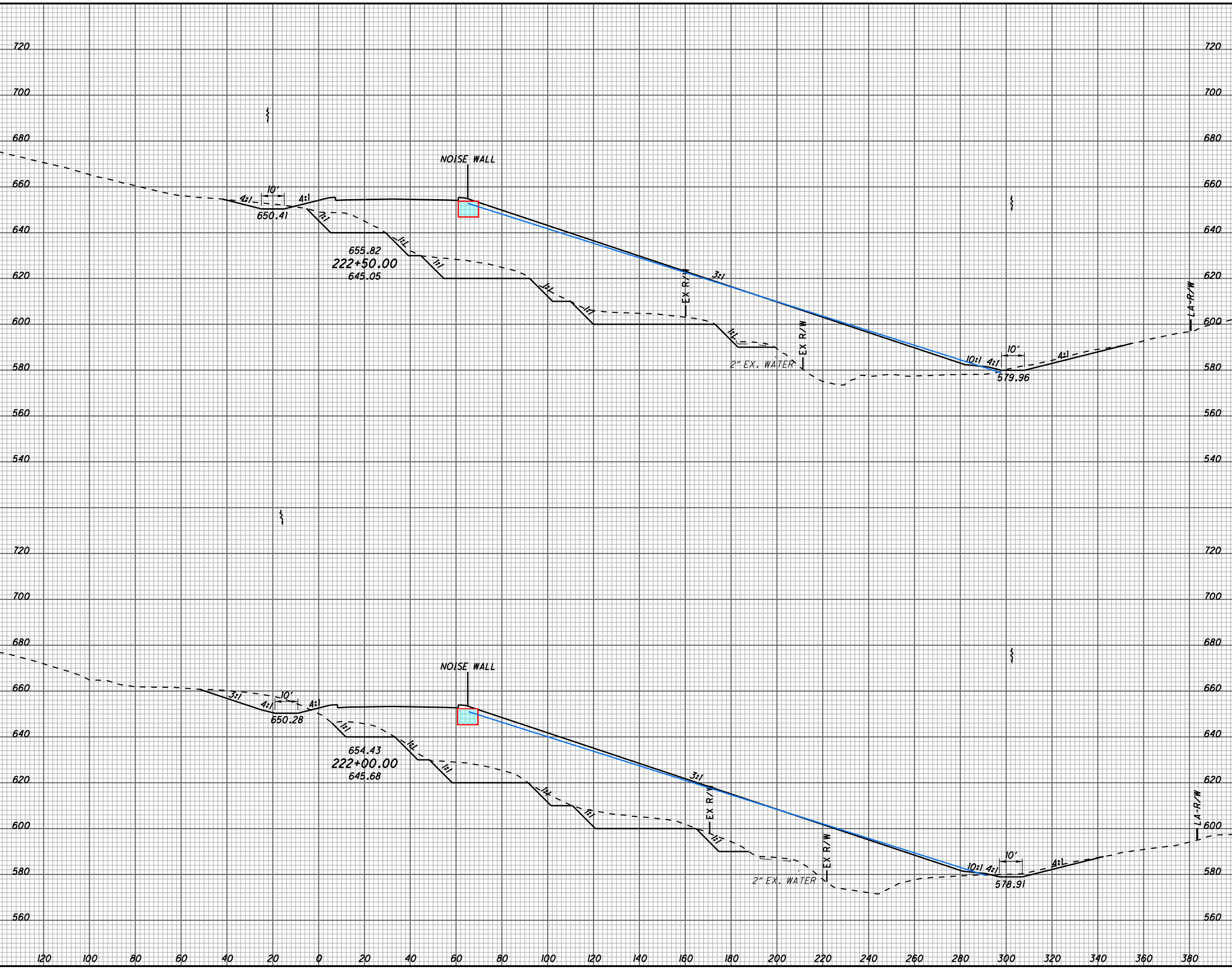
CROSS SECTIONS S.R. 7
STA. 221+00.00 TO STA. 221+50.00

LAW - 7 - 2.17

233
1247

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| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 367 | 1924 |
| 2040 | 3964 |



| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|-------|------------|------|
| CUT | FILL | CUT | FILL | ALB | TCM |
| 890 | 6722 | 1753 | 12035 | | |
| 1003 | 6276 | 1720 | 11764 | 234 | 1247 |
| | | 3473 | 23799 | | |

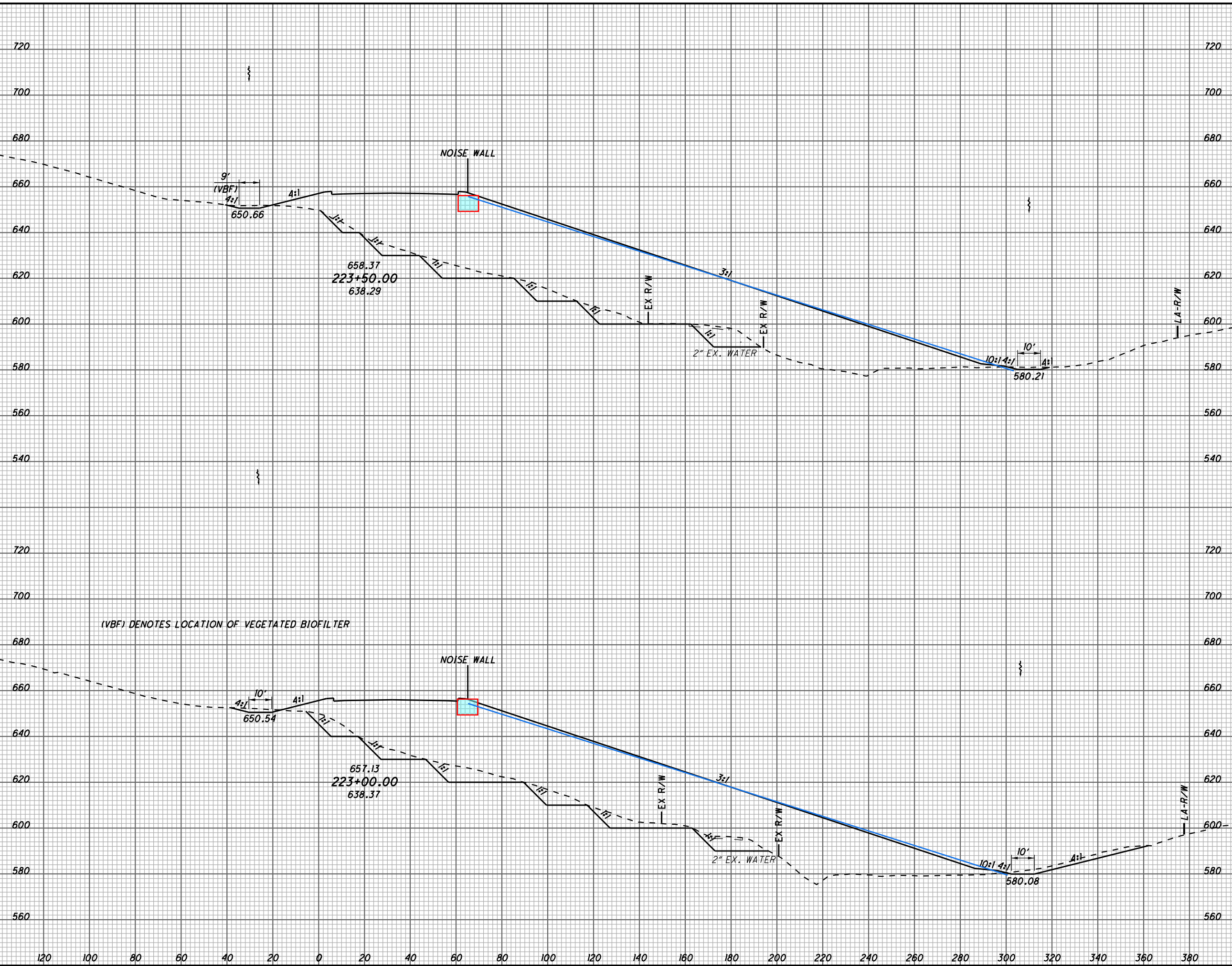
CROSS SECTIONS S.R. 7
 STA. 222+00.00 TO STA. 222+50.00

LAW - 7 - 2.17

234
1247

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| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| 328 | | |
| 1941 | | |
| 371 | | |
| 2050 | | |
| 3991 | 120 | 100 |



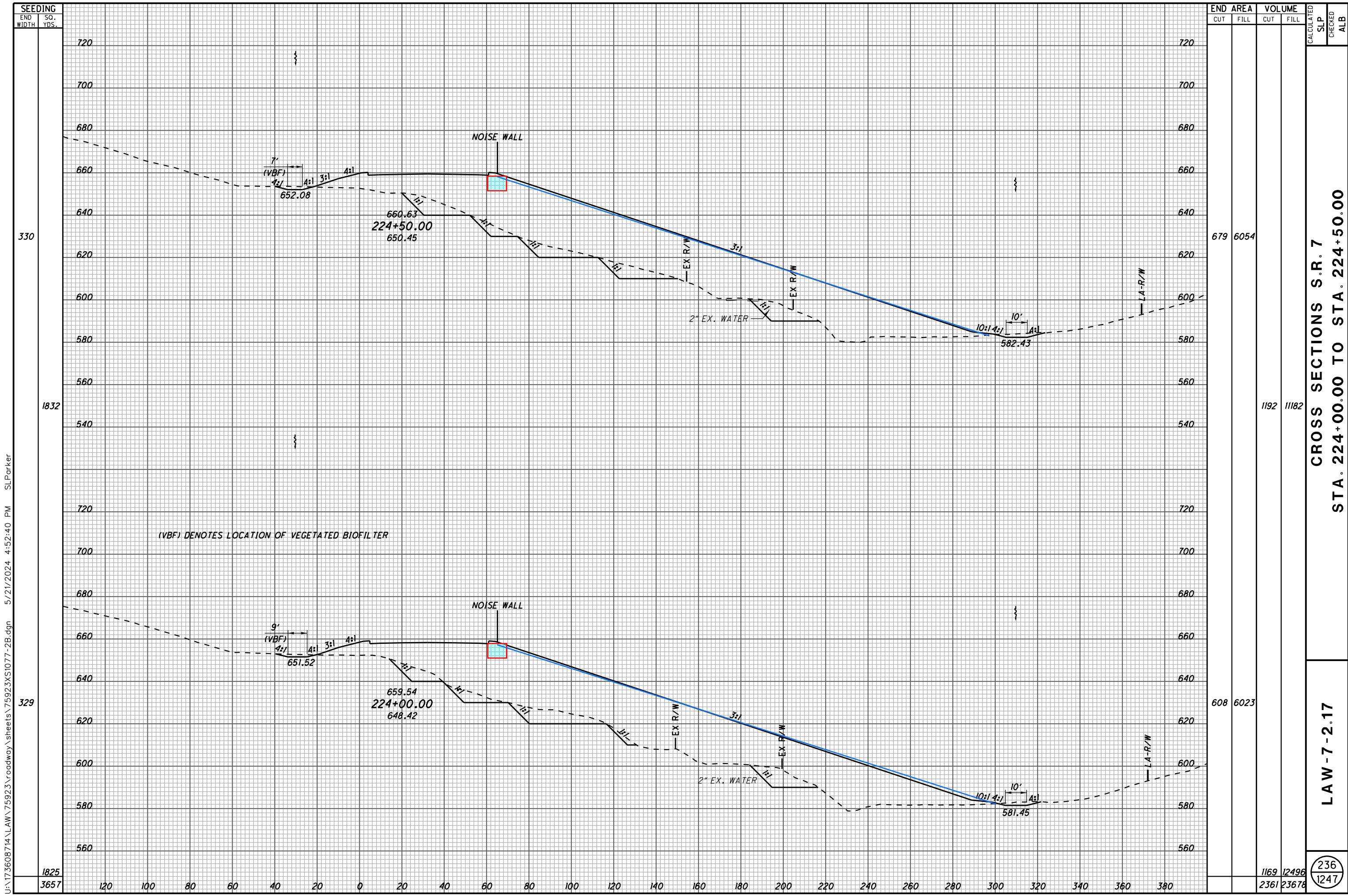
| END AREA | | VOLUME | |
|----------|-------|--------|-------|
| CUT | FILL | CUT | FILL |
| 654 | 7472 | 1382 | 13524 |
| 839 | 7134 | 1601 | 12829 |
| 2983 | 26353 | | |

CALCULATED SLP CHECKED ALB

CROSS SECTIONS S.R. 7
STA. 223+00.00 TO STA. 223+50.00

LAW - 7 - 2.17

235
1247



| SEEDING | |
|-----------|----------|
| END WIDTH | SO. YDS. |
| 330 | 330 |
| 1832 | 1832 |
| 329 | 329 |
| 1825 | 1825 |
| 3657 | 3657 |

| END AREA | | VOLUME | | CALCULATED | |
|----------|------|--------|-------|------------|---------|
| CUT | FILL | CUT | FILL | SLP | CHECKED |
| 679 | 6054 | 1192 | 11182 | 236 | 1247 |
| 608 | 6023 | 1169 | 12496 | 236 | 1247 |

CROSS SECTIONS S.R. 7
 STA. 224+00.00 TO STA. 224+50.00

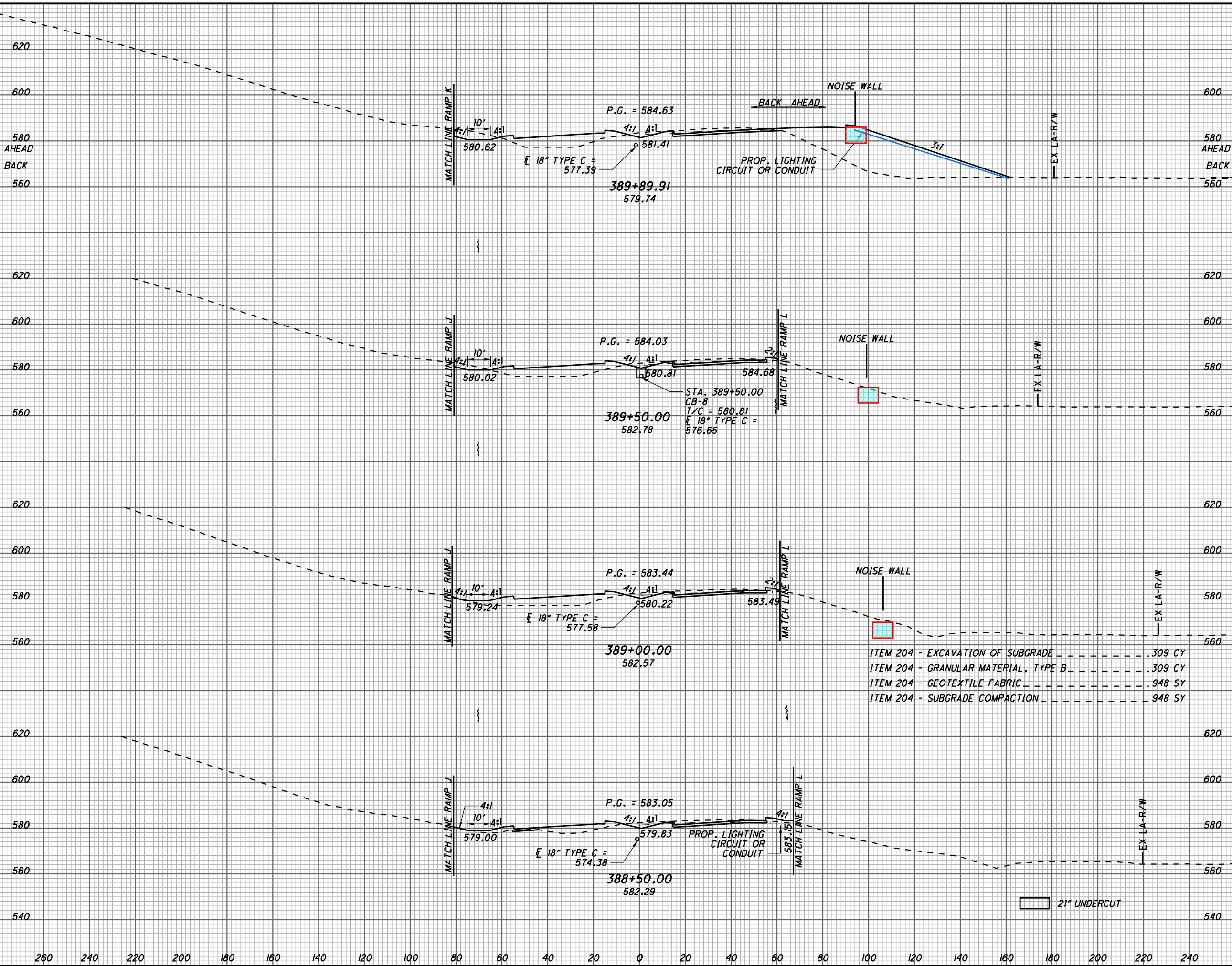
LAW - 7 - 2.17

236
1247

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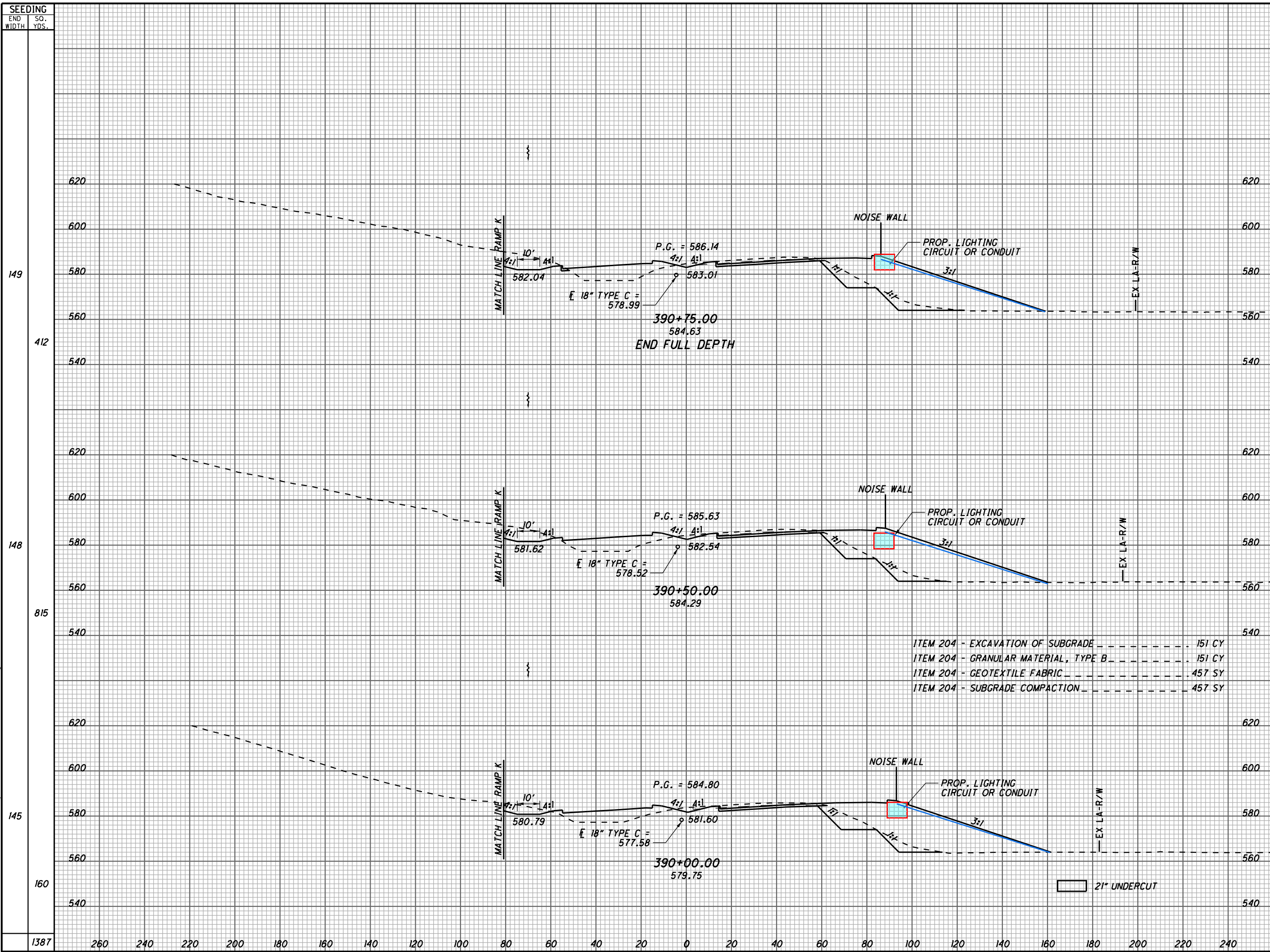
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 140 | 76 | 1215 | 90 | 317 | | |
| 60 | 76 | 209 | | | | |
| 299 | | | | | | |
| 75 | 45 | 218 | 64 | 399 | | |
| 420 | | | | | | |
| 76 | 23 | 212 | 40 | 321 | | |
| 439 | | | | | | |
| 82 | 20 | 134 | | | | |
| 461 | | | 39 | 397 | | |
| 1619 | | | 233 | 1434 | | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 309 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 309 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 948 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 948 SY

CROSS SECTIONS S.R. 7
STA. 338+50.00 TO STA. 389+89.91
LAW - 7 - 2.17
383
1247

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- ITEM 204 - EXCAVATION OF SUBGRADE ----- 151 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 151 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 457 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 457 SY

21" UNDERCUT

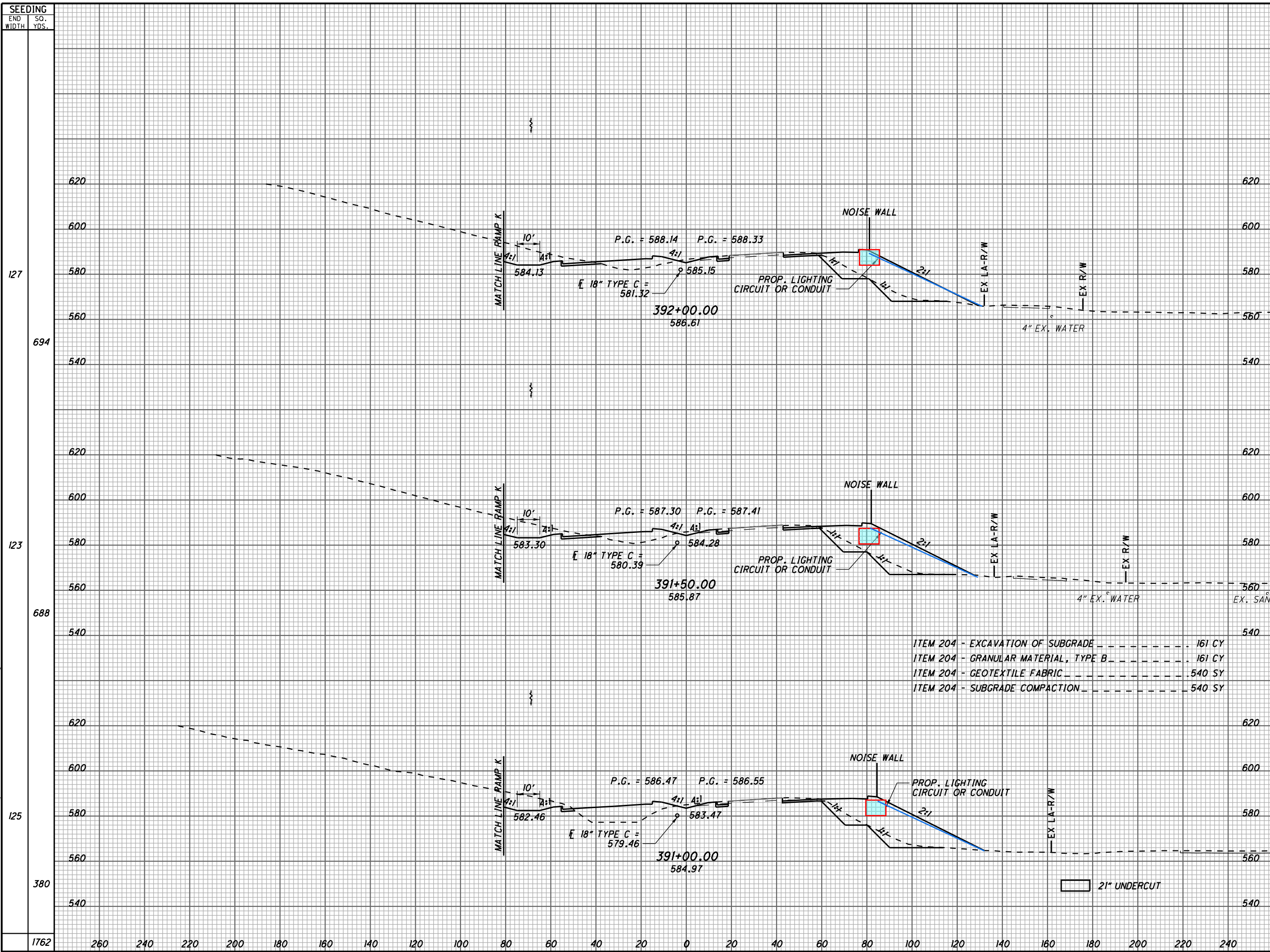
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 149 | 260 | 149 | 321 | 1373 | | |
| 148 | 260 | 148 | 284 | 1373 | | |
| 145 | 260 | 145 | 253 | 1395 | | |
| 160 | 260 | 160 | 62 | 488 | | |
| 1387 | 260 | 1387 | 840 | 4324 | | |

CROSS SECTIONS S.R. 7
STA. 390+00.00 TO STA. 390+75.00

LAW - 7 - 2.17

384
 1247

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- ITEM 204 - EXCAVATION OF SUBGRADE 161 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B 161 CY
- ITEM 204 - GEOTEXTILE FABRIC 540 SY
- ITEM 204 - SUBGRADE COMPACTION 540 SY

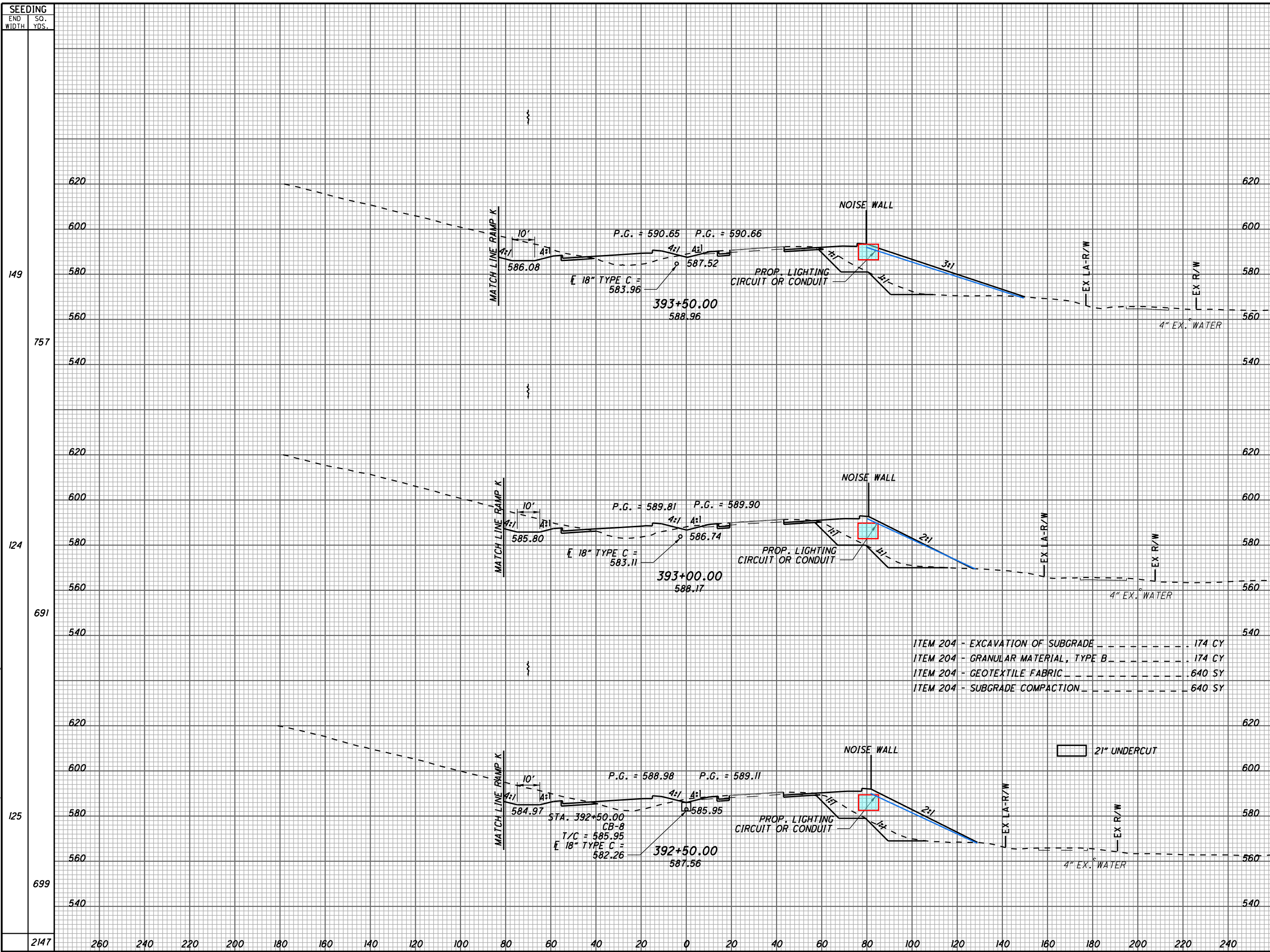
21" UNDERCUT

| SEEDING | END AREA | | VOLUME | | CALCULATED | ALB | CHECKED | TCM | | | | | | | | | | | | | | | | | | | | | | |
|---------|-----------|----------|--------|------|------------|------|---------|-----|-----|------|----|----|----|---|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-----|------|
| | END WIDTH | SO. YDS. | CUT | FILL | | | | | CUT | FILL | | | | | | | | | | | | | | | | | | | | |
| 127 | | | 317 | 790 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 694 | | | | | 567 | 1488 | | | | | | | | | | | | | | | | | | | | | | | | |
| 123 | | | 295 | 817 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 688 | | | | | 526 | 1676 | | | | | | | | | | | | | | | | | | | | | | | | |
| 125 | | | 273 | 993 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 380 | | | | | 275 | 1096 | | | | | | | | | | | | | | | | | | | | | | | | |
| 1762 | 260 | 240 | 220 | 200 | 180 | 160 | 140 | 120 | 100 | 80 | 60 | 40 | 20 | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 1368 | 4260 | 385 | 1247 |

CROSS SECTIONS S.R. 7
STA. 391+00.00 TO STA. 392+00.00

LAW - 7 - 2.17

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| | |
|--------------------------------------|--------|
| ITEM 204 - EXCAVATION OF SUBGRADE | 174 CY |
| ITEM 204 - GRANULAR MATERIAL, TYPE B | 174 CY |
| ITEM 204 - GEOTEXTILE FABRIC | 640 SY |
| ITEM 204 - SUBGRADE COMPACTION | 640 SY |

21" UNDERCUT

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 149 | 353 | 1048 | 615 | 1755 | | |
| 124 | 311 | 846 | 593 | 1600 | | |
| 125 | 330 | 881 | 599 | 1548 | | |
| 2147 | 260 | 240 | 220 | 200 | 180 | 160 |
| 757 | 540 | 540 | 540 | 540 | 540 | 540 |
| 691 | 540 | 540 | 540 | 540 | 540 | 540 |
| 699 | 540 | 540 | 540 | 540 | 540 | 540 |
| | 1807 | 4903 | | | | |

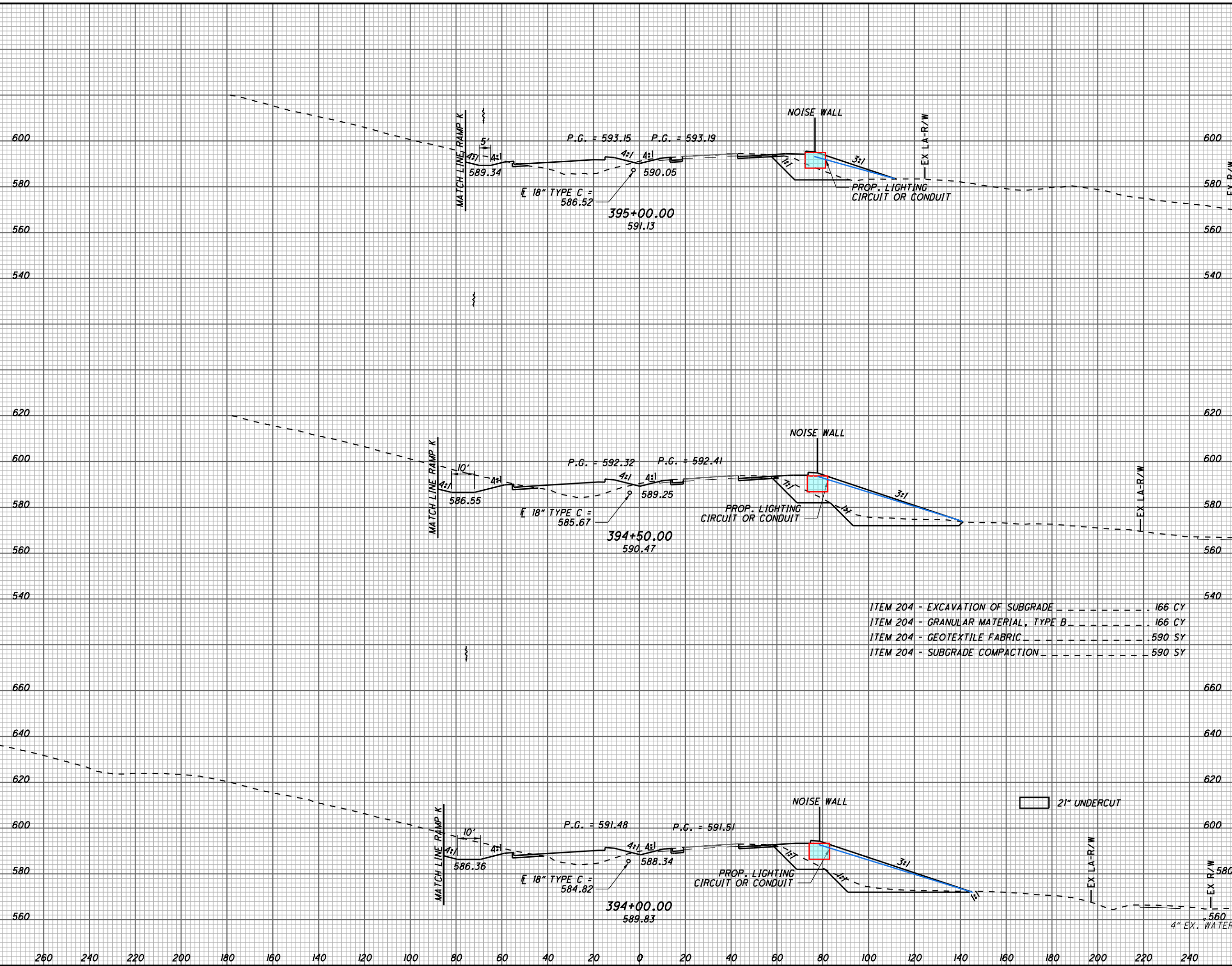
CROSS SECTIONS S.R. 7
STA. 392+50.00 TO STA. 393+50.00

LAW - 7 - 2.17

386
1247

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| SEEDING | END | |
|---------|-------|----------|
| | WIDTH | SO. YDS. |
| | 2330 | |
| | 260 | |
| | 240 | |
| | 220 | |
| | 200 | |
| | 180 | |
| | 160 | |
| | 140 | |
| | 120 | |
| | 100 | |
| | 80 | |
| | 60 | |
| | 40 | |
| | 20 | |
| | 0 | |
| | 20 | |
| | 40 | |
| | 60 | |
| | 80 | |
| | 100 | |
| | 120 | |
| | 140 | |
| | 160 | |
| | 180 | |
| | 200 | |
| | 220 | |
| | 240 | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 166 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 166 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 590 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 590 SY

21" UNDERCUT

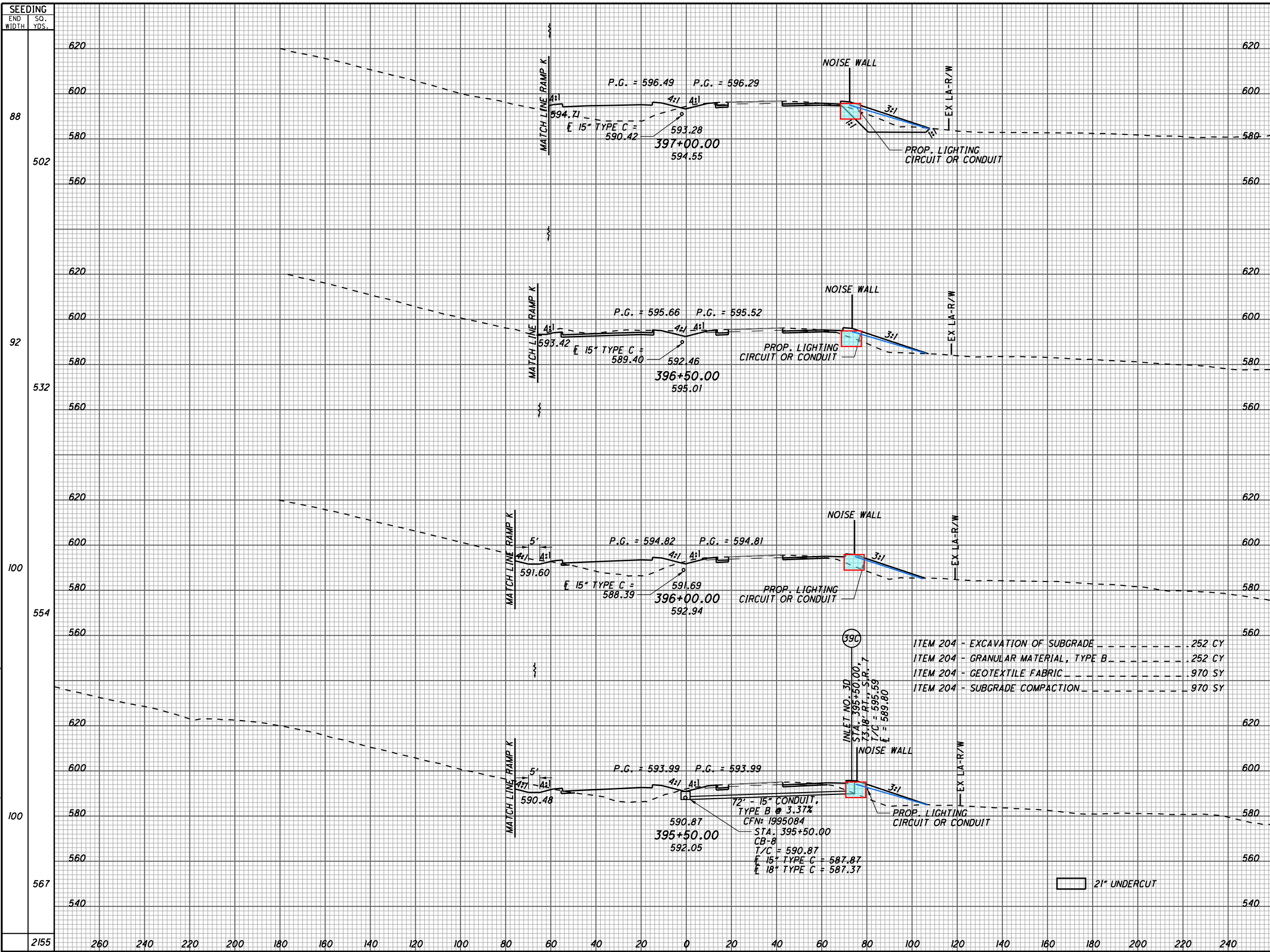
| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 220 | 580 | | | |
| 667 | 1500 | | | |
| 500 | 1040 | | | |
| 830 | 1902 | | | |
| 396 | 1013 | | | |
| 694 | 1909 | | | |
| 2191 | 5311 | | 387 | 1247 |

CROSS SECTIONS S.R. 7
STA. 394+00.00 TO STA. 395+00.00

LAW-7-2.17

387
1247

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| END STA. | AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 88 | 158 | 556 | 217 | 653 | | |
| 92 | 76 | 149 | 108 | 506 | | |
| 100 | 40 | 397 | 91 | 723 | | |
| 567 | 58 | 383 | 258 | 892 | | |
| 2155 | 674 | 2774 | | | | |

- ITEM 204 - EXCAVATION OF SUBGRADE ----- 252 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 252 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 970 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 970 SY

INLET NO. 30
 STA. 395+50.00,
 73.18' RT., S.R. 7
 T/C = 595.59
 E = 589.80

72" - 15" CONDUIT,
 TYPE B @ 3.37%
 CFN: 1995084
 STA. 395+50.00
 CB-8
 T/C = 590.87
 E 15" TYPE C = 587.87
 E 18" TYPE C = 587.37

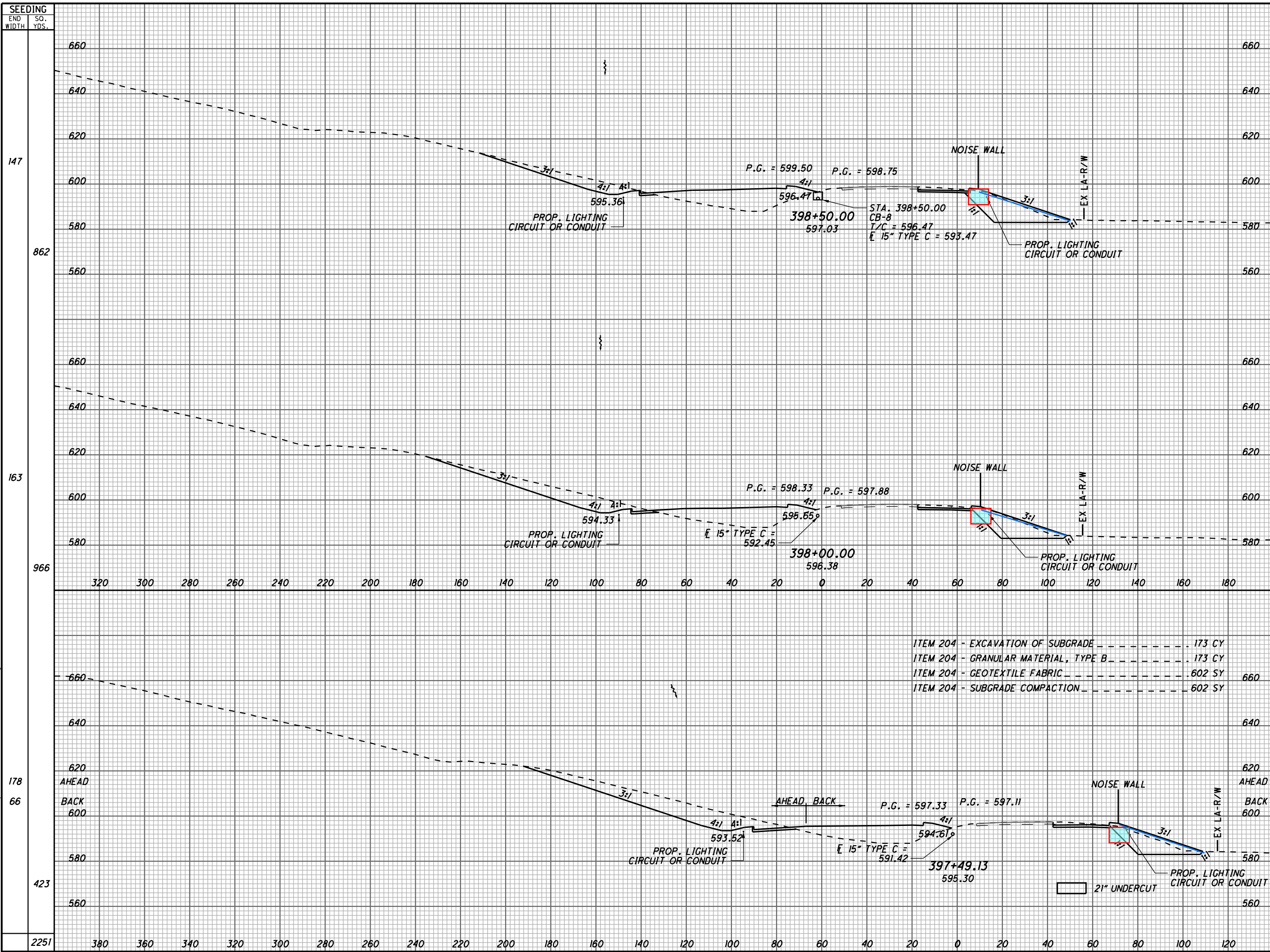
21" UNDERCUT

CROSS SECTIONS S.R. 7
 STA. 395+50.00 TO STA. 397+00.00

LAW - 7 - 2.17

388
 1247

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| | |
|--------------------------------------|--------|
| ITEM 204 - EXCAVATION OF SUBGRADE | 173 CY |
| ITEM 204 - GRANULAR MATERIAL, TYPE B | 173 CY |
| ITEM 204 - GEOTEXTILE FABRIC | 602 SY |
| ITEM 204 - SUBGRADE COMPACTION | 602 SY |

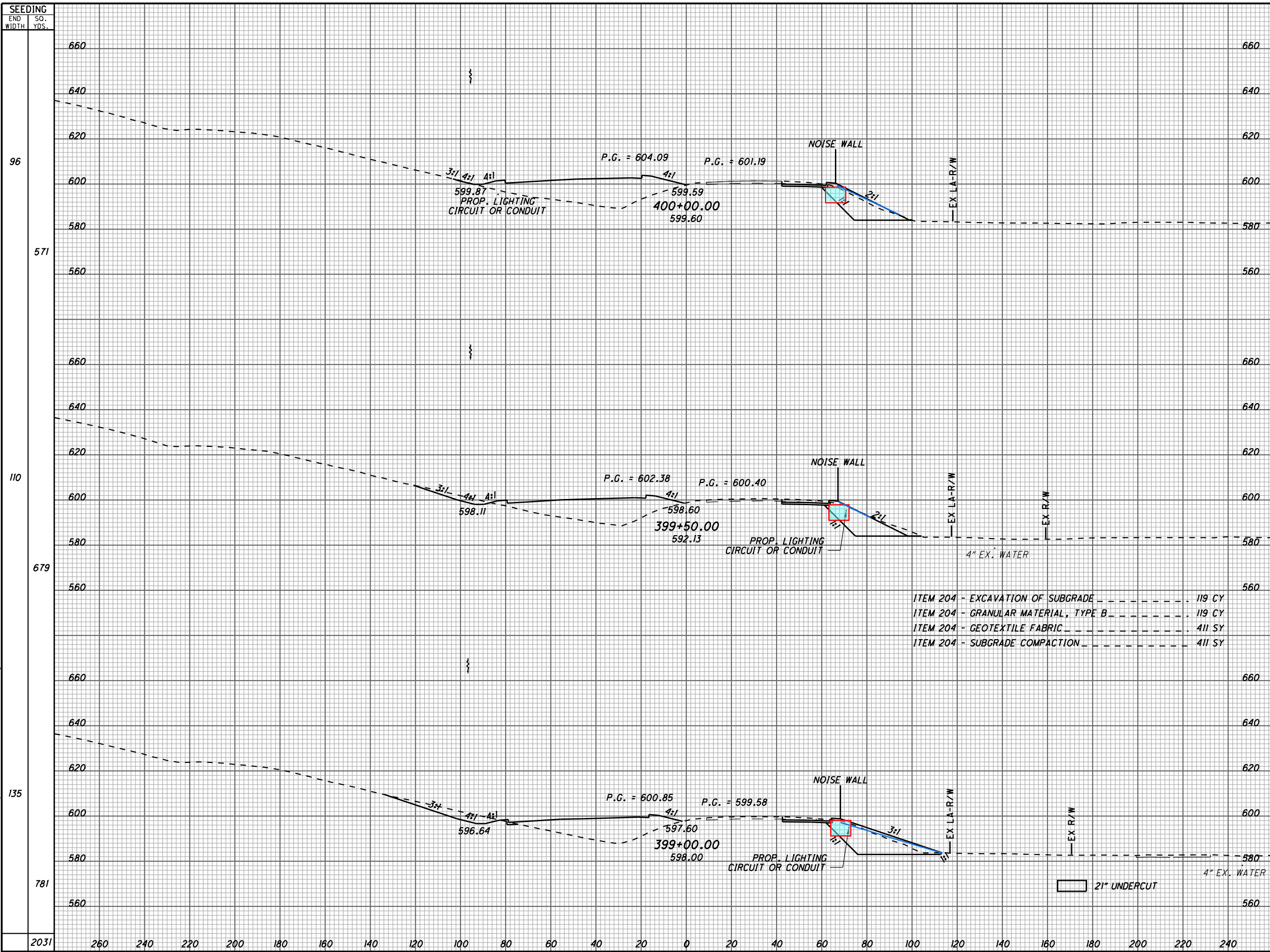
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 147 | 194 | 491 | 713 | 1071 | | |
| 862 | 576 | 665 | 1259 | 1219 | | |
| 163 | 760 | 629 | 323 | 1071 | | |
| 178 | 196 | 620 | | | | |
| 66 | | | | | | |
| 423 | | | | | | |
| 2251 | | | 2295 | 3361 | | |

CROSS SECTIONS S.R. 7
STA. 397+49.13 TO STA. 398+50.00

LAW - 7 - 2.17

389
1247

U:\173608714_LAW\75923\roadway_sheets\75923\XS1230-2B.dgn 5/21/2024 4:55:00 PM SLPorker



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 119 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 119 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 411 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 411 SY

21" UNDERCUT

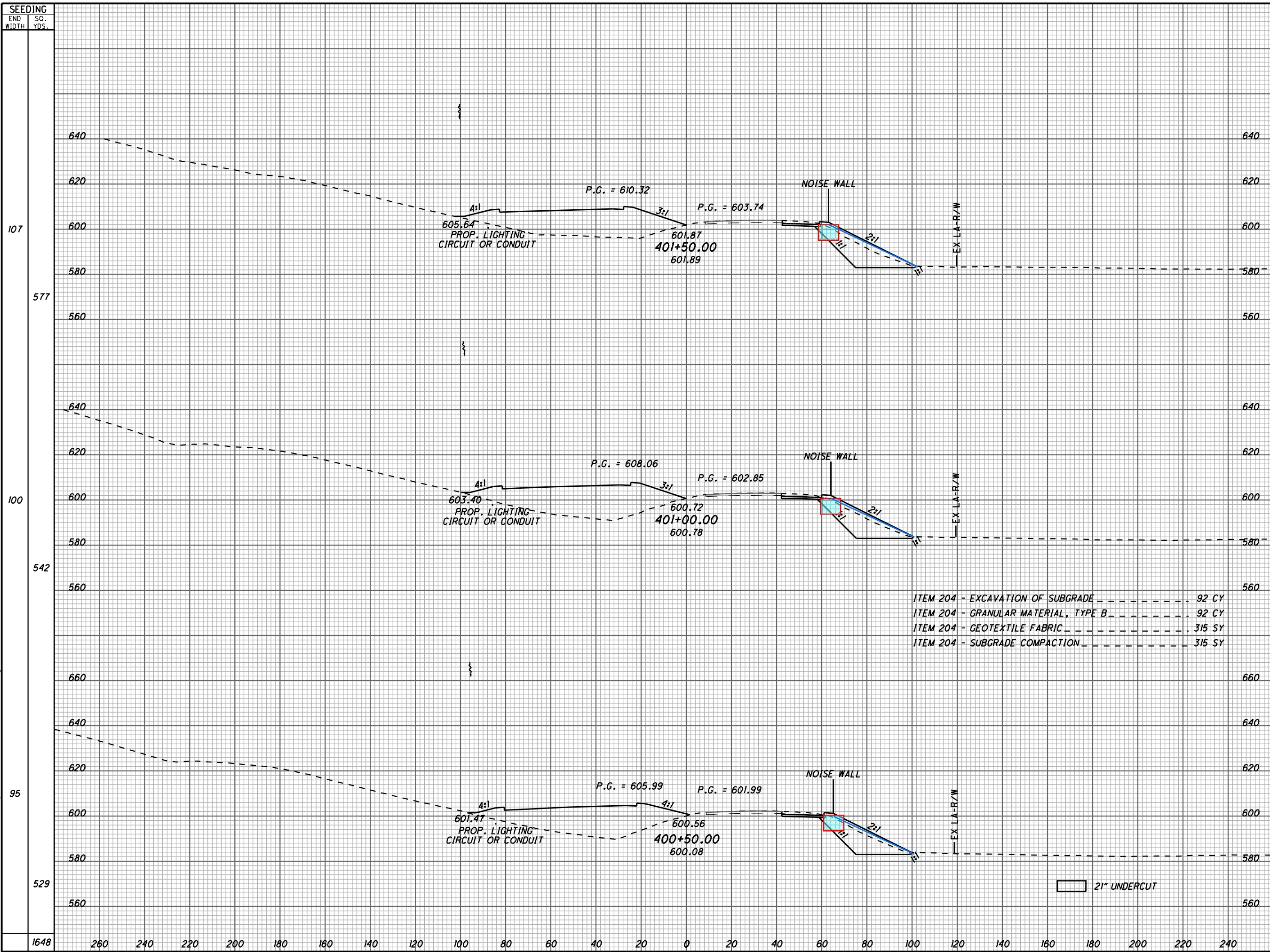
| END STA. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|--------------|-------------|-------------|-------------|-------------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 96 | 226 | 979 | 541 | 1662 | | |
| 110 | 358 | 815 | 714 | 1546 | | |
| 135 | 413 | 855 | 563 | 1247 | | |
| TOTAL | 1818 | 4455 | 1818 | 4455 | 390 | 1247 |

CROSS SECTIONS S.R. 7
STA. 399+00.00 TO STA. 400+00.00

LAW - 7 - 2.17

390
1247

U:\173608714_LAW\75923\roadway_sheets\75923\X51231-2B.dgn 5/21/2024 4:55:01 PM SLParker



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 92 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 92 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 315 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 315 SY

21" UNDERCUT

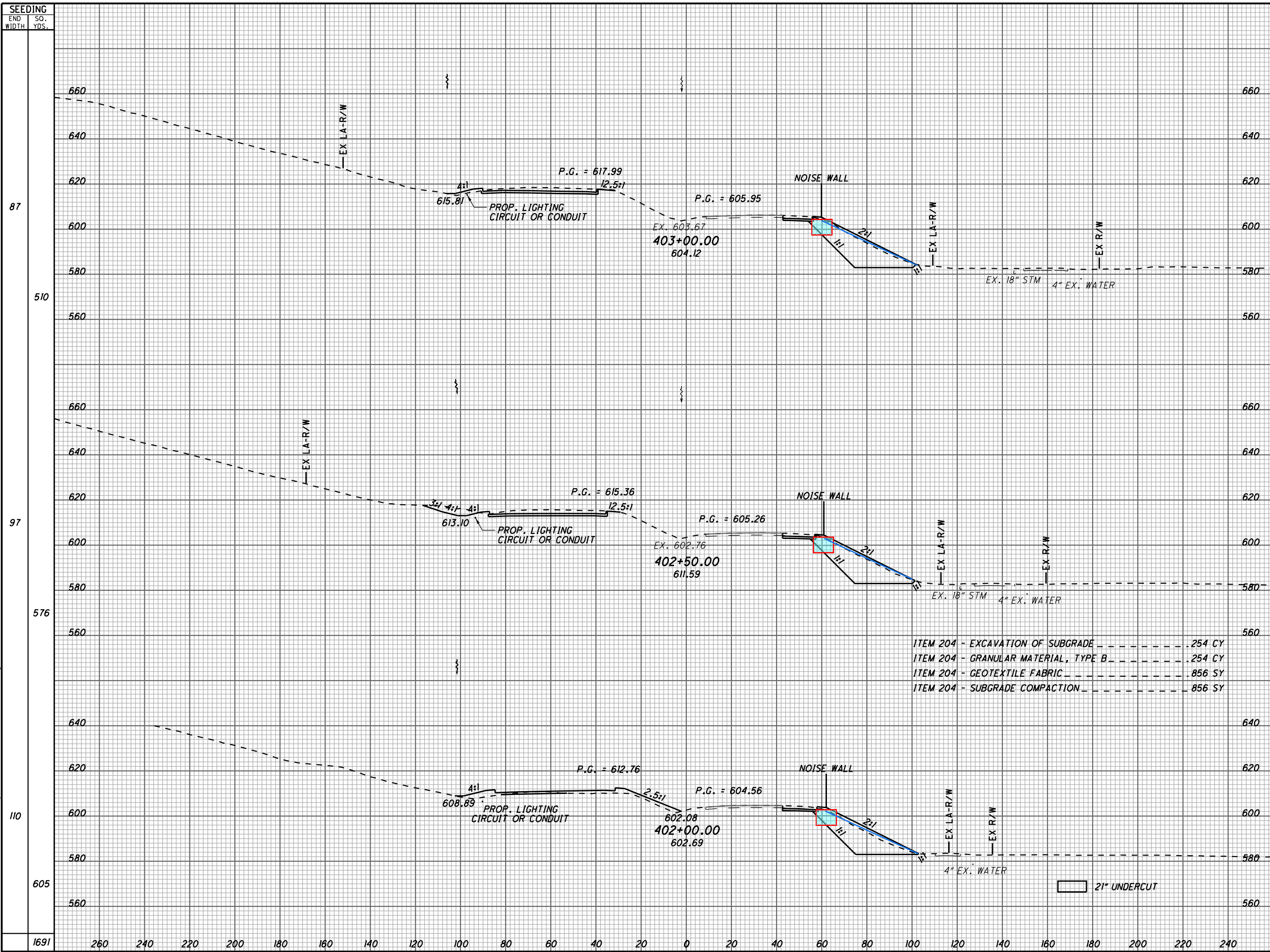
| SEEDING END WIDTH SO. YDS. | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------------------------------|----------|------|--------|------|-------------------|----------------|
| | CUT | FILL | CUT | FILL | | |
| 107 | 263 | 1233 | 475 | 2328 | | |
| 577 | | | | | | |
| 100 | 250 | 1281 | 453 | 2256 | | |
| 542 | | | | | | |
| 95 | 239 | 1155 | | | | |
| 529 | | | 431 | 1977 | | |
| 1648 | | | 1359 | 6561 | 391 | 1247 |

CROSS SECTIONS S.R. 7
STA. 400+50.00 TO STA. 401+50.00

LAW-7-2.17

391
1247

U:\173608714 LAW\75923\roadway\sheets\75923\XS1232-2B.dgn 5/21/2024 4:55:02 PM SLParker



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 254 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 254 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 856 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 856 SY

21" UNDERCUT

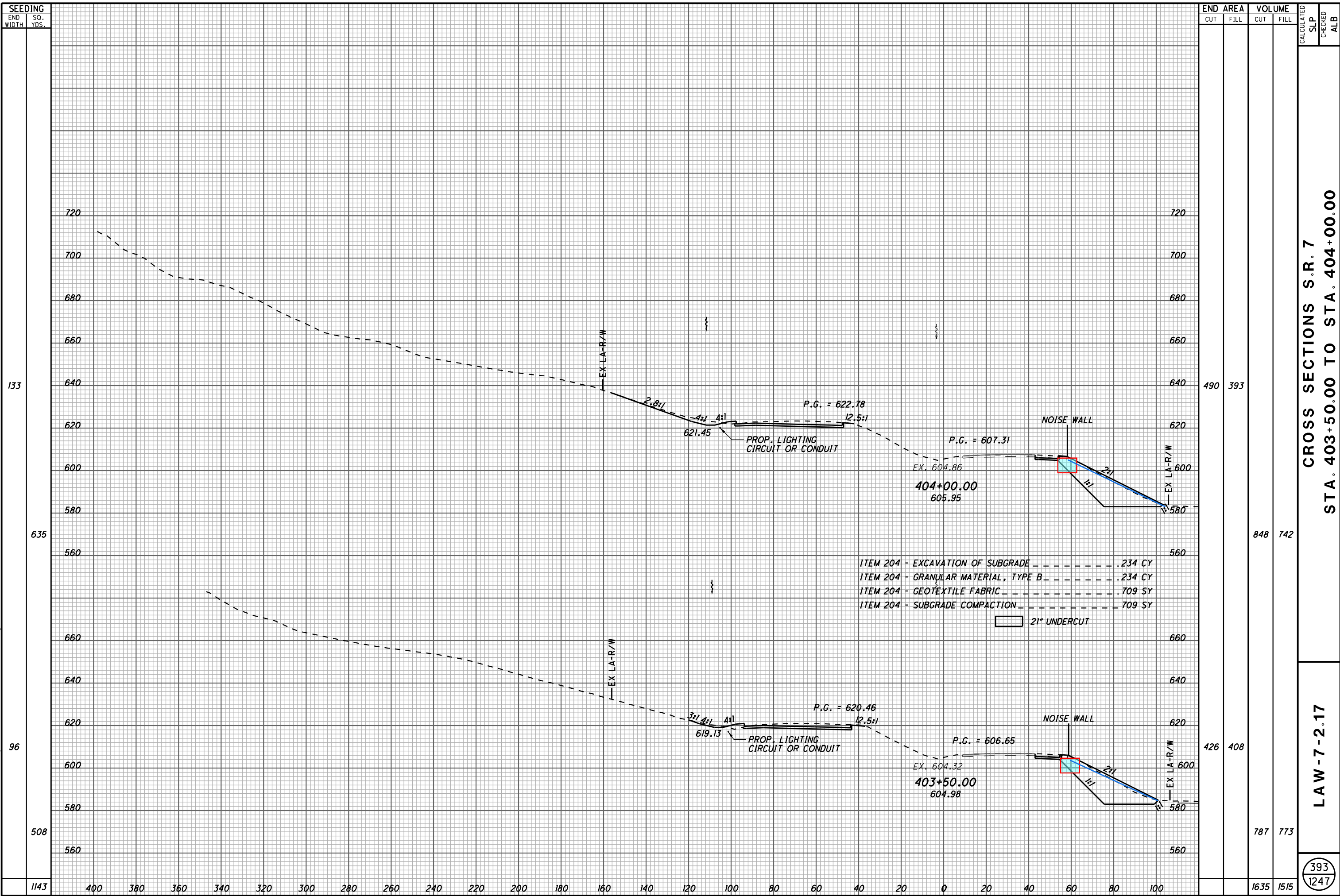
| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 87 | | | 424 | 427 | | |
| 510 | | | 823 | 760 | | |
| 97 | | | 465 | 393 | | |
| 576 | | | 713 | 819 | | |
| 110 | | | 305 | 490 | | |
| 605 | | | 526 | 1596 | | |
| 1691 | 260 | 240 | 2062 | 3175 | 392 | 1247 |

CROSS SECTIONS S.R. 7
STA. 402+00.00 TO STA. 403+00.00

LAW - 7 - 2.17

392
1247

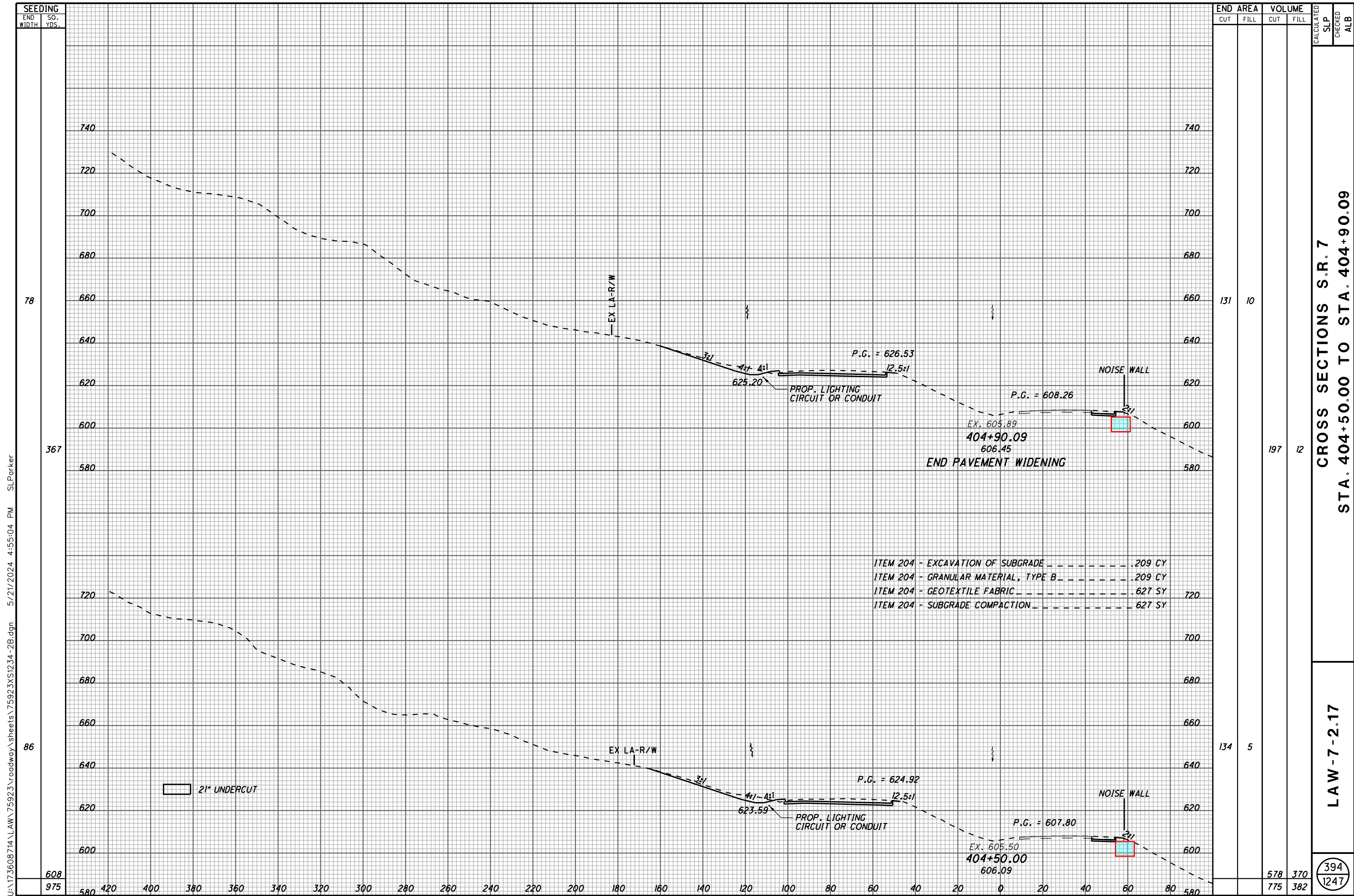
U:\173608714 LAW\75923\roadway_sheets\75923\XS1233-2B.dgn 5/21/2024 4:55:03 PM SLPorker



CROSS SECTIONS S.R. 7
 STA. 403+50.00 TO STA. 404+00.00

LAW - 7 - 2.17

393
 1247



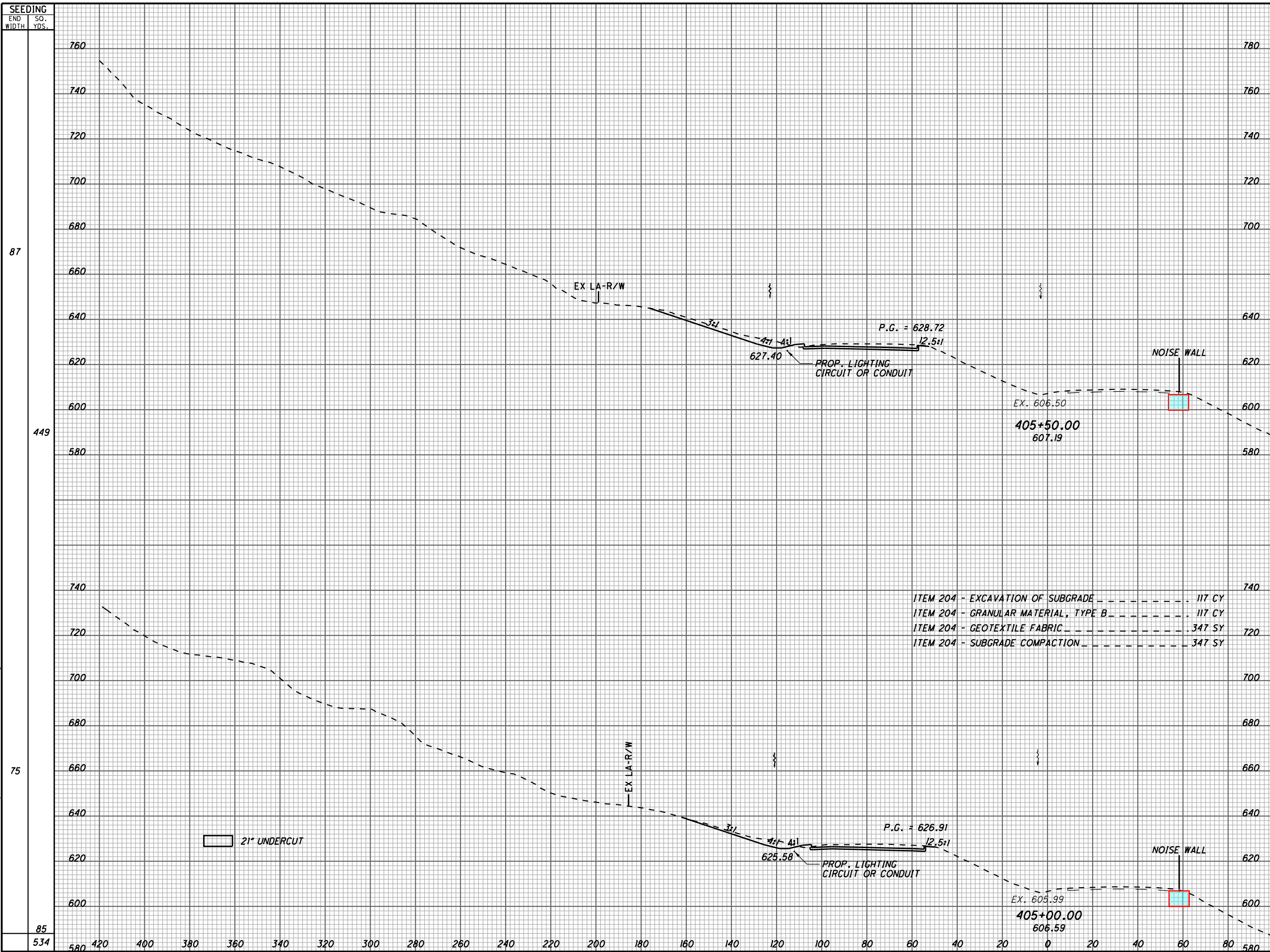
CROSS SECTIONS S.R. 7
 STA. 404+50.00 TO STA. 404+90.09

LAW - 7 - 2.17

394
1247

U:\173608714\LAN\75923\roadway_sheets\75923\XS1234-2B.dgn 5/21/2024 4:55:04 PM SLParker

U:\173608714_LAW\75923\roadway_sheets\75923\XS1235-2B.dgn 5/21/2024 4:55:04 PM SLForker



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 117 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 117 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 347 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 347 SY

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|----------|------|--------|------|----------------|-------------|
| | CUT | FILL | CUT | FILL | | |
| 87 | 168 | 6 | 278 | 11 | | |
| 449 | 131 | 6 | 49 | 3 | | |
| 75 | 534 | 327 | 14 | | | |

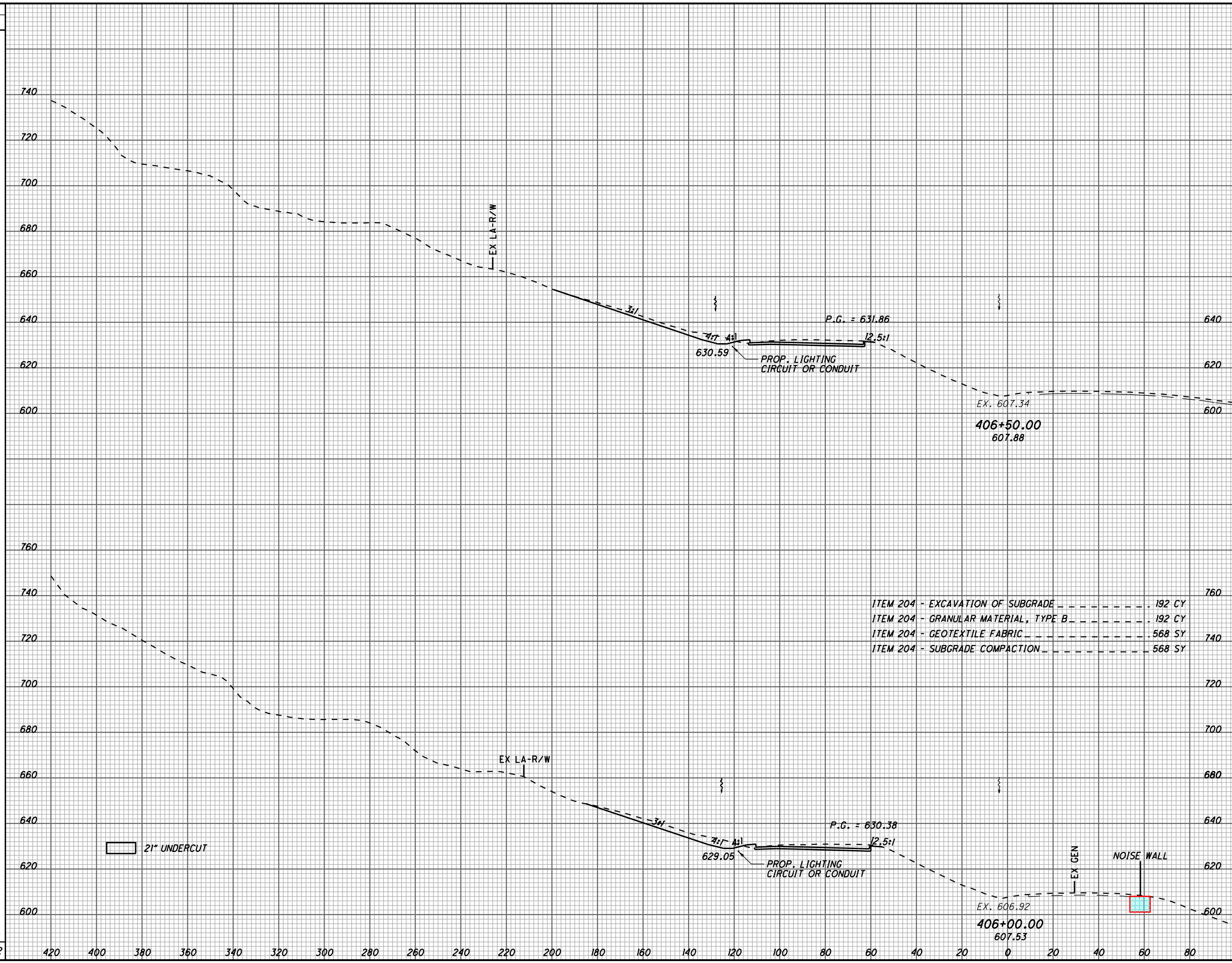
CROSS SECTIONS S.R. 7
STA. 405+00.00 TO STA. 405+50.00

LAW - 7 - 2.17

(395)
1247

U:\173608714 LAW\75923\roadway\sheets\75923\XS1236-2B.dgn 5/21/2024 4:55:05 PM SLParker

| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 105 | | | 169 | 6 | | |
| 551 | | | 337 | 11 | | |
| 93 | | | 194 | 6 | | |
| 501 | | | 336 | 11 | | |
| 1052 | | | 673 | 22 | | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 192 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 192 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 568 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 568 SY

| END AREA | VOLUME | | CALCULATED SLP | CHECKED ALB |
|----------|--------|------|----------------|-------------|
| | CUT | FILL | | |
| 169 | | 6 | | |
| 337 | | 11 | | |
| 194 | | 6 | | |
| 336 | | 11 | | |
| 673 | | 22 | | |

CROSS SECTIONS S.R. 7
STA. 406+00.00 TO STA. 406+50.00

LAW-7-2.17

396
1247

To: Brandon McNeal, PE
Columbus, Ohio

From: James Samples, EIT
Eric Kistner, PE
Cincinnati, Ohio

Project: 173609006

Date: July 18, 2024

Reference: Report of Geotechnical Findings, LAW-7-2.17 (Chesapeake Bypass) Noise Walls

The Ohio Department of Transportation (ODOT) plans to reroute State Route (SR) 7 in Lawrence County, Ohio around the town of Chesapeake. The project consists of the construction of a new two-lane divided highway with truck climbing lanes, traveling north of the town of Chesapeake, Ohio. This new road will connect the existing four-lane section of SR 7 on the east side of Chesapeake to the existing SR 7 north of the town of Proctorville, near SR 775. The beginning and ending stations for the project are 114+57.60 and 437+16.83, respectively, for an alignment length of 6.1 miles.

This memo summarizes the results of the exploration and analyses performed for the noise wall design portion of the project. Two noise walls, referred to as Wall B and Wall D, are planned. Wall B is split into two sections, with the first beginning and ending at Stations 156+35 and 194+87 and the second section beginning at Station 206+14 and ending at Station 224+38. Wall D begins at Station 381+55 and ends at Station 406+23.

It was determined that additional borings would be necessary along the alignments of the noise walls to better define soil and bedrock conditions. Stantec contracted National Engineering and Architectural Services, Inc. (NEAS) to perform 15 additional soil borings along the planned locations of the walls, which were advanced between April and June of 2024. A summary of these borings is shown in Table 1. Boring locations and graphical logs are shown in the geotechnical profile drawings for the project. The locations and elevations of the boring locations were surveyed by NEAS.


 **Include in the next submission the external stability checks of the noise wall mounted on top of the MSE walls and/or mounted on moment slab at the rear approach of Bridge No. LAW-7-0370 and at the forward approach of Bridge No. LAW-7-0387 and add a discussion regarding this.**

Table 1. Boring Summary

| Boring No. | Boring Purpose | Station (feet) | Offset (feet) | Ground Surface Elevation (feet) | Top of Bedrock Elevation (feet) | Bottom of Boring Elevation (feet) |
|------------|----------------|----------------|---------------|---------------------------------|---------------------------------|-----------------------------------|
| B-007-2-23 | Noise Wall B | 174+98 | 83 Rt. | 631.5 | 626.0 | 614.0 |
| B-007-3-23 | Noise Wall B | 177+50 | 50 Rt. | 659.2 | 653.2 | 646.7 |
| B-007-4-23 | Noise Wall B | 179+91 | 55 Rt. | 669.0 | 655.5 | 645.0 |
| B-007-5-23 | Noise Wall B | 181+87 | 103 Rt. | 645.2 | 632.7 | 621.2 |
| B-009-1-23 | Noise Wall B | 185+93 | 85 Rt. | 623.7 | 613.2 | 599.2 |
| B-009-2-23 | Noise Wall B | 193+42 | 98 Rt. | 583.9 | 560.4 | 559.4 |
| B-014-1-23 | Noise Wall B | 212+17 | 118 Rt. | 581.4 | N/A | 556.4 |
| B-014-2-23 | Noise Wall B | 213+74 | 95 Rt. | 609.0 | 590.5 | 585.0 |
| B-014-3-23 | Noise Wall B | 216+38 | 86 Rt. | 628.0 | 618.0 | 612.5 |
| B-076-2-23 | Noise Wall D | 396+04 | 102 Rt. | 587.7 | N/A | 562.7 |
| B-076-3-23 | Noise Wall D | 398+01 | 110 Rt. | 589.9 | N/A | 564.9 |
| B-077-2-23 | Noise Wall D | 399+99 | 108 Rt. | 592.6 | N/A | 567.6 |
| B-077-3-23 | Noise Wall D | 402+00 | 112 Rt. | 588.8 | N/A | 563.8 |
| B-078-2-23 | Noise Wall D | 404+03 | 102 Rt. | 595.3 | N/A | 570.3 |
| B-078-3-23 | Noise Wall D | 406+02 | 93 Rt. | 602.4 | N/A | 577.4 |

Borings were advanced with a track-mounted CME 55 drill rig using 3¼-inch inside diameter (ID) hollow stem augers to advance the borings through soil. Standard Penetration Test (SPT) sampling was performed at 2.5-foot intervals until the bedrock was encountered. The energy ratio (ER) of the drill rig automatic hammer and drill rod system were measured to be 79.9 percent on March 8, 2024. The depths and elevations of the SPTs with the corresponding N_{60} -values are shown on the boring logs.

If fairly competent bedrock was encountered during drilling, approximately 5 to 10 feet of rock coring was performed using NQ2-size equipment. Recovery, core loss, and rock quality designation (RQD) values were recorded as percentages for each coring run. These values are shown on the boring logs.

The materials encountered were logged by NEAS with attention given to soil type, consistency, and moisture content. The borings were checked for the presence of groundwater during drilling and at its conclusion with the depth of water recorded. Boring abandonment methods are also shown on the boring logs.

The soil samples obtained from the borings were returned to NEAS's geotechnical laboratory for visual classification and tested for water content. Engineering classification testing was performed on samples reflecting each of the main soil horizons. The engineering classification tests conducted on the samples were sieve and hydrometer analysis (ASTM D 422) and Atterberg limits (ASTM D 4318). The samples were classified according to the ODOT classification method. Results from classification and moisture content testing are shown on the boring logs.

Findings

Wall B

Soils encountered along Wall B were primarily plastic, classifying as sandy silt (A-4a), silt (A-4b), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as soft to hard (N_{60} values ranging from 4 to 95 blows per foot (bpf) with an average of 26 bpf) and damp (natural moisture contents ranging from 7 to 27 percent with an average of 19 percent). A small amount of non-plastic soil was observed in the Wall B borings, classifying as gravel and stone fragments with sand (A-1-b) or gravel and stone fragments with sand and silt (A-2-4). These soils were encountered near the bedrock interface and were described as very dense (N_{60} values ranging from 52 to 77 bpf with an average of 67 bpf) and damp (natural moisture contents ranging from 5 to 7 percent with an average of 6 percent).

Bedrock was encountered in 8 of the 9 borings advanced for Wall B. Bedrock was not encountered at boring B-014-1-23. Bedrock depth varies from 5.5 feet in B-007-2-23 to 23.5 feet in B-009-2-23. Bedrock was primarily described as severely to highly weathered shale, which made core recoveries lower than normal. The shale was also described as brown and maroonish brown to gray, very weak to slightly strong, and very thin to thin bedded. Between 3 and 4.5 feet of shale was cored in three borings. Core recoveries ranged from 24 to 95 percent and RQD values varied from 0 to 26. Siltstone was encountered in B-007-5-23, B-009-2-23, B-014-2-23, and B-014-3-23. The siltstone was described as gray and yellowish brown to brown, highly to moderately weathered, and slightly strong. Five feet of core was obtained from B-014-3-23, which resulted in 100 percent recovery and an RQD value of 80.

Groundwater was not observed while drilling borings for Wall B; however, this may have been obscured by the addition of water during rock coring. It is likely that groundwater is present within the bedrock at these locations. Boring logs are provided in the attachments.

Wall D

The surficial materials of borings completed on road surfaces varied from 12 to 13 inches of asphalt followed by 5 to 6 inches of granular base. Below the roadway materials, soils were primarily plastic with alternating layers of non-plastic soil. Plastic soils classified as sandy silt (A-4a), silt and clay (A-6a), silty clay (A-6b), and clay (A-7-6). These soils were further described as medium stiff to hard (N_{60} values ranging from 8 to 37 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 8 to 20 percent with an average of 14 percent). Non-plastic soils classified as gravel and stone fragments with sand (A-1-b), gravel and stone fragments with sand and silt (A-2-4), fine sand (A-3), coarse and fine sand (A-3a), and sandy silt (A-4a). These soils were further described as medium dense (N_{60} values ranging from 12 to 21 bpf with an average of 18 bpf) and damp (natural moisture contents ranging from 3 to 12 percent with an average of 7 percent).

Bedrock and groundwater were not encountered in any of the borings advanced for Wall D. Boring logs are provided in the attachments.

Analysis and Recommendations

The recommendations that follow are based on the information discussed in this report and the interpretation of the subsurface conditions encountered at the site during our fieldwork. If future design changes are made, Stantec should be notified so that such changes can be reviewed, and the recommendations amended as necessary.

These conclusions and recommendations are based on data and subsurface conditions from the borings advanced during this exploration using the degree of care and skill ordinarily exercised under similar circumstances by competent members of the engineering profession. No warranties can be made regarding the continuity of conditions.

ODOT's Geotechnical Design Manual (GDM) section 1600 provides guidelines for design of noise barrier foundations. The standard foundation design used by ODOT was applied to the analysis for Walls B and D. ODOT's Office of Geotechnical Engineering (OGE) has developed a spreadsheet to preform the standard drilled shaft design, which was used for the foundation design of the walls. These spreadsheets are attached.


Noise wall barrier height, post spacing, and top of shaft elevation were provided by the structural engineer. Survey data for borings completed by NEAS was used for boring elevations. Noise wall profile and cross-section drawings were used to estimate existing ground elevation and cross slope respectively. Cut or fill depths were determined by calculations within the spreadsheet using existing ground elevation, top of shaft elevation, and boring elevation. Borings were not completed along the noise wall alignments in areas where fill depths are expected to exceed 25 feet. In these areas, artificial "borings" assuming typical material parameters for fill were used to provide design recommendations throughout the entire wall alignment. These artificial "borings" were designated "B-00X". Boring B-007-1-23 was also included in the analysis for Noise Wall B due to its proximity to the wall alignment.

Noise Wall B

Table 2 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers.

Table 2. Noise Wall B Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Drilled Shaft Length (feet) |
|----------------|--------|-------------|-----|-----------------------------|
| From | To | From | To | |
| 156+35 | 159+95 | 1 | 16 | 6.5 |
| 160+19 | 164+99 | 17 | 37 | 8.0 |
| 165+23 | 172+43 | 38 | 69 | 6.5 |
| 172+67 | 176+03 | 70 | 84 | 8.0 |
| 176+27 | 178+67 | 85 | 95 | 7.5 |
| 178+91 | 180+83 | 96 | 104 | 6.5 |
| 181+07 | 182+75 | 105 | 112 | 8.0 |
| 182+99 | 184+91 | 113 | 121 | 6.5 |
| 185+15 | 194+03 | 122 | 159 | 8.0 |
| 194+27 | 209+02 | 160 | 176 | 6.5 |
| 209+26 | 212+86 | 177 | 193 | 8.0 |
| 213+10 | 215+02 | 194 | 202 | 7.5 |
| 215+26 | 224+38 | 203 | 241 | 6.5 |

 frequently varying plan specified shaft lengths throughout the project should be avoided, and the minimum increment of plan specified shaft length should be 2-ft, per the GDM Section 1603.7. It appears that drilled shaft length = 8 ft should be used for the entire alignment of Noise Wall B and drilled shaft length should be changed from 8 ft to 9 ft for noise wall D station 405+03 to 406+23. However, this will need to be checked after addressing relevant comments.

Noise Wall D

Table 3 summarizes the recommended drilled shaft foundation lengths provided by ODOT's Noise Wall Foundation Design Spreadsheet. Shaft lengths are provided over station limits as well as post numbers.

Table 3. Noise Wall D Drilled Shaft Length Recommendations

| Station (feet) | | Post Number | | Drilled Shaft Length (feet) |
|----------------|--------|-------------|-----|-----------------------------|
| From | To | From | To | |
| 381+55 | 400+95 | 1 | 82 | 6.5 |
| 401+19 | 404+79 | 83 | 98 | 9.0 |
| 405+03 | 406+23 | 99 | 104 | 8.0 |



See relevant comment on previous page.

Regards,

STANTEC CONSULTING SERVICES INC.

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Geotechnical Project Manager
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ATTACHMENTS: Noise Wall Boring Logs, Noise Wall Foundation Calculations

ATTACHMENTS

 Include the boring log of: B-007-1-23

Reference the boring location using the proposed feature location information. Change to use the noise wall baseline, station and offset. Do this for all borings.

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:24 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\IN

| | | | | |
|----------------------------|--|--------------------------|--------------------------------------|----------------------------|
| PROJECT: LAW-7-2.17 | DRILLING FIRM / OPERATOR: NEAS / J. HODGES | DRILL RIG: CME 55X | STATION / OFFSET: 174+98, 83' RT. | EXPLORATION ID: B-007-2-23 |
| TYPE: NOISE WALL | SAMPLING FIRM / LOGGER: NEAS / J. HODGES | HAMMER: CME AUTOMATIC | ALIGNMENT: LAW-7 | |
| PID: 75923 SFN: N/A | DRILLING METHOD: 3.25" HSA / NQ2 | CALIBRATION DATE: 3/8/24 | ELEVATION: 631.5 (MSL) EOB: 17.5 ft. | PAGE: 1 OF 1 |
| START: 4/24/24 END: 5/1/24 | SAMPLING METHOD: SPT / NQ2 | ENERGY RATIO (%): 80 | LAT / LONG: 38.443989, -82.442227 | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | | |
|--|-------|--------|---------|-----------------|---------|-----------|----------|---------------|----|----|----|----|-----------|----|----|-----------------|-----------|------------|------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | |
| 2.0" ASPHALT (DRILLERS DESCRIPTION) VERY STIFF, MAROONISH BROWN, CLAY, SOME SILT, LITTLE SAND, TRACE GRAVEL, MOIST | 631.5 | | | | | | | | | | | | | | | | | | |
| | 631.3 | | 4 | 2 | 9 | 39 | SS-1 | 3.00 | 3 | 4 | 12 | 26 | 55 | 50 | 22 | 28 | 23 | A-7-6 (17) | |
| | 626.0 | TR | 5 | 50 | - | 83 | SS-2 | - | - | - | - | - | - | - | - | - | 10 | Rock (V) | |
| | | | 6 | 50 | - | 67 | SS-3 | - | - | - | - | - | - | - | - | - | 9 | Rock (V) | |
| SHALE, MAROONISH BROWN AND BROWN, SEVERELY TO HIGHLY WEATHERED, VERY WEAK TO WEAK, VERY THIN BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITY: 12.5'-13.5', FRACTURED TO HIGHLY FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTEGRATED, POOR SURFACE CONDITION; RQD 7%, REC 57%. | | | 10 | 16 | - | 78 | SS-4 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) | |
| | | | 11 | 50/3" | - | | | | | | | | | | | | | | |
| | | | 12 | 50 | - | 67 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | |
| | | | 15 | 7 | | 57 | NQ2-1 | | | | | | | | | | | | CORE |
| | | 614.0 | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE. OFFSET 2.0' SOUTH.

ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>177+50.50' RT.</u> | EXPLORATION ID: <u>B-007-3-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>659.2 (MSL)</u> EOB: <u>12.5 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/1/24</u> END: <u>5/1/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444310, -82.441429</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | |
| VERY STIFF, MAROONISH BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 659.2 | | | | | | | | | | | | | | | | |
| | | 1 | | | | | | | | | | | | | | | |
| | | 2 | | | | | | | | | | | | | | | |
| | | 3 | 2 | | | | | | | | | | | | | | |
| | | 4 | 3 | 15 | 50 | SS-1 | 3.50 | 2 | 1 | 4 | 39 | 54 | 42 | 21 | 21 | 17 | A-7-6 (13) |
| | 654.7 | 5 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, RESIDUAL ROCK, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 653.2 | TR | | | | | | | | | | | | | | | |
| | | 6 | 4 | 13 | 50/5" | SS-2 | - | 12 | 11 | 11 | 39 | 27 | 35 | 21 | 14 | 11 | A-6a (8) |
| | | 7 | | | | | | | | | | | | | | | |
| SHALE , BROWN AND MAROONISH BROWN, SEVERELY TO HIGHLY WEATHERED, WEAK TO SLIGHTLY STRONG, VERY THIN TO THIN BEDDED, CONTAINS SIDERITE NODULES, BEDDING DISCONTINUITIES: LOW ANGLE, JOINT DISCONTINUITIES: 8.7'-9.3', 10.0'-10.6', 11.5'-12.5', HIGHLY FRACTURED TO MODERATELY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, DISINTIGRATED TO BLOCKY/DISTURBED/SEAMY, POOR SURFACE CONDITION; RQD 26%, REC 95%. | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | |
| | | 9 | | | | | | | | | | | | | | | |
| | | 10 | | | | | | | | | | | | | | | |
| | | 11 | 26 | | 95 | NQ2-1 | | | | | | | | | | | CORE |
| | 646.7 | 12 | | | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: POURED 1 BAG HOLE PLUG; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:24 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>179+91.55' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-007-4-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>669.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE |
| START: <u>5/2/24</u> END: <u>5/2/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444573, -82.440641</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | HOLE SEALED | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|------|----|----|-----------|----|----|--------------------|----------------|------------|----------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | |
| VERY STIFF, ORANGISH BROWN, SANDY SILT , LITTLE CLAY, TRACE GRAVEL, DAMP | 669.0 | 1 | | | | | | | | | | | | | | | < < < < < | | |
| | | 2 | | | | | | | | | | | | | | | > > > > > | | |
| | | 3 | 2 | 3 | 9 | 61 | SS-1 | 3.50 | - | - | - | - | - | - | - | 13 | A-4a (V) | < < < < < | |
| | | 4 | | 4 | | | | | | | | | | | | | | > > > > > | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 664.5 | 5 | 3 | 5 | 20 | 100 | SS-2 | 4.50 | 1 | 1 | 5 | 33 | 60 | 44 | 22 | 22 | 19 | A-7-6 (14) | |
| | | 6 | | 10 | | | | | | | | | | | | | | | |
| | | 7 | 7 | 10 | 31 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) | |
| | | 8 | | 13 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , TRACE STONE FRAGMENTS, TRACE SAND, RESIDUAL ROCK, DAMP | 659.5 | 9 | 10 | 18 | 41 | 100 | SS-4 | 4.50 | 9 | 1 | 2 | 38 | 50 | 39 | 21 | 18 | 11 | A-6b (11) | |
| | | 10 | | 13 | | | | | | | | | | | | | | | |
| | | 11 | 10 | 25 | 50 | 3" | - | 93 | SS-5 | 4.50 | - | - | - | - | - | - | - | 7 | A-6b (V) |
| | | 12 | | | | | | | | | | | | | | | | | |
| SHALE , GRAY BECOMING BROWN AND GRAY, SEVERELY WEATHERED, VERY WEAK, BEDDING DISCONTINUITIES: LOW ANGLE, FRACTURED, OPEN, SLIGHTLY ROUGH, DISINTIGRATED, POOR SURFACE CONDITION; RQD 0%, REC 24%. | 655.5 | 13 | 50 | 4" | - | 100 | SS-6 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | |
| | | 14 | | | | | | | | | | | | | | | | | |
| | | 15 | 50 | | | | | | | | | | | | | | | | |
| | | 16 | | | | | | | | | | | | | | | | | |
| MATERIAL DEGRADED DURING CORING CONTAINS A 2.5" SILTSTONE LAYER AT UNKNOWN DEPTH WITHIN CORE RUN | 645.0 | 17 | 50 | | | 100 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | |
| | | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 50 | 2" | - | 50 | SS-8 | - | - | - | - | - | - | - | - | - | 4 | Rock (V) | |
| | | 20 | | | | | | | | | | | | | | | | | |
| CORE | 645.0 | 21 | 0 | | | 24 | NQ2-1 | | | | | | | | | | | | |
| | | 22 | | | | | | | | | | | | | | | | | |
| | | 23 | 50 | | | | | | | | | | | | | | | | |
| | | 24 | 50 | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:24 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>181+87.103' RT.</u> | EXPLORATION ID: <u>B-007-5-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>645.2 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.444725, -82.439943</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|------|----|----|----|-----------|----|----|--------------------|--------------|----|------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | |
| STIFF TO VERY STIFF, MAROONISH BROWN, CLAY , SOME SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, MOIST TO DAMP | 645.2 | | 1 | | | | | | | | | | | | | | | | |
| | | | 2 | 4 | 44 | SS-1 | 1.50 | 6 | 4 | 9 | 25 | 56 | 65 | 26 | 39 | 27 | A-7-6 (20) | | |
| | | | 3 | | | | | | | | | | | | | | | | |
| | | | 4 | 6 | 19 | 50 | SS-2 | 3.75 | - | - | - | - | - | - | - | 21 | A-7-6 (V) | | |
| | | | 5 | | | | | | | | | | | | | | | | |
| | | | 6 | 7 | 25 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | 18 | A-7-6 (V) | | |
| | | 637.2 | 7 | 10 | 9 | | | | | | | | | | | | | | |
| VERY STIFF, YELLOWISH BROWN AND BROWN, CLAY , "AND" SILT, TRACE SAND, TRACE GRAVEL, DAMP | 637.2 | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 6 | 10 | 7 | 23 | 100 | SS-4 | 3.50 | 1 | 1 | 4 | 48 | 46 | 48 | 28 | 20 | 20 | A-7-6 (14) |
| | 634.7 | 10 | | | | | | | | | | | | | | | | | |
| VERY DENSE, BROWN, STONE FRAGMENTS WITH SAND , TRACE SILT, TRACE CLAY, RESIDUAL ROCK, DAMP | 632.7 | 11 | | | | | | | | | | | | | | | | | |
| | 632.7 | 12 | 8 | 15 | 24 | 52 | 28 | SS-5 | - | 55 | 17 | 8 | 10 | 10 | NP | NP | NP | 5 | A-1-b (0) |
| SHALE , GRAY AND YELLOWISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 9 | 19 | 26 | 60 | 33 | SS-6 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) |
| | | 15 | | | | | | | | | | | | | | | | | |
| | | 16 | 6 | 23 | 32 | 73 | 28 | SS-7 | - | - | - | - | - | - | - | - | - | 8 | Rock (V) |
| | 627.2 | 17 | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND YELLOWISH BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 17 | 50 | | - | 33 | SS-8 | - | - | - | - | - | - | - | - | - | 5 | Rock (V) |
| | | 20 | | | | | | | | | | | | | | | | | |
| | | 21 | 38 | 50/4" | | - | 30 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | 22 | | | | | | | | | | | | | | | | | |
| | 621.2 | 23 | | | | | | | | | | | | | | | | | |
| | | 24 | 50 | | | - | 50 | SS-10 | - | - | - | - | - | - | - | - | - | 7 | Rock (V) |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - IUS0247.PPFSS01SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE WA

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|---|---|---------------------------------|--|-----------------------------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>185+93.85' RT.</u> | EXPLORATION ID: <u>B-009-1-23</u> |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>623.7 (MSL)</u> EOB: <u>24.5 ft.</u> | PAGE: <u>1 OF 1</u> |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.445433, -82.438781</u> | |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | |
|---|----------|-------|----------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|-----------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC |
| HARD, YELLOWISH BROWN, CLAY , SOME GRAVEL, SOME SILT, LITTLE SAND, DAMP | 623.7 | 1 | 5 | | | | | | | | | | | | | | | |
| | | 2 | 9 12 | 28 | 100 | SS-1 | 4.50 | 32 | 11 | 6 | 30 | 21 | 42 | 24 | 18 | 11 | A-7-6 (6) | |
| | | 3 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, SILT AND CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 618.2 | 4 | 7 16 12 | 37 | 100 | SS-2 | - | 20 | 14 | 18 | 30 | 18 | 34 | 20 | 14 | 15 | A-6a (4) | |
| | | 5 | | | | | | | | | | | | | | | | |
| VERY DENSE, YELLOWISH BROWN, STONE FRAGMENTS WITH SAND AND SILT , TRACE CLAY, RESIDUAL ROCK, DAMP | 613.2 | 6 | 6 16 38 | 72 | 89 | SS-3 | - | 45 | 17 | 9 | 22 | 7 | 30 | 21 | 9 | 6 | A-2-4 (0) | |
| | | 7 | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 21 22 36 | 77 | 100 | SS-4 | - | - | - | - | - | - | - | - | - | - | 7 | A-2-4 (V) |
| | | 10 | | | | | | | | | | | | | | | | |
| SHALE , GRAY AND YELLOWISH BROWN BECOMING MAROONISH BROWN, HIGHLY WEATHERED, VERY WEAK TO WEAK. | 599.2 | 11 | 50 | - | 100 | SS-5 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | |
| | | 12 | 10 50 | - | 75 | SS-6 | - | - | - | - | - | - | - | - | - | 6 | Rock (V) | |
| | | 13 | | | | | | | | | | | | | | | | |
| | | 14 | 25 50/5" | - | 45 | SS-7 | - | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 22 50/5" | - | 36 | SS-8 | - | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | 17 | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 50 | - | 83 | SS-9 | - | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | 50/5" | - | 80 | SS-10 | - | - | - | - | - | - | - | - | - | - | 6 | Rock (V) |
| 22 | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | |
| 24 | 21 50 | - | 67 | SS-11 | - | - | - | - | - | - | - | - | - | - | 8 | Rock (V) | | |

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EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>193+42.98' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-009-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>583.9 (MSL)</u> EOB: <u>24.5 ft.</u> | PAGE |
| START: <u>5/3/24</u> END: <u>5/3/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.446815, -82.436821</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | | |
|--|----------------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | |
| VERY STIFF, BROWN AND ORANGISH BROWN, CLAY , SOME TO "AND" SILT, TRACE TO LITTLE SAND, TRACE GRAVEL, IRON STAINING, MOIST TO DAMP | 583.9 | 1 | 2 | | | | | | | | | | | | | | | | |
| | | 2 | 2 | 7 | 100 | SS-1 | 3.50 | - | - | - | - | - | - | - | 26 | A-7-6 (V) | | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 2 | 6 | 17 | 100 | SS-2 | 3.00 | 1 | 4 | 9 | 35 | 51 | 51 | 24 | 27 | 21 | A-7-6 (17) | |
| | | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 4 | 5 | 17 | 100 | SS-3 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | 7 | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 4 | 6 | 20 | 100 | SS-4 | 3.25 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | 10 | | | | | | | | | | | | | | | | | |
| | | 11 | 5 | 8 | 29 | 78 | SS-5 | 3.75 | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | | | |
| | | 14 | 6 | 9 | 24 | 33 | SS-6 | 3.75 | - | - | - | - | - | - | - | - | 18 | A-7-6 (V) | |
| 15 | | | | | | | | | | | | | | | | | | | |
| VERY STIFF TO HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , "AND" SILT, LITTLE SAND, LITTLE GRAVEL AND STONE FRAGMENTS, DAMP TO MOIST | 568.4 | 16 | 5 | 9 | 27 | 100 | SS-7 | 4.50 | 13 | 8 | 5 | 38 | 36 | 42 | 24 | 18 | 15 | A-7-6 (11) | |
| | | 17 | | | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | | | |
| | | 19 | 6 | 9 | 28 | 72 | SS-8 | 3.50 | - | - | - | - | - | - | - | 25 | A-7-6 (V) | | |
| | | 20 | | | | | | | | | | | | | | | | | |
| | | 21 | 5 | 10 | 31 | 100 | SS-9 | 3.00 | - | - | - | - | - | - | - | 19 | A-7-6 (V) | | |
| 22 | | | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY, HIGHLY WEATHERED, SLIGHTLY STRONG. | 560.4 559.4 | 23 | | | | | | | | | | | | | | | | | |
| | | 24 | 27 | - | 33 | SS-10 | - | - | - | - | - | - | - | - | 4 | Rock (V) | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>212+17.118' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-014-1-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>581.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449475, -82.431502</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|-----------|--|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | | |
| HARD, MAROONISH BROWN, CLAY , "AND" SILT, LITTLE SAND, TRACE GRAVEL, CONTAINS IRON STAINING AND ROOTS, DAMP | 581.4 | 1 | 4 | | | | | | | | | | | | | | | | | |
| | | 2 | 5 | 13 | 100 | SS-1 | 4.50 | 1 | 5 | 6 | 40 | 48 | 46 | 24 | 22 | 22 | A-7-6 (14) | | | |
| HARD, YELLOWISH BROWN AND BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, DAMP | 578.4 | 3 | | | | | | | | | | | | | | | | | | |
| | | 4 | 4 | 19 | 100 | SS-2 | 4.50 | 0 | 0 | 1 | 24 | 75 | 59 | 27 | 32 | 22 | A-7-6 (20) | | | |
| | | 5 | 5 | 9 | | | | | | | | | | | | | | | | |
| | | 6 | 4 | | | | | | | | | | | | | | | | | |
| | | 7 | 7 | 24 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | - | 20 | A-7-6 (V) | | |
| | | 8 | | | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 27 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | | |
| | | 10 | 8 | 12 | | | | | | | | | | | | | | | | |
| | | 11 | 5 | | | | | | | | | | | | | | | | | |
| | | 12 | 7 | 24 | 100 | SS-5 | 4.50 | 0 | 0 | 1 | 30 | 69 | 45 | 26 | 19 | 24 | A-7-6 (13) | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | 5 | 21 | 100 | SS-6 | 4.50 | - | - | - | - | - | - | - | - | - | 22 | A-7-6 (V) | | | | |
| 15 | 7 | 9 | | | | | | | | | | | | | | | | | | |
| 16 | 6 | | | | | | | | | | | | | | | | | | | |
| 17 | 7 | 24 | 78 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | - | 23 | A-7-6 (V) | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | |
| 19 | 4 | 17 | 89 | SS-8 | 4.50 | - | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | | | | |
| 20 | 6 | 7 | | | | | | | | | | | | | | | | | | |
| 21 | 3 | | | | | | | | | | | | | | | | | | | |
| 22 | 5 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | - | 25 | A-7-6 (V) | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | |
| 24 | 8 | 36 | 100 | SS-10 | 4.25 | - | - | - | - | - | - | - | - | - | 24 | A-7-6 (V) | | | | |
| | 556.4 | EOB | 25 | 11 | 16 | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>213+75.95' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-014-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>609.0 (MSL)</u> EOB: <u>24.0 ft.</u> | PAGE |
| START: <u>5/6/24</u> END: <u>5/6/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449658, -82.431007</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | | | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|------------|----------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC | | |
| STIFF, BROWN AND MAROONISH BROWN, SILTY CLAY , SOME SAND, LITTLE STONE FRAGMENTS, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 609.0 | 1 | 8 | | | | | | | | | | | | | | | | | |
| | | 2 | 6 | 4 | 13 | 83 | SS-1 | - | 16 | 11 | 23 | 24 | 26 | 36 | 20 | 16 | 14 | A-6b (5) | | |
| | | 3 | | | | | | | | | | | | | | | | | | |
| HARD, BROWN AND MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 606.0 | 4 | 3 | | | | | | | | | | | | | | | | | |
| | | 5 | 3 | 7 | 13 | 100 | SS-2 | 4.50 | 7 | 11 | 6 | 29 | 47 | 50 | 26 | 24 | 18 | A-7-6 (16) | | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME SAND, TRACE GRAVEL, DAMP | 603.5 | 6 | 9 | | | | | | | | | | | | | | | | | |
| | | 7 | 16 | 21 | 49 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 9 | A-6a (V) | | |
| SS-4 CONTAINS GYPSUM | 590.5 | 8 | | | | | | | | | | | | | | | | | | |
| 9 | | 9 | 25 | 31 | 75 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 15 | A-6a (V) | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| SS-5 CONTAINS GYPSUM | 590.5 | 11 | 13 | | | | | | | | | | | | | | | | | |
| 12 | | 19 | 22 | 55 | 100 | SS-5 | 4.50 | 2 | 12 | 19 | 36 | 31 | 40 | 25 | 15 | 15 | A-6a (8) | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| SILTSTONE , GRAY AND BROWN, MODERATELY WEATHERED, SLIGHTLY STRONG. | 590.5 | 14 | 11 | | | | | | | | | | | | | | | | | |
| | | 15 | 28 | 39 | 89 | 89 | SS-6 | 4.50 | - | - | - | - | - | - | - | - | 18 | A-6a (V) | | |
| | | 16 | | | | | | | | | | | | | | | | | | |
| TR | 590.5 | 17 | 9 | | | | | | | | | | | | | | | | | |
| | | 18 | 31 | 40 | 95 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 15 | A-6a (V) | | |
| | | 19 | 12 | 29 | 42 | 95 | 33 | SS-8 | - | - | - | - | - | - | - | - | 8 | Rock (V) | | |
| EOB | 585.0 | 20 | | | | | | | | | | | | | | | | | | |
| | | 21 | 10 | 35 | 44 | 105 | 39 | SS-9 | - | - | - | - | - | - | - | - | 5 | Rock (V) | | |
| | | 22 | | | | | | | | | | | | | | | | | | |
| | | 23 | | | | | | | | | | | | | | | | | | |
| | | 24 | 50 | | | | | | | | | | | | | | | 7 | Rock (V) | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>216+38, 86' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-014-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA / NQ2</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>628.0 (MSL)</u> EOB: <u>15.5 ft.</u> | PAGE |
| START: <u>5/4/24</u> END: <u>5/4/24</u> | SAMPLING METHOD: <u>SPT / NQ2</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449877, -82.430131</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | HOLE SEALED | |
|--|-------|-------|---------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----------|--------------------|----------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| HARD, MAROONISH BROWN AND YELLOWISH BROWN, CLAY , SOME SILT, TRACE SAND, TRACE GRAVEL, IRON STAINING, DAMP | 628.0 | 1 | 3 | | | | | | | | | | | | | | | <L> >L> | |
| | | 2 | 3 5 | 11 | 100 | SS-1 | 4.25 | 1 | 0 | 1 | 23 | 75 | 53 | 24 | 29 | 18 | A-7-6 (18) | <L> >L> | |
| HARD, REDDISH BROWN AND YELLOWISH BROWN BECOMING ORANGISH BROWN, CLAY , SOME TO "AND" SILT, LITTLE TO SOME SAND, TRACE GRAVEL AND STONE FRAGMENTS, IRON STAINING, RESIDUAL ROCK, DAMP | 625.0 | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 8 13 20 | 44 | 100 | SS-2 | 4.50 | 2 | 7 | 8 | 38 | 45 | 41 | 20 | 21 | 9 | A-7-6 (13) | | |
| | | 5 | | | | | | | | | | | | | | | | | |
| | | 6 | 6 11 13 | 32 | 33 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | - | 11 | A-7-6 (V) | |
| SILTSTONE, GRAY AND BROWN, SLIGHTLY TO MODERATELY WEATHERED, SLIGHTLY STRONG TO MODERATELY STRONG, VERY THIN TO MEDIUM BEDDED, BEDDING DISCONTINUITIES: LOW ANGLE, PARTIALLY CLAY FILLED HIGH ANGLE JOINT DISCONTINUITIES FROM 12.3'-12.9' AND 14.7'-15.2', HIGHLY FRACTURED TO SLIGHTLY FRACTURED, OPEN TO NARROW, SLIGHTLY ROUGH, BLOCKY, GOOD TO FAIR SURFACE CONDITION; RQD 80%, REC 100%. | 618.0 | 7 | | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| | | 9 | 8 12 16 | 37 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 11 | A-7-6 (V) | | |
| EOB | 612.5 | 10 | 50 | - | 83 | SS-5 | - | - | - | - | - | - | - | - | 5 | Rock (V) | | | |
| | | 11 | | | | | | | | | | | | | | | | | |
| | | 12 | | | | | | | | | | | | | | | | | |
| | | 13 | 80 | | 100 | NQ2-1 | | | | | | | | | | | CORE | | |
| | | 14 | | | | | | | | | | | | | | | | | |
| | | 15 | | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PUMPED 50 GAL. BENTONITE GROUT; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>396+04.102' RT</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-076-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>587.7 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448656, -82.373197</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL |
|---|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 587.7 | | | | | | | | | | | | | | | | | |
| HARD, BROWN, SANDY SILT , SOME STONE FRAGMENTS, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.1 | 1 | 7 | | | | | | | | | | | | | | | |
| | 584.7 | 2 | 18 11 | 39 | 100 | SS-1 | - | 26 | 19 | 13 | 28 | 14 | 30 | 20 | 10 | 7 | A-4a (1) | |
| HARD, MAROONISH BROWN BECOMING DARK BROWN, CLAY , SOME SILT, LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 5 6 | 15 | 89 | SS-2 | 4.50 | 15 | 7 | 12 | 30 | 36 | 44 | 24 | 20 | 20 | A-7-6 (11) | |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 7 | | | | | | | | | | | | | | | |
| | | 7 | 7 8 | 20 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 6 5 | 15 | 72 | SS-4 | 4.50 | 7 | 9 | 15 | 31 | 38 | 42 | 23 | 19 | 19 | A-7-6 (11) | |
| | | 10 | | | | | | | | | | | | | | | | |
| | | 11 | 3 | | | | | | | | | | | | | | | |
| | | 12 | 5 5 | 13 | 100 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) | |
| | 574.7 | 13 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN BECOMING MAROONISH BROWN, GRAVEL WITH SAND , TRACE SILT, TRACE CLAY, DAMP | | 14 | 4 5 6 | 15 | 28 | SS-6 | - | 32 | 32 | 26 | 5 | 5 | NP | NP | NP | 6 | A-1-b (0) | |
| | | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 3 | | | | | | | | | | | | | | | |
| | | 17 | 7 8 | 20 | 33 | SS-7 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 5 | 16 | 44 | SS-8 | - | - | - | - | - | - | - | - | - | 5 | A-1-b (V) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | 4 | | | | | | | | | | | | | | | |
| | | 22 | 6 9 | 20 | 100 | SS-9 | - | - | - | - | - | - | - | - | - | 7 | A-1-b (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 4 7 | 21 | 83 | SS-10 | - | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| | 562.7 | 25 | 9 | | | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

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|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>398+01, 110' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-076-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>589.9 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/29/24</u> END: <u>5/29/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.448837, -82.372539</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | |
|---|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|-----------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC |
| 12.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 589.9 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND GRAY, SILTY CLAY , LITTLE TO SOME SAND, LITTLE STONE FRAGMENTS, DAMP | 588.4 | 1 | 4 | | | | | | | | | | | | | | | |
| | | 2 | 3 | 7 | 13 | 67 | SS-1 | 4.25 | 12 | 15 | 11 | 31 | 31 | 36 | 20 | 16 | 12 | A-6b (8) |
| | | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 7 | 10 | 23 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) |
| HARD, BROWN, SILT AND CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE STONE FRAGMENTS, DAMP | 584.4 | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 6 | 9 | 23 | 100 | SS-3 | 4.50 | 16 | 12 | 13 | 31 | 28 | 34 | 20 | 14 | 13 | A-6a (6) |
| | | 7 | | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | 8 | 19 | 100 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-6a (V) |
| | | 10 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , TRACE CLAY, TRACE SILT, IRON STAINING, DAMP | 577.4 | 11 | 6 | 6 | 15 | 78 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 18 | A-6a (V) |
| | | 12 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, COARSE AND FINE SAND , TRACE CLAY, TRACE SILT, TRACE GRAVEL, IRON STAINING, DAMP | 574.4 | 13 | 5 | 8 | 19 | 100 | SS-6 | - | 22 | 29 | 30 | 9 | 10 | NP | NP | NP | 8 | A-1-b (0) |
| | | 14 | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, ORANGISH BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, IRON STAINING, DAMP | 571.9 | 15 | | | | | | | | | | | | | | | | |
| | | 16 | 4 | 8 | 21 | 39 | SS-7 | - | 4 | 23 | 59 | 5 | 9 | NP | NP | NP | 7 | A-3a (0) |
| | 564.9 | 17 | | | | | | | | | | | | | | | | |
| | | 18 | 4 | 5 | 15 | 50 | SS-8 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) |
| | | 19 | | | | | | | | | | | | | | | | |
| | | 20 | 2 | 6 | 16 | 44 | SS-9 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) |
| | | 21 | | | | | | | | | | | | | | | | |
| | | 22 | 4 | 7 | 21 | 100 | SS-10 | - | - | - | - | - | - | - | - | 5 | A-1-b (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | | | | | | | | | | | | | | | | |
| | | 25 | | | | | | | | | | | | | | | | |

EOB

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - IUS0247.PPFSS011SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>399+99.108' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-077-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>592.6 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449043, -82.371899</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|----------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | WC |
| 12.0" ASPHALT AND 5.5" BASE (DRILLERS DESCRIPTION) | 592.6 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 591.1 | 1 | 4 | | | | | | | | | | | | | | | |
| VERY STIFF, BROWN AND GRAY, SANDY SILT , "AND" GRAVEL, LITTLE CLAY, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 589.6 | 2 | 5 | 13 | 72 | SS-1 | 4.50 | 7 | 9 | 8 | 34 | 42 | 44 | 21 | 23 | 15 | A-7-6 (14) | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 587.1 | 3 | | | | | | | | | | | | | | | | |
| | | 4 | 5 | 12 | 24 | 94 | SS-2 | - | 35 | 9 | 8 | 33 | 15 | 30 | 20 | 10 | 8 | A-4a (3) |
| | | 5 | | | | | | | | | | | | | | | | |
| | | 6 | 4 | | | | | | | | | | | | | | | |
| | | 7 | 8 | 23 | 100 | SS-3 | 4.50 | 18 | 13 | 10 | 31 | 28 | 38 | 21 | 17 | 13 | A-6b (8) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | | | | | | | | | | | | | | | |
| | | 10 | 5 | 16 | 89 | SS-4 | 4.25 | - | - | - | - | - | - | - | - | 13 | A-6b (V) | |
| | | 11 | | | | | | | | | | | | | | | | |
| | | 12 | 4 | | | | | | | | | | | | | | | |
| | | 13 | 5 | 19 | 39 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-7-6 (V) | |
| | | 14 | | | | | | | | | | | | | | | | |
| | | 15 | 5 | 17 | 72 | SS-6 | 4.25 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) | |
| | | 16 | | | | | | | | | | | | | | | | |
| | | 17 | 5 | 17 | 100 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| | | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 | 16 | 78 | SS-8 | - | 14 | 27 | 53 | 5 | 1 | NP | NP | NP | 3 | A-3 (0) | |
| | | 20 | | | | | | | | | | | | | | | | |
| | | 21 | 6 | | | | | | | | | | | | | | | |
| | | 22 | 6 | 15 | 33 | SS-9 | - | - | - | - | - | - | - | - | - | 3 | A-3 (V) | |
| | | 23 | | | | | | | | | | | | | | | | |
| | | 24 | 2 | | | | | | | | | | | | | | | |
| | | 25 | 5 | 21 | 89 | SS-10 | - | - | - | - | - | - | - | - | - | 4 | A-3 (V) | |
| | 567.6 | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>402+00.112' RT</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-077-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>588.8 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449237, -82.371242</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | WC | ODOT CLASS (GI) | BACK FILL |
|---|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | | |
| 13.0" ASPHALT AND 5.0" BASE (DRILLERS DESCRIPTION) | 588.8 | | | | | | | | | | | | | | | | | |
| MEDIUM DENSE, MAROONISH BROWN AND BROWN, SANDY SILT , "AND" STONE FRAGMENTS, LITTLE CLAY, DAMP | 587.3 | 1 | 6 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN BECOMING BROWN, SILTY CLAY , SOME SAND, LITTLE TO SOME GRAVEL, DAMP | 585.8 | 2 | 4 | 21 | 22 | SS-1 | - | 47 | 7 | 9 | 21 | 16 | NP | NP | NP | 10 | A-4a (0) | |
| | | 3 | 12 | | | | | | | | | | | | | | | |
| | | 4 | 6 | | | | | | | | | | | | | | | |
| | | 5 | 5 | 20 | 100 | SS-2 | 4.50 | 21 | 12 | 10 | 32 | 25 | 38 | 22 | 16 | 13 | A-6b (7) | |
| | | 6 | 6 | | | | | | | | | | | | | | | |
| | | 7 | 8 | 25 | 17 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 8 | | | | | | | | | | | | | | | | |
| | | 9 | 5 | | | | | | | | | | | | | | | |
| | | 10 | 6 | 16 | 100 | SS-4 | 4.50 | 17 | 12 | 12 | 34 | 25 | 36 | 20 | 16 | 12 | A-6b (7) | |
| | | 11 | 6 | | | | | | | | | | | | | | | |
| | | 12 | 5 | 16 | 33 | SS-5 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6b (V) | |
| | | 13 | 7 | | | | | | | | | | | | | | | |
| | | 14 | 5 | | | | | | | | | | | | | | | |
| | | 15 | 4 | 16 | 44 | SS-6 | 4.25 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | |
| MEDIUM DENSE, BROWN, STONE FRAGMENTS WITH SAND , LITTLE SILT, TRACE CLAY, DAMP | 573.3 | 16 | 6 | | | | | | | | | | | | | | | |
| | | 17 | 7 | 20 | 44 | SS-7 | - | - | - | - | - | - | - | - | - | 10 | A-1-b (V) | |
| HARD, DARK BROWN, SILTY CLAY , "AND" SAND, TRACE GRAVEL, DAMP | 570.8 | 18 | | | | | | | | | | | | | | | | |
| | | 19 | 5 | | | | | | | | | | | | | | | |
| | | 20 | 6 | 17 | 100 | SS-8 | 4.50 | 4 | 13 | 28 | 28 | 27 | 34 | 18 | 16 | 15 | A-6b (6) | |
| | | 21 | 7 | | | | | | | | | | | | | | | |
| | | 22 | 4 | | | | | | | | | | | | | | | |
| | | 23 | 5 | 17 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 10 | A-6b (V) | |
| MEDIUM DENSE, BROWN, GRAVEL WITH SAND , LITTLE SILT, TRACE CLAY, DAMP | 565.8 | 24 | | | | | | | | | | | | | | | | |
| | | 25 | 5 | 19 | 100 | SS-10 | - | - | - | - | - | - | - | - | - | 6 | A-1-b (V) | |
| | 563.8 | EOB | | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LAW75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>404+03, 102' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-078-2-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>595.3 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449462, -82.370599</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTH | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | | ODOT CLASS (GI) | BACK FILL | |
|--|-------|-------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|----|--------------------|--------------|--|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | WC | | | |
| 12.5" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 593.8 | 1 | 3 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, SILTY CLAY , LITTLE TO SOME SAND, TRACE TO LITTLE GRAVEL, DAMP | 593.8 | 2 | 5 | 15 | 100 | SS-1 | 4.25 | 19 | 9 | 9 | 35 | 28 | 38 | 21 | 17 | 13 | A-6b (8) | | |
| | | 3 | | | | | | | | | | | | | | | | | |
| | | 4 | 6 | 17 | 100 | SS-2 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-6b (V) | | |
| | | 5 | 7 | 6 | | | | | | | | | | | | | | | |
| HARD, BROWN AND GRAY, SILT AND CLAY , SOME GRAVEL AND STONE FRAGMENTS, LITTLE SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 584.8 | 6 | 4 | 16 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| | | 7 | 5 | 7 | | | | | | | | | | | | | | | |
| | | 8 | | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 582.3 | 9 | 5 | 28 | 50 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 16 | A-6b (V) | | |
| | | 10 | 9 | 12 | | | | | | | | | | | | | | | |
| | | 11 | 7 | 16 | 37 | 100 | SS-5 | - | 31 | 10 | 9 | 30 | 20 | 34 | 20 | 14 | 10 | A-6a (4) | |
| HARD, MAROONISH BROWN AND BROWN, SILTY CLAY , LITTLE SAND, TRACE GRAVEL, DAMP | 574.8 | 12 | 6 | 23 | 28 | SS-6 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-6b (V) | | |
| | | 13 | 7 | 10 | | | | | | | | | | | | | | | |
| | | 14 | 6 | 17 | 44 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-6b (V) | | |
| | | 15 | 7 | 7 | | | | | | | | | | | | | | | |
| | | 16 | 6 | 17 | 22 | SS-8 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-6b (V) | | |
| MEDIUM DENSE, BROWN, GRAVEL AND STONE FRAGMENTS WITH SAND AND SILT , LITTLE CLAY, DAMP | 572.3 | 17 | 6 | 12 | 28 | SS-9 | - | - | - | - | - | - | - | - | - | 12 | A-2-4 (V) | | |
| | | 18 | 4 | 5 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , "AND" SAND, LITTLE GRAVEL, DAMP | 570.3 | 19 | 4 | 16 | 100 | SS-10 | 4.50 | 13 | 15 | 25 | 26 | 21 | 30 | 17 | 13 | 13 | A-6a (3) | | |
| | | 20 | 6 | 6 | | | | | | | | | | | | | | | |
| | | EOB | | 25 | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

STANDARD ODOT SOIL BORING LOG (8.5 X 11) - OH DOT GDT - 7/15/24 13:25 - \\US0247.PPFSS01\SHARED_PROJECTS\173608714\LA\75923\GEO\TECHNICAL\REPORTS\ROADWAY\NOISE_WA

| | | | | |
|---|---|---------------------------------|--|----------------|
| PROJECT: <u>LAW-7-2.17</u> | DRILLING FIRM / OPERATOR: <u>NEAS / J. HODGES</u> | DRILL RIG: <u>CME 55X</u> | STATION / OFFSET: <u>406+02, 93' RT.</u> | EXPLORATION ID |
| TYPE: <u>NOISE WALL</u> | SAMPLING FIRM / LOGGER: <u>NEAS / J. HODGES</u> | HAMMER: <u>CME AUTOMATIC</u> | ALIGNMENT: <u>LAW-7</u> | B-078-3-23 |
| PID: <u>75923</u> SFN: <u>N/A</u> | DRILLING METHOD: <u>3.25" HSA</u> | CALIBRATION DATE: <u>3/8/24</u> | ELEVATION: <u>602.4 (MSL)</u> EOB: <u>25.0 ft.</u> | PAGE |
| START: <u>5/30/24</u> END: <u>5/30/24</u> | SAMPLING METHOD: <u>SPT</u> | ENERGY RATIO (%): <u>80</u> | LAT / LONG: <u>38.449677, -82.369965</u> | 1 OF 1 |

| MATERIAL DESCRIPTION AND NOTES | ELEV. | DEPTHS | SPT/ RQD | N ₆₀ | REC (%) | SAMPLE ID | HP (tsf) | GRADATION (%) | | | | | ATTERBERG | | | ODOT CLASS (GI) | BACK FILL |
|--|-------|--------|-------------|-----------------|------------|--------------|-------------|---------------|----|----|----|----|-----------|----|----|--------------------|--------------|
| | | | | | | | | GR | CS | FS | SI | CL | LL | PL | PI | | |
| 13.0" ASPHALT AND 6.0" BASE (DRILLERS DESCRIPTION) | 602.4 | | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, LITTLE GRAVEL, DAMP | 600.8 | 1 | 5 | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN AND BROWN, SILT AND CLAY , LITTLE TO SOME GRAVEL, SOME SAND, DAMP | 599.4 | 2 | 2 | 8 | 33 | SS-1 | 4.50 | 13 | 8 | 10 | 32 | 37 | 41 | 20 | 21 | 16 | A-7-6 (11) |
| | | 3 | | | | | | | | | | | | | | | |
| | | 4 | 3 | | | | | | | | | | | | | | |
| | | 5 | 4 | 11 | 89 | SS-2 | 4.50 | 33 | 15 | 10 | 27 | 15 | 34 | 21 | 13 | 10 | A-6a (2) |
| | | 6 | | | | | | | | | | | | | | | |
| | | 7 | 5 | 23 | 100 | SS-3 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-6a (V) |
| | 594.4 | 8 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE GRAVEL, DAMP | 591.9 | 9 | 6 | 21 | 28 | SS-4 | 4.50 | - | - | - | - | - | - | - | - | 13 | A-7-6 (V) |
| | | 10 | | | | | | | | | | | | | | | |
| VERY STIFF, BROWN, SILT AND CLAY , SOME STONE FRAGMENTS, SOME SAND, CONTAINS NO INTACT SOIL FOR HP READINGS, DAMP | 586.9 | 11 | 5 | 27 | 94 | SS-5 | - | 33 | 16 | 10 | 23 | 18 | 36 | 22 | 14 | 10 | A-6a (2) |
| | | 12 | 12 | 8 | | | | | | | | | | | | | |
| | | 13 | | | | | | | | | | | | | | | |
| | | 14 | 6 | 20 | 22 | SS-6 | - | - | - | - | - | - | - | - | - | 9 | A-6a (V) |
| | 586.9 | 15 | | | | | | | | | | | | | | | |
| HARD, MAROONISH BROWN, CLAY , SOME SILT, LITTLE SAND, TRACE TO LITTLE GRAVEL, DAMP | | 16 | 4 | 15 | 17 | SS-7 | 4.50 | - | - | - | - | - | - | - | - | 14 | A-7-6 (V) |
| | | 17 | | | | | | | | | | | | | | | |
| | | 18 | | | | | | | | | | | | | | | |
| | | 19 | 5 | 21 | 100 | SS-8 | 4.50 | 11 | 12 | 7 | 33 | 37 | 41 | 21 | 20 | 13 | A-7-6 (11) |
| | | 20 | | | | | | | | | | | | | | | |
| | | 21 | | | | | | | | | | | | | | | |
| | | 22 | 6 | 31 | 100 | SS-9 | 4.50 | - | - | - | - | - | - | - | - | 12 | A-7-6 (V) |
| | | 23 | | | | | | | | | | | | | | | |
| | | 24 | 6 | 35 | 100 | SS-10 | 4.50 | - | - | - | - | - | - | - | - | 17 | A-7-6 (V) |
| | 577.4 | 25 | 10 | 16 | | | | | | | | | | | | | |
| | | EOB | | | | | | | | | | | | | | | |

NOTES: GROUNDWATER NOT ENCOUNTERED DURING DRILLING. HOLE DID NOT CAVE.
 ABANDONMENT METHODS, MATERIALS, QUANTITIES: PLACED 0.5 BAG ASPHALT PATCH; SHOVELED SOIL CUTTINGS

For future projects, create separate noise wall design workbook for each section (in this case one for Barrier B1 and another one for Barrier B2). For this project, using single noise wall design workbook will not affect the design since the two sections do not overlap. However, if there is an overlap then this will affect the design. Also, it is easier for the reviewer to review separate noise wall design workbook for each section.

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

Noise Wall Design

Use the current noise wall spreadsheet version V.2024.01, dated 3/26/2024. The required minimum drilled shaft lengths were calculated through ODOT Research Project FHWA/OH-2022-19, "Division of Engineering Services Research On Call Agreement #34652 Task #6 Noise Barrier Foundation Design", dated July 2022. The spreadsheet was later updated August 2023 to include this change.

**LAW-7-2.17
75923**

Noise Wall Along SR-7

Barrier B

Stantec Consulting

Prepared By: James Samples
Date prepared: Wednesday, July 17, 2024

Checked By: Eric Kistner
Date Checked: Thursday, July 18, 2024

No. of Borings: 17

ge to use the
osed noise wall
line stations. Do
for all borings.

Noise Wall: Barrier B

LAW-7-2.17
PID: 75923

Design Data Sheet

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 156+35.00 | 1 | 14.00 | 24.00 | 574.82 |
| 156+59.00 | 2 | 14.00 | 24.00 | 574.82 |
| 156+83.00 | 3 | 14.00 | 24.00 | 574.82 |
| 157+07.00 | 4 | 14.00 | 24.00 | 574.82 |
| 157+31.00 | 5 | 14.00 | 24.00 | 575.82 |
| 157+55.00 | 6 | 14.00 | 24.00 | 575.82 |
| 157+79.00 | 7 | 14.00 | 24.00 | 575.82 |
| 158+03.00 | 8 | 14.00 | 24.00 | 576.82 |
| 158+27.00 | 9 | 14.00 | 24.00 | 576.82 |
| 158+51.00 | 10 | 14.00 | 24.00 | 576.82 |
| 158+75.00 | 11 | 14.00 | 24.00 | 577.82 |
| 158+99.00 | 12 | 14.00 | 24.00 | 577.82 |
| 159+23.00 | 13 | 14.00 | 24.00 | 577.82 |
| 159+47.00 | 14 | 14.00 | 24.00 | 577.82 |
| 159+71.00 | 15 | 14.00 | 24.00 | 578.82 |
| 159+95.00 | 16 | 14.00 | 24.00 | 578.82 |
| 160+19.00 | 17 | 14.00 | 24.00 | 578.82 |
| 160+43.00 | 18 | 14.00 | 24.00 | 579.82 |
| 160+67.00 | 19 | 14.00 | 24.00 | 579.82 |
| 160+91.00 | 20 | 14.00 | 24.00 | 580.82 |
| 161+15.00 | 21 | 14.00 | 24.00 | 580.82 |
| 161+39.00 | 22 | 14.00 | 24.00 | 581.82 |
| 161+63.00 | 23 | 14.00 | 24.00 | 581.82 |
| 161+87.00 | 24 | 14.00 | 24.00 | 582.82 |
| 162+11.00 | 25 | 14.00 | 24.00 | 582.82 |
| 162+35.00 | 26 | 14.00 | 24.00 | 583.82 |
| 162+59.00 | 27 | 14.00 | 24.00 | 584.82 |
| 162+83.00 | 28 | 14.00 | 24.00 | 585.62 |
| 163+07.00 | 29 | 14.00 | 24.00 | 586.62 |
| 163+31.00 | 30 | 14.00 | 24.00 | 587.22 |
| 163+55.00 | 31 | 14.00 | 24.00 | 588.12 |
| 163+79.00 | 32 | 14.00 | 24.00 | 588.92 |
| 164+03.00 | 33 | 14.00 | 24.00 | 589.92 |
| 164+27.00 | 34 | 14.00 | 24.00 | 590.82 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 164+51.00 | 35 | 14.00 | 24.00 | 591.82 |
| 164+75.00 | 36 | 14.00 | 24.00 | 592.92 |
| 164+99.00 | 37 | 14.00 | 24.00 | 594.02 |
| 165+23.00 | 38 | 14.00 | 24.00 | 595.12 |
| 165+47.00 | 39 | 14.00 | 24.00 | 596.22 |
| 165+71.00 | 40 | 14.00 | 24.00 | 597.42 |
| 165+95.00 | 41 | 14.00 | 24.00 | 598.72 |
| 166+19.00 | 42 | 14.00 | 24.00 | 599.92 |
| 166+43.00 | 43 | 14.00 | 24.00 | 601.32 |
| 166+67.00 | 44 | 14.00 | 24.00 | 602.68 |
| 166+91.00 | 45 | 14.00 | 24.00 | 604.08 |
| 167+15.00 | 46 | 14.00 | 24.00 | 605.50 |
| 167+39.00 | 47 | 14.00 | 24.00 | 606.93 |
| 167+63.00 | 48 | 14.00 | 24.00 | 608.37 |
| 167+87.00 | 49 | 14.00 | 24.00 | 609.81 |
| 168+11.00 | 50 | 14.00 | 24.00 | 611.25 |
| 168+35.00 | 51 | 14.00 | 24.00 | 612.69 |
| 168+59.00 | 52 | 14.00 | 24.00 | 614.13 |
| 168+83.00 | 53 | 14.00 | 24.00 | 615.57 |
| 169+07.00 | 54 | 14.00 | 24.00 | 617.01 |
| 169+31.00 | 55 | 14.00 | 24.00 | 618.45 |
| 169+55.00 | 56 | 14.00 | 24.00 | 619.89 |
| 169+79.00 | 57 | 14.00 | 24.00 | 621.28 |
| 170+03.00 | 58 | 14.00 | 24.00 | 622.50 |
| 170+27.00 | 59 | 14.00 | 24.00 | 623.95 |
| 170+39.00 | 60 | 14.00 | 12.00 | 624.91 |
| 170+63.00 | 61 | 14.00 | 24.00 | 625.89 |
| 170+75.00 | 62 | 14.00 | 12.00 | 626.86 |
| 170+99.00 | 63 | 14.00 | 24.00 | 628.30 |
| 171+23.00 | 64 | 14.00 | 24.00 | 629.74 |
| 171+47.00 | 65 | 14.00 | 24.00 | 631.17 |
| 171+71.00 | 66 | 14.00 | 24.00 | 632.59 |
| 171+95.00 | 67 | 14.00 | 24.00 | 633.95 |
| 172+19.00 | 68 | 14.00 | 24.00 | 635.30 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 172+43.00 | 69 | 14.00 | 24.00 | 636.58 |
| 172+67.00 | 70 | 14.00 | 24.00 | 637.85 |
| 172+91.00 | 71 | 14.00 | 24.00 | 639.07 |
| 173+15.00 | 72 | 14.00 | 24.00 | 640.26 |
| 173+39.00 | 73 | 14.00 | 24.00 | 641.26 |
| 173+63.00 | 74 | 14.00 | 24.00 | 642.26 |
| 173+87.00 | 75 | 14.00 | 24.00 | 643.26 |
| 174+11.00 | 76 | 14.00 | 24.00 | 644.26 |
| 174+35.00 | 77 | 14.00 | 24.00 | 645.26 |
| 174+59.00 | 78 | 14.00 | 24.00 | 646.26 |
| 174+83.00 | 79 | 14.00 | 24.00 | 647.26 |
| 175+07.00 | 80 | 14.00 | 24.00 | 648.26 |
| 175+31.00 | 81 | 14.00 | 24.00 | 649.46 |
| 175+55.00 | 82 | 14.00 | 24.00 | 650.66 |
| 175+79.00 | 83 | 14.00 | 24.00 | 651.71 |
| 176+03.00 | 84 | 14.00 | 24.00 | 652.56 |
| 176+27.00 | 85 | 14.00 | 24.00 | 653.56 |
| 176+51.00 | 86 | 14.00 | 24.00 | 654.36 |
| 176+75.00 | 87 | 14.00 | 24.00 | 654.36 |
| 176+99.00 | 88 | 14.00 | 24.00 | 655.36 |
| 177+23.00 | 89 | 14.00 | 24.00 | 656.36 |
| 177+47.00 | 90 | 14.00 | 24.00 | 656.36 |
| 177+71.00 | 91 | 14.00 | 24.00 | 657.36 |
| 177+95.00 | 92 | 14.00 | 24.00 | 657.36 |
| 178+19.00 | 93 | 14.00 | 24.00 | 658.36 |
| 178+43.00 | 94 | 14.00 | 24.00 | 658.36 |
| 178+67.00 | 95 | 14.00 | 24.00 | 658.36 |
| 178+91.00 | 96 | 14.00 | 24.00 | 659.36 |
| 179+15.00 | 97 | 14.00 | 24.00 | 659.36 |
| 179+39.00 | 98 | 14.00 | 24.00 | 659.36 |
| 179+63.00 | 99 | 14.00 | 24.00 | 659.36 |
| 179+87.00 | 100 | 14.00 | 24.00 | 659.36 |
| 180+11.00 | 101 | 14.00 | 24.00 | 659.36 |
| 180+35.00 | 102 | 14.00 | 24.00 | 659.36 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 180+59.00 | 103 | 14.00 | 24.00 | 659.36 |
| 180+83.00 | 104 | 14.00 | 24.00 | 659.36 |
| 181+07.00 | 105 | 14.00 | 24.00 | 659.36 |
| 181+31.00 | 106 | 14.00 | 24.00 | 659.36 |
| 181+55.00 | 107 | 14.00 | 24.00 | 659.36 |
| 181+79.00 | 108 | 14.00 | 24.00 | 659.36 |
| 182+03.00 | 109 | 14.00 | 24.00 | 659.36 |
| 182+27.00 | 110 | 14.00 | 24.00 | 658.36 |
| 182+51.00 | 111 | 14.00 | 24.00 | 658.36 |
| 182+75.00 | 112 | 14.00 | 24.00 | 658.36 |
| 182+99.00 | 113 | 14.00 | 24.00 | 657.36 |
| 183+23.00 | 114 | 14.00 | 24.00 | 657.36 |
| 183+47.00 | 115 | 14.00 | 24.00 | 656.36 |
| 183+71.00 | 116 | 14.00 | 24.00 | 656.36 |
| 183+95.00 | 117 | 14.00 | 24.00 | 655.36 |
| 184+19.00 | 118 | 14.00 | 24.00 | 655.36 |
| 184+43.00 | 119 | 14.00 | 24.00 | 654.36 |
| 184+67.00 | 120 | 14.00 | 24.00 | 653.56 |
| 184+91.00 | 121 | 14.00 | 24.00 | 652.76 |
| 185+15.00 | 122 | 14.00 | 24.00 | 652.06 |
| 185+39.00 | 123 | 14.00 | 24.00 | 651.26 |
| 185+63.00 | 124 | 14.00 | 24.00 | 650.46 |
| 185+87.00 | 125 | 14.00 | 24.00 | 649.66 |
| 186+11.00 | 126 | 14.00 | 24.00 | 648.86 |
| 186+35.00 | 127 | 14.00 | 24.00 | 647.96 |
| 186+59.00 | 128 | 14.00 | 24.00 | 646.96 |
| 186+83.00 | 129 | 14.00 | 24.00 | 645.76 |
| 187+07.00 | 130 | 14.00 | 24.00 | 644.66 |
| 187+31.00 | 131 | 14.00 | 24.00 | 643.46 |
| 187+55.00 | 132 | 14.00 | 24.00 | 642.16 |
| 187+79.00 | 133 | 14.00 | 24.00 | 640.96 |
| 188+03.00 | 134 | 14.00 | 24.00 | 639.66 |
| 188+27.00 | 135 | 14.00 | 24.00 | 638.66 |
| 188+51.00 | 136 | 14.00 | 24.00 | 636.98 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|-----------|----------|---------------------|-------------------|-----------------------------|
| 188+75.00 | 137 | 14.00 | 24.00 | 635.56 |
| 188+99.00 | 138 | 14.00 | 24.00 | 633.94 |
| 189+23.00 | 139 | 14.00 | 24.00 | 632.33 |
| 189+47.00 | 140 | 14.00 | 24.00 | 630.72 |
| 189+71.00 | 141 | 14.00 | 24.00 | 629.16 |
| 189+95.00 | 142 | 14.00 | 24.00 | 627.63 |
| 190+19.00 | 143 | 14.00 | 24.00 | 626.09 |
| 190+43.00 | 144 | 14.00 | 24.00 | 624.52 |
| 190+67.00 | 145 | 14.00 | 24.00 | 622.67 |
| 190+91.00 | 146 | 14.00 | 24.00 | 621.10 |
| 191+15.00 | 147 | 14.00 | 24.00 | 619.53 |
| 191+39.00 | 148 | 14.00 | 24.00 | 617.97 |
| 191+63.00 | 149 | 14.00 | 24.00 | 616.57 |
| 191+87.00 | 150 | 14.00 | 24.00 | 615.57 |
| 192+11.00 | 151 | 14.00 | 24.00 | 614.57 |
| 192+35.00 | 152 | 14.00 | 24.00 | 613.47 |
| 192+59.00 | 153 | 14.00 | 24.00 | 612.27 |
| 192+83.00 | 154 | 14.00 | 24.00 | 610.88 |
| 193+07.00 | 155 | 14.00 | 24.00 | 609.46 |
| 193+31.00 | 156 | 14.00 | 24.00 | 608.10 |
| 193+55.00 | 157 | 14.00 | 24.00 | 606.73 |
| 193+79.00 | 158 | 14.00 | 24.00 | 605.43 |
| 194+03.00 | 159 | 14.00 | 24.00 | 604.13 |
| 194+27.00 | 160 | 14.00 | 24.00 | 602.83 |
| 194+51.00 | 161 | 14.00 | 24.00 | 601.63 |
| 194+75.00 | 162 | 14.00 | 24.00 | 600.35 |
| 194+87.00 | 163 | 14.00 | 12.00 | 600.35 |
| 206+14.00 | 164 | 14.00 | 24.00 | 584.14 |
| 206+38.00 | 165 | 14.00 | 24.00 | 584.14 |
| 206+62.00 | 166 | 14.00 | 24.00 | 585.14 |
| 206+86.00 | 167 | 14.00 | 24.00 | 585.14 |
| 207+10.00 | 168 | 14.00 | 24.00 | 586.44 |
| 207+34.00 | 169 | 14.00 | 24.00 | 586.44 |
| 207+58.00 | 170 | 14.00 | 24.00 | 587.44 |

Big gap, end of Noise Barrier B1 and start of Barrier B2



| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 207+82.00 | 171 | 14.00 | 24.00 | 588.44 |
| 208+06.00 | 172 | 14.00 | 24.00 | 589.34 |
| 208+30.00 | 173 | 14.00 | 24.00 | 590.24 |
| 208+54.00 | 174 | 14.00 | 24.00 | 591.04 |
| 208+78.00 | 175 | 14.00 | 24.00 | 591.94 |
| 209+02.00 | 176 | 14.00 | 24.00 | 592.94 |
| 209+26.00 | 177 | 14.00 | 24.00 | 593.84 |
| 209+50.00 | 178 | 14.00 | 24.00 | 594.84 |
| 209+74.00 | 179 | 14.00 | 24.00 | 595.84 |
| 209+98.00 | 180 | 14.00 | 24.00 | 596.59 |
| 210+22.00 | 181 | 14.00 | 24.00 | 597.79 |
| 210+46.00 | 182 | 14.00 | 24.00 | 598.46 |
| 210+70.00 | 183 | 14.00 | 24.00 | 599.96 |
| 210+94.00 | 184 | 14.00 | 24.00 | 601.22 |
| 211+18.00 | 185 | 14.00 | 24.00 | 602.42 |
| 211+42.00 | 186 | 14.00 | 24.00 | 603.72 |
| 211+66.00 | 187 | 14.00 | 24.00 | 605.08 |
| 211+90.00 | 188 | 14.00 | 24.00 | 606.51 |
| 212+14.00 | 189 | 14.00 | 24.00 | 607.90 |
| 212+26.00 | 190 | 14.00 | 12.00 | 609.41 |
| 212+50.00 | 191 | 14.00 | 24.00 | 610.22 |
| 212+62.00 | 192 | 14.00 | 12.00 | 611.87 |
| 212+86.00 | 193 | 14.00 | 24.00 | 612.63 |
| 213+10.00 | 194 | 14.00 | 24.00 | 614.13 |
| 213+34.00 | 195 | 14.00 | 24.00 | 615.60 |
| 213+58.00 | 196 | 14.00 | 24.00 | 617.06 |
| 213+82.00 | 197 | 14.00 | 24.00 | 618.50 |
| 214+06.00 | 198 | 14.00 | 24.00 | 619.99 |
| 214+30.00 | 199 | 14.00 | 24.00 | 621.34 |
| 214+54.00 | 200 | 14.00 | 24.00 | 622.69 |
| 214+78.00 | 201 | 14.00 | 24.00 | 623.94 |
| 215+02.00 | 202 | 14.00 | 24.00 | 625.17 |
| 215+26.00 | 203 | 14.00 | 24.00 | 626.17 |
| 215+50.00 | 204 | 14.00 | 24.00 | 627.35 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 215+74.00 | 205 | 14.00 | 24.00 | 628.50 |
| 215+98.00 | 206 | 14.00 | 24.00 | 629.60 |
| 216+22.00 | 207 | 14.00 | 24.00 | 630.60 |
| 216+46.00 | 208 | 14.00 | 24.00 | 631.70 |
| 216+70.00 | 209 | 14.00 | 24.00 | 632.80 |
| 216+94.00 | 210 | 14.00 | 24.00 | 633.80 |
| 217+18.00 | 211 | 14.00 | 24.00 | 634.90 |
| 217+42.00 | 212 | 14.00 | 24.00 | 635.90 |
| 217+66.00 | 213 | 14.00 | 24.00 | 636.90 |
| 217+90.00 | 214 | 14.00 | 24.00 | 637.90 |
| 218+14.00 | 215 | 14.00 | 24.00 | 638.90 |
| 218+38.00 | 216 | 14.00 | 24.00 | 639.90 |
| 218+62.00 | 217 | 14.00 | 24.00 | 640.80 |
| 218+86.00 | 218 | 14.00 | 24.00 | 641.70 |
| 219+10.00 | 219 | 14.00 | 24.00 | 642.60 |
| 219+34.00 | 220 | 14.00 | 24.00 | 643.50 |
| 219+58.00 | 221 | 14.00 | 24.00 | 644.40 |
| 219+82.00 | 222 | 14.00 | 24.00 | 645.30 |
| 220+06.00 | 223 | 14.00 | 24.00 | 646.10 |
| 220+30.00 | 224 | 14.00 | 24.00 | 646.90 |
| 220+54.00 | 225 | 14.00 | 24.00 | 647.77 |
| 220+78.00 | 226 | 14.00 | 24.00 | 648.52 |
| 221+02.00 | 227 | 14.00 | 24.00 | 649.32 |
| 221+26.00 | 228 | 14.00 | 24.00 | 649.32 |
| 221+50.00 | 229 | 14.00 | 24.00 | 650.80 |
| 221+74.00 | 230 | 14.00 | 24.00 | 650.80 |
| 221+98.00 | 231 | 14.00 | 24.00 | 652.22 |
| 222+22.00 | 232 | 14.00 | 24.00 | 652.22 |
| 222+46.00 | 233 | 14.00 | 24.00 | 653.57 |
| 222+70.00 | 234 | 14.00 | 24.00 | 653.57 |
| 222+94.00 | 235 | 14.00 | 24.00 | 654.86 |
| 223+18.00 | 236 | 14.00 | 24.00 | 654.86 |
| 223+42.00 | 237 | 14.00 | 24.00 | 656.06 |
| 223+66.00 | 238 | 14.00 | 24.00 | 656.06 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 223+90.00 | 239 | 14.00 | 24.00 | 657.16 |
| 224+14.00 | 240 | 14.00 | 24.00 | 657.16 |
| 224+38.00 | 241 | 14.00 | 24.00 | 658.16 |



Use the noise wall baseline stations.

Boring Information and Design Recommendation

**LAW-7-2.17
PID: 75923**

Foundation Design

Noise Wall ID: Barrier B

| Boring ID | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-------|--------------|------------|---------------|-------------|----------------|-------------------------|
| B-001 | 156+35.00 | 160+18.50 | 574.82 | 574.82 | 567.00 | | | 24 | 14.00 | 4.0 | 4:1 | 156+35.00 | 159+95.00 | 1 | 16 | 6.50 | 568.32 |
| B-007-1-23 | 164+02.00 | 165+01.00 | 576.50 | 588.92 | 557.00 | | | 24 | 14.00 | 3.0 | 3:1 | 160+19.00 | 164+99.00 | 17 | 37 | 8.00 | 580.92 |
| B-002 | 166+00.00 | 168+00.00 | 598.72 | 598.72 | 578.00 | | | 24 | 14.00 | 3.0 | 3:1 | 165+23.00 | 167+87.00 | 38 | 49 | 6.50 | 592.22 |
| B-003 | 170+00.00 | 172+49.00 | 621.28 | 621.28 | 598.50 | | | 24 | 14.00 | 3.0 | 3:1 | 168+11.00 | 172+43.00 | 50 | 69 | 6.50 | 614.78 |
| B-007-2-23 | 174+98.00 | 176+24.00 | 631.51 | 647.26 | 647.00 | 626.01 | | 24 | 14.00 | 4.0 | 4:1 | 172+67.00 | 176+03.00 | 70 | 84 | 8.00 | 639.26 |
| B-007-3-23 | 177+50.00 | 178+70.50 | 659.25 | 656.36 | 662.00 | 653.25 | 50 | 24 | 14.00 | 8.0 | Level | 176+27.00 | 178+67.00 | 85 | 95 | 7.50 | 648.86 |
| B-007-4-23 | 179+91.00 | 180+89.00 | 668.96 | 659.36 | 651.00 | 655.46 | 50 | 24 | 14.00 | 4.0 | 4:1 | 178+91.00 | 180+83.00 | 96 | 104 | 6.50 | 652.86 |
| B-007-5-23 | 181+87.00 | 182+93.50 | 645.20 | 659.36 | 651.00 | 632.70 | | 24 | 14.00 | 2.5 | 3:1 | 181+07.00 | 182+75.00 | 105 | 112 | 8.00 | 651.36 |
| B-004 | 184+00.00 | 184+96.50 | 655.36 | 655.36 | 610.00 | | | 24 | 14.00 | 3.0 | 3:1 | 182+99.00 | 184+91.00 | 113 | 121 | 6.50 | 648.86 |
| B-009-1-23 | 185+93.00 | 189+67.50 | 623.70 | 649.66 | 639.00 | 613.20 | | 24 | 14.00 | 4.0 | 4:1 | 185+15.00 | 189+47.00 | 122 | 140 | 8.00 | 641.66 |
| B-009-2-23 | 193+42.00 | 194+18.50 | 583.90 | 608.10 | 578.00 | 560.40 | | 24 | 14.00 | 4.0 | 4:1 | 189+71.00 | 194+03.00 | 141 | 159 | 8.00 | 600.10 |
| B-005 | 194+95.00 | 200+54.50 | 600.35 | 600.35 | 562.00 | | | 24 | 14.00 | 2.0 | 2:1 | 194+27.00 | 194+87.00 | 160 | 163 | 6.50 | 593.85 |
| B-006 | 206+14.00 | 209+15.50 | 584.14 | 584.14 | 569.00 | | | 24 | 14.00 | 5.0 | 5:1 | 206+14.00 | 209+02.00 | 164 | 176 | 6.50 | 577.64 |
| B-014-1-23 | 212+17.00 | 212+96.00 | 581.40 | 607.00 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 209+26.00 | 212+86.00 | 177 | 193 | 8.00 | 599.90 |
| B-014-2-23 | 213+75.00 | 215+06.50 | 609.00 | 617.06 | 630.00 | 590.50 | | 24 | 14.00 | 5.0 | 5:1 | 213+10.00 | 215+02.00 | 194 | 202 | 7.50 | 609.56 |
| B-014-3-23 | 216+38.00 | 220+32.00 | 628.02 | 630.60 | 626.00 | 618.02 | | 24 | 14.00 | 2.0 | 2:1 | 215+26.00 | 220+30.00 | 203 | 224 | 6.50 | 624.10 |
| B-007 | 224+26.00 | 224+26.00 | 657.16 | 657.16 | 635.00 | | | 24 | 14.00 | 2.0 | 2:1 | 220+54.00 | 224+38.00 | 225 | 241 | 6.50 | 650.66 |

The cross (transverse) slope calculations are missing from the report. Ensure these are included in the next submission. A label for the noise wall stationing is missing from the cross section sheets on the project plans and thus we cannot calculate this.

The cross (transverse) slope calculations appear to be in error. The cross slope is not the grade slope. Rather it is measured from the top of drilled shaft elevation to a projected intersection of the proposed to the existing grade at the toe of the slope. The most critical cross slope should be used for the design within the station limits between borings. Refer to the illustration below and ensure these are calculated correctly.



Fill (ft) = 7.82
 Shaft Top Elev. (ft) = 574.82
 Boring Top Elev. (ft) = 574.82 Ex. Ground Elev.= 567.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 568.32' | | | | | | | | | |


CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 574.82 | 567.00 | 7.82 | A-6b | Cohesive | 20 | 1.70 | 20 | 20 | 125 | 63 | 63 | 490 | 245 | 0.32 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 2.82 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.32 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.82 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.32 | | Cohesive |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

Fill (ft) = 31.92
 Shaft Top Elev. (ft) = 588.92
 Boring Top Elev. (ft) = 576.50 Ex. Ground Elev.= 557.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 580.92' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 576.50 | 544.58 | 31.92 | A-6a | Cohesive | 20 | 1.23 | 20 | 20 | 125 | 63 | 63 | 1998 | 999 | 1.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 4.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 6.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 9.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 11.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 14.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 16.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 19.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 21.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 24.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 26.92 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 29.42 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 31.92 | 20 | Cohesive |

 Include the soil samples as encountered by the boring logs the elevations, the soil class and N60. This could affect the design, especially if soil strength increase with depth. Do this to all borings.

Fill (ft) = 20.72
 Shaft Top Elev. (ft) = 598.72
 Boring Top Elev. (ft) = 598.72 Ex. Ground Elev.= 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 592.22' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 598.72 | 578.00 | 20.72 | A-6b | Cohesive | 20 | 1.38 | 20 | 20 | 125 | 63 | 63 | 1297 | 649 | 0.72 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 3.22 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.72 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 8.22 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.72 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 13.22 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.72 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 18.22 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 20.72 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 23.22 | | Cohesive |

Fill (ft) = 22.78
 Shaft Top Elev. (ft) = 621.28
 Boring Top Elev. (ft) = 621.28 Ex. Ground Elev.= 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 614.78' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 621.28 | 598.50 | 22.78 | A-6b | Cohesive | 20 | 1.35 | 20 | 20 | 125 | 63 | 63 | 1426 | 713 | 0.28 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 2.78 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.28 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.78 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.28 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.78 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.28 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.78 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 20.28 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 22.78 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 25.28 | | Cohesive |

Fill (ft) = 0.26 Rock Elev. (ft)= 626.01
 Shaft Top Elev. (ft) = 647.26 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 631.51 Ex. Ground Elev.= 647.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 639.26' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 631.51 | 626.01 | 5.50 | A-7-6 | Cohesive | 9 | 1.86 | 9 | 9 | 118 | 56 | 56 | 306 | 153 | 0.26 | 20 | Cohesive |
| 2 | 626.01 | 614.01 | 17.50 | Rock | | | | | | | | | | | 2.76 | 20 | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Cut (ft) = -5.64 Rock Elev. (ft)= 653.25
 Shaft Top Elev. (ft) = 656.36 Rock UCS (psi)= 50
 Boring Top Elev. (ft) = 659.25 Ex. Ground Elev.= 662.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = Level

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.0 ft | 7.5 ft | | | | | | | | |
| 650.36' | 648.86' | | | | | | | | |

CCT.: 2 CCT.: 2
 GCT.: 0 GCT.: 0
 N dsgn: 15 N dsgn: 15

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 659.25 | 654.75 | 4.50 | A-7-6 | Cohesive | 15 | 1.91 | 15 | 15 | 122 | 60 | 60 | 268 | 134 | 1.61 | 15 | Cohesive |
| 2 | 654.75 | 653.25 | 6.00 | A-6a | Cohesive | 15 | 1.62 | 15 | 15 | 122 | 60 | 60 | 89 | 313 | 3.11 | 15 | Cohesive |
| 3 | 653.25 | 646.75 | 12.50 | Rock | | | | | | | | | | | 9.61 | | |
| | | | | | | | | | | | | | | | | | |
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Per the boring log, this sample encountered refusal blow count greater than 50 bpf.

Fill (ft) = 8.36 Rock Elev. (ft)= 655.46
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 50
 Boring Top Elev. (ft) = 668.96 Ex. Ground Elev.= 651.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 652.86' | | | | | | | | | |

CCT: 4
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 668.96 | 664.46 | 4.50 | A-4a P | Cohesive | 9 | 1.93 | 9 | 9 | 118 | 56 | 56 | 250 | 125 | 0.86 | 20 | Cohesive |
| 2 | 664.46 | 659.46 | 9.50 | A-7-6 | Cohesive | 26 | 1.53 | 26 | 26 | 125 | 63 | 63 | 313 | 407 | 3.36 | 20 | Cohesive |
| 3 | 659.46 | 655.46 | 13.50 | A-6b | Cohesive | 41 | 1.35 | 41 | 32 | 130 | 68 | 68 | 270 | 698 | 5.86 | 20 | Cohesive |
| 4 | 655.46 | 650.26 | 18.70 | Rock | | | | | | | | | | | 8.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 13.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 18.36 | 26 | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Fill (ft) = 8.36 Rock Elev. (ft)= 632.70
 Shaft Top Elev. (ft) = 659.36 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 645.20 Ex. Ground Elev.= 651.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 651.36' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 645.20 | 634.70 | 10.50 | A-7-6 | Cohesive | 18 | 1.62 | 18 | 18 | 122 | 60 | 60 | 626 | 313 | 0.86 | 20 | Cohesive |
| 2 | 634.70 | 632.70 | 12.50 | A-1-b | Granular | 52 | 1.36 | 70 | 60 | 132 | 70 | 70 | 139 | 695 | 3.36 | 20 | Cohesive |
| 3 | 632.70 | 621.20 | 24.00 | Rock | | | | | | | | | | | 5.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 8.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 22.36 | 18 | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Fill (ft) = 45.36
 Shaft Top Elev. (ft) = 655.36
 Boring Top Elev. (ft) = 655.36 Ex. Ground Elev.= 610.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 648.86' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 655.36 | 610.00 | 45.36 | A-6b | Cohesive | 20 | 1.12 | 20 | 20 | 125 | 63 | 63 | 2840 | 1420 | 0.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 2.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 20.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 22.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 25.36 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 27.86 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 30.36 | 20 | Cohesive |

Fill (ft) = 10.66 Rock Elev. (ft)= 613.20
 Shaft Top Elev. (ft) = 649.66 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 623.70 Ex. Ground Elev.= 639.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 641.66' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 623.70 | 620.70 | 3.00 | A-7-6 | Cohesive | 28 | 2.00 | 28 | 28 | 128 | 66 | 66 | 197 | 98 | 0.66 | 20 | Cohesive |
| 2 | 620.70 | 618.20 | 5.50 | A-6a | Cohesive | 37 | 1.66 | 37 | 32 | 130 | 68 | 68 | 169 | 281 | 3.16 | 20 | Cohesive |
| 3 | 618.20 | 613.20 | 10.50 | A-2-4 | Granular | 75 | 1.43 | 107 | 60 | 140 | 78 | 78 | 388 | 560 | 5.66 | 20 | Cohesive |
| 4 | 613.20 | 599.20 | 24.50 | Rock | | | | | | | | | | | 8.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.66 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 13.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 18.16 | 28 | Cohesive |
| | | | | | | | | | | | | | | | 32.16 | 32 | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Fill (ft) = 30.10 Rock Elev. (ft)= 560.40
 Shaft Top Elev. (ft) = 608.10 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 583.90 Ex. Ground Elev.= 578.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 600.10' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 583.90 | 560.40 | 23.50 | A-7-6 | Cohesive | 7 | 1.38 | 7 | 7 | 118 | 56 | 56 | 1307 | 653 | 0.10 | 20 | Cohesive |
| 2 | 560.40 | 559.40 | 24.50 | Rock | | | | | | | | | | | 2.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.10 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.10 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.10 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 20.10 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 22.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 25.10 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 27.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 30.10 | 20 | Cohesive |

Fill (ft) = 38.35
 Shaft Top Elev. (ft) = 600.35
 Boring Top Elev. (ft) = 600.35 Ex. Ground Elev.= 562.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 593.85' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 600.35 | 562.00 | 38.35 | A-6b | Cohesive | 20 | 1.17 | 20 | 20 | 125 | 63 | 63 | 2401 | 1200 | 0.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 3.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 8.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 13.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 18.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 20.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 23.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 25.85 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 28.35 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 30.85 | 20 | Cohesive |

Fill (ft) = 15.14
 Shaft Top Elev. (ft) = 584.14
 Boring Top Elev. (ft) = 584.14 Ex. Ground Elev.= 569.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 5:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 577.64' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 584.14 | 569.00 | 15.14 | A-6b | Cohesive | 20 | 1.48 | 20 | 20 | 125 | 63 | 63 | 948 | 474 | 0.14 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 2.64 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.14 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.64 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.14 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.64 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 15.14 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.64 | | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Fill (ft) = 9.90
 Shaft Top Elev. (ft) = 607.90
 Boring Top Elev. (ft) = 581.40 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 8.0 ft | | | | | | | | | |
| 599.90' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 581.40 | 556.40 | 25.00 | A-7-6 | Cohesive | 22 | 1.32 | 22 | 22 | 125 | 63 | 63 | 1565 | 783 | 2.40 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 4.90 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.40 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 9.90 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.40 | 20 | Cohesive |
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Cut (ft) = -12.94 Rock Elev. (ft)= 590.50
 Shaft Top Elev. (ft) = 617.06 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 609.00 Ex. Ground Elev.= 630.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 5:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 7.5 ft | | | | | | | | | |
| 609.56' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N1 ₆₀ (bpf) | Adj. N1 ₆₀ (bpf) | Y _{tot} (pcf) | Y _{sat} (pcf) | γ' (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|------------------------|------------------------|----------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 609.00 | 606.00 | 3.00 | A-6b | Cohesive | 13 | 2.00 | 13 | 13 | 120 | 58 | 58 | 173 | 86 | 11.06 | 13 | Cohesive |
| 2 | 606.00 | 603.50 | 5.50 | A-7-6 | Cohesive | 13 | 1.70 | 13 | 13 | 120 | 58 | 58 | 144 | 245 | 13.56 | 13 | Cohesive |
| 3 | 603.50 | 590.50 | 18.50 | A-6a | Cohesive | 73 | 1.30 | 73 | 32 | 140 | 78 | 78 | 1009 | 821 | 26.56 | 32 | Cohesive |
| 4 | 590.50 | 585.00 | 24.00 | Rock | | | | | | | | | | | 32.06 | | |
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Fill (ft) = 4.60 Rock Elev. (ft)= 618.02
 Shaft Top Elev. (ft) = 630.60 Rock UCS (psi)= 0
 Boring Top Elev. (ft) = 628.02 Ex. Ground Elev.= 626.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 624.10' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 628.02 | 618.02 | 10.00 | A-7-6 | Cohesive | 31 | 1.61 | 31 | 31 | 128 | 66 | 66 | 656 | 328 | 2.10 | 20 | Cohesive |
| 2 | 618.02 | 613.02 | 15.00 | Rock | | | | | | | | | | | 4.60 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.10 | | Cohesive |
| | | | | | | | | | | | | | | | 17.58 | | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Fill (ft) = 22.16
 Shaft Top Elev. (ft) = 657.16
 Boring Top Elev. (ft) = 657.16 Ex. Ground Elev.= 635.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 650.66' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 657.16 | 635.00 | 22.16 | A-6b | Cohesive | 20 | 1.36 | 20 | 20 | 125 | 63 | 63 | 1387 | 694 | 2.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 4.66 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 9.66 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 14.66 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 19.66 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 22.16 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 24.66 | | Cohesive |

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF GEOTECHNICAL ENGINEERING

Noise Wall Design

**LAW-7-2.17
75923**

Noise Wall Along Ramp L from NB SR-775 to SR-7

Barrier D

Stantec Consulting

Prepared By: James Samples
Date prepared: Wednesday, July 17, 2024

Checked By: Eric Kistner
Date Checked: Thursday, July 18, 2024

No. of Borings: 8

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 381+55.00 | 1 | 14.00 | 24.00 | 610.70 |
| 381+79.00 | 2 | 14.00 | 24.00 | 609.60 |
| 382+03.00 | 3 | 14.00 | 24.00 | 608.30 |
| 382+26.00 | 4 | 14.00 | 24.00 | 607.20 |
| 382+50.00 | 5 | 14.00 | 24.00 | 605.90 |
| 382+74.00 | 6 | 14.00 | 24.00 | 604.70 |
| 382+97.00 | 7 | 14.00 | 24.00 | 603.50 |
| 383+21.00 | 8 | 14.00 | 24.00 | 602.50 |
| 383+45.00 | 9 | 14.00 | 24.00 | 601.20 |
| 383+68.00 | 10 | 14.00 | 24.00 | 600.10 |
| 383+92.00 | 11 | 14.00 | 24.00 | 598.80 |
| 384+16.00 | 12 | 14.00 | 24.00 | 597.60 |
| 384+39.00 | 13 | 14.00 | 24.00 | 596.50 |
| 384+63.00 | 14 | 14.00 | 24.00 | 595.30 |
| 384+87.00 | 15 | 14.00 | 24.00 | 594.20 |
| 385+11.00 | 16 | 14.00 | 24.00 | 593.20 |
| 385+35.00 | 17 | 14.00 | 24.00 | 592.20 |
| 385+59.00 | 18 | 14.00 | 24.00 | 591.30 |
| 385+83.00 | 19 | 14.00 | 24.00 | 590.40 |
| 386+07.00 | 20 | 14.00 | 24.00 | 589.70 |
| 386+31.00 | 21 | 14.00 | 24.00 | 588.34 |
| 386+55.00 | 22 | 14.00 | 24.00 | 588.34 |
| 386+79.00 | 23 | 14.00 | 24.00 | 586.76 |
| 387+03.00 | 24 | 14.00 | 24.00 | 586.76 |
| 387+27.00 | 25 | 14.00 | 24.00 | 586.76 |
| 387+51.00 | 26 | 14.00 | 24.00 | 585.49 |
| 387+75.00 | 27 | 14.00 | 24.00 | 585.49 |
| 387+99.00 | 28 | 14.00 | 24.00 | 585.49 |
| 388+23.00 | 29 | 14.00 | 24.00 | 585.49 |
| 388+47.00 | 30 | 14.00 | 24.00 | 585.49 |
| 388+71.00 | 31 | 14.00 | 24.00 | 585.49 |
| 388+95.00 | 32 | 14.00 | 24.00 | 585.49 |
| 389+19.00 | 33 | 14.00 | 24.00 | 585.49 |
| 389+43.00 | 34 | 14.00 | 24.00 | 585.49 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 389+67.00 | 35 | 14.00 | 24.00 | 585.49 |
| 389+91.00 | 36 | 14.00 | 24.00 | 585.49 |
| 390+15.00 | 37 | 14.00 | 24.00 | 585.49 |
| 390+39.00 | 38 | 14.00 | 24.00 | 585.49 |
| 390+63.00 | 39 | 14.00 | 24.00 | 586.39 |
| 390+87.00 | 40 | 14.00 | 24.00 | 586.39 |
| 391+11.00 | 41 | 14.00 | 24.00 | 586.99 |
| 391+35.00 | 42 | 14.00 | 24.00 | 588.02 |
| 391+59.00 | 43 | 14.00 | 24.00 | 588.02 |
| 391+83.00 | 44 | 14.00 | 24.00 | 588.92 |
| 392+07.00 | 45 | 14.00 | 24.00 | 588.92 |
| 392+31.00 | 46 | 14.00 | 24.00 | 588.92 |
| 392+55.00 | 47 | 14.00 | 24.00 | 589.92 |
| 392+79.00 | 48 | 14.00 | 24.00 | 591.12 |
| 393+03.00 | 49 | 14.00 | 24.00 | 591.12 |
| 393+27.00 | 50 | 14.00 | 24.00 | 591.12 |
| 393+51.00 | 51 | 14.00 | 24.00 | 591.12 |
| 393+75.00 | 52 | 14.00 | 24.00 | 592.32 |
| 393+99.00 | 53 | 14.00 | 24.00 | 592.32 |
| 394+23.00 | 54 | 14.00 | 24.00 | 592.32 |
| 394+47.00 | 55 | 14.00 | 24.00 | 593.62 |
| 394+71.00 | 56 | 14.00 | 24.00 | 593.62 |
| 394+95.00 | 57 | 14.00 | 24.00 | 593.62 |
| 395+19.00 | 58 | 14.00 | 24.00 | 593.62 |
| 395+43.00 | 59 | 14.00 | 24.00 | 593.62 |
| 395+67.00 | 60 | 14.00 | 24.00 | 593.62 |
| 395+91.00 | 61 | 14.00 | 24.00 | 593.62 |
| 396+15.00 | 62 | 14.00 | 24.00 | 594.54 |
| 396+39.00 | 63 | 14.00 | 24.00 | 594.54 |
| 396+63.00 | 64 | 14.00 | 24.00 | 594.54 |
| 396+87.00 | 65 | 14.00 | 24.00 | 594.54 |
| 397+11.00 | 66 | 14.00 | 24.00 | 594.54 |
| 397+35.00 | 67 | 14.00 | 24.00 | 594.54 |
| 397+59.00 | 68 | 14.00 | 24.00 | 594.54 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 397+83.00 | 69 | 14.00 | 24.00 | 595.54 |
| 398+07.00 | 70 | 14.00 | 24.00 | 595.54 |
| 398+31.00 | 71 | 14.00 | 24.00 | 595.54 |
| 398+55.00 | 72 | 14.00 | 24.00 | 595.54 |
| 398+79.00 | 73 | 14.00 | 24.00 | 596.54 |
| 399+03.00 | 74 | 14.00 | 24.00 | 596.54 |
| 399+27.00 | 75 | 14.00 | 24.00 | 597.54 |
| 399+51.00 | 76 | 14.00 | 24.00 | 597.54 |
| 399+75.00 | 77 | 14.00 | 24.00 | 597.54 |
| 399+99.00 | 78 | 14.00 | 24.00 | 598.54 |
| 400+23.00 | 79 | 14.00 | 24.00 | 598.54 |
| 400+47.00 | 80 | 14.00 | 24.00 | 599.54 |
| 400+71.00 | 81 | 14.00 | 24.00 | 599.54 |
| 400+95.00 | 82 | 14.00 | 24.00 | 600.44 |
| 401+19.00 | 83 | 14.00 | 24.00 | 600.44 |
| 401+43.00 | 84 | 14.00 | 24.00 | 600.44 |
| 401+67.00 | 85 | 14.00 | 24.00 | 601.44 |
| 401+91.00 | 86 | 14.00 | 24.00 | 601.44 |
| 402+15.00 | 87 | 14.00 | 24.00 | 602.44 |
| 402+39.00 | 88 | 14.00 | 24.00 | 602.44 |
| 402+63.00 | 89 | 14.00 | 24.00 | 602.44 |
| 402+87.00 | 90 | 14.00 | 24.00 | 603.44 |
| 403+11.00 | 91 | 14.00 | 24.00 | 603.44 |
| 403+35.00 | 92 | 14.00 | 24.00 | 603.44 |
| 403+59.00 | 93 | 14.00 | 24.00 | 604.44 |
| 403+83.00 | 94 | 14.00 | 24.00 | 604.44 |
| 404+07.00 | 95 | 14.00 | 24.00 | 604.44 |
| 404+31.00 | 96 | 14.00 | 24.00 | 605.44 |
| 404+55.00 | 97 | 14.00 | 24.00 | 605.44 |
| 404+79.00 | 98 | 14.00 | 24.00 | 605.44 |
| 405+03.00 | 99 | 14.00 | 24.00 | 605.44 |
| 405+27.00 | 100 | 14.00 | 24.00 | 605.44 |
| 405+51.00 | 101 | 14.00 | 24.00 | 606.44 |
| 405+75.00 | 102 | 14.00 | 24.00 | 606.44 |

| STA. (FT) | Post No. | Barrier Height (FT) | Post Spacing (FT) | Top of Shaft Elev. (MSL FT) |
|--------------|----------|------------------------|----------------------|--------------------------------|
| 405+99.00 | 103 | 14.00 | 24.00 | 606.44 |
| 406+23.00 | 104 | 14.00 | 24.00 | 606.44 |

Boring Information and Design Recommendation



Use the noise wall baseline stations.

LAW-7-2.17
PID: 75923

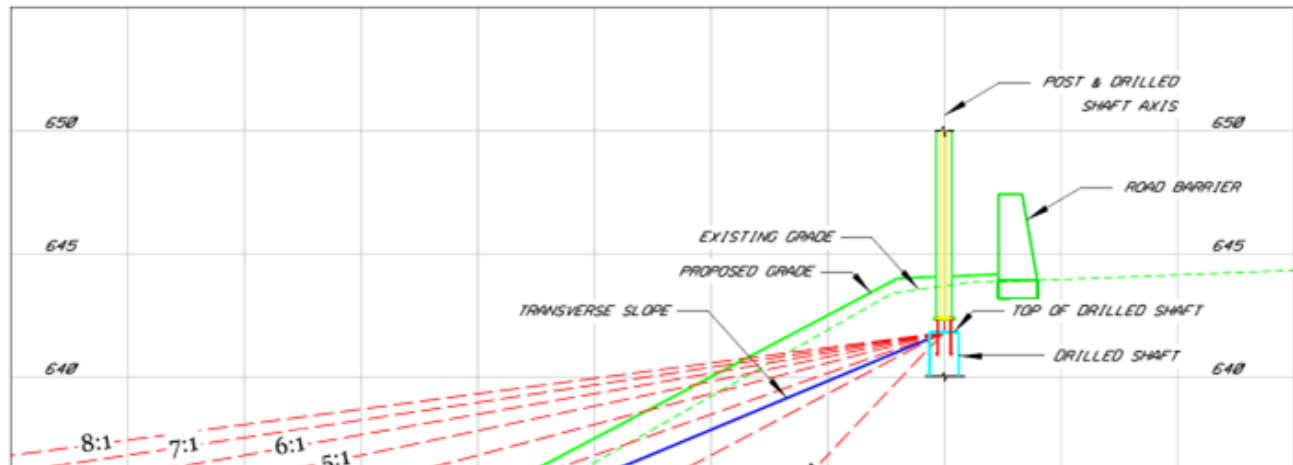
Foundation Design

Noise Wall ID: Barrier D

| Boring ID | Boring STA. (ft) | Mid-Boring STA. (ft) | Boring Elev. (ft) | Shaft Elev. (ft) | Ex. Ground Elev. (ft) | Rock Elev. (ft) | Rock UCS (psi) | Post Spacing (ft) | Barrier Height (ft) | Cross Slope | | From DS STA. | To DS STA. | From Post No. | To Post No. | DS Length (ft) | Bottom of DS Elev. (ft) |
|------------|------------------|----------------------|-------------------|------------------|-----------------------|-----------------|----------------|-------------------|---------------------|-------------|-----|--------------|------------|---------------|-------------|----------------|-------------------------|
| | | | | | | | | | | | | | | | | | |
| B-001 | 381+55.00 | 387+77.50 | 610.70 | 610.70 | 574.00 | | | 24 | 14.00 | 4.0 | 4:1 | 381+55.00 | 387+75.00 | 1 | 27 | 6.50 | 604.20 |
| B-002 | 394+00.00 | 395+02.00 | 592.32 | 592.32 | 582.00 | | | 24 | 14.00 | 3.0 | 3:1 | 387+99.00 | 394+95.00 | 28 | 57 | 6.50 | 585.82 |
| B-076-2-23 | 396+04.00 | 397+02.50 | 587.67 | 593.62 | 591.00 | | | 24 | 14.00 | 3.0 | 3:1 | 395+19.00 | 396+87.00 | 58 | 65 | 6.50 | 587.12 |
| B-076-3-23 | 398+01.00 | 399+00.00 | 589.87 | 595.54 | 598.00 | | | 24 | 14.00 | 3.0 | 3:1 | 397+11.00 | 398+79.00 | 66 | 73 | 6.50 | 589.04 |
| B-077-2-23 | 399+99.00 | 400+99.50 | 592.64 | 598.54 | 598.50 | | | 24 | 14.00 | 2.0 | 2:1 | 399+03.00 | 400+95.00 | 74 | 82 | 6.50 | 592.04 |
| B-077-3-23 | 402+00.00 | 403+01.50 | 588.81 | 601.44 | 602.00 | | | 24 | 14.00 | 2.0 | 2:1 | 401+19.00 | 402+87.00 | 83 | 90 | 9.00 | 592.44 |
| B-078-2-23 | 404+03.00 | 405+02.50 | 595.30 | 601.44 | 607.00 | | | 24 | 14.00 | 2.0 | 2:1 | 403+11.00 | 404+79.00 | 91 | 98 | 9.00 | 595.44 |
| B-078-3-23 | 406+02.00 | 406+02.00 | 602.38 | 606.44 | 607.00 | | | 24 | 14.00 | 2.0 | 2:1 | 405+03.00 | 406+23.00 | 99 | 104 | 8.00 | 598.44 |

The cross (transverse) slope calculations are missing from the report. Ensure these are included in the next submission. A label for the noise wall stationing is missing from the cross section sheets on the project plans and thus we cannot calculate this.

The cross (transverse) slope calculations appear to be in error. The cross slope is not the grade slope. Rather it is measured from the top of drilled shaft elevation to a projected intersection of the proposed to the existing grade at the toe of the slope. The most critical cross slope should be used for the design within the station limits between borings. Refer to the illustration below and ensure these are calculated correctly.



It appears that these are made up borings for fill areas. If this is true, provide discussion within the report to state this and include a table to summarize the borings IDs, assumed locations, and assumed elevations.

Fill (ft) = 36.70
 Shaft Top Elev. (ft) = 610.70
 Boring Top Elev. (ft) = 610.70 Ex. Ground Elev.= 574.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 4:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 604.20' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 610.70 | 574.00 | 36.70 | A-6b | Cohesive | 20 | 1.19 | 20 | 20 | 125 | 63 | 63 | 2297 | 1149 | 1.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 4.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 6.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 9.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 11.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 14.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 16.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 19.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 21.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 24.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 26.70 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 29.20 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 31.70 | 20 | Cohesive |

Fill (ft) = 10.32
 Shaft Top Elev. (ft) = 592.32
 Boring Top Elev. (ft) = 592.32 Ex. Ground Elev.= 582.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 585.82' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 592.32 | 582.00 | 10.32 | A-4a P | Cohesive | 20 | 1.61 | 20 | 20 | 125 | 63 | 63 | 646 | 323 | 0.32 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 2.82 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 5.32 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 7.82 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 10.32 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 12.82 | | Cohesive |
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Fill (ft) = 2.62
 Shaft Top Elev. (ft) = 593.62
 Boring Top Elev. (ft) = 587.67 Ex. Ground Elev.= 591.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 587.12' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 587.67 | 584.67 | 3.00 | A-4b P | Cohesive | 39 | 2.00 | 39 | 32 | 130 | 68 | 68 | 203 | 101 | 0.12 | 20 | Cohesive |
| 2 | 584.67 | 574.67 | 13.00 | A-7-6 | Cohesive | 16 | 1.46 | 16 | 16 | 122 | 60 | 60 | 596 | 501 | 2.62 | 20 | Cohesive |
| 3 | 574.67 | 562.67 | 25.00 | A-1-b | Granular | 18 | 1.18 | 21 | 21 | 125 | 63 | 63 | 751 | 1174 | 5.12 | 20 | Cohesive |
| | | | | | | | | | | | | | | | 17.12 | 32 | Cohesive |
| | | | | | | | | | | | | | | | | | |
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Cut (ft) = -2.46
 Shaft Top Elev. (ft) = 595.54
 Boring Top Elev. (ft) = 589.87 Ex. Ground Elev.= 598.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 3:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 589.04' | | | | | | | | | |

CCT.: 1
 GCT.: 0
 N dsgn: 18

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 589.87 | 584.37 | 5.50 | A-6b | Cohesive | 18 | 1.84 | 18 | 18 | 122 | 60 | 60 | 328 | 164 | 11.17 | 18 | Cohesive |
| 2 | 584.37 | 577.37 | 12.50 | A-6a | Cohesive | 19 | 1.44 | 19 | 19 | 122 | 60 | 60 | 417 | 536 | 18.17 | 19 | Cohesive |
| 3 | 577.37 | 574.37 | 15.50 | A-1-b | Granular | 19 | 1.29 | 25 | 25 | 125 | 63 | 63 | 188 | 839 | 21.17 | 25 | Granular |
| 4 | 574.37 | 571.87 | 18.00 | A-3a | Granular | 21 | 1.23 | 26 | 26 | 125 | 63 | 63 | 157 | 1011 | 23.67 | 26 | Granular |
| 5 | 571.87 | 564.87 | 25.00 | A-1-b | Granular | 17 | 1.14 | 19 | 19 | 125 | 63 | 63 | 438 | 1308 | 30.67 | 19 | Granular |
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Fill (ft) = 0.04
 Shaft Top Elev. (ft) = 598.54
 Boring Top Elev. (ft) = 592.64 Ex. Ground Elev.= 598.50
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | | | | | | | | | |
| 592.04' | | | | | | | | | |

CCT: 1
 GCT: 0
 N dsgn: 20

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot} (pcf) | Y _{sat} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|------------------------|------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 592.64 | 589.64 | 3.00 | A-7-6 | Cohesive | 13 | 2.00 | 13 | 13 | 120 | 58 | 58 | 173 | 86 | 0.04 | 20 | Cohesive |
| 2 | 589.64 | 587.14 | 5.50 | A-4a P | Cohesive | 24 | 1.70 | 24 | 24 | 125 | 63 | 63 | 157 | 251 | 2.54 | 20 | Cohesive |
| 3 | 587.14 | 582.14 | 10.50 | A-6b | Cohesive | 20 | 1.48 | 20 | 20 | 125 | 63 | 63 | 313 | 486 | 7.54 | 13 | Cohesive |
| 4 | 582.14 | 577.14 | 15.50 | A-7-6 | Cohesive | 18 | 1.31 | 18 | 18 | 122 | 60 | 60 | 298 | 791 | 12.54 | 24 | Cohesive |
| 5 | 577.14 | 574.64 | 18.00 | A-6b | Cohesive | 17 | 1.23 | 17 | 17 | 122 | 60 | 60 | 149 | 1015 | 15.04 | 20 | Cohesive |
| 6 | 574.64 | 567.64 | 25.00 | A-3 | Granular | 17 | 1.14 | 19 | 19 | 125 | 63 | 63 | 438 | 1308 | 22.04 | 18 | Cohesive |
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Cut (ft) = -0.56
 Shaft Top Elev. (ft) = 601.44
 Boring Top Elev. (ft) = 588.81 Ex. Ground Elev.= 602.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 9.0 ft | | | | | | | | | |
| 592.44' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 588.81 | 585.81 | 3.00 | A-4a P | Cohesive | 21 | 2.00 | 21 | 21 | 125 | 63 | 63 | 188 | 94 | 15.63 | 21 | Cohesive |
| 2 | 585.81 | 573.31 | 15.50 | A-6b | Cohesive | 19 | 1.43 | 19 | 19 | 122 | 60 | 60 | 745 | 560 | 28.13 | 19 | Cohesive |
| 3 | 573.31 | 570.81 | 18.00 | A-1-b | Granular | 20 | 1.23 | 25 | 25 | 125 | 63 | 63 | 157 | 1011 | 30.63 | 25 | Granular |
| 4 | 570.81 | 565.81 | 23.00 | A-6b | Cohesive | 17 | 1.16 | 17 | 17 | 122 | 60 | 60 | 298 | 1238 | 35.63 | 17 | Cohesive |
| 5 | 565.81 | 563.81 | 25.00 | A-1-b | Granular | 19 | 1.11 | 21 | 21 | 125 | 63 | 63 | 125 | 1450 | 37.63 | 21 | Granular |
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Cut (ft) = -2.56
 Shaft Top Elev. (ft) = 604.44
 Boring Top Elev. (ft) = 595.30 Ex. Ground Elev.= 607.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 9.0 ft | | | | | | | | | |
| 595.44' | | | | | | | | | |

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | Y _{tot.} (pcf) | Y _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 595.30 | 584.80 | 10.50 | A-6b | Cohesive | 19 | 1.62 | 19 | 19 | 122 | 60 | 60 | 626 | 313 | 19.64 | 19 | Cohesive |
| 2 | 584.80 | 582.30 | 13.00 | A-6a | Cohesive | 37 | 1.35 | 37 | 32 | 130 | 68 | 68 | 169 | 710 | 22.14 | 32 | Cohesive |
| 3 | 582.30 | 574.80 | 20.50 | A-6b | Cohesive | 31 | 1.22 | 31 | 31 | 128 | 66 | 66 | 492 | 1041 | 29.64 | 31 | Cohesive |
| 4 | 574.80 | 572.30 | 23.00 | A-2-4 | Granular | 12 | 1.13 | 14 | 14 | 122 | 60 | 60 | 149 | 1361 | 32.14 | 14 | Granular |
| 5 | 572.30 | 570.30 | 25.00 | A-6a | Cohesive | 16 | 1.10 | 16 | 16 | 122 | 60 | 60 | 119 | 1495 | 34.14 | 16 | Cohesive |
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Cut (ft) = -0.56
 Shaft Top Elev. (ft) = 606.44
 Boring Top Elev. (ft) = 602.38 Ex. Ground Elev.= 607.00
 Post Spacing (ft) = 24
 Barrier Height (ft) = 14.00
 Transverse Slope = 2:1

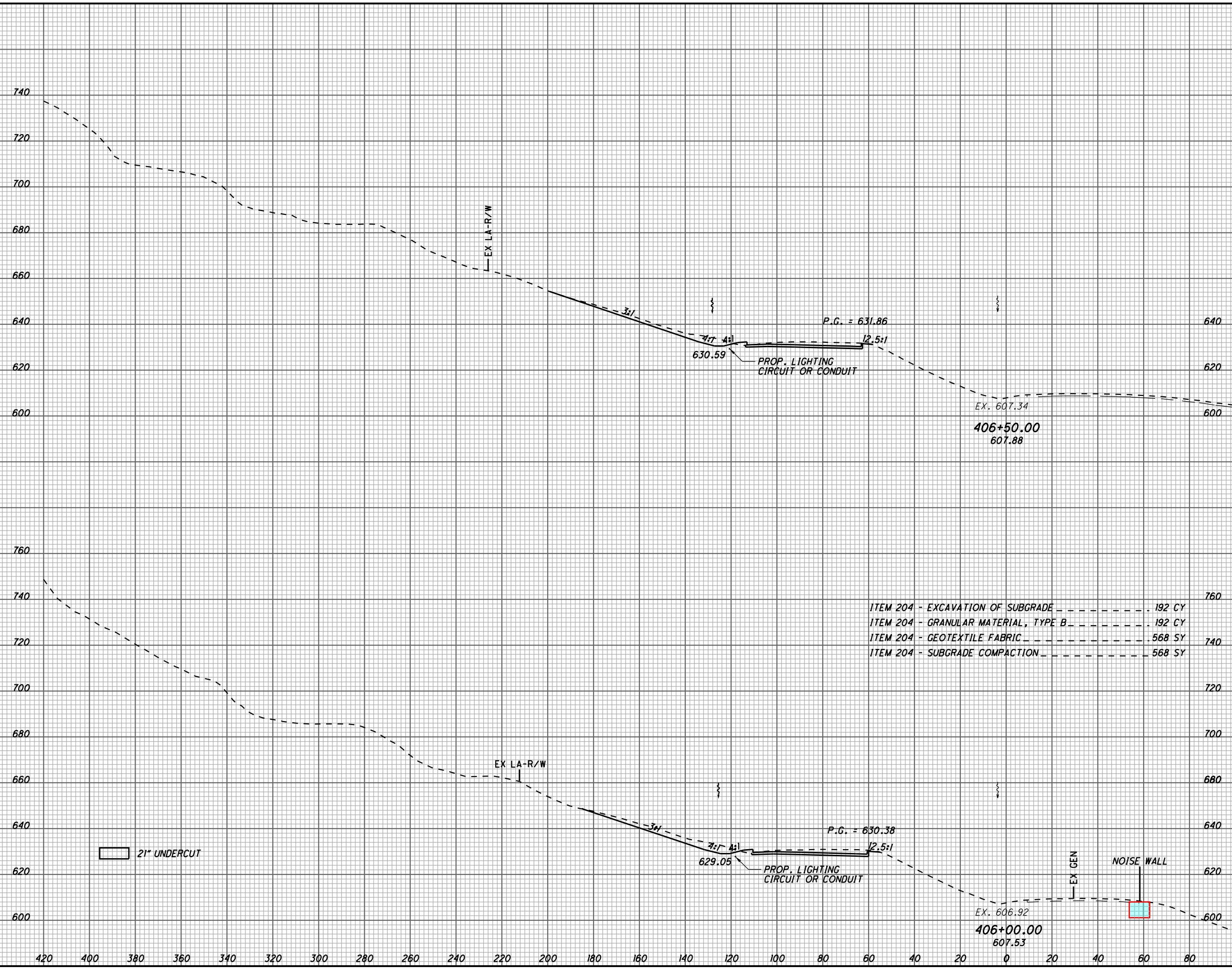
| Foundation Depth (ft) | | | | | | | | | |
|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Trial 01 | Trial 02 | Trial 03 | Trial 04 | Trial 05 | Trial 06 | Trial 07 | Trial 08 | Trial 09 | Trial 10 |
| 6.5 ft | 14.5 ft | 8.0 ft | | | | | | | |
| 599.94' | 591.94' | 598.44' | | | | | | | |

CCT.: 1 CCT.: 3 CCT.: 2
 GCT.: 0 GCT.: 0 GCT.: 0
 N dsgn: 8 N dsgn: 15 N dsgn: 13

| Layer No. | Top Elev. (ft) | Bottom Elev. (ft) | Layer Depth (ft) | Soil Class | Soil Type | N ₆₀ (bpf) | C _N | N ₁₆₀ (bpf) | Adj. N ₁₆₀ (bpf) | γ _{tot.} (pcf) | γ _{sat.} (pcf) | γ' (eff.) (pcf) | σ _v (psf) | σ' _v (psf) | Depth Cut Fill (ft) | N ₆₀ Cut Fill (bpf) | Soil Class |
|-----------|----------------|-------------------|------------------|------------|-----------|-----------------------|----------------|------------------------|-----------------------------|-------------------------|-------------------------|-----------------|----------------------|-----------------------|---------------------|--------------------------------|------------|
| 1 | 602.38 | 599.38 | 3.00 | A-7-6 | Cohesive | 8 | 2.00 | 8 | 8 | 118 | 56 | 56 | 167 | 83 | 7.06 | 8 | Cohesive |
| 2 | 599.38 | 594.38 | 8.00 | A-6a | Cohesive | 17 | 1.62 | 17 | 17 | 122 | 60 | 60 | 298 | 316 | 12.06 | 17 | Cohesive |
| 3 | 594.38 | 591.88 | 10.50 | A-7-6 | Cohesive | 21 | 1.44 | 21 | 21 | 125 | 63 | 63 | 157 | 543 | 14.56 | 21 | Cohesive |
| 4 | 591.88 | 586.88 | 15.50 | A-6a | Cohesive | 23 | 1.32 | 23 | 23 | 125 | 63 | 63 | 313 | 778 | 19.56 | 23 | Cohesive |
| 5 | 586.88 | 577.38 | 25.00 | A-7-6 | Cohesive | 25 | 1.16 | 25 | 25 | 125 | 63 | 63 | 595 | 1232 | 29.06 | 25 | Cohesive |
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| SEEDING | END AREA | | VOLUME | | CALCULATED SLP | CHECKED ALB |
|---------|-----------|----------|--------|------|----------------|-------------|
| | END WIDTH | SO. YDS. | CUT | FILL | | |
| 105 | | | 169 | 6 | | |
| 551 | | | 337 | 11 | | |
| 93 | | | 194 | 6 | | |
| 501 | | | 336 | 11 | | |
| 1052 | | | 673 | 22 | | |



- ITEM 204 - EXCAVATION OF SUBGRADE ----- 192 CY
- ITEM 204 - GRANULAR MATERIAL, TYPE B ----- 192 CY
- ITEM 204 - GEOTEXTILE FABRIC ----- 568 SY
- ITEM 204 - SUBGRADE COMPACTION ----- 568 SY

CROSS SECTIONS S.R. 7
STA. 406+00.00 TO STA. 406+50.00

LAW - 7 - 2.17

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