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REFERENCE: W-5701B

PROJECT: 44847

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

| | | | |
|-------|-----------------------------|-----------|--------------|
| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
| N.C. | W-5701B | 1 | 56 |

ROADWAY SUBSURFACE INVESTIGATION

COUNTY NORTHAMPTON/HERTFORD
PROJECT DESCRIPTION US 158 FROM WEST OF
US 258 TO EAST OF NC 11

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PERSONNEL

B. FARMER

M. METRY

INVESTIGATED BY RK&K

DRAWN BY S. KABRA

CHECKED BY M. SWEITZER

SUBMITTED BY RK&K

DATE FEBRUARY 2022

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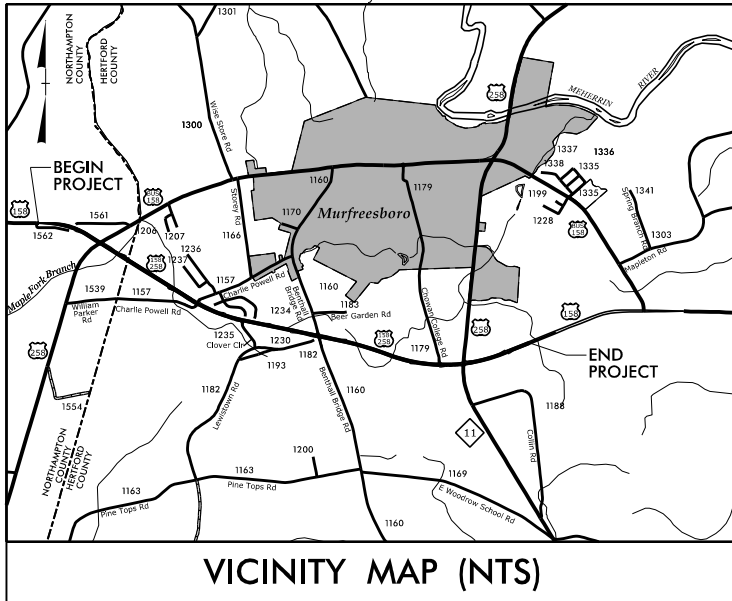
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

| SOIL DESCRIPTION | GRADATION | ROCK DESCRIPTION | TERMS AND DEFINITIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SOIL LEGEND AND AASHTO CLASSIFICATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="7">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="4">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="3">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th>A-1, A-2</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th>A-1, A-2</th> <th>A-4, A-5</th> <th>A-6, A-7</th> </tr> </thead> <tbody> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% PASSING</td> <td>50 MX 30 MX 15 MX</td> <td>50 MX 25 MX</td> <td>51 MN 35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>35 MX</td> <td>36 MN</td> <td>36 MN</td> <td>36 MN</td> <td>36 MN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MATERIAL PASSING #40 LL PI</td> <td>- 6 MX</td> <td>- NP</td> <td>40 MX 10 MX</td> <td>41 MN 10 MX</td> <td>41 MN 11 MN</td> <td>41 MN 11 MN</td> <td>40 MX 10 MX</td> <td>41 MN 10 MX</td> <td>41 MN 11 MN</td> <td>40 MX 11 MN</td> <td>41 MN 11 MN</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GROUP INDEX</td> <td>0</td> <td>0</td> <td>0</td> <td>4 MX</td> <td>8 MX</td> <td>12 MX</td> <td>16 MX</td> <td>NO MX</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td>STONE FRAGS. GRAVEL, AND SAND</td> <td>FINE SAND</td> <td>SILTY OR CLAYEY GRAVEL AND SAND</td> <td>SILTY SOILS</td> <td>CLAYEY SOILS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GEN. RATING AS SUBGRADE</td> <td colspan="3">EXCELLENT TO GOOD</td> <td colspan="3">FAIR TO POOR</td> <td>FAIR TO POOR</td> <td>POOR</td> <td>UNSATURABLE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30</td> </tr> <tr> <td colspan="4" style="text-align: center;">CONSISTENCY OR DENSENESS</td> </tr> <tr> <td>PRIMARY SOIL TYPE</td> <td>COMPACTNESS OR CONSISTENCY</td> <td>RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)</td> <td>RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)</td> </tr> <tr> <td>GENERALLY GRANULAR MATERIAL (NON-COHESIVE)</td> <td>VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE</td> <td>< 4 4 TO 10 10 TO 30 30 TO 50 > 50</td> <td>N/A</td> </tr> <tr> <td>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</td> <td>VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD</td> <td>< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30</td> <td>< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4</td> </tr> <tr> <td colspan="4" style="text-align: center;">TEXTURE OR GRAIN SIZE</td> </tr> <tr> <td>U.S. STD. SIEVE SIZE OPENING (MM)</td> <td>4</td> <td>10</td> <td>40</td> <td>60</td> <td>200</td> <td>270</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>4.76</td> <td>2.00</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>BOULDER (BLDR.)</td> <td>COBBLE (COB.)</td> <td>GRAVEL (GR.)</td> <td>COARSE SAND (CSE. SD.)</td> <td>FINE SAND (F. SD.)</td> <td>SILT (SL.)</td> <td>CLAY (CL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GRAIN SIZE</td> <td>MM IN.</td> <td>305 12</td> <td>75 3</td> <td>2.0</td> <td>0.25</td> <td>0.05</td> <td>0.005</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">SOIL MOISTURE - CORRELATION OF TERMS</td> </tr> <tr> <td>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</td> <td>FIELD MOISTURE DESCRIPTION</td> <td>GUIDE FOR FIELD MOISTURE DESCRIPTION</td> <td></td> </tr> <tr> <td>LL - LIQUID LIMIT</td> <td>- SATURATED - (SAT.)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> <td></td> </tr> <tr> <td>PL - PLASTIC LIMIT</td> <td>- WET - (W)</td> <td>SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> <td></td> </tr> <tr> <td>OM - OPTIMUM MOISTURE</td> <td>- MOIST - (M)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE</td> <td></td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td>- DRY - (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">PLASTICITY</td> </tr> <tr> <td>NON PLASTIC</td> <td>PLASTICITY INDEX (PI)</td> <td>DRY STRENGTH</td> <td></td> </tr> <tr> <td>SLIGHTLY PLASTIC</td> <td>0-5</td> <td>VERY LOW</td> <td></td> </tr> <tr> <td>MODERATELY PLASTIC</td> <td>6-15</td> <td>SLIGHT</td> <td></td> </tr> <tr> <td>HIGHLY PLASTIC</td> <td>16-25</td> <td>MEDIUM</td> <td></td> </tr> <tr> <td></td> <td>26 OR MORE</td> <td>HIGH</td> <td></td> </tr> <tr> <td colspan="4" style="text-align: center;">COLOR</td> </tr> <tr> <td colspan="4">DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</td> </tr> <tr> <td colspan="4" style="text-align: center;">GRADATION</td> </tr> <tr> <td colspan="4">WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</td> </tr> <tr> <td colspan="4" style="text-align: center;">ANGULARITY OF GRAINS</td> </tr> <tr> <td colspan="4">THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</td> </tr> <tr> <td colspan="4" style="text-align: center;">MINERALOGICAL COMPOSITION</td> </tr> <tr> <td colspan="4">MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</td> </tr> <tr> <td colspan="4" style="text-align: center;">COMPRESSIBILITY</td> </tr> <tr> <td colspan="4">SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50</td> </tr> <tr> <td colspan="4" style="text-align: center;">PERCENTAGE OF MATERIAL</td> </tr> <tr> <td colspan="4"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> </thead> <tbody> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY</td> </tr> </tbody> </table> </td> </tr> <tr> <td colspan="4" style="text-align: center;">GROUND WATER</td> </tr> <tr> <td colspan="4"> WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP </td> </tr> <tr> <td colspan="4" style="text-align: center;">MISCELLANEOUS SYMBOLS</td> </tr> <tr> <td colspan="4"> ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SPT DMT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD TEST BORING WITH CORE SPT N-VALUE </td> </tr> <tr> <td colspan="4" style="text-align: center;">RECOMMENDATION SYMBOLS</td> </tr> <tr> <td colspan="4"> UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL </td> </tr> <tr> <td colspan="4" style="text-align: center;">ABBREVIATIONS</td> </tr> <tr> <td colspan="4"> AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE. - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SIL. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED % - UNIT WEIGHT % - DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO </td> </tr> <tr> <td colspan="4" style="text-align: center;">EQUIPMENT USED ON SUBJECT PROJECT</td> </tr> <tr> <td colspan="4"> DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ </td> </tr> <tr> <td colspan="4"> ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 2 1/4" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ </td> </tr> <tr> <td colspan="4"> HAMMER TYPE: <input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> B _____ <input type="checkbox"/> H _____ <input type="checkbox"/> N _____ HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> _____ <input type="checkbox"/> _____ </td> </tr> <tr> <td colspan="4" style="text-align: center;">ROCK HARDNESS</td> </tr> <tr> <td colspan="4"> VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. COMPLETE ROCK REDUCED TO SOIL. FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. </td> </tr> <tr> <td colspan="4" style="text-align: center;">ROCK HARDNESS</td> </tr> <tr> <td colspan="4"> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TERM</th> <th>SPACING</th> <th>TERM</th> <th>THICKNESS</th> </tr> </thead> <tbody> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td></td> <td></td> <td>THINLY LAMINATED</td> <td>< 0.008 FEET</td> </tr> </tbody> </table> </td> </tr> <tr> <td colspan="4" style="text-align: center;">INDURATION</td> </tr> <tr> <td colspan="4"> FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS. </td> </tr> <tr> <td colspan="4" style="text-align: center;">TERMS AND DEFINITIONS</td> </tr> <tr> <td colspan="4"> ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SRC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. </td> </tr> <tr> <td colspan="4" style="text-align: center;">BENCH MARK:</td> </tr> <tr> <td colspan="4" style="text-align: center;">ELEVATION: FEET</td> </tr> <tr> <td colspan="4" style="text-align: center;">NOTES:</td> </tr> <tr> <td colspan="4">RELATIVE DENSITY/ CONSISTENCY OF SOIL WAS ESTIMATED DURING HAND AUGER DRILLING AND IT MAY NOT REPRESENT ACTUAL FIELD CONDITIONS.</td> </tr> <tr> <td colspan="4">BOREHOLE ELEVATIONS DETERMINED FROM PROVIDED .TIN FILE.</td> </tr> <tr> <td colspan="4">TIN FILE: W5701B_Is.tin.tin DATE: 8/4/2021</td> </tr> <tr> <td colspan="4">ABBREVIATIONS: AR - HAND AUGER REFUSAL</td> </tr> </tbody> </table> | | | | GENERAL CLASS. | GRANULAR MATERIALS (≤ 35% PASSING #200) | | | | | | | SILT-CLAY MATERIALS (> 35% PASSING #200) | | | | ORGANIC MATERIALS | | | A-1 | A-3 | A-2 | A-4 | A-5 | A-6 | A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | GROUP CLASS. | A-1-a | A-1-b | A-2-4 | A-2-5 | A-2-6 | A-2-7 | | | | | | | | | | | SYMBOL | | | | | | | | | | | | | | | | | % PASSING | 50 MX 30 MX 15 MX | 50 MX 25 MX | 51 MN 35 MX | 35 MX | 35 MX | 35 MX | 36 MN | 36 MN | 36 MN | 36 MN | | | | | | | MATERIAL PASSING #40 LL PI | - 6 MX | - NP | 40 MX 10 MX | 41 MN 10 MX | 41 MN 11 MN | 41 MN 11 MN | 40 MX 10 MX | 41 MN 10 MX | 41 MN 11 MN | 40 MX 11 MN | 41 MN 11 MN | | | | | | GROUP INDEX | 0 | 0 | 0 | 4 MX | 8 MX | 12 MX | 16 MX | NO MX | | | | | | | | | USUAL TYPES OF MAJOR MATERIALS | STONE FRAGS. GRAVEL, AND SAND | FINE SAND | SILTY OR CLAYEY GRAVEL AND SAND | SILTY SOILS | CLAYEY SOILS | | | | | | | | | | | | GEN. RATING AS SUBGRADE | EXCELLENT TO GOOD | | | FAIR TO POOR | | | FAIR TO POOR | POOR | UNSATURABLE | | | | | | | | PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30 | | | | CONSISTENCY OR DENSENESS | | | | PRIMARY SOIL TYPE | COMPACTNESS OR CONSISTENCY | RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) | RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²) | GENERALLY GRANULAR MATERIAL (NON-COHESIVE) | VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE | < 4 4 TO 10 10 TO 30 30 TO 50 > 50 | N/A | GENERALLY SILT-CLAY MATERIAL (COHESIVE) | VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD | < 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30 | < 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4 | TEXTURE OR GRAIN SIZE | | | | U.S. STD. SIEVE SIZE OPENING (MM) | 4 | 10 | 40 | 60 | 200 | 270 | | | | | | | | | | | | 4.76 | 2.00 | 0.42 | 0.25 | 0.075 | 0.053 | | | | | | | | | | | BOULDER (BLDR.) | COBBLE (COB.) | GRAVEL (GR.) | COARSE SAND (CSE. SD.) | FINE SAND (F. SD.) | SILT (SL.) | CLAY (CL.) | | | | | | | | | | | GRAIN SIZE | MM IN. | 305 12 | 75 3 | 2.0 | 0.25 | 0.05 | 0.005 | | | | | | | | | | SOIL MOISTURE - CORRELATION OF TERMS | | | | SOIL MOISTURE SCALE (ATTERBERG LIMITS) | FIELD MOISTURE DESCRIPTION | GUIDE FOR FIELD MOISTURE DESCRIPTION | | LL - LIQUID LIMIT | - SATURATED - (SAT.) | USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE | | PL - PLASTIC LIMIT | - WET - (W) | SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE | | OM - OPTIMUM MOISTURE | - MOIST - (M) | SOLID; AT OR NEAR OPTIMUM MOISTURE | | SL - SHRINKAGE LIMIT | - DRY - (D) | REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE | | PLASTICITY | | | | NON PLASTIC | PLASTICITY INDEX (PI) | DRY STRENGTH | | SLIGHTLY PLASTIC | 0-5 | VERY LOW | | MODERATELY PLASTIC | 6-15 | SLIGHT | | HIGHLY PLASTIC | 16-25 | MEDIUM | | | 26 OR MORE | HIGH | | COLOR | | | | DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE. | | | | GRADATION | | | | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES. | | | | ANGULARITY OF GRAINS | | | | THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED. | | | | MINERALOGICAL COMPOSITION | | | | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. | | | | COMPRESSIBILITY | | | | SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50 | | | | PERCENTAGE OF MATERIAL | | | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> </thead> <tbody> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY</td> </tr> </tbody> </table> | | | | ORGANIC MATERIAL | GRANULAR SOILS | SILT - CLAY SOILS | OTHER MATERIAL | TRACE OF ORGANIC MATTER | 2 - 3% | 3 - 5% | TRACE | LITTLE ORGANIC MATTER | 3 - 5% | 5 - 12% | LITTLE | MODERATELY ORGANIC | 5 - 10% | 12 - 20% | SOME | HIGHLY ORGANIC | > 10% | > 20% | HIGHLY | GROUND WATER | | | | WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP | | | | MISCELLANEOUS SYMBOLS | | | | ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SPT DMT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD TEST BORING WITH CORE SPT N-VALUE | | | | RECOMMENDATION SYMBOLS | | | | UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL | | | | ABBREVIATIONS | | | | AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE. - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HL - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SIL. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED % - UNIT WEIGHT % - DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO | | | | EQUIPMENT USED ON SUBJECT PROJECT | | | | DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 2 1/4" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | HAMMER TYPE: <input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> B _____ <input type="checkbox"/> H _____ <input type="checkbox"/> N _____ HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | ROCK HARDNESS | | | | VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. COMPLETE ROCK REDUCED TO SOIL. FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | | | | ROCK HARDNESS | | | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TERM</th> <th>SPACING</th> <th>TERM</th> <th>THICKNESS</th> </tr> </thead> <tbody> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td></td> <td></td> <td>THINLY LAMINATED</td> <td>< 0.008 FEET</td> </tr> </tbody> </table> | | | | TERM | SPACING | TERM | THICKNESS | VERY WIDE | MORE THAN 10 FEET | VERY THICKLY BEDDED | 4 FEET | WIDE | 3 TO 10 FEET | THICKLY BEDDED | 1.5 - 4 FEET | MODERATELY CLOSE | 1 TO 3 FEET | THINLY BEDDED | 0.16 - 1.5 FEET | CLOSE | 0.16 TO 1 FOOT | VERY THINLY BEDDED | 0.03 - 0.16 FEET | VERY CLOSE | LESS THAN 0.16 FEET | THICKLY LAMINATED | 0.008 - 0.03 FEET | | | THINLY LAMINATED | < 0.008 FEET | INDURATION | | | | FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS. | | | | TERMS AND DEFINITIONS | | | | ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SRC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. | | | | BENCH MARK: | | | | ELEVATION: FEET | | | | NOTES: | | | | RELATIVE DENSITY/ CONSISTENCY OF SOIL WAS ESTIMATED DURING HAND AUGER DRILLING AND IT MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. | | | | BOREHOLE ELEVATIONS DETERMINED FROM PROVIDED .TIN FILE. | | | | TIN FILE: W5701B_Is.tin.tin DATE: 8/4/2021 | | | | ABBREVIATIONS: AR - HAND AUGER REFUSAL | | | |
| GENERAL CLASS. | GRANULAR MATERIALS (≤ 35% PASSING #200) | | | | | | | SILT-CLAY MATERIALS (> 35% PASSING #200) | | | | ORGANIC MATERIALS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | A-1 | A-3 | A-2 | A-4 | A-5 | A-6 | A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | A-1, A-2 | A-4, A-5 | A-6, A-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUP CLASS. | A-1-a | A-1-b | A-2-4 | A-2-5 | A-2-6 | A-2-7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SYMBOL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| % PASSING | 50 MX 30 MX 15 MX | 50 MX 25 MX | 51 MN 35 MX | 35 MX | 35 MX | 35 MX | 36 MN | 36 MN | 36 MN | 36 MN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MATERIAL PASSING #40 LL PI | - 6 MX | - NP | 40 MX 10 MX | 41 MN 10 MX | 41 MN 11 MN | 41 MN 11 MN | 40 MX 10 MX | 41 MN 10 MX | 41 MN 11 MN | 40 MX 11 MN | 41 MN 11 MN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> </thead> <tbody> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY</td> </tr> </tbody> </table> | | | | ORGANIC MATERIAL | GRANULAR SOILS | SILT - CLAY SOILS | OTHER MATERIAL | TRACE OF ORGANIC MATTER | 2 - 3% | 3 - 5% | TRACE | LITTLE ORGANIC MATTER | 3 - 5% | 5 - 12% | LITTLE | MODERATELY ORGANIC | 5 - 10% | 12 - 20% | SOME | HIGHLY ORGANIC | > 10% | > 20% | HIGHLY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| EQUIPMENT USED ON SUBJECT PROJECT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 2 1/4" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HAMMER TYPE: <input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> B _____ <input type="checkbox"/> H _____ <input type="checkbox"/> N _____ HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> _____ <input type="checkbox"/> _____ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROCK HARDNESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK, GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL. COMPLETE ROCK REDUCED TO SOIL. FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ROCK HARDNESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TERM</th> <th>SPACING</th> <th>TERM</th> <th>THICKNESS</th> </tr> </thead> <tbody> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td></td> <td></td> <td>THINLY LAMINATED</td> <td>< 0.008 FEET</td> </tr> </tbody> </table> | | | | TERM | SPACING | TERM | THICKNESS | VERY WIDE | MORE THAN 10 FEET | VERY THICKLY BEDDED | 4 FEET | WIDE | 3 TO 10 FEET | THICKLY BEDDED | 1.5 - 4 FEET | MODERATELY CLOSE | 1 TO 3 FEET | THINLY BEDDED | 0.16 - 1.5 FEET | CLOSE | 0.16 TO 1 FOOT | VERY THINLY BEDDED | 0.03 - 0.16 FEET | VERY CLOSE | LESS THAN 0.16 FEET | THICKLY LAMINATED | 0.008 - 0.03 FEET | | | THINLY LAMINATED | < 0.008 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TERM | SPACING | TERM | THICKNESS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VERY WIDE | MORE THAN 10 FEET | VERY THICKLY BEDDED | 4 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WIDE | 3 TO 10 FEET | THICKLY BEDDED | 1.5 - 4 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MODERATELY CLOSE | 1 TO 3 FEET | THINLY BEDDED | 0.16 - 1.5 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CLOSE | 0.16 TO 1 FOOT | VERY THINLY BEDDED | 0.03 - 0.16 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VERY CLOSE | LESS THAN 0.16 FEET | THICKLY LAMINATED | 0.008 - 0.03 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | THINLY LAMINATED | < 0.008 FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| INDURATION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TERMS AND DEFINITIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SRC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BENCH MARK: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ELEVATION: FEET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RELATIVE DENSITY/ CONSISTENCY OF SOIL WAS ESTIMATED DURING HAND AUGER DRILLING AND IT MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BOREHOLE ELEVATIONS DETERMINED FROM PROVIDED .TIN FILE. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TIN FILE: W5701B_Is.tin.tin DATE: 8/4/2021 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ABBREVIATIONS: AR - HAND AUGER REFUSAL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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 09/08/99

See Sheet 1A For Index of Sheets
 See Sheet 1-B For Conventional Symbols
 See Sheet RWQ2C-1-RWQ2C-6 For Survey Control Sheets



VICINITY MAP (NTS)

25% PLAN SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**NORTHAMPTON AND
HERTFORD COUNTIES**

LOCATION: US 158 FROM WEST OF US 258 TO
EAST OF NC 11

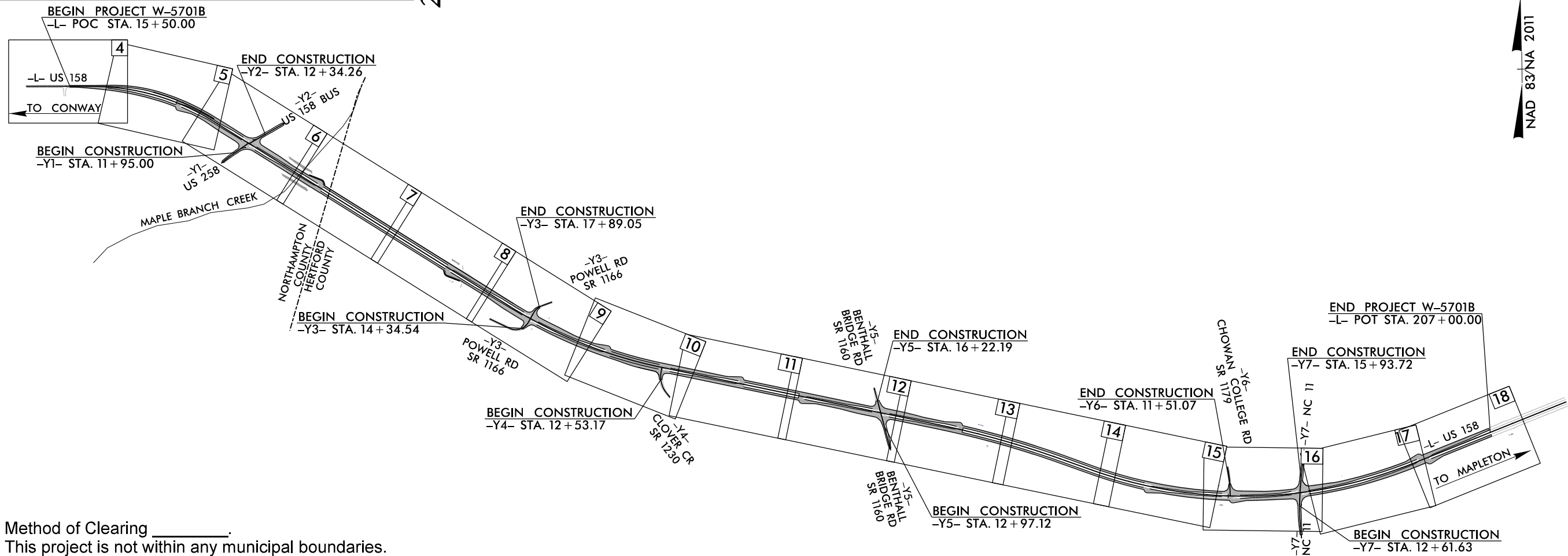
TYPE OF WORK: GRADING, DRAINAGE, PAVING,
AND SIGNING

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | W-5701B | 3 | 56 |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 44847.1.2 | HSIP-0158(074) | PE | |
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INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

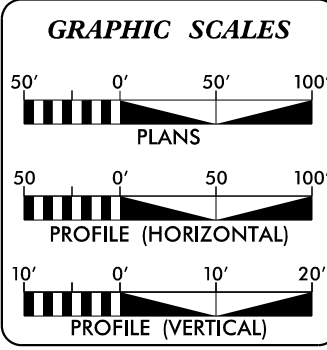


NAD 83/NA 2011



Method of Clearing _____.
 This project is not within any municipal boundaries.

CONTRACT:



DESIGN DATA

| | |
|---------------------|----------|
| ADT 2017 | = 4,500 |
| ADT 2040 | = 5,100 |
| K | = 10 % |
| D | = 60 % |
| T | = 12 % * |
| V | = 70 MPH |
| * TTST = 6% DUAL 9% | |
| FUNC CLASS = | |
| PRINCIPAL RURAL | |
| ARTERIAL | |
| STATEWIDE TIER | |

PROJECT LENGTH

| | |
|---|----------|
| LENGTH ROADWAY TIP PROJECT W-5701B..... | 3.627 mi |
| LENGTH CULVERT TIP PROJECT W-5701B..... | 0.000 mi |
| TOTAL LENGTH TIP PROJECT W-5701B..... | 3.627 mi |

NCDOT CONTACT

John S. Abel, Jr.
 PROJECT ENGINEER - DIVISION 1

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
 8601 Six Forks Road, Fourth Floor, Suite 700
 SALEM, NORTH CAROLINA 27155-3960
 NC LICENSE NO. F-0112

**FOR NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION**

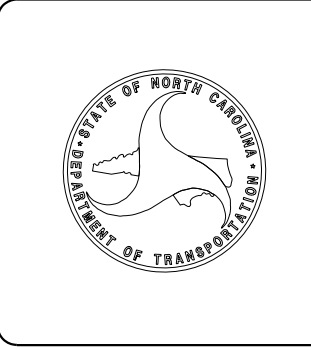
| | |
|------------------------------|---|
| 2018 STANDARD SPECIFICATIONS | |
| RIGHT OF WAY DATE: | Scott D. Blevins, P.E. PROJECT ENGINEER RK&K, LLP |
| LETTING DATE: | Bill Bollman PROJECT DESIGN ENGINEER RK&K, LLP |

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.





January 27, 2022

WBS Number: 44847.1.2
F.A. Project Number: HSIP-0158(074)
TIP Number: W-5701B
County: Northampton/ Hertford
Description: US 158 from West of US 258 to East of NC 11
Subject: Roadway Subsurface Inventory Report

PROJECT DESCRIPTION

The proposed project consists of improvements to US 158, including grading, drainage, paving and signing. The proposed project is approximately 3.6 miles in length. It begins from 0.5 miles east of US 158/ US 258 intersection, and it ends approximately 0.5 miles west of US 158/ NC 11 intersection in Hertford County, NC.

The geotechnical investigation was performed during October & November 2021. During this time, a total of 64 auger probe borings were drilled. Auger probe borings were advanced using a hand auger. Representative soil samples were collected from the soil cuttings for field visual classification and laboratory testing.

The following alignment was investigated. Selected cross sections of this alignment are included in this report.

| <u>Line</u> | <u>Stations (±)</u> |
|-------------|---------------------|
| -L- | 15+50 – 207+00 |

PHYSIOGRAPHY AND GEOLOGY

The proposed project is located in the Coastal Plain Physiographic Province. The terrain within and around the project is flat to gently rolling hills. The land surrounding the proposed roadway is typically agricultural or forested, but there are a few locations with swamps on one or both sides of the existing roadway. Topographic relief along the length of the project alignment ranges in elevation from 78.3 feet to 95.4 feet.

The proposed project is underlain by the Yorktown Formation, Undivided. The Yorktown Formation: fossiliferous clay with varying amounts of fine-grained sand, bluish gray, shell material commonly concentrated in lenses; mainly in the area north of Neuse River.

A typical soil profile consists of a loose/soft upper layer of sand or clay underlain by more stiff/dense material of the Undivided Coastal Plain soils. The Undivided Coastal Plain soils are typically composed of sands and clays.

GROUNDWATER PROPERTIES

24-hour stabilized groundwater measurements were taken at all the borings. Groundwater was encountered in 12 borings and measured at elevations ranging from 51.1’ to 83.9’. The remaining borings were dry. It should

be noted that the groundwater levels fluctuate depending upon seasonal factors such as precipitation and temperature. As such, soil moisture and groundwater conditions at other times may vary or be different from those described in this report. Small intermittent channels exist throughout the project providing drainage during heavy rainfall events. Some channels are groundwater fed while others appear to be artificial from construction of the existing roadway.

SOIL PROPERTIES

Soils encountered during the geotechnical investigation are separated into three categories based on origin. The origins consist of roadway embankment, alluvial soils, and Undivided Coastal Plain.

Materials interpreted as roadway embankment were encountered within the limits of the existing US 158 alignment and intersecting roads. The roadway embankment consists of very loose to medium dense, non-plastic silty clayey fine to coarse SAND (A-2-4, A-2-5, A-2-6, and A-1-b); medium stiff, sandy non-plastic to slightly plastic (PI < 7) SILT (A-4); and soft to stiff, sandy to silty moderately to highly plastic (PI = 14-34) CLAY (A-6, A-7-5, A-7-6). Encountered roadway embankment was up to 6 feet thick.

Alluvial soils were encountered in one boring in the proposed project. It is composed of soft to medium stiff, fine to coarse sandy CLAY (A-6).

Soils classified as Undivided Coastal Plain are located throughout the project and generally consist of loose to medium dense, silty to clayey fine to coarse SAND (A-2-4, A-2-5, A-2-6); soft to stiff, non-plastic fine to coarse sandy to slightly plastic (PI = 9) SILT (A-4); and soft to medium stiff, fine sandy to silty slightly to highly plastic (PI = 14-32) CLAY (A-6, A-7-5, A-7-6). The encountered undivided coastal plain soils were up to 6 feet thick.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Alluvial Soils: The following areas contain alluvial soils:

| <u>Line</u> | <u>Stations (±)</u> | <u>Offset</u> |
|-------------|---------------------|---------------|
| -L- | 69+33 – 70+33 | RT |

Highly Plastic Soils: The following areas contain soils with plasticity indices (PI) greater than 20 within proposed cut sections and within 3-ft of subgrade:

| <u>Line</u> | <u>Stations (±)</u> | <u>Offset</u> |
|-------------|---------------------|---------------|
| -L- | 79+25 – 84+25 | CL |
| -L- | 119+25 – 124+25 | CL |
| -L- | 198+25 – 200+25 | RT |

Groundwater: Groundwater was encountered within **six (6) feet** of proposed subgrade at the following locations:


| <u>Line</u> | <u>Stations (±)</u> | <u>Offset</u> |
|-------------|---------------------|---------------|
| -L- | 77+25 – 81+75 | CL |

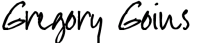
| <u>Line</u> | <u>Stations (±)</u> | <u>Offset</u> |
|-------------|---------------------|---------------|
| -L- | 88+25 – 92+25 | CL |
| -L- | 134+00 – 136+00 | CL |
| -L- | 162+25 – 164+25 | CL & RT |
| -L- | 164+25 – 165+25 | CL |
| -L- | 198+25 – 200+25 | RT |

Ponds: Ponds were not observed during the subsurface investigation within the footprint of the project.

Water Wells: Water wells were not observed during the subsurface investigation within the footprint of the project. Water wells may be encountered during construction due to the presence of dwellings and businesses near the proposed right of way.

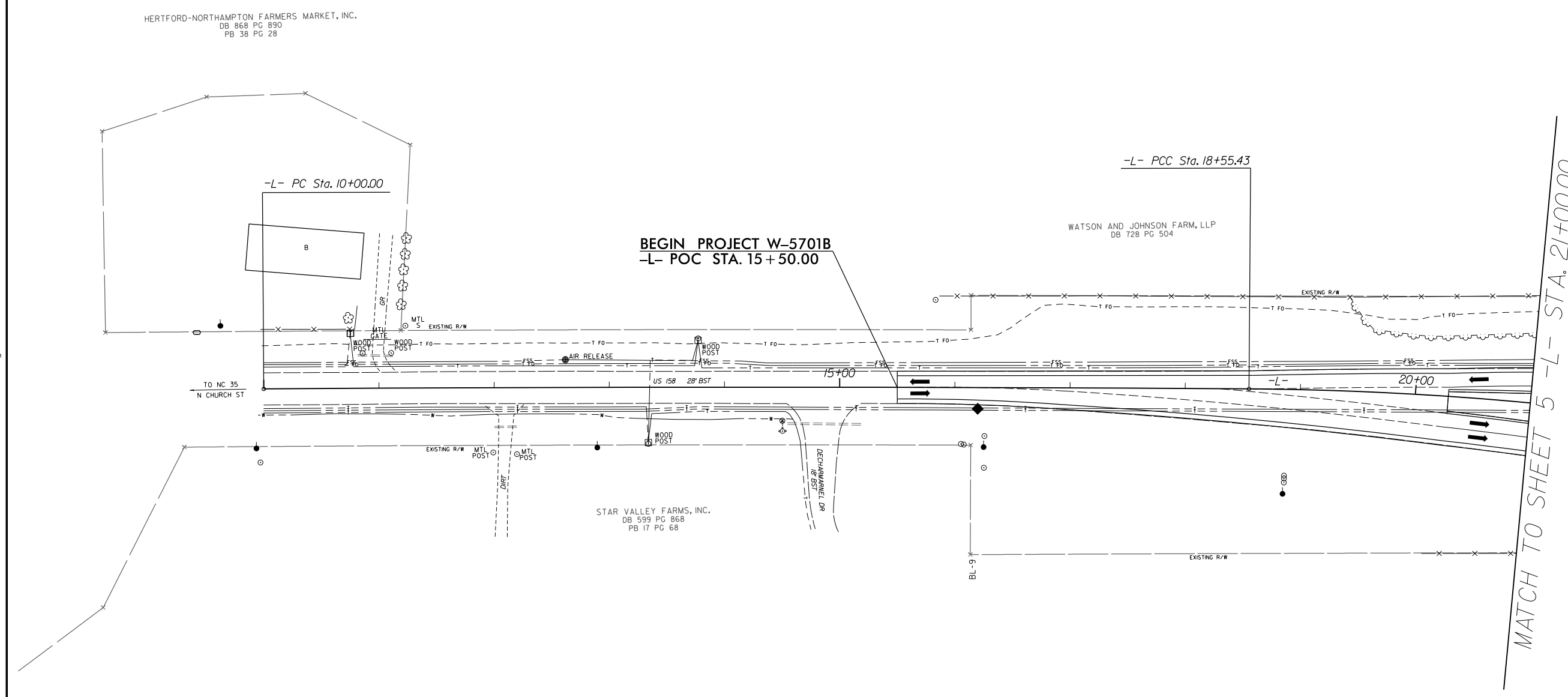
Prepared by,

DocuSigned by:

 2/11/2022
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 Saket N. Kabra, P.E.
 Associate Engineer, Geotechnical
 Registered, North Carolina 053059

DocuSigned by:

 2/11/2022
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 Gregory K. Goins, P.E.
 Project Manager, Geotechnical
 Registered, North Carolina 041709

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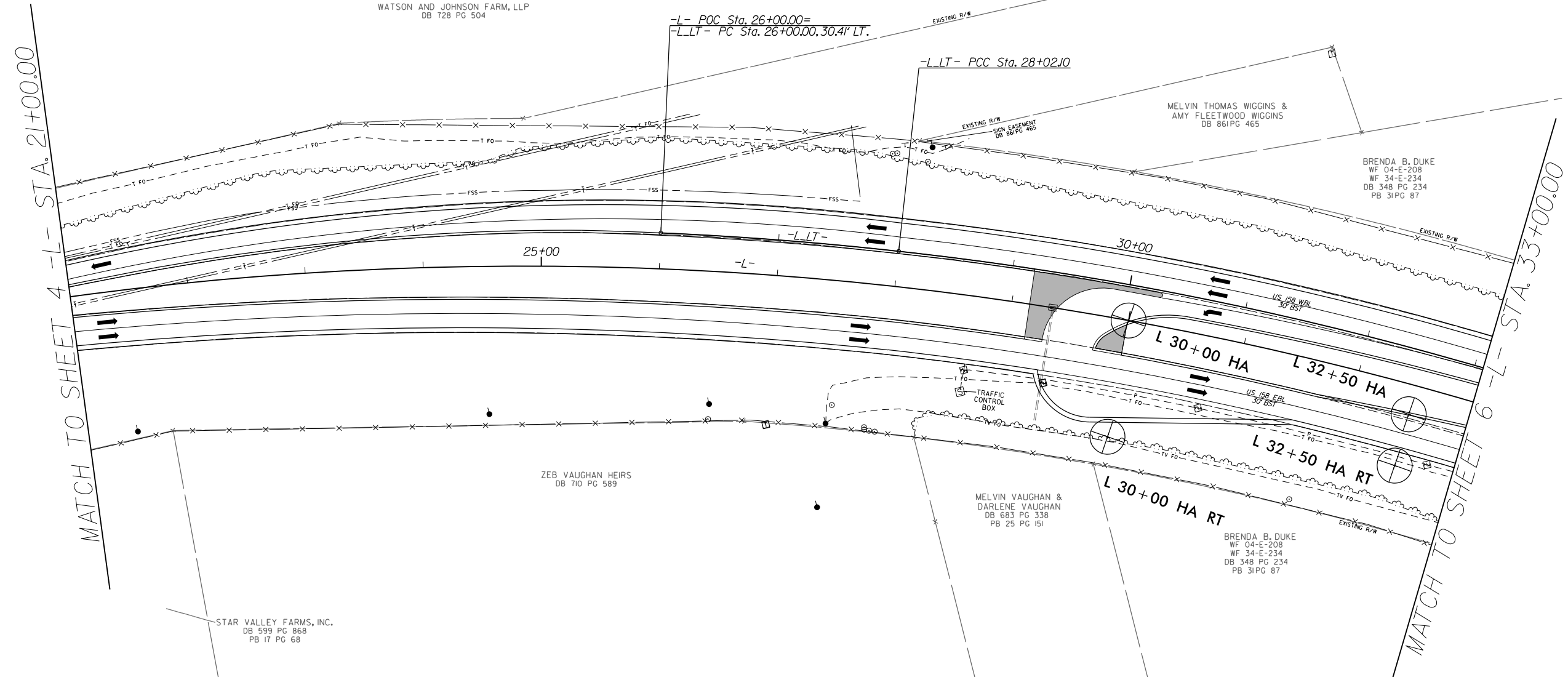
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| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

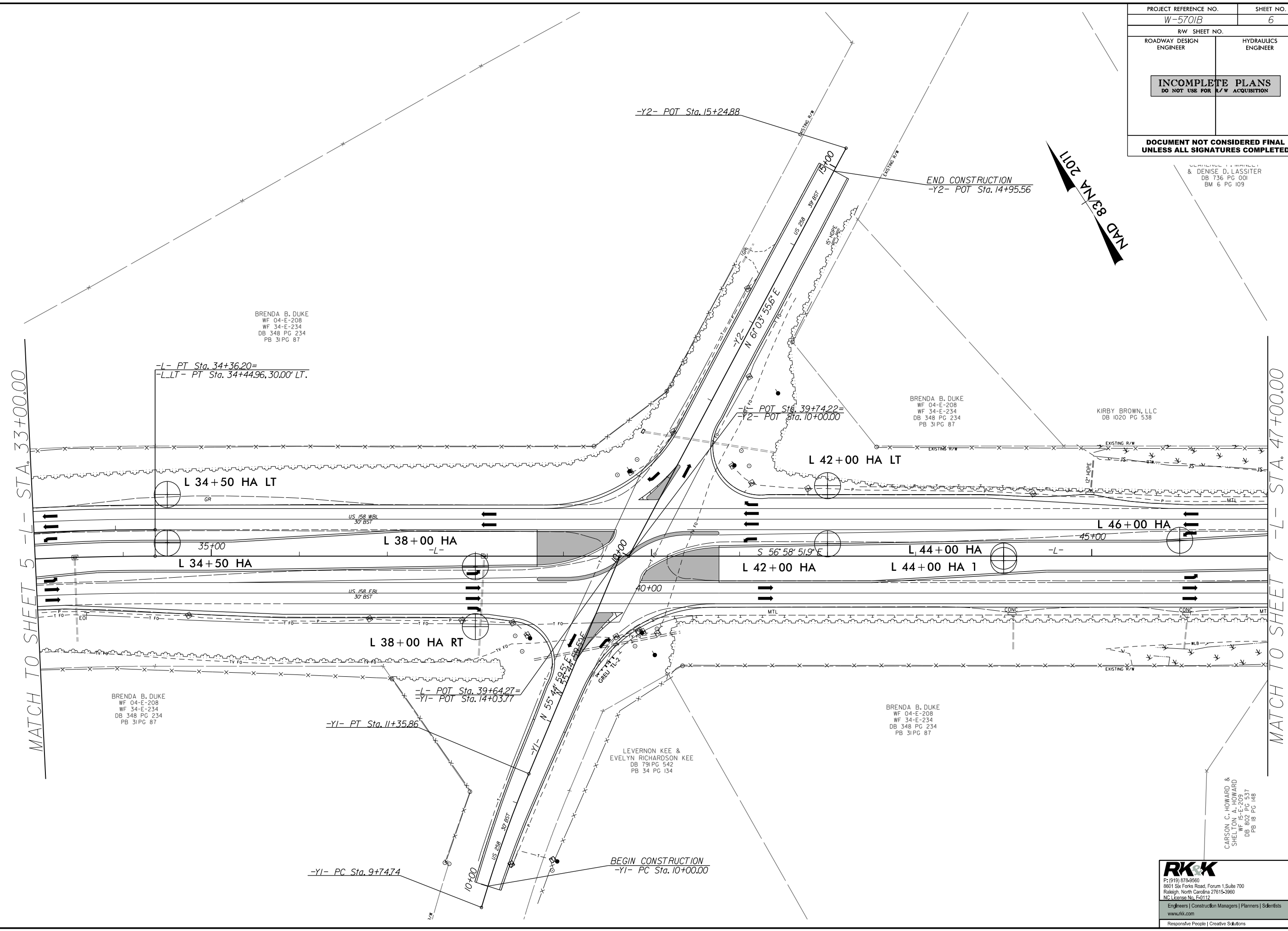
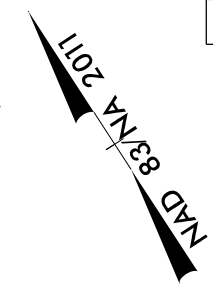
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CELESTINE J. HARRIS
& DENISE D. LASSITER
DB 736 PG 001
BM 6 PG 109



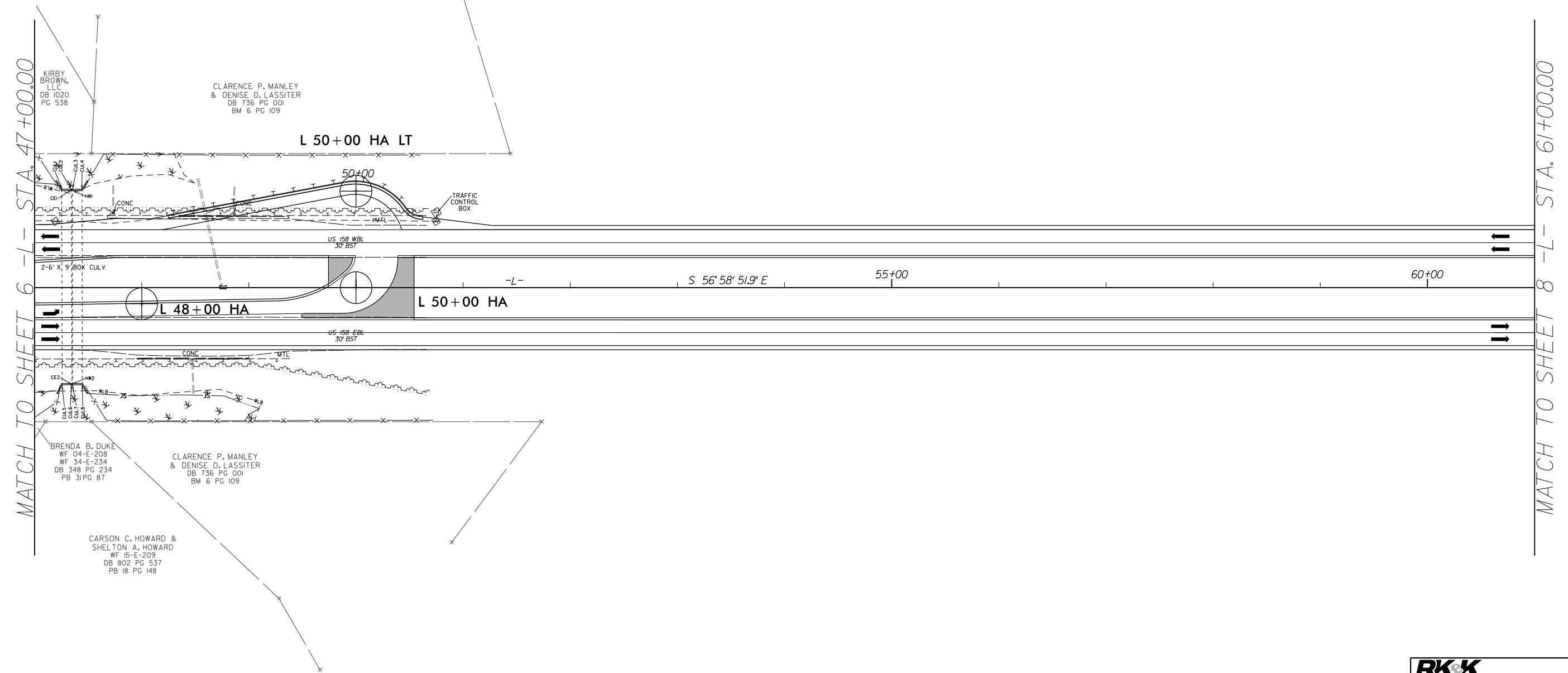
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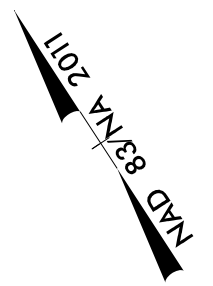
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| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

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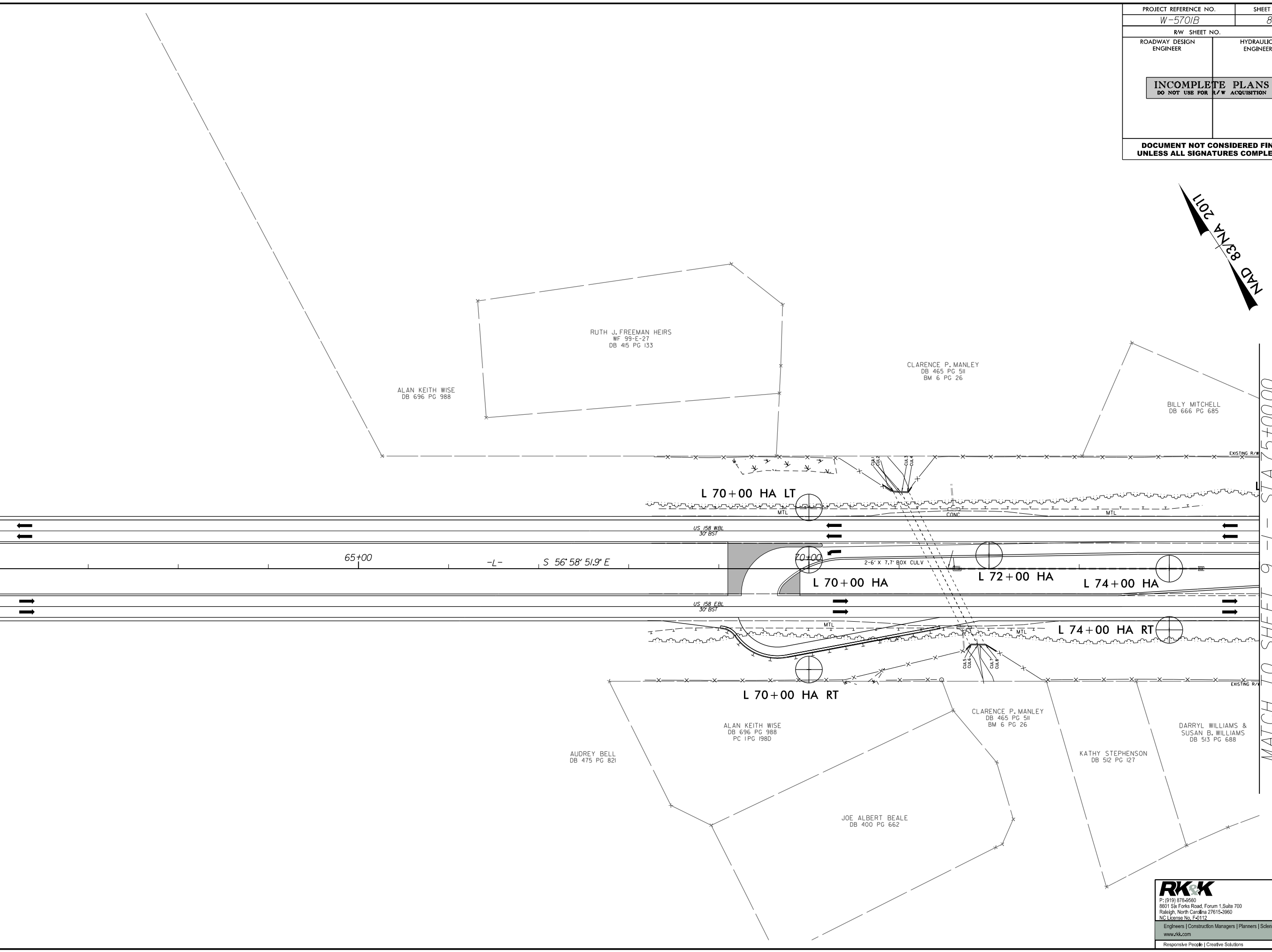
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|---|---------------------|
| PROJECT REFERENCE NO. | SHEET NO. |
| W-5701B | 8 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



MATCH TO SHEET 7 -L- STA. 61+00.00

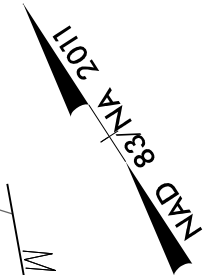
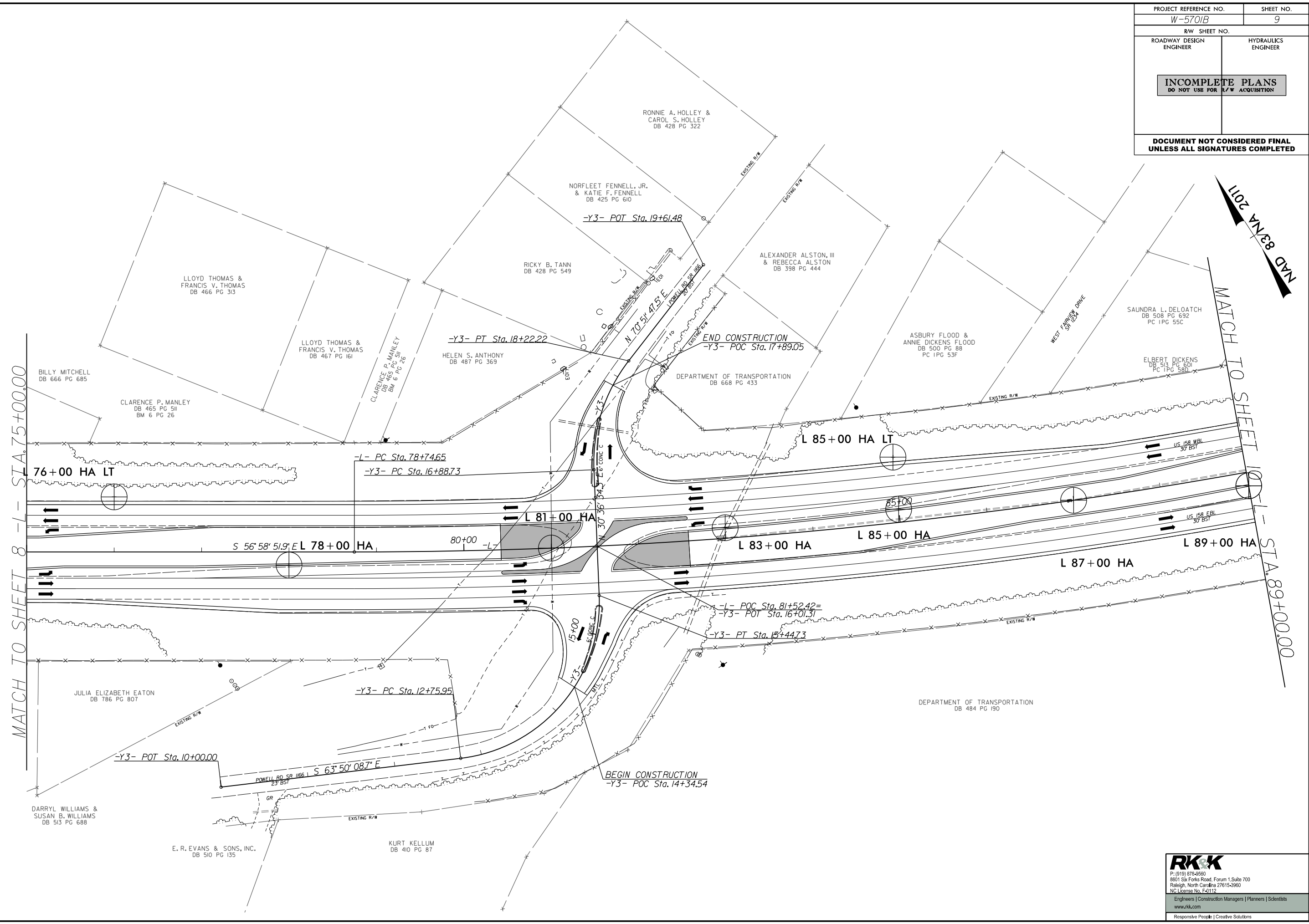
MATCH TO SHEET 9 -L- STA. 75+00.00



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| PROJECT REFERENCE NO. | SHEET NO. |
| W-5701B | 9 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
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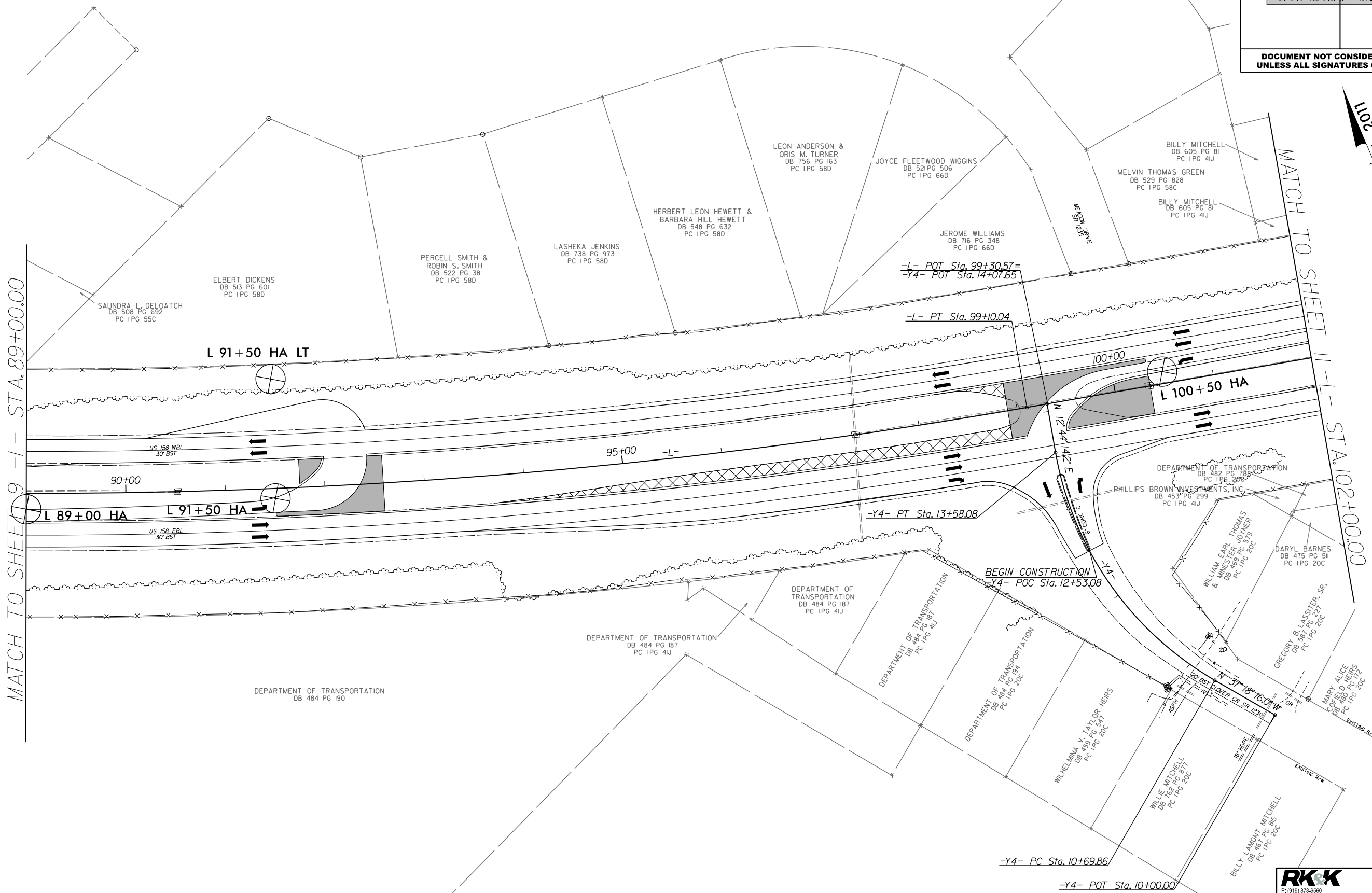


MATCH TO SHEET 8 - L - STA. 75+00.00

MATCH TO SHEET 10 - STA. 89+00.00

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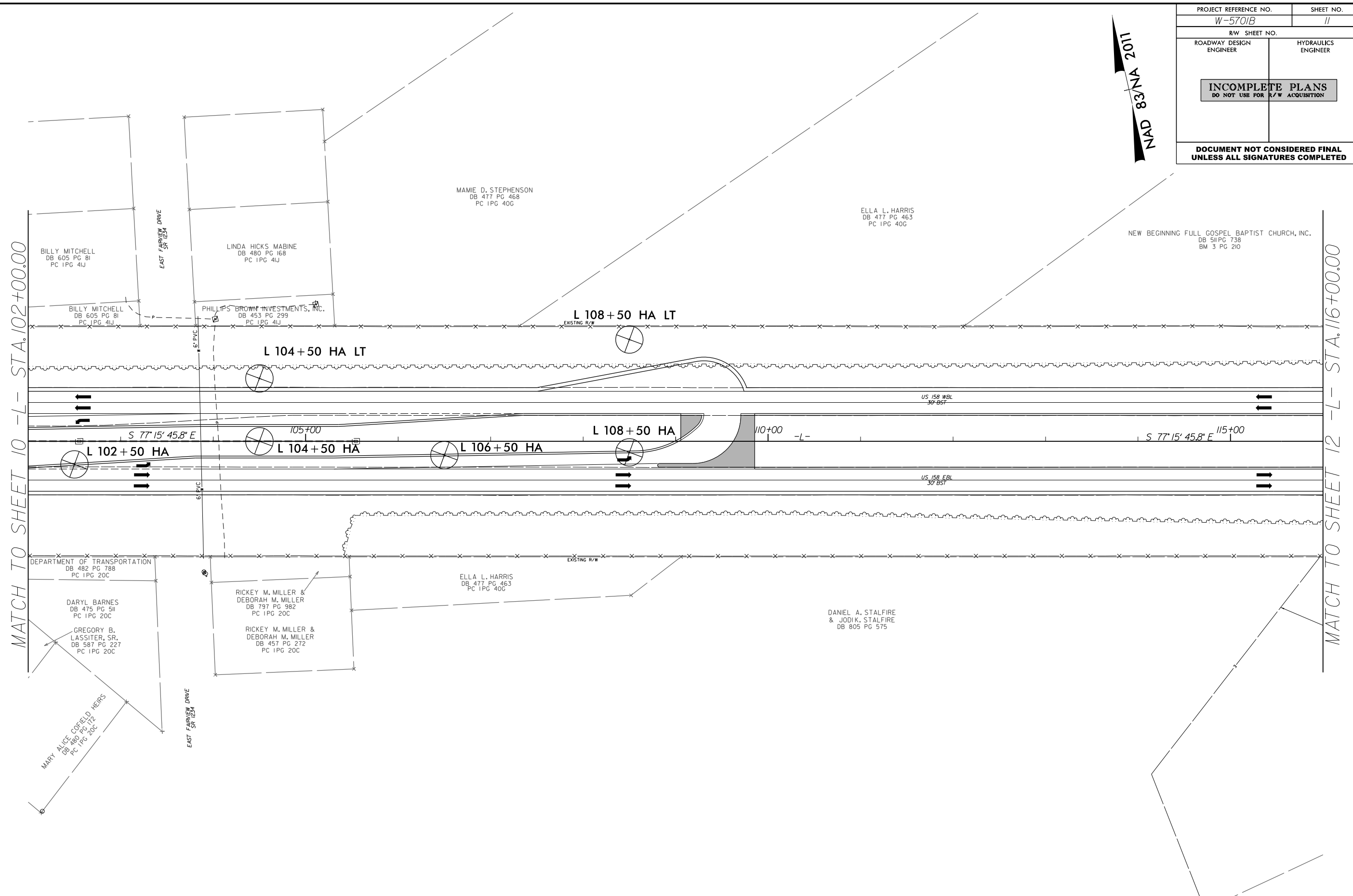
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| W-5701B | | 10 | |
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| INCOMPLETE PLANS | | | |
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| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |



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MATCH TO SHEET 10 - L - STA. 102+00.00

MATCH TO SHEET 12 - L - STA. 116+00.00

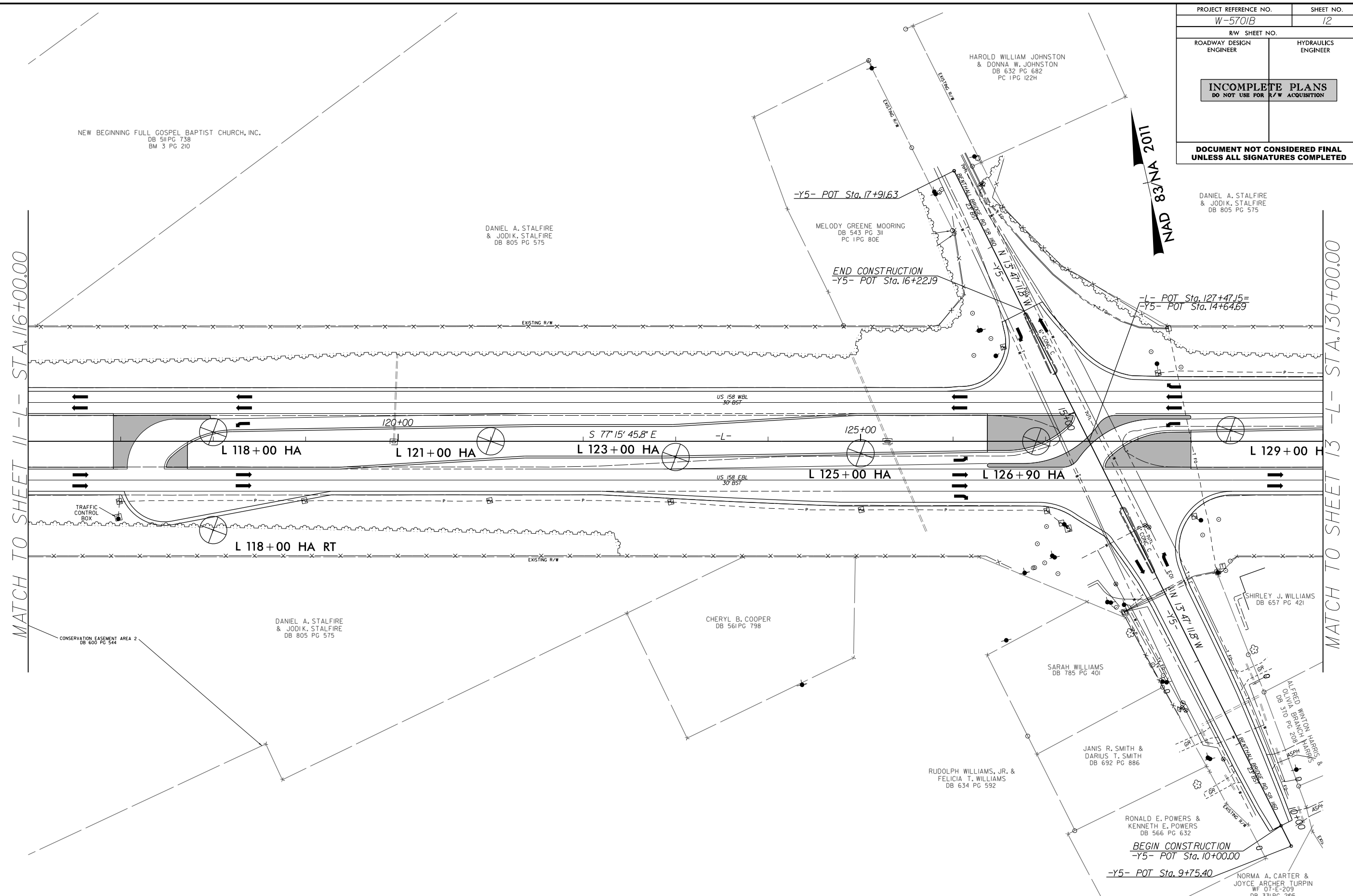


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| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

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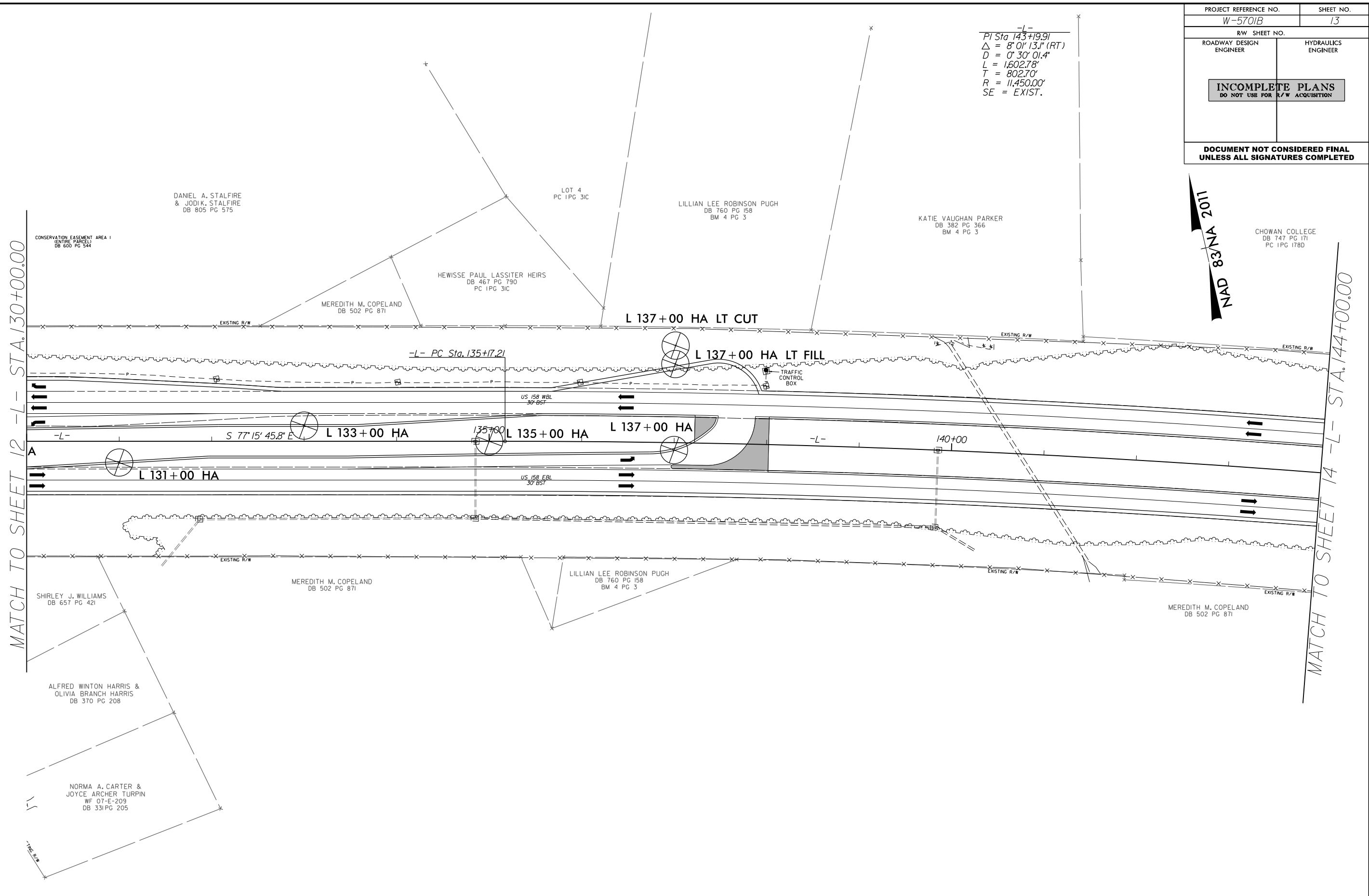
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| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
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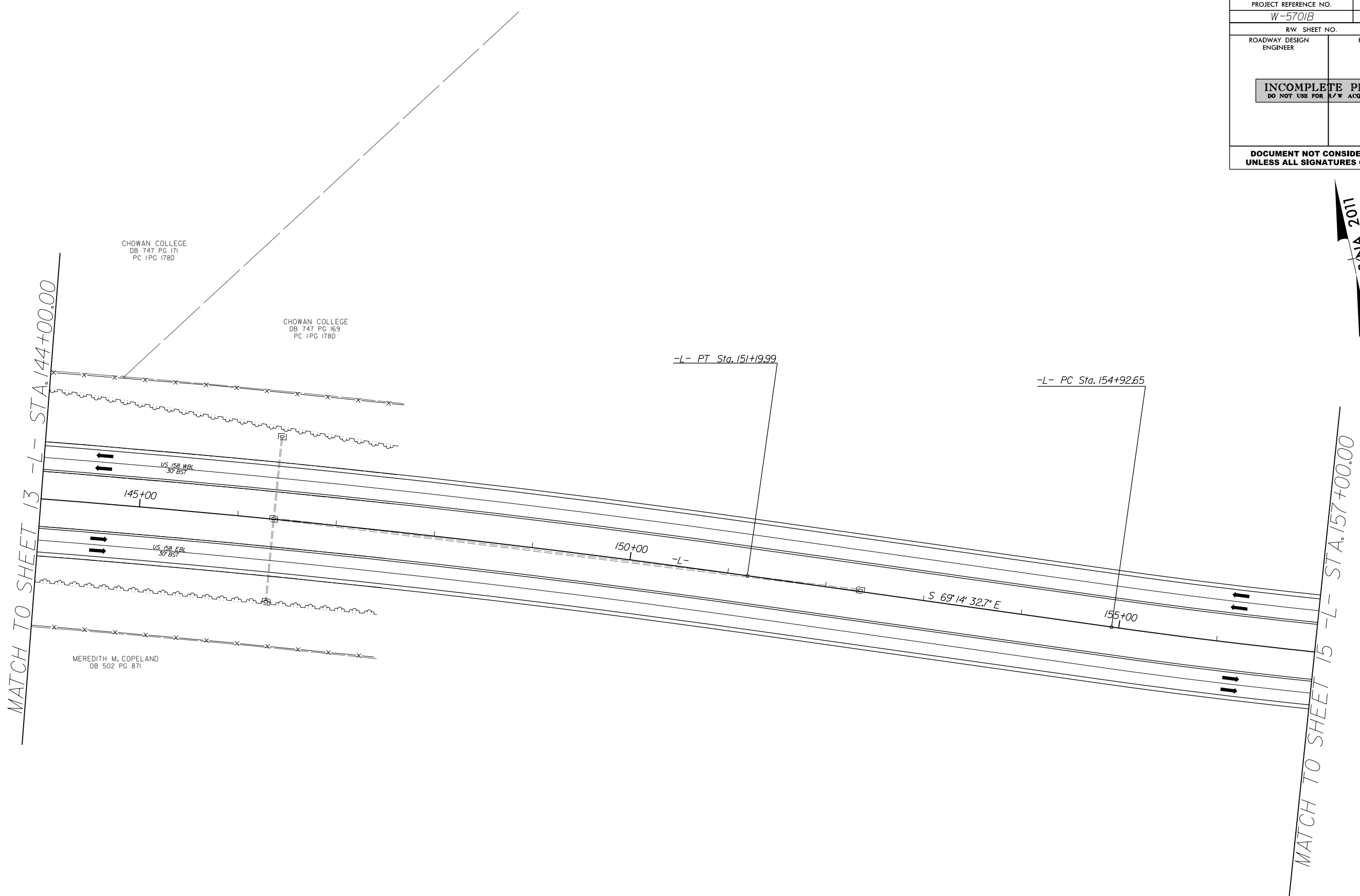
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| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |



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 $D = 0^{\circ} 30' 01.4''$
 $L = 1,602.78'$
 $T = 802.70'$
 $R = 11,450.00'$
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| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

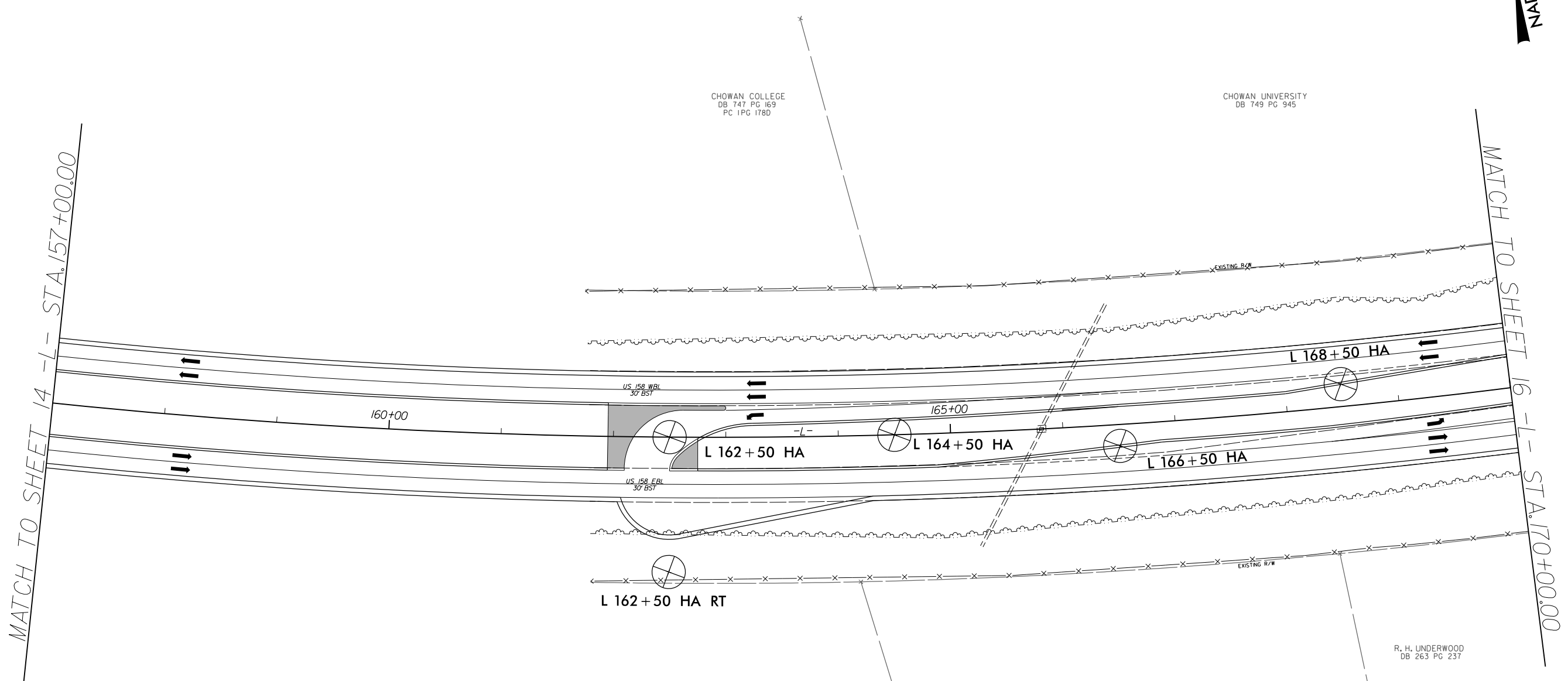


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| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

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NAD
2011



CHOWAN COLLEGE
DB 747 PG 169
PC 1PG 178D

CHOWAN UNIVERSITY
DB 749 PG 945

MATCH TO SHEET 14 - L - STA. 157+00.00

MATCH TO SHEET 16 - L - STA. 170+00.00

L 162+50 HA RT

L 162+50 HA

L 164+50 HA

L 166+50 HA

L 168+50 HA

MEREDITH M. COPELAND
DB 502 PG 871

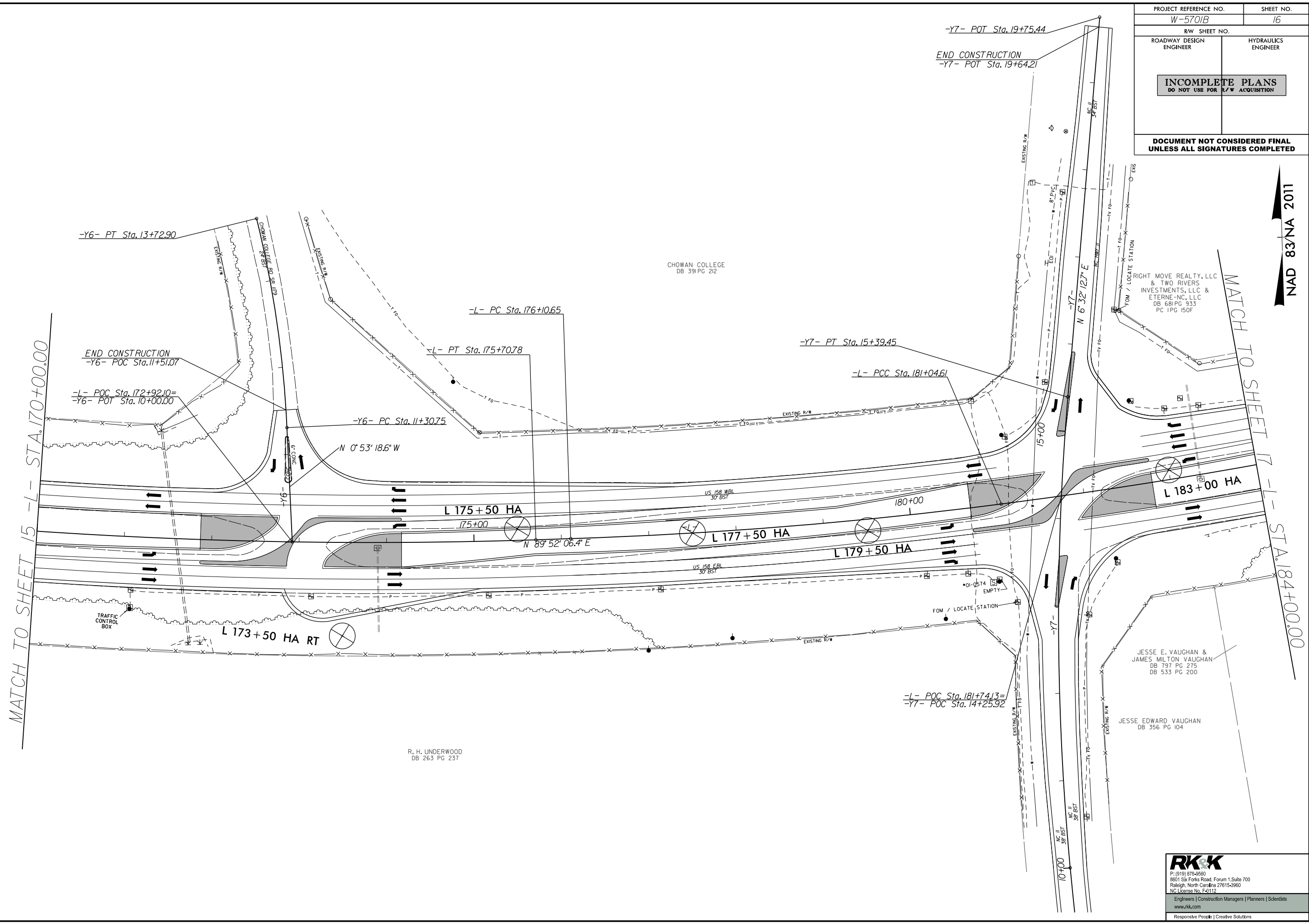
STEVEN R. BURGESS
DB 813 PG 292

R. H. UNDERWOOD
DB 263 PG 237

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|---|---------------------|
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| R/W SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
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|---|---------------------|
| PROJECT REFERENCE NO. W-5701B | SHEET NO. 17 |
| RW SHEET NO. | |
| ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

MATCH TO SHEET 16 -L- STA. 184+00.00

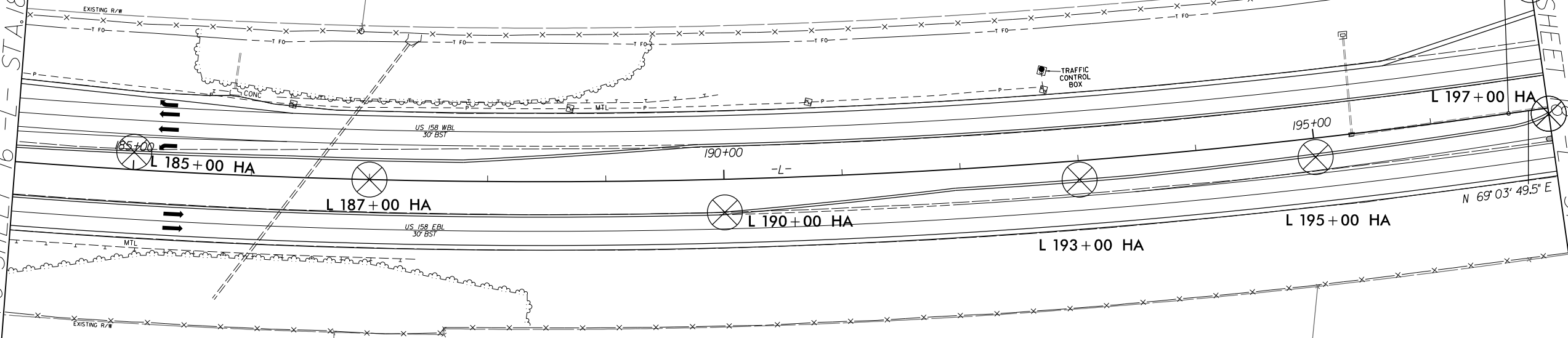
MATCH TO SHEET 18 -L- STA. 197+00.00

NAD 83/NA 2011

RIGHT MOVE REALTY, LLC &
TWO RIVERS INVESTMENTS, LLC &
ETERNE-NC, LLC
DB 681 PG 933
PC 1 PG 150F

VERNON WILLIAM JOYNER HEIRS
WF IA-5707
BM 2 PG 47

-L- PT Sta. 196+66.40
AGNES P. JOYNER
DB 507 PG 575



JESSE E. VAUGHAN &
JAMES MILTON VAUGHAN
DB 797 PG 275
DB 533 PG 200

VERNON WILLIAM JOYNER HEIRS
WF IA-5707
BM 2 PG 47

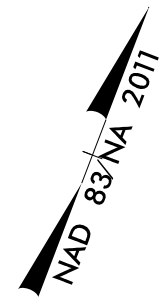
AGNES P. JOYNER
DB 507 PG 575

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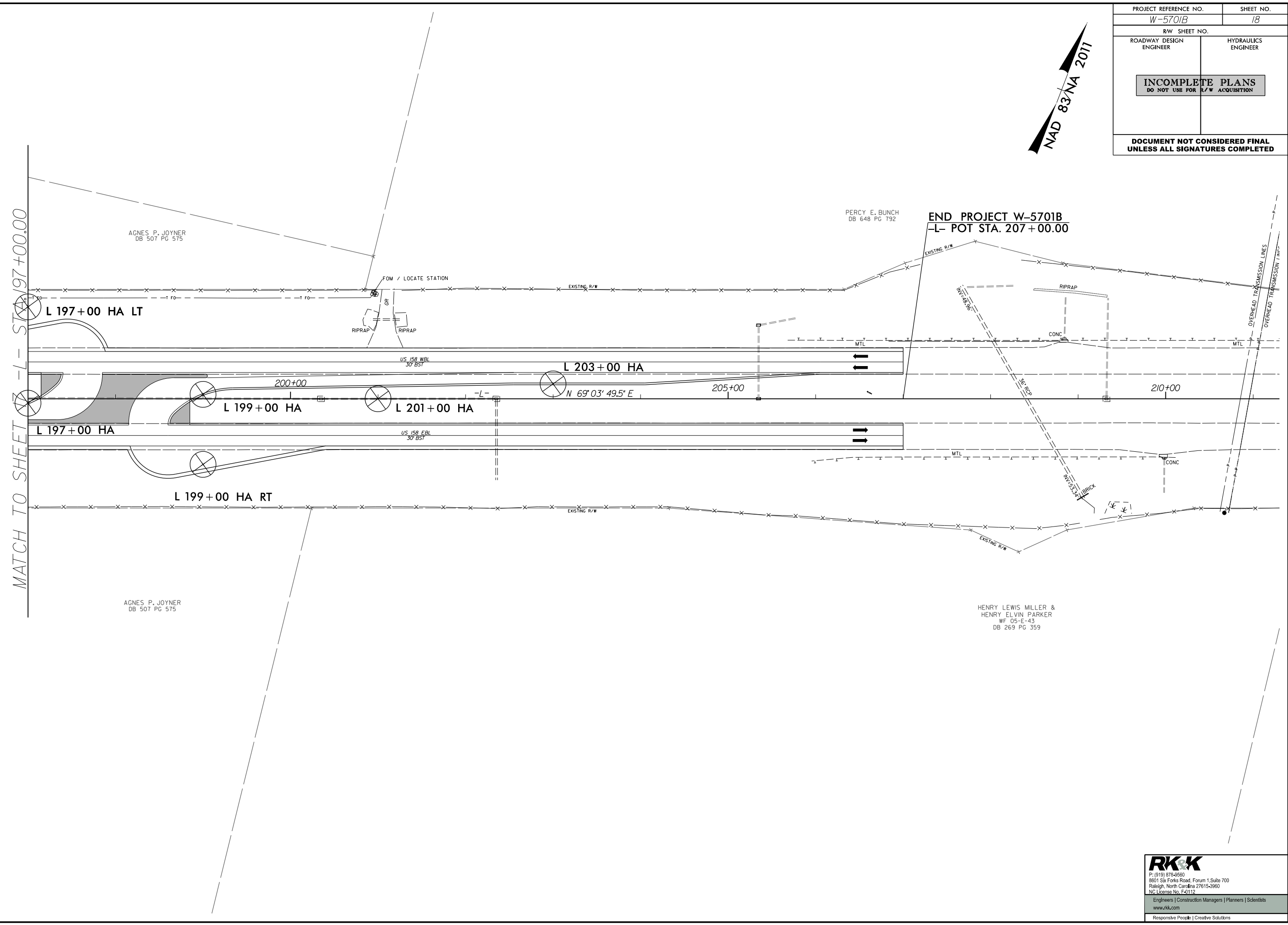
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| PROJECT REFERENCE NO. <i>W-5701B</i> | | SHEET NO. <i>18</i> | |
| RW SHEET NO. | | | |
| ROADWAY DESIGN ENGINEER | | HYDRAULICS ENGINEER | |
| INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION | | | |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | | | |



MATCH TO SHEET -L- STA. 197+00.00



AGNES P. JOYNER
DB 507 PG 575

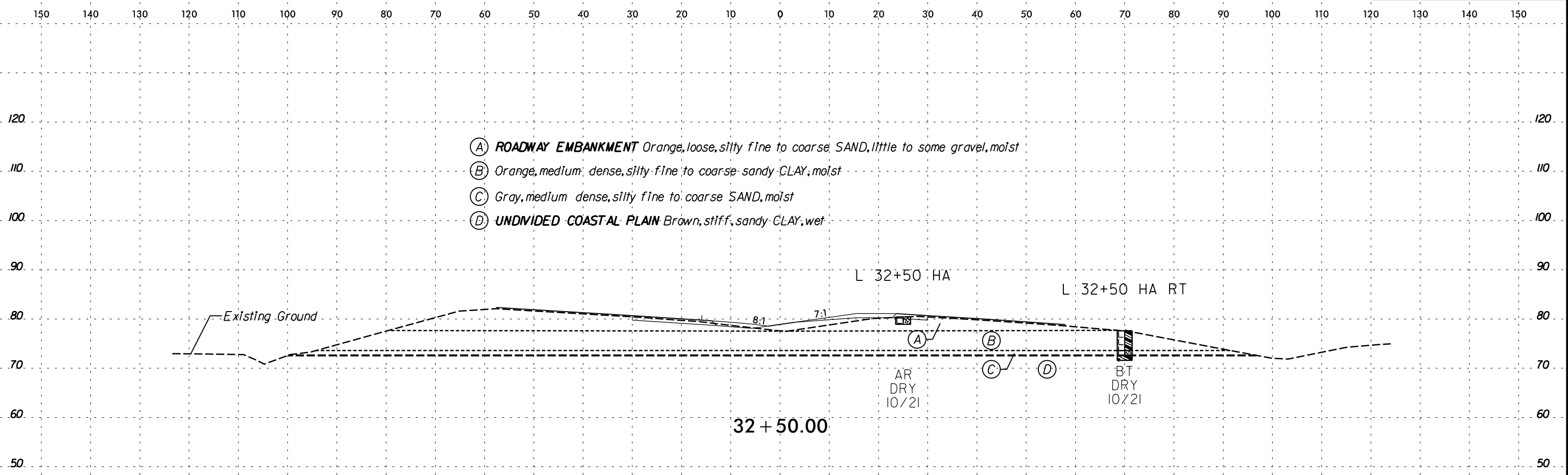
PERCY E. BUNCH
DB 648 PG 792

AGNES P. JOYNER
DB 507 PG 575

HENRY LEWIS MILLER &
HENRY ELVIN PARKER
WF 05-E-43
DB 269 PG 359

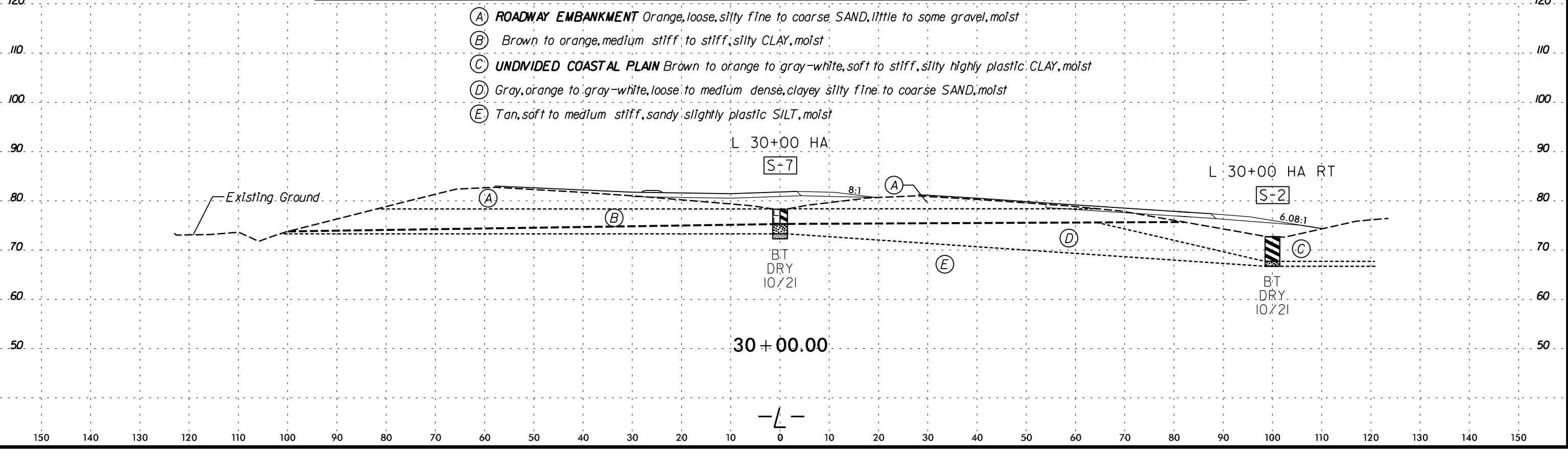
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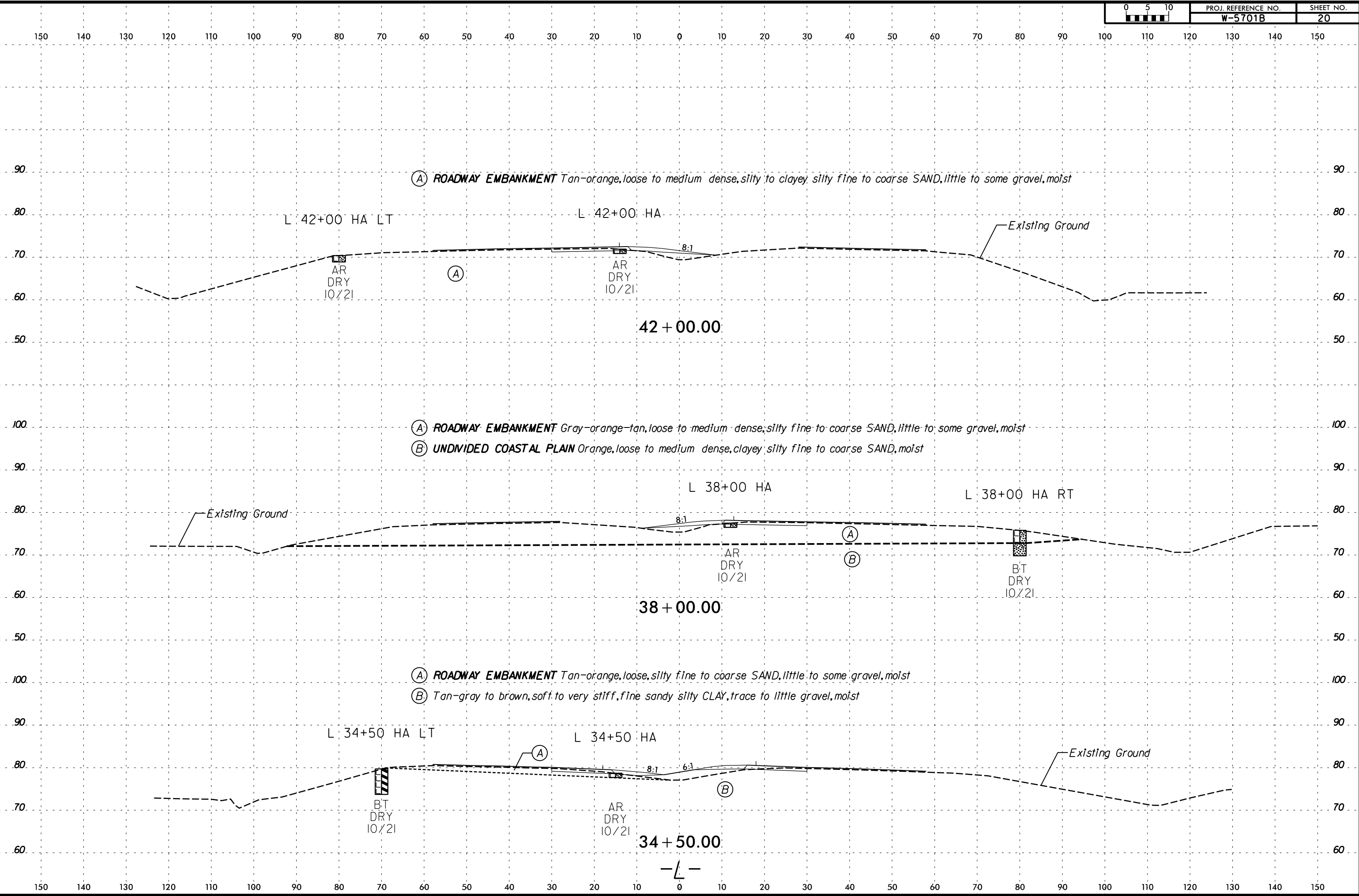


- (A) ROADWAY EMBANKMENT Orange, loose, silty fine to coarse SAND, little to some gravel, moist
- (B) Orange, medium dense, silty-fine to coarse sandy CLAY, moist
- (C) Gray, medium dense, silty fine to coarse SAND, moist
- (D) UNDIVIDED COASTAL PLAIN Brown, stiff, sandy CLAY, wet

| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
|------------|---------|---------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-2 | 30+00 | 100' RT | 1.9-2.4' | A-7-6 | 46 | 27 | 32 | 31 | 5 | 33 | 86 | 79 | 38 | 18 | ND |
| S-7 | 30+00 | 0' CL | 5.0-5.5' | A-4 | 23 | 9 | 15 | 45 | 11 | 29 | 99 | 94 | 43 | 18 | ND |

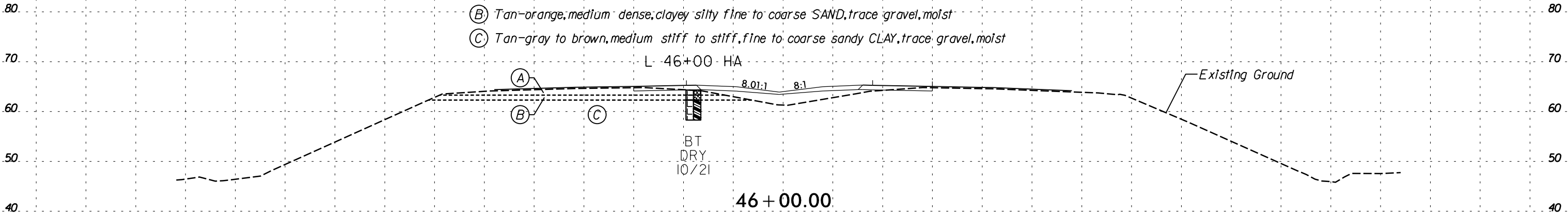


- (A) ROADWAY EMBANKMENT Orange, loose, silty fine to coarse SAND, little to some gravel, moist
- (B) Brown to orange, medium stiff to stiff, silty CLAY, moist
- (C) UNDIVIDED COASTAL PLAIN Brown to orange to gray-white, soft to stiff, silty highly plastic CLAY, moist
- (D) Gray, orange to gray-white, loose to medium dense, clayey silty fine to coarse SAND, moist
- (E) Tan, soft to medium stiff, sandy, slightly plastic SILT, moist

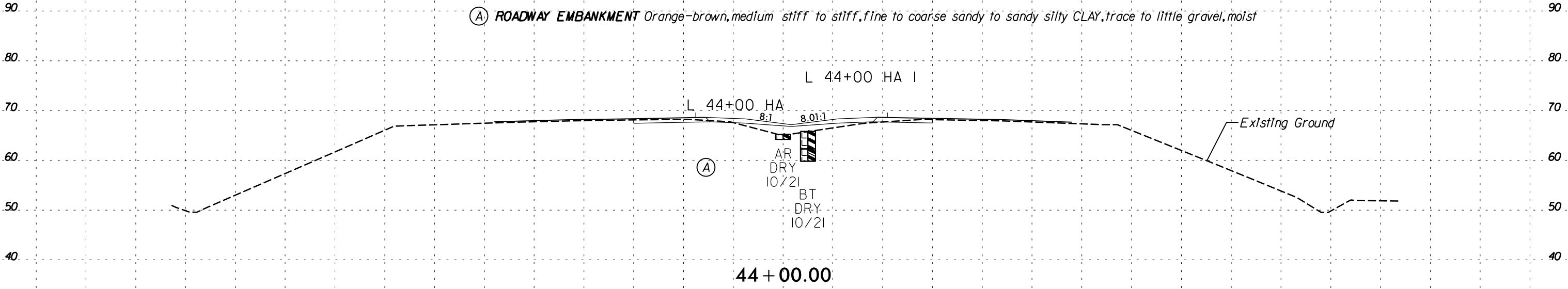


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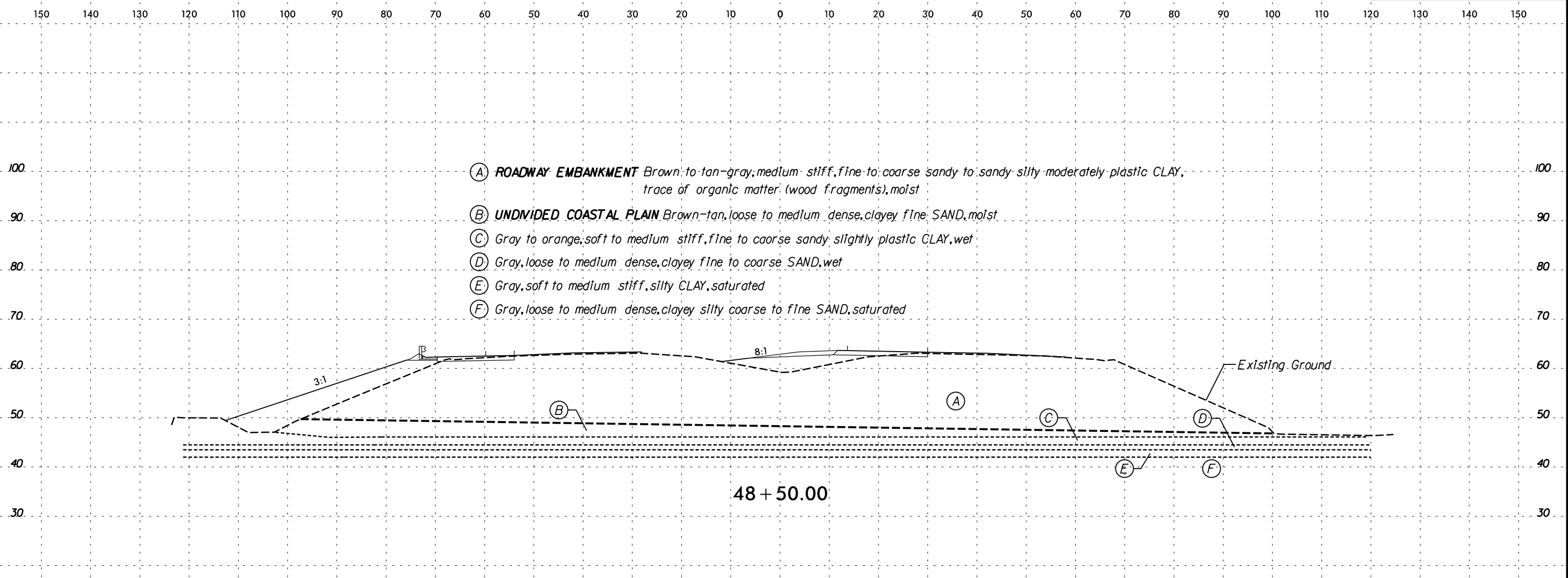
- (A) ROADWAY EMBANKMENT Brown, dense to very dense, gravelly SAND, moist
- (B) Tan-orange, medium dense, clayey silty fine to coarse SAND, trace gravel, moist
- (C) Tan-gray to brown, medium stiff to stiff, fine to coarse sandy CLAY, trace gravel, moist



- (A) ROADWAY EMBANKMENT Orange-brown, medium stiff to stiff, fine to coarse sandy to sandy silty CLAY, trace to little gravel, moist

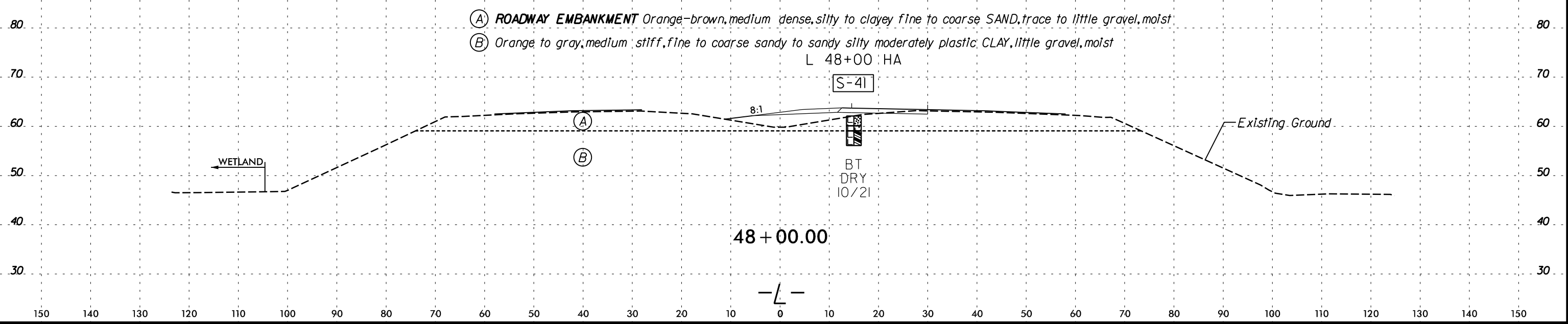


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 1/27/2022
 kkbba



- (A) **ROADWAY EMBANKMENT** Brown-to-tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist
- (B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist
- (C) Gray to orange, soft to medium stiff, fine to coarse sandy, slightly plastic CLAY, wet
- (D) Gray, loose to medium dense, clayey fine to coarse SAND, wet
- (E) Gray, soft to medium stiff, silty CLAY, saturated
- (F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated

| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-41 | 48+00 | 15' RT | 3.0-3.5' | A-6 | 35 | 18 | 17 | 40 | 11 | 33 | 99 | 93 | 47 | 16 | ND |



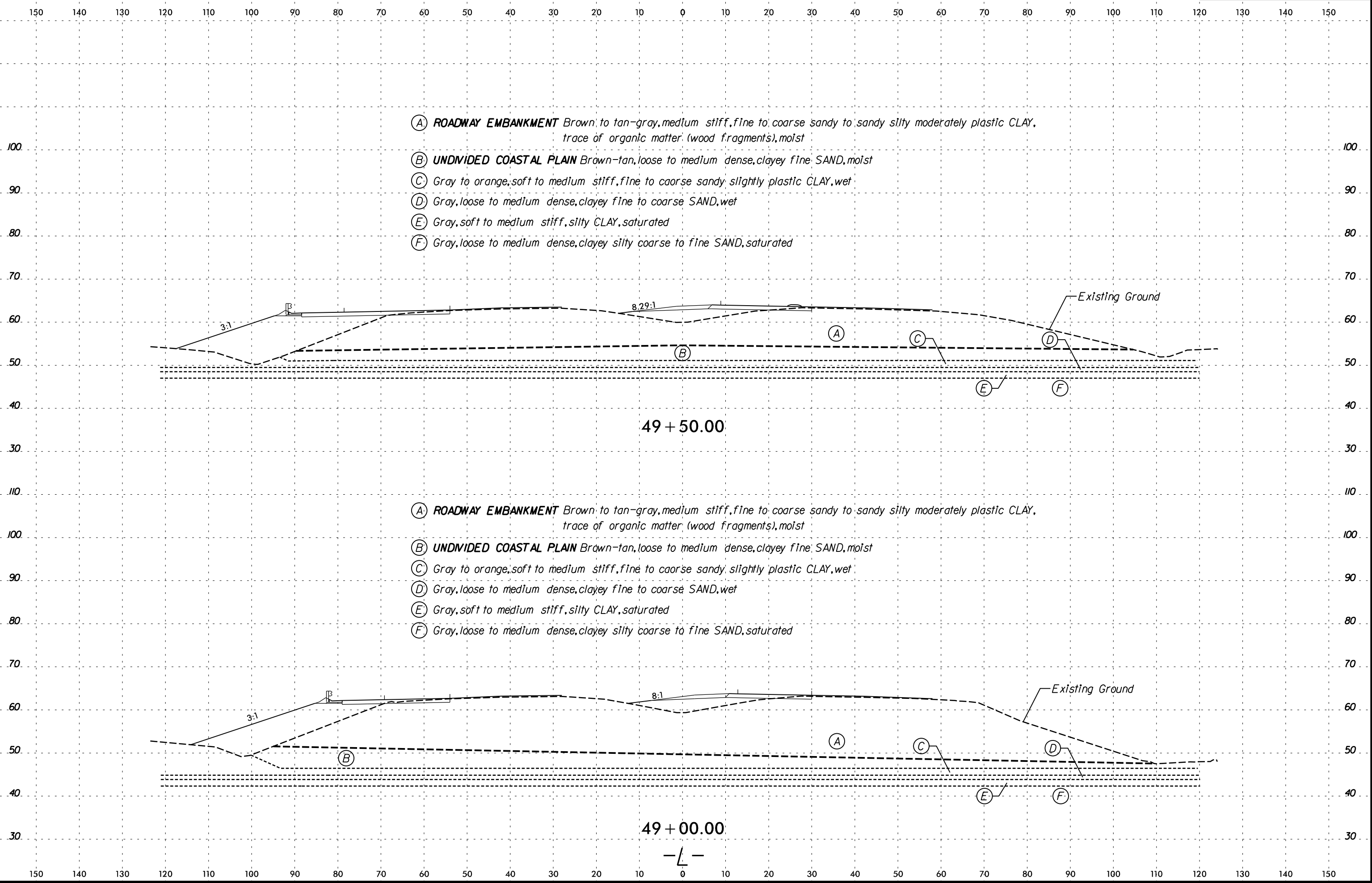
- (A) **ROADWAY EMBANKMENT** Orange-brown, medium dense, silty to clayey fine to coarse SAND, trace to little gravel, moist
 - (B) Orange to gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, little gravel, moist
- L 48+00 HA

S-41

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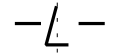


- (A) **ROADWAY EMBANKMENT** Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist
- (B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist
- (C) Gray to orange, soft to medium stiff, fine to coarse sandy, slightly plastic CLAY, wet
- (D) Gray, loose to medium dense, clayey fine to coarse SAND, wet
- (E) Gray, soft to medium stiff, silty CLAY, saturated
- (F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated

49 + 50.00

- (A) **ROADWAY EMBANKMENT** Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist
- (B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist
- (C) Gray to orange, soft to medium stiff, fine to coarse sandy, slightly plastic CLAY, wet
- (D) Gray, loose to medium dense, clayey fine to coarse SAND, wet
- (E) Gray, soft to medium stiff, silty CLAY, saturated
- (F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated

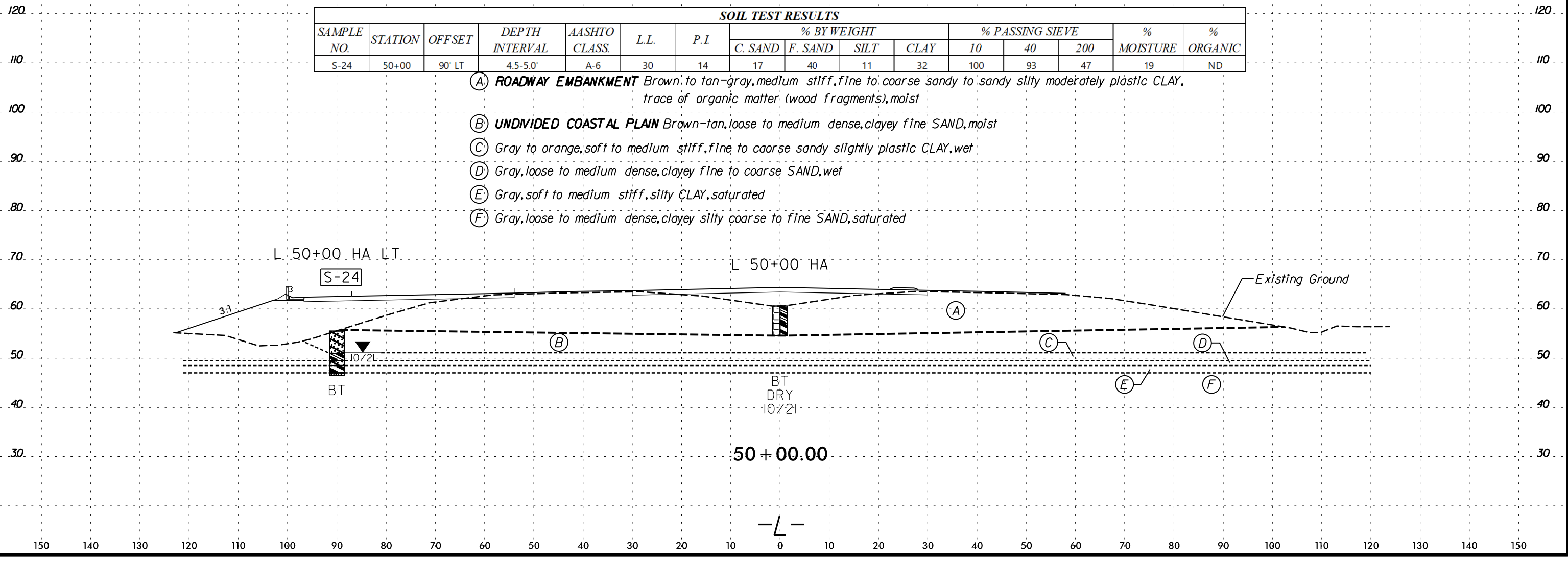
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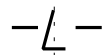
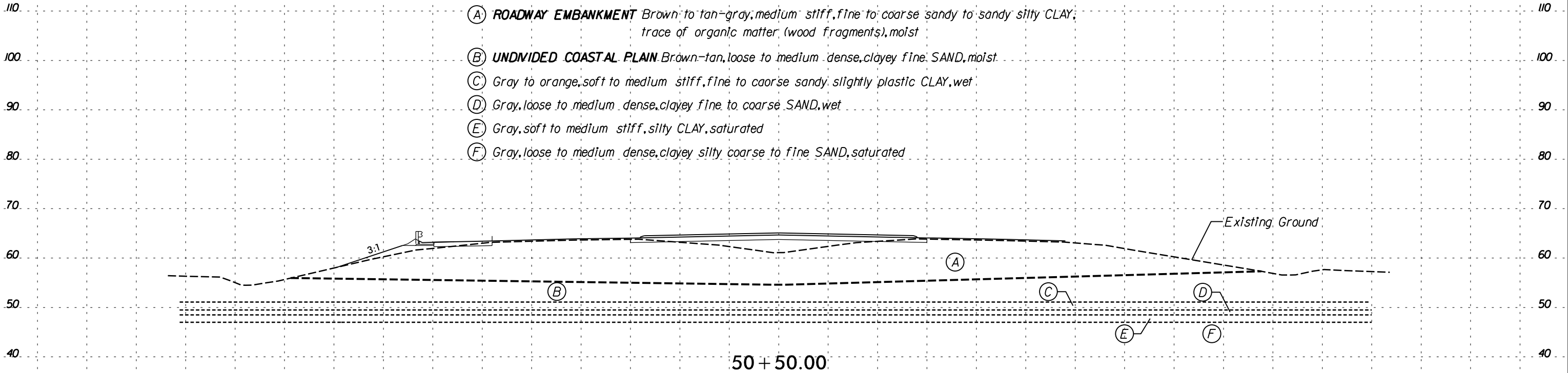
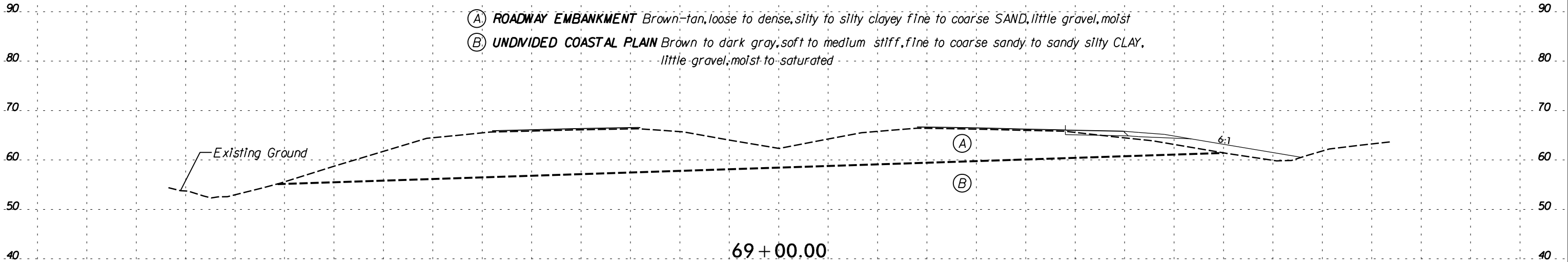
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| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|--------|----------|-----------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| | | | | | | | S-24 | 50+00 | 90' LT | 4.5-5.0' | A-6 | 30 | 14 | | |

- (A) **ROADWAY EMBANKMENT** Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist
- (B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist
- (C) Gray to orange, soft to medium stiff, fine to coarse sandy, slightly plastic CLAY, wet
- (D) Gray, loose to medium dense, clayey fine to coarse SAND, wet
- (E) Gray, soft to medium stiff, silty CLAY, saturated
- (F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated

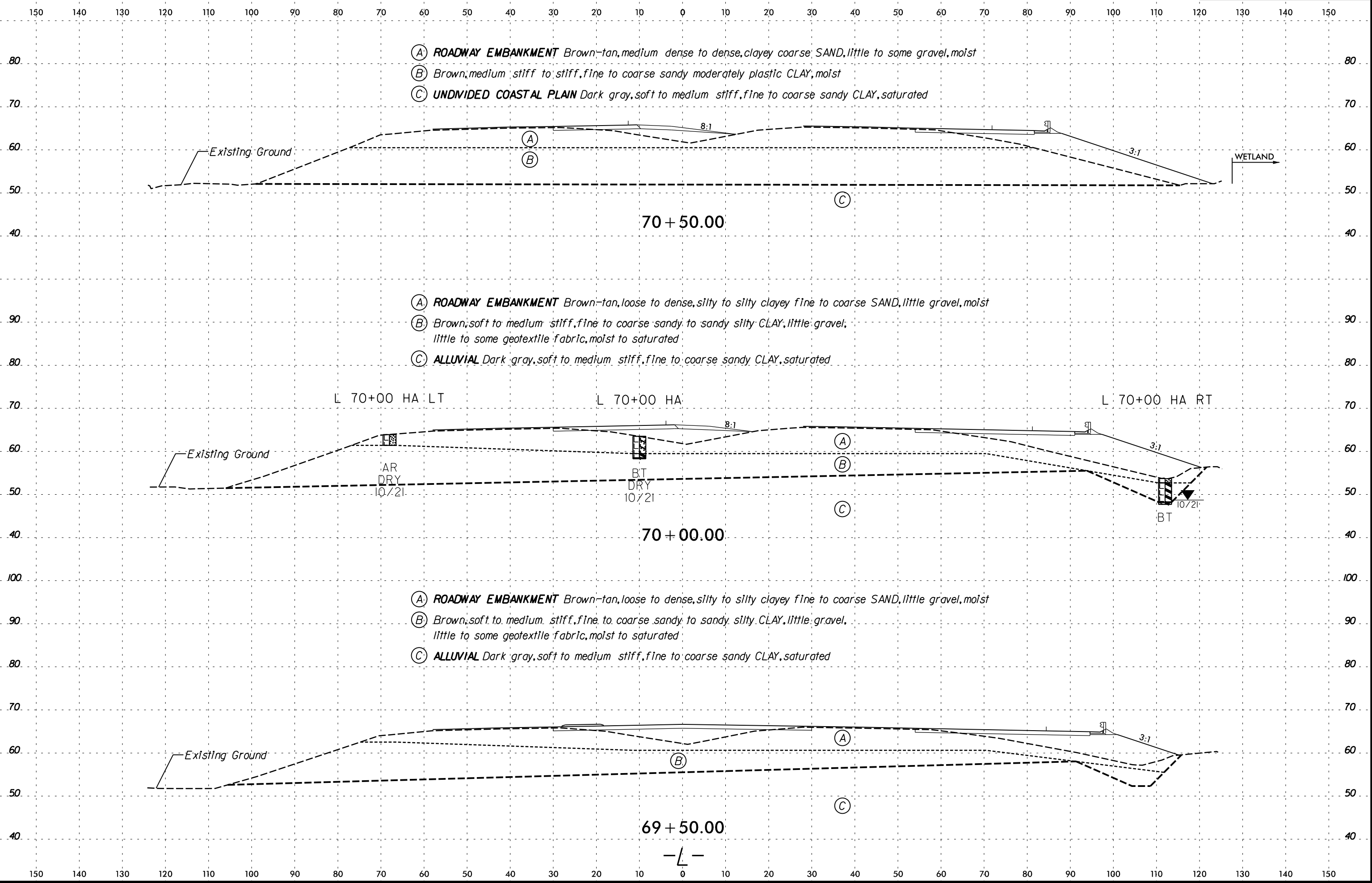


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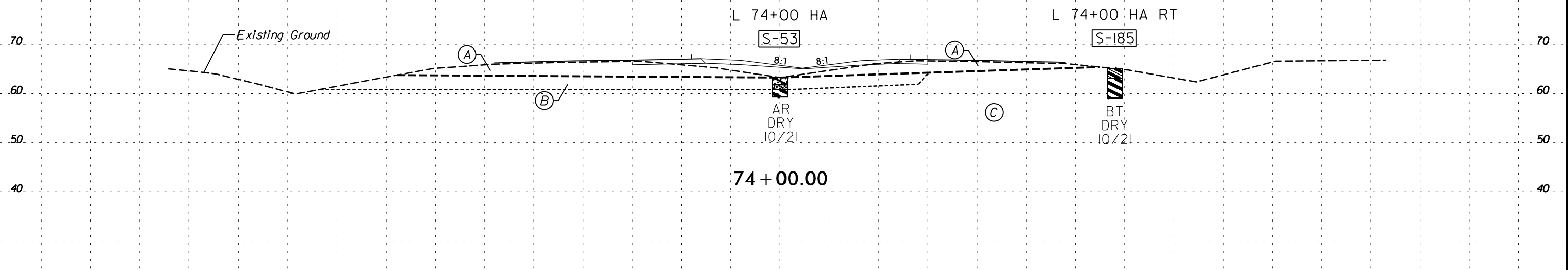
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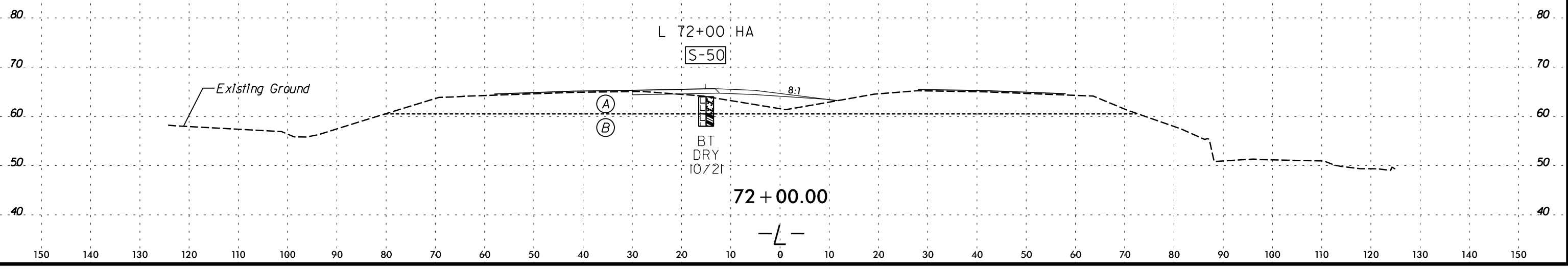
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-53 | 74+00 | 0' CL | 2.5-3.0' | A-7-6 | 45 | 25 | 7 | 36 | 13 | 44 | 100 | 96 | 60 | 19 | ND |
| S-185 | 74+00 | 68' RT | 2.0-2.5' | A-7-6 | 49 | 29 | 5 | 43 | 12 | 40 | 100 | 97 | 57 | 23 | ND |

- (A) ROADWAY EMBANKMENT Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist
- (B) UNDIVIDED COASTAL PLAIN Orange-brown to gray, medium dense, clayey to silty fine to coarse to fine SAND, moist to wet
- (C) Brown-tan, orange, brown, tan-gray, gray, soft to stiff, fine silty sandy to sandy silty, moderately to highly plastic CLAY, moist



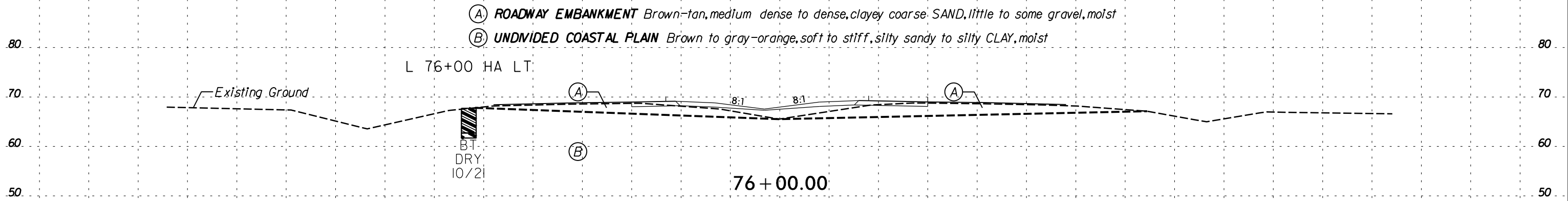
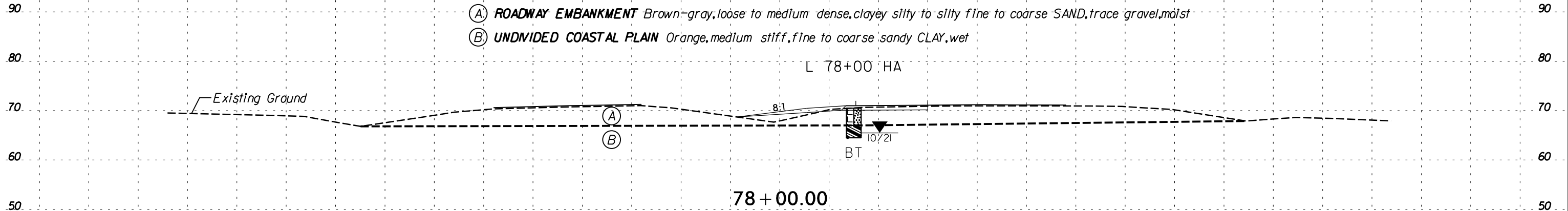
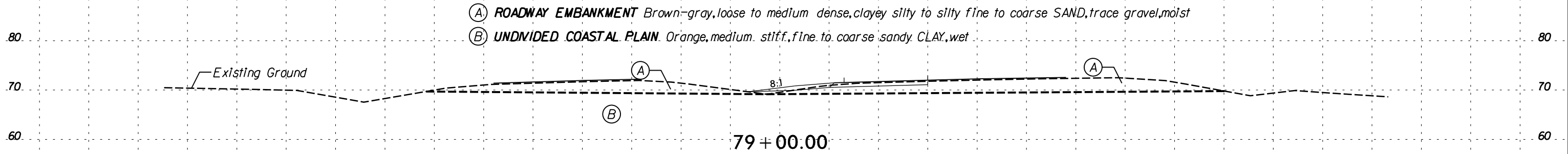
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
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| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-50 | 72+00 | 15' LT | 5.5-6.0' | A-6 | 38 | 20 | 18 | 42 | 8 | 32 | 98 | 91 | 42 | 15 | ND |

- (A) ROADWAY EMBANKMENT Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist
- (B) Brown, medium stiff to stiff, fine to coarse sandy moderately plastic CLAY, moist



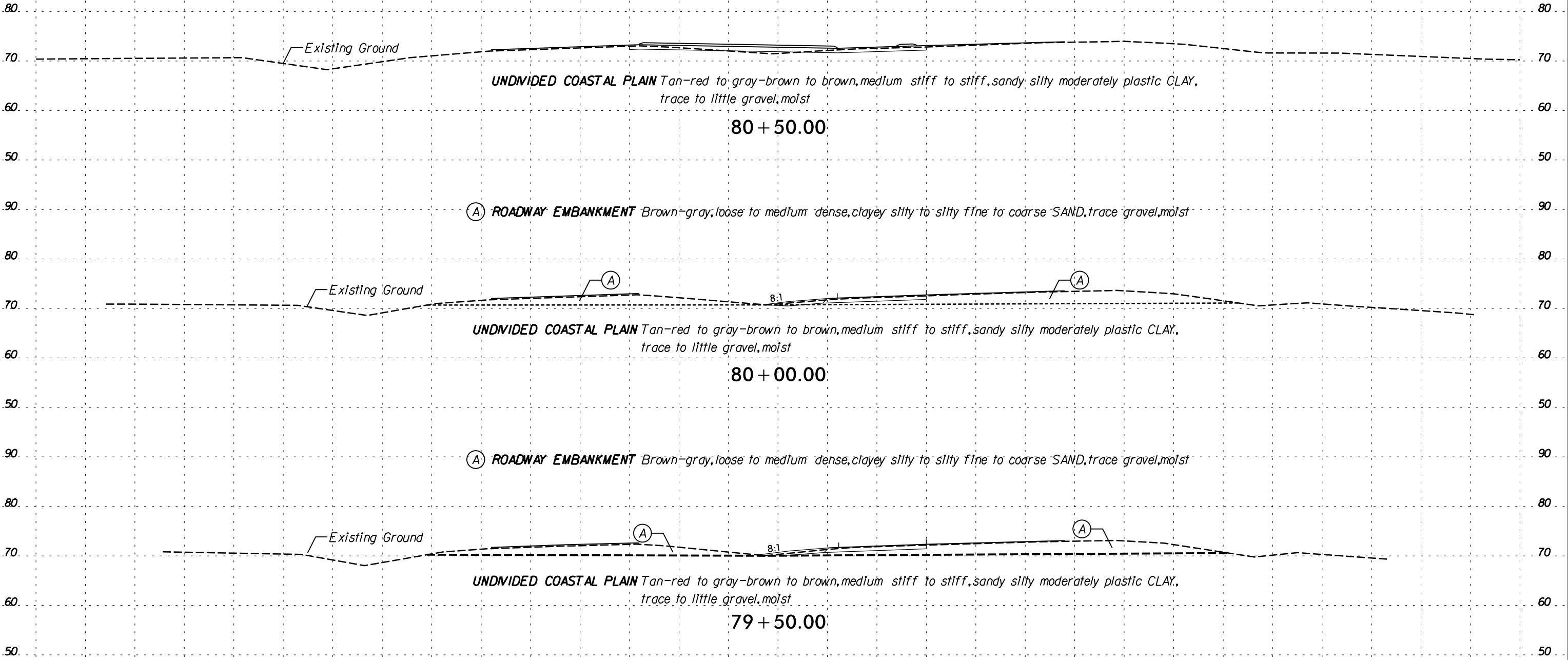
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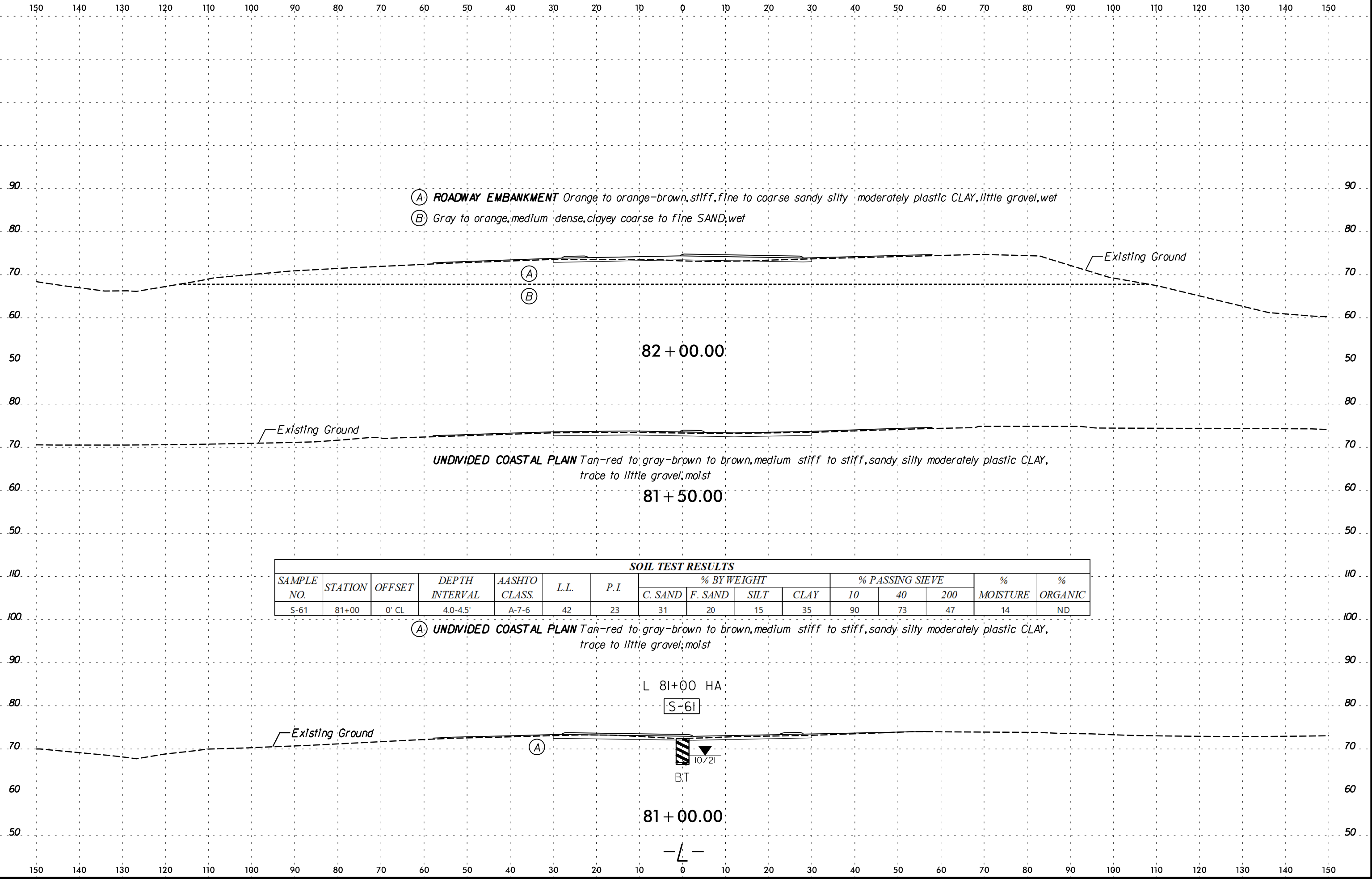
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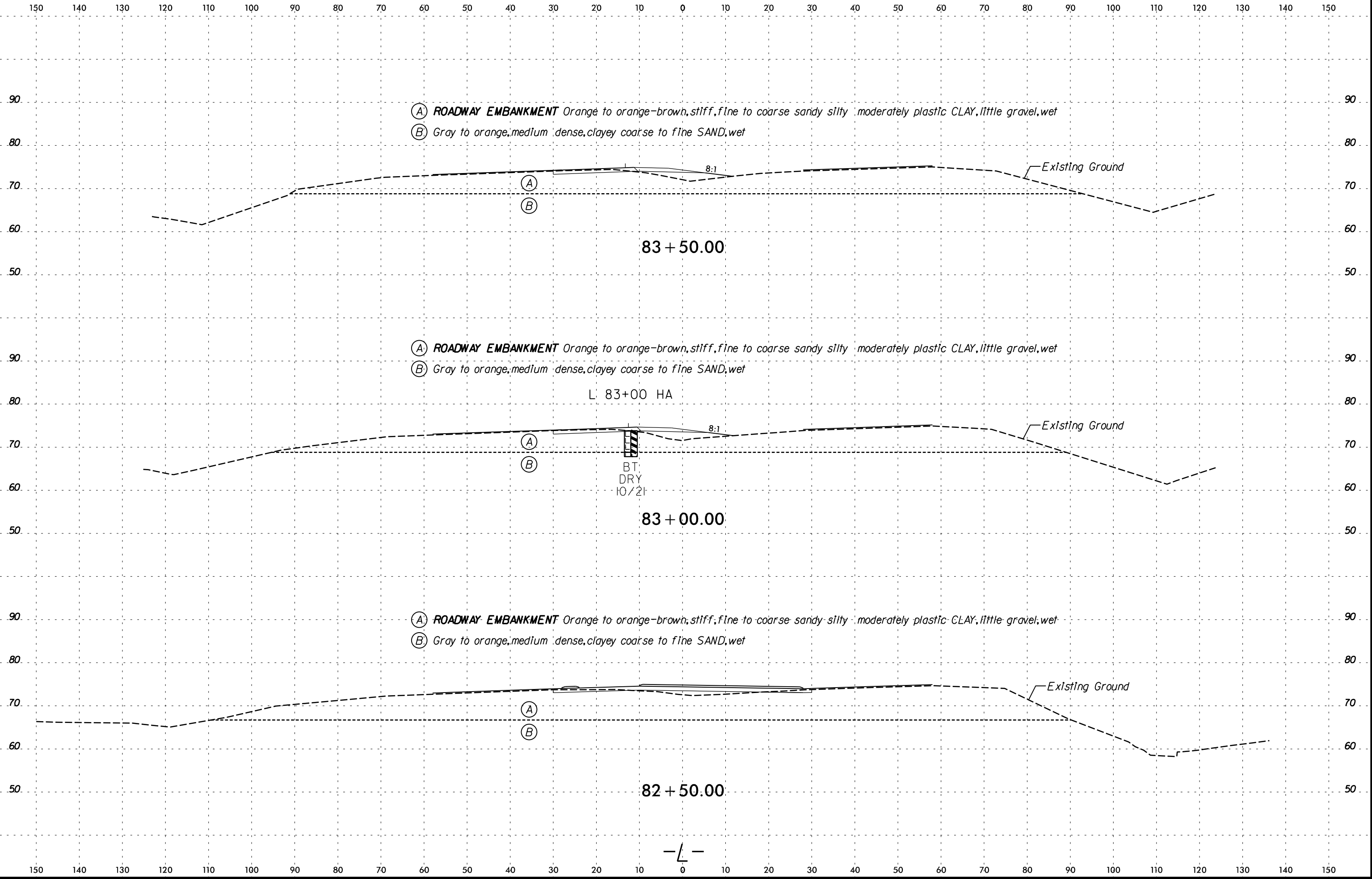
- (A) **ROADWAY EMBANKMENT** Orange to orange-brown, stiff, fine to coarse sandy silty moderately plastic CLAY, little gravel, wet
- (B) Gray to orange, medium dense, clayey coarse to fine SAND, wet

UNDIVIDED COASTAL PLAIN Tan-red to gray-brown to brown, medium stiff to stiff, sandy, silty moderately plastic CLAY, trace to little gravel, moist

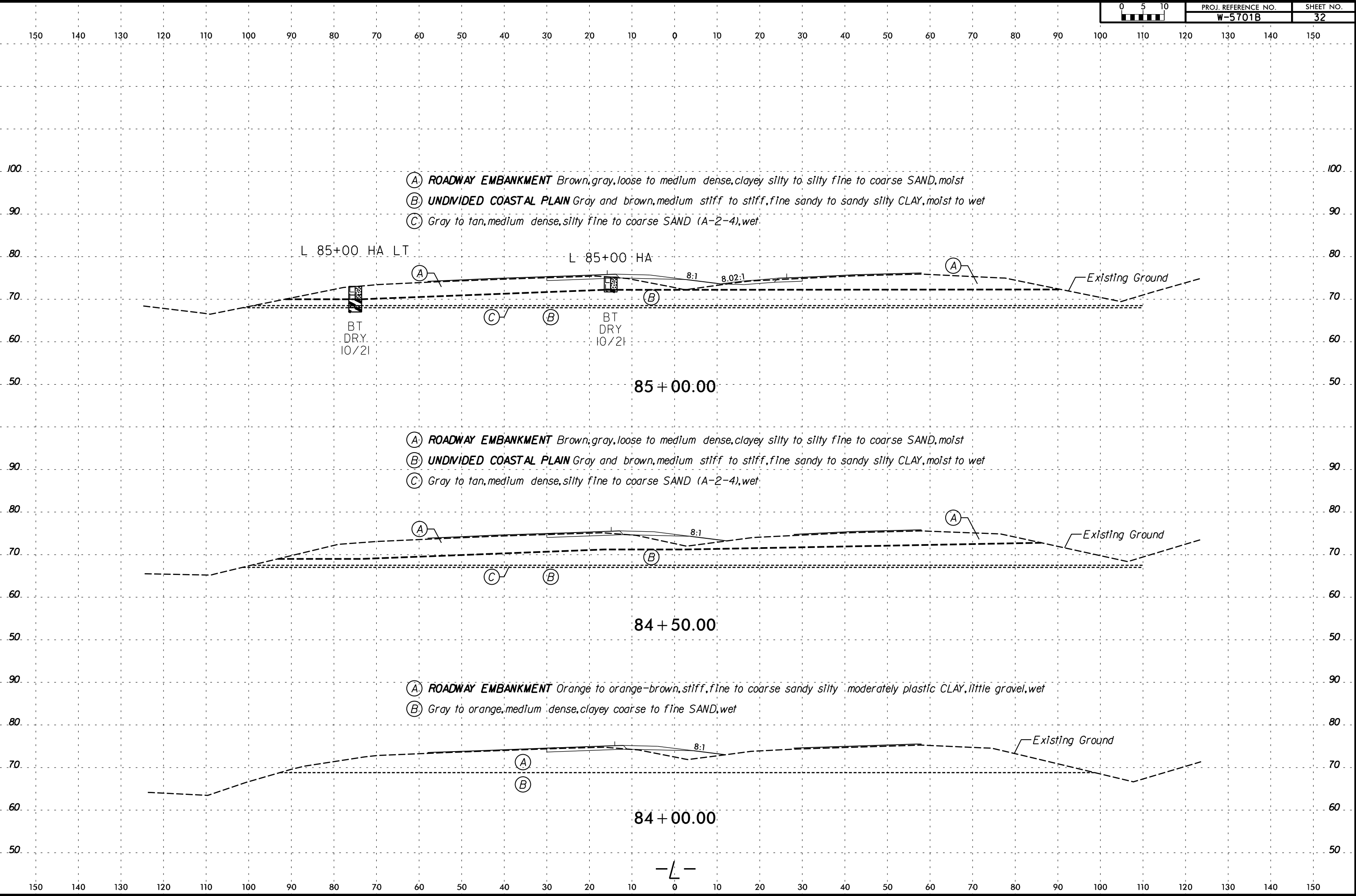
(A) **UNDIVIDED COASTAL PLAIN** Tan-red to gray-brown to brown, medium stiff to stiff, sandy silty moderately plastic CLAY, trace to little gravel, moist

SOIL TEST RESULTS

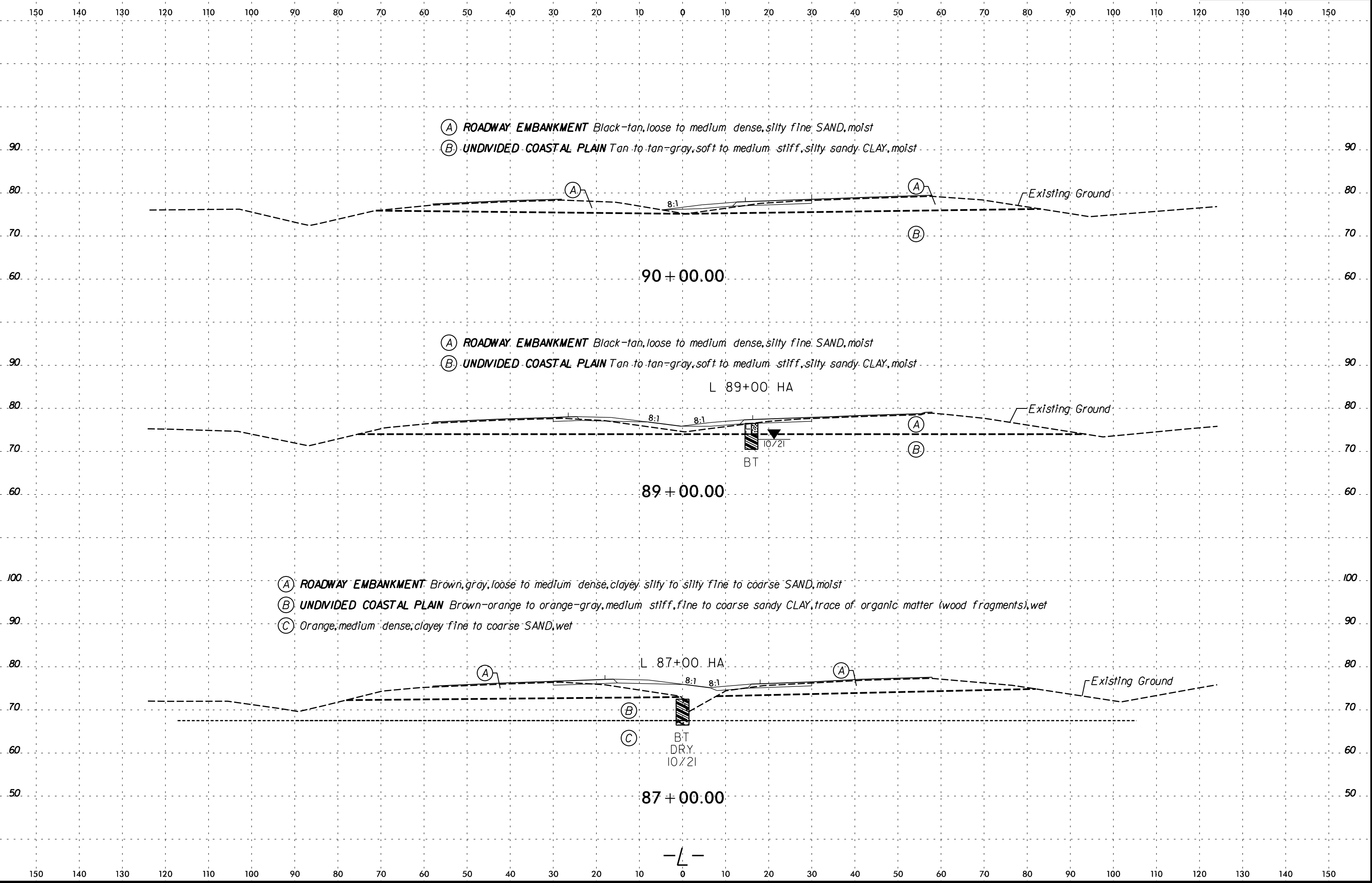
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-61 | 81+00 | 0' CL | 4.0-4.5' | A-7-6 | 42 | 23 | 31 | 20 | 15 | 35 | 90 | 73 | 47 | 14 | ND |



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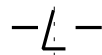
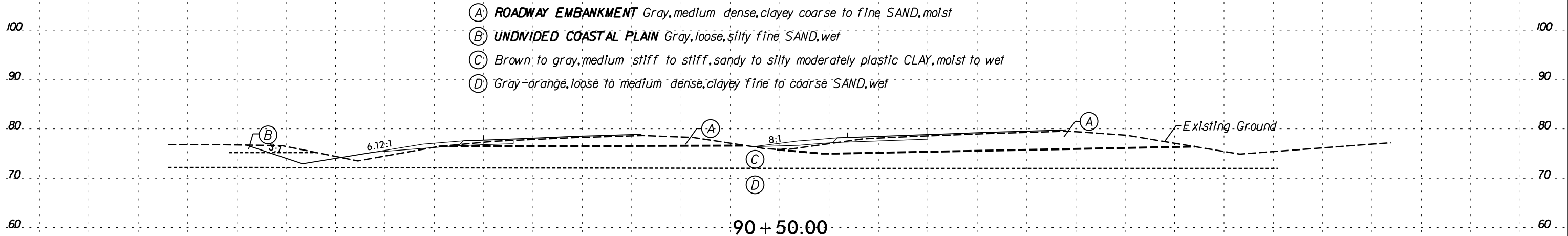
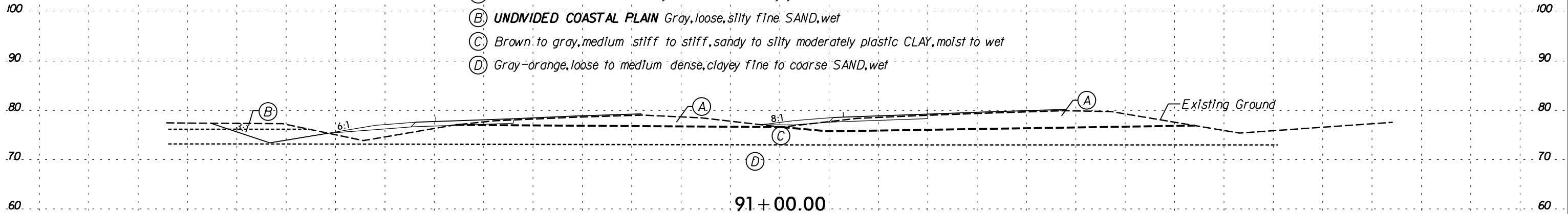


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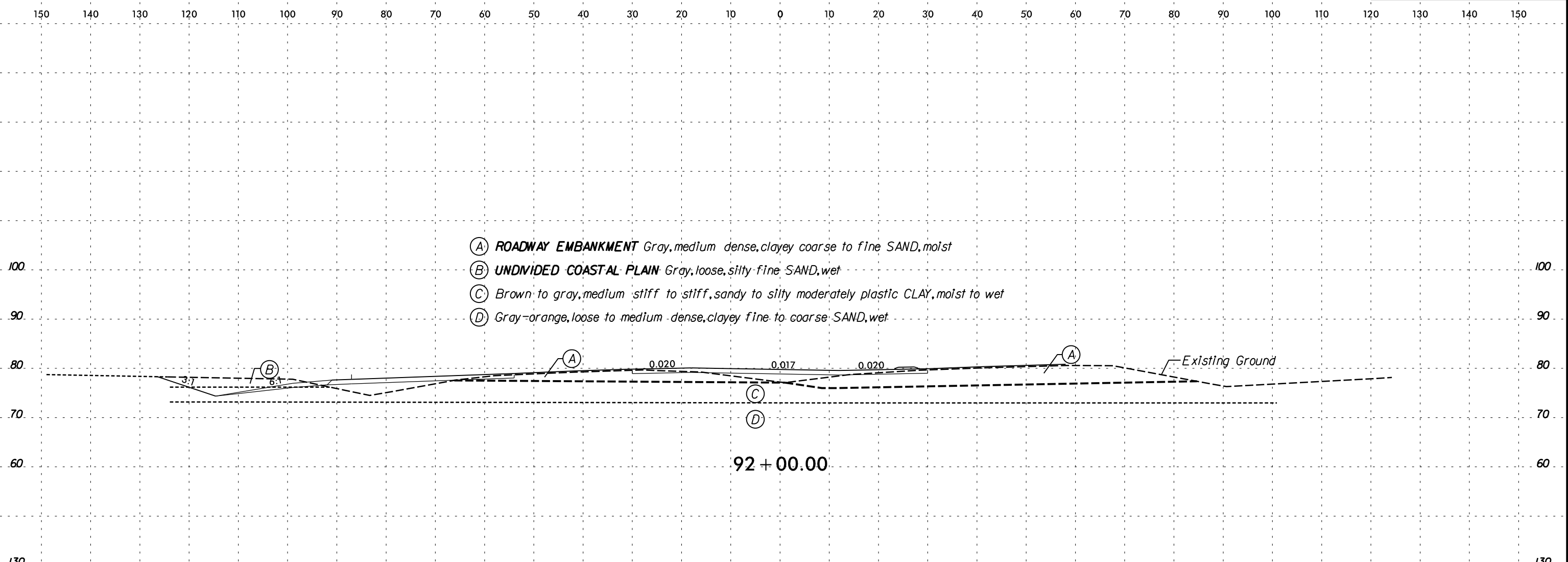


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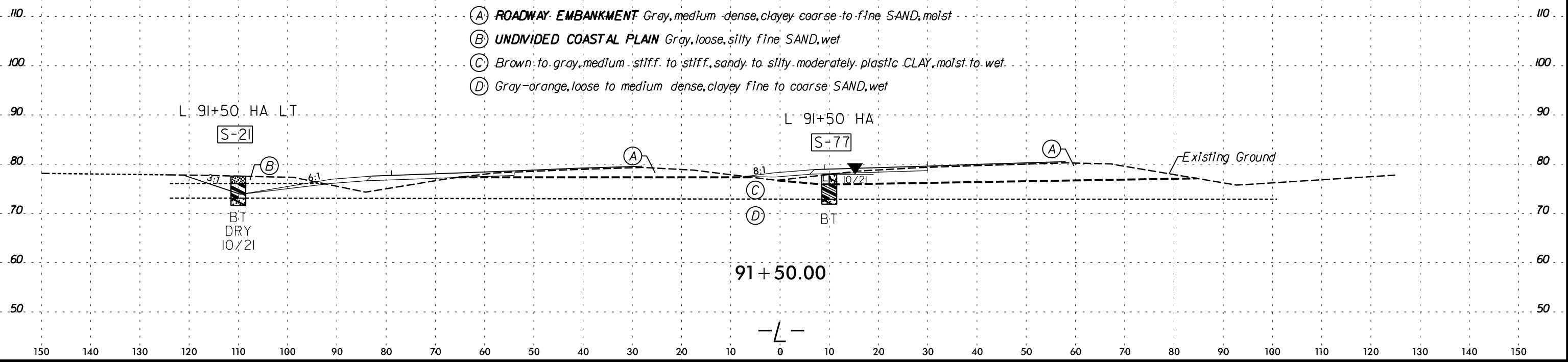
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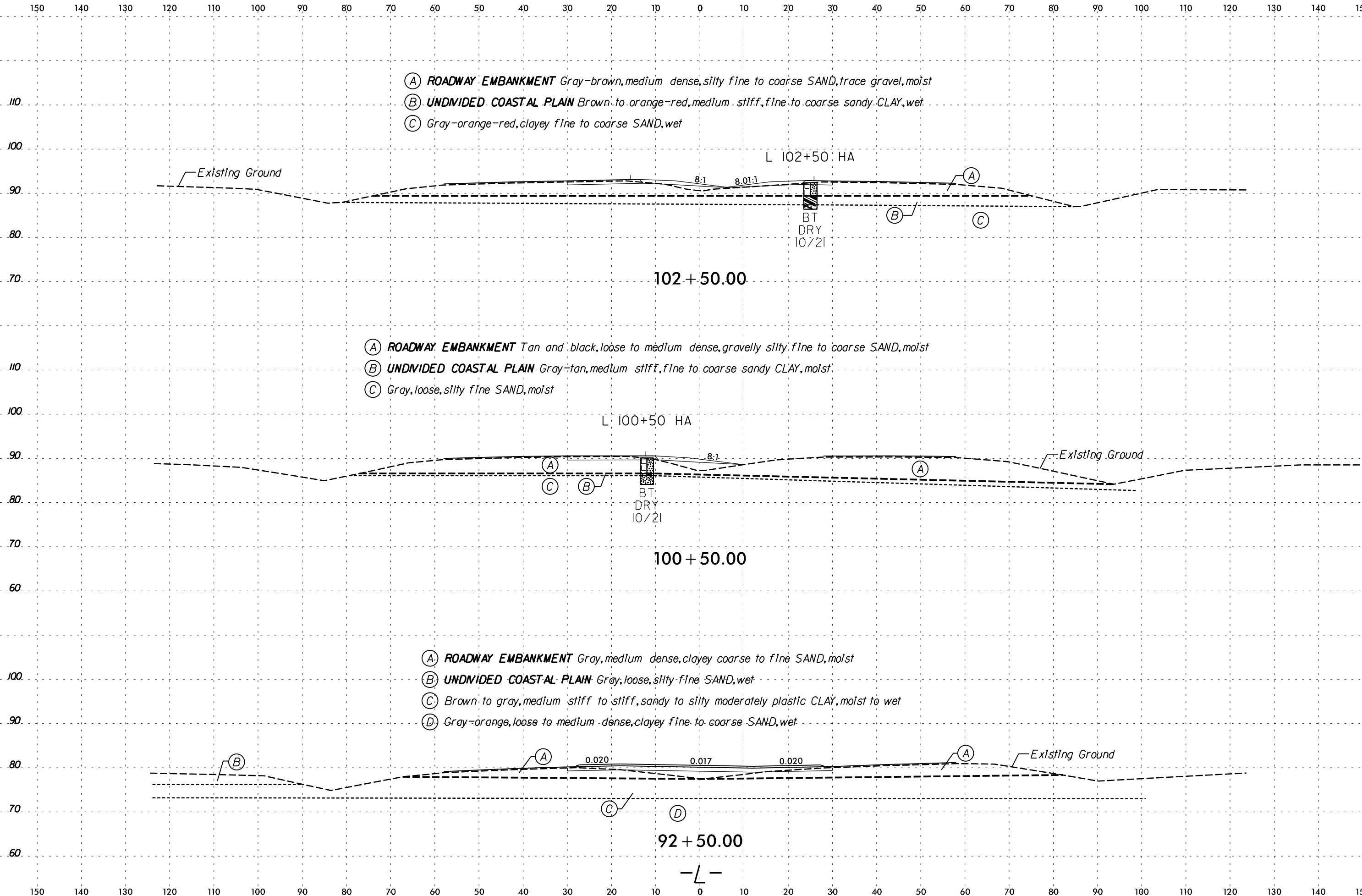


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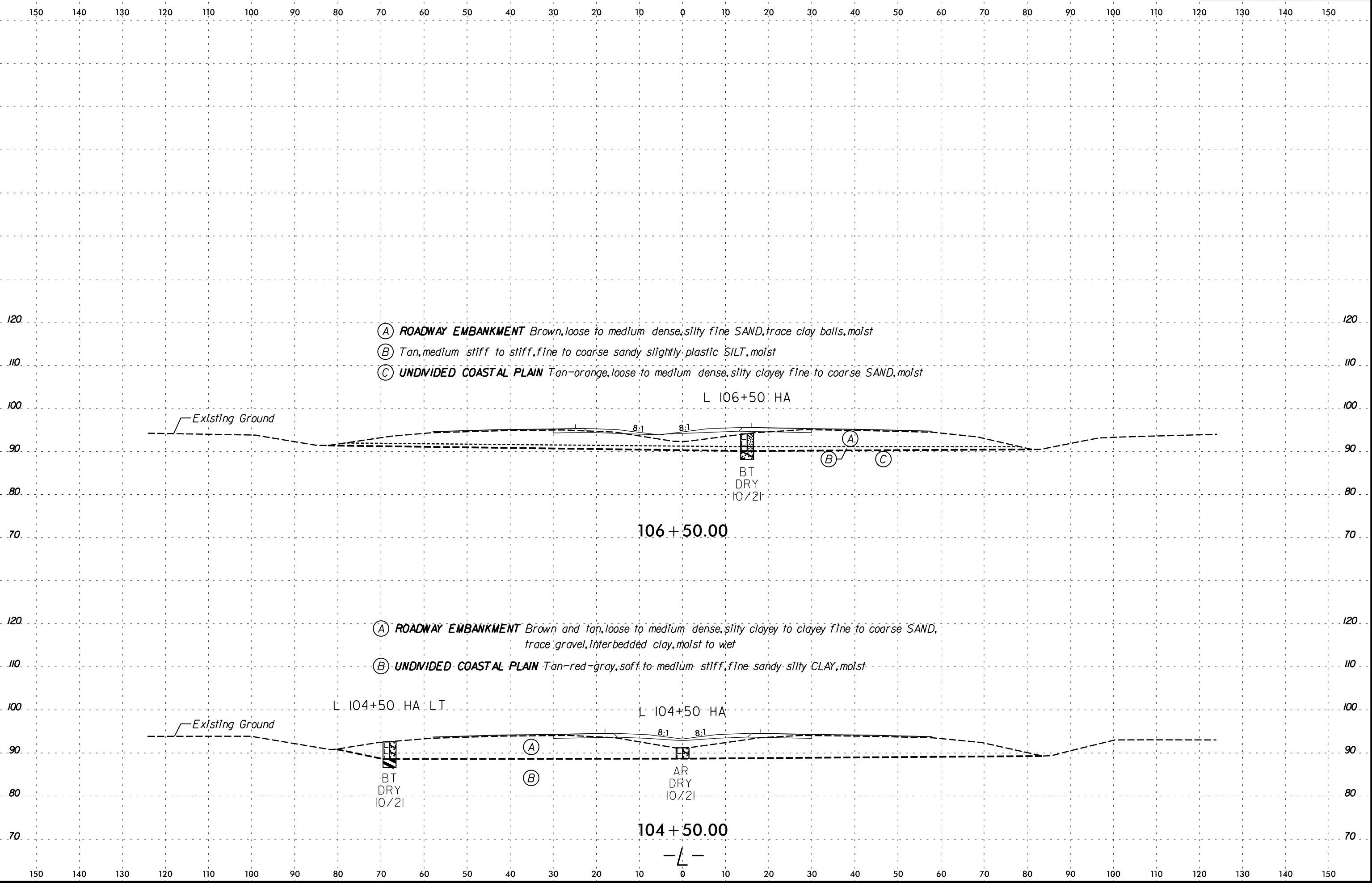
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-21 | 91+50 | 110' LT | 2.0-2.5' | A-7-6 | 42 | 21 | 17 | 37 | 5 | 42 | 99 | 90 | 48 | 30 | ND |
| S-77 | 91+50 | 10' RT | 2.0-2.5' | A-6 | 38 | 19 | 19 | 34 | 8 | 40 | 98 | 86 | 48 | 18 | ND |





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- (A) ROADWAY EMBANKMENT *Brown, loose to medium dense, silty fine SAND, trace clay balls, moist*
- (B) *Tan, medium stiff to stiff, fine to coarse sandy slightly plastic SILT, moist*
- (C) UNDIVIDED COASTAL PLAIN *Tan-orange, loose to medium dense, silty clayey fine to coarse SAND, moist*

L 106+50 HA

106 + 50.00

- (A) ROADWAY EMBANKMENT *Brown and tan, loose to medium dense, silty clayey to clayey fine to coarse SAND, trace gravel, interbedded clay, moist to wet*
- (B) UNDIVIDED COASTAL PLAIN *Tan-red-gray, soft to medium stiff, fine sandy silty CLAY, moist*

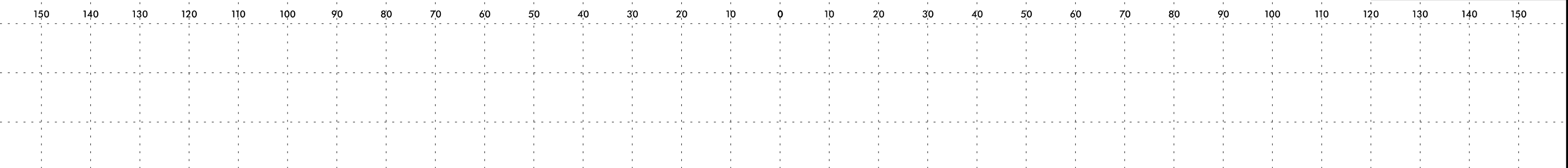
L 104+50 HA LT

L 104+50 HA

104 + 50.00

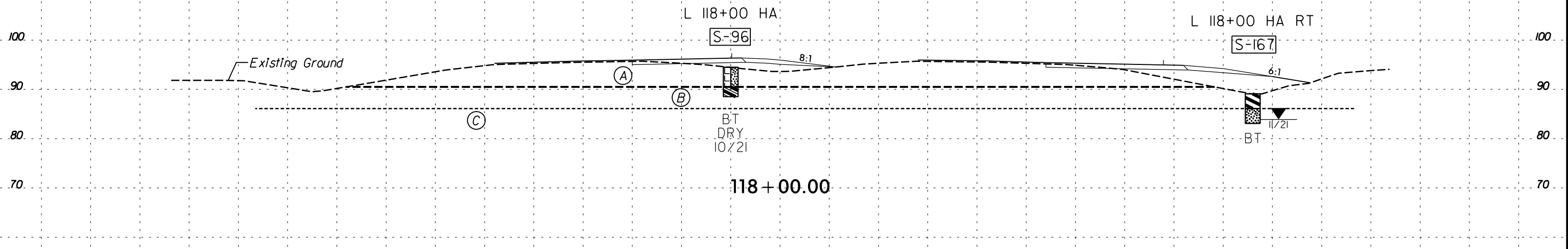
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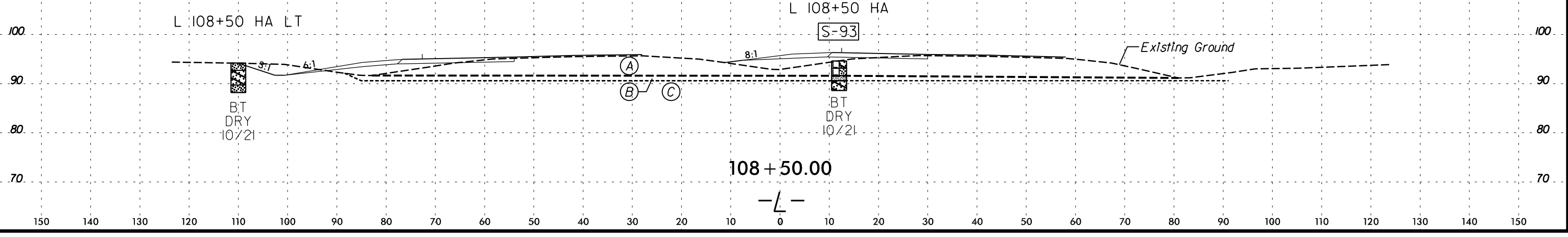
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-96 | 118+00 | 10' LT | 4.0-4.5' | A-6 | 25 | 11 | 23 | 34 | 14 | 29 | 100 | 93 | 48 | 15 | ND |
| S-167 | 118+00 | 96' RT | 0.5-1.0' | A-7-6 | 48 | 24 | 32 | 21 | 4 | 43 | 100 | 85 | 50 | 36 | ND |

- (A) **ROADWAY EMBANKMENT** Brown-gray, loose to medium dense, clayey silty fine SAND, moist
- (B) **UNDIVIDED COASTAL PLAIN** Orange-brown, tan to gray-tan-red, medium stiff to stiff, fine to coarse sandy to sandy, silty slightly to moderately plastic CLAY, moist to wet
- (C) Orange-brown, medium dense, silty coarse to fine SAND, saturated

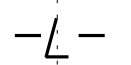
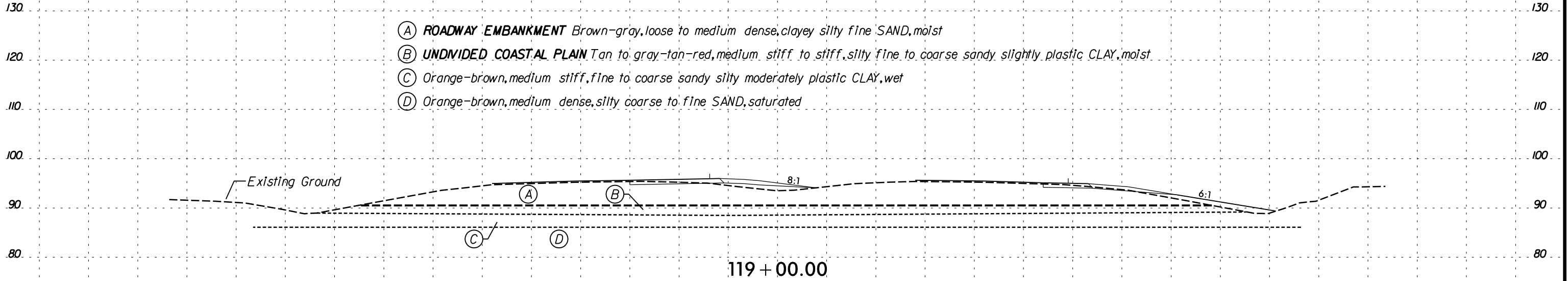
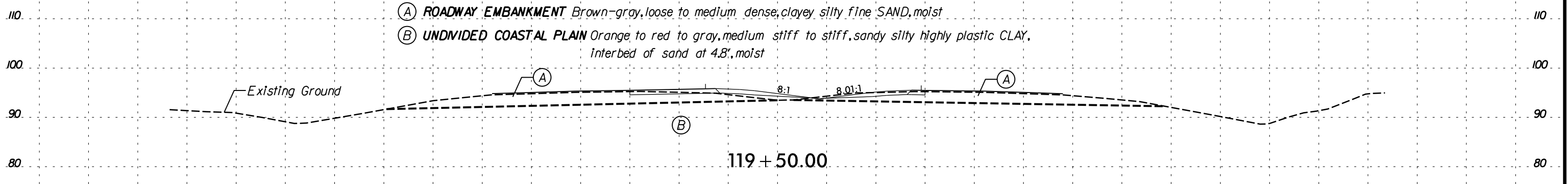
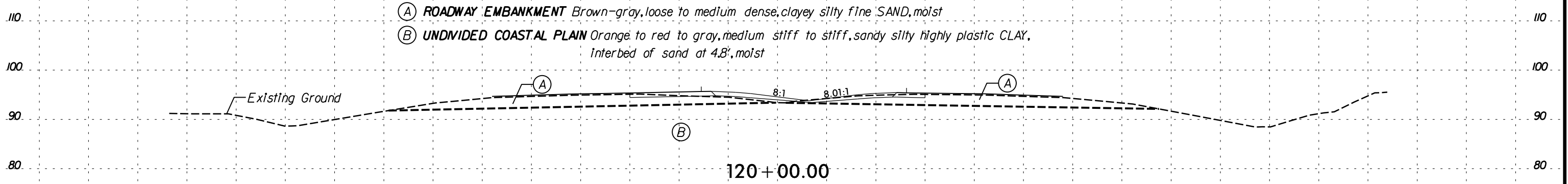


| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-93 | 108+50 | 12' RT | 3.0-3.5' | A-4 | 24 | 7 | 14 | 51 | 8 | 27 | 100 | 96 | 38 | 14 | ND |

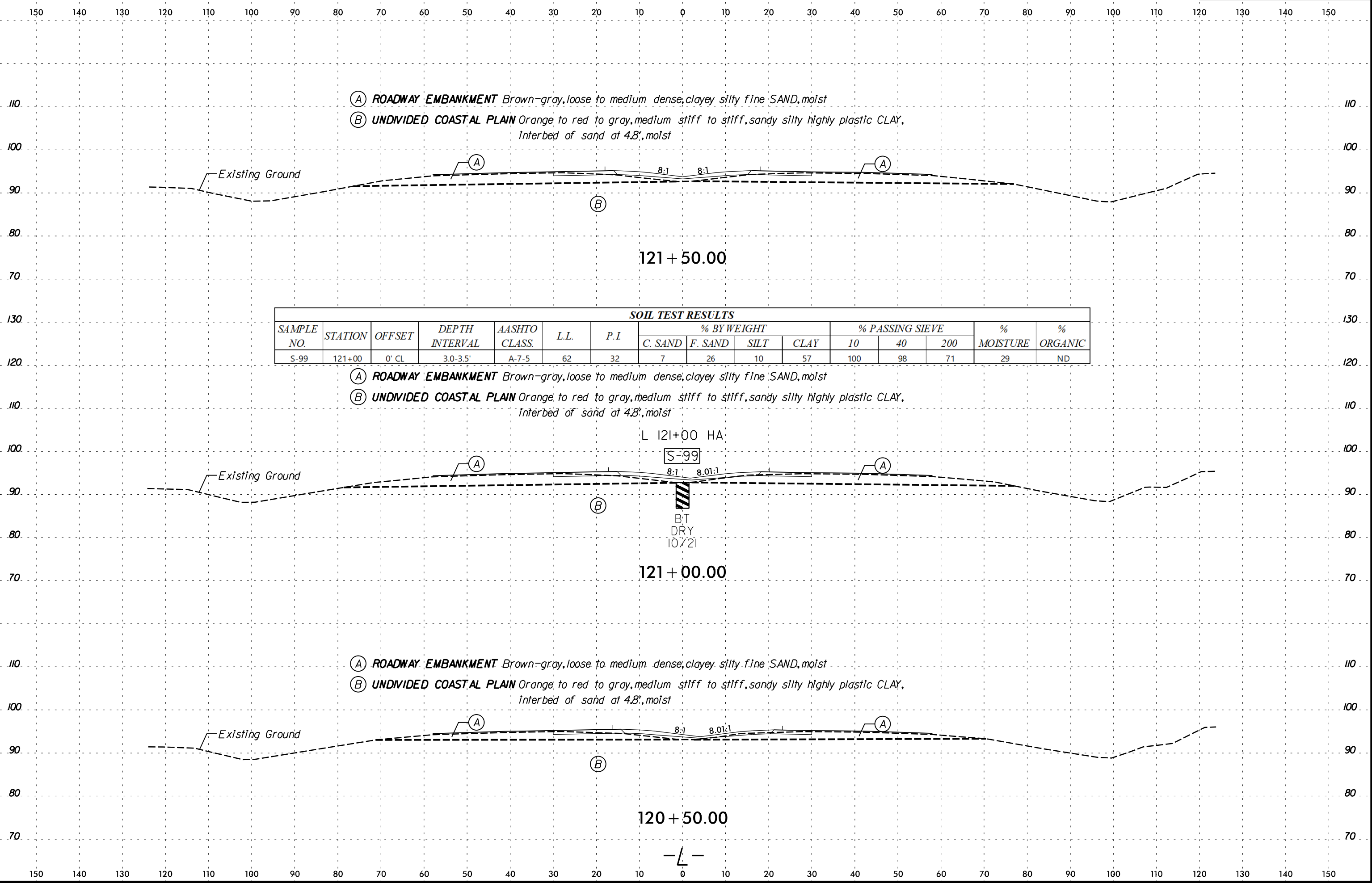
- (A) **ROADWAY EMBANKMENT** Brown to gray, medium dense to dense, clayey to silty, fine to coarse SAND, moist
- (B) **UNDIVIDED COASTAL PLAIN** Gray, medium stiff, coarse to fine sandy slightly plastic SILT, moist
- (C) Gray, brown and orange, loose to medium dense, clayey silty to clayey fine to coarse SAND, moist



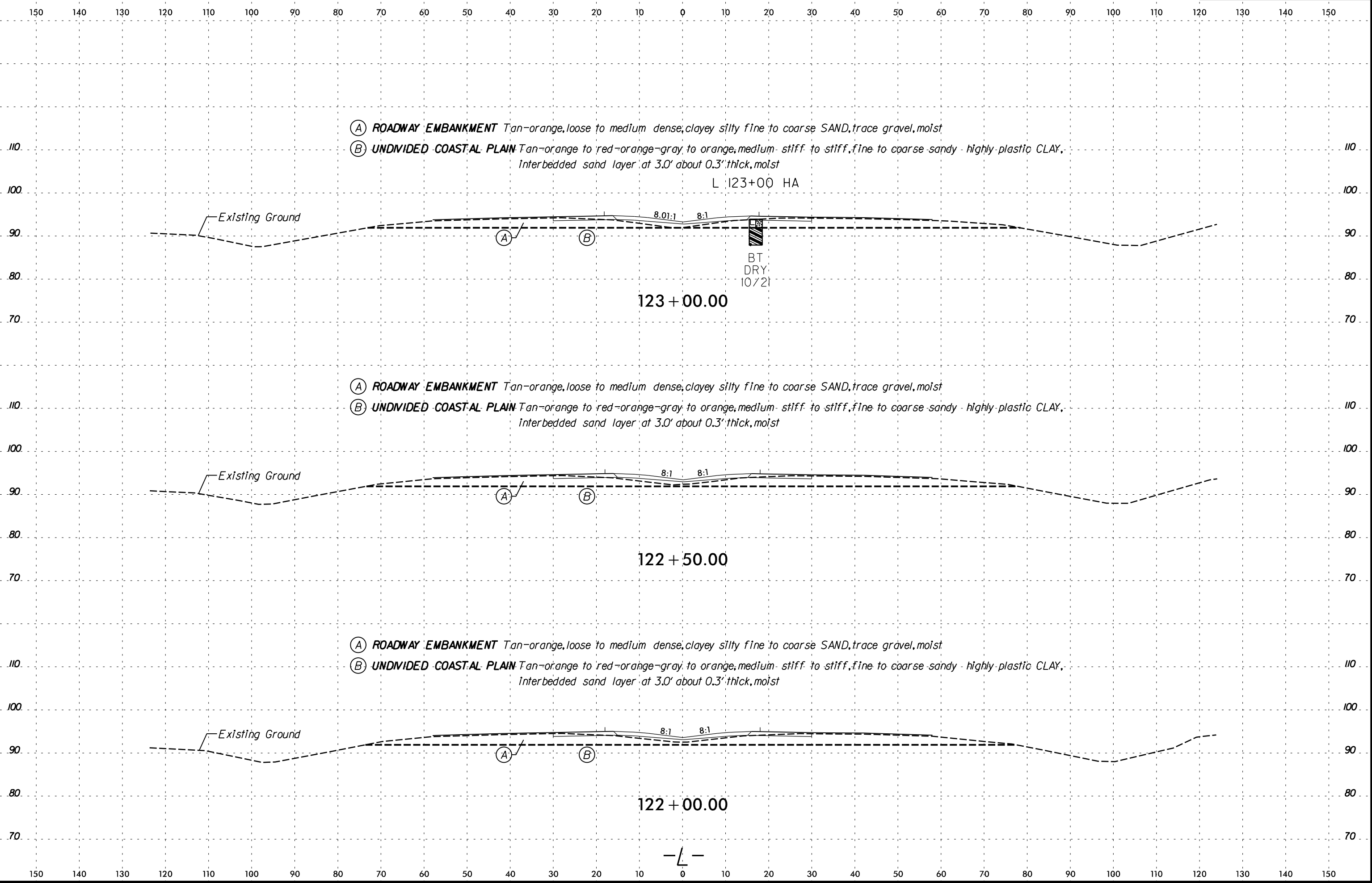
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(A) ROADWAY EMBANKMENT Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist
(B) UNDIVIDED COASTAL PLAIN Tan-orange to red-orange-gray to orange, medium-stiff to stiff, fine to coarse sandy - highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist

L 123+00 HA

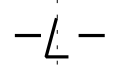
123 + 00.00

(A) ROADWAY EMBANKMENT Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist
(B) UNDIVIDED COASTAL PLAIN Tan-orange to red-orange-gray to orange, medium-stiff to stiff, fine to coarse sandy - highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist

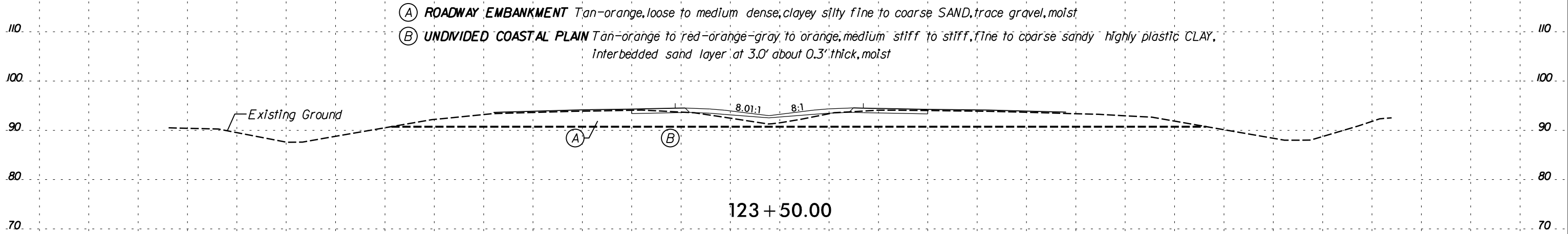
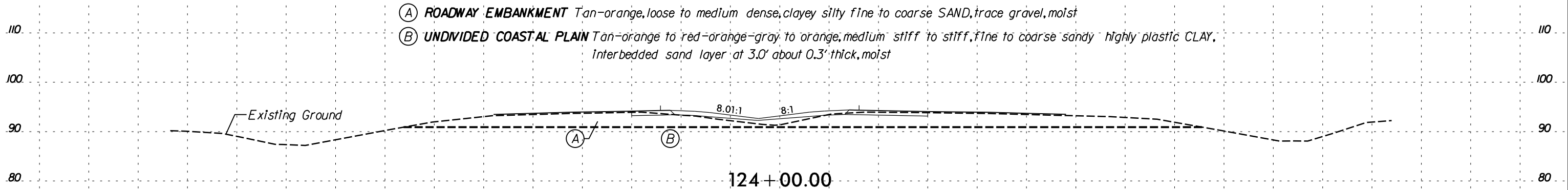
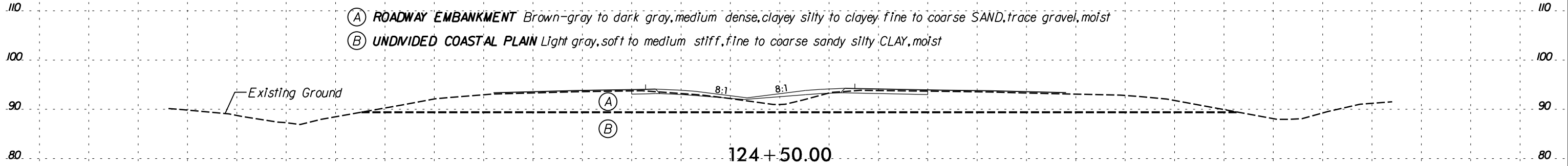
122 + 50.00

(A) ROADWAY EMBANKMENT Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist
(B) UNDIVIDED COASTAL PLAIN Tan-orange to red-orange-gray to orange, medium-stiff to stiff, fine to coarse sandy - highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist

122 + 00.00



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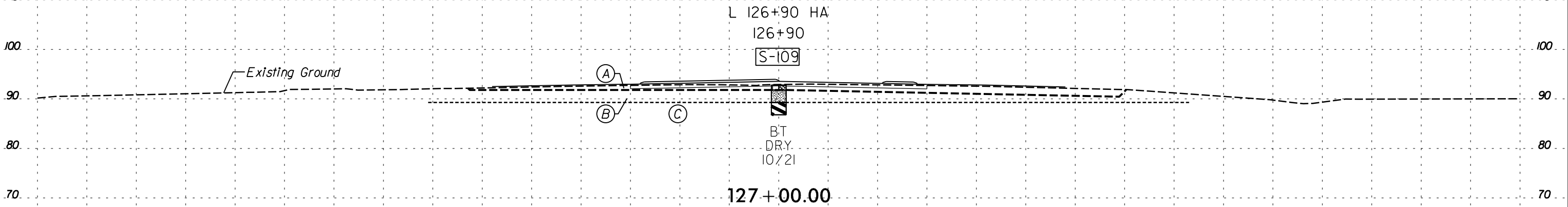


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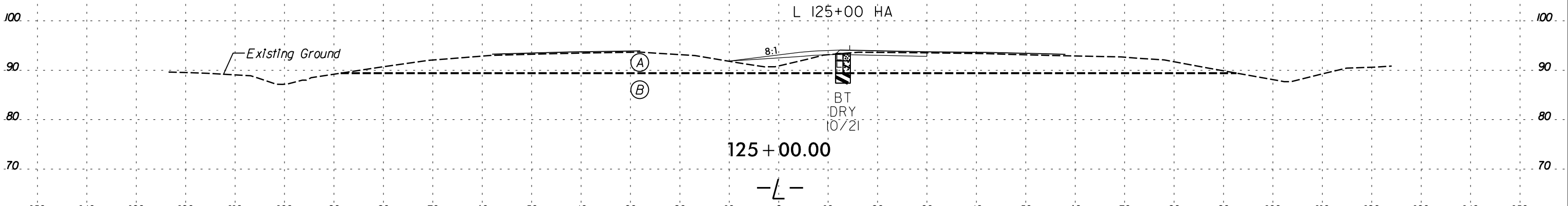
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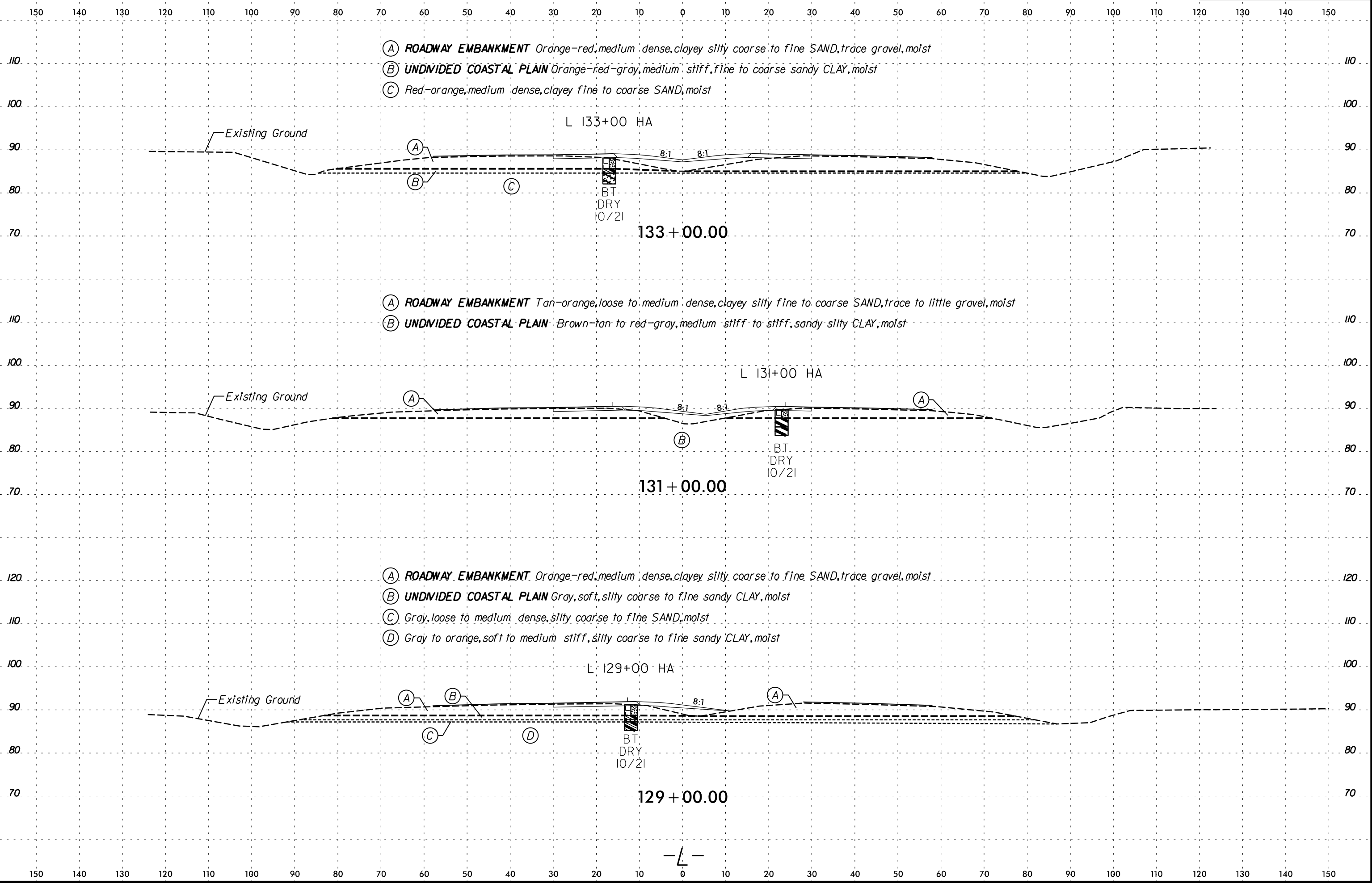
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-109 | 126+90 | 0' CL | 2.0-5.0' | A-4 | NP | NP | 34 | 24 | 21 | 21 | 95 | 77 | 43 | 16 | 1 |

- (A) ROADWAY EMBANKMENT Brown, medium dense, silty gravelly SAND, moist
- (B) UNDIVIDED COASTAL PLAIN Gray-tan to black, medium stiff to stiff, fine to coarse sandy non plastic SILT, trace of organic matter (roots), interbedded sand layer at 2.0', moist
- (C) Gray-tan to gray-black, very soft to medium stiff, fine to coarse sandy silty CLAY, moist



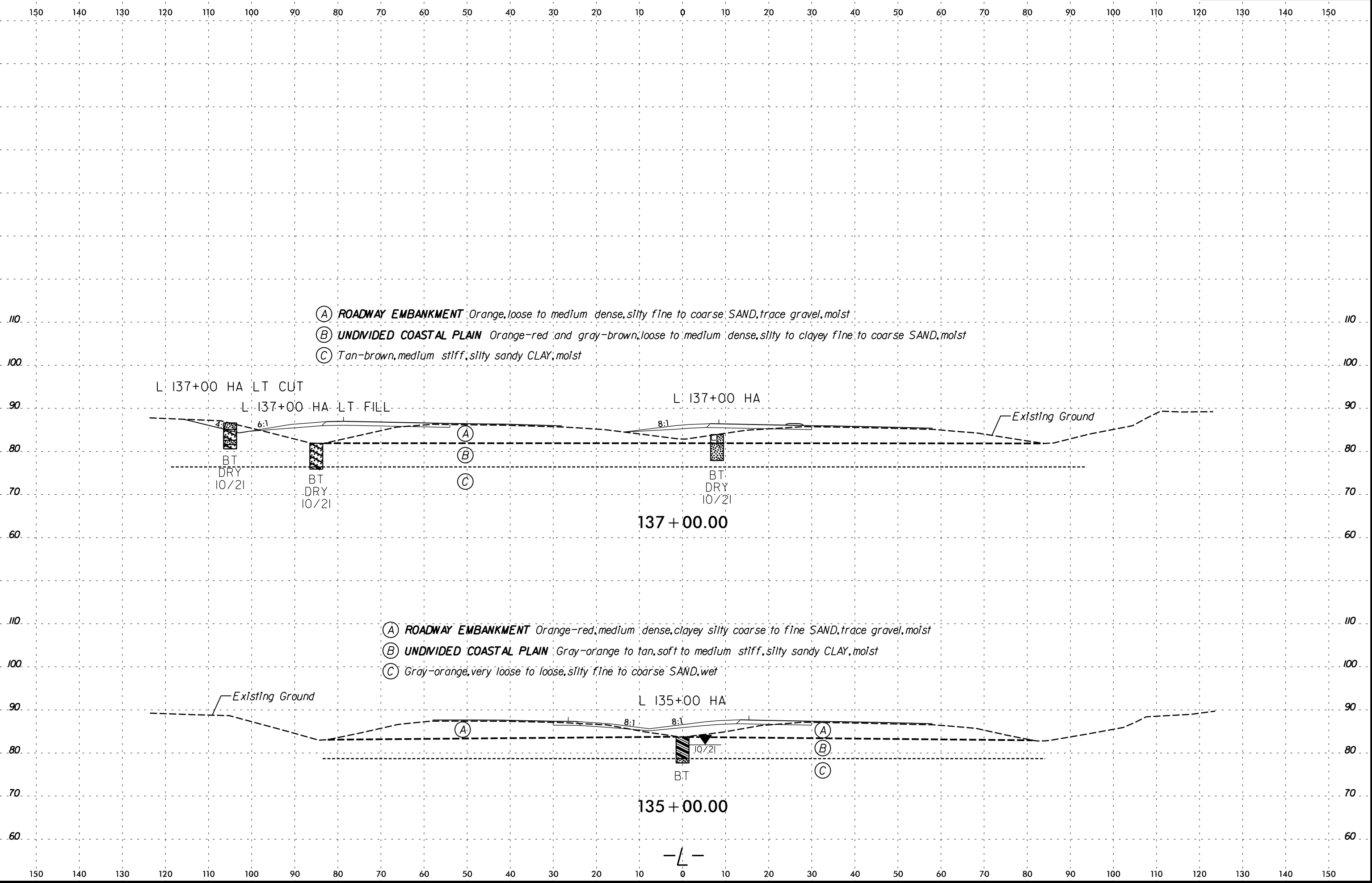
- (A) ROADWAY EMBANKMENT Brown-gray to dark gray, medium dense, clayey silty to clayey fine to coarse SAND, trace gravel, moist
- (B) UNDIVIDED COASTAL PLAIN Light gray, soft to medium stiff, fine to coarse sandy silty CLAY, moist





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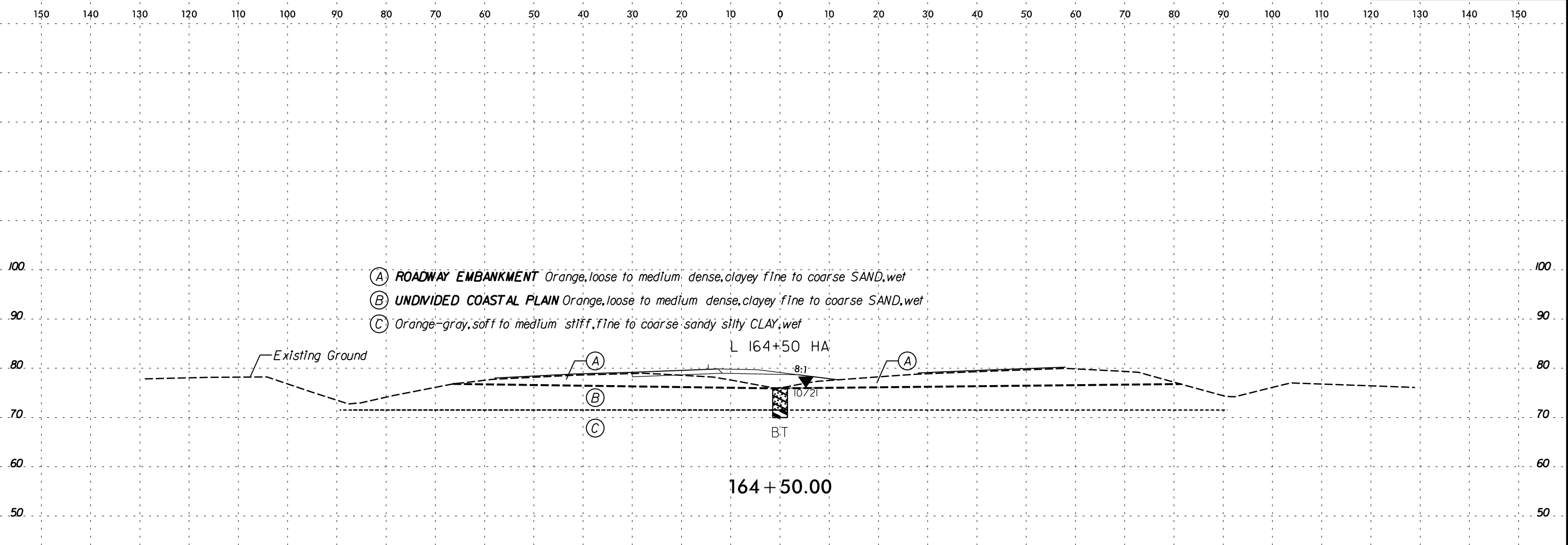
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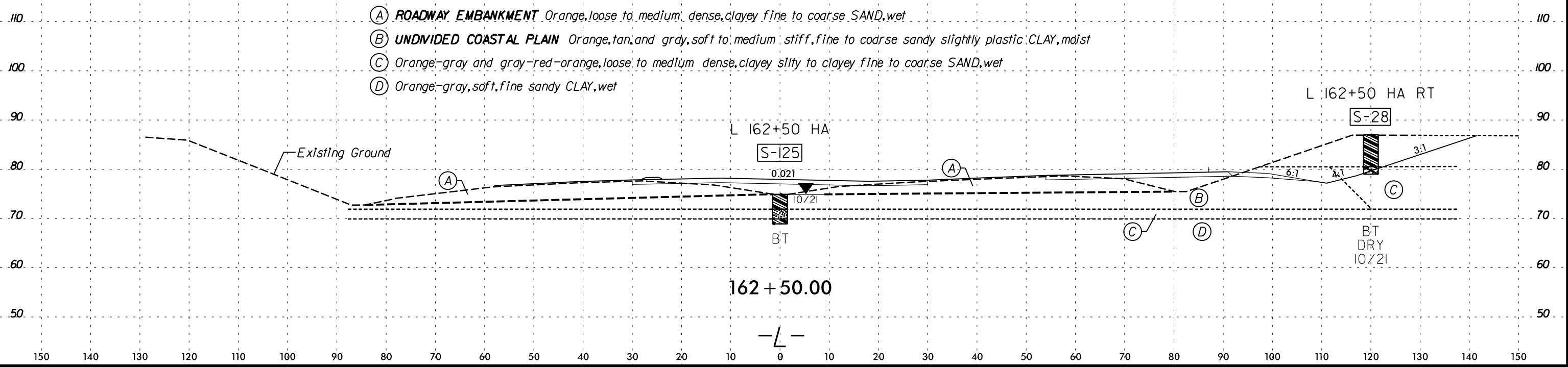
- (A) **ROADWAY EMBANKMENT** Orange, loose to medium dense, silty fine to coarse SAND, trace gravel, moist
- (B) **UNDIVIDED COASTAL PLAIN** Orange-red and gray-brown, loose to medium dense, silty to clayey fine to coarse SAND, moist
- (C) Tan-brown, medium stiff, silty sandy CLAY, moist

- (A) **ROADWAY EMBANKMENT** Orange-red, medium dense, clayey silty coarse to fine SAND, trace gravel, moist
- (B) **UNDIVIDED COASTAL PLAIN** Gray-orange to tan, soft to medium stiff, silty sandy CLAY, moist
- (C) Gray-orange, very loose to loose, silty fine to coarse SAND, wet

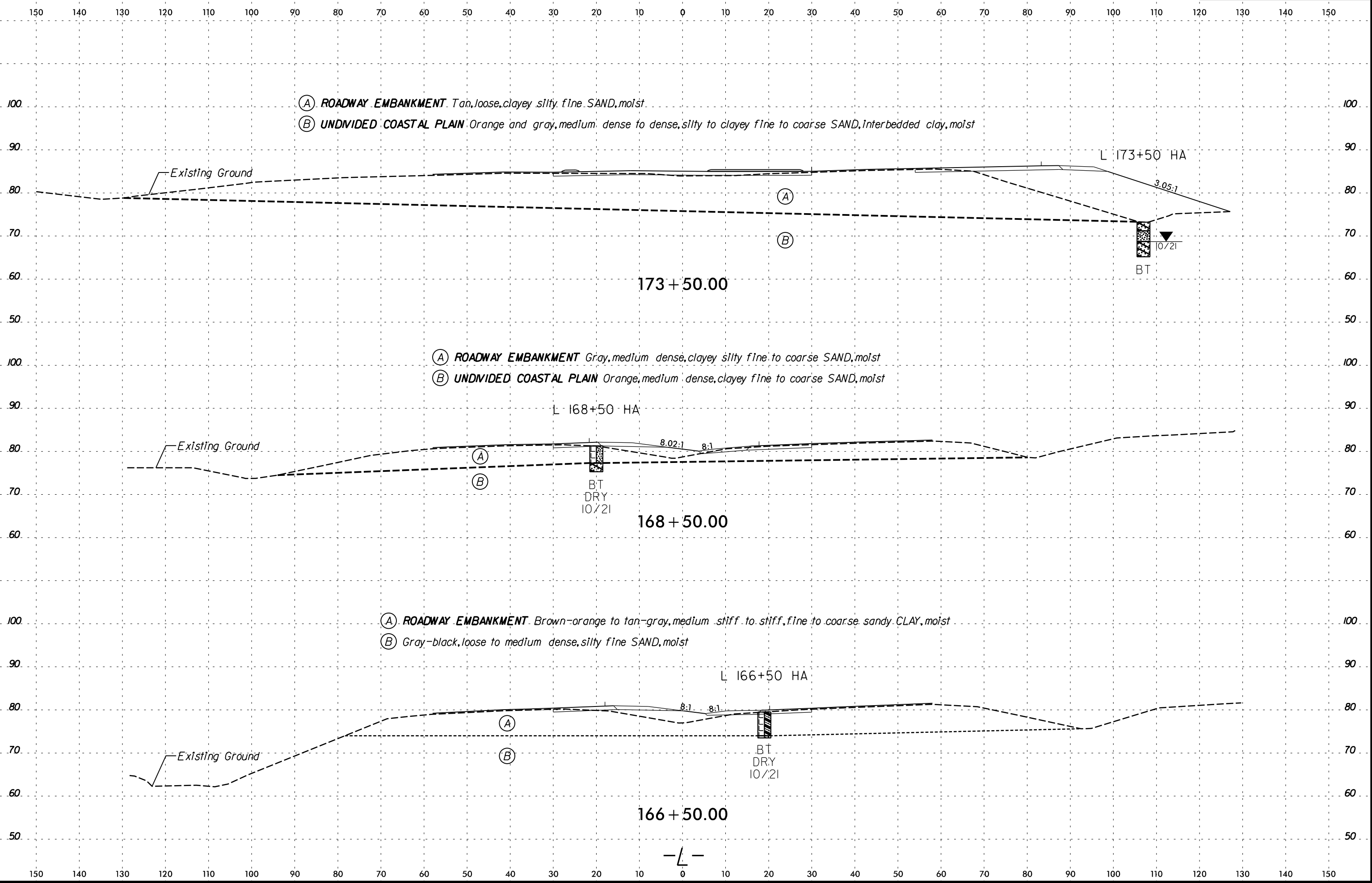
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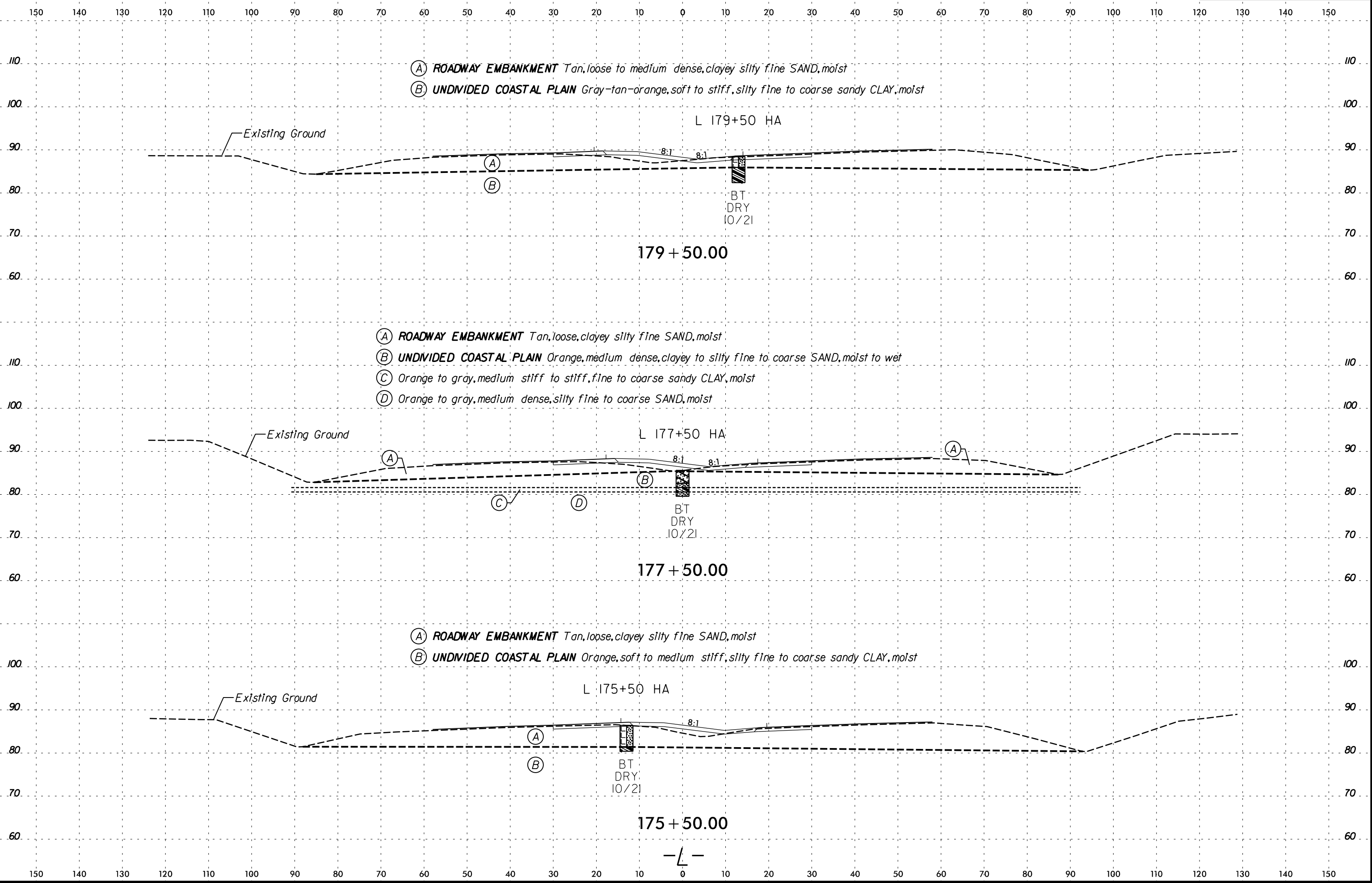
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|---------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|-----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-28 | 162+50 | 120' RT | 0.5-1.0' | A-6 | 32 | 13 | 28 | 17 | 18 | 36 | 99 | 85 | 56 | 23 | ND |
| S-125 | 162+50 | 0' CL | 3.0-3.5' | A-2-4 | 31 | 9 | 5 | 63 | 6 | 26 | 100 | 100 | 33 | 25 | ND |



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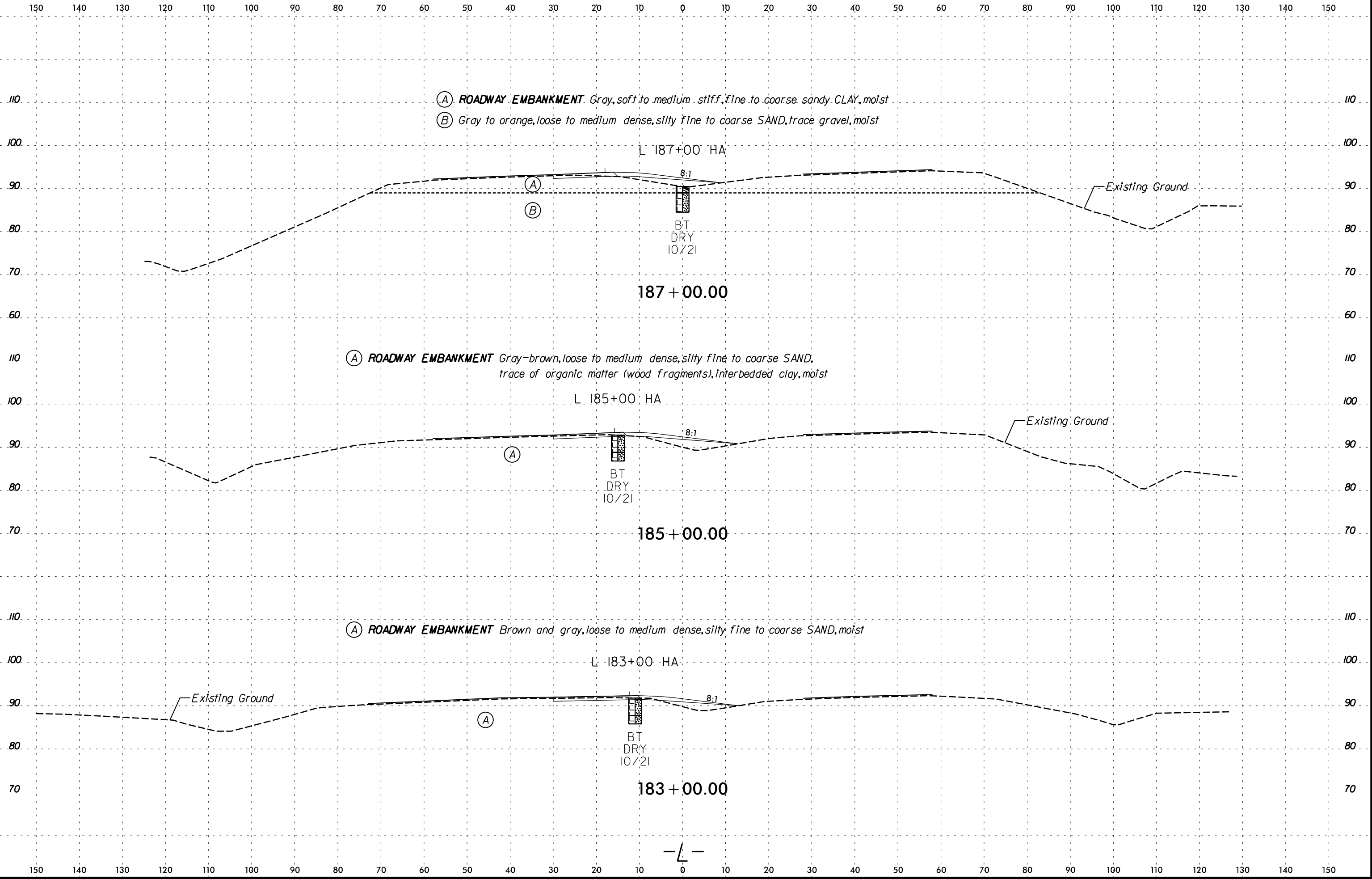


- (A) ROADWAY EMBANKMENT Tan, loose to medium dense, clayey silty fine SAND, moist
- (B) UNDIVIDED COASTAL PLAIN Gray-tan-orange, soft to stiff, silty fine to coarse sandy CLAY, moist

- (A) ROADWAY EMBANKMENT Tan, loose, clayey silty fine SAND, moist
- (B) UNDIVIDED COASTAL PLAIN Orange, medium dense, clayey to silty fine to coarse SAND, moist to wet
- (C) Orange to gray, medium stiff to stiff, fine to coarse sandy CLAY, moist
- (D) Orange to gray, medium dense, silty fine to coarse SAND, moist

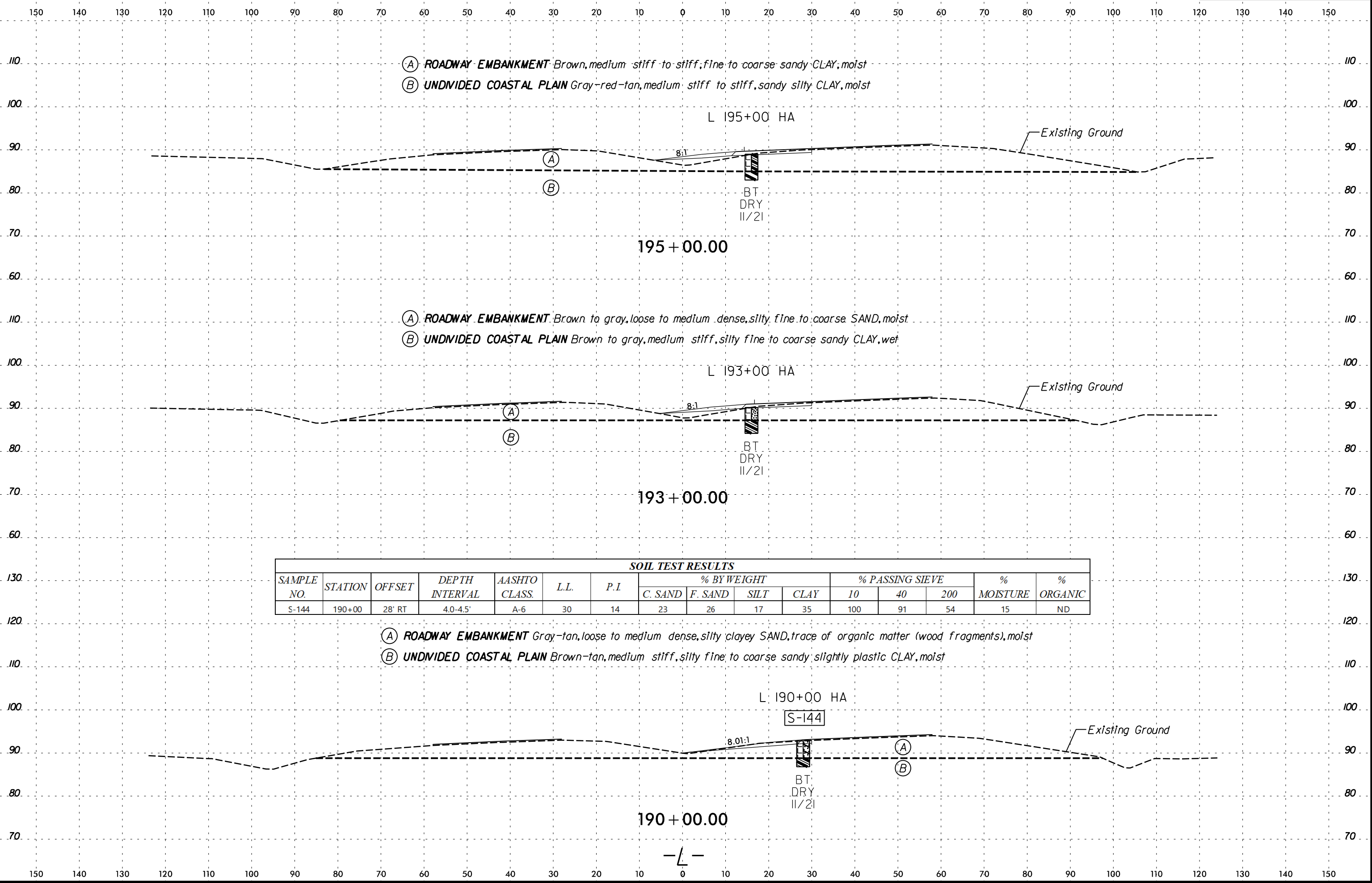
- (A) ROADWAY EMBANKMENT Tan, loose, clayey silty fine SAND, moist
- (B) UNDIVIDED COASTAL PLAIN Orange, soft to medium stiff, silty fine to coarse sandy CLAY, moist

-L-

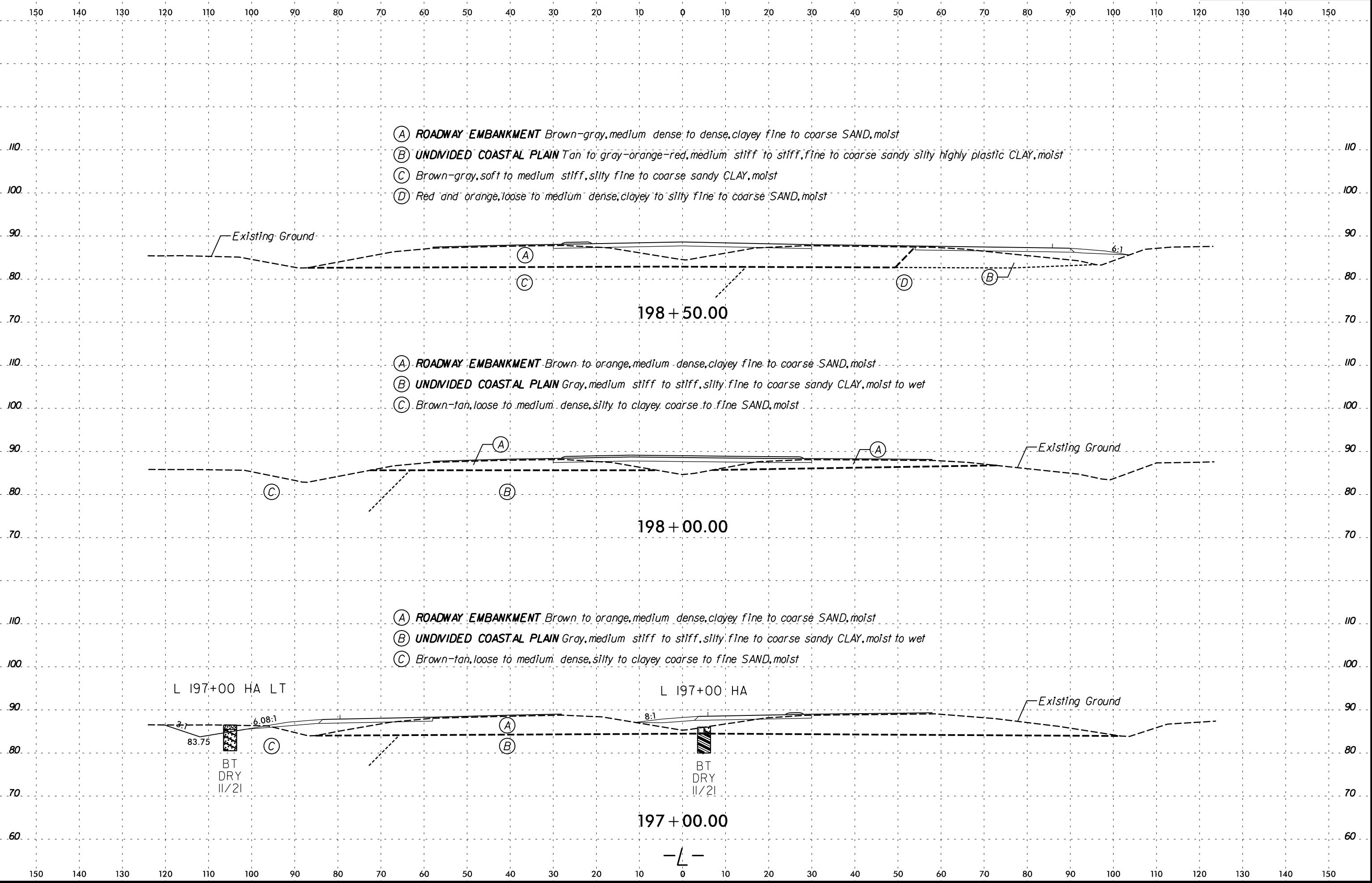


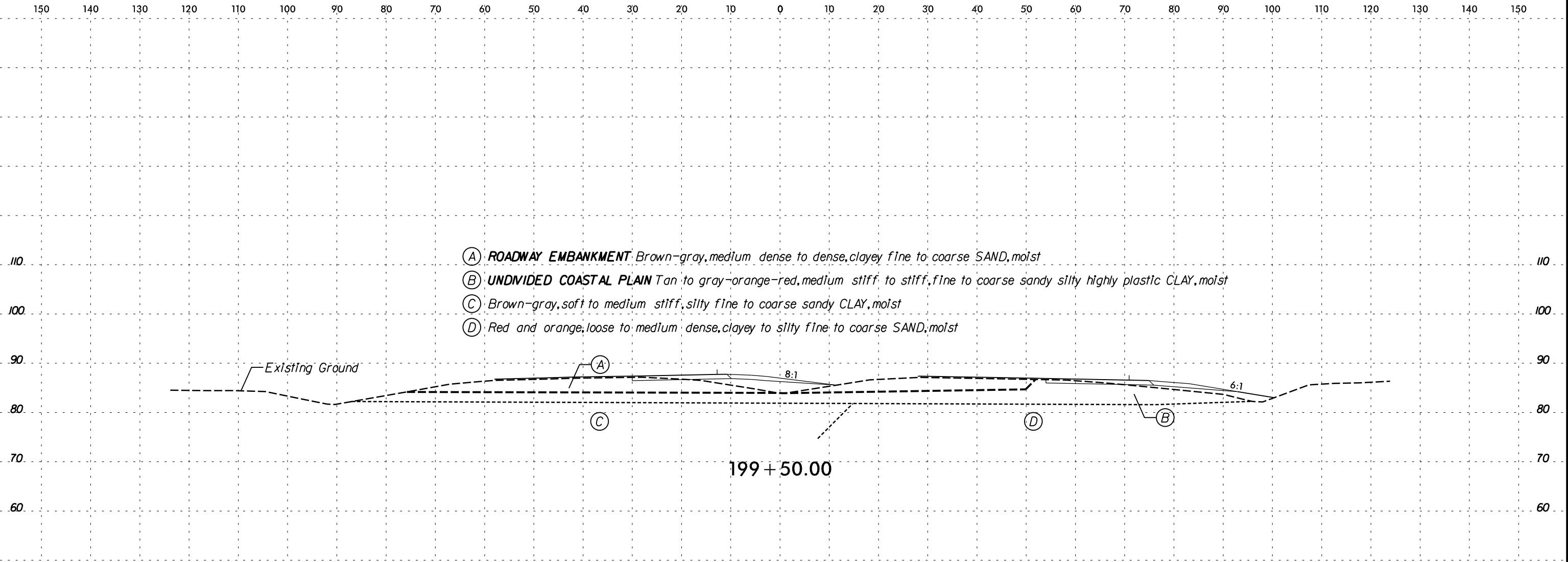
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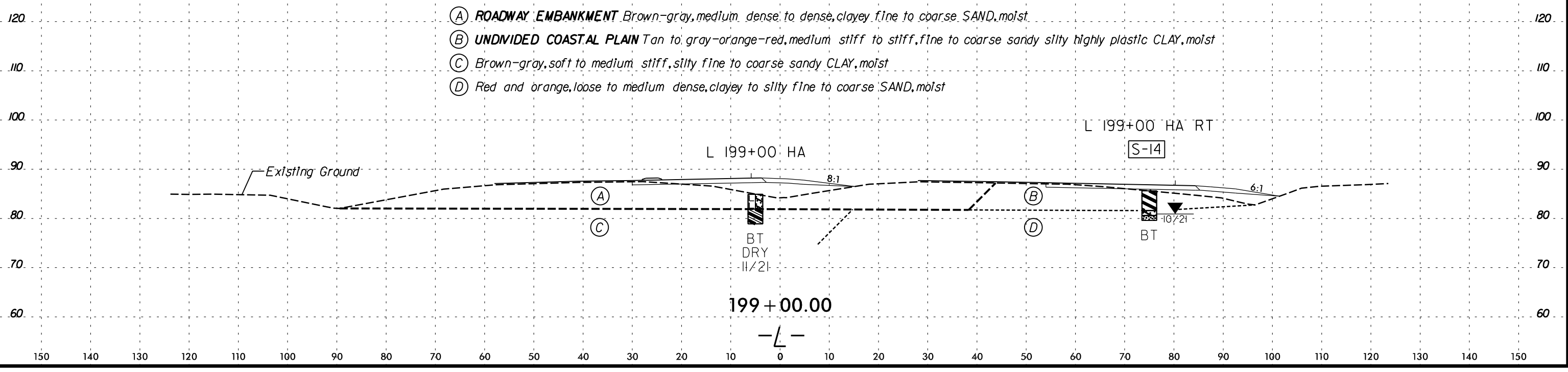
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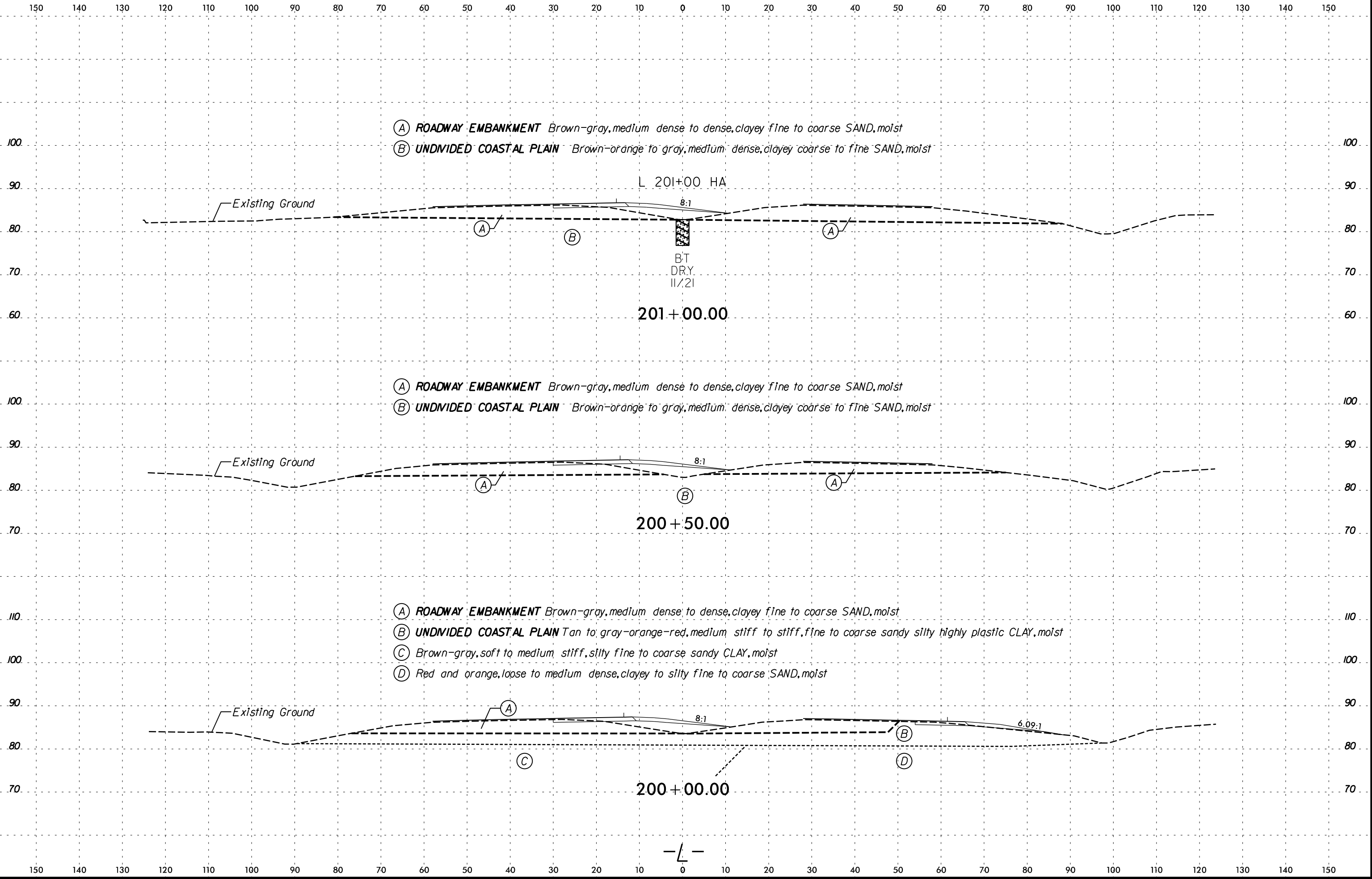


199+50.00

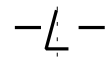
| SOIL TEST RESULTS | | | | | | | | | | | | | | | |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT | | | | % PASSING SIEVE | | | % MOISTURE | % ORGANIC |
| | | | | | | | C. SAND | F. SAND | SILT | CLAY | 10 | 40 | 200 | | |
| S-14 | 199+00 | 75' RT | 2.5-3.0' | A-7-6 | 55 | 34 | 39 | 17 | 5 | 39 | 100 | 85 | 45 | 23 | ND |

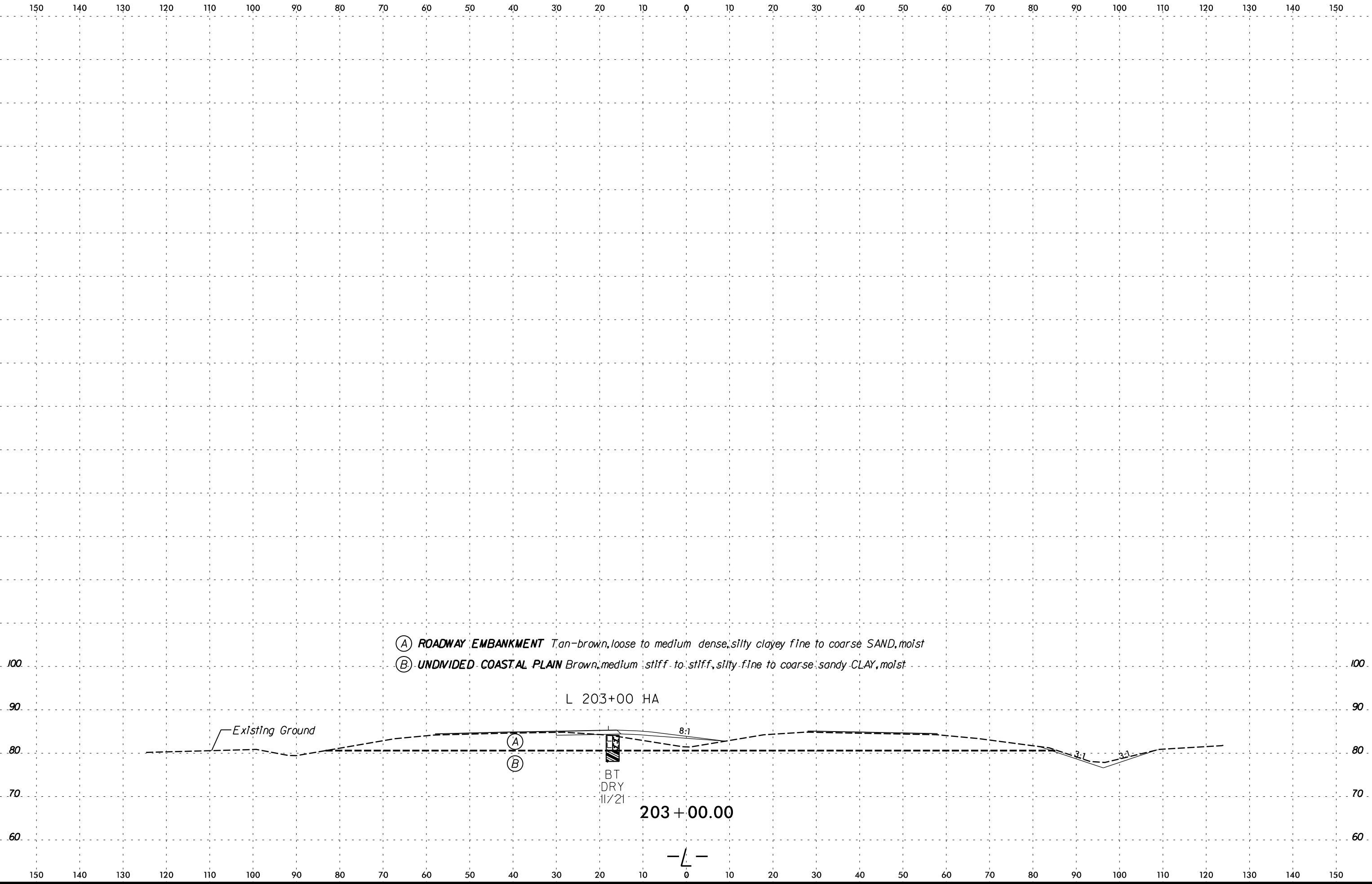


199+00.00



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- (A) ROADWAY EMBANKMENT Tan-brown, loose to medium dense, silty clayey fine to coarse SAND, moist
- (B) UNDIVIDED COASTAL PLAIN Brown, medium stiff to stiff, silty fine to coarse sandy CLAY, moist

L 203+00 HA

Existing Ground

BT
DRY
11/21

203 + 00.00

-L-

REFERENCE: W-5701B

PROJECT: 44847

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

ROADWAY
SUBSURFACE INVESTIGATION

APPENDIX A
LAB RESULTS

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C. | W-5701B | 55 | 56 |

LAB RESULTS

Project: US 158 from West of US 258 to East of NC 11

TIP: W-5701B

| BORING NO. | SAMPLE NO. | STATION NO. | OFFSET | ALIGNMENT | SAMPLE DEPTH (ft) | AASHTO CLASSIFICATION | % PASSING SIEVE | | | % BY WEIGHT | | | | LL | PI | % ORGANIC | % MOISTURE |
|----------------|------------|-------------|---------|-----------|-------------------|-----------------------|-----------------|------|------|-------------|---------|------|------|----|----|-----------|------------|
| | | | | | | | 10 | 40 | 200 | C. SAND | F. SAND | SILT | CLAY | | | | |
| L 30+00 HA | S-7 | 30+00 | 0' CL | -L- | 5.0-5.5' | A-4 | 99.2 | 93.7 | 42.9 | 14.8 | 44.5 | 11.3 | 29.4 | 23 | 9 | ND | 18.2 |
| L 30+00 HA RT | S-2 | 30+00 | 100' RT | -L- | 1.9-2.4' | A-7-6 | 85.7 | 79 | 38.4 | 31.7 | 30.6 | 5.1 | 32.6 | 46 | 27 | ND | 18.2 |
| L 48+00 HA | S-41 | 48+00 | 15' RT | -L- | 3.0-3.5' | A-6 | 99.2 | 93.4 | 46.6 | 16.9 | 39.9 | 10.5 | 32.7 | 35 | 18 | ND | 8.0 |
| L 50+00 HA LT | S-24 | 50+00 | 90' LT | -L- | 4.5-5.0' | A-6 | 99.9 | 93.2 | 46.8 | 17.1 | 39.8 | 11 | 32.1 | 30 | 14 | ND | 18.8 |
| L 72+00 HA | S-50 | 72+00 | 15' LT | -L- | 5.5-6.0' | A-6 | 98 | 91.4 | 42.4 | 17.9 | 42.3 | 7.5 | 32.3 | 38 | 20 | ND | 14.9 |
| L 74+00 HA | S-53 | 74+00 | 0' CL | -L- | 2.5-3.0' | A-7-6 | 99.9 | 96 | 60.2 | 7.2 | 35.7 | 13.2 | 43.9 | 45 | 25 | ND | 18.6 |
| L 74+00 HA RT | S-185 | 74+00 | 68' RT | -L- | 2.0-2.5' | A-7-6 | 99.7 | 96.5 | 56.7 | 5.1 | 43.3 | 11.5 | 40.1 | 49 | 29 | ND | 23.4 |
| L 81+00 HA | S-61 | 81+00 | 0' CL | -L- | 4.0-4.5' | A-7-6 | 89.9 | 72.8 | 47.4 | 30.9 | 20 | 14.5 | 34.6 | 42 | 23 | ND | 13.6 |
| L 91+50 HA | S-77 | 91+50 | 10' RT | -L- | 2.0-2.5' | A-6 | 97.7 | 86.4 | 47.9 | 18.5 | 34.1 | 7.8 | 39.6 | 38 | 19 | ND | 18.1 |
| L 91+50 HA LT | S-21 | 91+50 | 110' LT | -L- | 2.0-2.5' | A-7-6 | 99.3 | 90.4 | 47.8 | 16.6 | 36.7 | 5 | 41.7 | 42 | 21 | ND | 29.5 |
| L 108+50 HA | S-93 | 108+50 | 12' RT | -L- | 3.0-3.5' | A-4 | 100 | 96.1 | 37.6 | 14.2 | 51.1 | 7.8 | 26.9 | 24 | 7 | ND | 14.0 |
| L 118+00 HA | S-96 | 118+00 | 10' LT | -L- | 4.0-4.5' | A-6 | 100 | 92.7 | 47.5 | 22.6 | 34 | 14.3 | 29.1 | 25 | 11 | ND | 15.2 |
| L 118+00 HA RT | S-167 | 118+00 | 96' RT | -L- | 0.5-1.0' | A-7-6 | 100 | 84.9 | 49.6 | 32.1 | 20.5 | 4.2 | 43.2 | 48 | 24 | ND | 35.7 |
| L 121+00 HA | S-99 | 121+00 | 0' CL | -L- | 3.0-3.5' | A-7-5 | 100 | 97.9 | 71.1 | 6.9 | 25.6 | 10.3 | 57.2 | 62 | 32 | ND | 28.7 |
| L 126+90 HA | S-109 | 126+90 | 0' CL | -L- | 2.0-5.0' | A-4 | 95.4 | 77 | 42.5 | 33.9 | 24.1 | 20.6 | 21.4 | NP | NP | 1.3 | 16.4 |
| L 162+50 HA | S-125 | 162+50 | 0' CL | -L- | 3.0-3.5' | A-2-4 | 100 | 99.7 | 32.7 | 5.4 | 62.8 | 5.5 | 26.3 | 31 | 9 | ND | 24.7 |
| L 162+50 HA RT | S-28 | 162+50 | 120' RT | -L- | 0.5-1.0' | A-6 | 99.3 | 85.2 | 56.2 | 28.2 | 17.1 | 18.3 | 36.4 | 32 | 13 | ND | 22.7 |
| L 190+00 HA | S-144 | 190+00 | 28' RT | -L- | 4.0-4.5' | A-6 | 99.7 | 90.7 | 53.8 | 23.1 | 25.7 | 16.7 | 34.5 | 30 | 14 | ND | 15.2 |
| L 199+00 HA RT | S-14 | 199+00 | 75' RT | -L- | 2.5-3.0' | A-7-6 | 99.9 | 85.2 | 45.2 | 38.6 | 17.3 | 5.1 | 39 | 55 | 34 | ND | 22.7 |