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

REFERENCE: W-5701B

PROJECT: 44847

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN
-L-	15+50 - 207+00	4 - 18

CROSS SECTIONS

LINE	STATION (Selected Stations)	SHEETS
-L-	30+00, 32+50	19
-L-	34+50, 38+00, 42+00	20
-L-	44+00, 46+00	21
-L-	48+00 - 50+50	22 - 25
-L-	69+00 - 70+50	25 - 26
-L-	72+00, 74+00	27
-L-	76+00	28
-L-	78+00 - 85+00	28 - 32
-L-	87+00	33
-L-	89+00 - 92+50	33 - 36
-L-	100+50, 102+50	36
-L-	104+50, 106+50	37
-L-	108+50	38
-L-	118+00 - 125+00	38 - 43
-L-	127+00	43
-L-	129+00, 131+00, 133+00	44
-L-	135+00, 137+00	45
-L-	162+50, 164+50	46
-L-	166+50, 168+50, 173+50	47
-L-	175+50, 177+50, 179+50	48
-L-	183+00, 185+00, 187+00	49
-L-	190+00, 193+00, 195+00	50
-L-	197+00 - 201+00	51 - 53
-L-	203+00	54

APPENDENCIES

APPENDIX	TITLE	SHEETS
A	LAB RESULTS	55 - 56

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *NORTHAMPTON/HERTFORD*

PROJECT DESCRIPTION *US 158 FROM WEST OF US 258 TO EAST OF NC 11*

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:
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

B. FARMER

M. METRY

INVESTIGATED BY *RK&K*

DRAWN BY *S. KABRA*

CHECKED BY *M. SWEITZER*

SUBMITTED BY *RK&K*

DATE *FEBRUARY 2022*

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DocuSigned by:
Saket Kabra 2/11/2022
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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
W-5701B	2

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		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10	50 MX													
#40	30 MX	50 MX	51 MN											
#200	15 MX	25 MX	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40														
LL	—		—	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PI	6 MX		NP	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

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 RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

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
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE	- 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

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
- PW — 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
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT / SPT DMT / VST PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — 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. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - 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
- [ ] _____
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [ ] 2¼" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [ ] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [ ] -N _____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

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 YEILD 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 SLI.)	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 (SLI.)	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 PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

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

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 (RQD) - 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 (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK:

ELEVATION: FEET

NOTES:

RELATIVE DENSITY/ CONSISTENCY OF SOIL WAS ESTIMATED DURING HAND AUGER DRILLING AND IT MAY NOT REPRESENT ACTUAL FIELD CONDITIONS.

BOREHOLE ELEVATIONS DETERMINED FROM PROVIDED .TIN FILE.

TIN FILE: W5701B_ls_tin.tin DATE: 8/4/2021

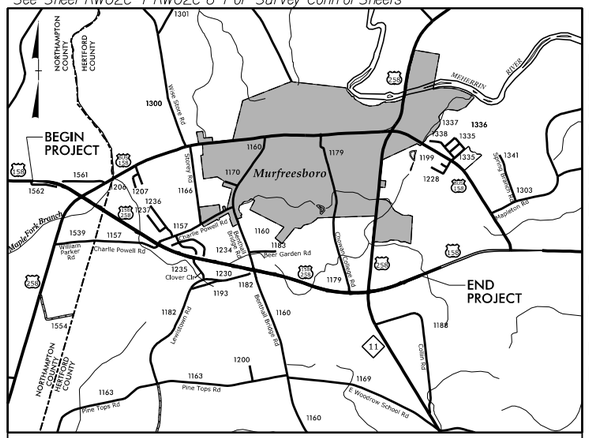
ABBREVIATIONS:
AR - HAND AUGER REFUSAL

DATE: 8-15-14

TIP PROJECT: W-5701B

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1-B For Conventional Symbols
See Sheet RW02C-1-RW02C-6 For Survey Control Sheets



VICINITY MAP (NTS)

25% PLAN SUBMITTAL

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NORTHAMPTON AND HERTFORD COUNTIES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5701B	3	56

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
44847.1.2	HSIP-0158(074)	PE

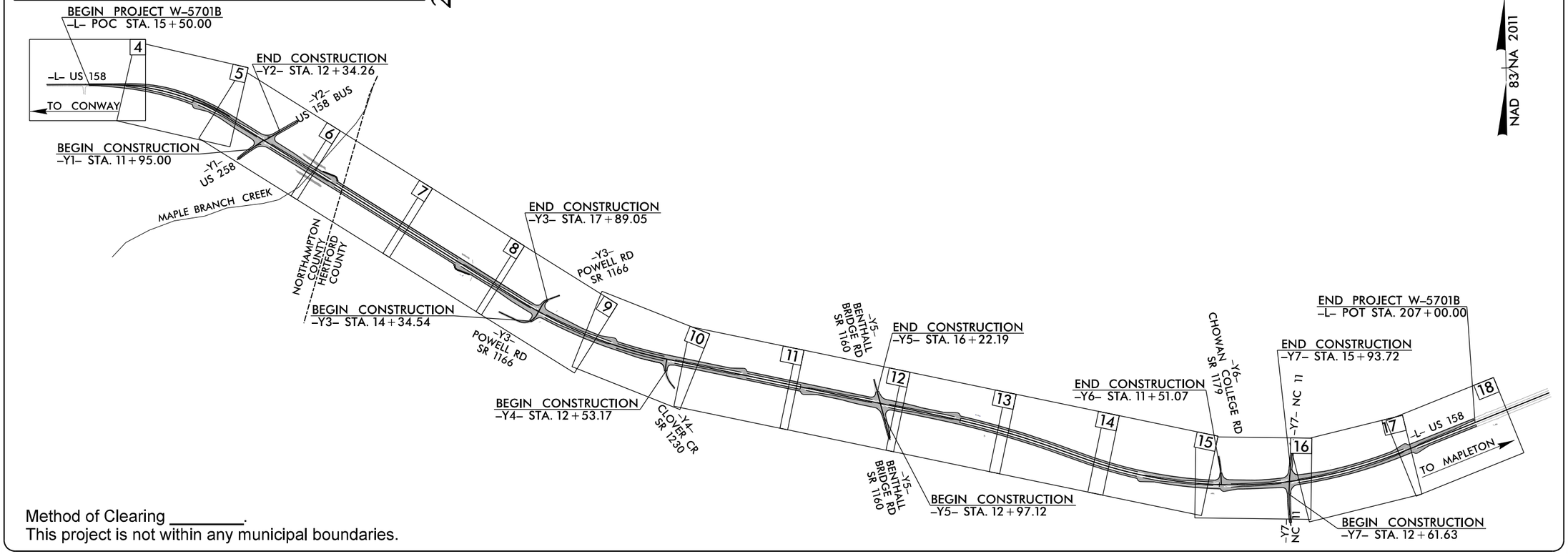
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

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

NAD 83/NA 2011



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

GRAPHIC SCALES

PLANS: 50′ 0′ 50′ 100′

PROFILE (HORIZONTAL): 50 0′ 50 100′

PROFILE (VERTICAL): 10′ 0′ 10′ 20′

DESIGN DATA

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

PROJECT LENGTH

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

NCDOT CONTACT

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

PLANS PREPARED BY:

RK&K
RUMMEL, KLEPPER & KAHL, LLP
8601 Six Forks Road, Forum 1, SUITE 700
RALEIGH, NORTH CAROLINA 27615-3960
NC LICENSE NO. F-0112

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: _____

LETTING DATE: _____

Scott D. Blevins, P.E.
PROJECT ENGINEER
RK&K, LLP

Bill Bollman
PROJECT DESIGN ENGINEER
RK&K, LLP

HYDRAULICS ENGINEER

_____ P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

_____ P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

January 27, 2022

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

PROJECT DESCRIPTION

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

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

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

Line	Stations (±)
-L-	15+50 – 207+00

PHYSIOGRAPHY AND GEOLOGY

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

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

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

GROUNDWATER PROPERTIES

24-hour stabilized groundwater measurements were taken at all the borings. Groundwater was encountered in 12 borings and measured at elevations ranging from 51.1’ to 83.9’. The remaining borings were dry. It should be noted that the groundwater levels fluctuate depending upon seasonal factors such as precipitation and temperature. As such, soil moisture and groundwater conditions at other times may vary or be different from those described in this report. Small intermittent channels exist throughout the project providing drainage during heavy rainfall events. Some channels are groundwater fed while others appear to be artificial from construction of the existing roadway.

SOIL PROPERTIES

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

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

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

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

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Alluvial Soils: The following areas contain alluvial soils:

Line	Stations (±)	Offset
-L-	69+33 – 70+33	RT

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

Line	Stations (±)	Offset
-L-	79+25 – 84+25	CL
-L-	119+25 – 124+25	CL
-L-	198+25 – 200+25	RT

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

Line	Stations (±)	Offset
-L-	77+25 – 81+75	CL

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

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

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

Prepared by,

DocuSigned by:
Saket Kabra
0EDF8C65F5964D2...
2/11/2022

Saket N. Kabra, P.E.
Associate Engineer, Geotechnical
Registered, North Carolina 053059

DocuSigned by:
Gregory Goins
4725B2704A9E4D7...
2/11/2022

Gregory K. Goins, P.E.
Project Manager, Geotechnical
Registered, North Carolina 041709

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5701B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

HERTFORD-NORTHAMPTON FARMERS MARKET, INC.
DB 868 PG 890
PB 38 PG 28

-L- PC Sta. 10+00.00

B

BEGIN PROJECT W-5701B
-L- POC STA. 15+50.00

-L- PCC Sta. 18+55.43

WATSON AND JOHNSON FARM, LLP
DB 728 PG 504

MATCH TO SHEET 5 -L- STA. 21+00.00

EXISTING R/W

T FO

MTL GATE

MTL S

WOOD POST

AIR RELEASE

FSS

US 158 28" BST

15+00

20+00

-L-

TO NC 35
N CHURCH ST

MTL POST

LAND

DECHARHARNEL DR
18" BST

STAR VALLEY FARMS, INC.
DB 599 PG 868
PB 17 PG 68

BL-9

RK&K
P: (919) 878-9560
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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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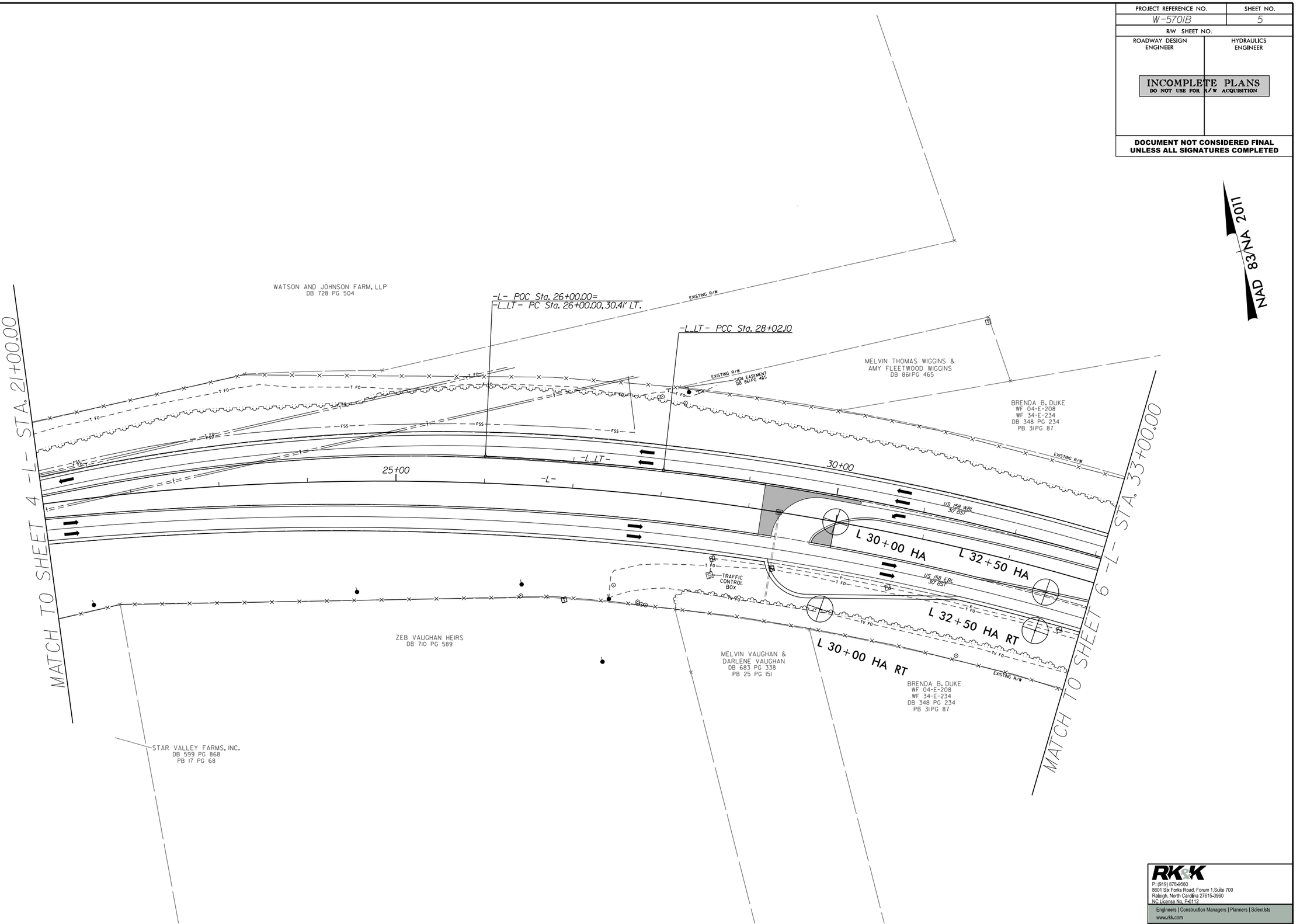
NAD 83/NA 2011



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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

MATCH TO SHEET 5 -L- STA. 33+00.00

MATCH TO SHEET 7 -L- STA. 47+00.00

-Y2- POT Sta. 15+24.88

EXISTING R/W

END CONSTRUCTION
-Y2- POT Sta. 14+95.56

15+00

US 258
39' BST

15" HDPE

-Y2-
N 6° 03' 55.8" E

-L- POT Sta. 39+74.22=
-Y2- POT Sta. 10+00.00

BRENDA B. DUKE
WF 04-E-208
WF 34-E-234
DB 348 PG 234
PB 31PG 87

-L- PT Sta. 34+36.20=
-L_LT- PT Sta. 34+44.96, 30.00' LT.

CLARENCE T. MANLEY
& DENISE D. LASSITER
DB 736 PG 001
BM 6 PG 109

KIRBY BROWN, LLC
DB 1020 PG 538

L 34+50 HA LT

L 42+00 HA LT

US 158 WBL
30' BST

L 38+00 HA
-L-

L 34+50 HA

35+00

L 46+00 HA

45+00

L 44+00 HA
-L-

L 42+00 HA

L 44+00 HA 1

S 56° 58' 51.9" E

40+00

10+00

US 158 EBL
30' BST

L 38+00 HA RT

-L- POT Sta. 39+64.27=
-Y1- POT Sta. 14+03.77

N 55° 44' 59.5" E
355.44'

GREU TL-2

-Y1- PT Sta. 11+35.86

-Y1-

LEVERNON KEE &
EVELYN RICHARDSON KEE
DB 791PG 542
PB 34 PG 134

BRENDA B. DUKE
WF 04-E-208
WF 34-E-234
DB 348 PG 234
PB 31PG 87

CARSON C. HOWARD &
SHELTON A. HOWARD
WF I5-E-209
DB 802 PG 537
PB 18 PG 148

-Y1- PC Sta. 9+74.74

BEGIN CONSTRUCTION
-Y1- PC Sta. 10+00.00

10+00

US 258
30' BST

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kmorris

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

MATCH TO SHEET 6 -L- STA. 47+00.00

MATCH TO SHEET 8 -L- STA. 61+00.00

KIRBY BROWN, LLC
DB 1020
PG 538

CLARENCE P. MANLEY
& DENISE D. LASSITER
DB 736 PG 001
BM 6 PG 109

L 50+00 HA LT

50+00

TRAFFIC CONTROL BOX

CONC

PMTL

US 158 WBL
30' BST

2-6' X 9' BOX CULV

-L-

S 56° 58' 51.9" E

55+00

60+00

L 48+00 HA

L 50+00 HA

US 158 EBL
30' BST

CONC

MTL

BRENDA B. DUKE
WF 04-E-208
WF 34-E-234
DB 348 PG 234
PB 31PG 87

CLARENCE P. MANLEY
& DENISE D. LASSITER
DB 736 PG 001
BM 6 PG 109

CARSON C. HOWARD &
SHELTON A. HOWARD
WF 15-E-209
DB 802 PG 537
PB 18 PG 148

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

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

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

RUTH J. FREEMAN HEIRS
WF 99-E-27
DB 415 PG 133

ALAN KEITH WISE
DB 696 PG 988

CLARENCE P. MANLEY
DB 465 PG 511
BM 6 PG 26

BILLY MITCHELL
DB 666 PG 685

EXISTING R/W

L 70+00 HA LT

L

MTL

CONC

MTL

US 158 WBL
30' BST

65+00

-L-

S 56° 58' 51.9" E

70+00

2-6' X 7.7' BOX CULV

L 70+00 HA

L 72+00 HA

L 74+00 HA

US 158 EBL
30' BST

MTL

MTL

L 74+00 HA RT

EXISTING R/W

L 70+00 HA RT

ALAN KEITH WISE
DB 696 PG 988
PC 1 PG 198D

CLARENCE P. MANLEY
DB 465 PG 511
BM 6 PG 26

DARRYL WILLIAMS &
SUSAN B. WILLIAMS
DB 513 PG 688

AUDREY BELL
DB 475 PG 821

KATHY STEPHENSON
DB 512 PG 127

JOE ALBERT BEALE
DB 400 PG 662

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

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

MATCH TO SHEET 10 -L- STA. 89+00.00

RONNIE A. HOLLEY & CAROL S. HOLLEY DB 428 PG 322

NORFLEET FENNELL, JR. & KATIE F. FENNELL DB 425 PG 610

RICKY B. TANN DB 428 PG 549

ALEXANDER ALSTON, III & REBECCA ALSTON DB 398 PG 444

LLOYD THOMAS & FRANCIS V. THOMAS DB 466 PG 313

LLOYD THOMAS & FRANCIS V. THOMAS DB 467 PG 161

CLARENCE P. MANLEY DB 465 PG 511 BM 6 PG 26

HELEN S. ANTHONY DB 487 PG 369

BILLY MITCHELL DB 666 PG 685

CLARENCE P. MANLEY DB 465 PG 511 BM 6 PG 26

DEPARTMENT OF TRANSPORTATION DB 668 PG 433

ASBURY FLOOD & ANNIE DICKENS FLOOD DB 500 PG 88 PC 1 PG 53F

SAUNDRA L. DELOATCH DB 508 PG 692 PC 1 PG 55C

ELBERT DICKENS DB 513 PG 601 PC 1 PG 58D

JULIA ELIZABETH EATON DB 786 PG 807

DARRYL WILLIAMS & SUSAN B. WILLIAMS DB 513 PG 688

E. R. EVANS & SONS, INC. DB 510 PG 135

KURT KELLUM DB 410 PG 87

DEPARTMENT OF TRANSPORTATION DB 484 PG 190

-Y3- POT Sta. 19+61.48

-Y3- PT Sta. 18+22.22

N 70° 51' 47.5" E

END CONSTRUCTION
-Y3- POC Sta. 17+89.05

-L- PC Sta. 78+74.65

-Y3- PC Sta. 16+88.73

L 76+00 HA LT

L 85+00 HA LT

L 81+00 HA

S 56° 58' 51.9" E L 78+00 HA

80+00

85+00

L 83+00 HA

L 85+00 HA

L 87+00 HA

L 89+00 HA

N 30° 36' 34.5" E

15+00

-L- POC Sta. 81+52.42=
-Y3- POT Sta. 16+01.31

-Y3- PT Sta. 15+44.73

-Y3- PC Sta. 12+75.95

-Y3- POT Sta. 10+00.00

S 63° 50' 08.7" E

BEGIN CONSTRUCTION
-Y3- POC Sta. 14+34.54

POWELL RD SR 1166 23' BST

US 158 WBL 30' BST

US 158 EBL 30' BST

WEST FARVIEW DRIVE SR 1234

EXISTING R/W

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

MATCH TO SHEET 9 -L- STA. 89+00.00

MATCH TO SHEET 11 -L- STA. 102+00.00

ELBERT DICKENS
DB 513 PG 601
PC 1PG 58D

SAUNDRA L. DELOATCH
DB 508 PG 692
PC 1PG 55C

PERCELL SMITH &
ROBIN S. SMITH
DB 522 PG 38
PC 1PG 58D

LASHEKA JENKINS
DB 738 PG 973
PC 1PG 58D

HERBERT LEON HEWETT &
BARBARA HILL HEWETT
DB 548 PG 632
PC 1PG 58D

LEON ANDERSON &
ORIS M. TURNER
DB 756 PG 163
PC 1PG 58D

JOYCE FLEETWOOD WIGGINS
DB 521PG 506
PC 1PG 66D

JEROME WILLIAMS
DB 716 PG 348
PC 1PG 66D

MEARNS DRIVE
SR 1235

BILLY MITCHELL
DB 605 PG 81
PC 1PG 41J

MELVIN THOMAS GREEN
DB 529 PG 828
PC 1PG 58C

BILLY MITCHELL
DB 605 PG 81
PC 1PG 41J

-L- POT Sta. 99+30.57=
-Y4- POT Sta. 14+07.65

-L- PT Sta. 99+10.04

L 91+50 HA LT

100+00

L 100+50 HA

N 12°44'42" E

95+00 -L-

90+00

L 89+00 HA

L 91+50 HA

US 158 WBL
30' BST

US 158 EBL
30' BST

DEPARTMENT OF TRANSPORTATION
DB 482 PG 788
PC 1PG 20C

PHILLIPS BROWN INVESTMENTS, INC.
DB 453 PG 299
PC 1PG 41J

-Y4- PT Sta. 13+58.08

BEGIN CONSTRUCTION
-Y4- POC Sta. 12+53.08

WILLIAM EARL THOMAS
& MINNIE STEP JOYNER
DB 379 PG 379
PC 1PG 20C

DARYL BARNES
DB 475 PG 511
PC 1PG 20C

GREGORY B. LASSITER, SR.
DB 387 PG 221
PC 1PG 20C

MARY ALICE
COPELD HEIRS
DB 480 PG 172
PC 1PG 20C

DEPARTMENT OF TRANSPORTATION
DB 484 PG 187
PC 1PG 41J

DEPARTMENT OF TRANSPORTATION
DB 484 PG 187
PC 1PG 41J

DEPARTMENT OF TRANSPORTATION
DB 484 PG 187
PC 1PG 41J

DEPARTMENT OF TRANSPORTATION
DB 484 PG 190

DEPARTMENT OF TRANSPORTATION
DB 484 PG 184
PC 1PG 20C

WILHELMINA V. TAYLOR HEIRS
DB 459 PG 547
PC 1PG 20C

WILLIE MITCHELL
DB 716 PG 877
PC 1PG 20C

BILLY LAMONT MITCHELL
DB 467 PG 485
PC 1PG 20C

N 37°18'16.01" W

120' BST
RIVER CR SR 1230

35MPH

GS

EXISTING R/W

18" HDPE

-Y4- PC Sta. 10+69.86

-Y4- POT Sta. 10+00.00

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W-5701B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NA 2011

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

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

MAMIE D. STEPHENSON
DB 477 PG 468
PC 1PG 40G

ELLA L. HARRIS
DB 477 PG 463
PC 1PG 40G

NEW BEGINNING FULL GOSPEL BAPTIST CHURCH, INC.
DB 511PG 738
BM 3 PG 210

BILLY MITCHELL
DB 605 PG 81
PC 1PG 41J

EAST FAIRVIEW DRIVE
SR 1234

LINDA HICKS MABINE
DB 480 PG 168
PC 1PG 41J

BILLY MITCHELL
DB 605 PG 81
PC 1PG 41J

PHILLIPS BROWN INVESTMENTS, INC.
DB 453 PG 299
PC 1PG 41J

EXISTING R/W

L 108+50 HA LT

L 104+50 HA LT

6" PVC

US 158 WBL
30' BST

L 108+50 HA

110+00

-L-

S 77° 15' 45.8" E

115+00

L 102+50 HA

105+00

L 104+50 HA

L 106+50 HA

US 158 EBL
30' BST

DEPARTMENT OF TRANSPORTATION
DB 482 PG 788
PC 1PG 20C

EXISTING R/W

ELLA L. HARRIS
DB 477 PG 463
PC 1PG 40C

RICKEY M. MILLER &
DEBORAH M. MILLER
DB 797 PG 982
PC 1PG 20C

RICKEY M. MILLER &
DEBORAH M. MILLER
DB 457 PG 272
PC 1PG 20C

DARYL BARNES
DB 475 PG 511
PC 1PG 20C

GREGORY B.
LASSITER, SR.
DB 587 PG 227
PC 1PG 20C

DANIEL A. STALFIRE
& JODIK. STALFIRE
DB 805 PG 575

MARY ALICE COFIELD HEIRS
DB 486 PG 172
PC 1PG 20C

EAST FAIRVIEW DRIVE
SR 1234

RK&K
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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5701B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

NEW BEGINNING FULL GOSPEL BAPTIST CHURCH, INC.
DB 511PG 738
BM 3 PG 210

DANIEL A. STALFIRE
& JODIK. STALFIRE
DB 805 PG 575

MELODY GREENE MOORING
DB 543 PG 311
PC 1PG 80E

HAROLD WILLIAM JOHNSTON
& DONNA W. JOHNSTON
DB 632 PG 682
PC 1PG 122H

DANIEL A. STALFIRE
& JODIK. STALFIRE
DB 805 PG 575

-Y5- POT Sta. 17+91.63

END CONSTRUCTION
-Y5- POT Sta. 16+22.19

-L- POT Sta. 127+47.15=
-Y5- POT Sta. 14+64.69

MATCH TO SHEET 11 -L- STA. 116+00.00

MATCH TO SHEET 13 -L- STA. 130+00.00

EXISTING R/W

US 158 WBL
30' BST

US 158 EBL
30' BST

120+00

125+00

L 118+00 HA

L 121+00 HA

S 77° 15' 45.8" E

-L-

L 123+00 HA

L 125+00 HA

L 126+90 HA

L 129+00 H

154.00

TRAFFIC CONTROL BOX

L 118+00 HA RT

EXISTING R/W

CONSERVATION EASEMENT AREA 2
DB 600 PG 544

DANIEL A. STALFIRE
& JODIK. STALFIRE
DB 805 PG 575

CHERYL B. COOPER
DB 561PG 798

RUDOLPH WILLIAMS, JR. &
FELICIA T. WILLIAMS
DB 634 PG 592

SARAH WILLIAMS
DB 785 PG 401

JANIS R. SMITH &
DARIUS T. SMITH
DB 692 PG 886

RONALD E. POWERS &
KENNETH E. POWERS
DB 566 PG 632

SHIRLEY J. WILLIAMS
DB 657 PG 421

ALFRED WINTON HARRIS &
OLIVIA BRANCH HARRIS
DB 370 PG 208 HARRIS

N 13° 47' 11.8" W

-Y5-

BEGIN CONSTRUCTION
-Y5- POT Sta. 10+00.00

-Y5- POT Sta. 9+75.40

10+00

NORMA A. CARTER &
JOYCE ARCHER TURPIN
WF 07-E-209
DB 331PG 295

BENTHAL BRIDGE #29 BRIDGE NO. 250160

6' CONC. C

2 LANES

ASPH

GR

EXISTING R/W

EXP

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	13
R/W 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 143+19.91
Δ = 8° 01' 13.1" (RT)
D = 0° 30' 01.4"
L = 1,602.78'
T = 802.70'
R = 11,450.00'
SE = EXIST.

NAD 83/NA 2011

SHEET 12 -L- STA. 130+00.00

MATCH TO SHEET 14 -L- STA. 144+00.00

DANIEL A. STALFIRE & JODI K. STALFIRE
DB 805 PG 575

CONSERVATION EASEMENT AREA 1 (ENTIRE PARCEL)
DB 600 PG 544

LOT 4
PC 1 PG 31C

HEWISSE PAUL LASSITER HEIRS
DB 467 PG 790
PC 1 PG 31C

MEREDITH M. COPELAND
DB 502 PG 871

LILLIAN LEE ROBINSON PUGH
DB 760 PG 158
BM 4 PG 3

KATIE VAUGHAN PARKER
DB 382 PG 366
BM 4 PG 3

CHOWAN COLLEGE
DB 747 PG 171
PC 1 PG 178D

EXISTING R/W

L 137+00 HA LT CUT

L 137+00 HA LT FILL

-L- PC Sta. 135+17.21

TRAFFIC CONTROL BOX

US 158 WBL 30' BST

US 158 EBL 30' BST

L 133+00 HA

S 77° 15' 45.8" E

L 135+00 HA

135+00

L 137+00 HA

140+00

L 131+00 HA

-L-

A

SHIRLEY J. WILLIAMS
DB 657 PG 421

ALFRED WINTON HARRIS & OLIVIA BRANCH HARRIS
DB 370 PG 208

NORMA A. CARTER & JOYCE ARCHER TURPIN
WF 07-E-209
DB 331 PG 205

-TMG R/W

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

CHOWAN COLLEGE
DB 747 PG 171
PC 1PG 178D

CHOWAN COLLEGE
DB 747 PG 169
PC 1PG 178D

MEREDITH M. COPELAND
DB 502 PG 871

MATCH TO SHEET 13 -L- STA. 144+00.00

US 158 WBL
30' BSF

US 158 EBL
30' BSF

145+00

150+00

-L-

-L- PT Sta. 151+19.99

-L- PC Sta. 154+92.65

S 69° 14' 32.7" E

155+00

MATCH TO SHEET 15 -L- STA. 157+00.00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5701B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

CHOWAN COLLEGE
DB 747 PG 169
PC 1PG 178D

CHOWAN UNIVERSITY
DB 749 PG 945

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

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

EXISTING R/W

US 158 WBL
30' BST

US 158 EBL
30' BST

160+00

165+00

-L-

L 162+50 HA

L 164+50 HA

L 166+50 HA

L 168+50 HA

L 162+50 HA RT

EXISTING R/W

MEREDITH M. COPELAND
DB 502 PG 871

STEVEN R. BURGESS
DB 813 PG 292

R. H. UNDERWOOD
DB 263 PG 237

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W5701B_GEO_RDWY

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
W-5701B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

-Y7- POT Sta. 19+75.44

END CONSTRUCTION
-Y7- POT Sta. 19+64.21

-Y6- PT Sta. 13+72.90

CHOWAN COLLEGE RD SR 1179
24' BST

EXISTING R/W

CHOWAN COLLEGE
DB 391 PG 212

-L- PC Sta. 176+10.65

-L- PT Sta. 175+70.78

-Y7- PT Sta. 15+39.45

-L- PCC Sta. 181+04.61

END CONSTRUCTION
-Y6- POC Sta. 11+51.07

-L- POC Sta. 172+92.10=
-Y6- POT Sta. 10+00.00

-Y6- PC Sta. 11+30.75

N 0° 53' 18.6" W

-Y6-

CONC

-Y7-
N 6° 32' 12.7" E

NC 11
24' BST

8" PVC

EOT

FOM / LOCATE STATION

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

MATCH TO SHEET 15 -L- STA. 170+00.00

MATCH TO SHEET 17 -L- STA. 184+00.00

L 175+50 HA

175+00

N 89° 52' 06.4" E

L 177+50 HA

L 179+50 HA

180+00

L 183+00 HA

US 158 WBL
30' BST

US 158 EBL
30' BST

TRAFFIC CONTROL BOX

L 173+50 HA RT

01-0574
EMPTY

FOM / LOCATE STATION

-L- POC Sta. 181+74.13=
-Y7- POC Sta. 14+25.92

-Y7-

15+00

10+00

NC 11
36' BST

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

JESSE EDWARD VAUGHAN
DB 356 PG 104

R. H. UNDERWOOD
DB 263 PG 237

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

RIGHT MOVE REALTY, LLC &
TWO RIVERS INVESTMENTS, LLC &
ETERNE-NC, LLC
DB 6811PG 933
PC 1PG 150F

VERNON WILLIAM JOYNER HEIRS
WF 1A-570T
BM 2 PG 47

-L- PT Sta. 196+66.40

AGNES P. JOYNER
DB 507 PG 575

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

MATCH TO SHEET -L- STA. 197+00.00

EXISTING R/W

CONC

MTL

US 158 WBL
30' BST

US 158 EBL
30' BST

TRAFFIC CONTROL BOX

185+00

190+00

195+00

-L-

L 185+00 HA

L 187+00 HA

L 190+00 HA

L 193+00 HA

L 195+00 HA

L 197+00 HA

L 197+00 HA LT

N 69° 03' 49.5" E

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

VERNON WILLIAM JOYNER HEIRS
WF 1A-5707
BM 2 PG 47

AGNES P. JOYNER
DB 507 PG 575

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PROJECT REFERENCE NO.	SHEET NO.
W-5701B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NA 2011

MATCH TO SHEET 17 -L- STA. 197+00.00

L 197+00 HA LT

L 197+00 HA

L 199+00 HA RT

L 199+00 HA

L 201+00 HA

L 203+00 HA

AGNES P. JOYNER
DB 507 PG 575

AGNES P. JOYNER
DB 507 PG 575

PERCY E. BUNCH
DB 648 PG 792

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

END PROJECT W-5701B
-L- POT STA. 207+00.00

FOM / LOCATE STATION

EXISTING R/W

RIPRAP

RIPRAP

GR

US 158 WBL
30' BST

US 158 EBL
30' BST

200+00

205+00

210+00

-L-

N 69° 03' 49.5" E

MTL

CONC

INV=48.36'

35' RCP

INV=53.34' BRICK

OVERHEAD TRANSMISSION LINES

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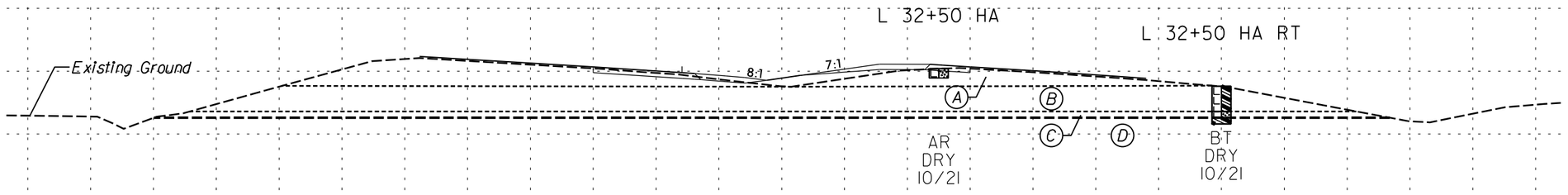
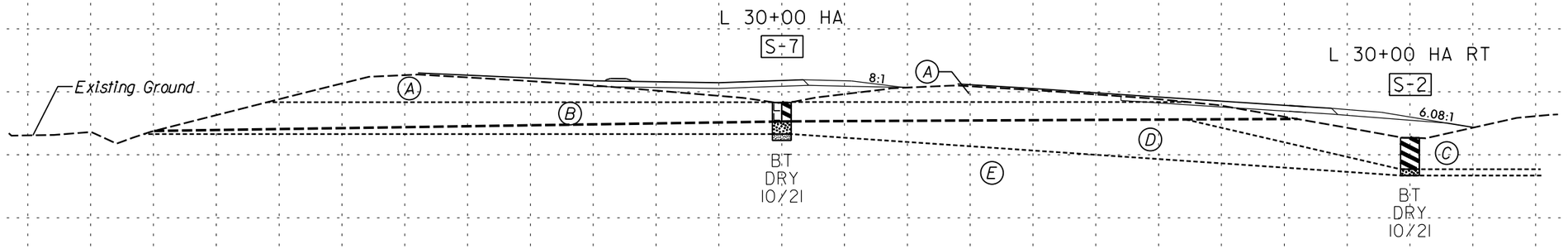
(A) **ROADWAY EMBANKMENT** Orange, loose, silty fine to coarse SAND, little to some gravel, moist
(B) Orange, medium dense, silty fine to coarse sandy CLAY, moist
(C) Gray, medium dense, silty fine to coarse SAND, moist
(D) **UNDIVIDED COASTAL PLAIN** Brown, stiff, sandy CLAY, wet

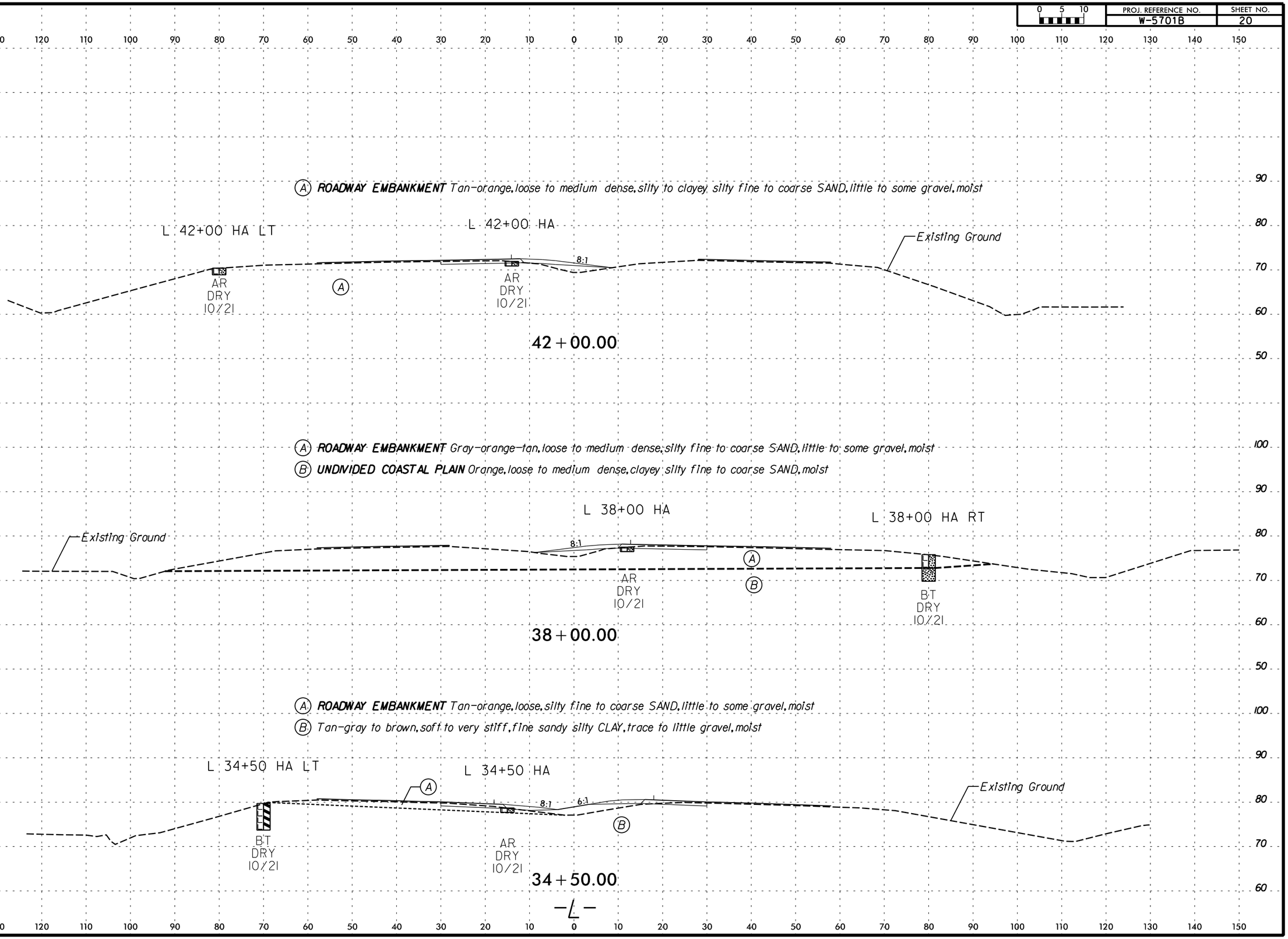


SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I	% BY WEIGHT				% PASSING SIEVE			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-2	30+00	100' RT	1.9-2.4'	A-7-6	46	27	32	31	5	33	86	79	38	18	ND
S-7	30+00	0' CL	5.0-5.5'	A-4	23	9	15	45	11	29	99	94	43	18	ND

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



-L-



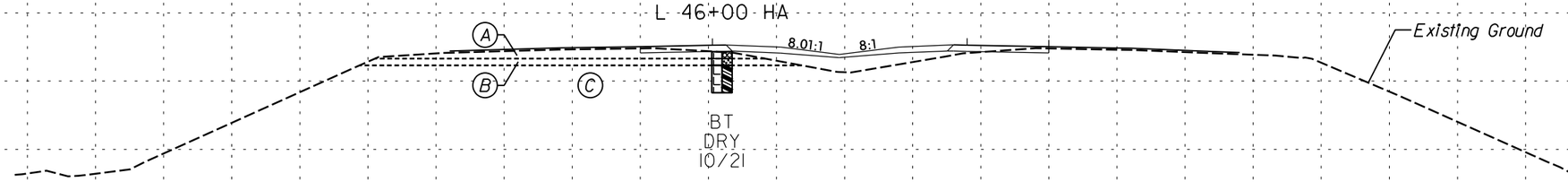
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

(A) **ROADWAY EMBANKMENT** *Brown, dense to very dense, gravelly SAND, moist*

(B) *Tan-orange, medium dense, clayey silty fine to coarse SAND, trace gravel, moist*

(C) *Tan-gray to brown, medium stiff to stiff, fine to coarse sandy CLAY, trace gravel, moist*

L 46+00 HA

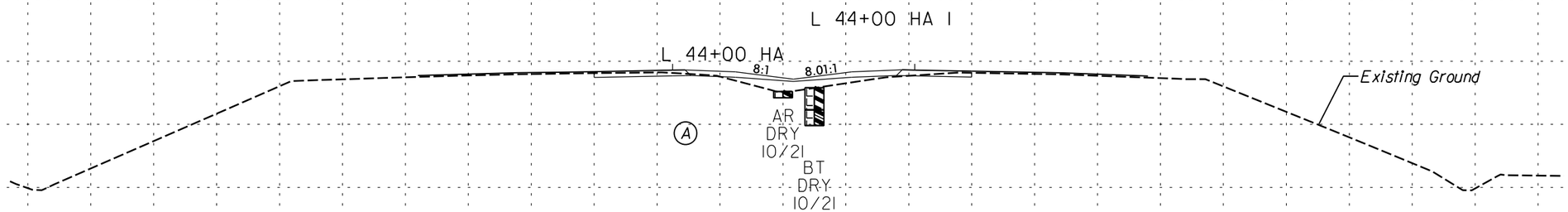


46+00.00

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

L 44+00 HA

L 44+00 HA I



44+00.00

—L—

80 70 60 50 40 90 80 70 60 50 40 30

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

\\Fs\Cloud\Projects\2020\20123_NCGeoLSA\001_W-5701B RDWY\Design\Geotech\InvestigationDesign\W5701B_GEO_RDWY - REV1\CADD_GEOTECH\xsc\W5701B_GEO_XSLL.dgn

7/27/2022
skoontz

(A) **ROADWAY EMBANKMENT** Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist

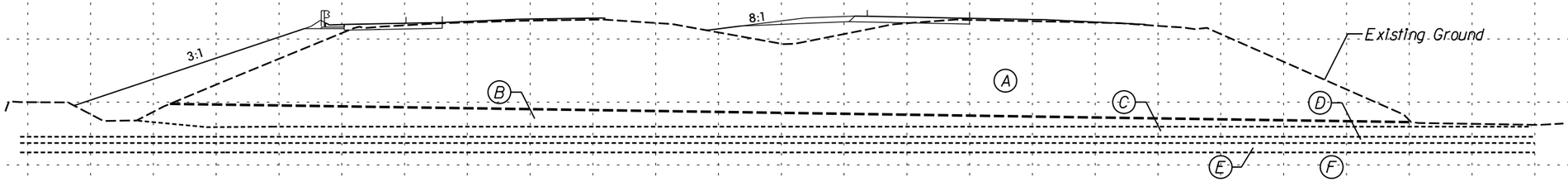
(B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist

(C) Gray to orange, soft to medium stiff, fine to coarse sandy slightly plastic CLAY, wet

(D) Gray, loose to medium dense, clayey fine to coarse SAND, wet

(E) Gray, soft to medium stiff, silty CLAY, saturated

(F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated



48+50.00

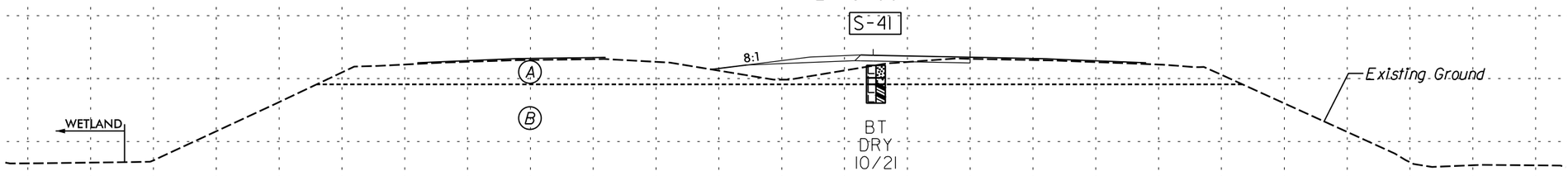
SOIL TEST RESULTS

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

(A) **ROADWAY EMBANKMENT** Orange-brown, medium dense, silty to clayey fine to coarse SAND, trace to little gravel, moist

(B) Orange to gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, little gravel, moist

L 48+00 HA



48+00.00

—L—

(A) ***ROADWAY EMBANKMENT*** *Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist*

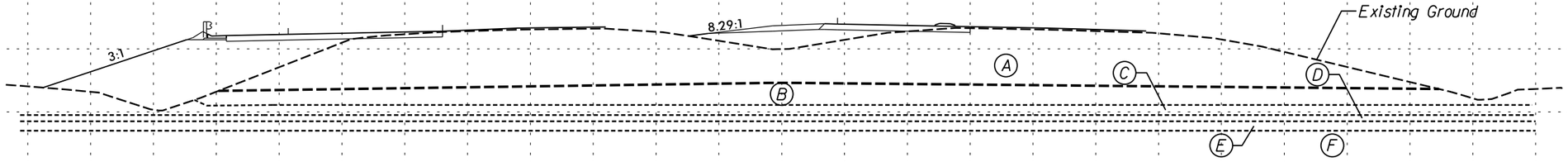
(B) ***UNDIVIDED COASTAL PLAIN*** *Brown-tan, loose to medium dense, clayey fine SAND, moist*

(C) *Gray to orange, soft to medium stiff, fine to caorse sandy slightly plastic CLAY, wet*

(D) *Gray, loose to medium dense, clayey fine to coarse SAND, wet*

(E) *Gray, soft to medium stiff, silty CLAY, saturated*

(F) *Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated*



49 + 50.00

(A) ***ROADWAY EMBANKMENT*** *Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist*

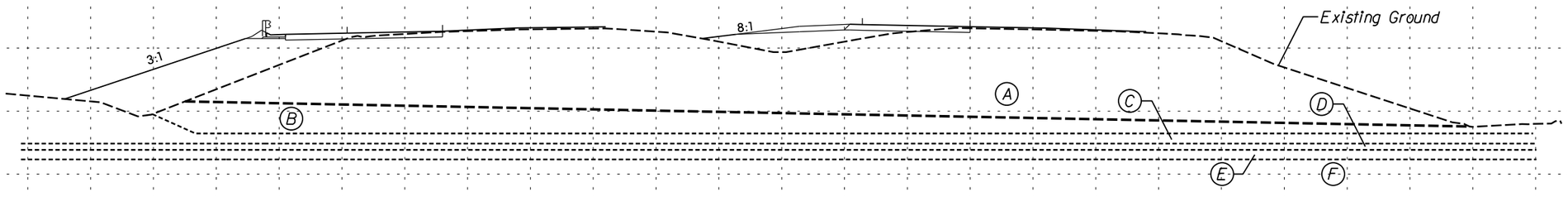
(B) ***UNDIVIDED COASTAL PLAIN*** *Brown-tan, loose to medium dense, clayey fine SAND, moist*

(C) *Gray to orange, soft to medium stiff, fine to caorse sandy slightly plastic CLAY, wet*

(D) *Gray, loose to medium dense, clayey fine to coarse SAND, wet*

(E) *Gray, soft to medium stiff, silty CLAY, saturated*

(F) *Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated*



49 + 00.00

-L-

SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVE			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-24	50+00	90' LT	4.5-5.0'	A-6	30	14	17	40	11	32	100	93	47	19	ND

(A) ***ROADWAY EMBANKMENT*** *Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty moderately plastic CLAY, trace of organic matter (wood fragments), moist*

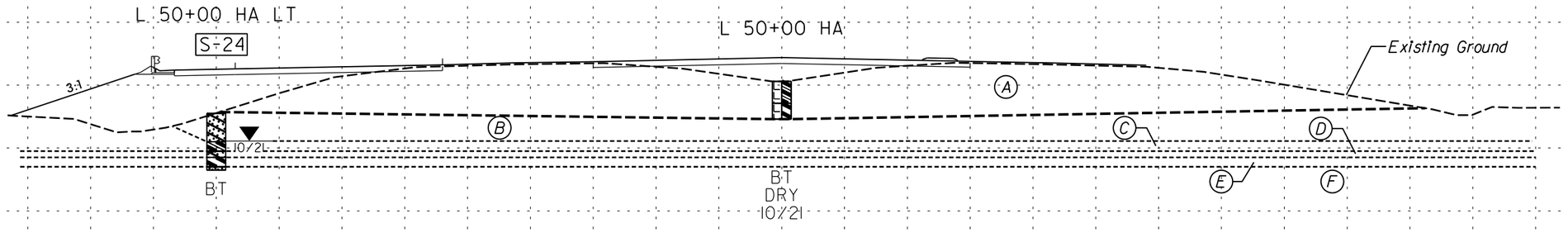
(B) ***UNDIVIDED COASTAL PLAIN*** *Brown-tan, loose to medium dense, clayey fine SAND, moist*

(C) *Gray to orange, soft to medium stiff, fine to caorse sandy slightly plastic CLAY, wet*

(D) *Gray, loose to medium dense, clayey fine to coarse SAND, wet*

(E) *Gray, soft to medium stiff, silty CLAY, saturated*

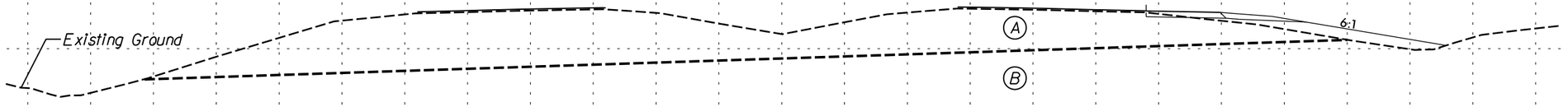
(F) *Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated*



50+00.00

(A) **ROADWAY EMBANKMENT** Brown-tan, loose to dense, silty to silty clayey fine to coarse SAND, little gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Brown to dark gray, soft to medium stiff, fine to coarse sandy to sandy silty CLAY, little gravel, moist to saturated



69+00.00

(A) **ROADWAY EMBANKMENT** Brown to tan-gray, medium stiff, fine to coarse sandy to sandy silty CLAY, trace of organic matter (wood fragments), moist

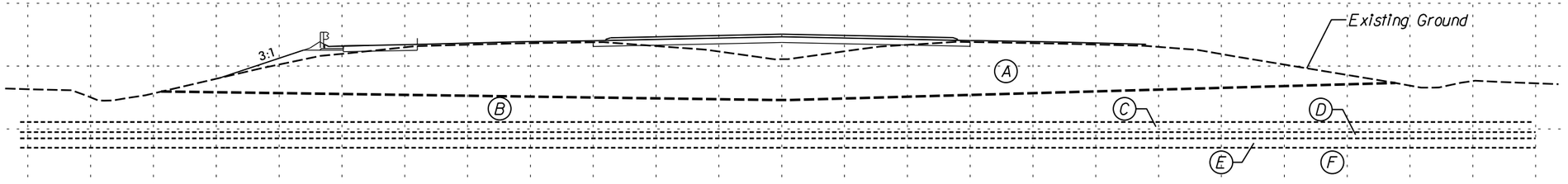
(B) **UNDIVIDED COASTAL PLAIN** Brown-tan, loose to medium dense, clayey fine SAND, moist

(C) Gray to orange, soft to medium stiff, fine to caorse sandy slightly plastic CLAY, wet

(D) Gray, loose to medium dense, clayey fine to coarse SAND, wet

(E) Gray, soft to medium stiff, silty CLAY, saturated

(F) Gray, loose to medium dense, clayey silty coarse to fine SAND, saturated



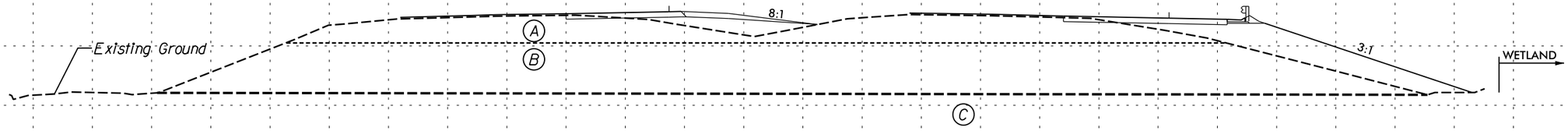
50+50.00

-L-

Ⓐ **ROADWAY EMBANKMENT** Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist

Ⓑ Brown, medium stiff to stiff, fine to coarse sandy moderately plastic CLAY, moist

Ⓒ **UNDIVIDED COASTAL PLAIN** Dark gray, soft to medium stiff, fine to coarse sandy CLAY, saturated



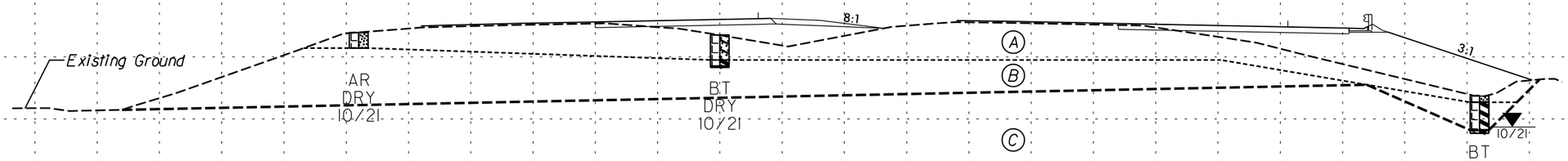
70+50.00

Ⓐ **ROADWAY EMBANKMENT** Brown-tan, loose to dense, silty to silty clayey fine to coarse SAND, little gravel, moist

Ⓑ Brown, soft to medium stiff, fine to coarse sandy to sandy silty CLAY, little gravel, little to some geotextile fabric, moist to saturated

Ⓒ **ALLUVIAL** Dark gray, soft to medium stiff, fine to coarse sandy CLAY, saturated

L 70+00 HA LT | L 70+00 HA | L 70+00 HA RT

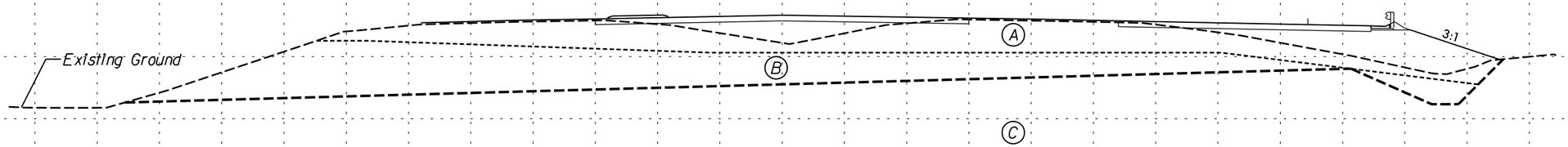


70+00.00

Ⓐ **ROADWAY EMBANKMENT** Brown-tan, loose to dense, silty to silty clayey fine to coarse SAND, little gravel, moist

Ⓑ Brown, soft to medium stiff, fine to coarse sandy to sandy silty CLAY, little gravel, little to some geotextile fabric, moist to saturated

Ⓒ **ALLUVIAL** Dark gray, soft to medium stiff, fine to coarse sandy CLAY, saturated



69+50.00

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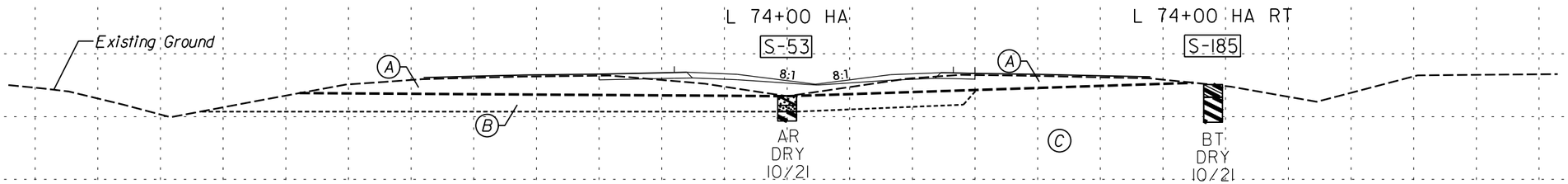
SOIL TEST RESULTS

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

(A) **ROADWAY EMBANKMENT** Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Orange-brown to gray, medium dense, clayey to silty fine to coarse to fine SAND, moist to wet

(C) Brown-tan, orange, brown, tan-gray, gray, soft to stiff, fine silty sandy to sandy silty moderately to highly plastic CLAY, moist



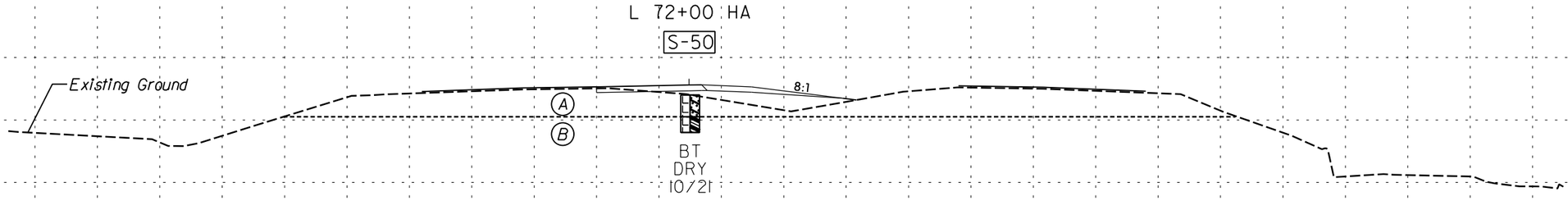
74+00.00

SOIL TEST RESULTS

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

(A) **ROADWAY EMBANKMENT** Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist

(B) Brown, medium stiff to stiff, fine to coarse sandy moderately plastic CLAY, moist

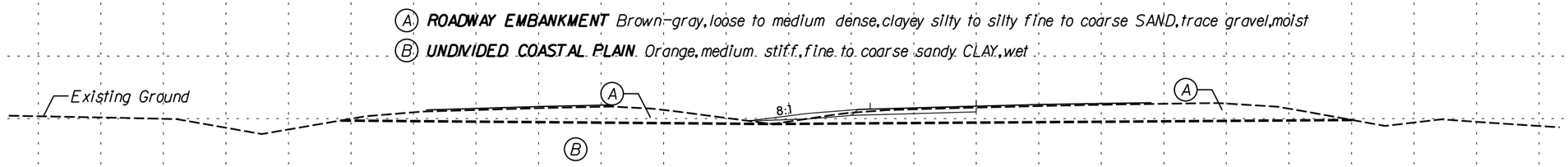


72+00.00

-L-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	W-5701B	28

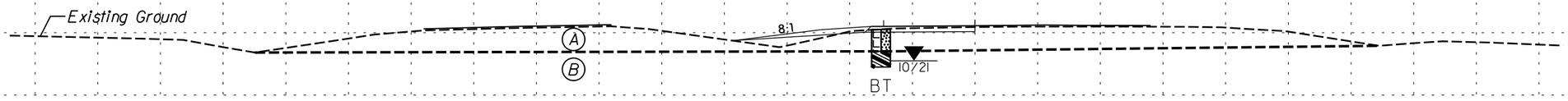
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



(A) **ROADWAY EMBANKMENT** Brown-gray, loose to medium dense, clayey silty to silty fine to coarse SAND, trace gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Orange, medium stiff, fine to coarse sandy CLAY, wet

79+00.00

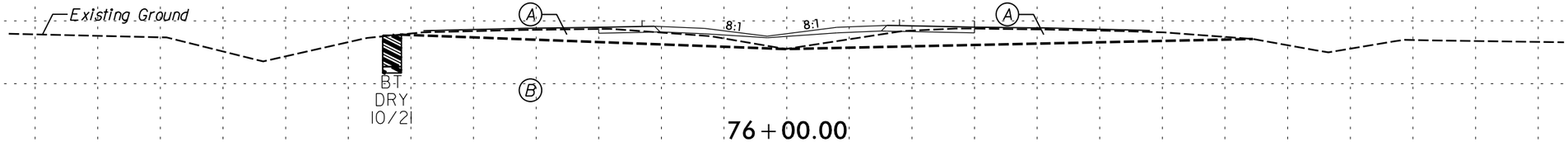


(A) **ROADWAY EMBANKMENT** Brown-gray, loose to medium dense, clayey silty to silty fine to coarse SAND, trace gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Orange, medium stiff, fine to coarse sandy CLAY, wet

L 78+00 HA

78+00.00



(A) **ROADWAY EMBANKMENT** Brown-tan, medium dense to dense, clayey coarse SAND, little to some gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Brown to gray-orange, soft to stiff, silty sandy to silty CLAY, moist

L 76+00 HA LT

76+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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	W-5701B	29

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

80
70
60
50
90

Existing Ground

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

80 + 50.00

(A) **ROADWAY EMBANKMENT** *Brown-gray, loose to medium dense, clayey silty to silty fine to coarse SAND, trace gravel, moist*

Existing Ground

8:1

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

80 + 00.00

(A) **ROADWAY EMBANKMENT** *Brown-gray, loose to medium dense, clayey silty to silty fine to coarse SAND, trace gravel, moist*

Existing Ground

8:1

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

79 + 50.00

$-L-$

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

6/23/16

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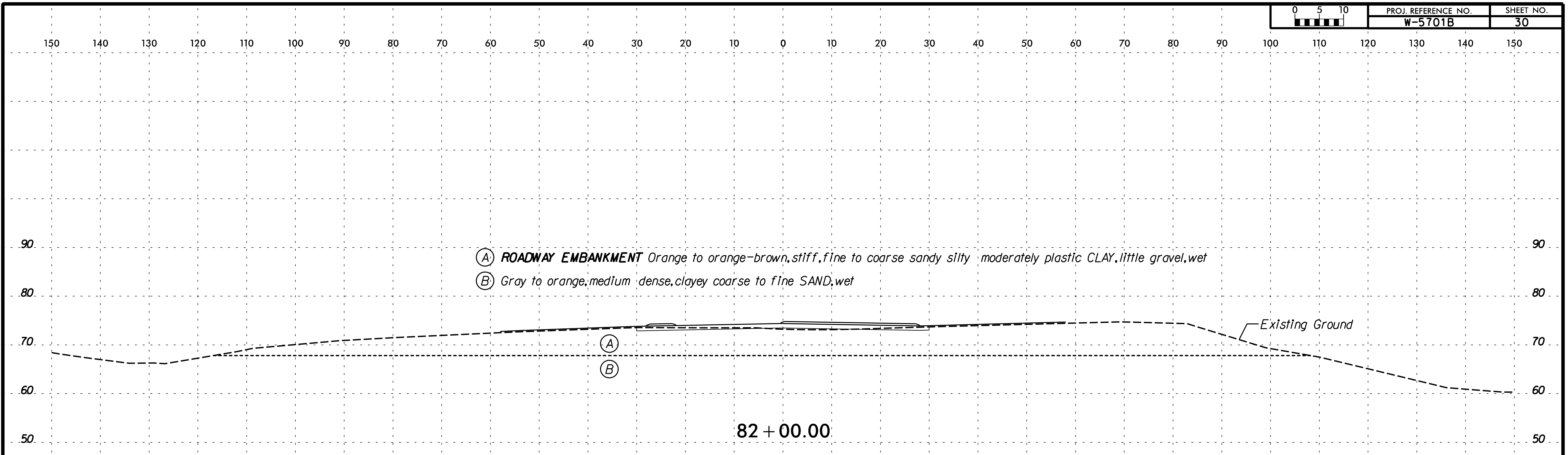
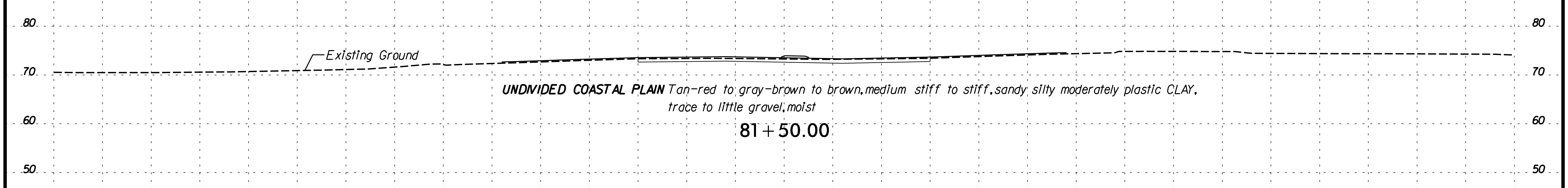


Ⓐ **ROADWAY EMBANKMENT** *Orange to orange-brown, stiff, fine to coarse sandy silty moderately plastic CLAY, little gravel, wet*

Ⓑ *Gray to orange, medium dense, clayey coarse to fine SAND, wet*

82+00.00



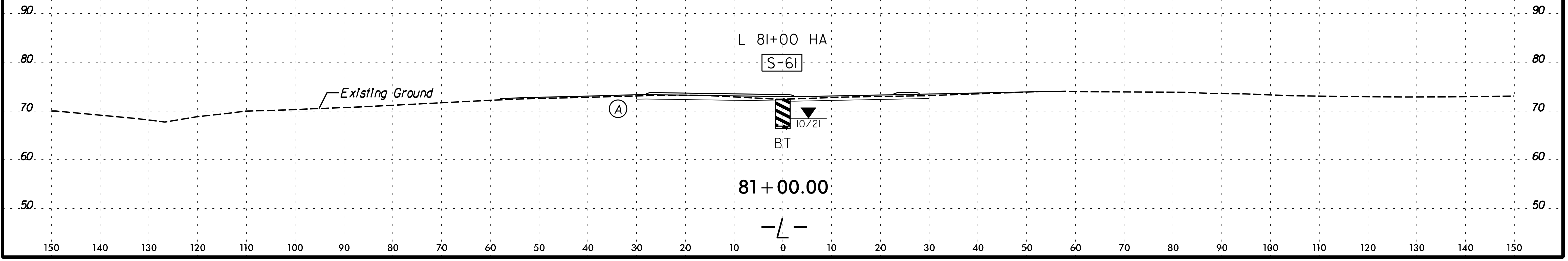
UNDIVIDED COASTAL PLAIN *Tan-red to gray-brown to brown, medium stiff to stiff, sandy silty moderately plastic CLAY, trace to little gravel, moist*

81+50.00

SOIL TEST RESULTS

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

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



81+00.00

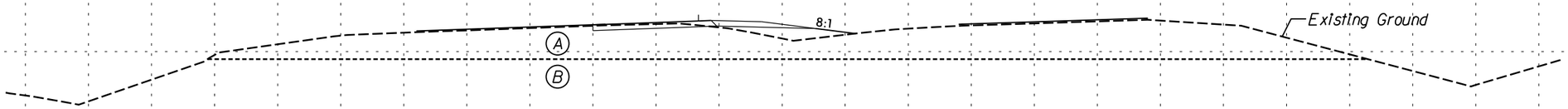
-L-

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

90 80 70 60 50

(A) **ROADWAY EMBANKMENT** Orange to orange-brown, stiff, fine to coarse sandy silty moderately plastic CLAY, little gravel, wet

(B) Gray to orange, medium dense, clayey coarse to fine SAND, wet

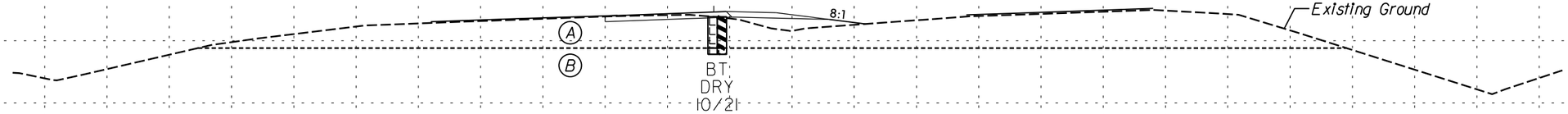


83+50.00

(A) **ROADWAY EMBANKMENT** Orange to orange-brown, stiff, fine to coarse sandy silty moderately plastic CLAY, little gravel, wet

(B) Gray to orange, medium dense, clayey coarse to fine SAND, wet

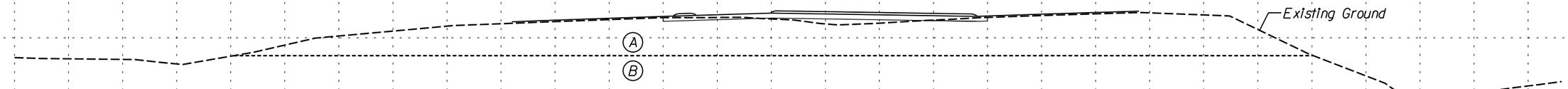
L 83+00 HA



83+00.00

(A) **ROADWAY EMBANKMENT** Orange to orange-brown, stiff, fine to coarse sandy silty moderately plastic CLAY, little gravel, wet

(B) Gray to orange, medium dense, clayey coarse to fine SAND, wet



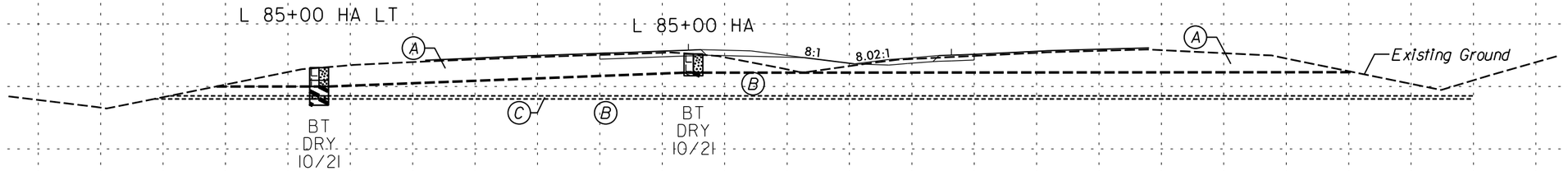
82+50.00

-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

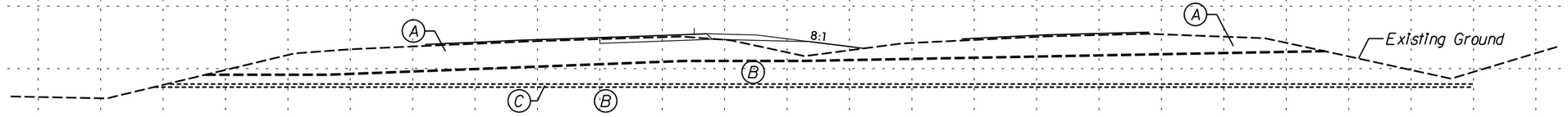
100 90 80 70 60 50

(A) **ROADWAY EMBANKMENT** *Brown, gray, loose to medium dense, clayey silty to silty fine to coarse SAND, moist*
(B) **UNDIVIDED COASTAL PLAIN** *Gray and brown, medium stiff to stiff, fine sandy to sandy silty CLAY, moist to wet*
(C) *Gray to tan, medium dense, silty fine to coarse SAND (A-2-4), wet*



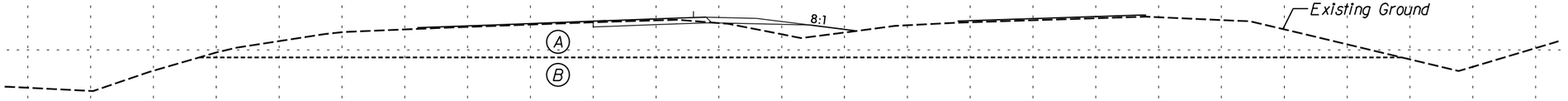
85+00.00

(A) **ROADWAY EMBANKMENT** *Brown, gray, loose to medium dense, clayey silty to silty fine to coarse SAND, moist*
(B) **UNDIVIDED COASTAL PLAIN** *Gray and brown, medium stiff to stiff, fine sandy to sandy silty CLAY, moist to wet*
(C) *Gray to tan, medium dense, silty fine to coarse SAND (A-2-4), wet*



84+50.00

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



84+00.00

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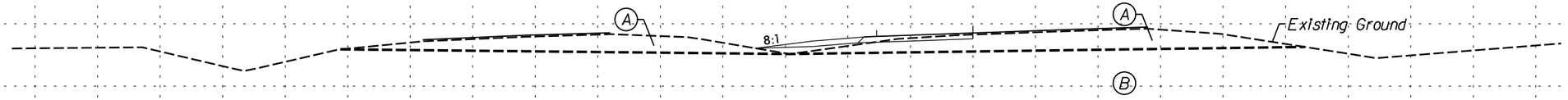
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

90
80
70
60

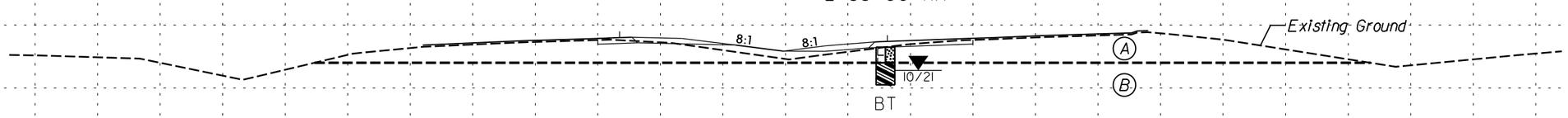
(A) **ROADWAY EMBANKMENT** Black-tan, loose to medium dense, silty fine SAND, moist
(B) **UNDIVIDED COASTAL PLAIN** Tan to tan-gray, soft to medium stiff, silty sandy CLAY, moist



90+00.00

(A) **ROADWAY EMBANKMENT** Black-tan, loose to medium dense, silty fine SAND, moist
(B) **UNDIVIDED COASTAL PLAIN** Tan to tan-gray, soft to medium stiff, silty sandy CLAY, moist

L 89+00 HA

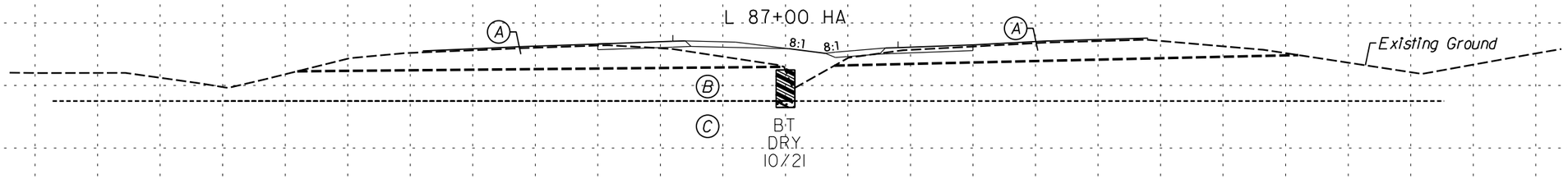


89+00.00

100
90
80
70
60
50

(A) **ROADWAY EMBANKMENT** Brown, gray, loose to medium dense, clayey silty to silty fine to coarse SAND, moist
(B) **UNDIVIDED COASTAL PLAIN** Brown-orange to orange-gray, medium stiff, fine to coarse sandy CLAY, trace of organic matter (wood fragments), wet
(C) Orange, medium dense, clayey fine to coarse SAND, wet

L 87+00 HA



87+00.00

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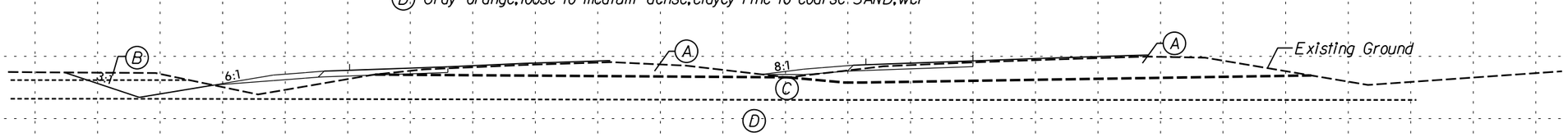
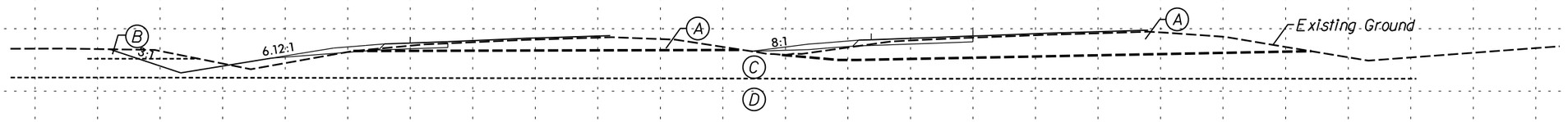
(A) **ROADWAY EMBANKMENT** *Gray, medium dense, clayey coarse to fine SAND, moist*
(B) **UNDIVIDED COASTAL PLAIN** *Gray, loose, silty fine SAND, wet*
(C) *Brown to gray, medium stiff to stiff, sandy to silty moderately plastic CLAY, moist to wet*
(D) *Gray-orange, loose to medium dense, clayey fine to coarse SAND, wet*



91+00.00

(A) **ROADWAY EMBANKMENT** *Gray, medium dense, clayey coarse to fine SAND, moist*
(B) **UNDIVIDED COASTAL PLAIN** *Gray, loose, silty fine SAND, wet*
(C) *Brown to gray, medium stiff to stiff, sandy to silty moderately plastic CLAY, moist to wet*
(D) *Gray-orange, loose to medium dense, clayey fine to coarse SAND, wet*



90+50.00

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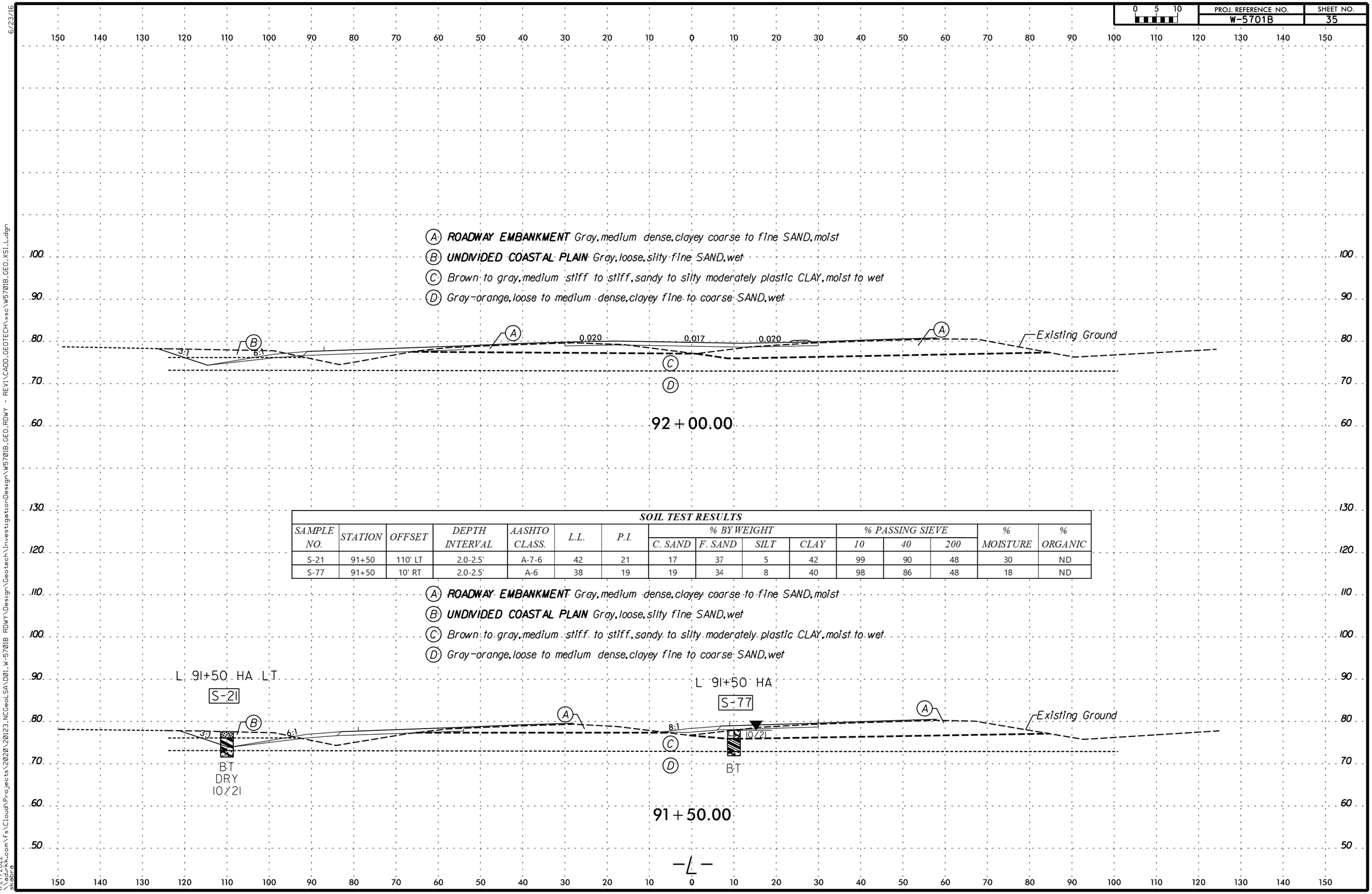


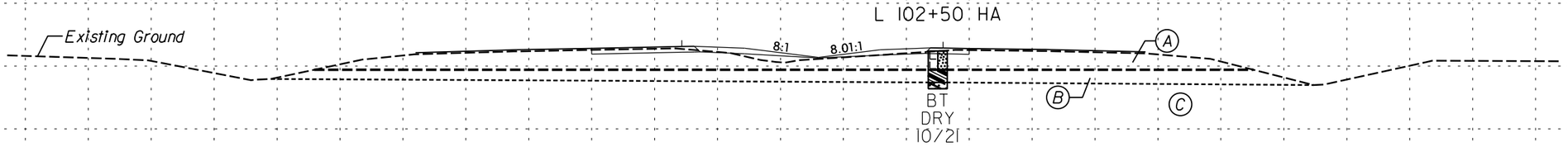
SOIL TEST RESULTS

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

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

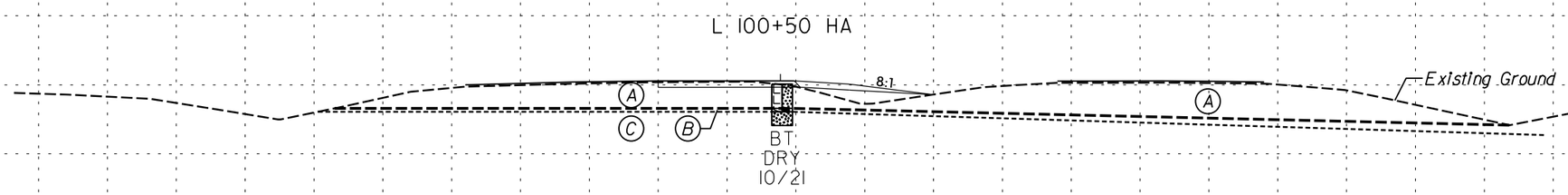
PROJ. REFERENCE NO.	SHEET NO.
W-5701B	36

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



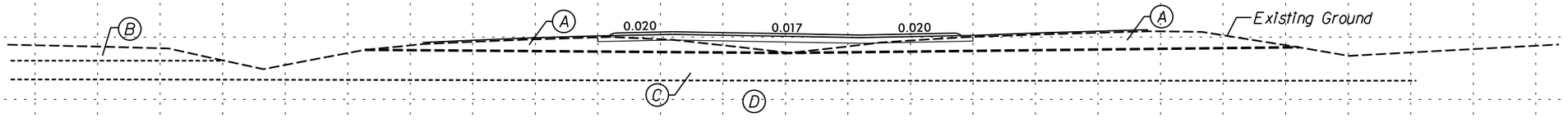
102+50.00

(A) ***ROADWAY EMBANKMENT*** *Tan and black, loose to medium dense, gravelly silty fine to coarse SAND, moist*
(B) ***UNDIVIDED COASTAL PLAIN*** *Gray-tan, medium stiff, fine to coarse sandy CLAY, moist*
(C) *Gray, loose, silty fine SAND, moist*



100+50.00

(A) ***ROADWAY EMBANKMENT*** *Gray, medium dense, clayey coarse to fine SAND, moist*
(B) ***UNDIVIDED COASTAL PLAIN*** *Gray, loose, silty fine SAND, wet*
(C) *Brown to gray, medium stiff to stiff, sandy to silty moderately plastic CLAY, moist to wet*
(D) *Gray-orange, loose to medium dense, clayey fine to coarse SAND, wet*



92+50.00

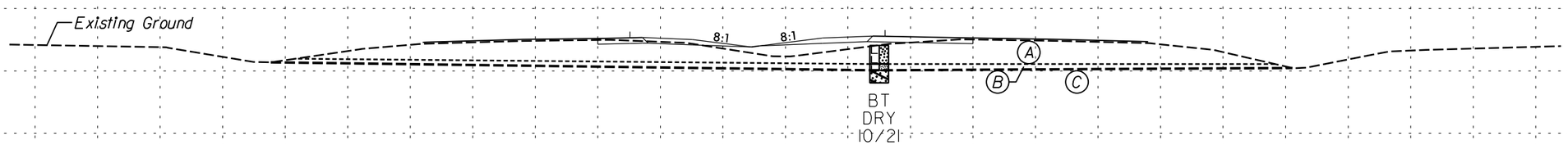
—L—

(A) **ROADWAY EMBANKMENT** Brown, loose to medium dense, silty fine SAND, trace clay balls, moist

(B) Tan, medium stiff to stiff, fine to coarse sandy slightly plastic SILT, moist

(C) **UNDIVIDED COASTAL PLAIN** Tan-orange, loose to medium dense, silty clayey fine to coarse SAND, moist

L 106+50 HA



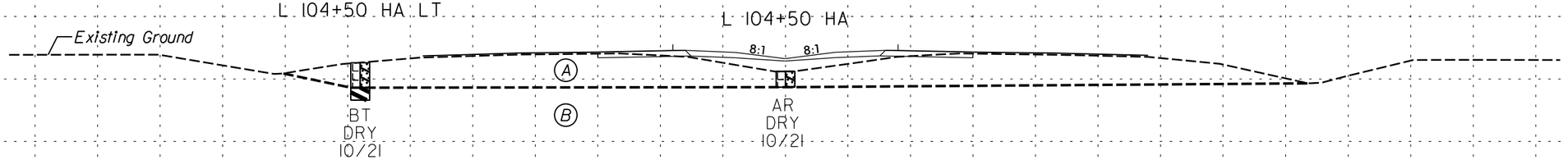
106+50.00

(A) **ROADWAY EMBANKMENT** Brown and tan, loose to medium dense, silty clayey to clayey fine to coarse SAND, trace gravel, interbedded clay, moist to wet

(B) **UNDIVIDED COASTAL PLAIN** Tan-red-gray, soft to medium stiff, fine sandy silty CLAY, moist

L 104+50 HA LT

L 104+50 HA



104+50.00

—L—

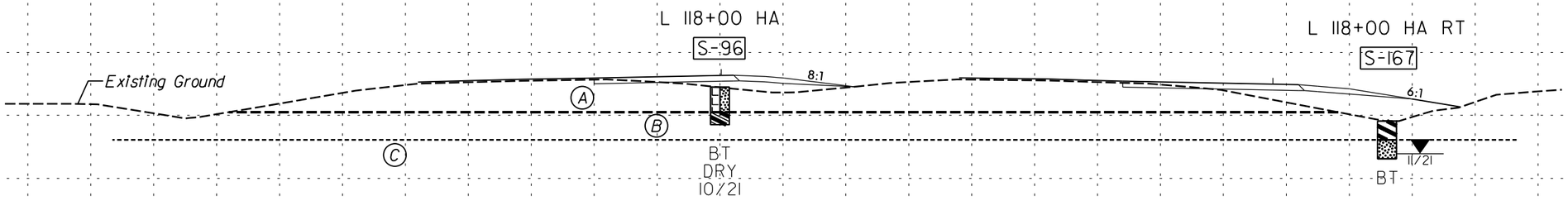
SOIL TEST RESULTS

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

(A) **ROADWAY EMBANKMENT** Brown-gray, loose to medium dense, clayey silty fine SAND, moist

(B) **UNDIVIDED COASTAL PLAIN** Orange-brown, tan to gray-tan-red, medium stiff to stiff, fine to coarse sandy to sandy silty slightly to moderately plastic CLAY, moist to wet

(C) Orange-brown, medium dense, silty coarse to fine SAND, saturated



118+00.00

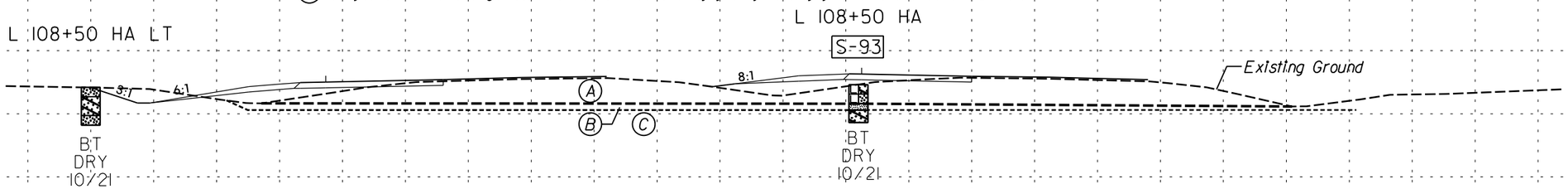
SOIL TEST RESULTS

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

(A) **ROADWAY EMBANKMENT** Brown to gray, medium dense to dense, clayey to silty fine to coarse SAND, moist

(B) **UNDIVIDED COASTAL PLAIN** Gray, medium stiff, coarse to fine sandy slightly plastic SILT, moist

(C) Gray, brown and orange, loose to medium dense, clayey silty to clayey fine to coarse SAND, moist



108+50.00

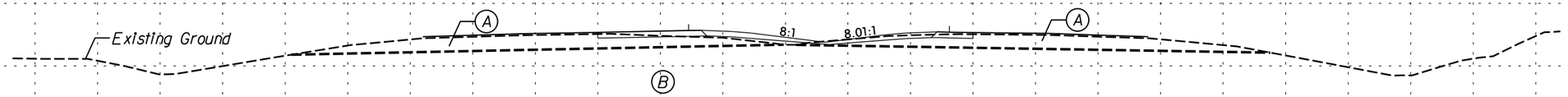
—℄—

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

110 100 90 80

(A) **ROADWAY EMBANKMENT** *Brown-gray, loose to medium dense, clayey silty fine SAND, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Orange to red to gray, medium stiff to stiff, sandy silty highly plastic CLAY, interbed of sand at 4.8', moist*

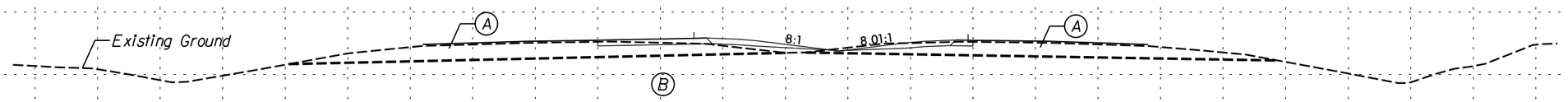


120+00.00

110 100 90 80

(A) **ROADWAY EMBANKMENT** *Brown-gray, loose to medium dense, clayey silty fine SAND, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Orange to red to gray, medium stiff to stiff, sandy silty highly plastic CLAY, interbed of sand at 4.8', moist*



119+50.00

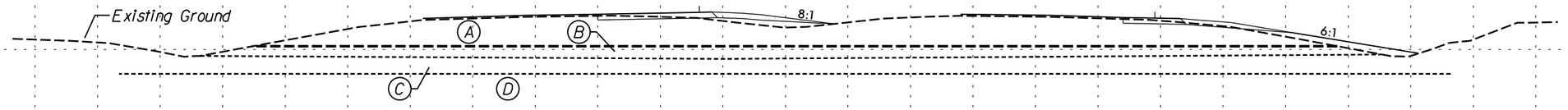
130 120 110 100 90 80 70

(A) **ROADWAY EMBANKMENT** *Brown-gray, loose to medium dense, clayey silty fine SAND, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Tan to gray-tan-red, medium stiff to stiff, silty fine to coarse sandy slightly plastic CLAY, moist*

(C) *Orange-brown, medium stiff, fine to coarse sandy silty moderately plastic CLAY, wet*

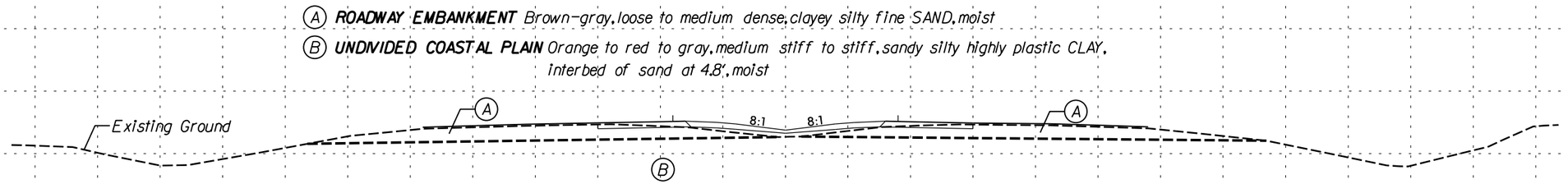
(D) *Orange-brown, medium dense, silty coarse to fine SAND, saturated*



119+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

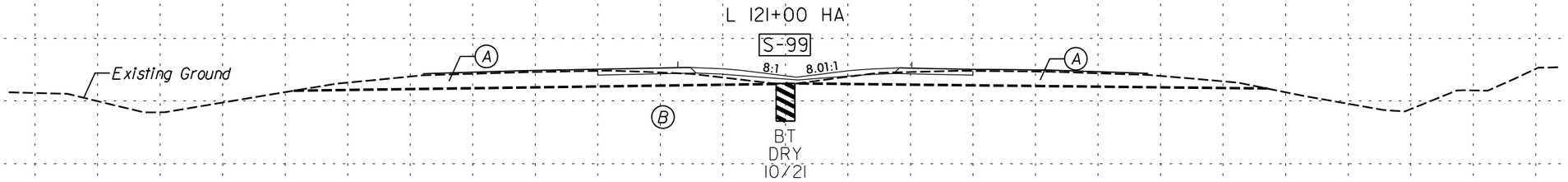


121+50.00

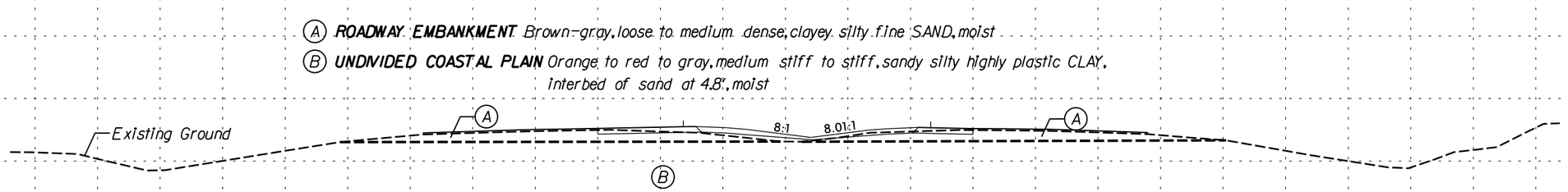
SOIL TEST RESULTS

SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVE			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-99	121+00	0' CL	3.0-3.5'	A-7-5	62	32	7	26	10	57	100	98	71	29	ND

Ⓐ ROADWAY EMBANKMENT Brown-gray, loose to medium dense, clayey silty fine SAND, moist
Ⓑ UNDIVIDED COASTAL PLAIN Orange to red to gray, medium stiff to stiff, sandy silty highly plastic CLAY, interbed of sand at 4.8', moist



121+00.00



120+50.00

—L—

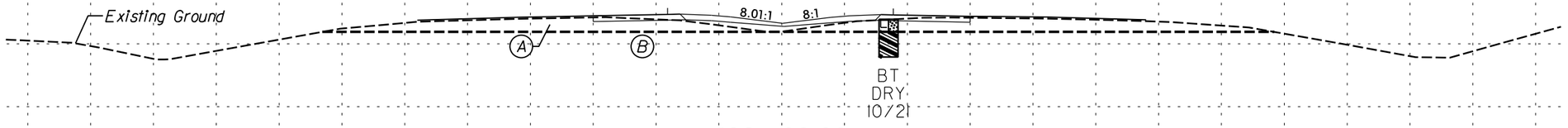
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

110 / 100 / 90 / 80 / 70

(A) **ROADWAY EMBANKMENT** Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Tan-orange to red-orange-gray to orange, medium stiff to stiff, fine to coarse sandy highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist

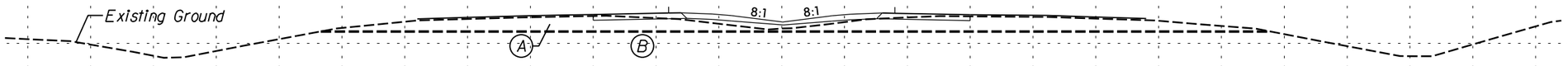
L 123+00 HA



123+00.00

(A) **ROADWAY EMBANKMENT** Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist

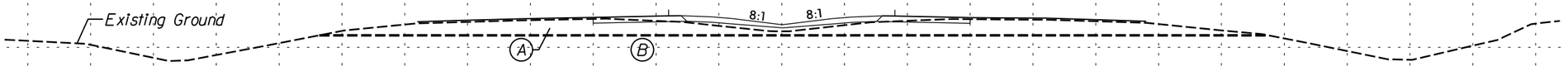
(B) **UNDIVIDED COASTAL PLAIN** Tan-orange to red-orange-gray to orange, medium stiff to stiff, fine to coarse sandy highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist



122+50.00

(A) **ROADWAY EMBANKMENT** Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist

(B) **UNDIVIDED COASTAL PLAIN** Tan-orange to red-orange-gray to orange, medium stiff to stiff, fine to coarse sandy highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist



122+00.00

—L—

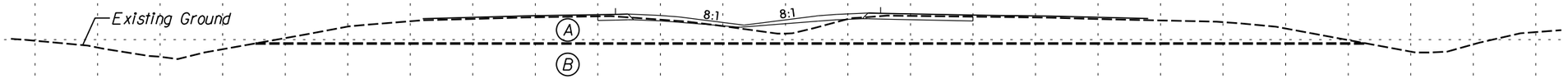
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	W-5701B	42

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

110 / 100 / 90 / 80

Ⓐ **ROADWAY EMBANKMENT** *Brown-gray to dark gray, medium dense, clayey silty to clayey fine to coarse SAND, trace gravel, moist*

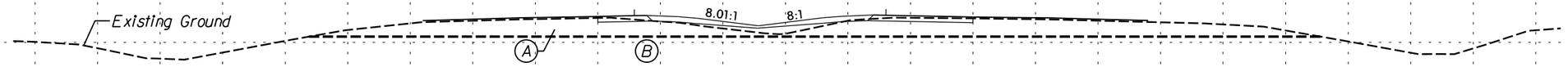
Ⓑ **UNDIVIDED COASTAL PLAIN** *Light gray, soft to medium stiff, fine to coarse sandy silty CLAY, moist*



124+50.00

Ⓐ **ROADWAY EMBANKMENT** *Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Tan-orange to red-orange-gray to orange, medium stiff to stiff, fine to coarse sandy highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist*



124+00.00

Ⓐ **ROADWAY EMBANKMENT** *Tan-orange, loose to medium dense, clayey silty fine to coarse SAND, trace gravel, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Tan-orange to red-orange-gray to orange, medium stiff to stiff, fine to coarse sandy highly plastic CLAY, interbedded sand layer at 3.0' about 0.3' thick, moist*

123+50.00

—L—

110 / 100 / 90 / 80 / 70

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

\\fs\Cloud\Projects\2020\20123.NCGeoLSA\001.W-5701B RDWY\Design\Geotech\InvestigationDesign\W5701B_GEO_RDWY - REV1\CADD_GEOTECH\xsec\W5701B_GEO_XSLL.dgn

7/27/2022
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skoontz

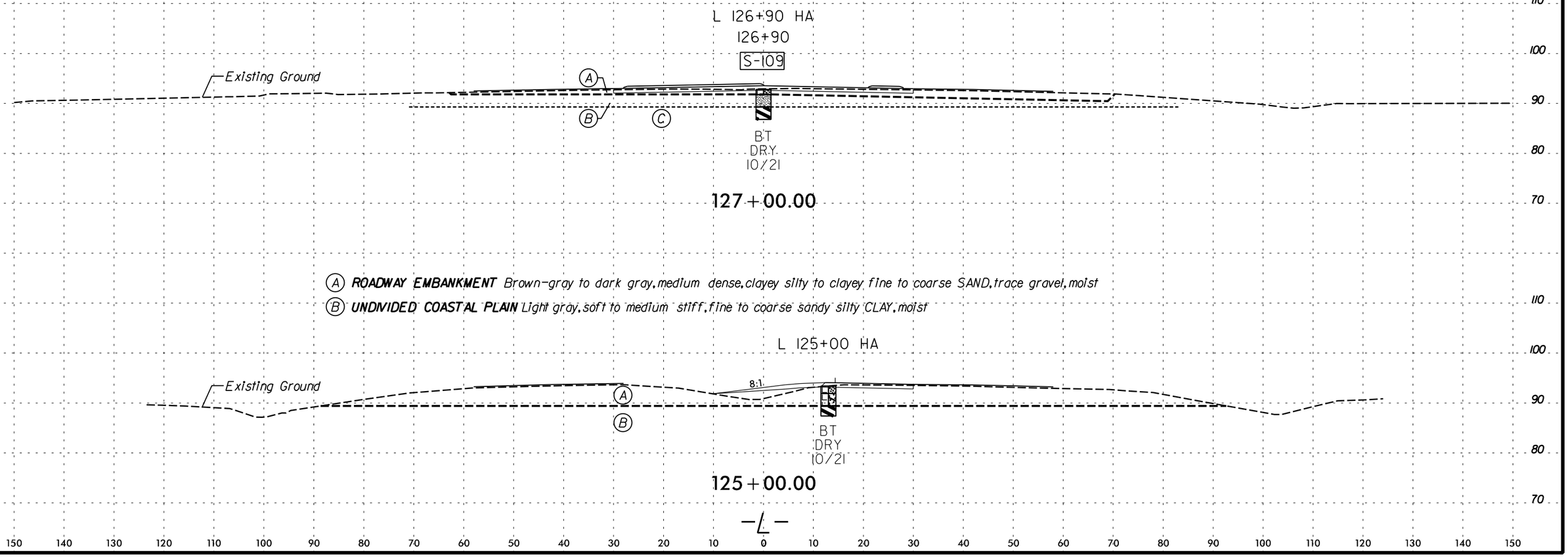
SOIL TEST RESULTS

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

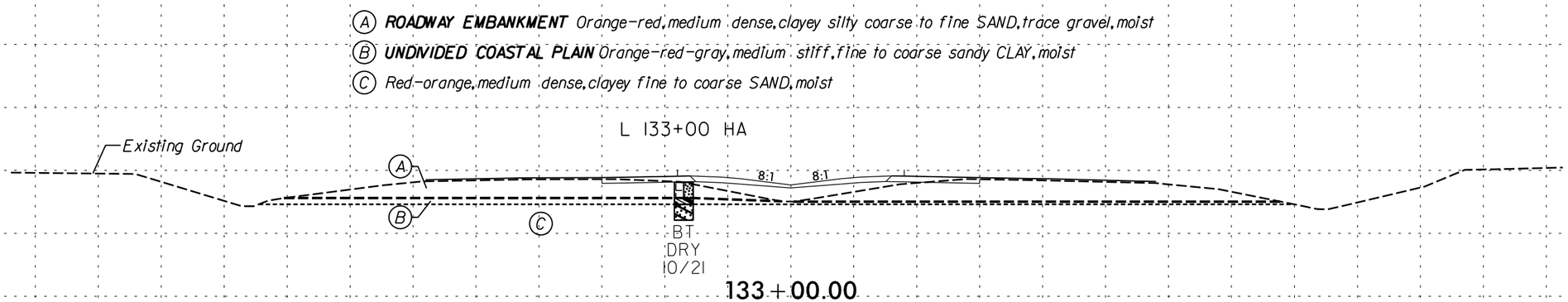
Ⓐ ***ROADWAY EMBANKMENT*** *Brown, medium dense, silty gravelly SAND, moist*

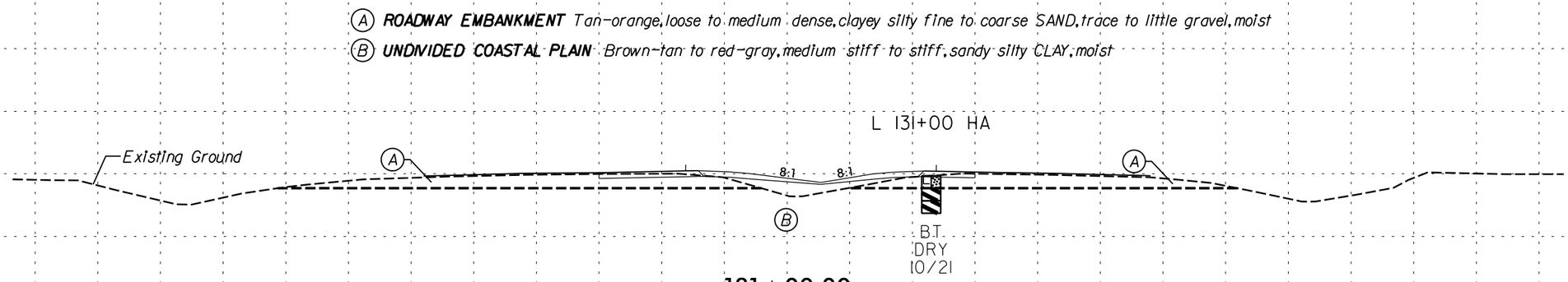
Ⓑ ***UNDIVIDED COASTAL PLAIN*** *Gray-tan to black, medium stiff to stiff, fine to coarse sandy non plastic SILT, trace of organic matter (roots), interbedded sand layer at 2.0', moist*

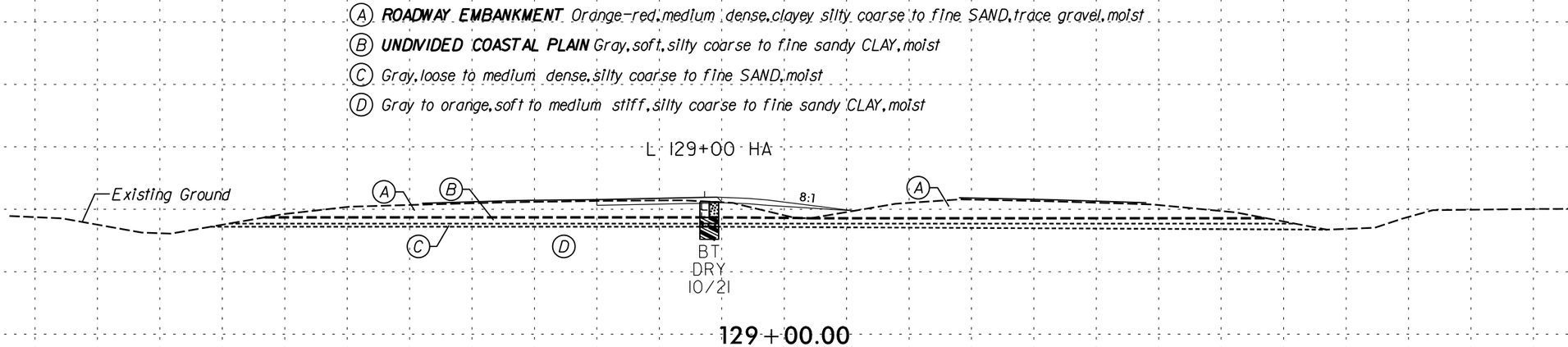
Ⓒ *Gray-tan to gray-black, very soft to medium stiff, fine to coarse sandy silty CLAY, moist*



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







120 110 100 90 80 70

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

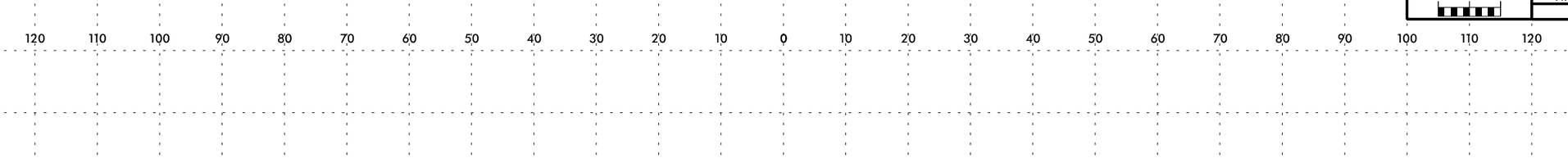
110 100 90 80 70 60

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

L 137+00 HA LT CUT

L 137+00 HA LT FILL

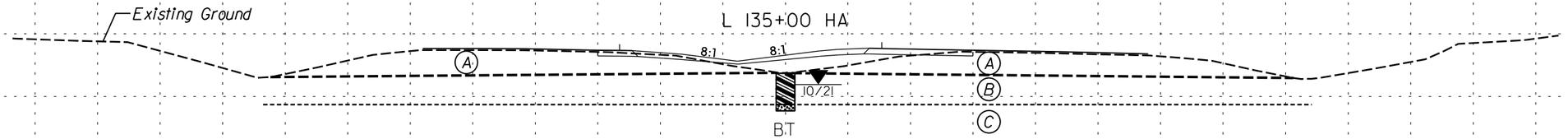
L 137+00 HA



137+00.00

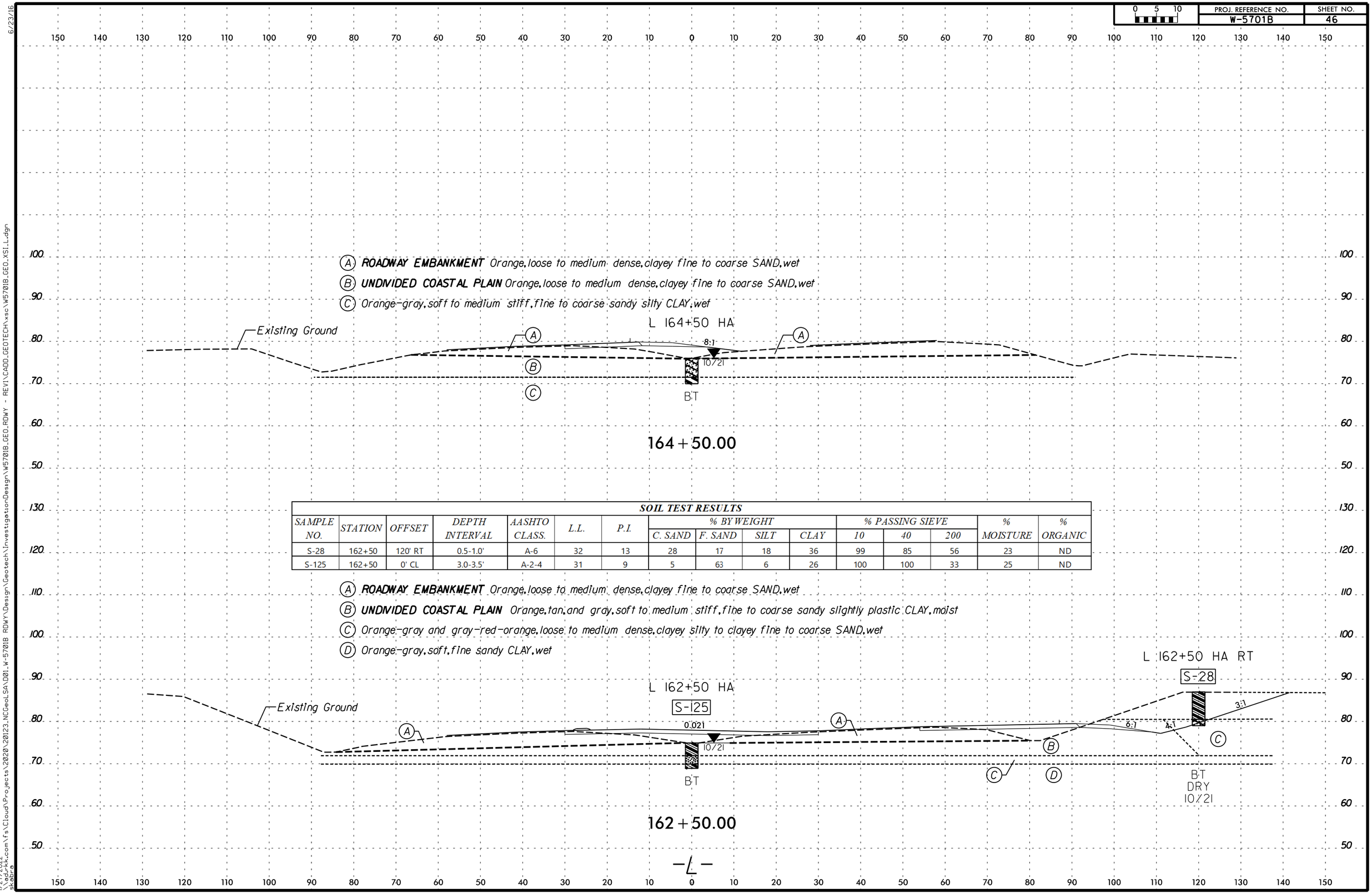
(A) ***ROADWAY EMBANKMENT*** *Orange-red, medium dense, clayey silty coarse to fine SAND, trace gravel, moist*
(B) ***UNDIVIDED COASTAL PLAIN*** *Gray-orange to tan, soft to medium stiff, silty sandy CLAY, moist*
(C) *Gray-orange, very loose to loose, silty fine to coarse SAND, wet*

L 135+00 HA



135+00.00

-L-

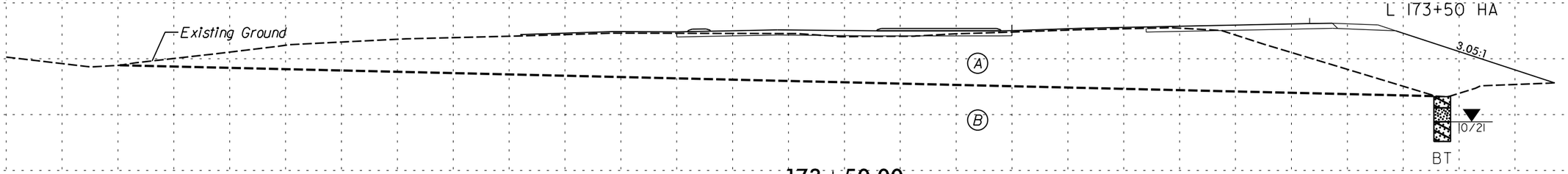


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

100 90 80 70 60 50

Ⓐ **ROADWAY EMBANKMENT** *Tan, loose, clayey silty fine SAND, moist*

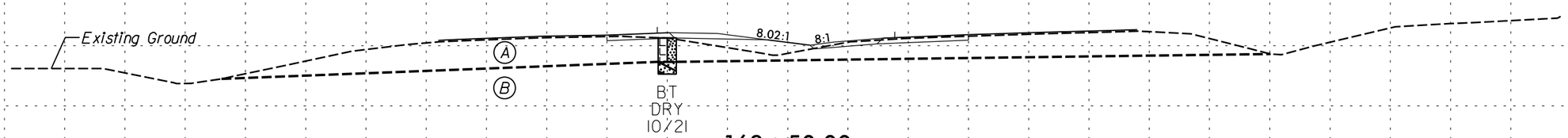
Ⓑ **UNDIVIDED COASTAL PLAIN** *Orange and gray, medium dense to dense, silty to clayey fine to coarse SAND, interbedded clay, moist*



173+50.00

Ⓐ **ROADWAY EMBANKMENT** *Gray, medium dense, clayey silty fine to coarse SAND, moist*

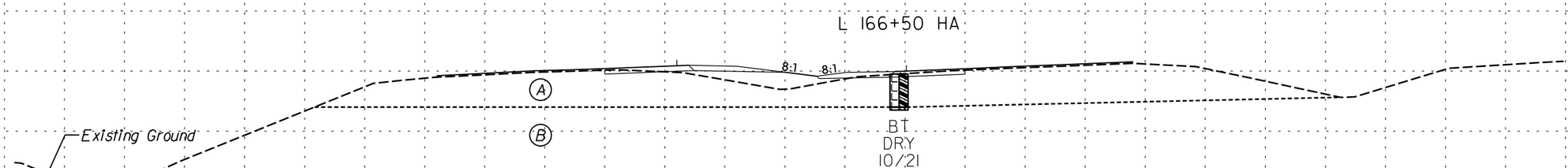
Ⓑ **UNDIVIDED COASTAL PLAIN** *Orange, medium dense, clayey fine to coarse SAND, moist*



168+50.00

Ⓐ **ROADWAY EMBANKMENT** *Brown-orange to tan-gray, medium stiff to stiff, fine to coarse sandy CLAY, moist*

Ⓑ *Gray-black, loose to medium dense, silty fine SAND, moist*



166+50.00

—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

110 100 90 80 70 60

Ⓐ **ROADWAY EMBANKMENT** *Tan, loose to medium dense, clayey silty fine SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Gray-tan-orange, soft to stiff, silty fine to coarse sandy CLAY, moist*

L 179+50 HA

Existing Ground

8:1 8:1

Ⓐ Ⓑ

BT
DRY
10/21

179+50.00

Ⓐ **ROADWAY EMBANKMENT** *Tan, loose, clayey silty fine SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Orange, medium dense, clayey to silty fine to coarse SAND, moist to wet*

Ⓒ *Orange to gray, medium stiff to stiff, fine to coarse sandy CLAY, moist*

Ⓓ *Orange to gray, medium dense, silty fine to coarse SAND, moist*

L 177+50 HA

Existing Ground

Ⓐ Ⓑ Ⓒ Ⓓ

8:1 8:1

BT
DRY
10/21

177+50.00

Ⓐ **ROADWAY EMBANKMENT** *Tan, loose, clayey silty fine SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Orange, soft to medium stiff, silty fine to coarse sandy CLAY, moist*

L 175+50 HA

Existing Ground

Ⓐ Ⓑ

8:1

BT
DRY
10/21

175+50.00

$-\mathit{L}-$

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

110 100 90 80 70

Ⓐ **ROADWAY EMBANKMENT** *Gray, soft to medium stiff, fine to coarse sandy CLAY, moist*

Ⓑ *Gray to orange, loose to medium dense, silty fine to coarse SAND, trace gravel, moist*

L 187+00 HA

8:1

Ⓐ

Ⓑ

BT
DRY
10/21

Existing Ground

187+00.00

Ⓐ **ROADWAY EMBANKMENT** *Gray-brown, loose to medium dense, silty fine to coarse SAND, trace of organic matter (wood fragments), interbedded clay, moist*

L 185+00 HA

8:1

Ⓐ

BT
DRY
10/21

Existing Ground

185+00.00

Ⓐ **ROADWAY EMBANKMENT** *Brown and gray, loose to medium dense, silty fine to coarse SAND, moist*

L 183+00 HA

8:1

Ⓐ

BT
DRY
10/21

Existing Ground

183+00.00

—L—

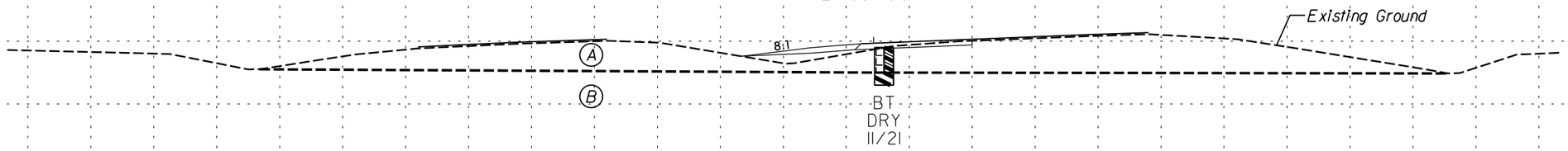
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

110 100 90 80 70 60

(A) **ROADWAY EMBANKMENT** *Brown, medium stiff to stiff, fine to coarse sandy CLAY, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Gray-red-tan, medium stiff to stiff, sandy silty CLAY, moist*

L 195+00 HA

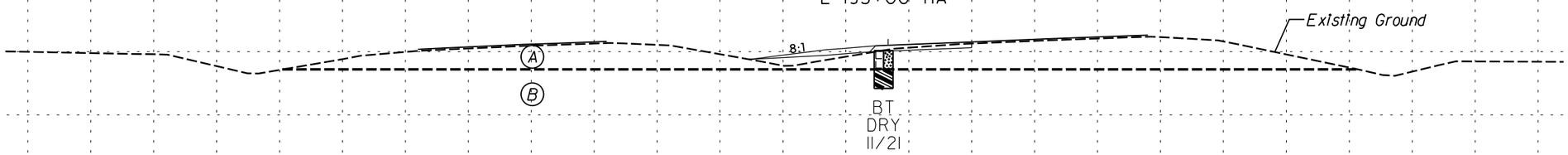


195+00.00

(A) **ROADWAY EMBANKMENT** *Brown to gray, loose to medium dense, silty fine to coarse SAND, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Brown to gray, medium stiff, silty fine to coarse sandy CLAY, wet*

L 193+00 HA



193+00.00

SOIL TEST RESULTS

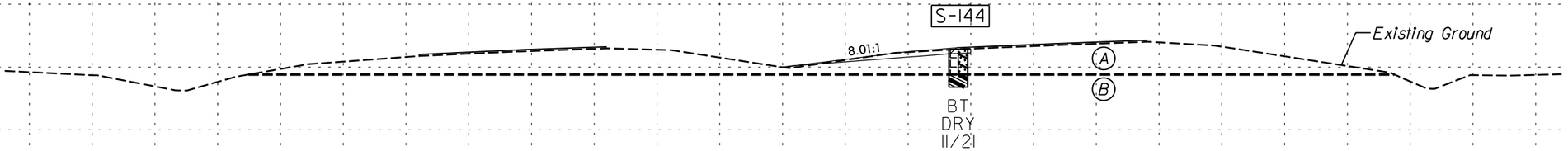
SAMPLE NO.	STATION	OFFSET	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING SIEVE			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-144	190+00	28' RT	4.0-4.5'	A-6	30	14	23	26	17	35	100	91	54	15	ND

(A) **ROADWAY EMBANKMENT** *Gray-tan, loose to medium dense, silty clayey SAND, trace of organic matter (wood fragments), moist*

(B) **UNDIVIDED COASTAL PLAIN** *Brown-tan, medium stiff, silty fine to coarse sandy slightly plastic CLAY, moist*

L 190+00 HA

S-144



190+00.00

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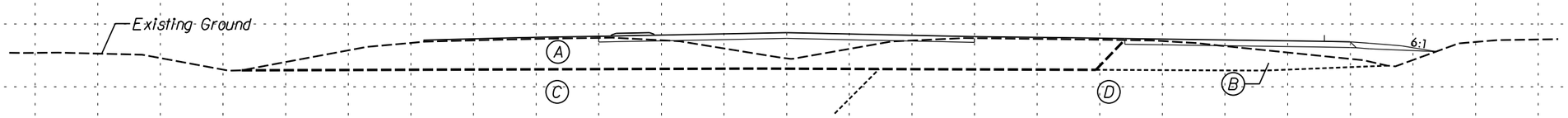
PROJ. REFERENCE NO.	SHEET NO.
W-5701B	51

0 5 10

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

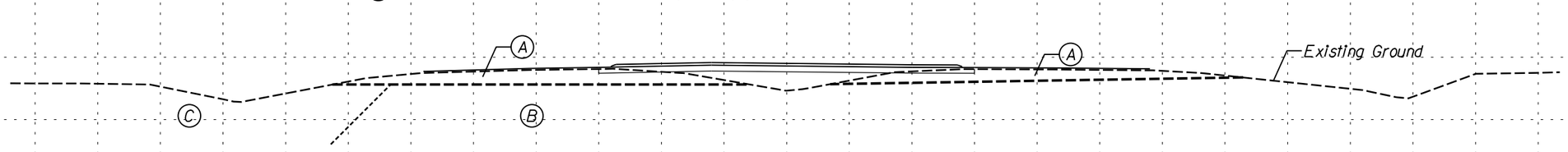
110 100 90 80 70

(A) ***ROADWAY EMBANKMENT*** *Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist*
(B) ***UNDIVIDED COASTAL PLAIN*** *Tan to gray-orange-red, medium stiff to stiff, fine to coarse sandy silty highly plastic CLAY, moist*
(C) *Brown-gray, soft to medium stiff, silty fine to coarse sandy CLAY, moist*
(D) *Red and orange, loose to medium dense, clayey to silty fine to coarse SAND, moist*



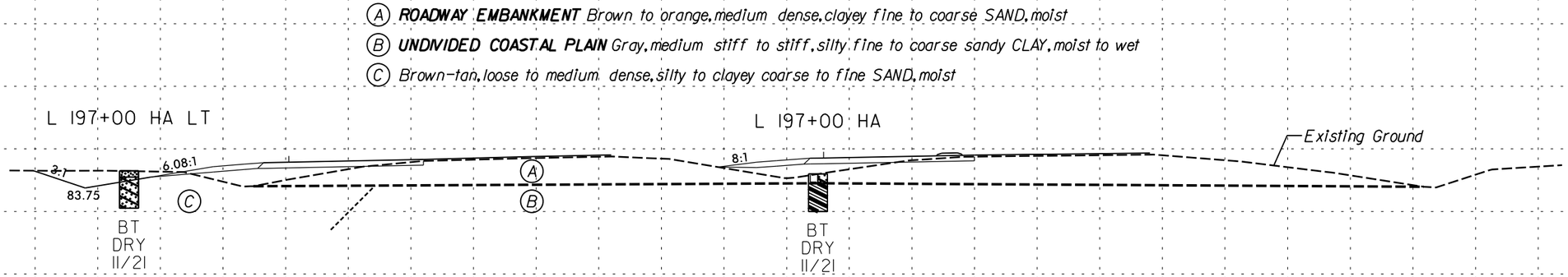
198+50.00

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



198+00.00

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



197+00.00

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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

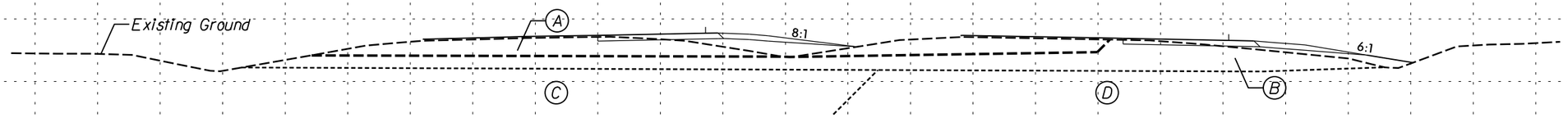
110 100 90 80 70 60

Ⓐ **ROADWAY EMBANKMENT** Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist

Ⓑ **UNDIVIDED COASTAL PLAIN** Tan to gray-orange-red, medium stiff to stiff, fine to coarse sandy silty highly plastic CLAY, moist

Ⓒ Brown-gray, soft to medium stiff, silty fine to coarse sandy CLAY, moist

Ⓓ Red and orange, loose to medium dense, clayey to silty fine to coarse SAND, moist



199+50.00

SOIL TEST RESULTS

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

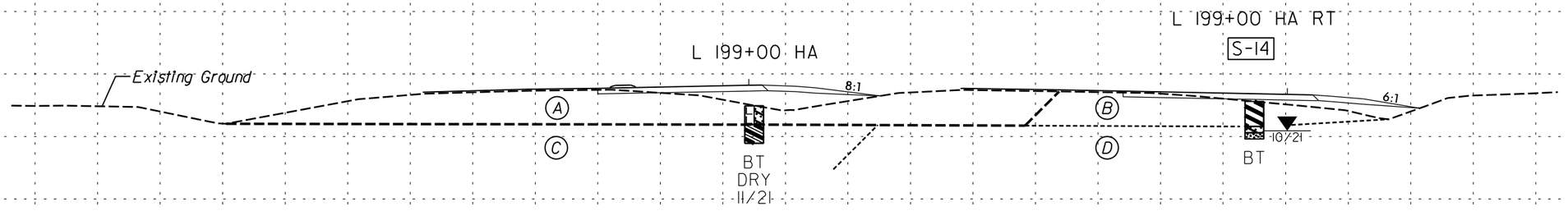
130 120 110 100 90 80 70 60

Ⓐ **ROADWAY EMBANKMENT** Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist

Ⓑ **UNDIVIDED COASTAL PLAIN** Tan to gray-orange-red, medium stiff to stiff, fine to coarse sandy silty highly plastic CLAY, moist

Ⓒ Brown-gray, soft to medium stiff, silty fine to coarse sandy CLAY, moist

Ⓓ Red and orange, loose to medium dense, clayey to silty fine to coarse SAND, moist



199+00.00

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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

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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

100 90 80 70 60

Ⓐ **ROADWAY EMBANKMENT** *Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Brown-orange to gray, medium dense, clayey coarse to fine SAND, moist*

L 201+00 HA

Existing Ground

8:1

Ⓐ Ⓑ Ⓐ

BT
DRY
11/21

201+00.00

Ⓐ **ROADWAY EMBANKMENT** *Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Brown-orange to gray, medium dense, clayey coarse to fine SAND, moist*

100 90 80 70

Existing Ground

8:1

Ⓐ Ⓑ Ⓐ

200+50.00

110 100 90 80 70

Ⓐ **ROADWAY EMBANKMENT** *Brown-gray, medium dense to dense, clayey fine to coarse SAND, moist*

Ⓑ **UNDIVIDED COASTAL PLAIN** *Tan to gray-orange-red, medium stiff to stiff, fine to coarse sandy silty highly plastic CLAY, moist*

Ⓒ *Brown-gray, soft to medium stiff, silty fine to coarse sandy CLAY, moist*

Ⓓ *Red and orange, loose to medium dense, clayey to silty fine to coarse SAND, moist*

Existing Ground

Ⓐ 8:1 6.09:1 Ⓑ

Ⓒ Ⓓ

200+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

6/23/16

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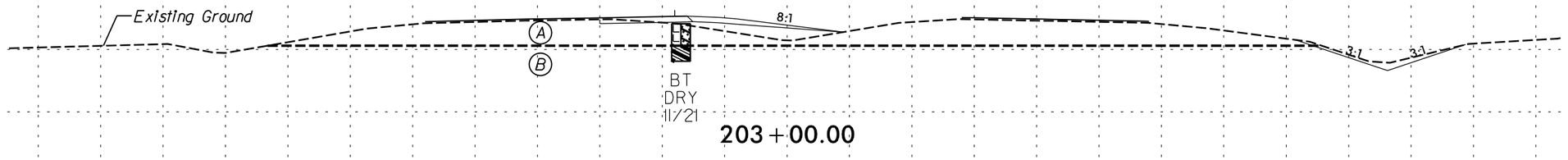
skidmore

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	W-5701B	54

(A) **ROADWAY EMBANKMENT** *Tan-brown, loose to medium dense, silty clayey fine to coarse SAND, moist*

(B) **UNDIVIDED COASTAL PLAIN** *Brown, medium stiff to stiff, silty fine to coarse sandy CLAY, moist*

L 203+00 HA



203+00.00

-L-

6/23/16

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sk0drr

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

REFERENCE: W–5701B

PROJECT: 44847

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

ROADWAY SUBSURFACE INVESTIGATION

APPENDIX A
LAB RESULTS

RK&K
P: (919) 878-9560
8601 Six Forks Road, Forum 1,Suite 700
Raleigh, North Carolina 27615-3960
NC License No, F-0112
Engineers | Construction Managers | Planners | Scientists
www.rkk.com
Responsive People | Creative Solutions

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

TIP: W-5701B

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