

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.	B-4926	1	27

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	15+00.00 to 43+00.00	4-5	N/A
-DRV-	10+00.00 to 12+41.88	4	N/A

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	15+00.00 to 23+50.00	6-13
-L-	28+00.00 to 34+00.00	14-20
-L-	36+00.00 to 43+00.00	21-25
-DRV-	11+50.00 to 12+00.00	26

SUMMARY OF LAB TEST RESULTS	27
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ROADWAY  
SUBSURFACE INVESTIGATION

COUNTY LENOIR  
PROJECT DESCRIPTION BRIDGE NO. 20 AND BRIDGE  
NO. 34 ON NC 55 OVER THE NEUSE RIVER

INVENTORY

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:

- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
- BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

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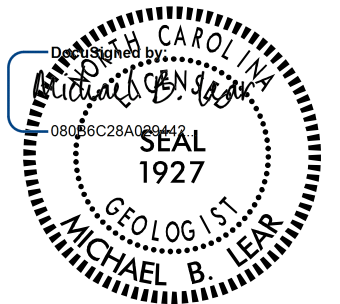
SUBMITTED BY M. LEAR

DATE MARCH, 2022

REFERENCE: B-4926

PROJECT: 40163

NC Engineering F-1253 NC Geology C-247



4/21/2022

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**  
**SUBSURFACE INVESTIGATION**  
**SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

**SOIL DESCRIPTION**

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 208, 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, *VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6*

**SOIL LEGEND AND AASHTO CLASSIFICATION**

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)							ORGANIC MATERIALS			
	A-1	A-3	A-2	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7			
GROUP CLASS.	A-1-a	A-1-b	A-2	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7			
SYMBOL																		
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 35 MX	35 MX 35 MX	35 MX 35 MX	35 MX 35 MX	35 MX 35 MX	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	36 MN 36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	-	-	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	41 MN 11 MN	40 MX 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	HIGHLY ORGANIC SOILS
GROUP INDEX	0	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 <sup>2</sup> )
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
	4.75	2.00	0.42	0.25	0.075	0.053
BOULDER (BLDR.)						
COBBLE (COB.)						
GRAVEL (GR.)						
COARSE SAND (CS, SD.)						
FINE SAND (F SD.)						
SILT (SL.)						
CLAY (CL.)						
GRAIN SIZE	305	75	2.0	0.25	0.05	0.005
MM						
IN.	12	3				

**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 SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL - SHRINKAGE LIMIT	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

**PLASTICITY**

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	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**

	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE 1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE 10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME 20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY 35% AND ABOVE

**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 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
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- SHALLOW UNDERCUT
- 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
- HI. - HIGHLY
- MED. - MEDIUM
- MICA - MICACEOUS
- MOD. - MODERATELY
- NP - NON PLASTIC
- ORG. - ORGANIC
- PMT - PRESSUREMETER TEST
- SAP. - SAPROLITIC
- SD. - SAND, SANDY
- SL. - SILTY, SILTY
- SLI. - SLIGHTLY
- TCR - TRICONE REFUSAL
- w - MOISTURE CONTENT
- V - VERY
- VST - VANE SHEAR TEST
- WEA. - WEATHERED
- UW - UNIT WEIGHT
- UWg - DRY UNIT WEIGHT
- S - BULK
- SS - SPLIT SPOON
- ST - SHELBY TUBE
- RS - ROCK
- RT - RECOMPACTED TRIAXIAL
- CBR - CALIFORNIA BEARING RATIO

**EQUIPMENT USED ON SUBJECT PROJECT**

- DRILL UNITS: CME-45C
- CME-55
- CME-550
- VANE SHEAR TEST
- PORTABLE HOIST
- CME-450
- CME-550X
- ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 8" HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG-CARBIDE INSERTS, CASING w/ ADVANCER, TRICONE 3 \* STEEL TEETH, TRICONE \* TUNG-CARB., CORE BIT, MUD ROTARY
- HAMMER TYPE: AUTOMATIC
- MANUAL
- CORE SIZE: -B, -H, -N
- HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST, MUCK PROBE

**ROCK DESCRIPTION**

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

- WEATHERED ROCK (WR): NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
- CRYSTALLINE ROCK (CR): FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
- NON-CRYSTALLINE ROCK (NCR): FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
- COASTAL PLAIN SEDIMENTARY ROCK (CP): COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

**WEATHERING**

- FRESH**: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
- VERY SLIGHT (V SL.)**: ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
- SLIGHT (SL.)**: ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
- MODERATE (MOD.)**: SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
- MODERATELY SEVERE (MOD. SEV.)**: ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
- SEVERE (SEV.)**: ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
- VERY SEVERE (V SEV.)**: ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
- COMPLETE**: ROCK REDUCED TO SOIL. ROCK 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**

- 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 PIECES 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 FINGER NAIL.

**FRACTURE SPACING**

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

**BEDDING**

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

**INDURATION**

- 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 DISLOADED 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 (N 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 (SREC.)** - 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: BORING ELEVATIONS OBTAINED FROM TIN FILE PROVIDED BY NCDOT (b4926\_is\_tin\_i7i205.tin).**

ELEVATION: N/A FEET

**NOTES:**

- FIAD - FILLED IMMEDIATELY AFTER DRILLING

09\_08/9c

28-MAR-2022 17:12 P:\Transportation\Projects\Road\NC-DOT\2019\6468199027\_B4926 Kinston\B-4926\_GEO\_RDWY\_Kinston\B-4926\_GEO\_RDWY\_Kinston\CADD\_GEO\TECH\Plan\Prof\B-4926\_GEO\_rsh.dgn \$\$\$USERNAME\$\$\$

**CONTRACT:** TIP PROJECT: B-4926

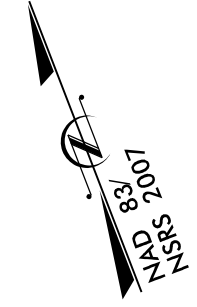
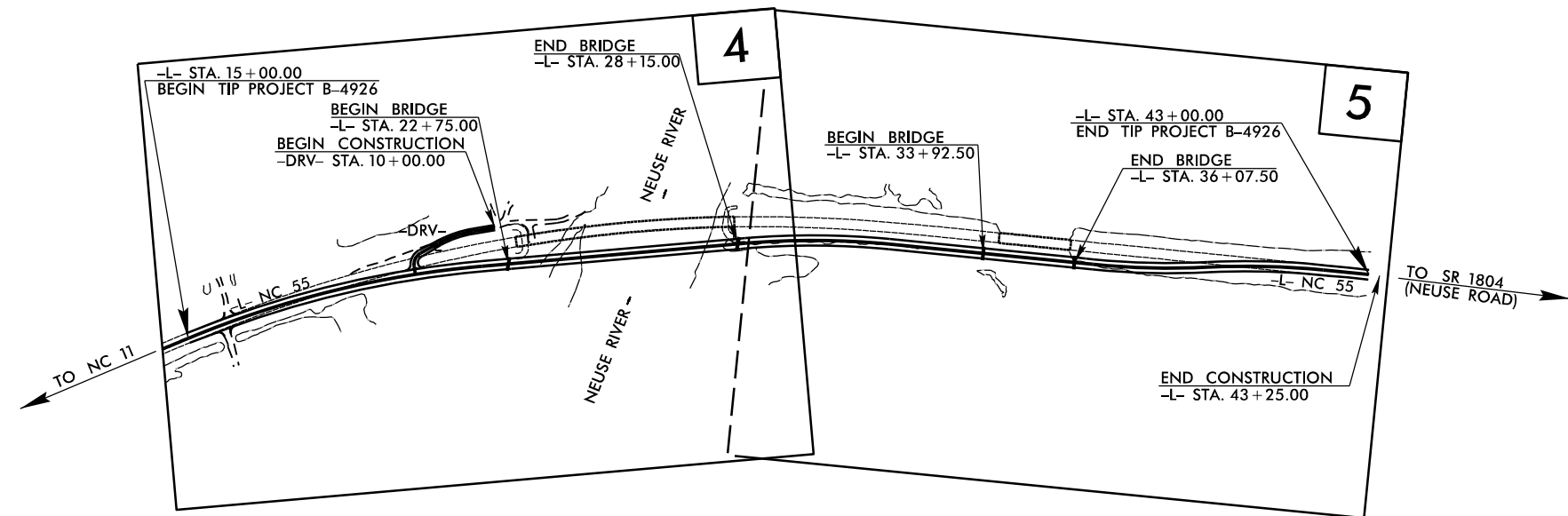
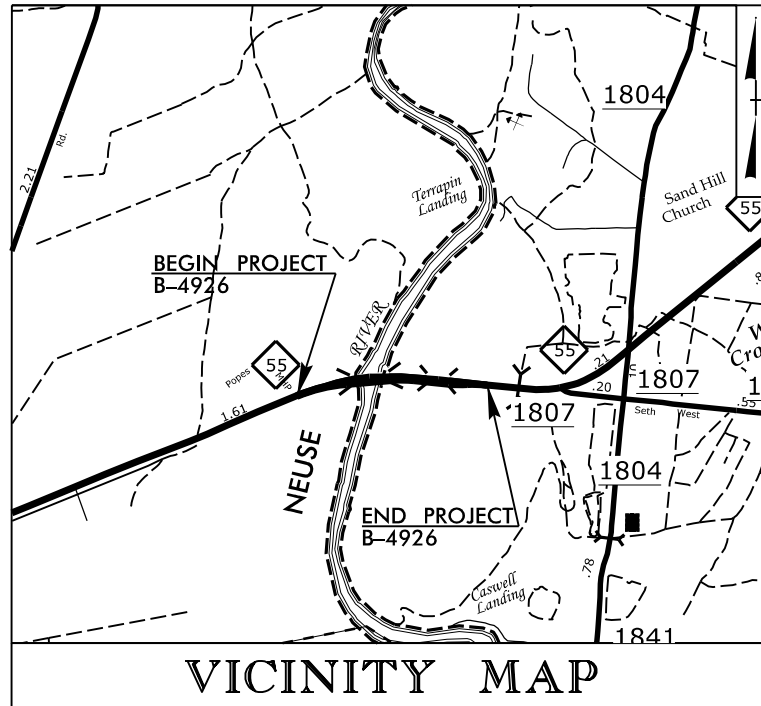
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**LENOIR COUNTY**

LOCATION: BRIDGE NO. 20 AND BRIDGE NO. 34 ON NC 55  
OVER THE NEUSE RIVER

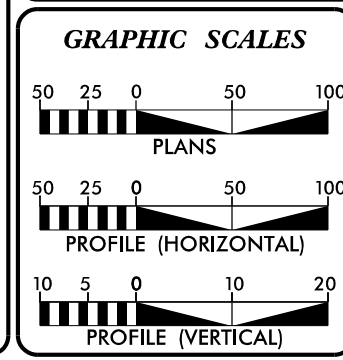
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4926	3	27
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
40163.1.2	N/A	PE	
40163.2.1	N/A	R/W & UTILITIES	



DESIGN EXCEPTION REQUIRED FOR SUPERELEVATION.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

**INCOMPLETE PLANS**  
DO NOT USE FOR R/W ACQUISITION  
DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2020 =	3020
ADT 2040 =	3900
K =	9 %
D =	60 %
T =	8 % *
V =	60 MPH
* TTST =	3% DUAL = 5%
FUNC CLASS =	MAJOR COLLECTOR
	"REGIONAL TIER"

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4926 =	0.387 MILES
LENGTH STRUCTURES TIP PROJECT B-4926 =	0.143 MILES
TOTAL LENGTH OF TIP PROJECT B-4926 =	0.530 MILES

Prepared In the Office of:

**SEPI**  
Engineering & Construction, Inc.  
1 Glenwood Avenue  
Raleigh, NC 27603  
Tel: 919.788.9977  
Fax: 919.788.9591  
License: C-2197

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
AUGUST 16, 2019

LETTING DATE:  
OCTOBER 3, 2022

RAJIT RAMKUMAR, PE  
PROJECT ENGINEER

DANIEL W. GARDNER, JR., PE  
PROJECT DESIGN ENGINEER

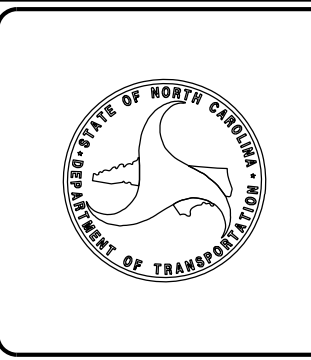
CASEY K. WHITLEY, PE, PLS  
NCDOT CONTACT

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



March 24, 2022

WBS Number: 40163.1.2  
 TIP Number: B-4926  
 COUNTY: Lenoir  
 DESCRIPTION: Bridge No. 20 and Bridge No. 34 on NC 55 Over the Neuse River

WOOD E&IS Number: 6468199027

SUBJECT: Geotechnical Roadway Inventory Report

### Project Description

The project consists of replacing the bridges on NC 55 over the Neuse River (Bridge No. 20) and the Neuse River Overflow (Bridge No. 34). We understand that the Bridge over the Neuse River will be a 6-span bridge and the Neuse River Overflow Bridge will be a 3-span bridge. To maintain traffic on NC 55 during construction, the horizontal alignment of NC 55 will be shifted south into the wetland area. The project site is located as described above, approximately 5 miles northeast of Kinston, NC. Most of the proposed roadway alignment (-L-) passes through forested swamp with standing water. The remaining portion of the proposed alignment consists of wooded areas.

The geotechnical field investigation for the roadway portion of the project was conducted in two phases, with most of the field work completed during April and May of 2019, and the remaining field work completed in October of 2021. This interruption to the field work was the result of the NCDOT placing the project on hold in June of 2019, and direction to resume work in the spring of 2021. A CME-45C drill rig mounted on a swamp buggy ATV carrier was used to access and perform borings in portions the swamp section of the project. Two CME-550X ATV drill rigs were utilized to perform borings within the existing roadway. The three rigs were equipped with automatic hammers. Mud rotary drilling procedures were used to advance borings to the required depths. Standard Penetration Tests (SPT) were performed at approximately 2.5-foot to 5.0-foot intervals to termination in selected borings. Muck probes and/or hand auger borings were also performed throughout the swamp section of the project. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis.

The following alignments, totalling approximately 0.4 miles, were explored. Selected subsurface cross sections of these alignments are included in this report.

<u>Alignment</u>	<u>Station (±)</u>
-L-	15+00 to 43+00
-DRV-	10+00 to 12+41.88

### Areas of Special Geotechnical Interest

- 1) The entire project contains fine grained cohesive soils which have the potential to cause embankment/subgrade and/or slope stability problems during construction.

- 2) The entire project was found to exhibit seasonal high ground water.

- 3) Organic Soils: The following sections contain soils with little to high organic content, which have the potential to cause embankment/subgrade and/or slope stability problems during construction.

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets (ft.)</u>
-L-	15+00 to 15+75	RT
-L-	16+25 to 19+75	RT
-L-	27+75 to 31+25	RT
-L-	32+25 to 34+25	RT
-L-	35+75 to 42+75	RT

### Physiography and Geology

The project is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping and generally exhibits poor surface drainage. Natural ground elevations along the project alignments ranged from 12± to 19± feet above sea level. Surface waters from this area are generally collected in shallow ditches along the roadway and flow into the Neuse River. The project site is located within the existing floodplain of the Neuse River and as such is subject to periodic flooding from the river. The site consists primarily of the existing roadway, woods, and forested swamp.

Geologically, the project is located within the Coastal Plain Province. Alluvial soils are present throughout the project site. The alluvial soils are underlain at depth by the Cretaceous aged marine sediments of the Pee Dee Formation.

### Ground Water

Ground water data was collected during our subsurface investigations in April and May of 2019 and October of 2021, in almost all borings throughout the project corridor. Ground water elevations ranged from approximately 10.5 to 23.4 feet above sea level. The surface water elevation of the wooded swamp was measured several times during the field investigation and ranged from 8.7 to 19.1 feet above sea level. Ground water and surface water levels may fluctuate with seasonal precipitation and localized storm events within the Neuse River Basin.

### Soil Properties

Soils encountered during this investigation have been divided into four categories based on origin, including roadway embankment, artificial fill, alluvial soils, and coastal plain formational strata.

Roadway embankment soils are present along existing NC 55 (-L-) and the intersecting driveway (-DRV-). These soils consist of ±3 to ±20 feet of tan, orange, gray, and brown, very loose to very dense, dry to saturated, silty fine to coarse sand (A-2-4, A-3), locally with trace gravel and asphalt fragments; and tan, orange, gray, and brown, very soft to soft, wet, fine sandy, silt and clay (A-4, A-6). Laboratory test results from selected samples show plastic indices of non-plastic to 22. The natural moisture content ranges from 8 to 35 percent in these samples.



Artificial fill soils are present along the existing driveway (-DRV-). These soils consist of  $\pm 7$  feet of tan, orange, and brown, medium dense, dry to wet, silty fine to coarse sand (A-2-4).

Alluvial soils are present at the ground surface within the low laying areas in and around the wooded swamp and below the existing roadway embankment soils for NC 55 where it passes through the Neuse River floodplain. The surficial alluvial soils primarily consist of  $\pm 1$  to  $\pm 6$  feet of gray and brown, very soft, saturated, sandy, and clayey, Muck; and brown, gray, and tan, very soft to medium stiff, moist to saturated, fine sandy, silt and clay (A-4, A-6, A-7-6) with trace to moderate organics, locally with trace gravel. Below the surficial alluvial sediments the alluvial soils consists of  $\pm 7$  to  $\pm 19$  feet of brown, tan, orange, gray and green, very loose to medium dense, wet to saturated, silty and clayey, fine to coarse sand (A-2-4, A-2-6, A-3, A-1-b) with trace gravel and organics; and locally interbedded with gray and tan, very soft to stiff, wet to saturated, fine to coarse sandy and silty clay and clayey silt (A-6, A-7-6, A-4) with trace gravel, organics, and wood fragments. The natural moisture content of the alluvial soils ranges from 13 to 52 percent. Laboratory test results from selected samples of the surficial alluvial clay and silt show trace to high organic content (4.7% to 57.7%) and slight to high plasticity with plastic indices from 10 to 38. Alluvial soils extended to the top of the coastal plain formational strata at elevations ranging from approximately 10 to -3 feet.

Coastal plain formational strata belonging to the Peedee Formation where encountered below the alluvial soils in the deeper subsurface and consist mostly of gray and green, medium stiff to hard, moist to saturated, locally glauconitic, fine to coarse sandy and silty, clay and sandy silt (A-6, A-7-6, A-4) with trace shell fragments and fine sandy partings; green and gray, medium dense to very dense, moist to wet, glauconitic, silty and clayey fine sand (A-2-4, A-2-6) with trace shell fragments and cemented sand lenses, gravel, clay lenses, and very thinly to thinly bedded cemented sand lenses. Laboratory test results from selected clay samples show liquid limits ranging from 32 to 42 and slight to high plasticity, with plastic indices of 14 to 26. The natural moisture content ranges from 23 to 32 percent in these samples.

Prepared By,



Michael B. Lear, PG  
Senior Geologist

#### UNDISTURBED SAMPLES

The following undisturbed samples were taken for tests to determine the engineering properties of the soil:  
(Note: Tubes pushed at offset locations shown and adjacent to SPT boring location. ST-1 and ST-2 not tested due to project hold as directed by NCDOT, ST-3 not tested due to damage to tube during sample collection.)

<u>Sample No.</u>	<u>Location</u>	<u>Depth (ft)</u>	<u>Test</u>
ST-1	-L-, 36+18, 35' LT	8.5 – 10.5	Not Tested
ST-2	-L-, 36+18, 35' LT	13.0 – 15.0	Not Tested
ST-3	-L-, 22+72, 40' RT	4.1 – 5.2	Not Tested



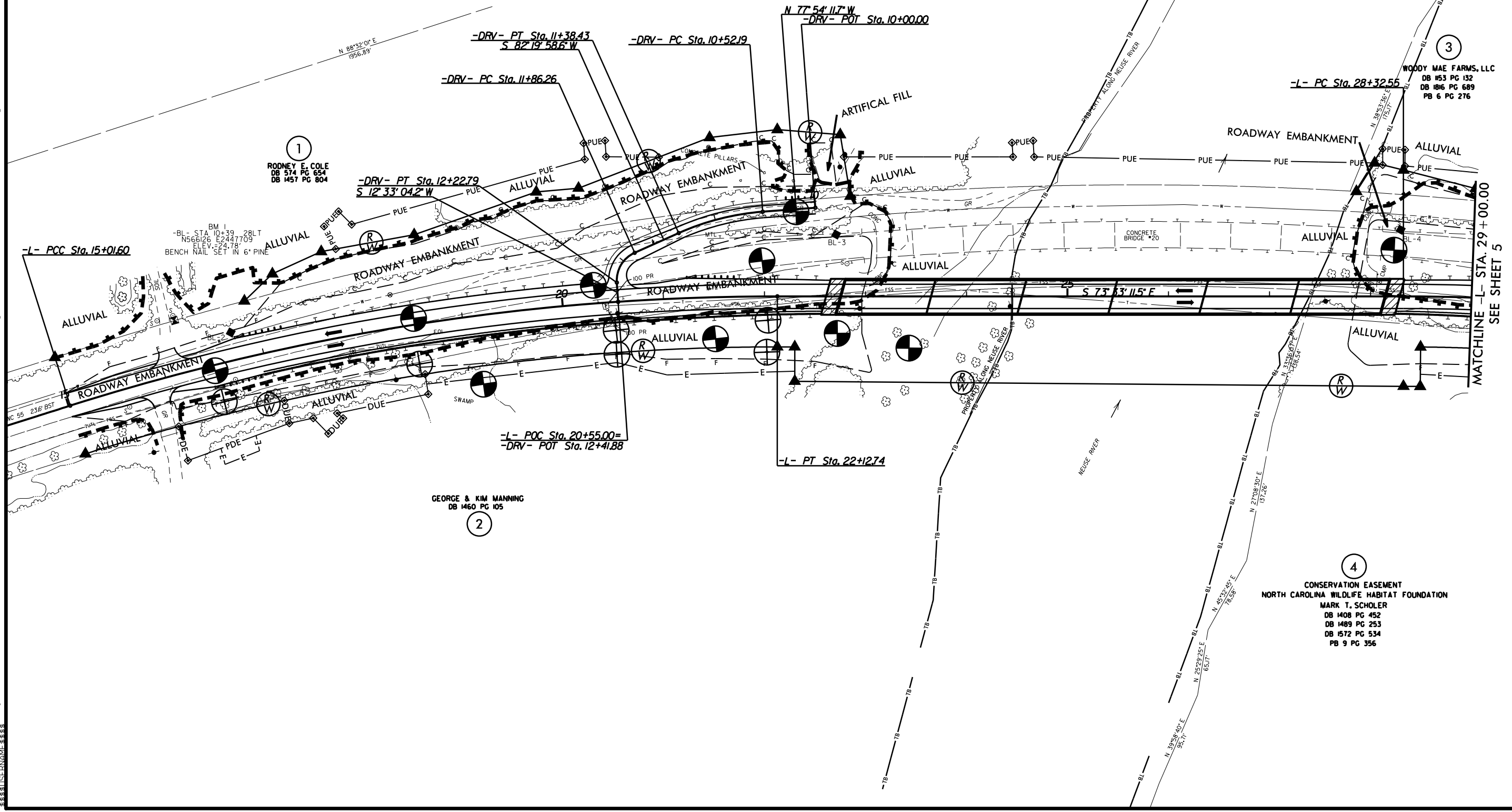
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1 Glenwood Avenue  
Raleigh, NC 27603  
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Fax: 919.789.9591  
License: C-2197

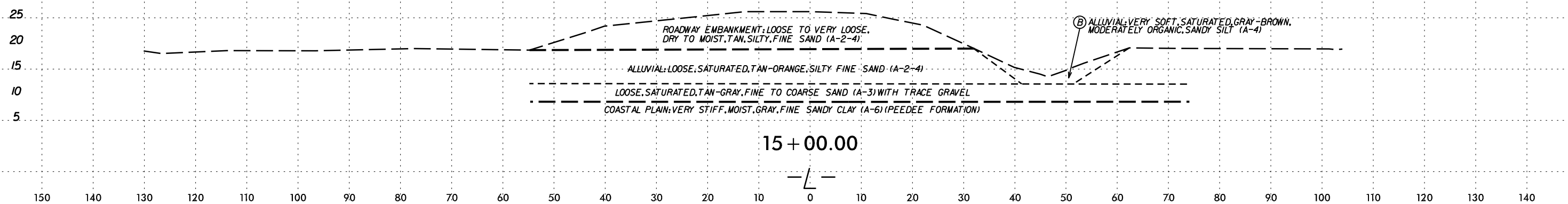
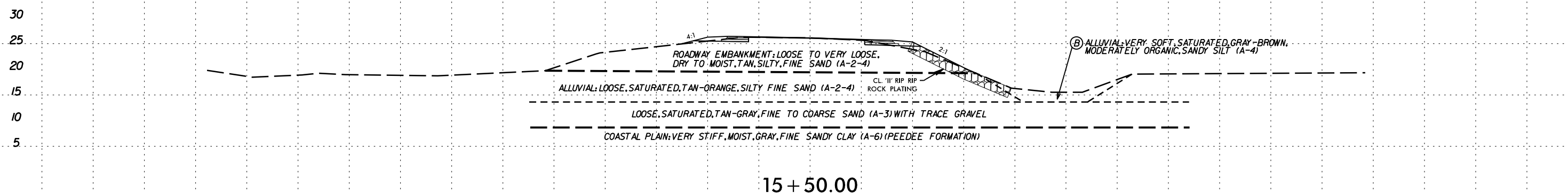
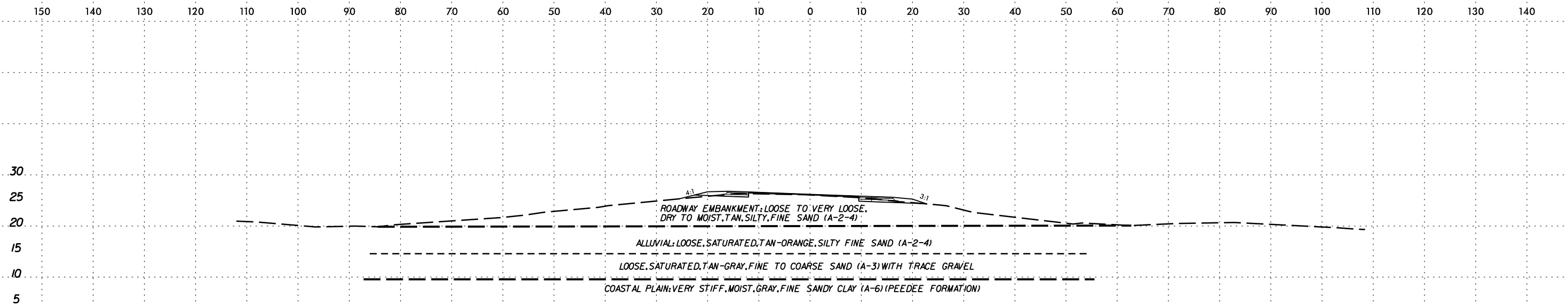
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

-L-	
PI Sta 18+59.98 Δ = 17° 33' 45.4" (RT) D = 2' 28' 10.7" L = 711.4' T = 358.38' R = 2,320.00' SE = .06 RO = 160'	PI Sta 30+02.07 Δ = 10° 38' 32.4" (RT) D = 3' 08' 53.2" L = 338.05' T = 169.51' R = 1,820.00' SE = .07 RO = 187'
-DRV-	
PI Sta 10+95.74 Δ = 19° 45' 49.7" (LT) D = 22' 55' 05.9" L = 86.24' T = 43.55' R = 250.00' SE = SEE PLANS	PI Sta 12+07.18 Δ = 69° 46' 54.4" (LT) D = 190' 59' 09.4" L = 36.54' T = 20.92' R = 30.00' SE = SEE PLANS



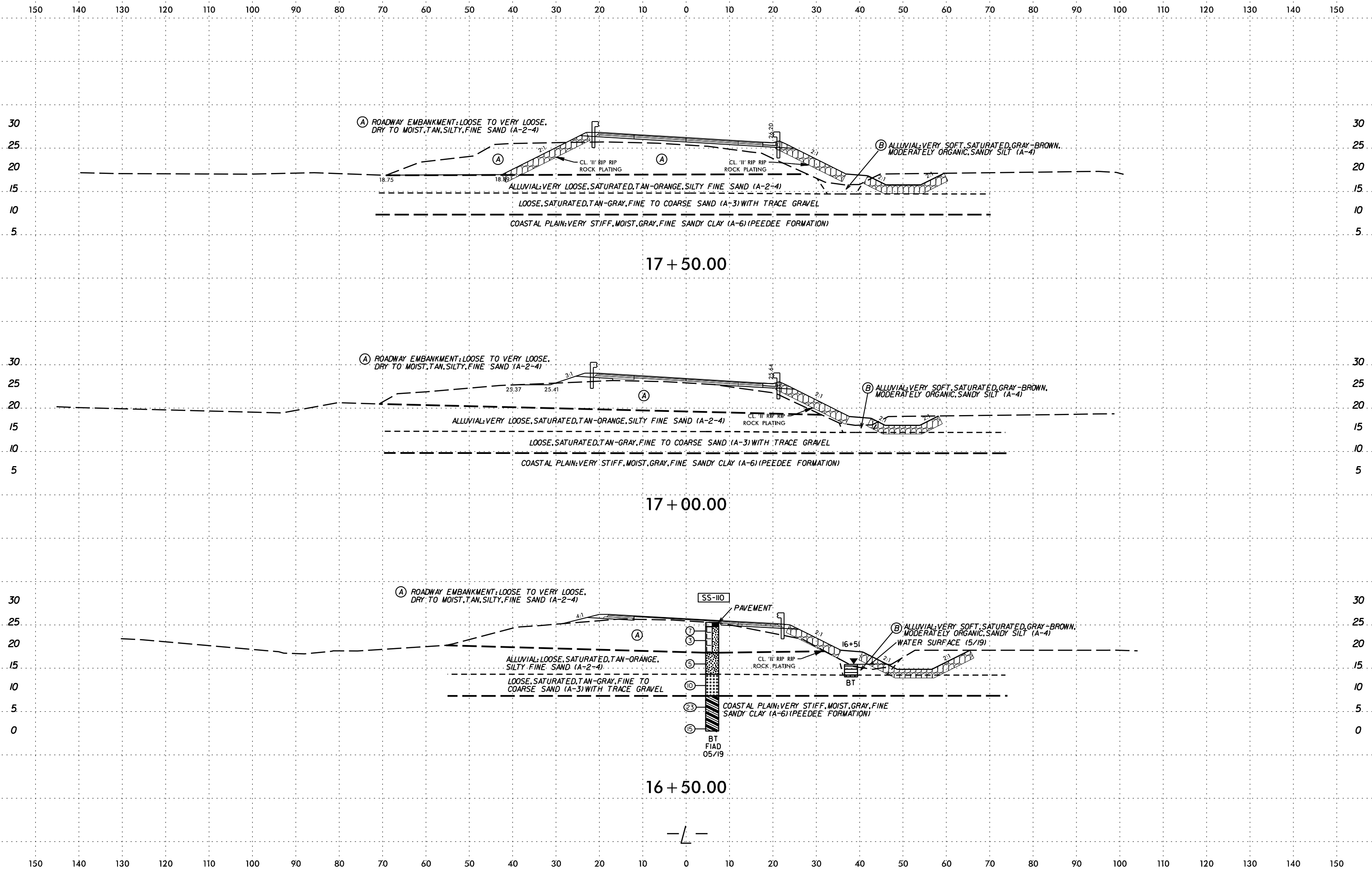
MATCHLINE -L- STA. 29+00.00  
SEE SHEET 5



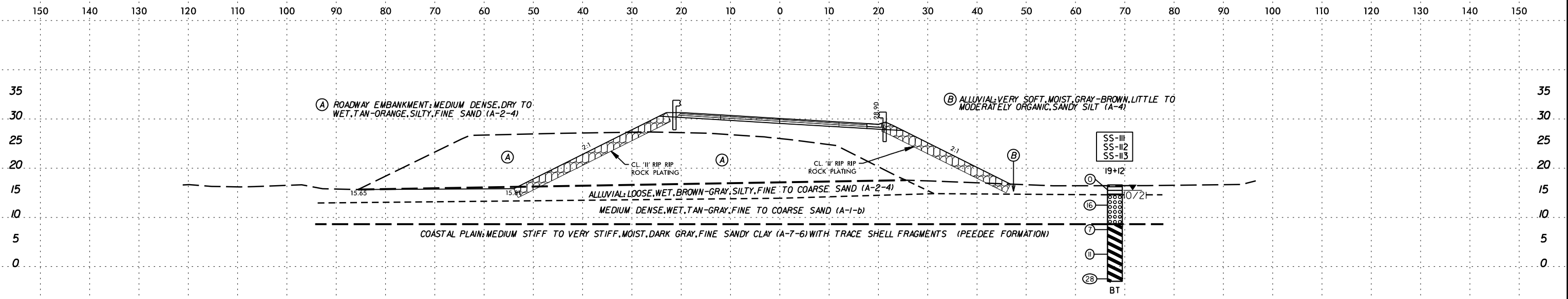


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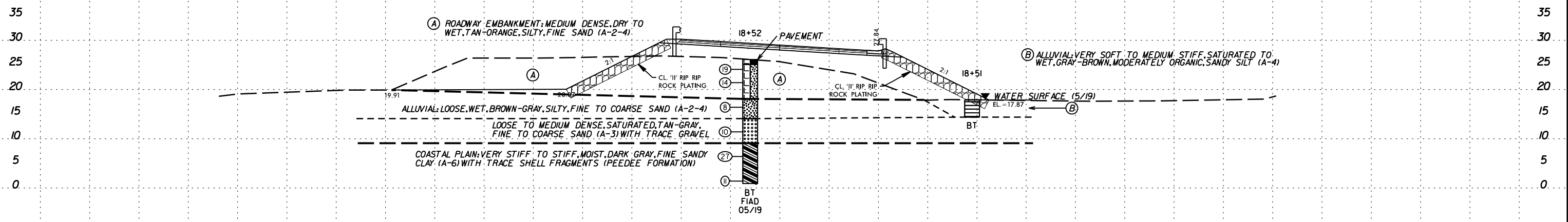




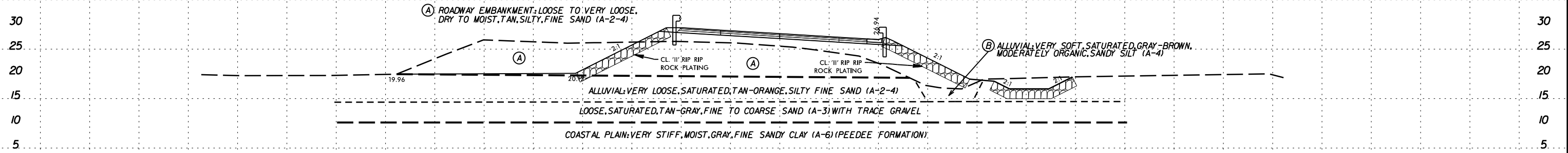
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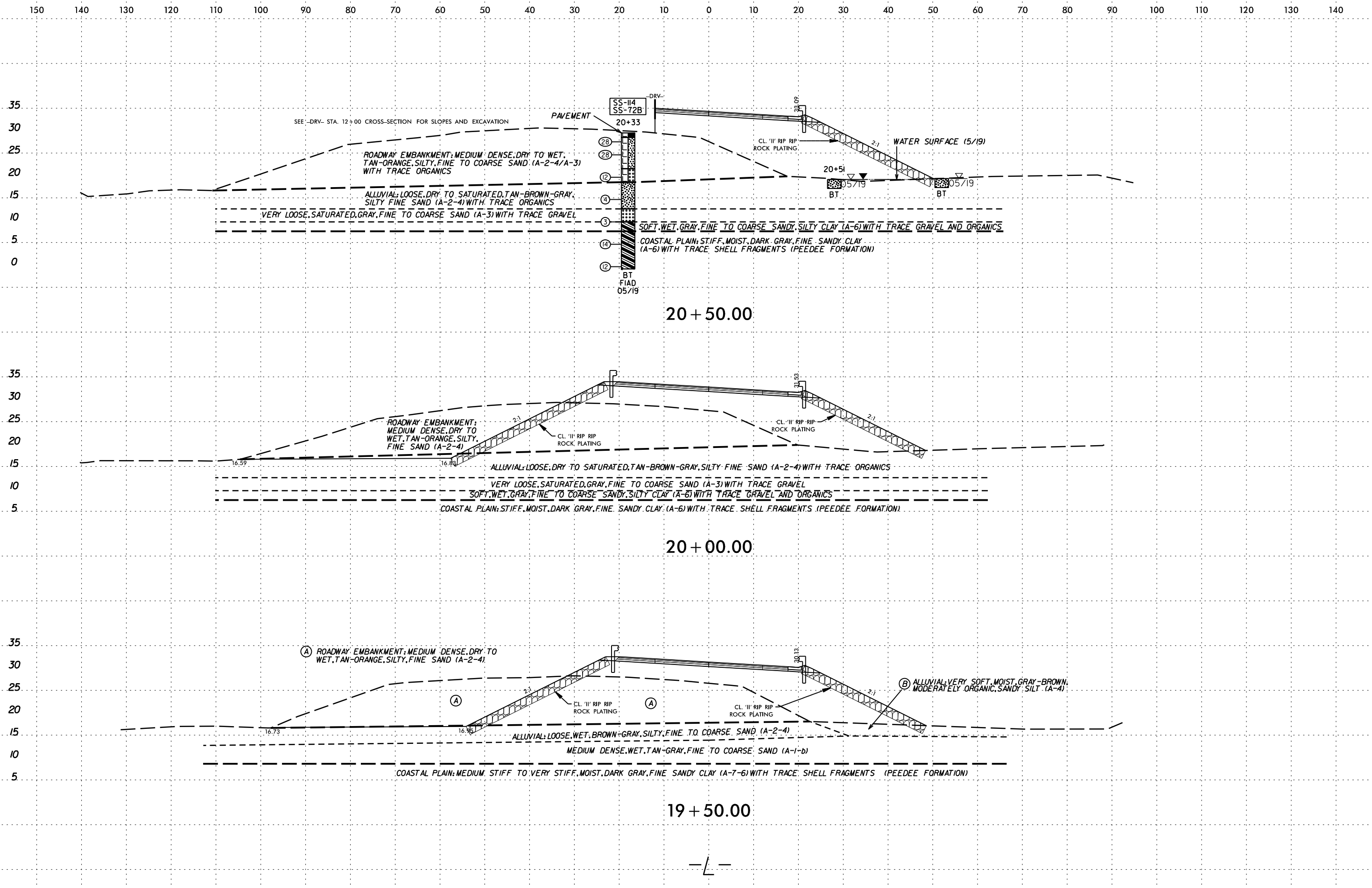


18 + 50.00



18 + 00.00

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SEE -DRV- STA. 12+00 CROSS-SECTION FOR SLOPES AND EXCAVATION

SS-II4  
SS-72B  
20+33

- 28
- 28
- 12
- 4
- 3
- 14
- 12

ROADWAY EMBANKMENT: MEDIUM DENSE, DRY TO WET, TAN-ORANGE, SILTY, FINE TO COARSE SAND (A-2-4/A-3) WITH TRACE ORGANICS

ALLUVIAL: LOOSE, DRY TO SATURATED, TAN-BROWN-GRAY, SILTY FINE SAND (A-2-4) WITH TRACE ORGANICS

VERY LOOSE, SATURATED, GRAY, FINE TO COARSE SAND (A-3) WITH TRACE GRAVEL

SOFT, WET, GRAY, FINE TO COARSE SANDY, SILTY CLAY (A-6) WITH TRACE GRAVEL AND ORGANICS

COASTAL PLAIN: STIFF, MOIST, DARK GRAY, FINE SANDY CLAY (A-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

20 + 50.00

ROADWAY EMBANKMENT: MEDIUM DENSE, DRY TO WET, TAN-ORANGE, SILTY, FINE SAND (A-2-4)

ALLUVIAL: LOOSE, DRY TO SATURATED, TAN-BROWN-GRAY, SILTY FINE SAND (A-2-4) WITH TRACE ORGANICS

VERY LOOSE, SATURATED, GRAY, FINE TO COARSE SAND (A-3) WITH TRACE GRAVEL

SOFT, WET, GRAY, FINE TO COARSE SANDY, SILTY CLAY (A-6) WITH TRACE GRAVEL AND ORGANICS

COASTAL PLAIN: STIFF, MOIST, DARK GRAY, FINE SANDY CLAY (A-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

20 + 00.00

(A) ROADWAY EMBANKMENT: MEDIUM DENSE, DRY TO WET, TAN-ORANGE, SILTY, FINE SAND (A-2-4)

(A)

(A)

(B) ALLUVIAL: VERY SOFT, MOIST, GRAY-BROWN, MODERATELY ORGANIC, SANDY SILT (A-4)

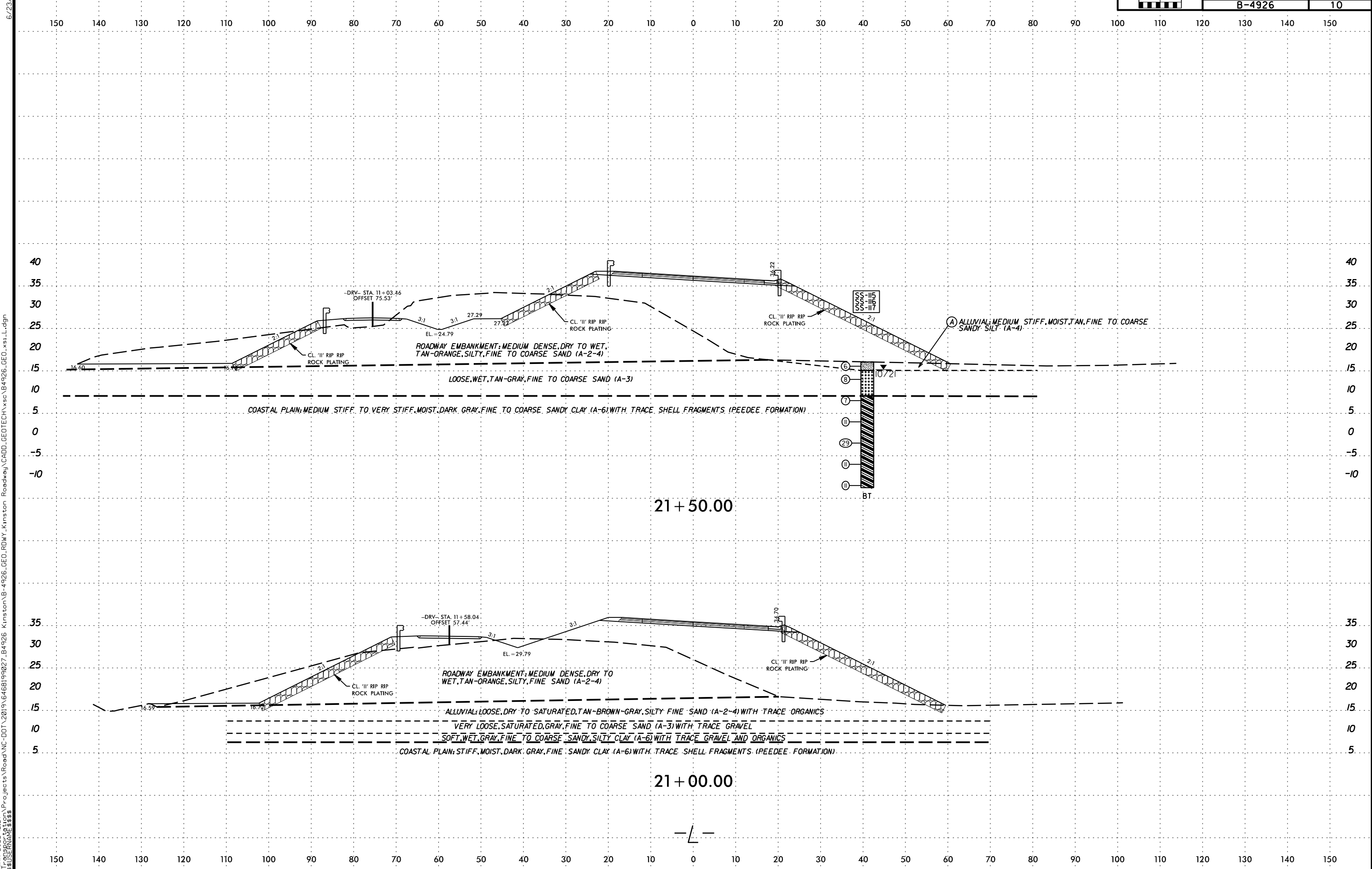
ALLUVIAL: LOOSE, WET, BROWN-GRAY, SILTY, FINE TO COARSE SAND (A-2-4)

MEDIUM DENSE, WET, TAN-GRAY, FINE TO COARSE SAND (A-1-b)

COASTAL PLAIN: MEDIUM, STIFF TO VERY STIFF, MOIST, DARK GRAY, FINE SANDY CLAY (A-7-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

19 + 50.00

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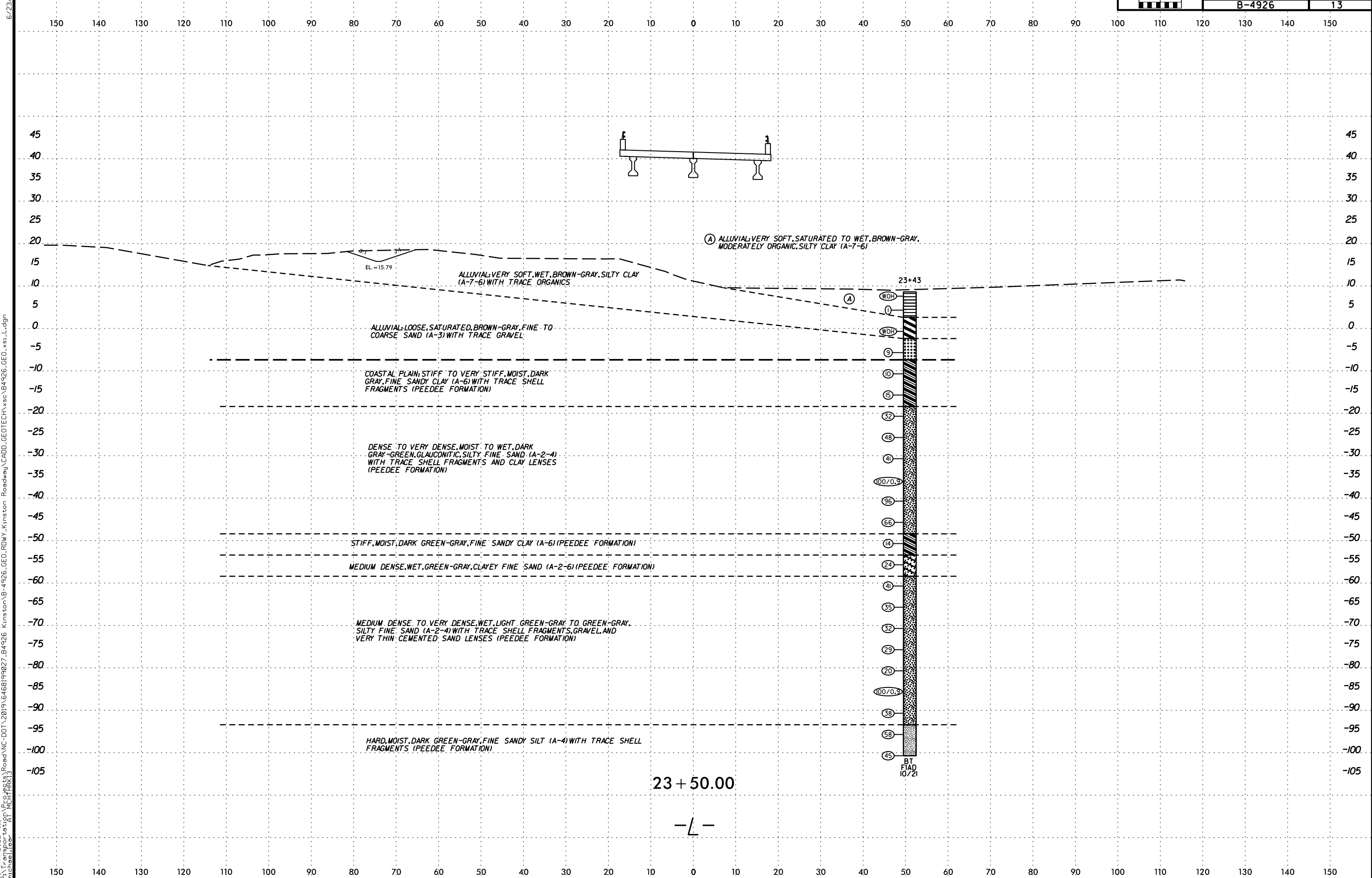


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ALLUVIAL: VERY SOFT, WET, BROWN-GRAY, SILTY CLAY (A-7-6) WITH TRACE ORGANICS

ALLUVIAL: LOOSE, SATURATED, BROWN-GRAY, FINE TO COARSE SAND (A-3) WITH TRACE GRAVEL

COASTAL PLAIN: STIFF TO VERY STIFF, MOIST, DARK GRAY, FINE SANDY CLAY (A-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

DENSE TO VERY DENSE, MOIST TO WET, DARK GRAY-GREEN, GLAUCONITIC, SILTY FINE SAND (A-2-4) WITH TRACE SHELL FRAGMENTS AND CLAY LENSES (PEEDEE FORMATION)

STIFF, MOIST, DARK GREEN-GRAY, FINE SANDY CLAY (A-6) (PEEDEE FORMATION)

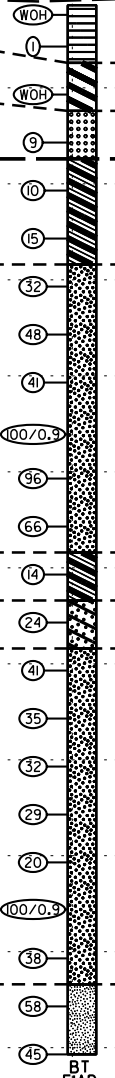
MEDIUM DENSE, WET, GREEN-GRAY, CLAYEY FINE SAND (A-2-6) (PEEDEE FORMATION)

MEDIUM DENSE TO VERY DENSE, WET, LIGHT GREEN-GRAY TO GREEN-GRAY, SILTY FINE SAND (A-2-4) WITH TRACE SHELL FRAGMENTS, GRAVEL, AND VERY THIN CEMENTED SAND LENSES (PEEDEE FORMATION)

HARD, MOIST, DARK GREEN-GRAY, FINE SANDY SILT (A-4) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

(A) ALLUVIAL: VERY SOFT, SATURATED TO WET, BROWN-GRAY, MODERATELY ORGANIC, SILTY CLAY (A-7-6)

23+43

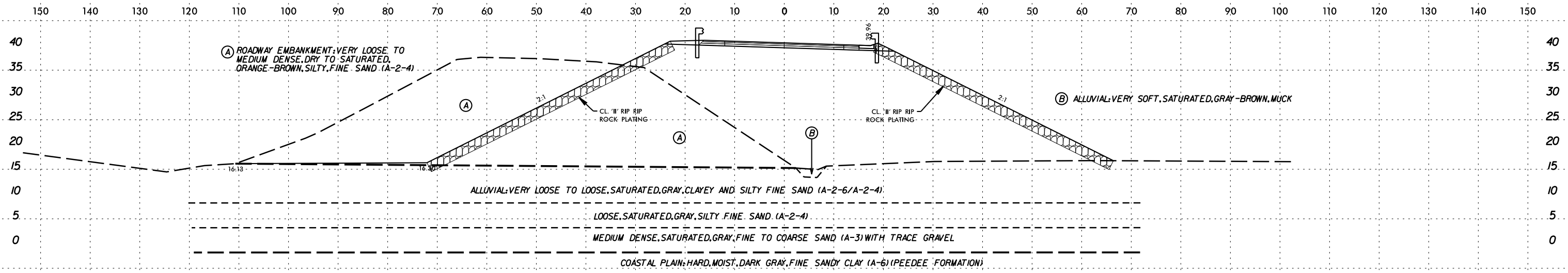


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FIAD  
10/21

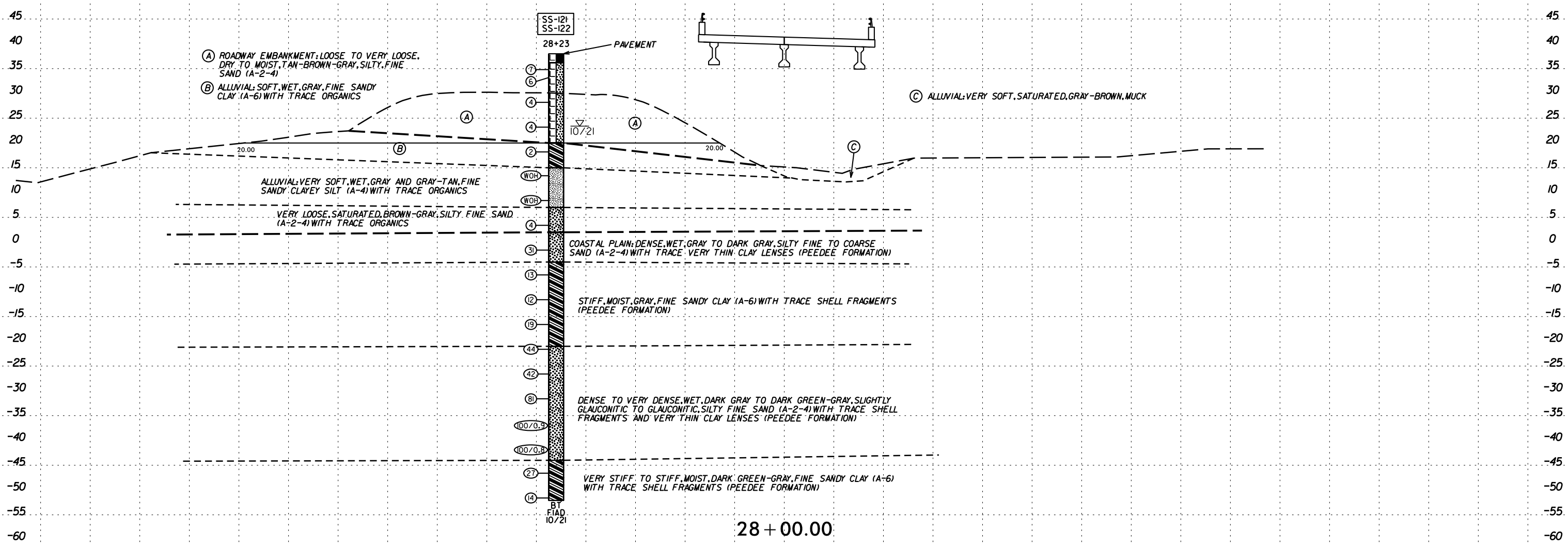
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-L-

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michele.pearce - AT - MCH TRK13



28 + 50.00

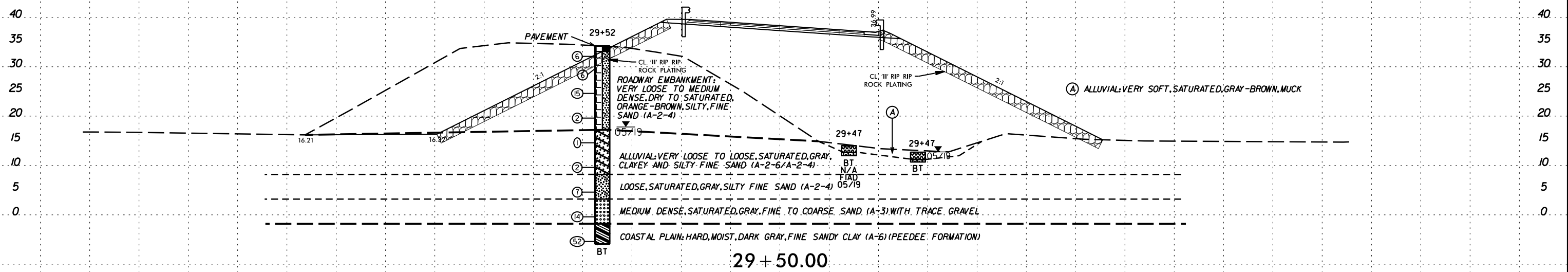


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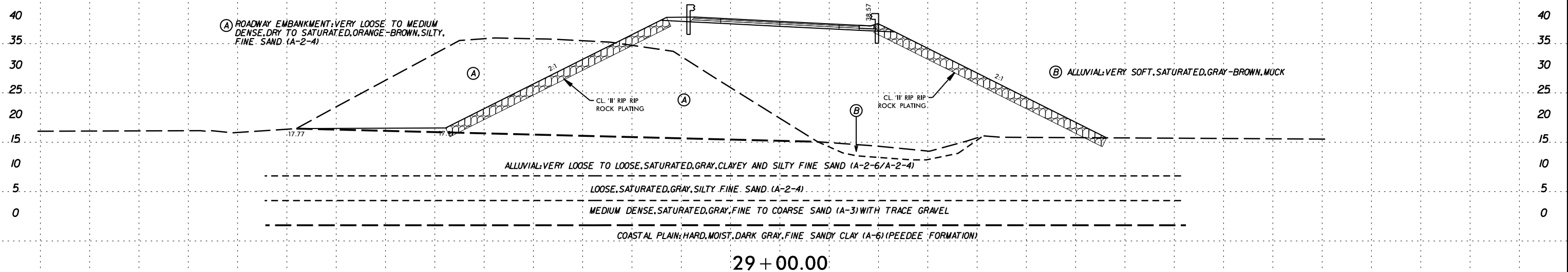
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29 + 50.00



29 + 00.00

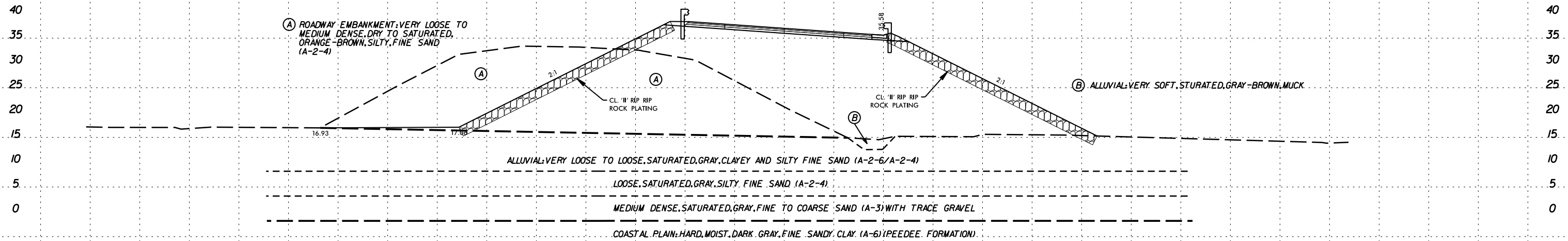
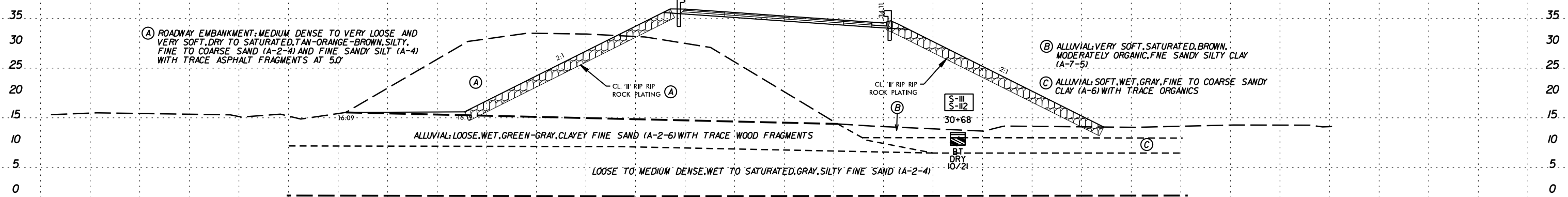
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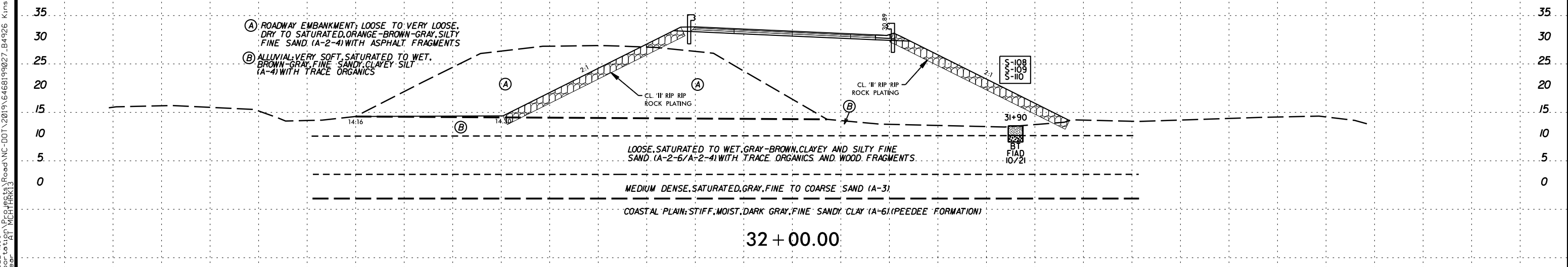
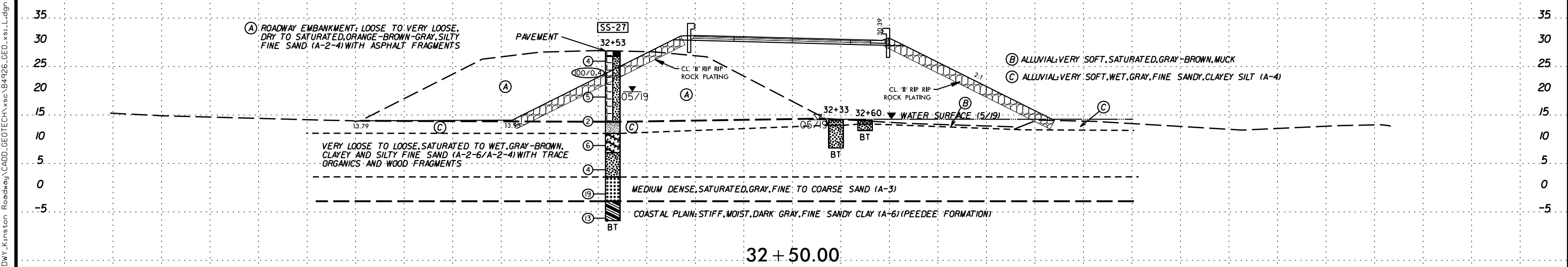
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 mchickler AT MCHTRK3





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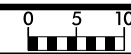


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michele.pearce - AT - MCH TRK13

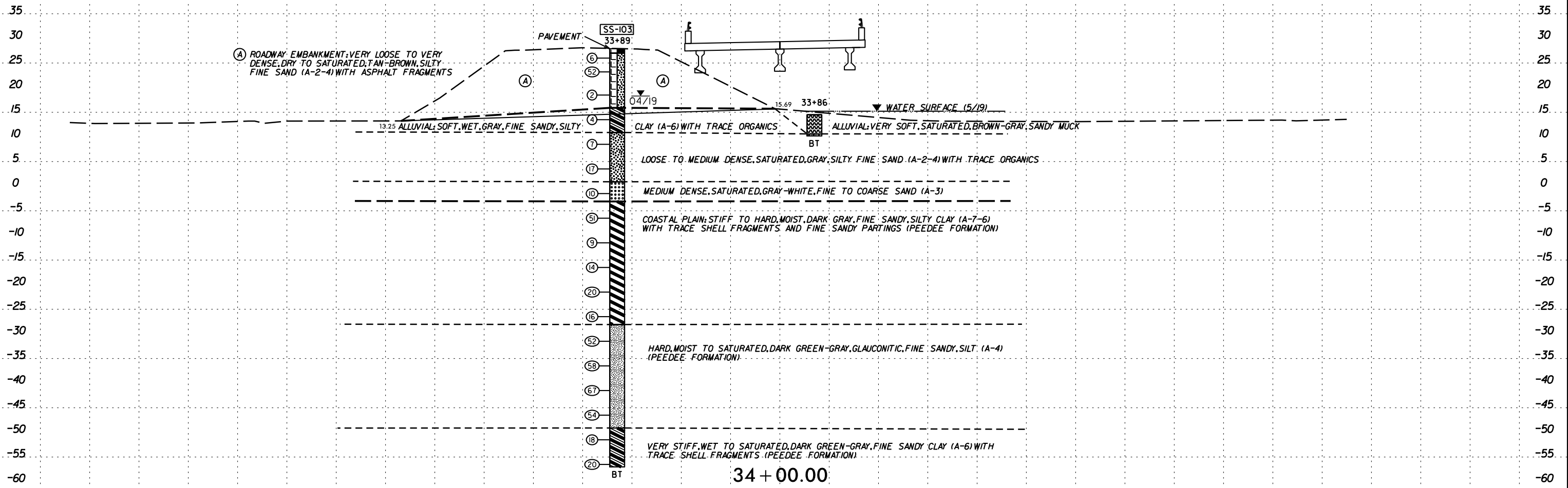


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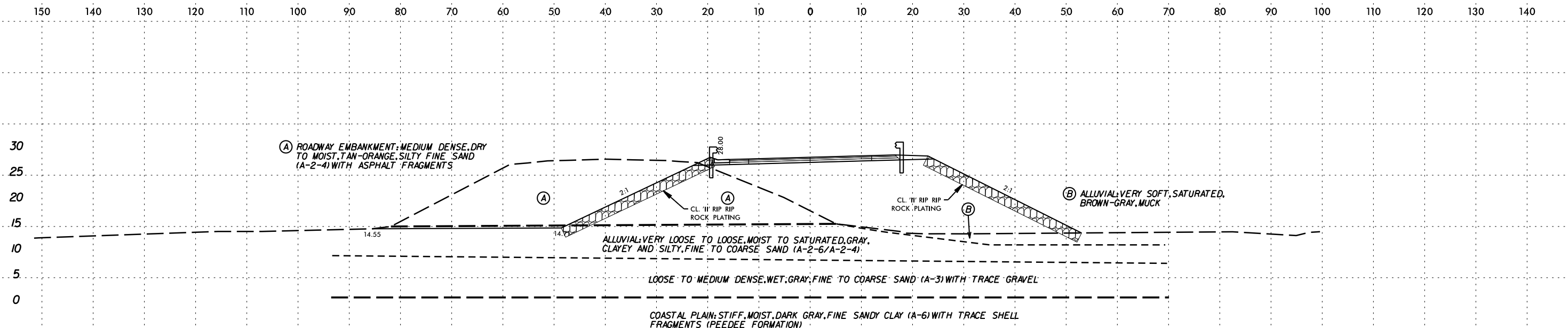
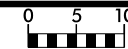


PROJ. REFERENCE NO.	SHEET NO.
B-4926	20

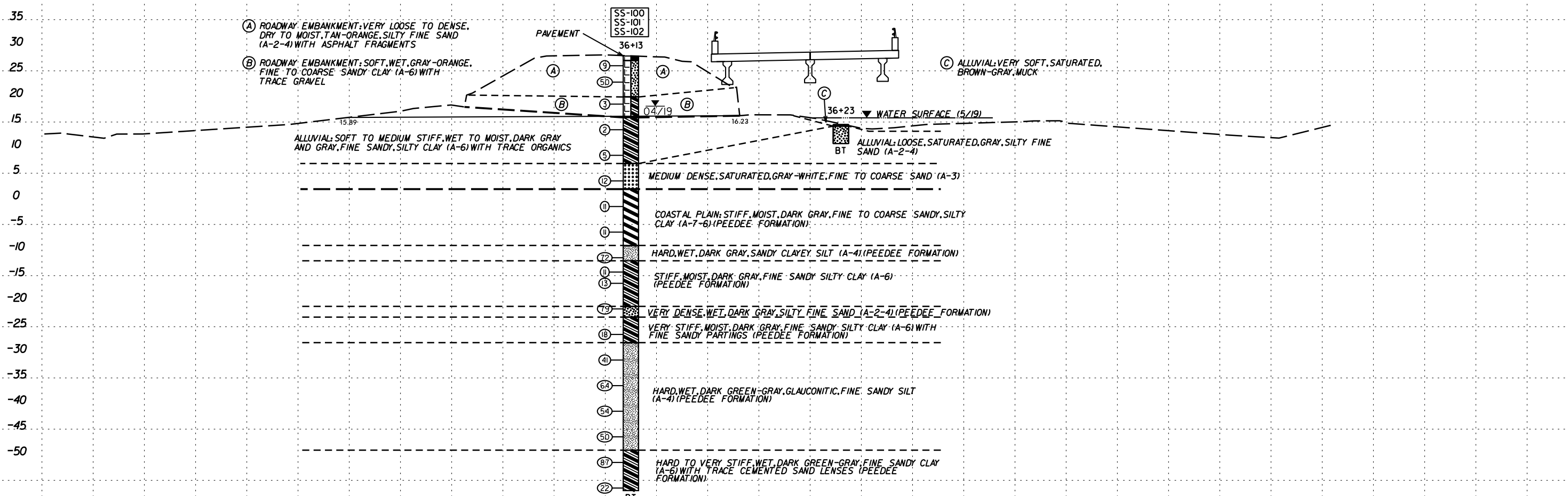
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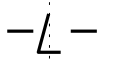
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 mchase@ncdot.gov



36 + 50.00



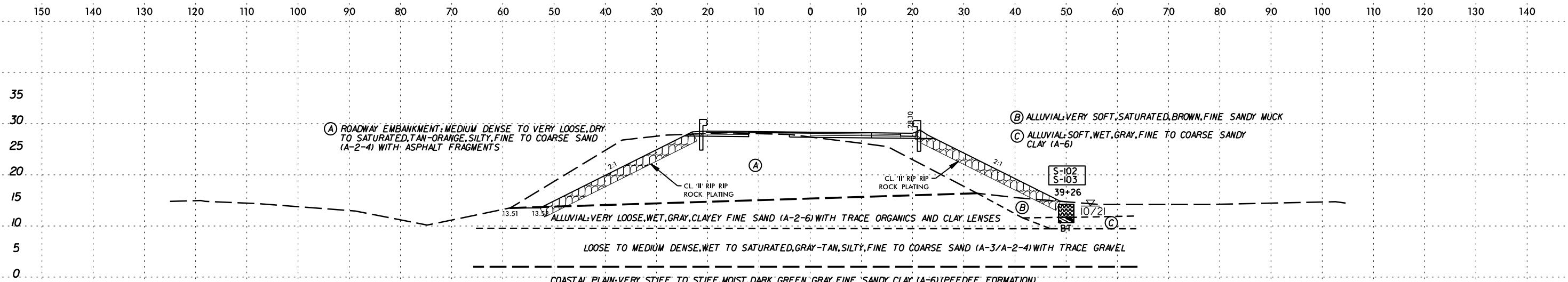
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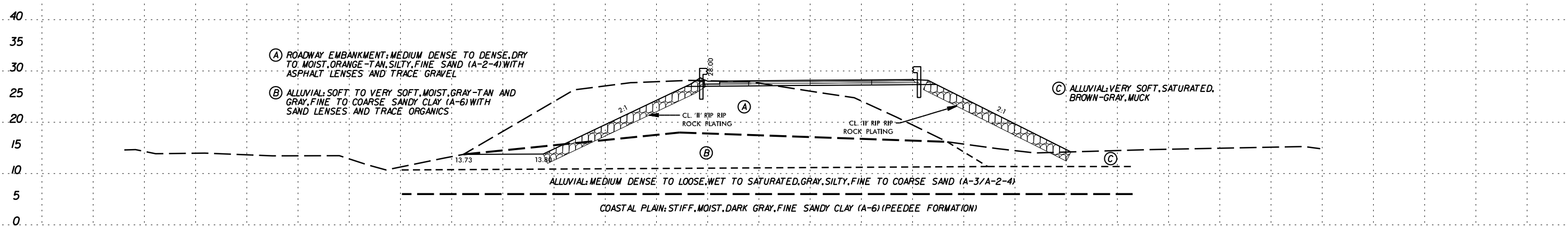
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michele.lee AT MCHTRK3



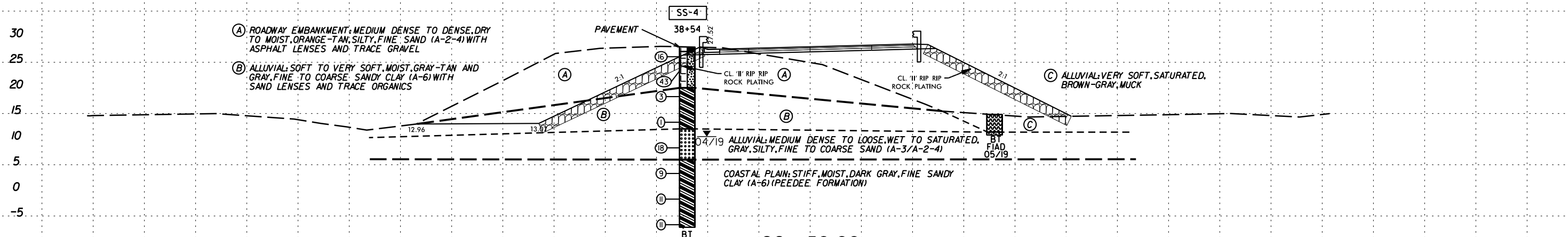




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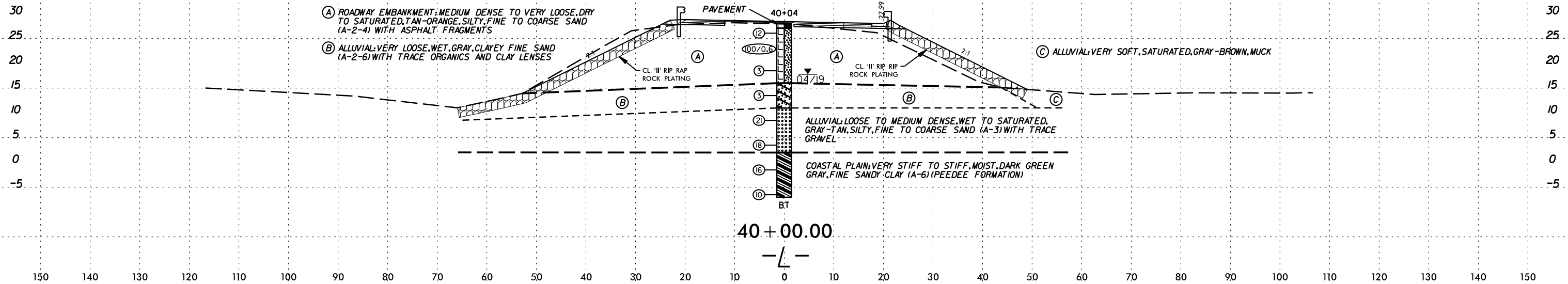
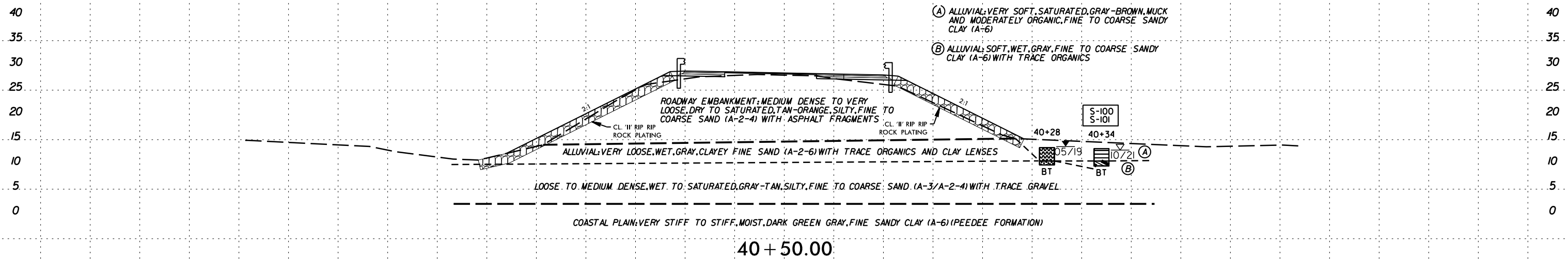
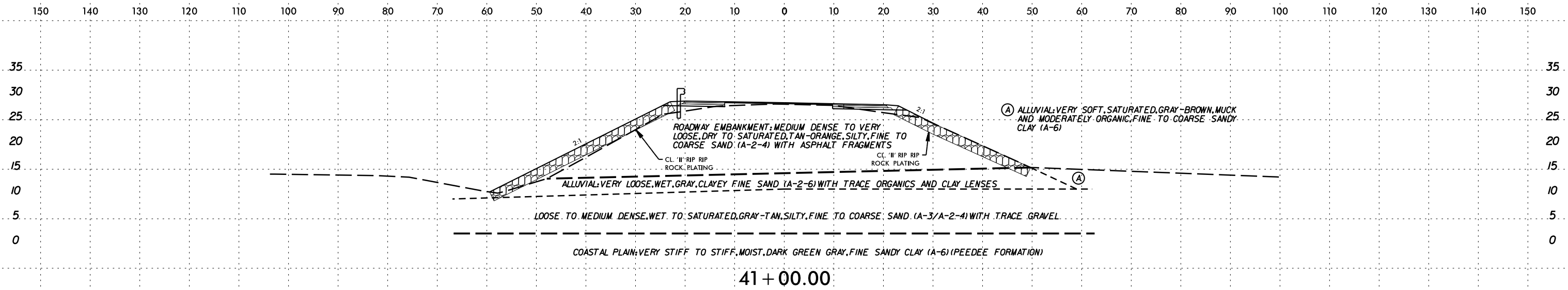


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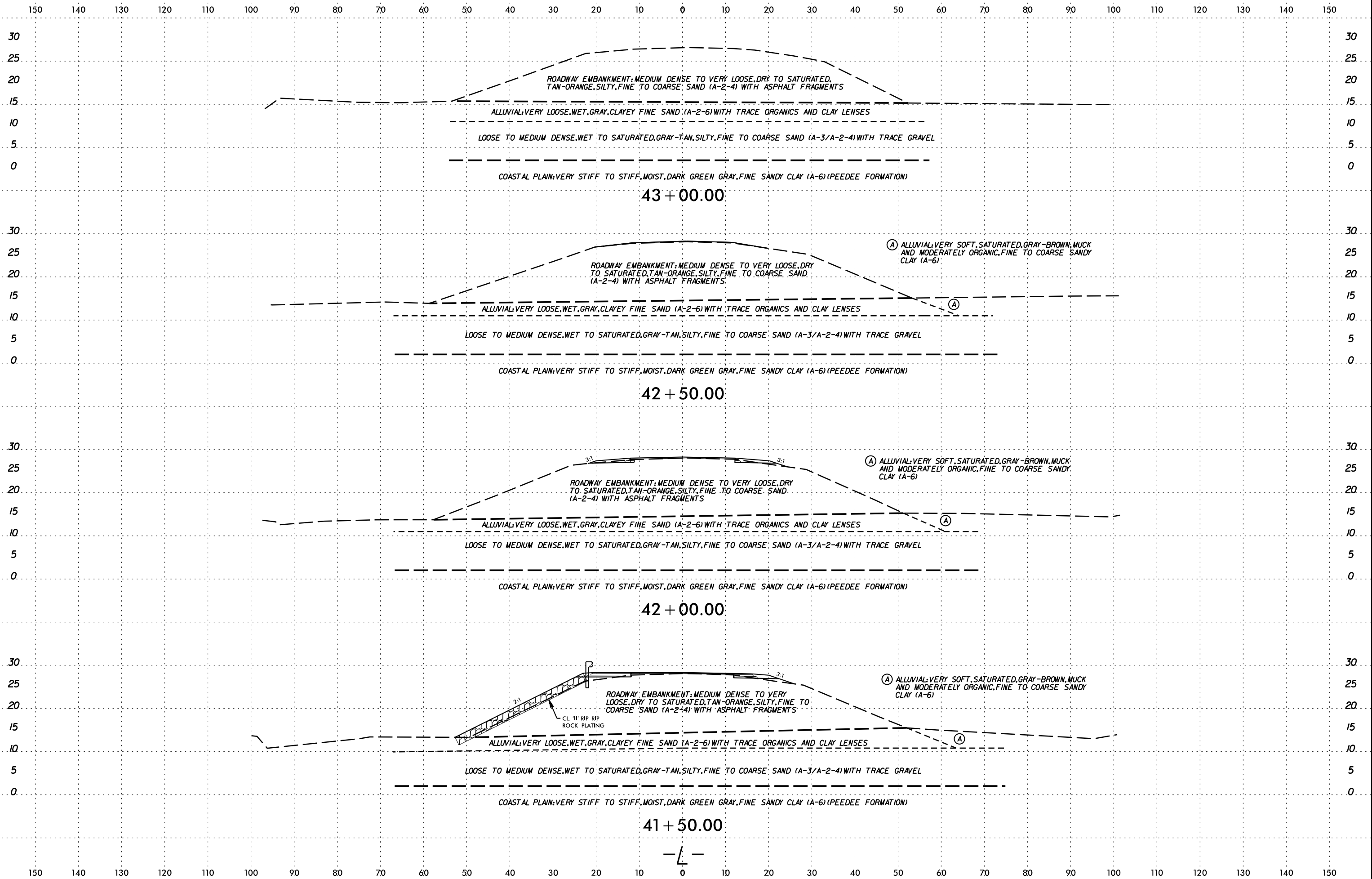
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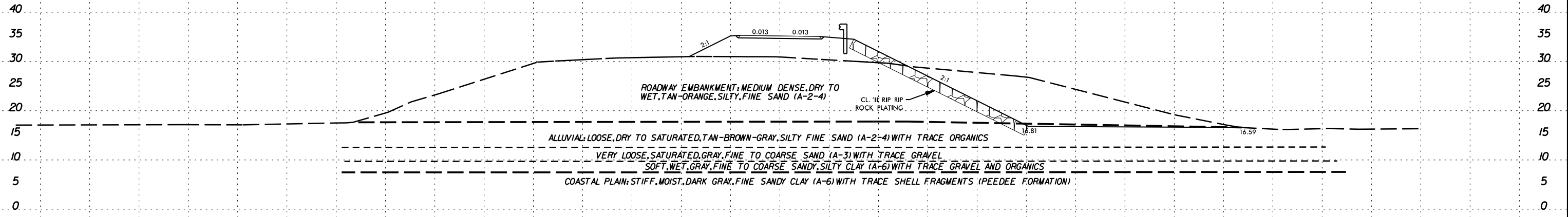


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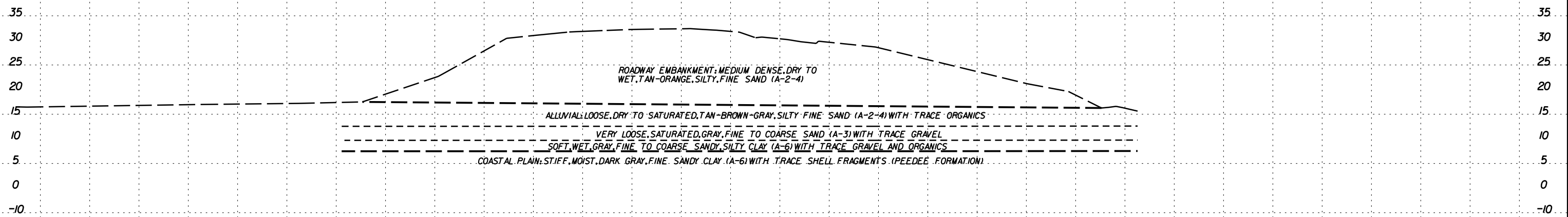


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B-4926	26

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11 + 50.00

- DRV -

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Wood E&amp;IS Project No.: 6468-19-9027

Bridge Nos. 20 and 34 on NC 55 Over the Neuse River and Overflow

Date Reported: 10/29/2021

SHEET 27

NCDOT WBS No.: 40163.1.2

Tip No.: B-4926

County: LENOIR

Date Tested: October 2021

## SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	LINE	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-110	16+50	6' RT	-L-	3.2-4.7'	A-2-4(0)	NP	NP	27.4	62.5	1.6	8.5	100.0	90.4	12.2	11.9	-
SS-111	19+12	68' RT	-L-	0.0-1.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	74.3	11.7
SS-112	19+12	68' RT	-L-	3.1-4.6'	A-1-b	NP	NP	77.7	15.1	3.7	0.8	97.3	39.3	5.4	19.5	-
SS-113	19+12	68' RT	-L-	8.1-9.6'	A-7-6(10)	42	24	2.2	49.1	14.4	34.3	100.0	98.8	54.7	30.9	-
SS-114	20+33	18' LT	-L-	8.9-10.4'	A-3	NP	NP	68.4	21.0	5.1	2.7	97.2	53.7	9.0	8.4	-
SS-72B	20+33	18' LT	-L-	19.9-21.0'	A-6(10)	34	15	14.3	12.2	52.7	20.0	99.2	87.7	73.8	35.4	-
SS-115	21+50	41' RT	-L-	0.0-1.5'	A-4(0)	26	10	39.4	26.2	6.7	27.4	99.7	83.2	35.8	13.2	-
SS-116	21+50	41' RT	-L-	3.1-4.6'	A-3	NP	NP	65.9	25.2	3.3	5.4	99.8	81.6	10.2	24.7	-
SS-117	21+50	41' RT	-L-	8.1-9.6'	A-6(7)	36	19	35.3	11.7	25.4	27.6	100.0	73.5	54.3	31.5	-
SS-118	22+72	37' RT	-L-	0.0-1.5'	A-6(1)	27	11	17.0	41.5	7.6	32.4	98.5	92.3	43.1	12.7	-
SS-119	22+72	37' RT	-L-	2.9-4.4'	A-7-6(12)	56	38	1.6	55.4	17.9	23.1	98.0	97.1	45.5	27.6	-
SS120	22+72	37' RT	-L-	7.9-9.4'	A-6(2)	32	14	1.7	62.9	12.2	23.2	100.0	99.1	41.9	28.9	-
SS-121	28+23	46' LT	-L-	18.8-20.3'	A-6(5)	30	13	2.4	47.3	14.7	35.6	100.0	99.5	58.8	27.3	-
SS-122	28+23	46' LT	-L-	23.6-25.1'	A-4(2)	24	10	5.6	47.8	15.9	30.7	100.0	99.7	51.7	26.8	-
S-111	30+68	35' RT	-L-	0.0-0.5'	A-7-5 (vis)	ND	ND	8.4	13.0	35.8	41.3	98.5	93.6	79.5	302.6	16.9
S-112	30+68	35' RT	-L-	1.0-2.5'	A-6(5)	33	16	22.1	29.1	13.0	35.8	100.0	89.1	51.6	32.4	-
S-108	31+90	46' RT	-L-	0.5-1.5'	A-4(2)	32	9	5.4	48.6	16.8	26.2	97.0	95.3	46.6	51.9	4.7
S-109	31+90	46' RT	-L-	2.0-2.5'	A-2-4(0)	16	1	5.3	72.6	7.7	14.4	100.0	99.6	25.7	26.2	-
S-110	31+90	46' RT	-L-	2.8-3.3	A-2-4(0)	NP	NP	5.4	83.9	3.6	7.0	99.9	99.9	13.6	27.4	-
SS-27	32+53	37' LT	-L-	13.5-15.0'	A-4(4)	24	9	7.3	20.1	42.0	30.5	99.9	97.5	73.2	24.8	-
S-106	33+10	15' RT	-L-	0.5-1.5'	A-6 (vis)	ND	ND	10.9	26.4	20.9	32.9	91.1	85.2	57.1	171.8	12.2
S-107	33+10	15' RT	-L-	3.5-4.0'	A-2-4(0)	NP	NP	48.2	40.6	6.0	3.4	98.2	73.5	11.8	20.6	-
SS-103	33+89	33' LT	-L-	13.4-14.9'	A-6(12)	35	19	7.8	18.4	36.3	37.4	99.9	95.7	74.8	30.3	-
SS-100	36+13	35' LT	-L-	8.4-9.9'	A-6(12)	37	22	27.5	6.8	33.7	31.4	99.4	77.1	65.6	35.2	-
SS-101	36+13	35' LT	-L-	13.4-14.9'	A-6(8)	30	14	2.1	25.1	37.9	34.9	100.0	99.6	74.2	45.5	-
SS-102	36+13	35' LT	-L-	28.4-29.9'	A-7-6(20)	41	26	12.6	7.5	49.4	30.3	99.8	91.3	80.8	23.4	-
S-104	37+45	29' RT	-L-	0.5-1.5'	A-6 (vis)	ND	ND	16.9	27.3	21.9	26.4	92.5	85.5	51.4	160.3	57.7
S-105	37+45	29' RT	-L-	3.0-3.5'	A-6(1)	27	12	15.0	44.3	12.4	25.3	97.0	90.3	40.4	28.7	-
SS-4	38+54	24' LT	-L-	13.7-15.2'	A-6(7)	32	17	30.7	9.7	28.1	31.1	99.6	78.6	60.0	40.8	-
S-102	39+26	50' RT	-L-	0.5-1.5'	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	277.7	21.2
S-103	39+26	50' RT	-L-	2.5-3.0'	A-6(5)	36	17	22.1	29.1	12.5	35.7	99.4	88.2	50.8	29.0	-
S-100	40+34	64' RT	-L-	0.5-1.0'	A-6 (vis)	ND	ND	22.0	11.7	15.2	44.5	93.4	80.3	61.2	265.6	17.2
S-101	40+34	64' RT	-L-	2.8-3.3'	A-6(8)	32	16	18.5	15.3	35.9	30.0	99.7	97.8	67.4	25.0	-

ND = NOT DETERMINED

NV = NO VALUE

NP = NON-PLASTIC



Signature

115-01-0504

Certification #

Albert Romero

Print Name