

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
-----------------------------	----

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.

PERSONNEL

J. HOWARD

M. CRUZ

K. PLUMMER

S. HARDEE

B. POWELL

L. GONZALEZ

INVESTIGATED BY WOOD E&S, INC.

DRAWN BY R. RAHIE

CHECKED BY C.T. TANG

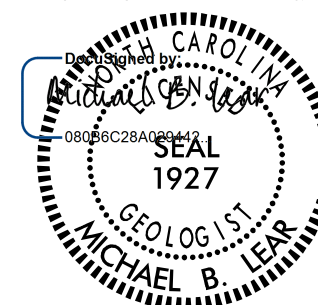
SUBMITTED BY M. LEAR

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			GRADATION			ROCK DESCRIPTION			TERMS AND DEFINITIONS					
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 298, 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			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.			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:			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 DISLODGED 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.					
SOIL LEGEND AND AASHTO CLASSIFICATION			ANGULARITY OF GRAINS			WEATHERED ROCK (WR)			NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.					
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS			THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.			FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.			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.					
MINERALOGICAL COMPOSITION			COMPRESSION			CRYSTALLINE ROCK (CR)			NON-CRYSTALLINE ROCK (NCR)					
MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.			SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50			ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.			COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.					
PERCENTAGE OF MATERIAL			GROUND WATER			WEATHERING			CRUSTALINE ROCK (CR)					
ORGANIC 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			ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.			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.					
MISCELLANEOUS SYMBOLS			ROCK HARDNESS			FRESH			MODERATELY SEVERE (MOD. SEV.)					
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			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			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					
RECOMMENDATION SYMBOLS			ABBREVIATIONS			MODERATE (MOD.)			SEVERE (SEV.)					
UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK			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 U - UNIT WEIGHT D - DRY UNIT WEIGHT SAMPLE ABBREVIATIONS S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO			ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. FABRIC MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.			CAN BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.			CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.		
EQUIPMENT USED ON SUBJECT PROJECT			FRACTURE SPACING			MEDIUM HARD			SOFT					
DRILL UNITS: [X] CME-45C [] CME-55 [X] CME-550 [] VANE SHEAR TEST [] PORTABLE HOIST [] CME-450 [X] CME-550X			ADVANCING TOOLS: [] CLAY BITS [] 6" CONTINUOUS FLIGHT AUGER [] 8" HOLLOW AUGERS [] HARD FACED FINGER BITS [] TUNG-CARBIDE INSERTS [X] CASING [] w/ ADVANCER [X] TRICONE 3 * STEEL TEETH [] TRICONE * TUNG-CARB. [] CORE BIT [X] MUD ROTARY			HAMMER TYPE: [X] AUTOMATIC [] MANUAL CORE SIZE: [] -B [] -H [] -N HAND TOOLS: [] POST HOLE DIGGER [X] HAND AUGER [] SOUNDING ROD [] VANE SHEAR TEST [X] MUCK PROBE			CAN BE GROUVED 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.			CAN BE GROUVED 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.		
TEXTURE OR GRAIN SIZE			SOIL MOISTURE - CORRELATION OF TERMS			VERY HARD			HARD					
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			SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION - SATURATED - (SAT.) USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE - WET - (W) SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE - DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE			CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.			CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.					
CONSISTENCY OR DENSENESS			PLASTICITY			MODERATELY HARD			MEDIUM HARD					
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)			NON PLASTIC PLASTICITY INDEX (PI) DRY STRENGTH VERY LOW SLIGHT MEDIUM HIGH SLIGHTLY PLASTIC 0-5 MODERATELY PLASTIC 6-15 HIGHLY PLASTIC 16-25 26 OR MORE			CAN BE GROUVED OR GOUGED 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.			CAN BE GROUVED OR GOUGED 1 TO 3 FEET 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.					
FRACATURE SPACING			BEDDING			SOFT			VERY SOFT					
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			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			CAN BE GROUVED 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.			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.					
COLOR			INDURATION			VERY SOFT			EXTREMELY INDURATED					
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.			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.					
BENCH MARK: BORING ELEVATIONS OBTAINED FROM TIN FILE PROVIDED BY NCDOT (b4926_is_tin_l7i205.tin).			NOTES:			INDURATED			EXTREMELY INDURATED					
ELEVATION: N/A FEET			FIAD - FILLED IMMEDIATELY AFTER DRILLING			GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.			SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.					

09/28/19

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

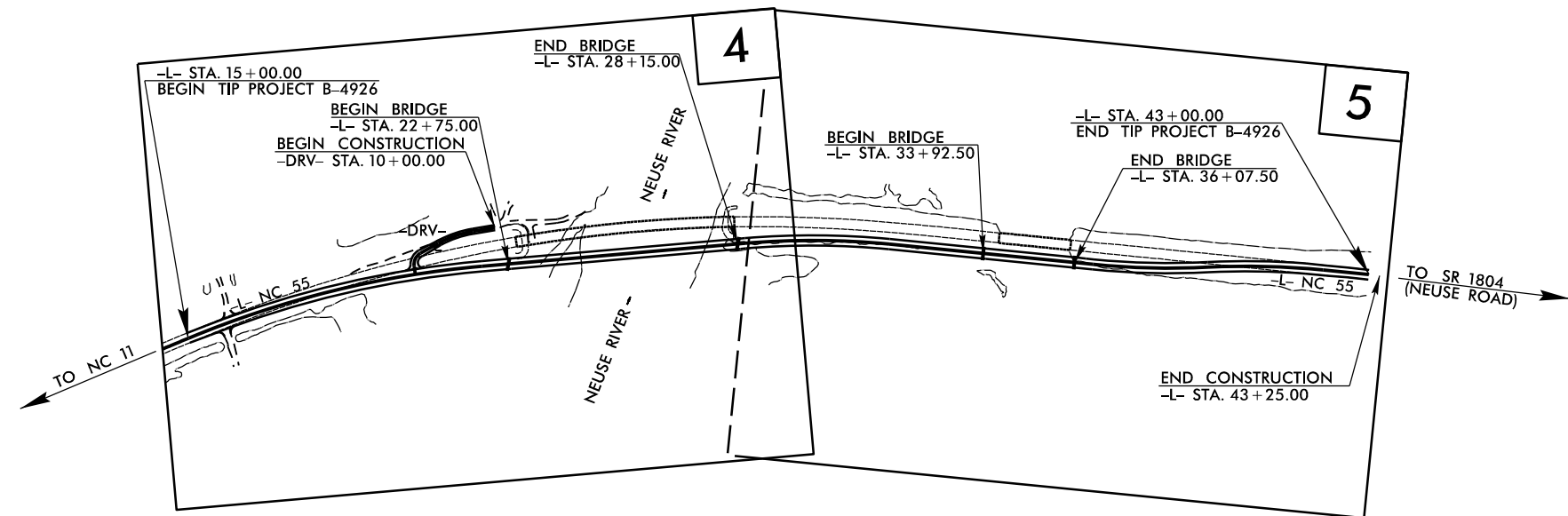
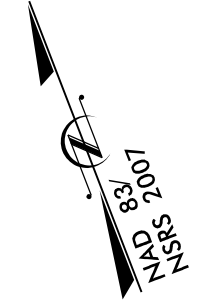
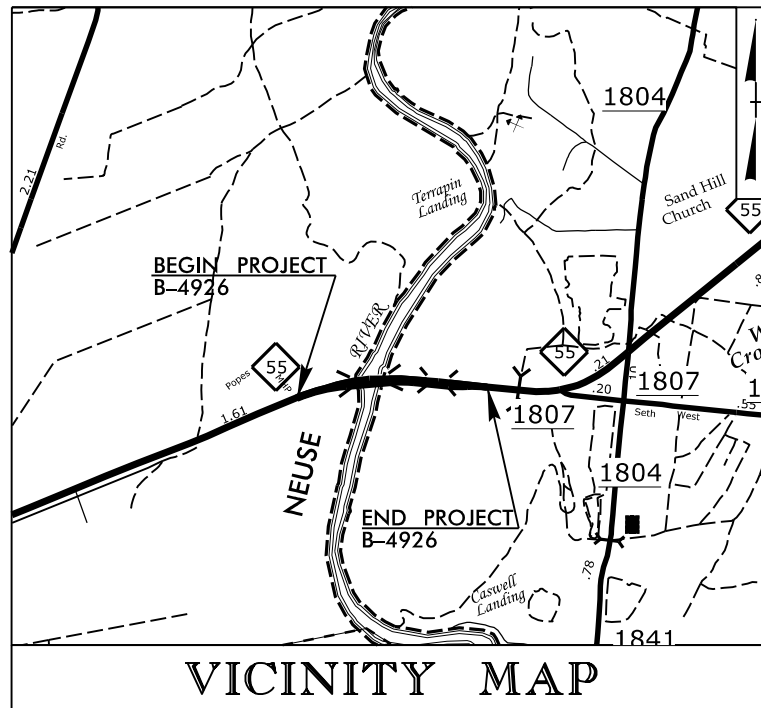
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

LENOIR COUNTY

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

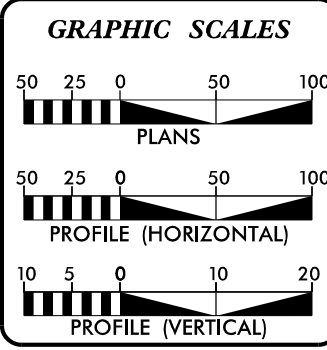
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

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

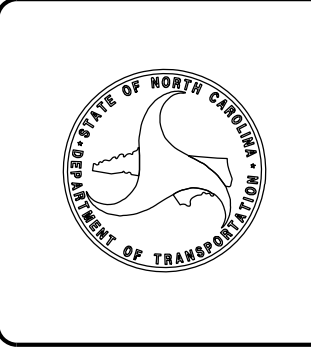
CASEY K. WHITLEY, PE, PLS
NCDOT CONTACT

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 ± 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 ± 1 to ± 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 ± 7 to ± 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

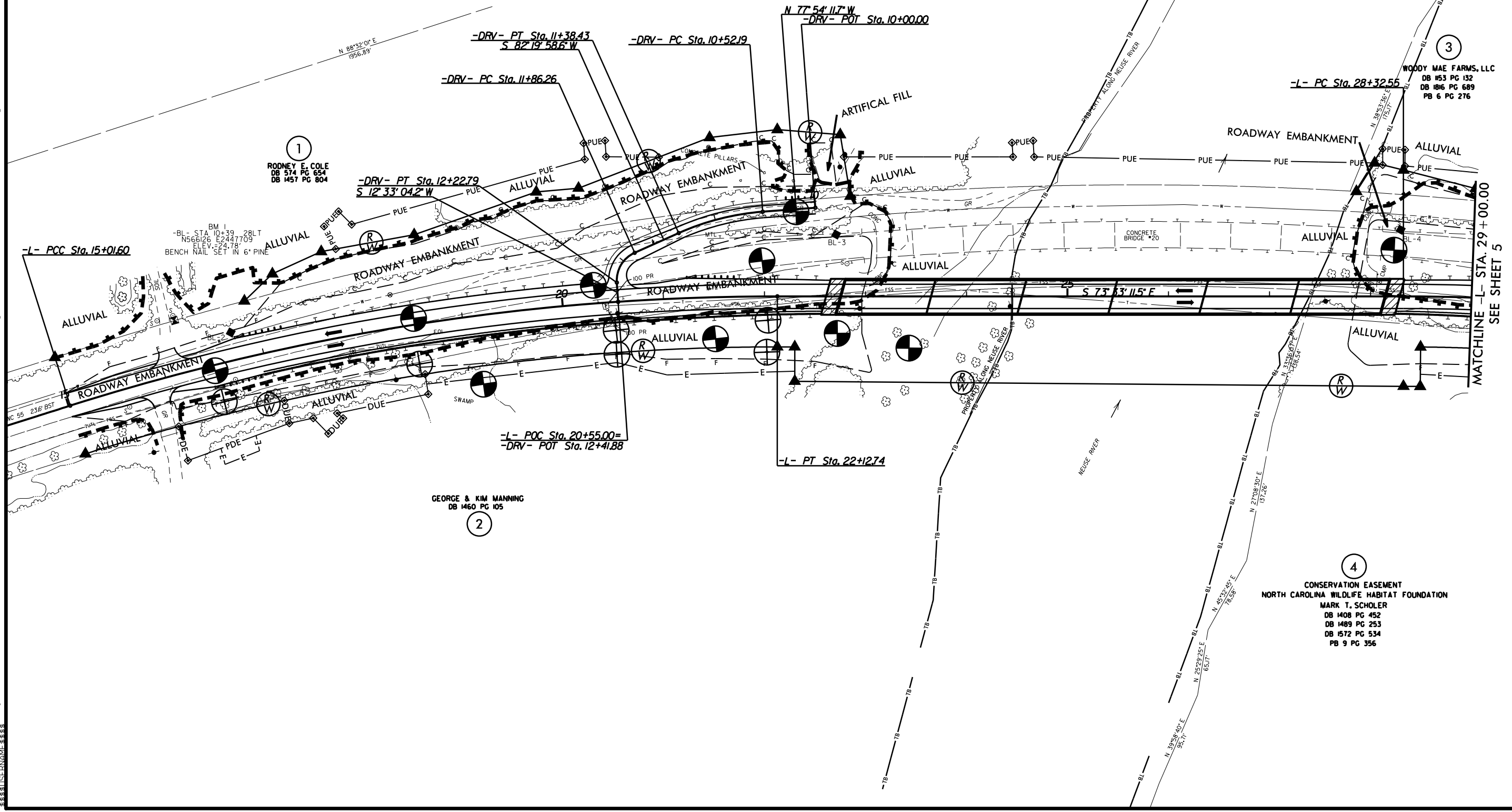
8/17/99
P:\MAR 2022\1216\Projects\Road\NC-D01\2019\6468199027_B4926_Kinston\B-4926_GEO\RDWY_Kinston_Roadway\CADD_GEO\TECH\Plan\Prof\B4926_GEO Inv_04.dgn



1 Glenwood Avenue
Raleigh, NC 27603
Tel: 919.789.9977
Fax: 919.789.9591
License: C-2197

PROJECT REFERENCE NO. B-4926	SHEET NO. 4
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	

-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



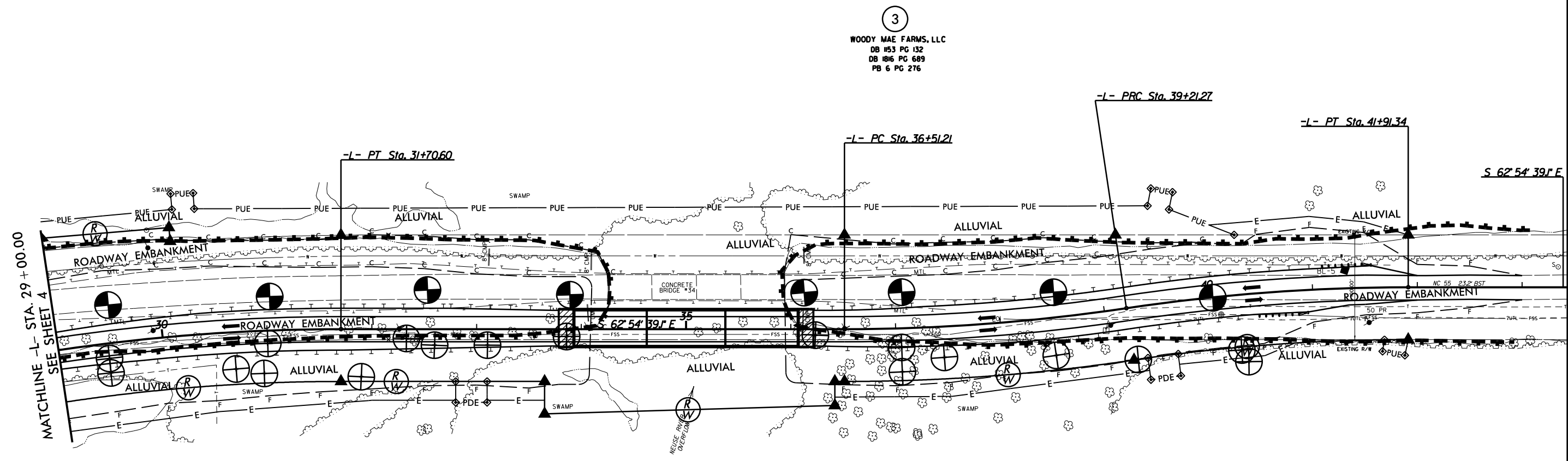
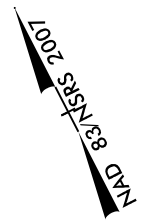
MATCHLINE -L- STA. 29+00.00
SEE SHEET 5

B:\17\99\... 2022 12:17... 4926_Kinston_Roadway_CADD_GEO\TECH\Plan\Prof\B4926_GEO Inv_05.dgn



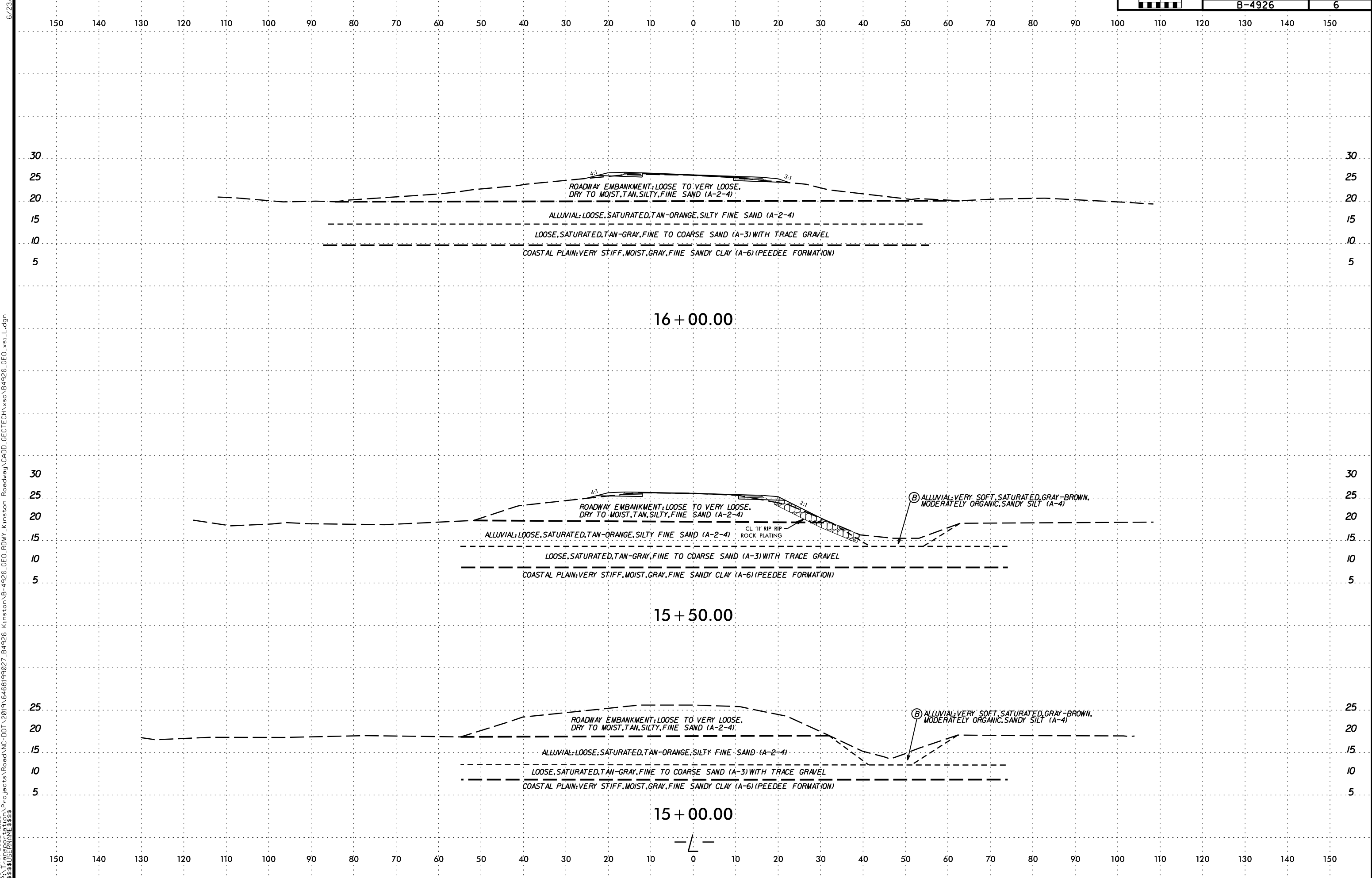
PROJECT REFERENCE NO. B-4926	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-		
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'	PI Sta 37+86.49 Δ = 8° 30' 06.8" (LT) D = 3° 08' 53.2" L = 270.06' T = 135.28' R = 1,820.00' *SE = SEE PLANS	PI Sta 40+56.55 Δ = 8° 30' 06.8" (RT) D = 3° 08' 53.2" L = 270.06' T = 135.28' R = 1,820.00' *SE = SEE PLANS
*DESIGN EXCEPTION REQUIRED FOR SUPERELEVATION.		



③
WOODY MAE FARMS, LLC
DB 153 PG 132
DB 1816 PG 689
PB 6 PG 276

④
CONSERVATION EASEMENT
NORTH CAROLINA HABITAT FOUNDATION
MARK T. SCHOLER
DB 1408 PG 452
DB 1489 PG 253
DB 1572 PG 534
PB 9 PG 356

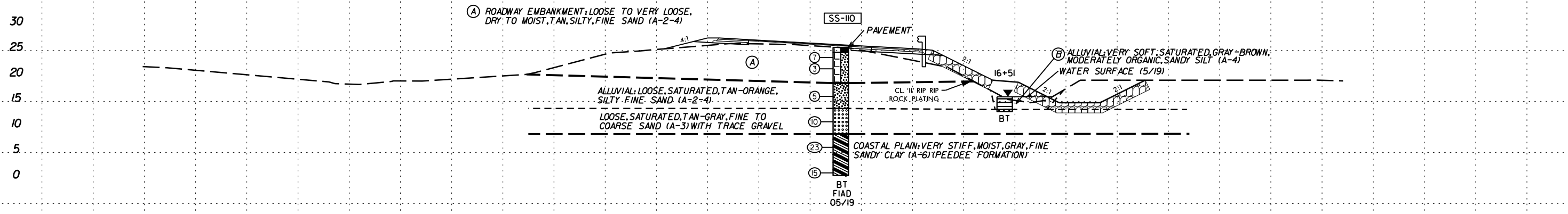
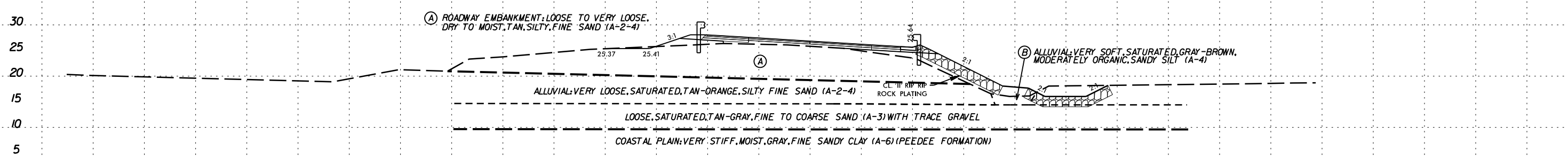
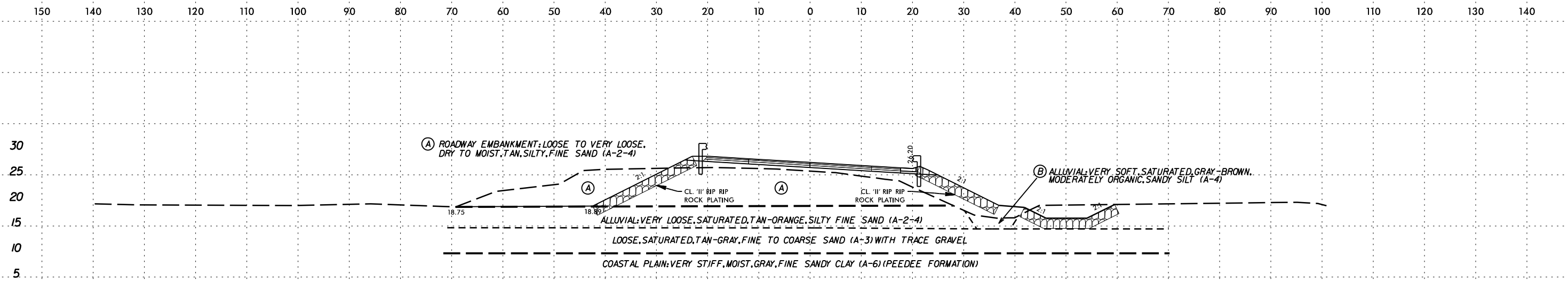


16 + 00.00

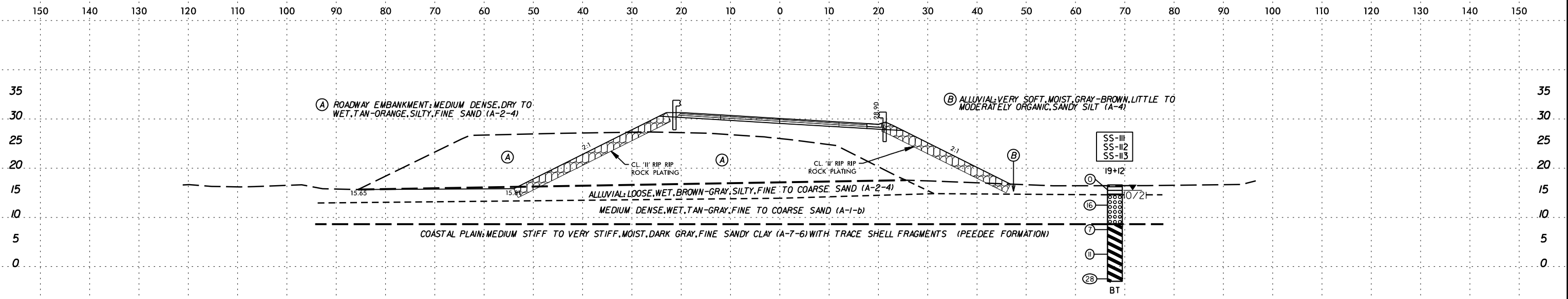
15 + 50.00

15 + 00.00

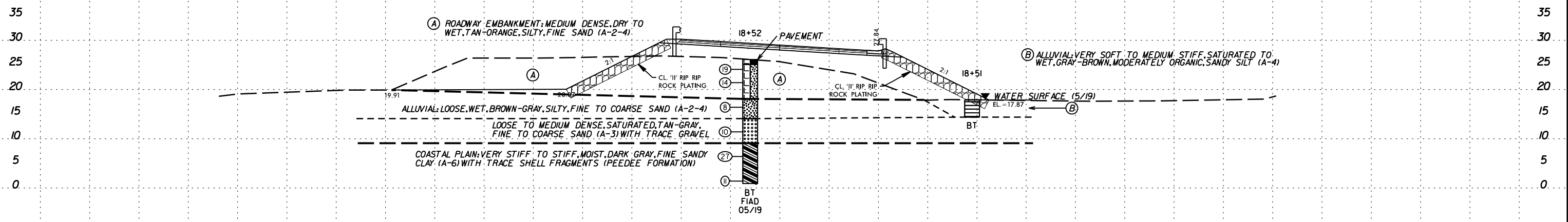
28-MAR-2022 12:25
P:\Projects\Road\NC-DDT\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\XSE\B4926_GEO_XSI.L.dgn



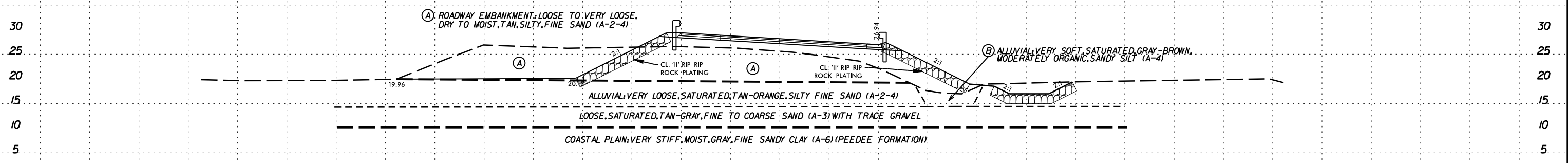
28-MAR-2022 12:26 P:\Projects\Road\NC-DDT\2019\646819\027_B4926_Kinston\B-4926_GEO-RDWAY_Kinston_Roadway\CADD_GEDTECH\se\B4926_GEO_xsi.L.dgn



19 + 00.00



18 + 50.00

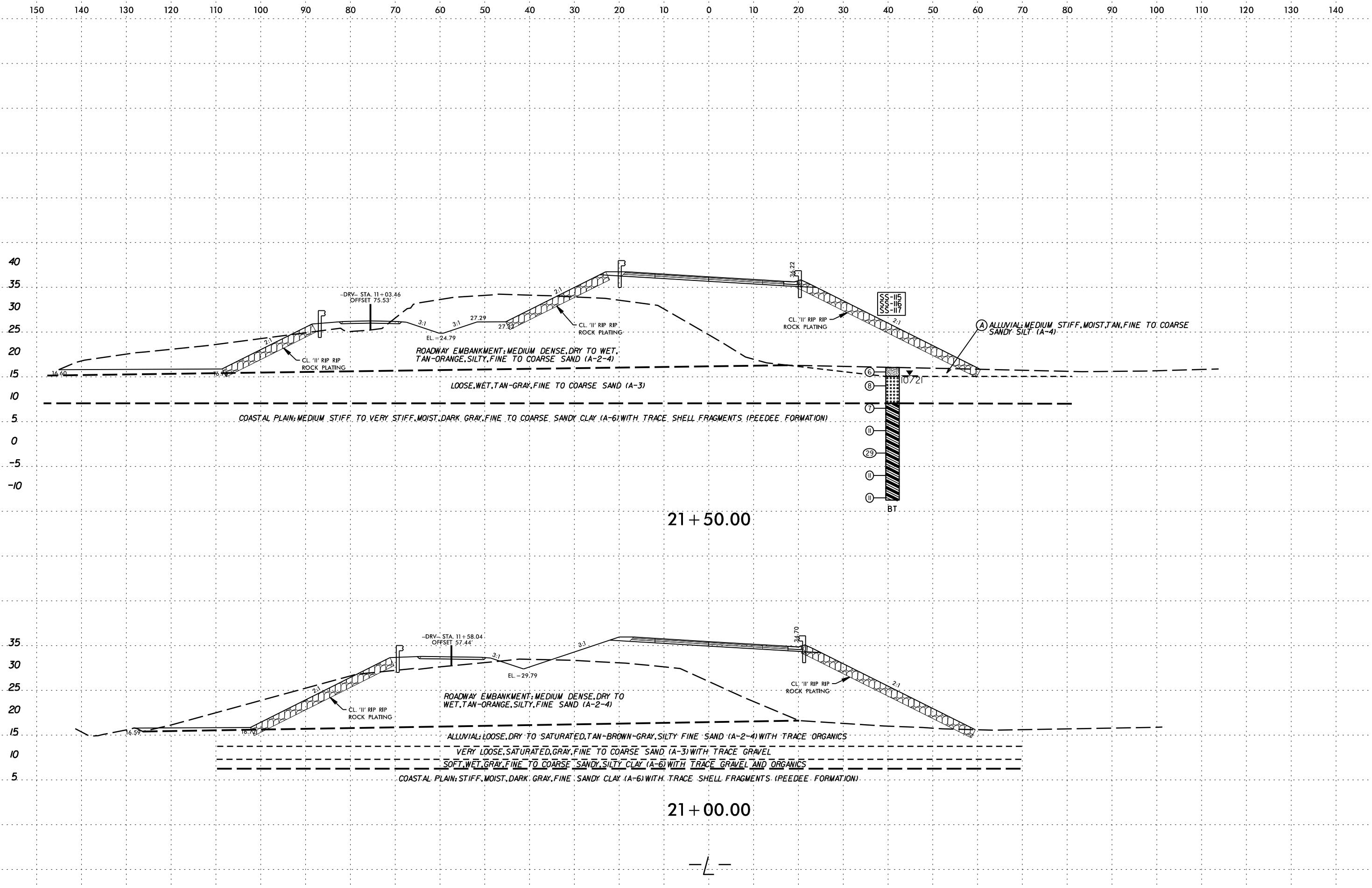


18 + 00.00

28-MAR-2022 12:26
S:\Projects\Road\NC-DDT\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway_CADD_GEO\TECH\XSE\B4926_GEO_XSI.L.dgn



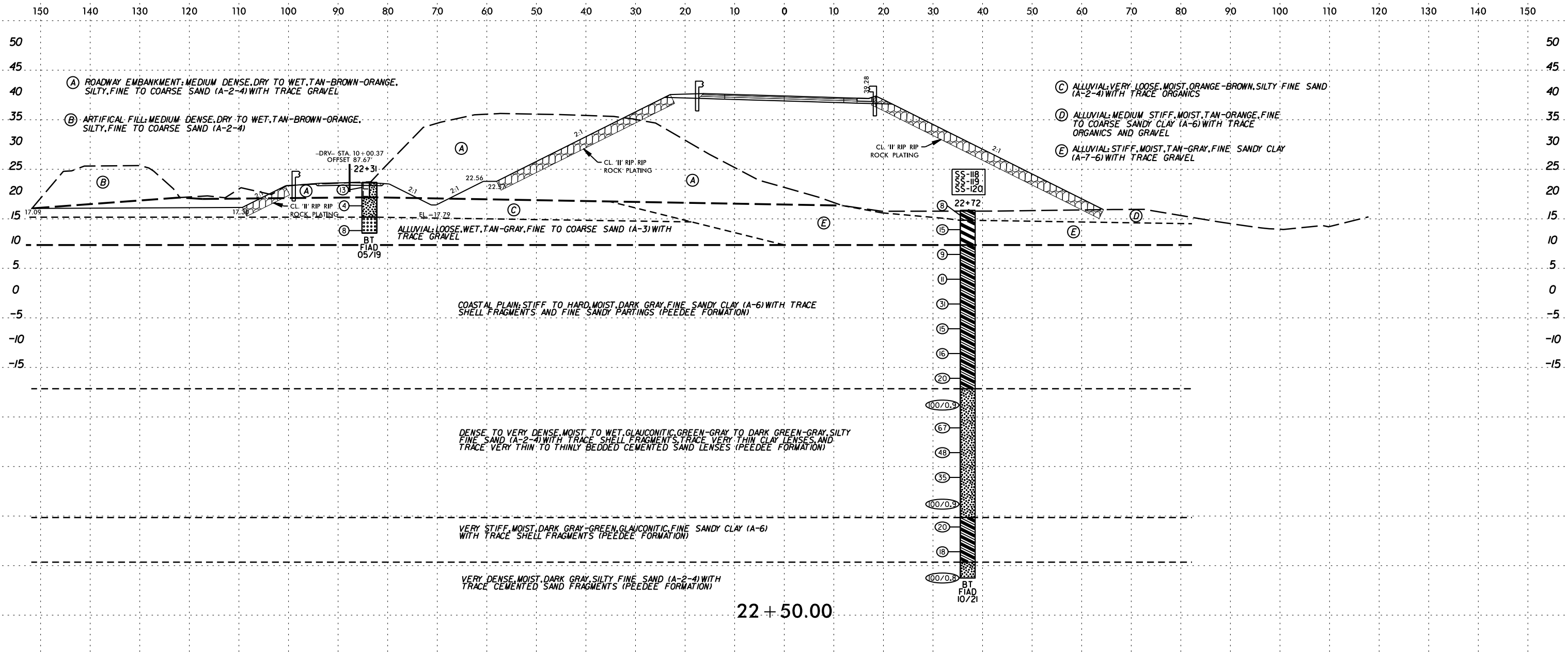
6/23/16
28-MAR-2022 12:27
S:\Projects\Road\NC-DDT\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\XSE\B4926_GEO_XSI.L.dgn



21+50.00

21+00.00

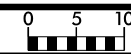
-L-



29-MAR-2022 10:22
 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO-RDWAY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsi.L.dgn
 mch@htrk.com AT HTRK

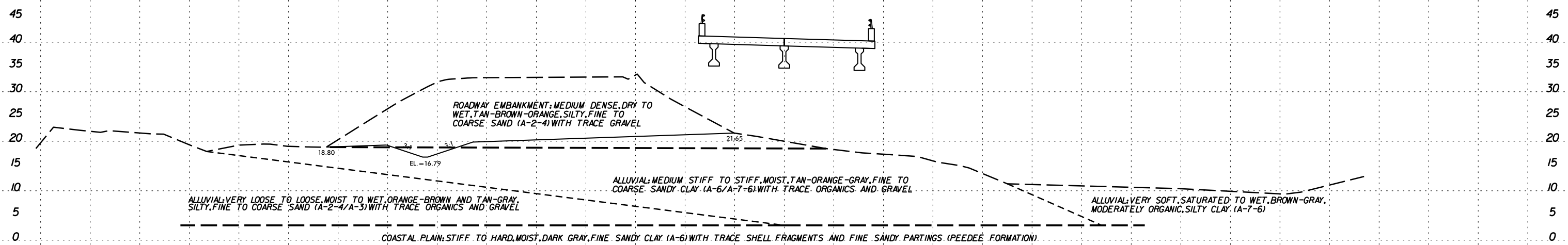
-L-

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-4926	12

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

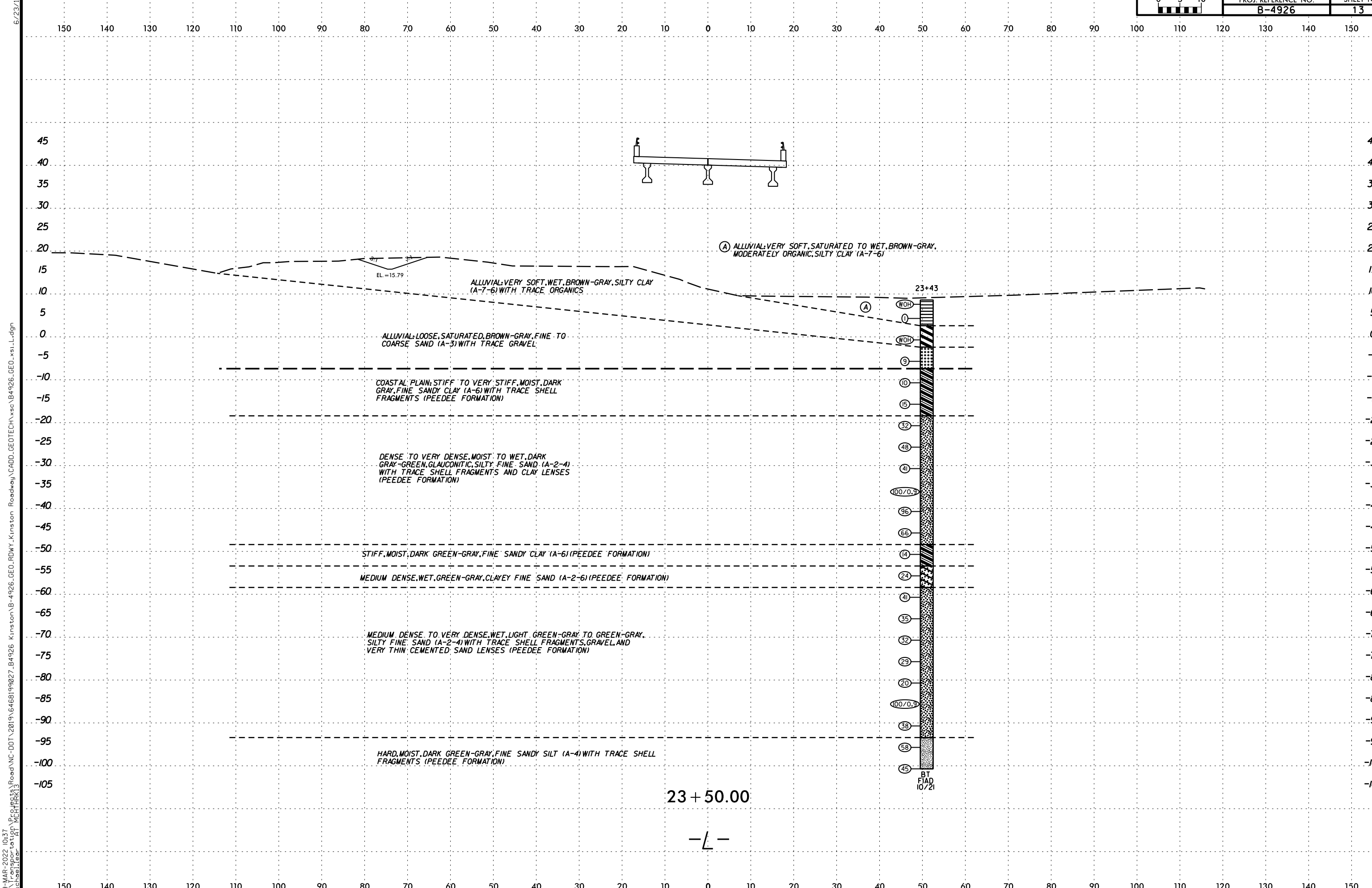
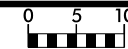


23 + 00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 10:30 P:\Engineering\2019\646819\027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEDTECH\se\B4926_GEO_xsi.L.dgn



EL. = 15.79

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

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

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)

23+43

- (WOH)
- (0)
- (WOH)
- (9)
- (10)
- (15)
- (32)
- (48)
- (41)
- (100/0.9)
- (96)
- (66)
- (14)
- (24)
- (41)
- (35)
- (32)
- (29)
- (20)
- (100/0.9)
- (38)
- (58)
- (45)

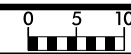
BT FIAD 10/21

23 + 50.00

-L-

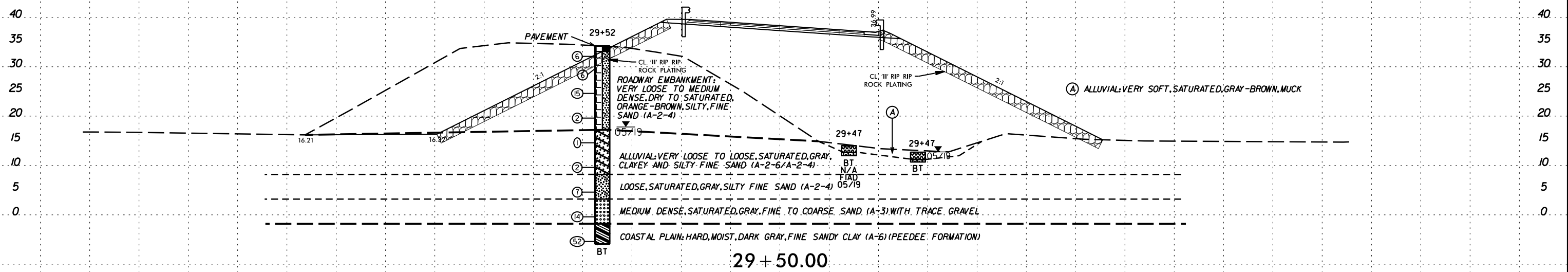
29-MAR-2022 10:37 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926-GEO-RDWAY_Kinston_Roadway\CADD_GEO\TECH\B-4926-GEO_xsi.L.dgn

6/23/16

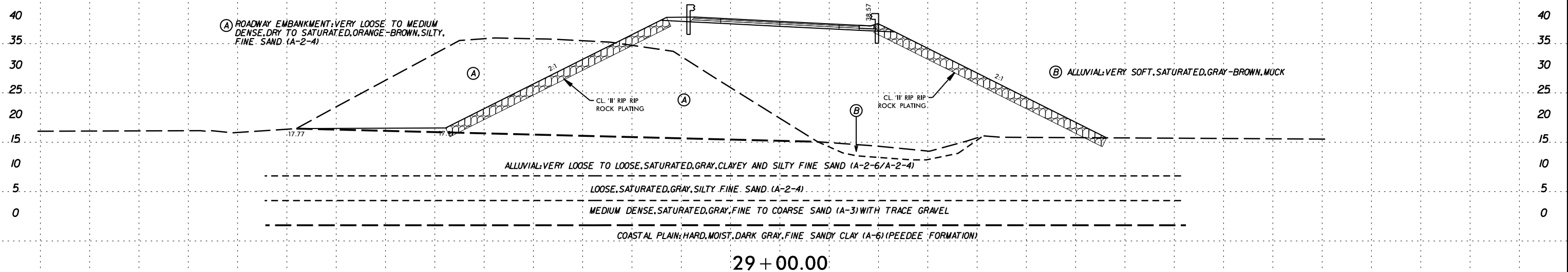


PROJ. REFERENCE NO.	SHEET NO.
B-4926	15

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



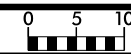
29 + 50.00



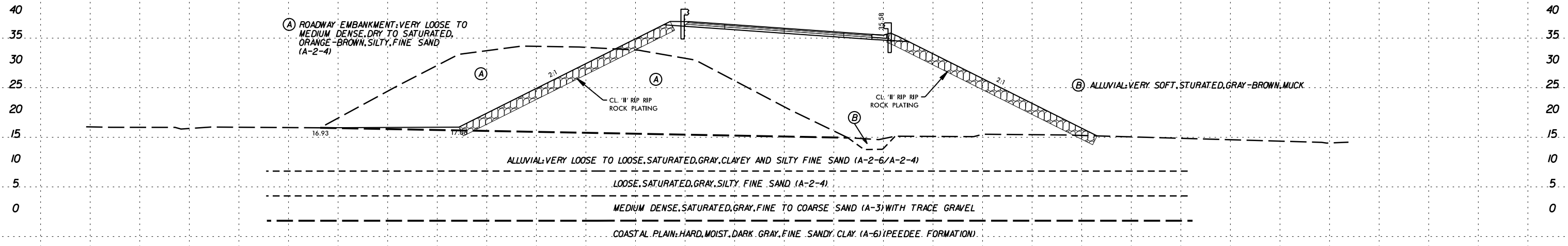
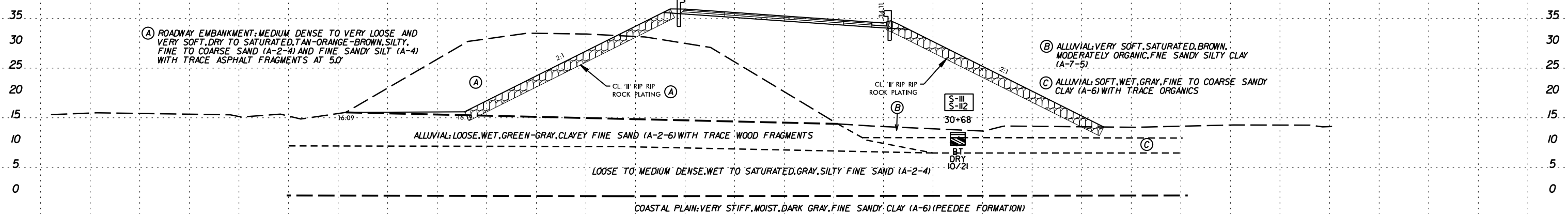
29 + 00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 10:51 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO\RDWY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsi.L.dgn

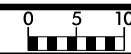


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



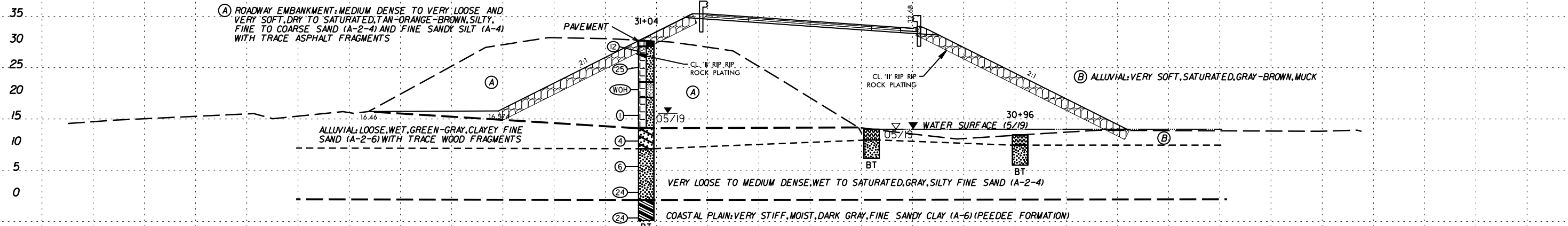
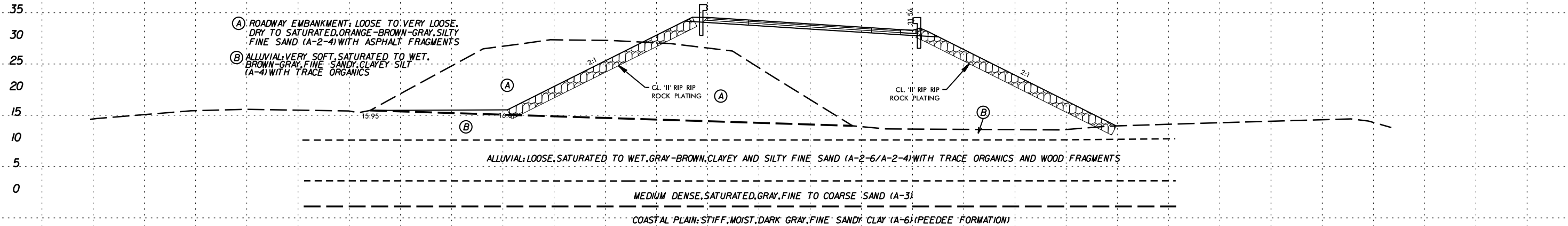
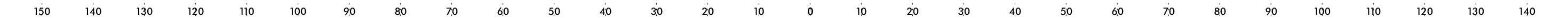
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

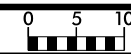
29-MAR-2022 10:56 P:\Engineering\Projects\Roadway\B-4926 Kinaston\B-4926 GEO-ROADWAY_Kinaston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsi.L.dgn



6/23/16

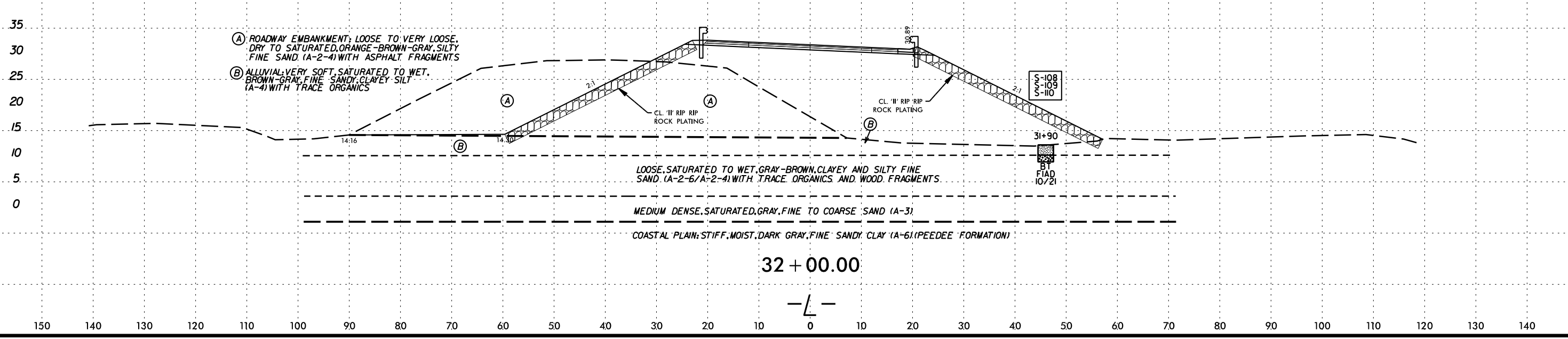
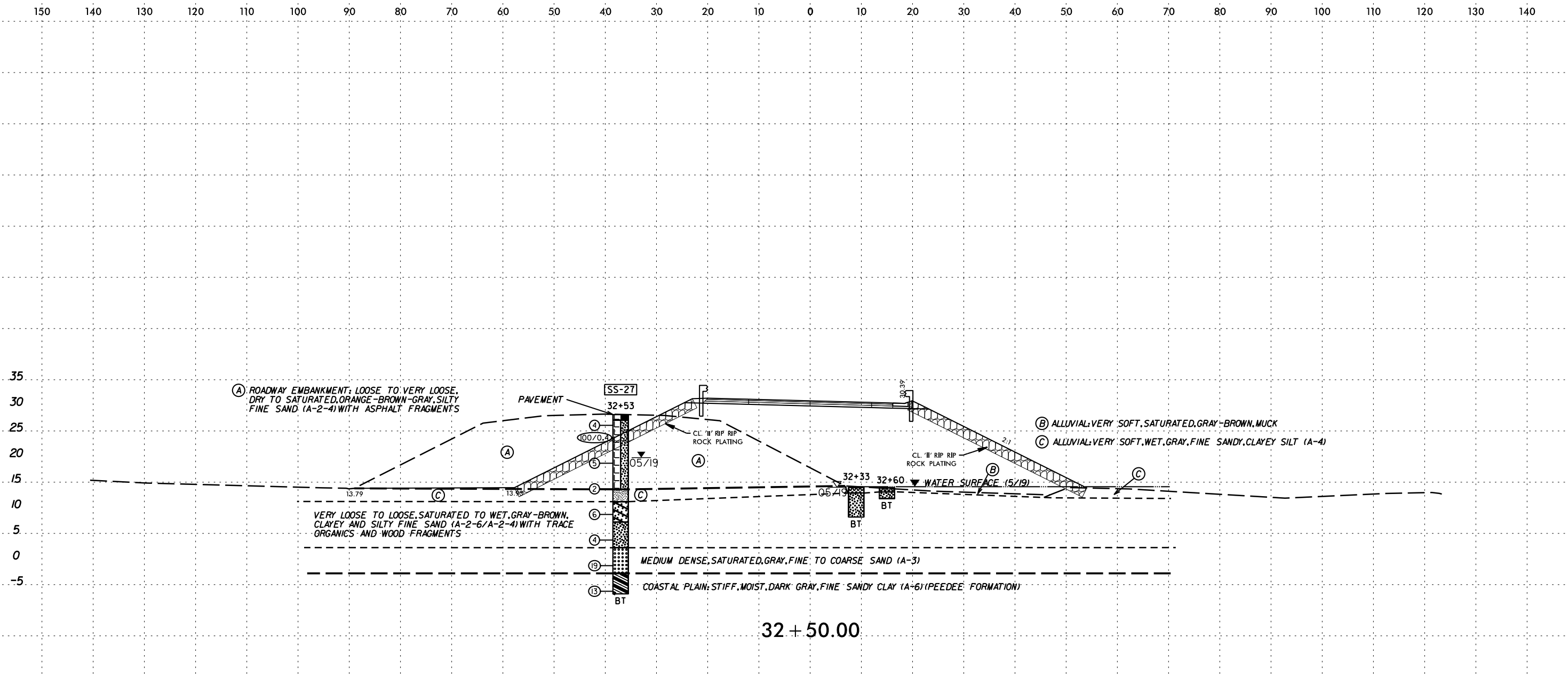
29-MAR-2022 10:58 P:\In\proj\location\Road\NC-DDT\2019\6468199027_B4926_Kinaston\B-4926_GEO_PDWY_Kinaston_Roadway\CADD_GEO\TECH\use\B4926_GEO_xsi.L.dgn





6/23/16

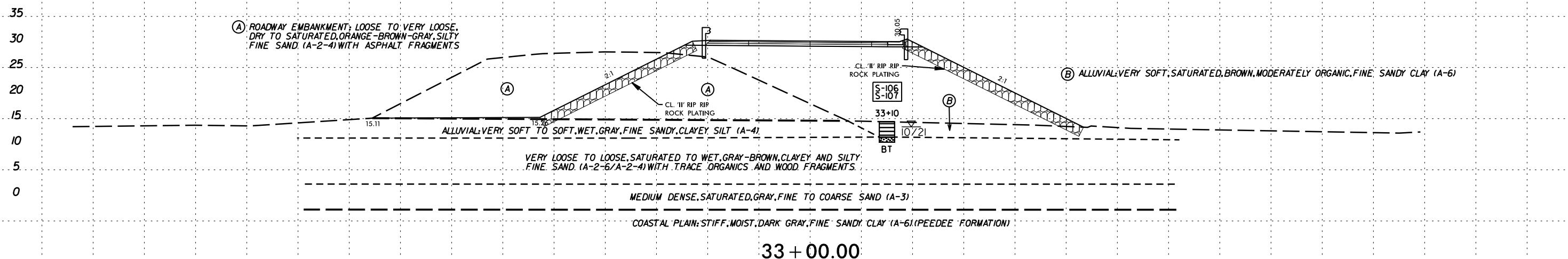
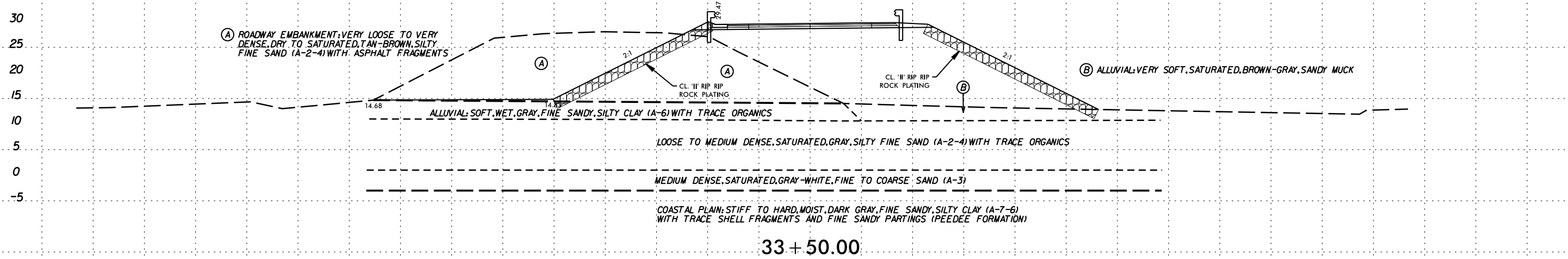
29-MAR-2022 11:00 P:\Engineering\Projects\Roadway\Kinaston\B-4926\GEO\RDWY_Kinaston_Roadway\CADD_GEDTECH\B-4926_GEO_xsi.L.dgn





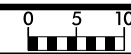
6/23/16
29-MAR-2022 11:02
P:\Engineering\Projects\Roadway\Kinaton\B-4926\Kinaton\Roadway\CADD\GEO\TECH\se\B-4926_GEO_xsi.L.dgn
michele.pearson@atkins.com

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



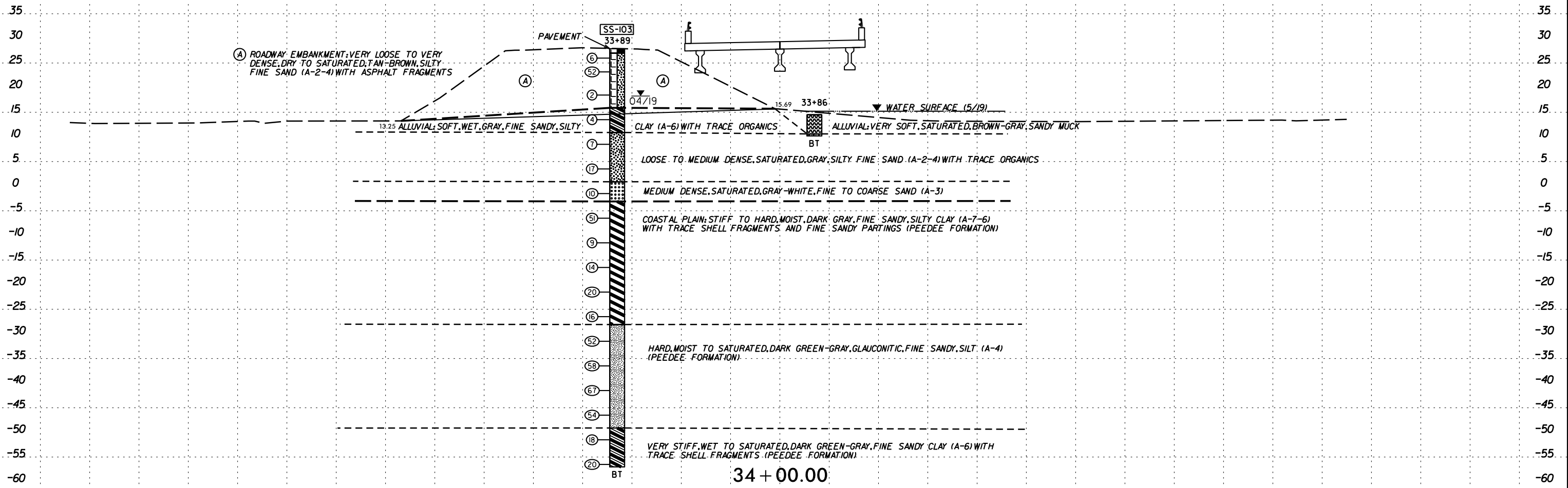
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/23/16



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

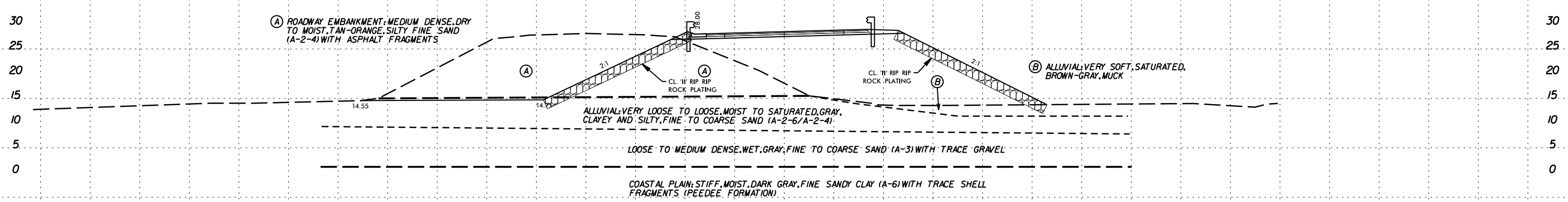
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



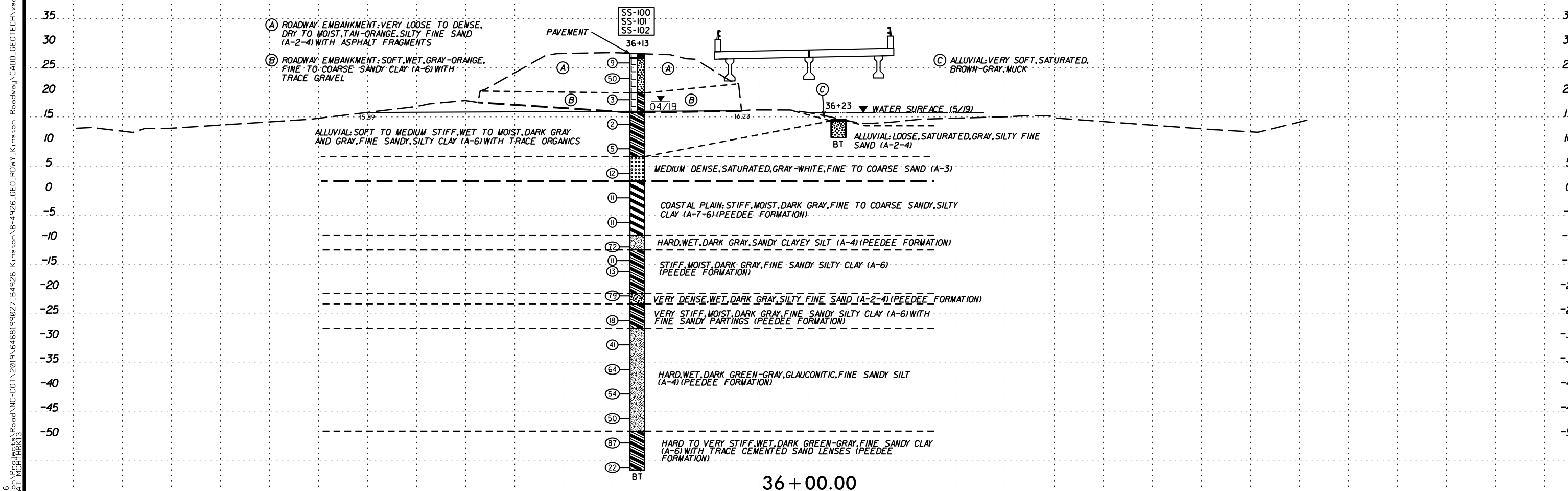
-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 11:04 P:\Engineering\Projects\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\B4926_GEO_xsi.L.dgn



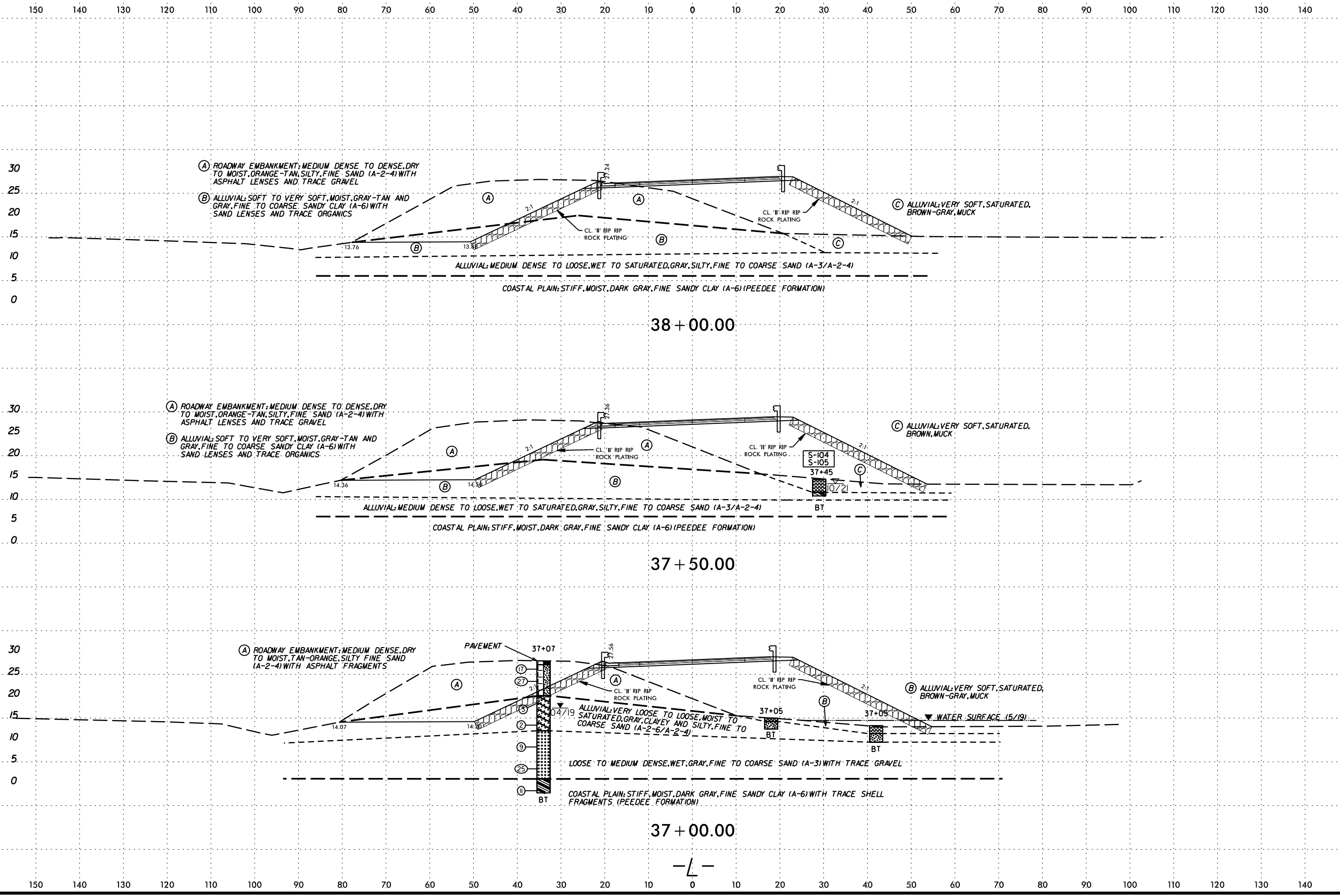
36 + 50.00



36 + 00.00

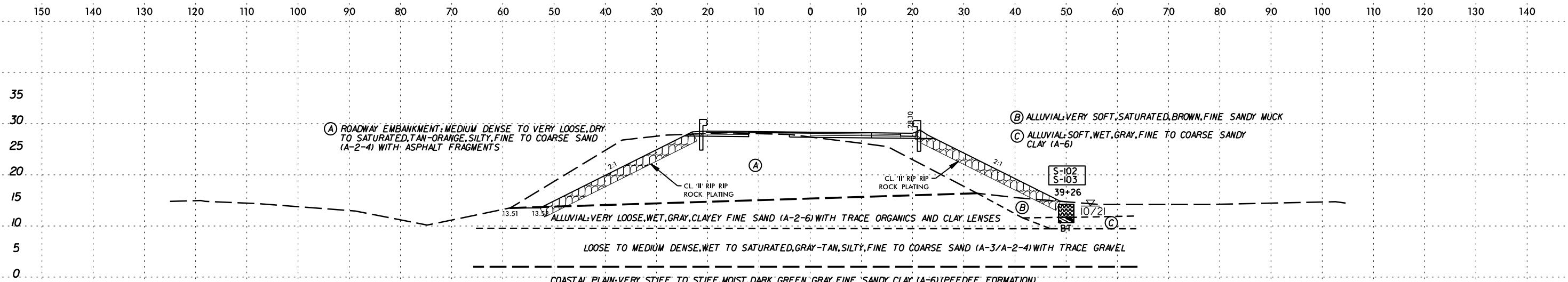
-L-

29-MAR-2022 10:06 P:\Engineering\Projects\2019\646819\027_B4926_Kinston\Roadway\Roadway_Kinston\B-4926_GEO_RDWY_Kinston\B-4926_GEO_TECH\XSE\B4926_GEO_XSI_L.dgn

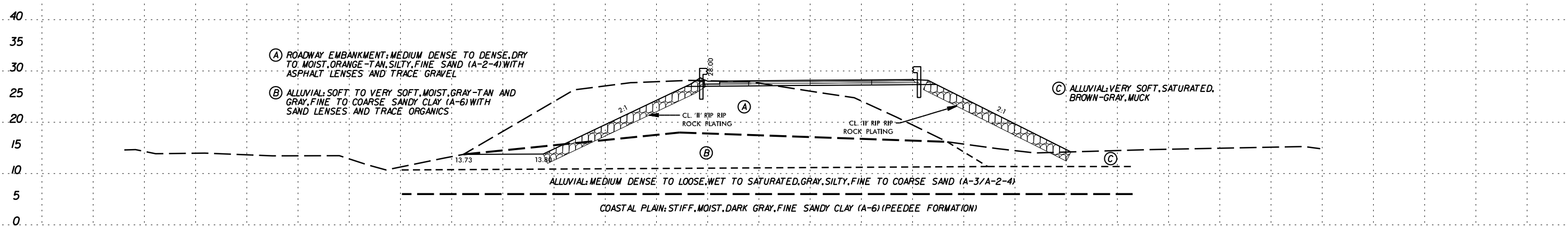


29-MAR-2022 11:08
 P:\Engineering\Stationing\Road\NC-DDT\2019\6468199027_B4926_Kinston\B-4926_GEO_PDWY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsi_L.dgn
 mch@htrk.com AT HTRK

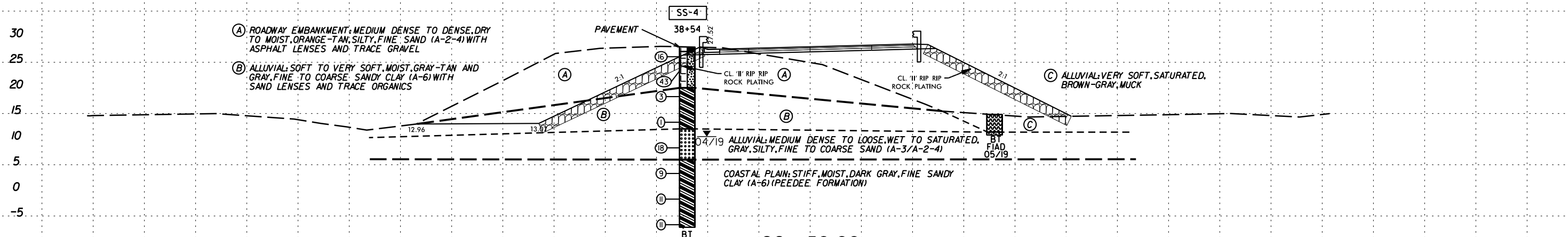
6/23/16



39 + 50.00

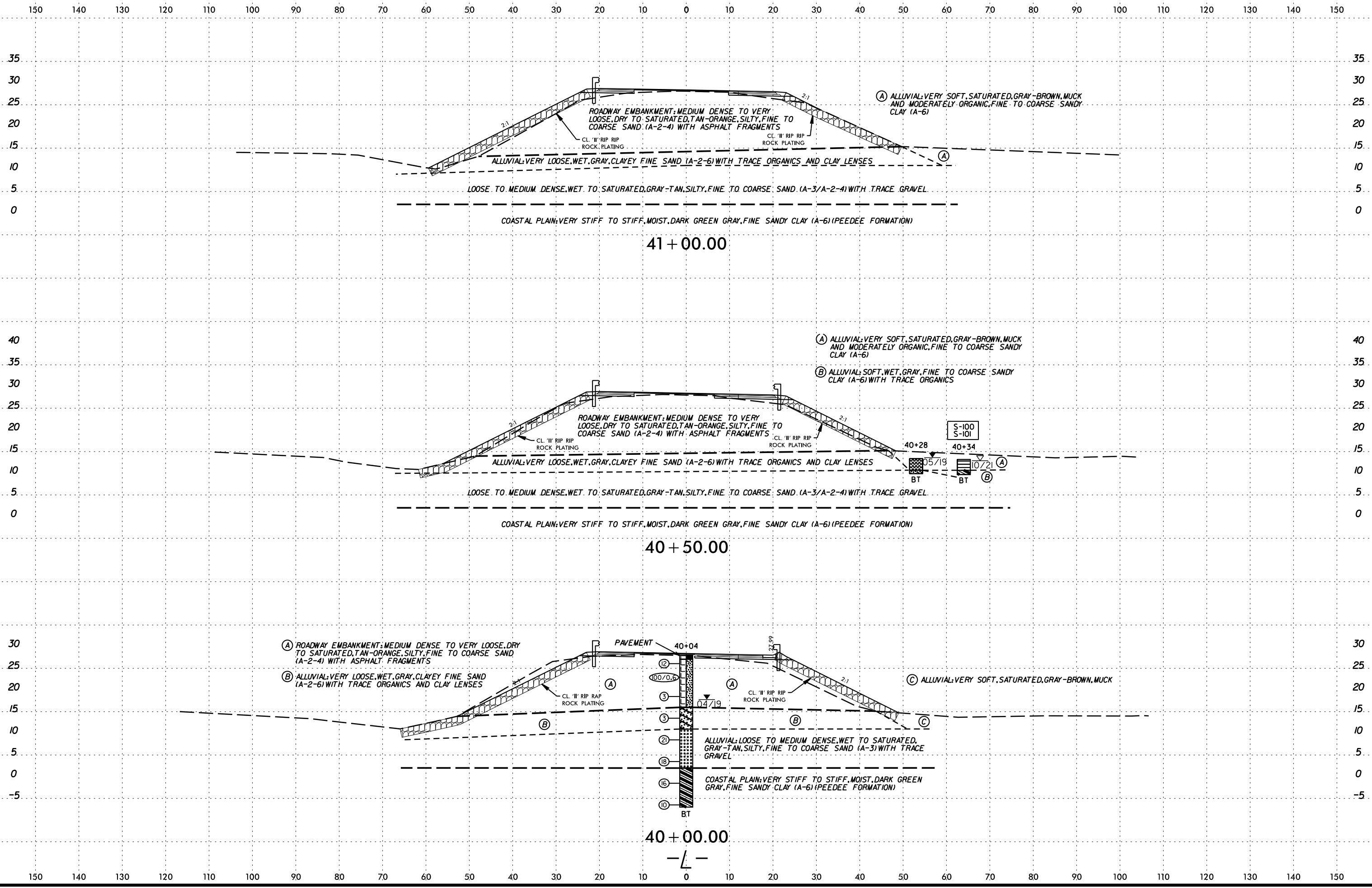


39 + 00.00

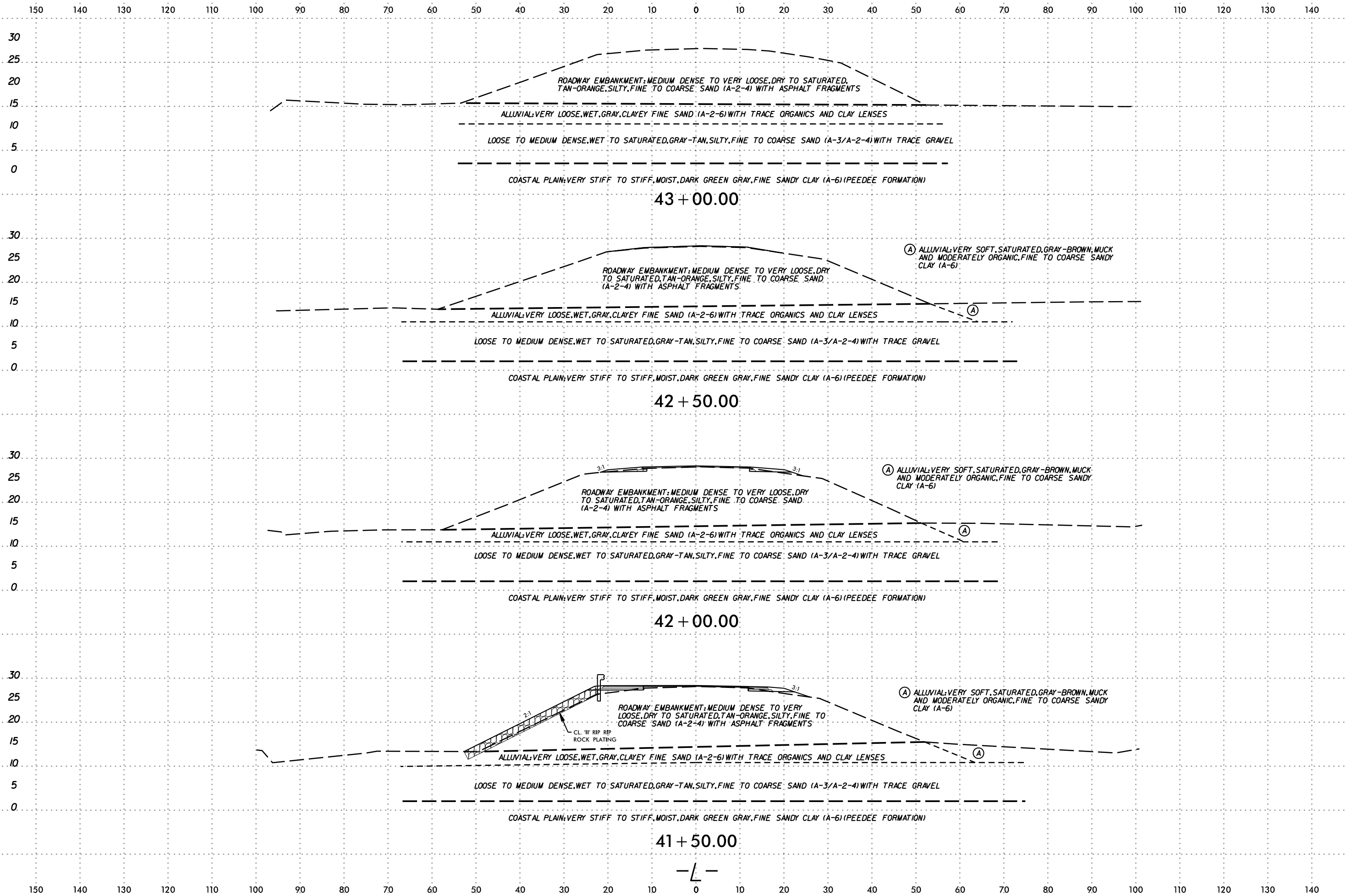


38 + 50.00

29-MAR-2022 11:00 P:\Engineering\Projects\2019\646819\027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\se_B4926_GEO_xsi.L.dgn



29-MAR-2022 11:31
 P:\Engineering\Projects\Roadway\Roadway\Kinaston\Roadway\B-4926\GEO\RDWY_Kinaston_Roadway\CADD_GEO\TECH\B-4926_GEO_xsi.L.dgn
 mchickler AT MCHTRK13



29-MAR-2022 11:44
 P:\Engineering\2021\Projects\Road\NC-001\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\XSE\B4926_GEO_XSI_L.dgn
 mch@htrklls.com

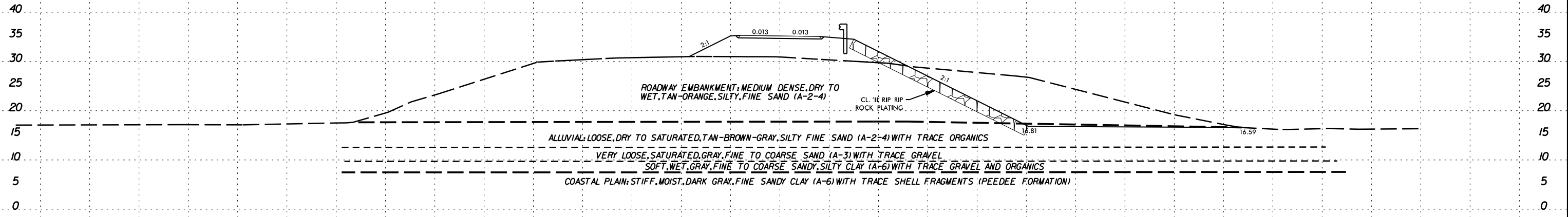
6/23/16

6/23/16

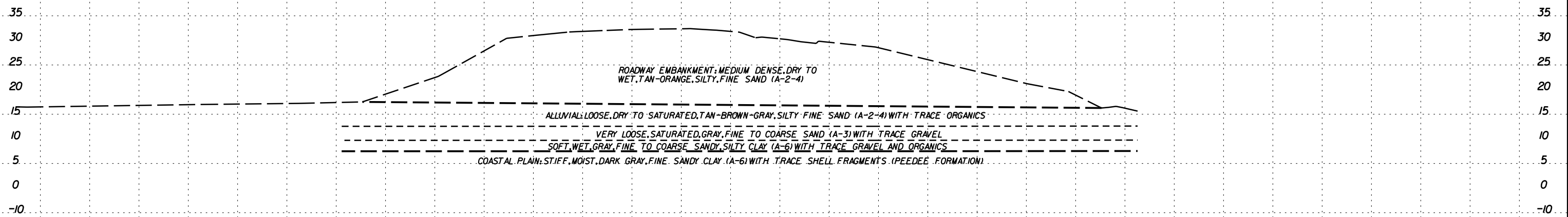


PROJ. REFERENCE NO.	SHEET NO.
B-4926	26

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



12 + 00.00



11 + 50.00

- DRV -

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 11:17 P:\Engineering\Projects\2019\646819\027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsi_DRV.dgn

Wood E&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

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	15+00.00 to 23+00.00	4-10
-L-	28+00.00 to 34+00.00	11-17
-L-	36+00.00 to 42+00.00	18-22
-DRV-	11+50.00 to 12+00.00	23
SUMMARY OF LAB TEST RESULTS		24

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

**ROADWAY
SUBSURFACE INVESTIGATION**

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

RECOMMENDATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4926	1	24

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:
1. 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.
 2. 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.

PERSONNEL

M. LEAR

M. MOSELEY

J. HOWARD

INVESTIGATED BY WOOD E&S, INC.

DRAWN BY R. RAHIE

CHECKED BY M. LEAR

SUBMITTED BY C. T. TANG

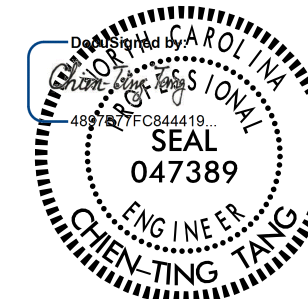
DATE APRIL, 2022

WOOD E&S, INC.
4021 STIRRUP CREEK DRIVE, SUITE 100
DURHAM, NORTH CAROLINA 27703
(919) 381-9900

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 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, *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-2-4	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 10 MX	35 MX 10 MX	35 MX 10 MX	35 MX 10 MX	35 MX 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX	36 MN 10 MX
MATERIAL PASSING #40 LL PI													SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		
GROUP INDEX	0						4 MX 8 MX 12 MX 16 MX NO MX						HIGHLY ORGANIC SOILS		
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

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

ORGANIC 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 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
- 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
- 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:
 - 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 GROUVED 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 GROUVED 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	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 DISLODGED 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_ls_tin_i7i205.tin).

ELEVATION: N/A FEET

NOTES:

- FIAD - FILLED IMMEDIATELY AFTER DRILLING

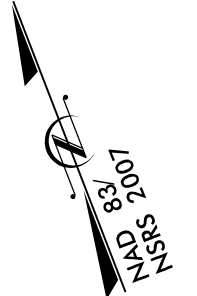
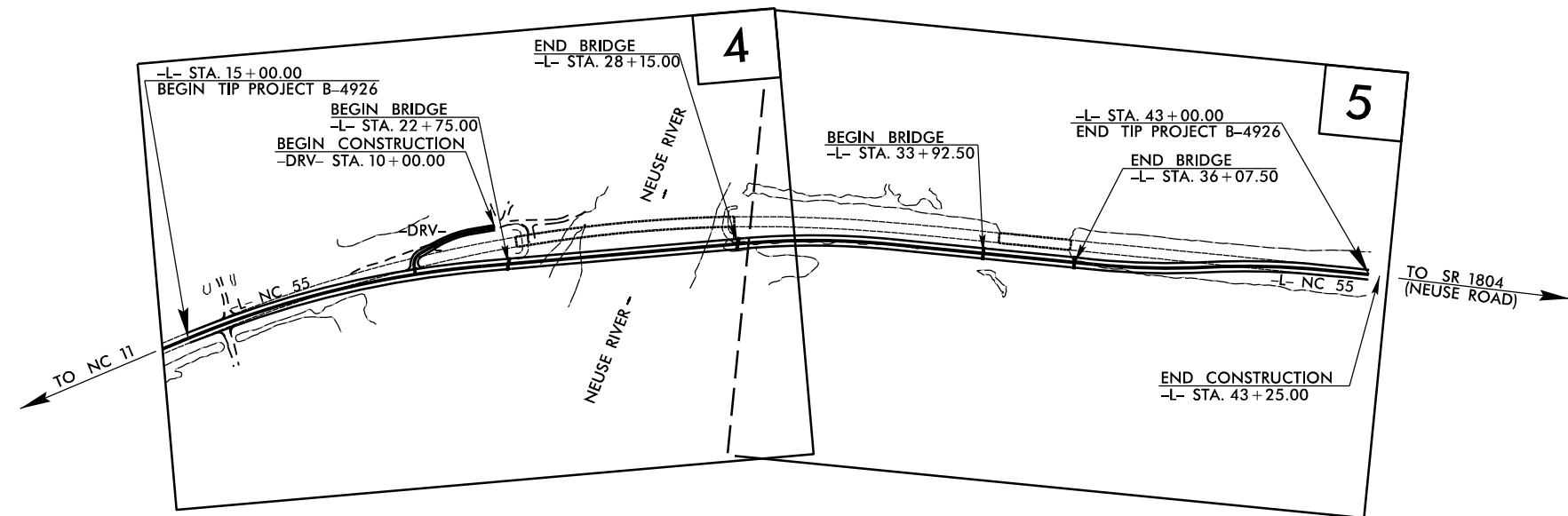
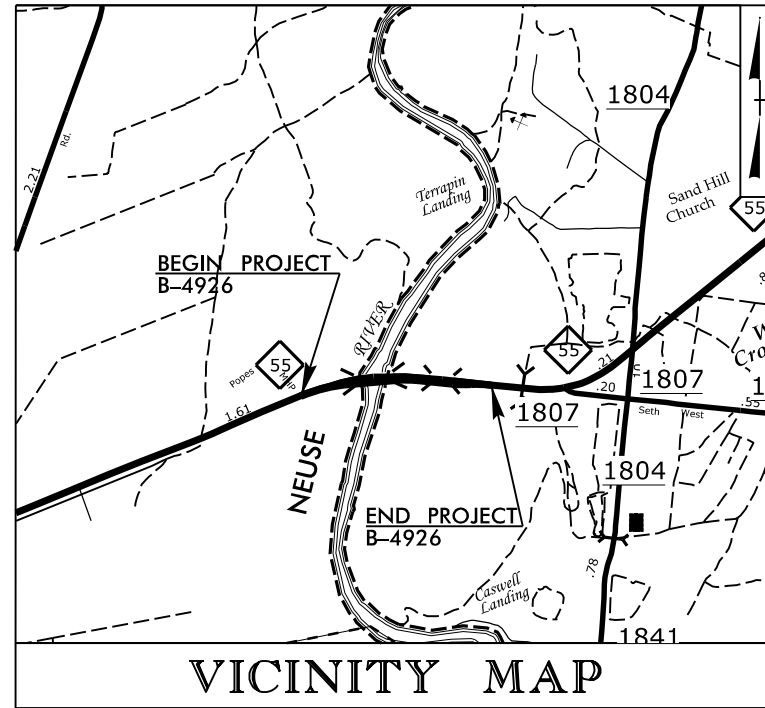
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4926	3	24
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
40163.1.2	N/A	PE	
40163.2.1	N/A	R/W & UTILITIES	

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

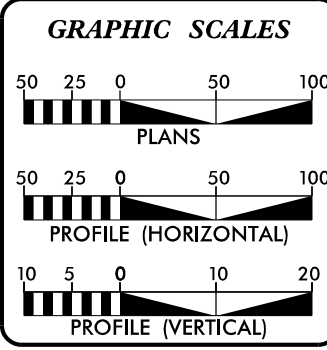


TIP PROJECT: B-4926

CONTRACT:

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

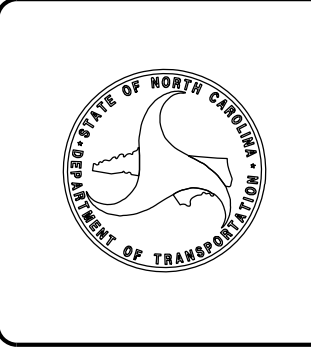
RAJIT RAMKUMAR, PE PROJECT ENGINEER
DANIEL W. GARDNER, JR., PE PROJECT DESIGN ENGINEER
CASEY K. WHITLEY, PE, PLS NCDOT CONTACT

HYDRAULICS ENGINEER

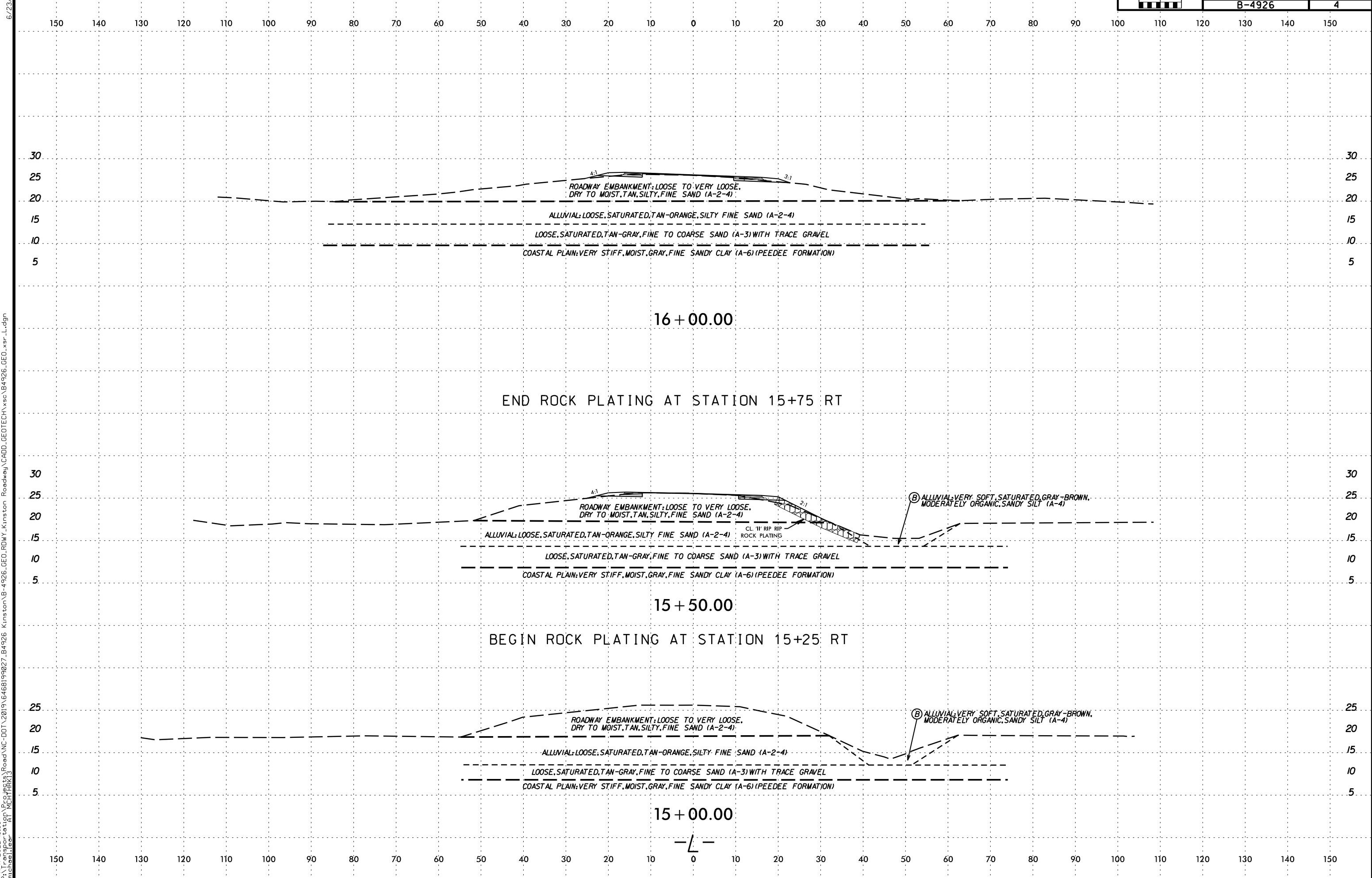
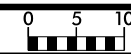
SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



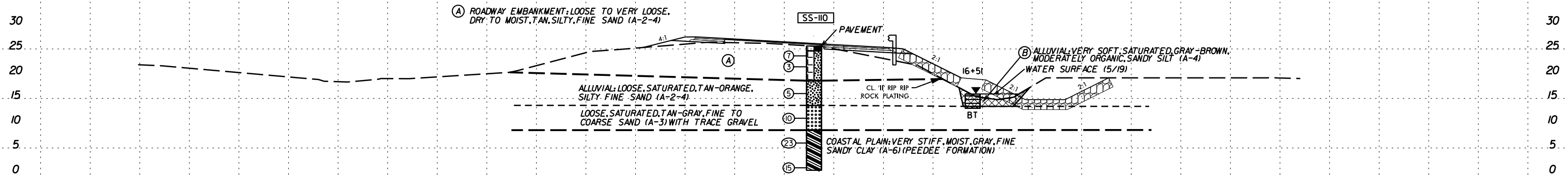
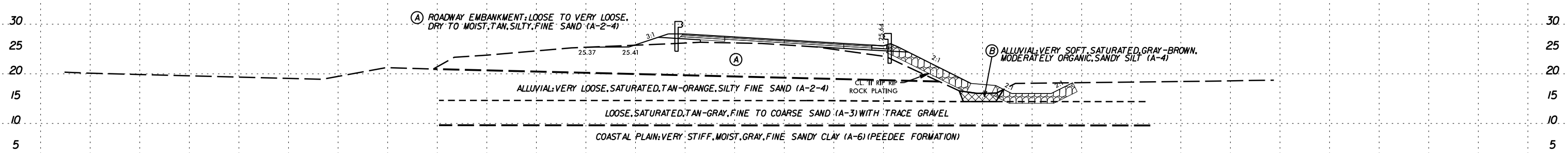
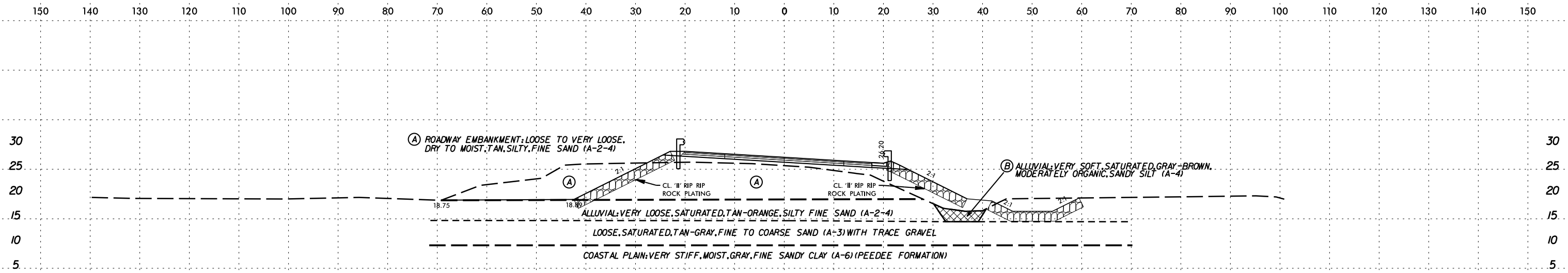
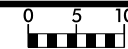
28-MAR-2022 17:14 P:\Transportation\Projects\Road\NC-DOT\2019\6468199027_B4926 Kinston_Roadway\CADD_GEO\TECH\Plan\Prof\B-4926_GEO_tsh_rec.dgn \$\$\$USERNAME\$\$\$



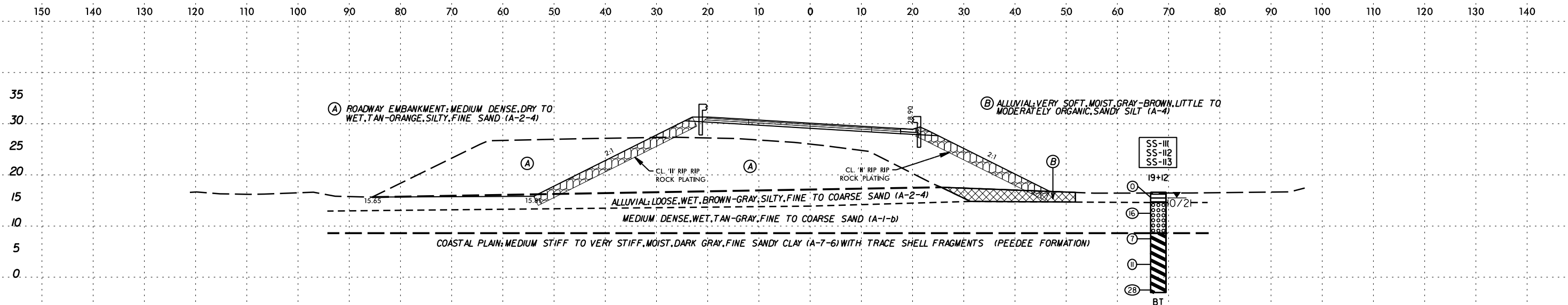
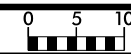
END ROCK PLATING AT STATION 15+75 RT

BEGIN ROCK PLATING AT STATION 15+25 RT

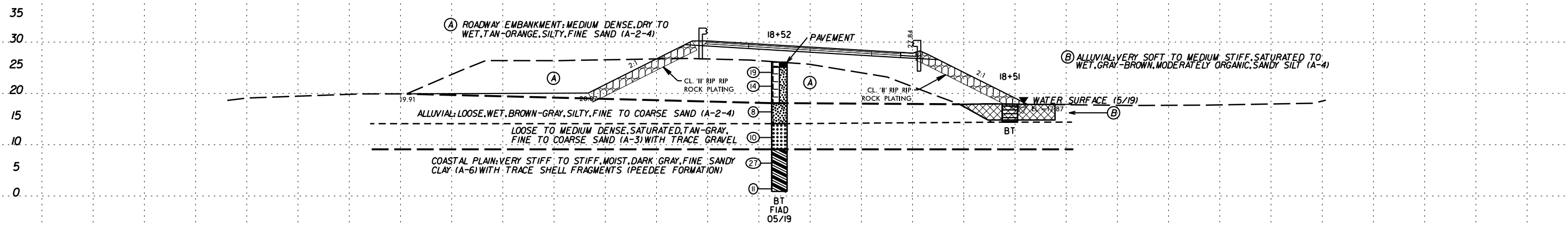
6/23/16
I:\APR-2022 15:58
P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\XSE\B4926_GEO_XSR_L.dgn
mch@trk3



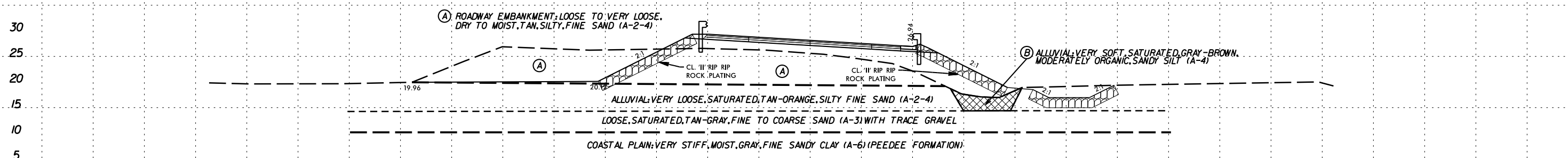
6/23/16
 I:\APR-2022 16:00
 P:\Engineering\Projects\Roadway\B-4926 Kinaston\B-4926 GEO\RDWY_Kinaston_Roadway\CADD_GEO\TECH\se\B-4926_GEO_xsr_L.dgn
 mchase@carroll.com



19 + 00.00



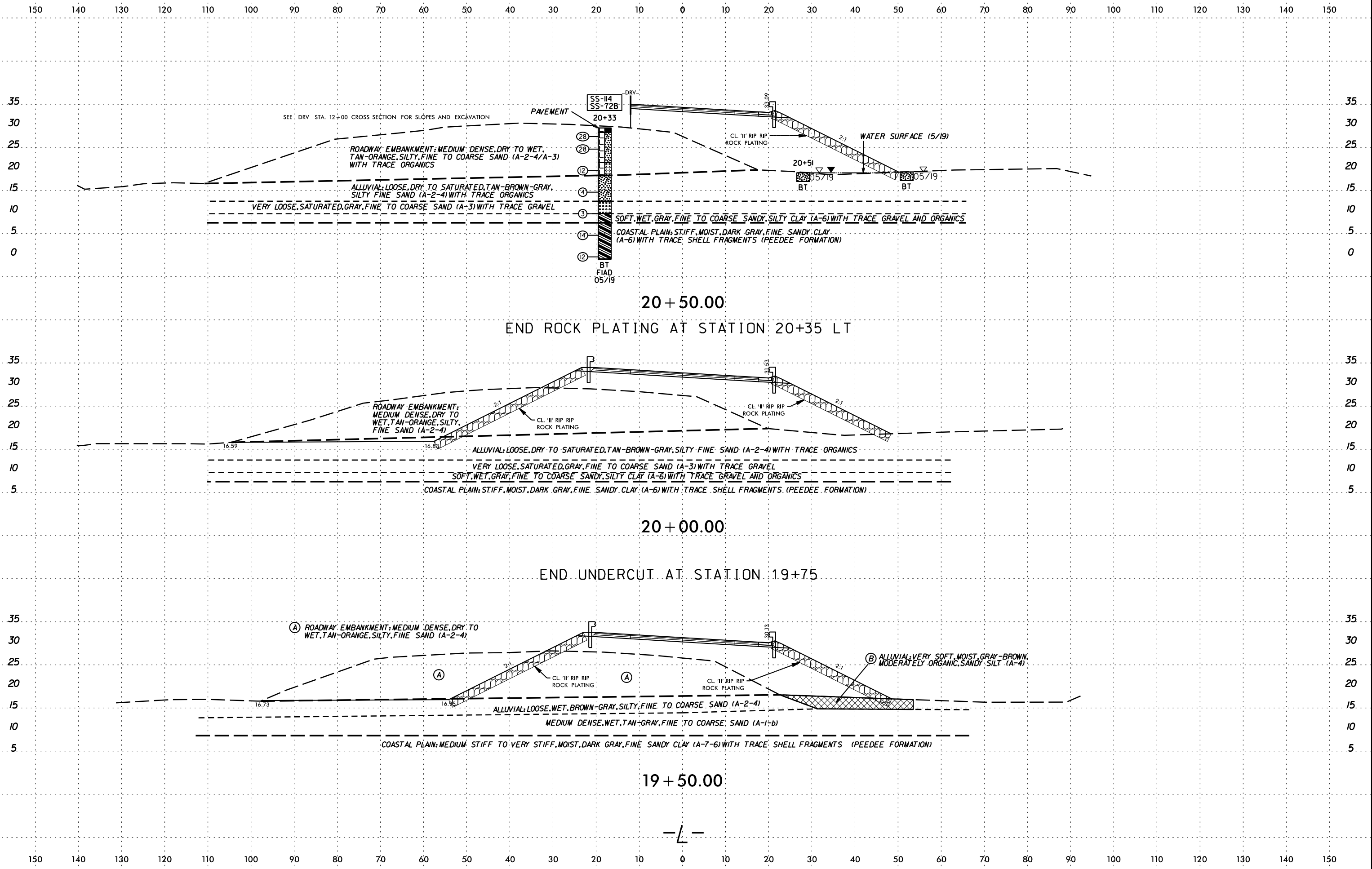
18 + 50.00



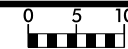
18 + 00.00

-L-

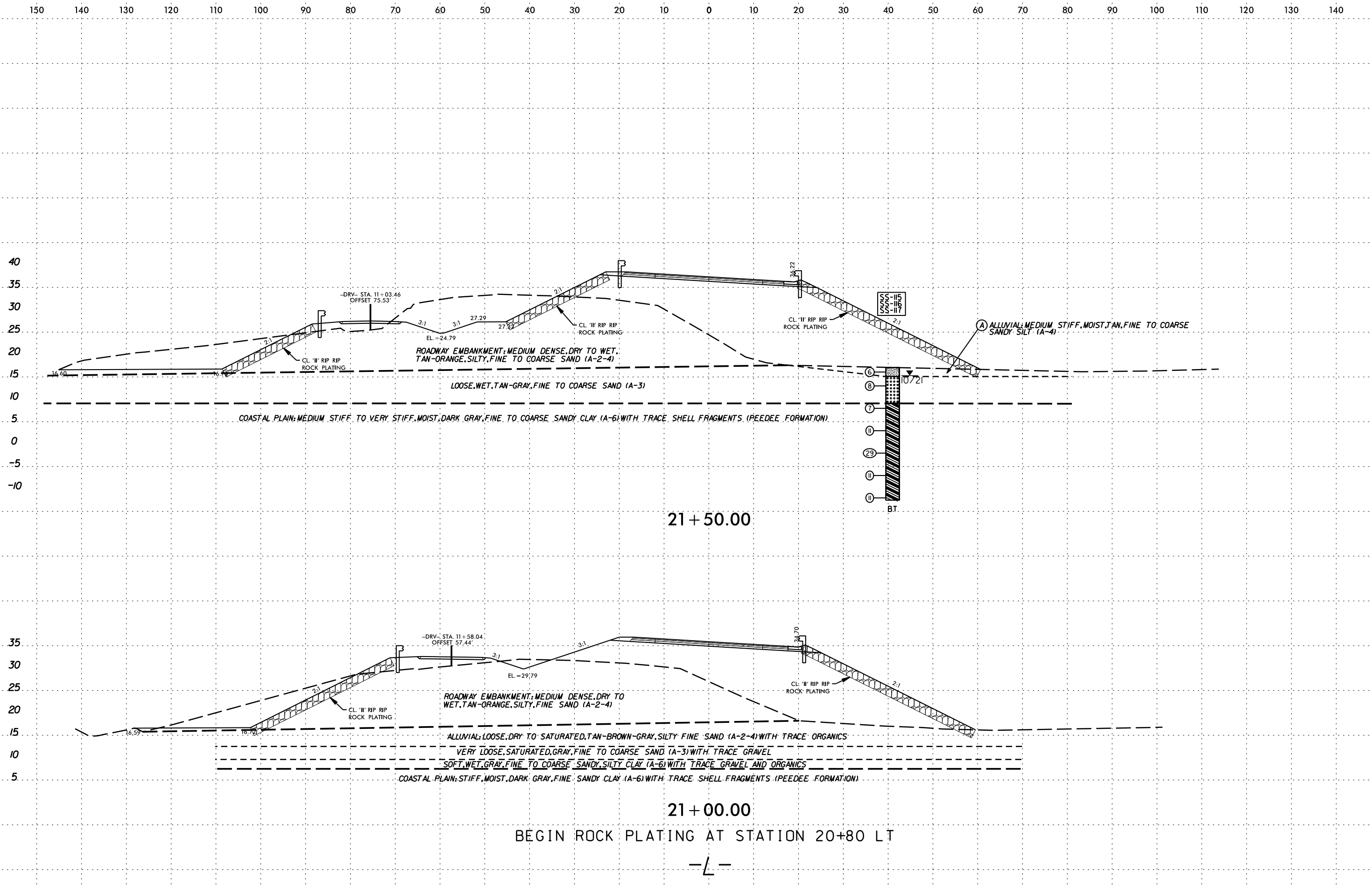
29-MAR-2022 15:32 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsp_L.dgn



I:\APR-2022 16:02
 P:\Engineering\Stationing\Roadway\Roadway\Kinaton\Roadway\Kinaton\Roadway\Roadway\B4926_GEO_PDD\GEO\TECH\XSE\B4926_GEO_XSR_L.dgn
 mcheney.dgn



6/23/16
I:\APR-2022\16104
P:\Transportation\B4926\Roadway\Roadway\Kinaton\Roadway\KINADDD_GEDTECH\B4926_GEO_RDWY_Kinaton\Roadway\KINADDD_GEDTECH\B4926_GEO_xsr_L.dgn
michele.pearson - AT - MCH TRK13



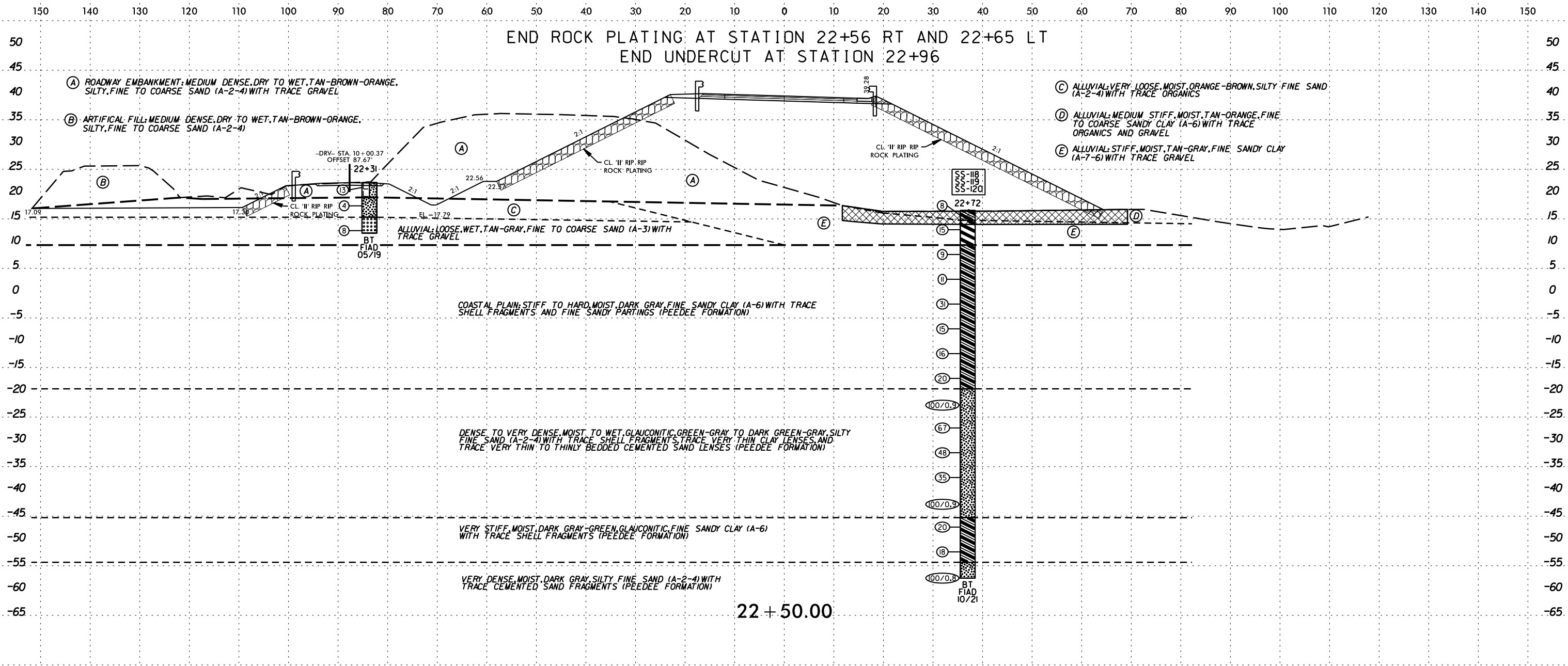
21+50.00

21+00.00

BEGIN ROCK PLATING AT STATION 20+80 LT

-L-

END ROCK PLATING AT STATION 22+56 RT AND 22+65 LT
END UNDERCUT AT STATION 22+96



- (A) ROADWAY EMBANKMENT: MEDIUM DENSE, DRY TO WET, TAN-BROWN-ORANGE, SILTY, FINE TO COARSE SAND (A-2-4) WITH TRACE GRAVEL
- (B) ARTIFICIAL FILL: MEDIUM DENSE, DRY TO WET, TAN-BROWN-ORANGE, SILTY, FINE TO COARSE SAND (A-2-4)
- (C) ALLUVIAL: VERY LOOSE, MOIST, ORANGE-BROWN, SILTY FINE SAND (A-2-4) WITH TRACE ORGANICS
- (D) ALLUVIAL: MEDIUM STIFF, MOIST, TAN-ORANGE, FINE TO COARSE SANDY CLAY (A-6) WITH TRACE ORGANICS AND GRAVEL
- (E) ALLUVIAL: STIFF, MOIST, TAN-GRAY, FINE SANDY CLAY (A-7-6) WITH TRACE GRAVEL

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

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

VERY STIFF, MOIST, DARK GRAY-GREEN, GLAUCONITIC, FINE SANDY CLAY (A-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

VERY DENSE, MOIST, DARK GRAY SILTY FINE SAND (A-2-4) WITH TRACE CEMENTED SAND FRAGMENTS (PEEDEE FORMATION)

22 + 50.00

- (A) ROADWAY EMBANKMENT: MEDIUM DENSE, DRY TO WET, TAN-ORANGE, SILTY, FINE TO COARSE SAND (A-2-4)
- (B) ALLUVIAL: SOFT, MOIST, LIGHT BROWN-GRAY, FINE SANDY SILT AND CLAY (A-4/A-6) WITH TRACE ORGANICS
- PAVEMENT
- CL. 11" RIP RIP ROCK PLATING
- CL. 11" RIP RIP ROCK PLATING
- CL. 11" RIP RIP ROCK PLATING
- ALLUVIAL: LOOSE, WET, GRAY AND BROWN GRAY, CLAYEY AND SILTY FINE SAND (A-2-6/A-2-4)
- MEDIUM DENSE, WET, GRAY, FINE TO COARSE SAND (A-3)
- COASTAL PLAIN: VERY STIFF, MOIST, DARK GRAY, FINE SANDY CLAY (A-6) WITH TRACE SHELL FRAGMENTS (PEEDEE FORMATION)

BEGIN UNDERCUT AT STATION 21+75

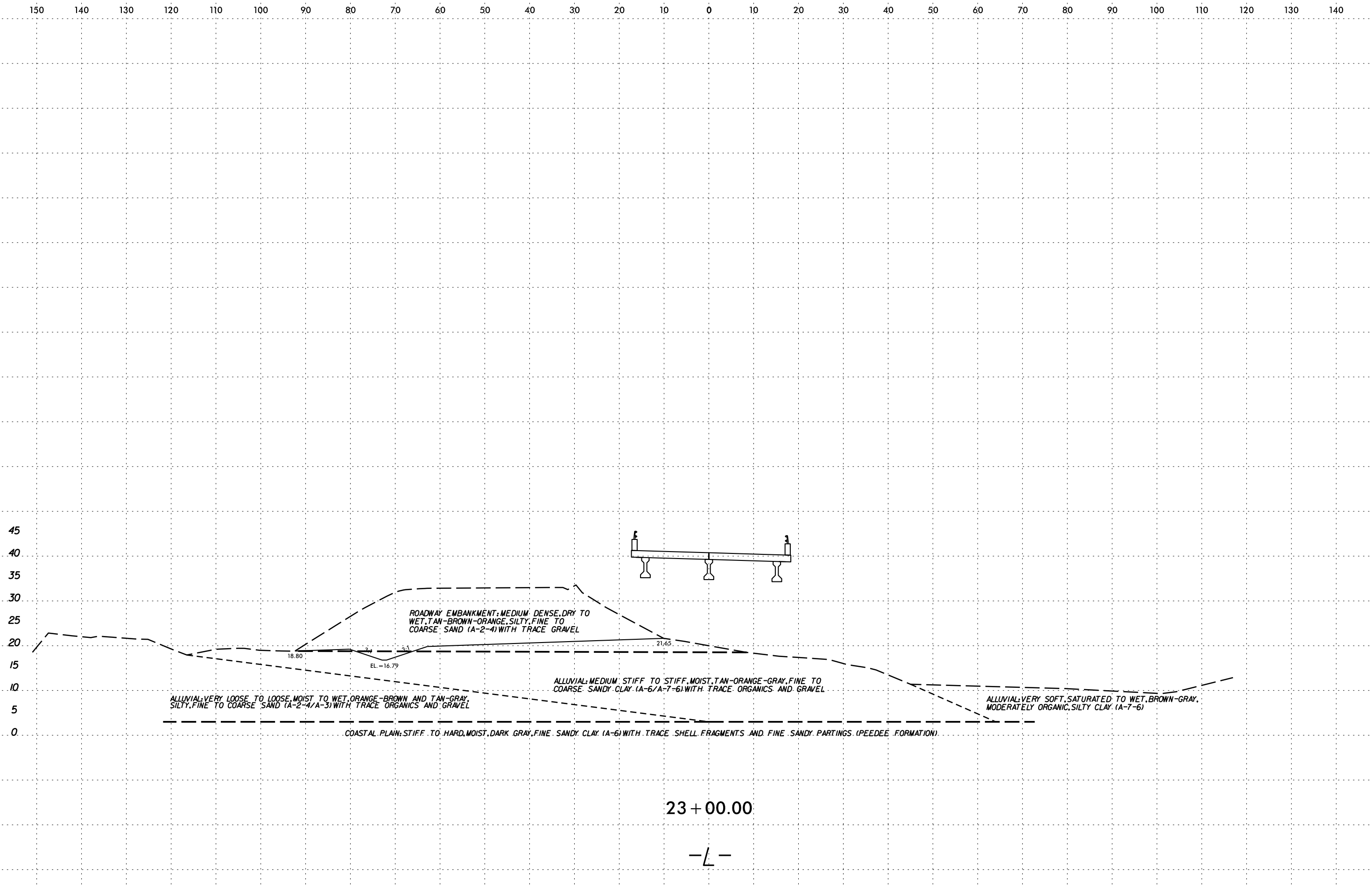
-L-

I:\APR-2022 16:06
 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO-RDWAY_Kinston_Roadway\CADD_GEO\TECH\se\B4926_GEO_xsp_L.dgn
 mch\trk\3



6/23/16

29-MAR-2022 15:52
P:\Engineering\2019\646819\027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\B4926_GEO_xsr_L.dgn
michele.pearson AT MCHTRK3



ALLUVIAL: VERY LOOSE TO LOOSE, MOIST TO WET, ORANGE-BROWN AND TAN-GRAY, SILTY, FINE TO COARSE SAND (A-2-4/A-3) WITH TRACE ORGANICS AND GRAVEL

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

ALLUVIAL: MEDIUM STIFF TO STIFF, MOIST, TAN-ORANGE-GRAY, FINE TO COARSE SANDY CLAY (A-6/A-7-6) WITH TRACE ORGANICS AND GRAVEL

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

18.80

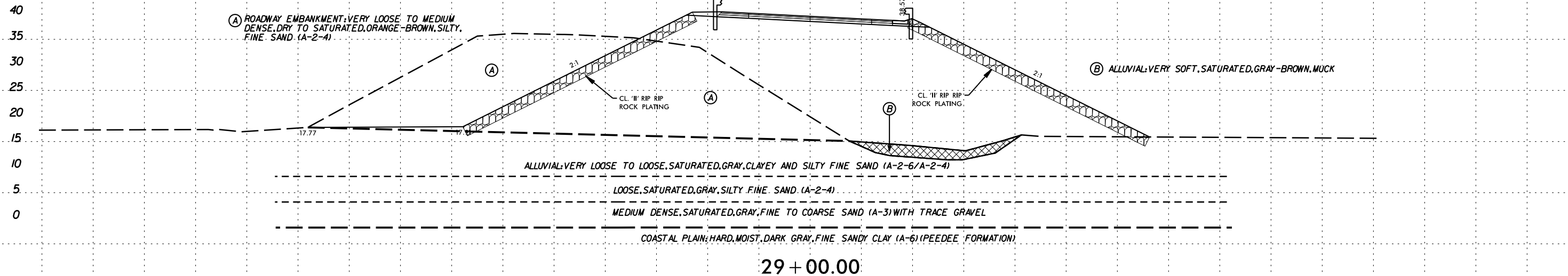
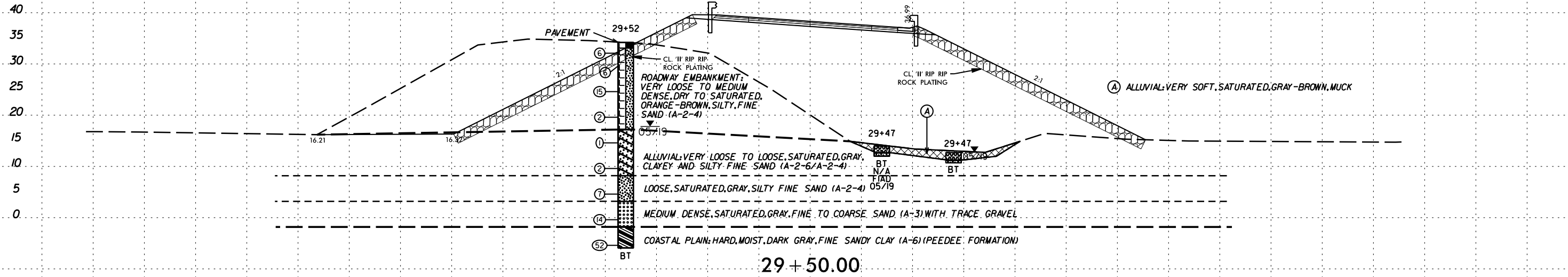
EL. = 16.79

21.65

23 + 00.00

-L-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

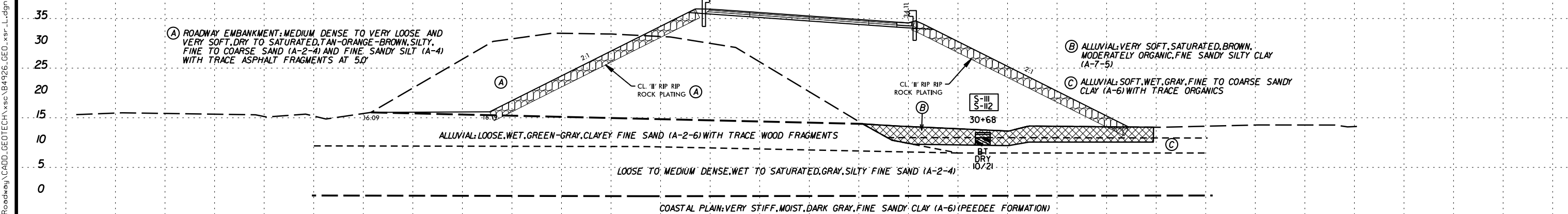


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

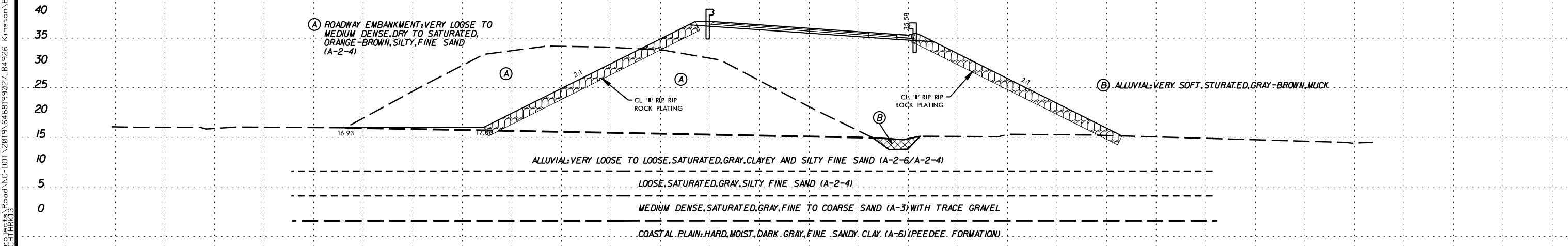
29-MAR-2022 15:56 P:\Engineering\2019\646819\027_B4926_Kinston\B-4926_GEO\RDWY_Kinston_Roadway\CADD_GEO\TECH\29\B4926_GEO_RDWY_Kinston_Roadway.dgn



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



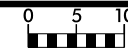
30 + 50.00



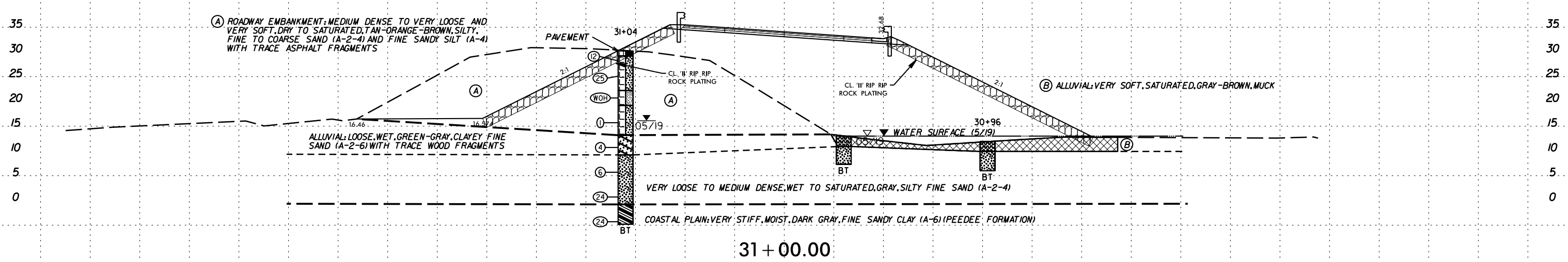
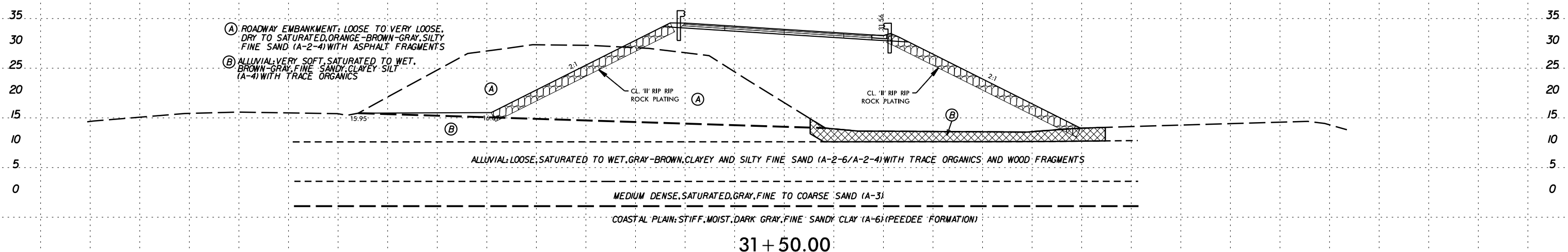
30 + 00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 15:58
 P:\Engineering\Projects\Roadway\B-4926\Kinston\B-4926-GEO-RDWAY_Kinston_Roadway\CADD_GEDTECH\B-4926-GEO-rsp-L.dgn
 mchase@ncdot.gov



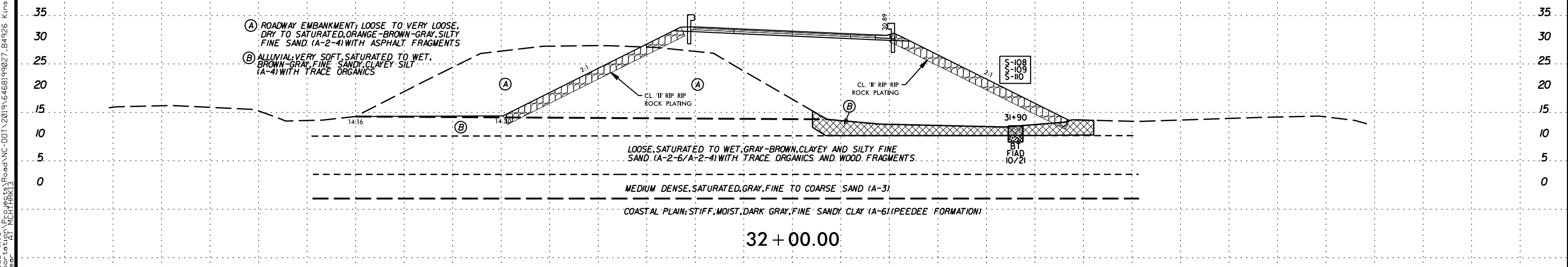
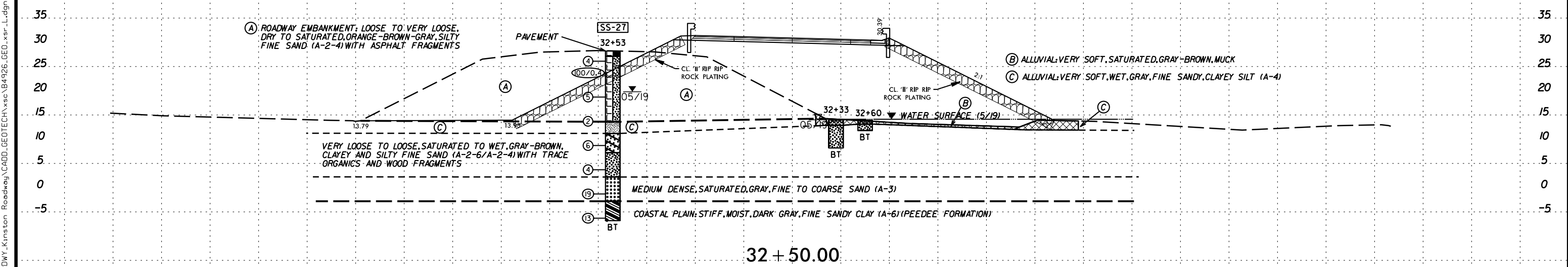
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

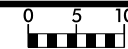
6/23/16
29-MAR-2022 16:00
P:\In\proj\station\road\NC-DDT\2019\6468199027_B4926_Kinston\B-4926_GEO-RDWAY_Kinston_Roadway\CADD_GEDTECH\se\B4926_GEO_xsr_L.dgn
michele.pearce AT MCHTRK3

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



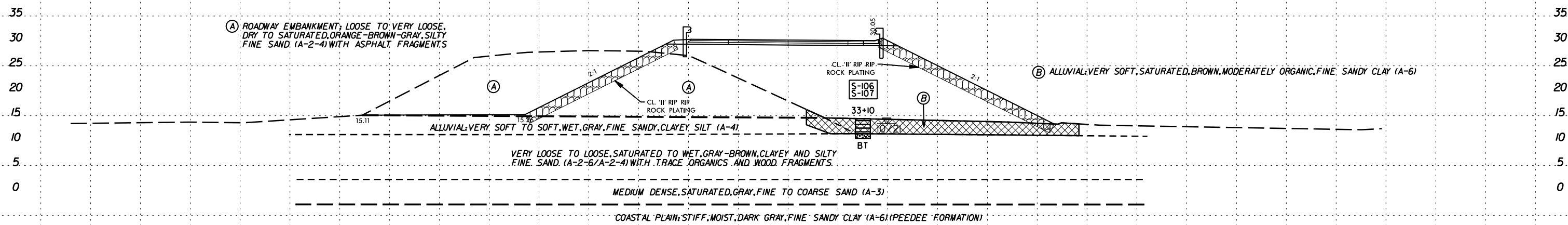
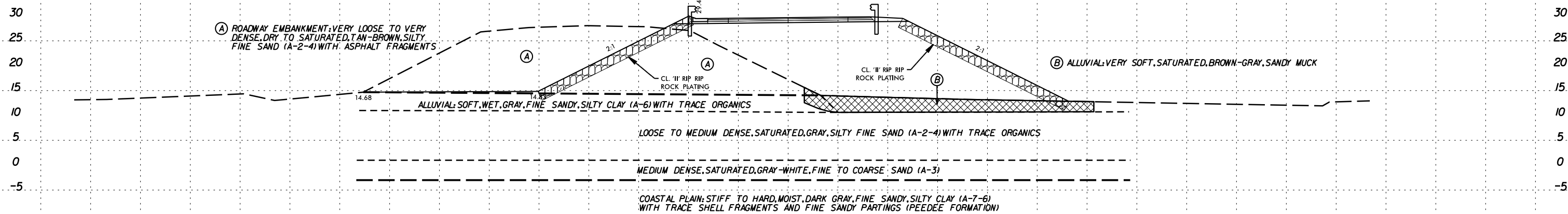
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 16:02
 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEDTECH\B4926_GEO_xsr_L.dgn
 mchicklear AT MCHICKLEA



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

END ROCK PLATING AT STATION 33+78

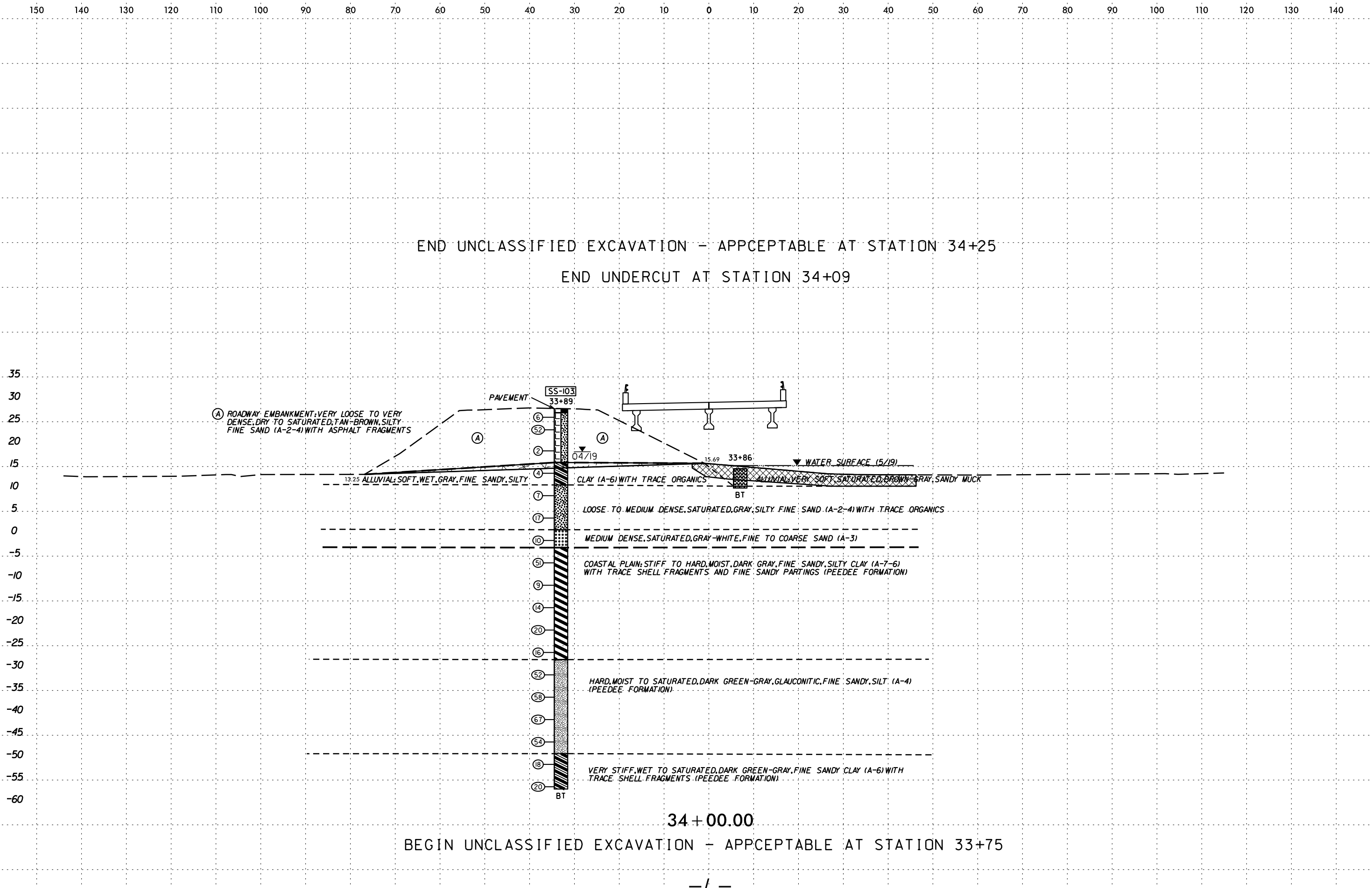


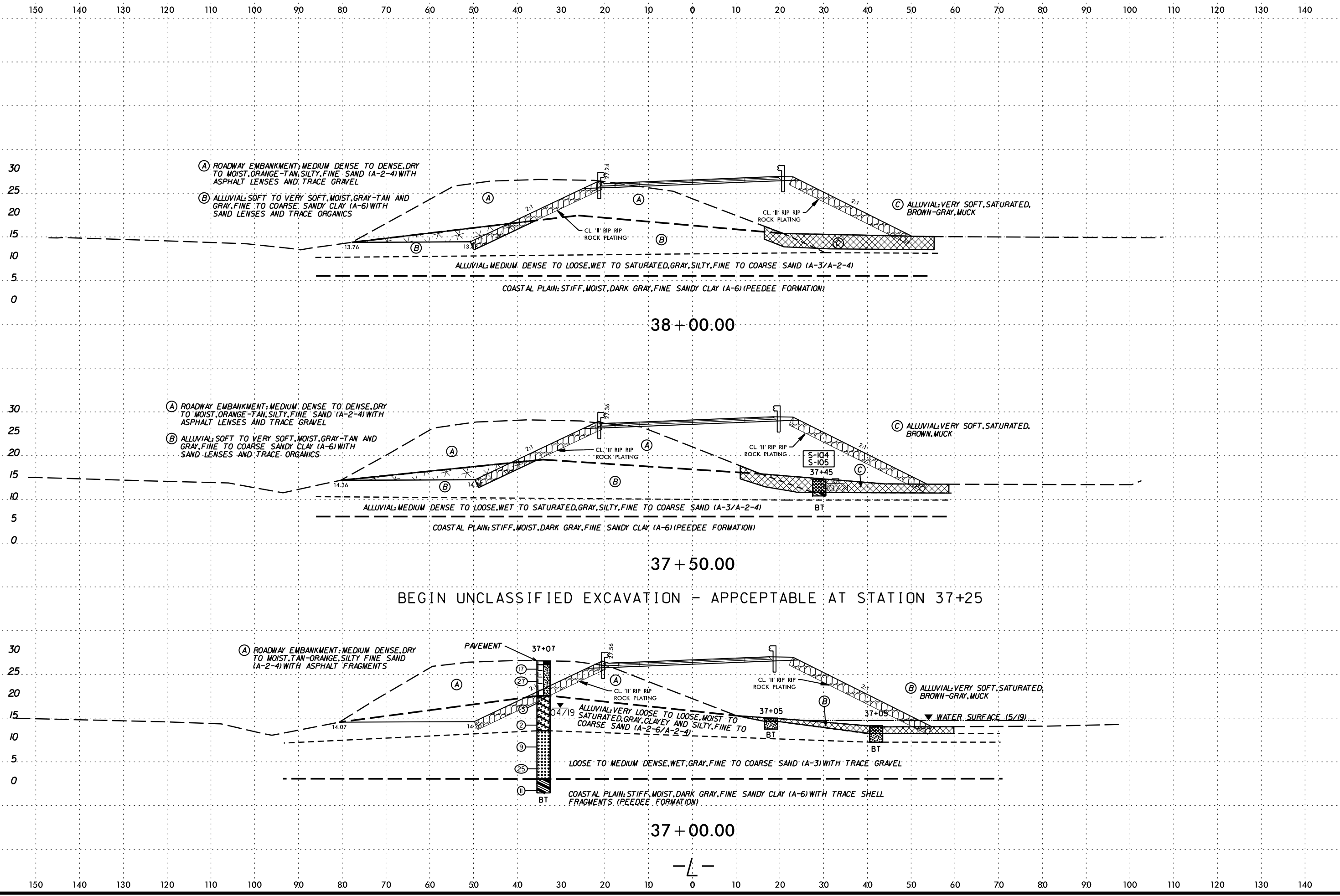
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

29-MAR-2022 16:05 P:\Engineering\Stationing\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEDTECH\se_B4926_GEO_xsr_L.dgn

6/23/16
29-MAR-2022 16:12
P:\Engineering\Stationing\Road\NC-DDT\2019\6468199027_B4926_Kinston\Roadway\Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEDTECH\se\B4926_GEO_xsr_L.dgn
michael

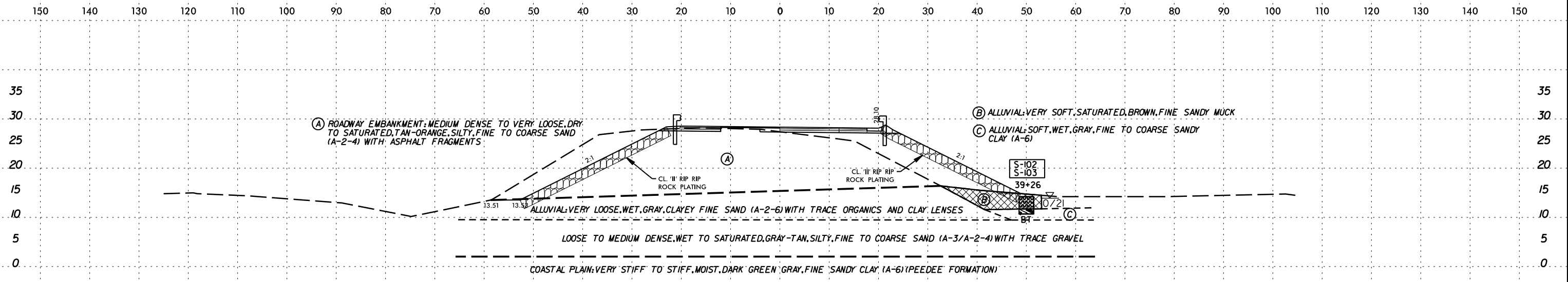
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4926	17





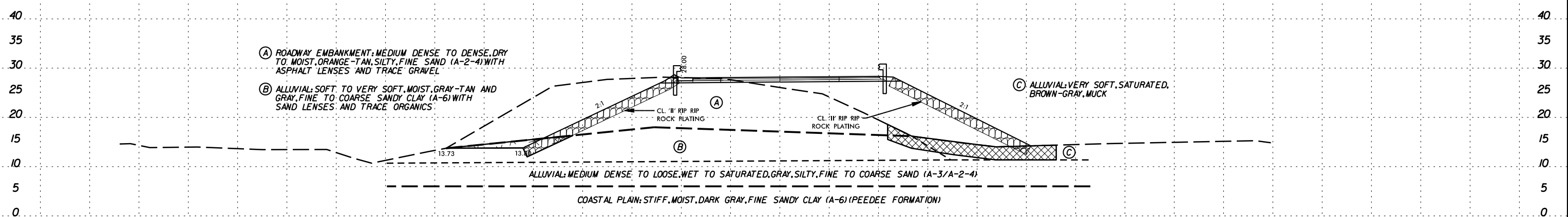
29-MAR-2022 16:15
 P:\Engineering\2019\6468199027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\use\B4926_GEO_xsr_L.dgn
 mch@htrk.com AT HTRK

6/23/16

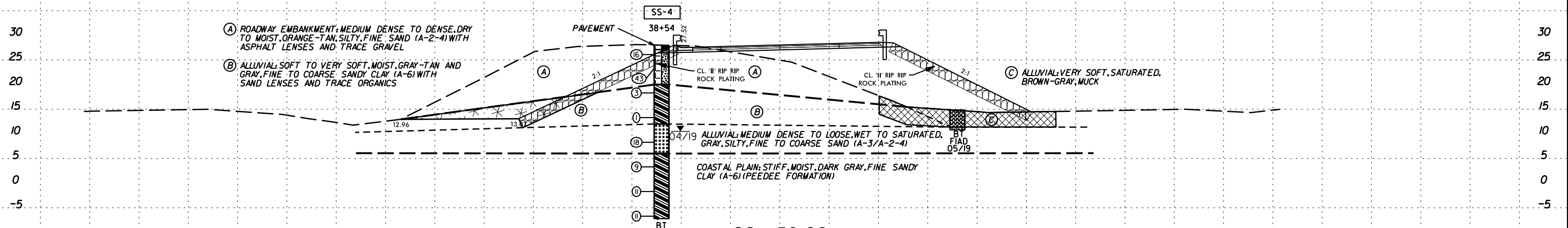


39 + 50.00

END UNCLASSIFIED EXCAVATION - APPCEPTABLE AT STATION 39+25



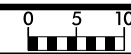
39 + 00.00



38 + 50.00

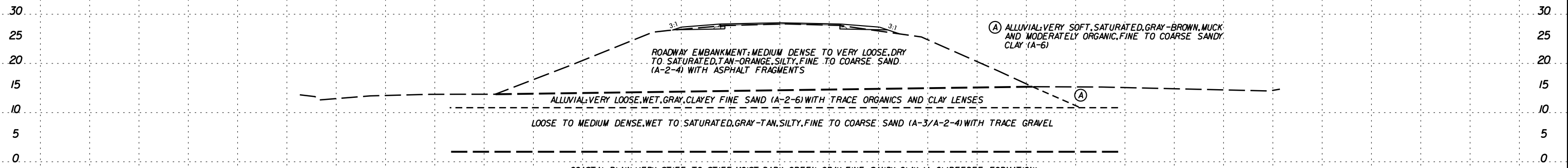
29-MAR-2022 16:17 P:\Engineering\Projects\2019\646819\027_B4926_Kinston\B-4926_GEO_RDWY_Kinston_Roadway\CADD_GEO\TECH\use_B4926_GEO_xsr_L.dgn

6/23/16



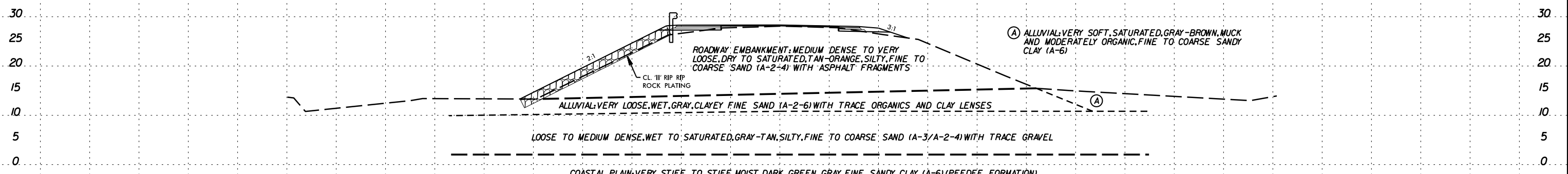
PROJ. REFERENCE NO.	SHEET NO.
B-4926	22

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

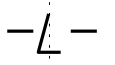


42 + 00.00

END ROCK PLATING AT STATION 41+75 LT



41 + 50.00



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

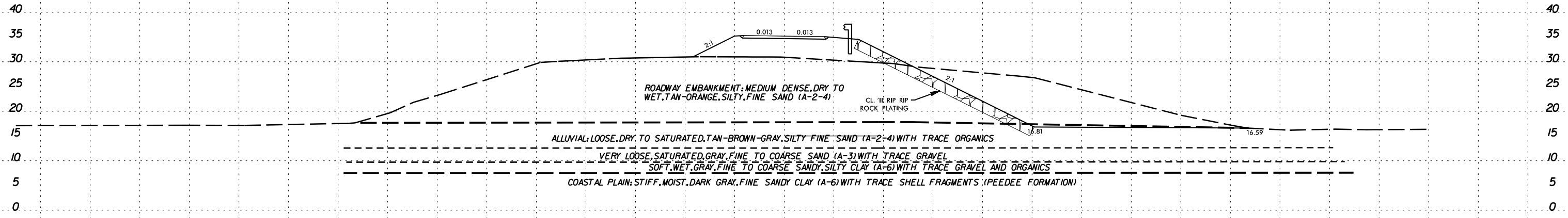
IL-APR-2022 16:13 P:\Transportation\Projects\Roadway\Kinaston\B-4926\Kinaston_Roadway\CADD_GEO\TECH\XSE\B4926_GEO_xsrf_L.dgn

6/23/16
29-MAR-2022 16:23
P:\Engineering\Stationing\Roadway\B4926\B4926_Kinaston_Roadway_Kinaston_Roadway\CADD\GEO\TECH\B4926_GEO_xsp_DRV.dgn
michele.lee AT MCHTRK3

0 10	PROJ. REFERENCE NO.	SHEET NO.
	B-4926	23

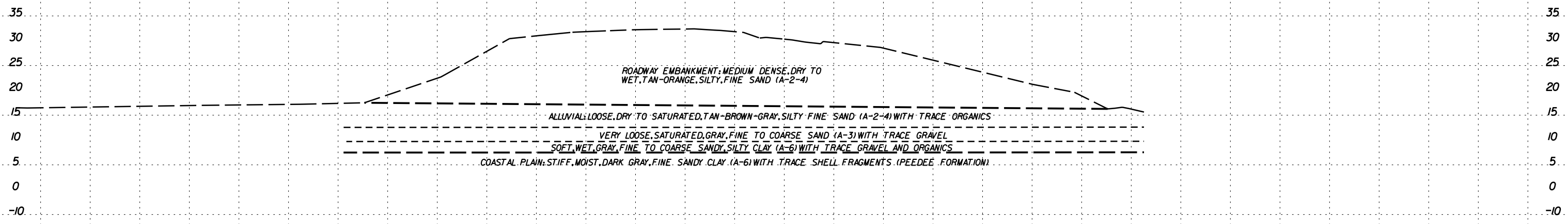
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

END ROCK PLATING AT STATION 12+30



12 + 00.00

BEGIN ROCK PLATING AT STATION 11+75



11 + 50.00

-DRV-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Wood E&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 24

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