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REFERENCE: R-5751

PROJECT: 53087

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *ROBESON*

PROJECT DESCRIPTION *UPGRADE OF AT-GRADE INTERSECTIONS AT US 74 /NC 72 AND US 74 /NC 130 TO INTERCHANGE*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5751	1	90

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.

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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.

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PROJECT REFERENCE NO.	SHEET NO.
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 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 PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
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 SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- 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, DPT, 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
- [X] DIEDRICH D-50
- [ ] _____

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [X] TRICONE 2-15/16" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] 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: TOP OF BORING ELEVATIONS ESTIMATED USING PROVIDED PROJECT TINE FILE: (R5751_is_tin.tin) DATED: 08/30/2018
ELEVATION: N/A FEET

NOTES:

FIAD - FILLED IMMEDIATELY AFTER DRILLING

PAVEMENT DESIGN INVESTIGATION
TEST LOCATION AND CORE

TIP PROJECT: R-5751

CONTRACT:

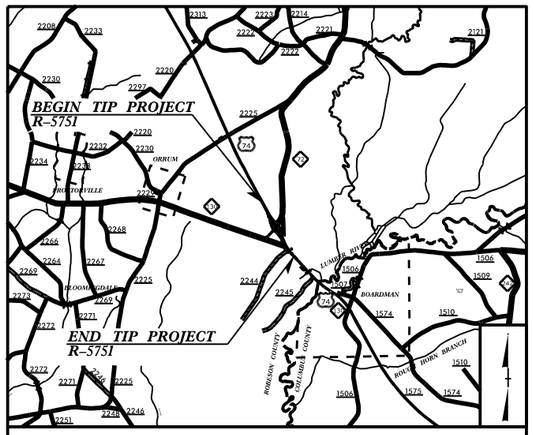
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ROBESON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5751	3	90
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
53087.1.1	NHP-0074(203)	PE	

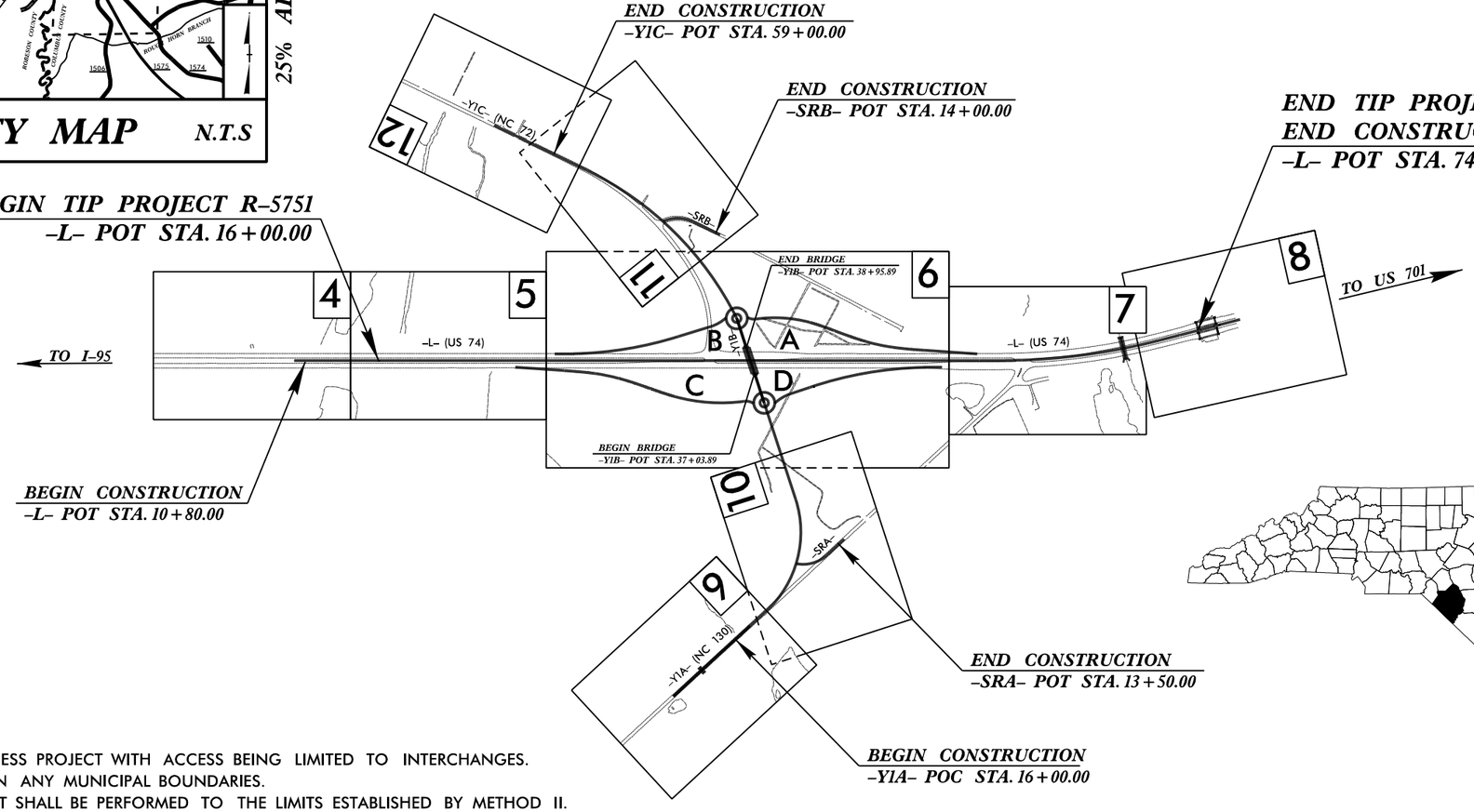
LOCATION: *US 74 AT NC 72 /NC 130*
CONVERT INTERSECTION TO INTERCHANGE

TYPE OF WORK: *GRADING, PAVING, DRAINAGE, AND STRUCTURE*



25% APPROVED PLANS

VICINITY MAP N.T.S



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

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

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2022 = 20,300
ADT 2042 = 30,000
K = 8 %
D = 55 %
T = 19 % *
V = 75 MPH
*(TTST=12% + DUAL=7%)
FUNC CLASS = FUTURE INTERSTATE
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-5751 = 1.105 MILES
TOTAL LENGTH TIP PROJECT R-5751 = 1.105 MILES

PREPARED IN THE OFFICE OF:
RS&H
8521 SIX FORKS ROAD, SUITE 400
RALEIGH, NC 27615
NC FIRM LICENSE No: F-0493

PREPARED FOR:
DIVISION OF HIGHWAYS
DIVISION 6
558 Gillespie St.
Fayetteville, NC 28301
910-364-0603

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JANUARY 24, 2020

LETTING DATE: JANUARY 18, 2022

JARED BOND, PE
PROJECT ENGINEER

SEAN KANE, EI
PROJECT DESIGN ENGINEER

ALEX HENDERSON
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

PROJECT REFERENCE NO.	SHEET NO.
R-5751	3A

Date: January 29, 2021
WBS Number: 53087.1.1
TIP Number: R-5751
County: Robeson
Description: Upgrade of at-grade intersections at US 74/NC 72 and US 74/NC 130 to interchange

Subject: Roadway Geotechnical Report - Inventory

Project Description

The project is located near the Town of Orrum in Robeson County, North Carolina and consists of the addition of two roundabouts, four ramps, and a bridge over US 74 (-L-). The project reroutes NC 72 (-Y1C-) and NC 130 (-Y1A-) and combines them into a single interchange for access to US 74 (-L-).

The length of the project is about 1.1 miles along -L-, 1.1 miles combined along -Y1A-, -Y1B-, and -Y1C-, and 1.1 miles combined along the ramp alignments (-Y1RPA-, -Y1RPB-, -Y1RPC-, and -Y1RPD-). There are two roundabouts (-RAB-, -RCD-) located along the overpass combined alignment (-Y1A-, -Y1B, and -Y1C-) on either side of US 74. Realignment of two services roads (-SRA-, -SRB-) less than 0.1 miles long will be included in the project. The project corridor is in a rural setting with mostly vegetation and farm land along each alignment, with some areas of delineated wetlands.

The geotechnical subsurface investigation was performed in June and July of 2019 and supplemental hand augers performed in January 2021. The site was investigated with 42 standard penetration test (SPT) borings that were advanced using a Diedrich D-50 track mounted rotary drill rig equipped with a calibrated automatic hammer. The SPT borings were advanced with hollow stem augers to depths of 10 to 12 feet beneath the ground surface and with mud rotary to depths of 19 to 84 feet beneath the ground surface. Representative soil samples were collected in the field for visual classification and selected samples were submitted for laboratory analysis by Terracon's soil testing laboratory. Laboratory testing was performed in accordance with the NCDOT laboratory testing standards. The hand augers were performed to identify groundwater depths in the wet season and included 14 hand augers at previous boring locations and 11 hand augers at new locations. The hand augers ranged in depth from 2 to 6 feet.

The following alignments were investigated by soil testing and visual reconnaissance:

Alignment	Stations (±)
-L-	10+80 to 74+36
-RAB-	10+00 to 14+71
-RCD-	10+00 to 14+71
-Y1A-	10+00 to 34+84
-Y1B-	34+84 to 41+15
-Y1C-	41+15 to 59+00
-Y1RPA-	10+00 to 26+68
-Y1RPB-	10+00 to 22+58
-Y1RPC-	10+00 to 27+26
-Y1PRD-	10+00 to 22+30
-SRA-	10+00 to 14+02
-SRB-	10+00 to 14+34

Physiography and Geography

The site is located in the Lumber River basin and primarily consists of Duplin Formation soils with recent alluvial soils in the low lying swampy areas as discussed below. The existing elevations along the investigated corridor range from approximately 76 feet to 86 feet. The western portion of the project is located in the White Oak Swamp. Based on the presence of several rivers and creeks and the surrounding very flat terrain, the site appears to be located in a flood prone and swampy area.

Soil Properties

Soils encountered during this investigation are separated into four categories based on their origin. The soils encountered consist of roadway embankment, artificial fill, alluvial deposit and coastal plain soils. We anticipate that roadway embankments were constructed to elevate roads through low-lying swampy areas and areas prone to flooding. Artificial fill was encountered in isolated areas outside the roadway embankments to raise those locations above the surrounding swampy areas. Alluvial deposits were identified within the limits of the delineated wetlands area. Coastal plain soils are found at the surface in some areas and below the surficial roadway embankment, artificial fill and alluvial soil across the entire.

In general, the roadway embankment soils generally consist of very loose to medium dense silty sand and clayey sand to fine sands (A-2-4, A-2-6, A-3) and stiff sandy silt and sandy clay (A-4, A-6), and the artificial fill soils consist of medium dense silty sand and sand with clay (A-2-4, A-2-6). Alluvial deposits consist of very loose to loose, clayey sand, silty sand, and sand with clay (A-1-b, A-2-4, A-2-5, A-2-6), very soft silty and sandy clay and sandy silt (A-6, A-7, A-4) and very soft silty clay with trace organics to highly organic (ORG1, ORG2, A-6). Coastal plain (Duplin Formation) soils encountered consist of very soft to hard sandy silts and sandy to silty clays and clay with sand (A-4, A-6, A-7), very loose to very dense fine to coarse sands (A-1, A-3), and very loose to dense silty to clayey sands (A-2-4, A-2-6).

Groundwater Properties

The Lumber River passes near the site to the east, running approximately perpendicular to -L-. Tributary creeks can also be found east of the site, one crossing -L- through a culvert, and tie into the Lumber River. The majority of the west portion and some of the east portion of the project are within the limits of White Oak Swamp. Groundwater was encountered during our explorations from depths of 1 to 6 feet beneath the ground surface. Surface water was observed at several boring locations within the delineated wetlands, in ditches and in other low areas at the time of our investigation.

The depth of groundwater, beneath the ground surface, will fluctuate with seasonal precipitation and may occur at higher levels at other times of the year above less permeable clayey soils.

Areas of Special Geotechnical Interest

1) Very soft to soft and wet soils were encountered at the following approximate locations:

Alignment	Stations (±)
-L-	32+00 to 33+00, 36+50 to 37+00
-Y1A-	19+00 to 29+00, 30+50 to 31+50, 32+50 to 33+50
-Y1C-	47+50 to 48+50
-Y1PRB-	17+50 to 18+50, 19+50 to 21+00
-Y1PRC-	15+80 to 16+80, 18+75 to 19+75, 23+75 to 24+75
-Y1RPD-	19+50 TO 20+50

2) Near surface soils with little to moderate organics requiring remediation were encountered at the following approximate locations:

Alignment	Stations (±)
-Y1A-	19+00 to 24+50

3) Groundwater was encountered within 6 feet of proposed pavement subgrade at the following approximate locations:

Alignment	Stations (±)
-Y1RPA-	15+00 TO 18+00
-Y1A-	19+00 TO 25+50
-Y1RPC-	10+00 TO 18+50
-Y1RPB-	10+00 TO 14+50

BULK SAMPLES

The following bulk samples were taken for tests to determine the engineering properties of the soil.

Sample No.	Location	Depth (ft.)	Test
CBR-1	12+00 -Y1RPD-, 70’ RT	0.5 – 1.5	Proctor and CBR
CBR-2	13+00 -Y1RPA-, 68’ LT	0.5 – 1.5	Proctor and CBR
CBR-4	16+20 -Y1RPC-, CL	0.5 – 1.5	Proctor and CBR

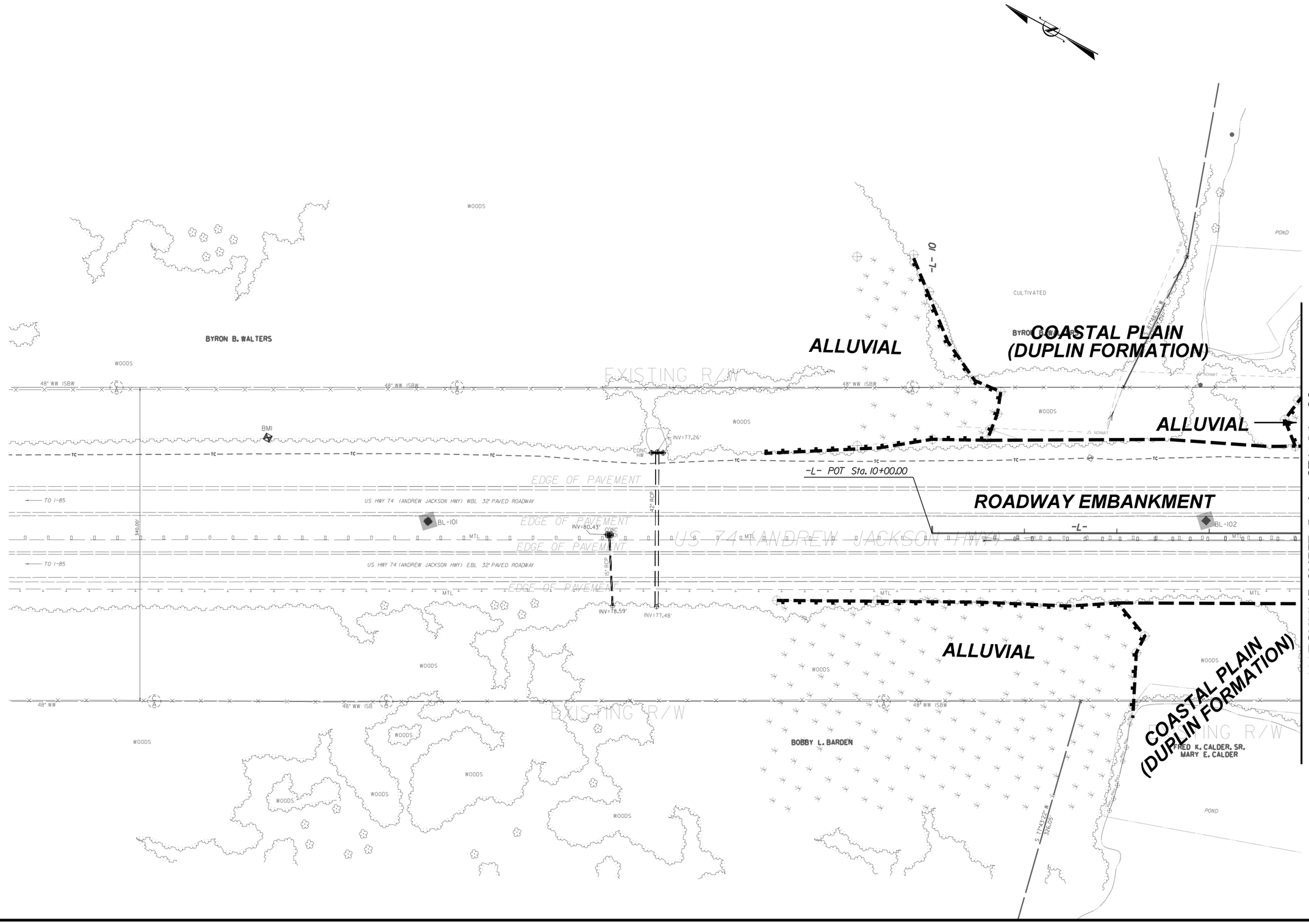
Closing

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us at your convenience.

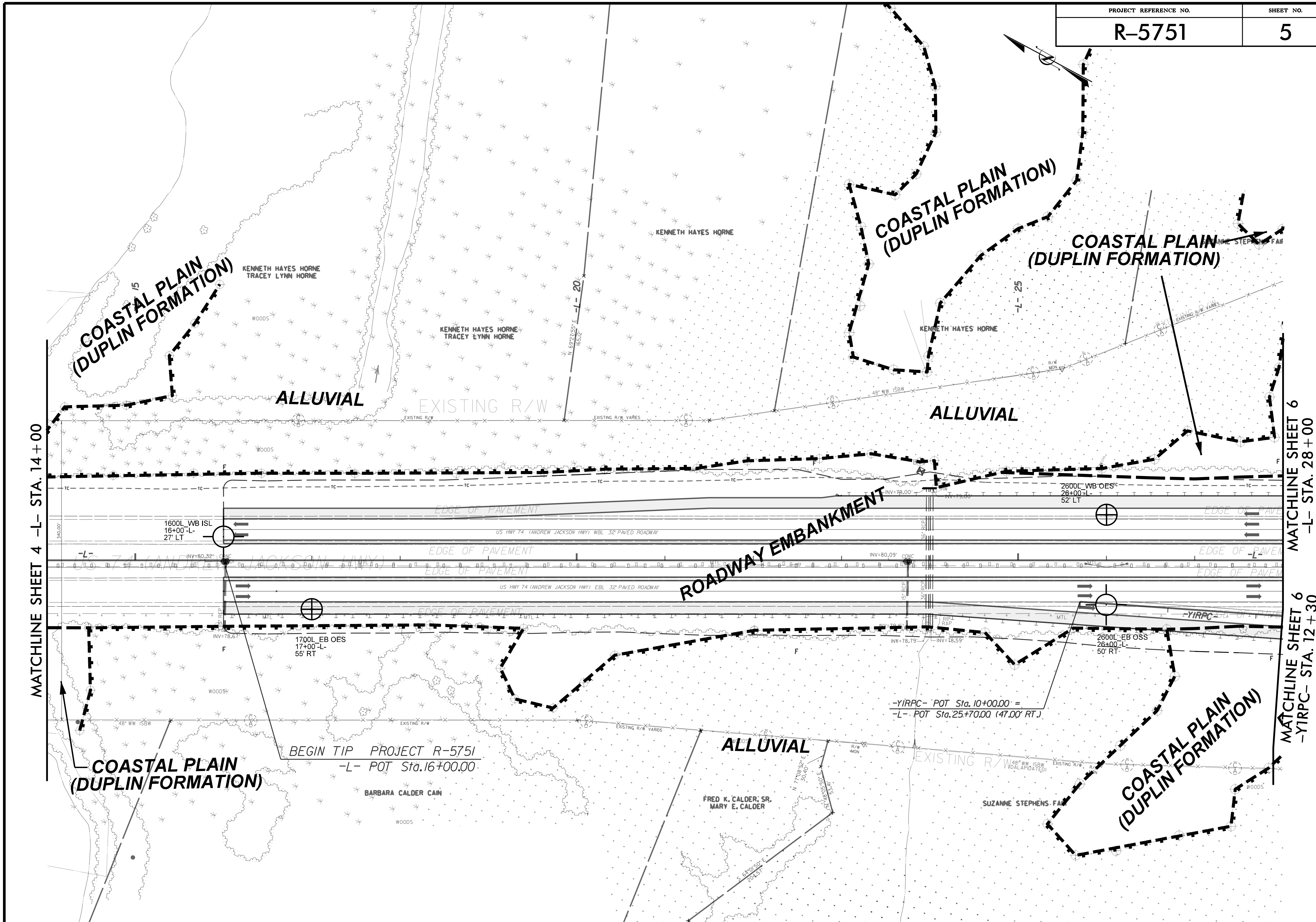
Sincerely,
Terracon Consultants, Inc.

Jonathan P. Manke, PE
Senior Geotechnical Engineer

PROJECT REFERENCE NO.	SHEET NO.
R-5751	4



PROJECT REFERENCE NO.	SHEET NO.
R-5751	5



PROJECT REFERENCE NO.	SHEET NO.
R–5751	6

MATCHLINE SHEET 11
–Y1C– STA. 46+50

MATCHLINE SHEET 5
–L– STA. 28+00

MATCHLINE SHEET 5
–Y1RPC– STA. 12+30

MATCHLINE SHEET 7
–Y1RPA– STA. 12+00

MATCHLINE SHEET 7
–L– STA. 56+50

MATCHLINE SHEET 10 –Y1A– STA. 30+50

ROADWAY EMBANKMENT

ARTIFICIAL FILL

ALLUVIAL

COASTAL PLAIN (DUPLIN FORMATION)

US 74 (ANDREW JACKSON HWY)

EXISTING R/W

EDGE OF PAVEMENT

-Y1C- POC Sta. 41+90.33 = -RAB- POC Sta. 10+00.00

-Y1B- PC Sta. 41+15.33 = -Y1C- PC Sta. 41+15.33

-Y1RPA- PT Sta. 26+67.80 = -RAB- PC Sta. 13+25.48

-Y1RPB- PT Sta. 22+58.20 = -RAB- POC Sta. 10+71.85

-Y1RPB- ST Sta. 10+00.00 = -L- POT Sta. 15+50.00 (47.00' LT.)

-Y1B- POT Sta. 40+40.33 = -RAB- POC Sta. 12+23.24

-Y1RPC- CS Sta. 17+39.08

-Y1RPC- PT Sta. 22+26.17 = -RCD- POC Sta. 13+34.04

-Y1A- POT Sta. 34+84.45 = -Y1B- POT Sta. 34+84.45

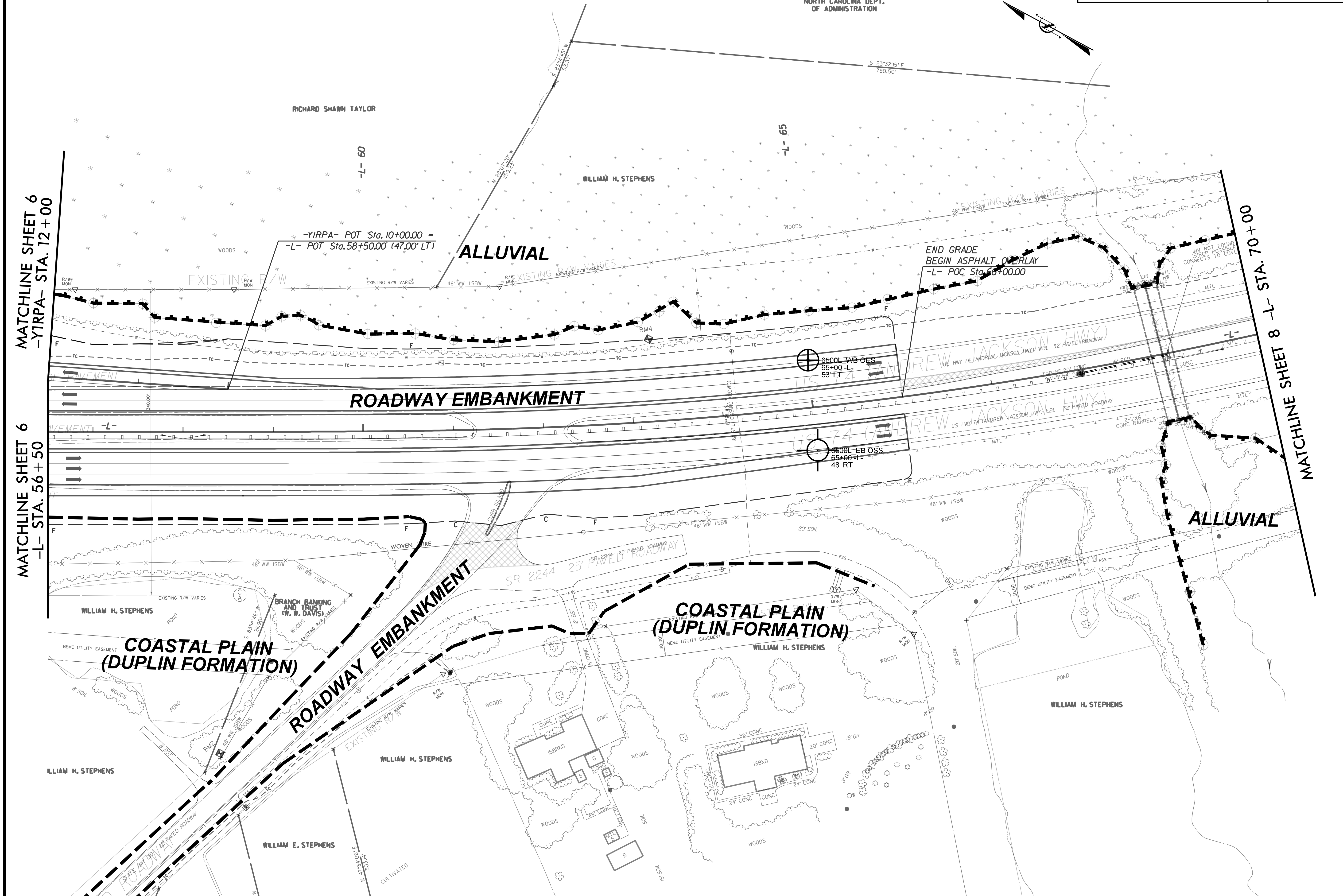
-Y1B- POT Sta. 35+59.45 = -RCD- POC Sta. 12+35.62

-Y1RPD- PT Sta. 22+29.76 = -RCD- POC Sta. 10+93.20

-Y1A- POT Sta. 34+09.45 = -RCD- PC Sta. 10+00.00

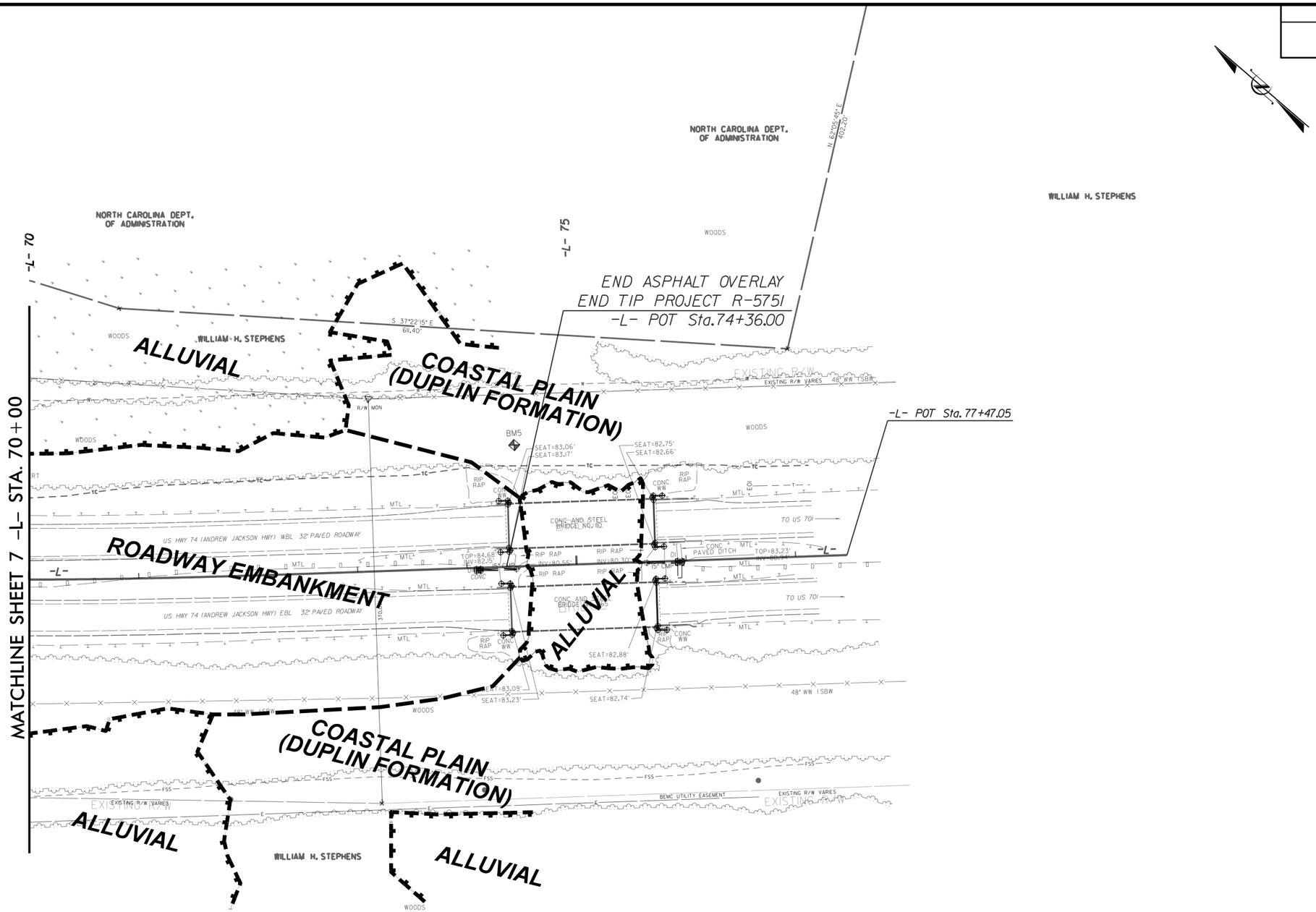
-Y1RPD- ST Sta. 10+00.00 = -L- POT Sta. 56+00.00 (47.00' RT.)

GRAPHIC SCALE
50 25 0 50 100
PLANS

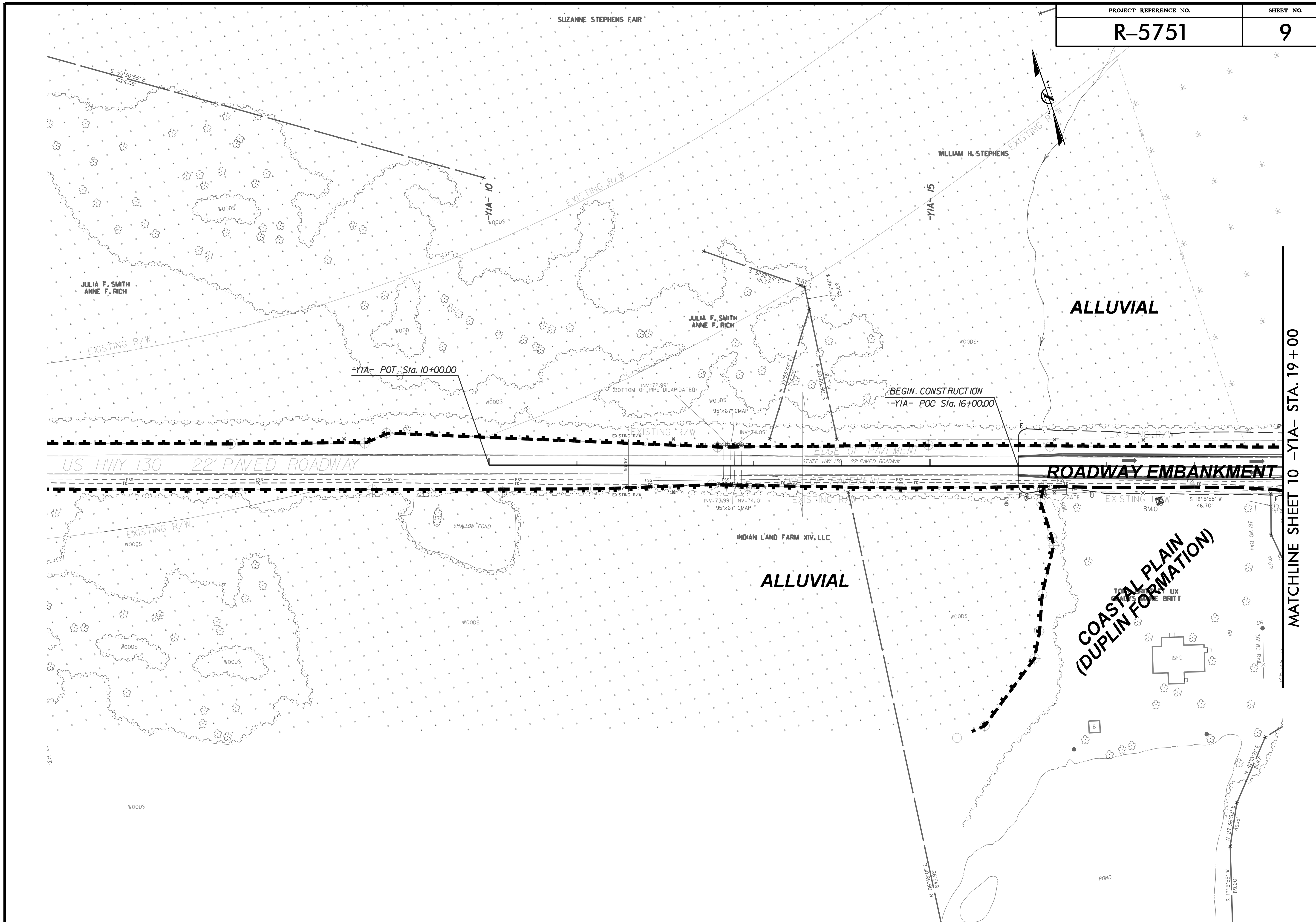


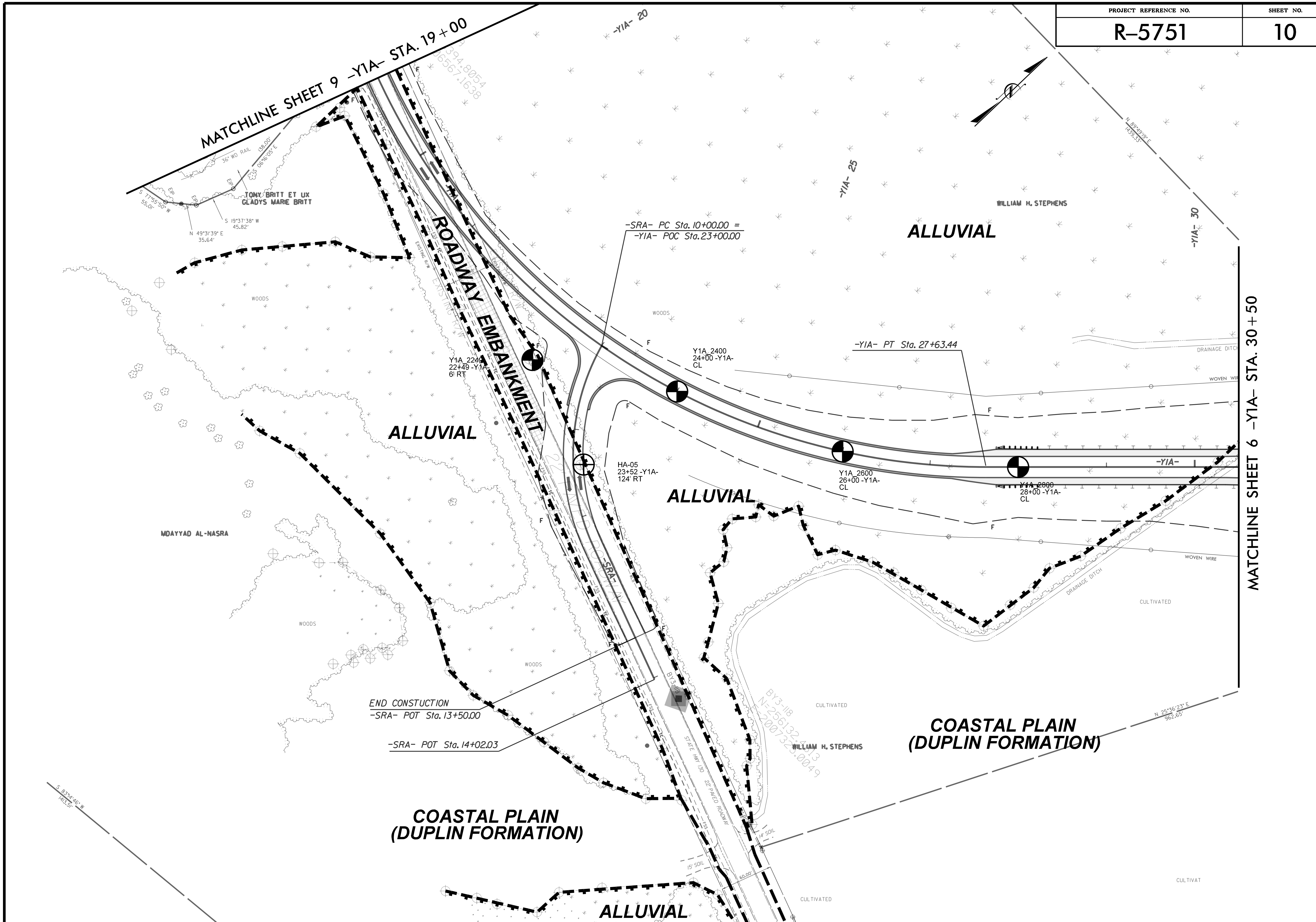
NORTH CAROLINA DEPT. OF ADMINISTRATION
S 23°32'15" E 790.50'
RICHARD SHAWN TAYLOR
WILLIAM H. STEPHENS
-L- 60
-L- 65
WOODS
ALLUVIAL
-YIRPA- POT Sta. 10+00.00 =
-L- POT Sta.58+50.00 (47.00' LT)
EXISTING R/W
EXISTING R/W VARIES
48" WW ISBW
END GRADE
BEGIN ASPHALT OVERLAY
-L- POC Sta.65+00.00
MATCHLINE SHEET 6 -Y1RPA- STA. 12+00
MATCHLINE SHEET 6 -L- STA. 56+50
MATCHLINE SHEET 8 -L- STA. 70+00
BM4
6500L_WB OES
65+00 -L-
53' LT
ROADWAY EMBANKMENT
US 74 (ANDREW JACKSON HWY)
-L-
6500L_EB OSS
65+00 -L-
48' RT
ALLUVIAL
SR 2244 25' PAVED ROADWAY
WOVEN WIRE
BRANCH BANKING AND TRUST (W. W. DAVIS)
WILLIAM H. STEPHENS
COASTAL PLAIN (DUPLIN FORMATION)
ROADWAY EMBANKMENT
COASTAL PLAIN (DUPLIN FORMATION)
BEMC UTILITY EASEMENT
POND
BM2
ISBRKD
CONC
WILLIAM H. STEPHENS
ILLIAM H. STEPHENS
WILLIAM E. STEPHENS
CULTIVATED

PROJECT REFERENCE NO.	SHEET NO.
R-5751	8



PROJECT REFERENCE NO.	SHEET NO.
R-5751	9




MATCHLINE SHEET 9 -Y1A- STA. 19+00
TONY BRITT ET UX
GLADYS MARIE BRITT
-SRA- PC Sta. 10+00.00 =
-Y1A- POC Sta. 23+00.00
WILLIAM H. STEPHENS
ALLUVIAL
ROADWAY EMBANKMENT
Y1A_2249
22+49 -Y1A-
6' RT
Y1A_2400
24+00 -Y1A-
CL
-Y1A- PT Sta. 27+63.44
ALLUVIAL
HA-05
23+52 -Y1A-
124' RT
ALLUVIAL
Y1A_2600
26+00 -Y1A-
CL
Y1A_2800
28+00 -Y1A-
CL
MATCHLINE SHEET 6 -Y1A- STA. 30+50
MOAYYAD AL-NASRA
END CONSTUCTION
-SRA- POT Sta. 13+50.00
-SRA- POT Sta. 14+02.03
WILLIAM H. STEPHENS
COASTAL PLAIN
(DUPLIN FORMATION)
COASTAL PLAIN
(DUPLIN FORMATION)
ALLUVIAL

PROJECT REFERENCE NO.	SHEET NO.
R–5751	11

MATCHLINE SHEET 6 –Y1C– STA. 46+00

MATCHLINE SHEET 12 –Y1C– STA. 57+00

ALLUVIAL

ROADWAY EMBANKMENT

ALLUVIAL

COASTAL PLAIN
(DUPLIN FORMATION)

COASTAL PLAIN
(DUPLIN FORMATION)

SUZANNE STEPHENS FAIR

SUZANNE STEPHENS FAIR

SUZANNE STEPHENS FAIR

STATE HWY 72 (WILMINGTON HWY) 24' PAVED ROADWAY

EXISTING R/W

WOVEN WIRE

BARBED WIRE

-SRB-
S 2°24'27.0" E

-SRB- PC Sta. 10+00.00 =
-Y1C- PCO Sta. 49+85.00

END CONSTRUCTION
-SRB- POT Sta. 14+00.00

-SRB- POT Sta. 14+33.57

Y1C_4800
48+00 -Y1C-
CL

Y1C_5010
50+10 -Y1C-
CL

Y1C_5200
52+00 -Y1C-
CL

Y1C_5400
54+00 -Y1C-
1' RT

HA-01
53+85 -Y1C-
50' RT

BM6

BY1-110

INV=78.21

24" RCP

18" RCP

CULTIVATED

CULTIVATED

CULTIVATED

CULTIVATED

GARDEN

ISFD

2SFD BARN

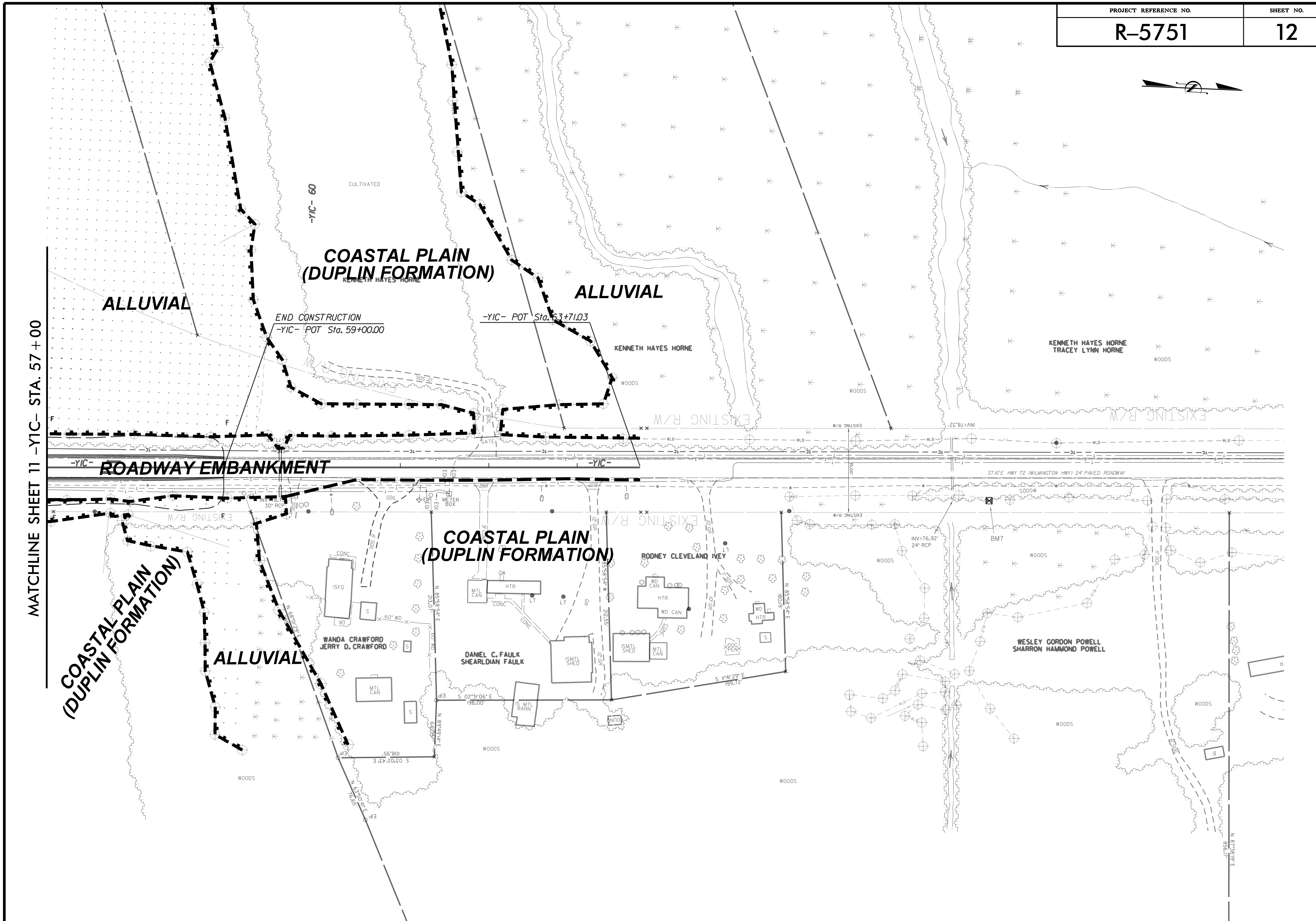
2SMTL BARN

MTL

SOIL

GARDEN

PROJECT REFERENCE NO.	SHEET NO.
R-5751	12



HORIZONTAL
0 40 80
FEET

VERTICAL
0 10 20 40
FEET

VE = 2

PROJECT REFERENCE NO.	SHEET NO.
R-5751	13

CENTERLINE PROFILE ALONG –Y1B– ACROSS US 74

–Y1B–

STA. 35+60 -Y1B-

PROPOSED GRADE

STA. 40+40 -Y1B-

SS–181
SS–183
SS–184
SS–186
SS–188

Y1B_3570
35+70 -Y1B-
CL

EB1-C
37+00 -Y1B-
CL

ST–4

B1-C
38+00 -Y1B-
CL

EB2-C
39+00 -Y1B-
6' LT

SS–64
SS–66
SS–67
SS–68
SS–70

Y1B_4040
40+40 -Y1B-
CL

EXISTING GRADE

ROADWAY EMBANKMENT.

LOOSE TO MEDIUM DENSE, BROWN, TAN, SILTY SAND, DRY

COASTAL PLAIN, LOOSE TO MEDIUM DENSE, LIGHT TAN, TAN, LIGHT BROWN, LIGHT GRAY, COARSE SAND, SILTY FINE TO COARSE SAND, DRY TO WET (DUPLIN FORMATION)

STIFF TO VERY STIFF, GRAY, STIFF, GRAY, DARK GRAY, SANDY CLAY, MOIST TO WET

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, WET

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, MOIST TO WET

VERY STIFF, GRAY, SANDY SILT, MOIST

VERY STIFF, GRAY, SILTY CLAY, SANDY CLAY, WET

FINE

VERY STIFF, GRAY, SANDY CLAY, MOIST, HIGHLY PLASTIC

MEDIUM DENSE TO DENSE, LIGHT GRAY, GRAY, DARK GRAY, COARSE SAND, SILTY FINE SAND, CLAYEY FINE SAND, MOIST TO SATURATED

BT
FIAD
07/19

BT
FIAD
07/19

BT
FIAD
07/19

BT
FIAD
06/19

BT
FIAD
06/19

Ⓐ COASTAL PLAIN, MEDIUM STIFF, BROWN, SANDY SILT, DRY TO MOIST (DUPLIN FORMATION)
Ⓑ COASTAL PLAIN, VERY LOOSE, LIGHT BROWN, SILTY SAND, MOIST (DUPLIN FORMATION)
Ⓒ COASTAL PLAIN, STIFF, DARK GRAY, SANDY CLAY, WET, HIGHLY PLASTIC
Ⓓ COASTAL PLAIN, VERY STIFF, GRAY, SANDY CLAY, WET TO MOIST

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

35+00 36+00 37+00 38+00 39+00 40+00 –Y1B–

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	14

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

1700L_EB OES
17+00 -L-
55' RT

ROADWAY EMBANKMENT (ASPHALT)

5.85:1 6.012:1 6:1 3:1

ROADWAY EMBANKMENT, LOOSE, TAN, BROWN, SILTY FINE SAND, WET

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

BT
FIAD
07/19

17+00

90
80
70

ROADWAY EMBANKMENT (ASPHALT)

6:1 6.009:1 6:1 3:1

ROADWAY EMBANKMENT, LOOSE, TAN, GRAY, SILTY FINE SAND, CLAYEY FINE SAND, WET

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

16+50

1600L_WB ISL
16+00 -L-
27' LT

90
80
70

ROADWAY EMBANKMENT (ASPHALT)

5.73:1 6.007:1 6:1 3:1

ROADWAY EMBANKMENT, LOOSE, TAN, GRAY, SILTY FINE SAND, CLAYEY FINE SAND, WET

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

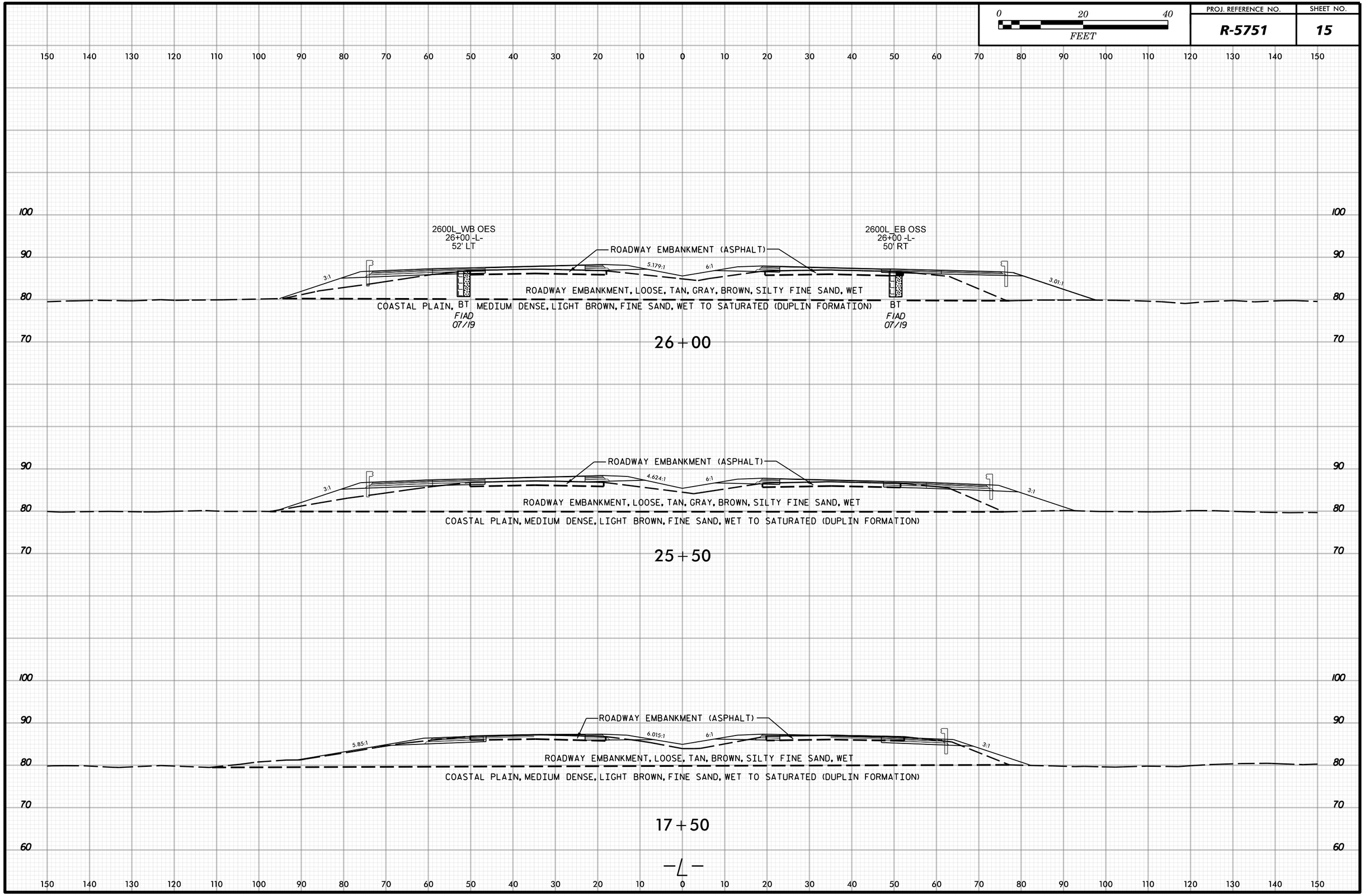
BT
FIAD
07/19

16+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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	15



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	16

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

ROADWAY EMBANKMENT (ASPHALT)

3:1 5.697:1 6:1 3:1

ROADWAY EMBANKMENT, LOOSE TO VERY LOOSE, RED, BLACK, SILTY SAND, MOIST

ALLUVIAL, VERY LOOSE, TAN, BROWN, SAND, DRY

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

SS-219
SS-220
Y1RPC_1425
29+94 -L-
82' RT

3
21
13

BT
FIAD
07/19

30+00

ROADWAY EMBANKMENT (ASPHALT)

3:1 6.486:1 6:1 3:1

ROADWAY EMBANKMENT, LOOSE TO VERY LOOSE, RED, BLACK, SILTY SAND, MOIST

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

29+50

ROADWAY EMBANKMENT (ASPHALT)

3:1 5.884:1 6:1 3.01:1

ROADWAY EMBANKMENT, LOOSE, TAN, GRAY, BROWN, SILTY FINE SAND, WET

COASTAL PLAIN, MEDIUM DENSE, LIGHT BROWN, FINE SAND, WET TO SATURATED (DUPLIN FORMATION)

26+50

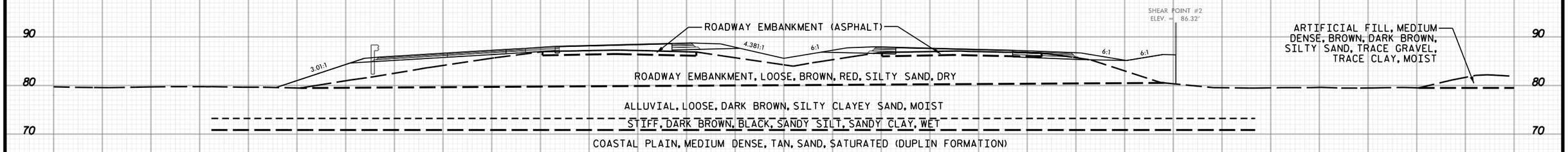
-L-

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

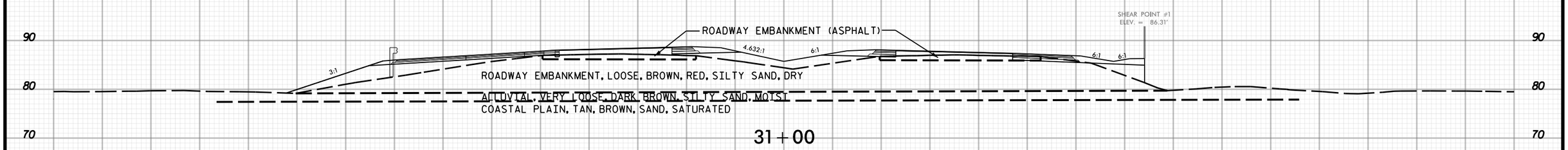
PROJ. REFERENCE NO.	SHEET NO.
R-5751	17

0 20 40
FEET

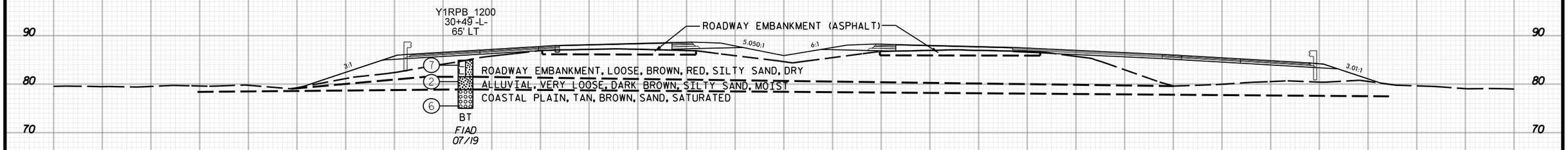
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



31+50



31+00



30+50

-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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	18

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

ROADWAY EMBANKMENT (ASPHALT)

3:1 — 4.571:1 — 6:1 — 4:1 — 4:1

SHEAR POINT #5
ELEV. = 85.60'

ROADWAY EMBANKMENT, VERY LOOSE, BROWN, SILTY SAND, DRY

ALLUVIAL, VERY SOFT, DARK BROWN, SILTY CLAY, WET, TRACE ORGANICS

COASTAL PLAIN, MEDIUM DENSE, TAN, BROWN, SILTY SAND, WET (DUPLIN FORMATION)

33+00

SS-225
Y1RPB_1400
32+48 -L-
77' LT

ROADWAY EMBANKMENT (ASPHALT)

3.02:1 — 4.374:1 — 6:1 — 6:1 — 6:1

SHEAR POINT #4
ELEV. = 86.28'

4 / WOH / 19

ROADWAY EMBANKMENT, VERY LOOSE, BROWN, SILTY SAND, DRY

ALLUVIAL, VERY SOFT, DARK BROWN, SILTY CLAY, WET, TRACE ORGANICS

COASTAL PLAIN, MEDIUM DENSE, TAN, BROWN, SILTY SAND, SATURATED (DUPLIN FORMATION)

BT
FIAD
07/19

32+50

ROADWAY EMBANKMENT (ASPHALT)

3.01:1 — 4.299:1 — 6:1 — 6:1 — 6:1

SHEAR POINT #3
ELEV. = 86.34'

HA-06
32+16 -L-
94' RT

01/21

ST-8
Y1RPC_1620
31+87 -L-
100' RT

ROADWAY EMBANKMENT, LOOSE, BROWN, RED, SILTY SAND, DRY

ALLUVIAL, SOFT TO MEDIUM STIFF, DARK BROWN, FINE SANDY CLAY, WET

COASTAL PLAIN, STIFF, BLACK, SANDY SILT,
MEDIUM DENSE, TAN, SAND, SATURATED

29 / ST-8 / 17

BT

BT
FIAD
07/19

ARTIFICIAL FILL, MEDIUM DENSE, BROWN, DARK BROWN, SILTY SAND, TRACE GRAVEL, TRACE CLAY, MOIST

2

ALLUVIAL, VERY LOOSE, DARK BROWN, SILTY CLAYEY SAND, MOIST

SATURATED (DUPLIN FORMATION)

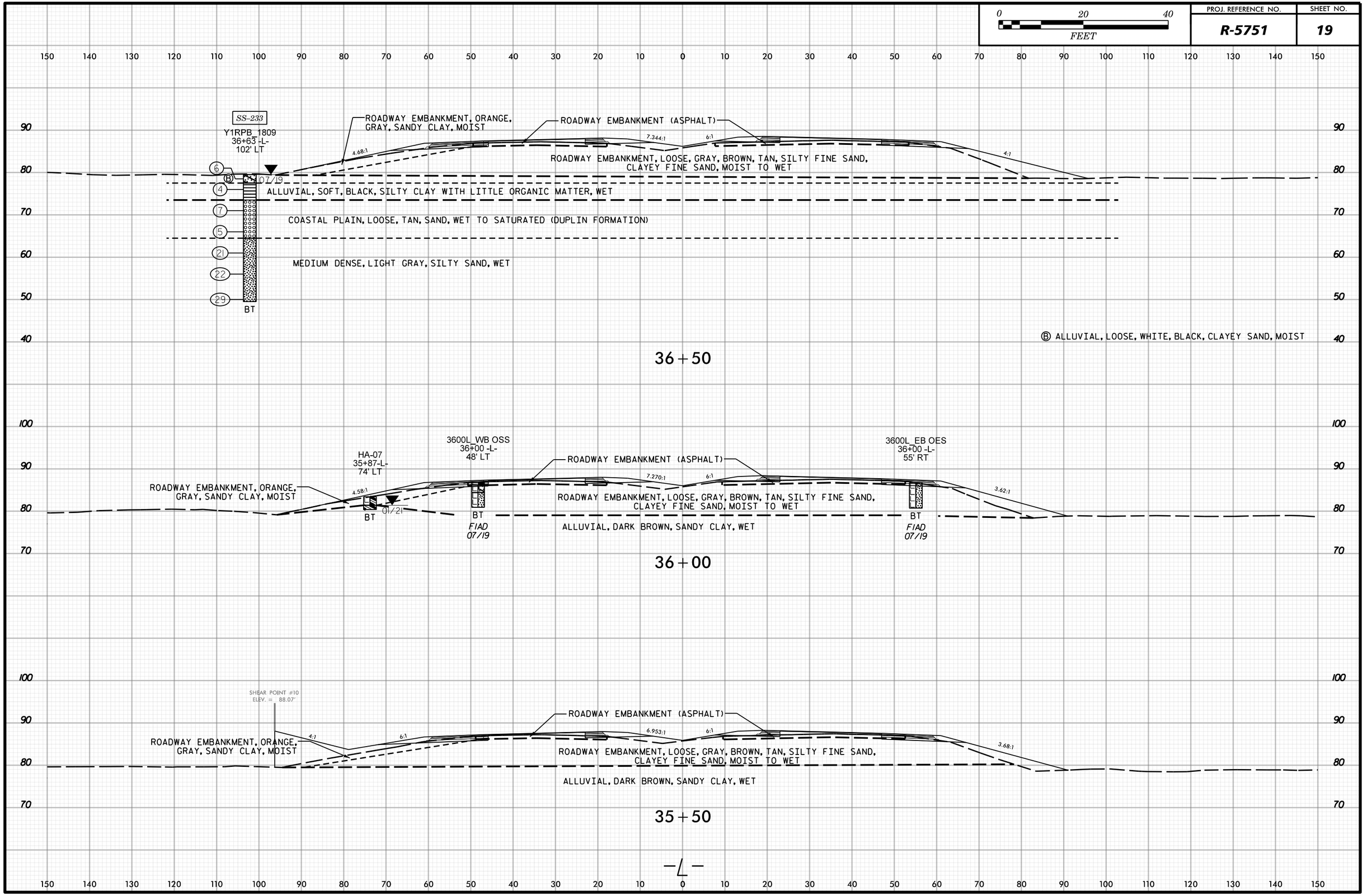
NOTE:
ST-8 OFFSET AT
STA. 31+87, 104' RT

32+00

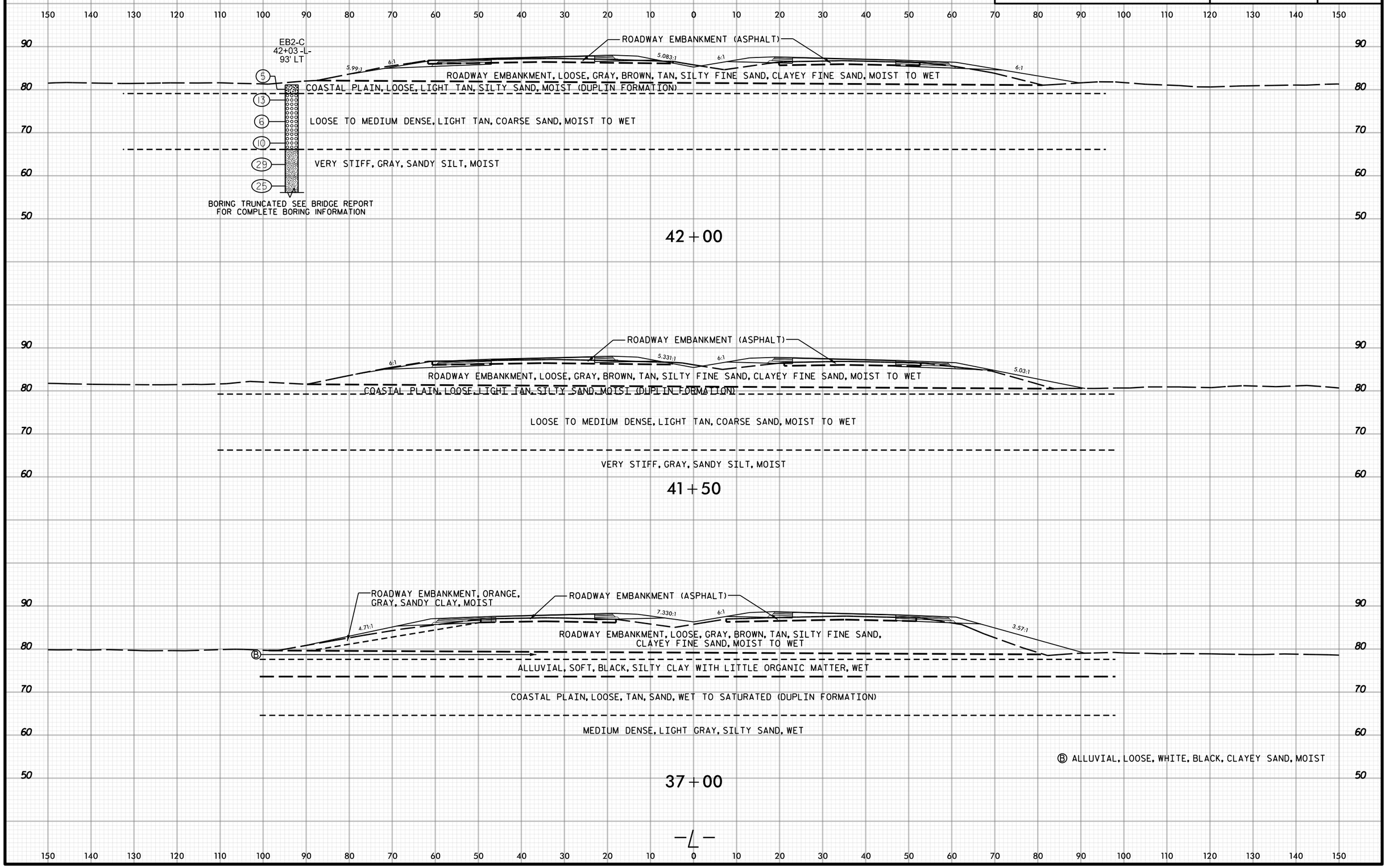
-L-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	19



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	20



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	21

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

ROADWAY EMBANKMENT (ASPHALT)

5.99:1 6:1 4.44:1 6:1 6:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, TAN, SILTY SAND, DRY

COASTAL PLAIN, VERY LOOSE TO MEDIUM DENSE, LIGHT BROWN, TAN, LIGHT GRAY, COARSE SAND, SILTY SAND, MOIST TO SATURATED (DUPLIN FORMATION)

STIFF, DARK GRAY, SANDY CLAY, MOIST, HIGHLY PLASTIC

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, WET

STIFF, DARK GRAY, SANDY CLAY, WET

43+00

100 90 80 70 60 50 40

ST-2
B1-C
42+40 -L-
CL

ROADWAY EMBANKMENT (ASPHALT)

EB1-C
42+71 -L-
95' RT

5.99:1 6:1 4.78:1 6:1 5.94:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, (9) (17) BROWN, TAN, SILTY SAND, DRY

(14) (11) (11) (10) ST-2

COASTAL PLAIN, VERY LOOSE TO MEDIUM DENSE, LIGHT BROWN, TAN, LIGHT GRAY, COARSE SAND, SILTY FINE SAND, MOIST TO SATURATED (DUPLIN FORMATION)

(4) (5) (10) (12) (37) (22) (12)

STIFF, DARK GRAY, SANDY CLAY, MOIST, HIGHLY PLASTIC

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, WET

STIFF, DARK GRAY, SANDY CLAY, WET

BORING TRUNCATED SEE BRIDGE REPORT FOR COMPLETE BORING INFORMATION

BORING TRUNCATED SEE BRIDGE REPORT FOR COMPLETE BORING INFORMATION

NOTE:
ST-2 OFFSET AT STA. 42+40, 5' RT

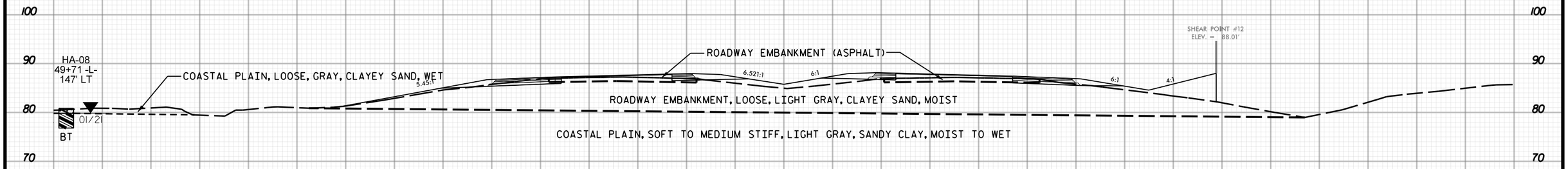
42+50

-L-

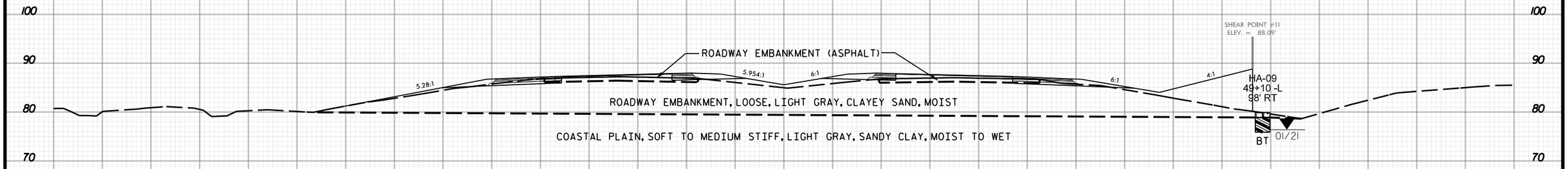
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	22

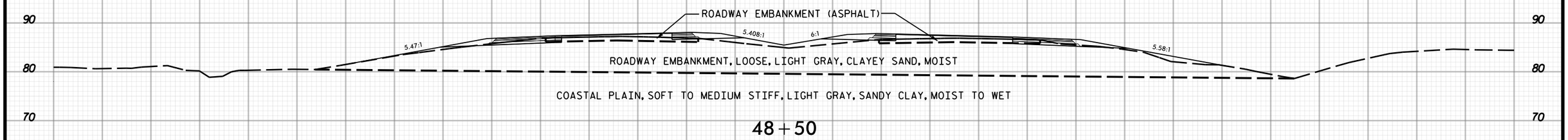
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



49 + 50



49 + 00



48 + 50

$-L-$

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	23

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

SHEAR POINT #16
ELEV. = 87.46'

ROADWAY EMBANKMENT (ASPHALT)

6:1 6:1 6.845:1 6:1 4.06:1

ROADWAY EMBANKMENT, LOOSE, BROWN, SILTY SAND, DRY TO MOIST

COASTAL PLAIN, LOOSE, DARK GRAY, SILTY SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, TAN, SAND, WET

51+50

SHEAR POINT #14
ELEV. = 87.74'

ROADWAY EMBANKMENT (ASPHALT)

6:1 7.382:1 6:1 6:1 4:1

ROADWAY EMBANKMENT, LOOSE, DARK GRAY, SILTY SAND, DRY

COASTAL PLAIN, MEDIUM STIFF, DARK GRAY, SANDY SILT, MOIST (DUPLIN FORMATION)

LOOSE, TAN, SAND, WET

STIFF, DARK GRAY, SANDY CLAY, MOIST

50+50

SHEAR POINT #13
ELEV. = 88.00'

ROADWAY EMBANKMENT (ASPHALT)

6:1 7.077:1 6:1 6:1 4:1

Y1RPD_1600
50+03 -L-
98' RT

ROADWAY EMBANKMENT, LOOSE, DARK GRAY, SILTY SAND, DRY

COASTAL PLAIN, MEDIUM STIFF, DARK GRAY, SANDY SILT, MOIST (DUPLIN FORMATION)

10 6 10 10 10

07/19

LOOSE, TAN, SAND, WET

STIFF, DARK GRAY, SANDY CLAY, MOIST

BT

50+00
-L-

90 80 70 60 100

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	24

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

SHEAR POINT #19
ELEV. = 86.63'

ROADWAY EMBANKMENT (ASPHALT)

6:1 6:1 4.849:1 6:1 4.01:1

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, VERY LOOSE, TAN, SILTY SAND, MOIST (DUPLIN FORMATION)

LOOSE, GRAY, COARSE SAND, SATURATED

90 80 70 60

53+00

SHEAR POINT #18
ELEV. = 86.95'

ROADWAY EMBANKMENT (ASPHALT)

6:1 6:1 5.404:1 6:1 4.02:1

ROADWAY EMBANKMENT, LOOSE, BROWN, SILTY SAND, DRY TO MOIST

COASTAL PLAIN, LOOSE, DARK GRAY, SILTY SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, TAN, SAND, WET

90 80 70 60

52+50

SHEAR POINT #17
ELEV. = 87.23'

ROADWAY EMBANKMENT (ASPHALT)

Y1RPD_1420
51+81 -L-
70' RT

6:1 6:1 6.151:1 6:1 4.04:1

ROADWAY EMBANKMENT, LOOSE, BROWN, SILTY SAND, DRY TO MOIST

7 6 9 10 16

01/21

COASTAL PLAIN, LOOSE, DARK GRAY, SILTY SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, TAN, SAND, WET

BT

90 80 70 60

52+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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	25

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

ROADWAY EMBANKMENT (ASPHALT)

3.40:1 5.99:1 4.398:1 6:1 4:1

ROADWAY EMBANKMENT, LOOSE, BROWN, GRAY, TAN, SILTY FINE SAND, WET

COASTAL PLAIN, LOOSE TO MEDIUM DENSE, TAN, SAND (DUPLIN FORMATION)

54+50

100 / 90 / 80 / 70 / 60

5400L_WB OES
54+00 -L-
50' LT

5400L_EB OES
54+00 -L-
60' RT

CBR-1
Y1RPD_1200
54+01 -L-
70' RT

ROADWAY EMBANKMENT (ASPHALT)

4.31:1 6:1 4.360:1 6:1 4:1

ROADWAY EMBANKMENT, LOOSE, BROWN, GRAY, TAN, SILTY FINE SAND, WET

BT
FIAD
07/19

BT
FIAD
07/19

8 5 13 6 9

01/21

BT

COASTAL PLAIN, LOOSE TO MEDIUM DENSE, TAN, SAND (DUPLIN FORMATION)

54+00

90 / 80 / 70

SS-83
SS-84
Y1RPA_1500
53+51 -L-
82' LT

SHEAR POINT #20
ELEV. = 86.42'

ROADWAY EMBANKMENT (ASPHALT)

6:1 4.500:1 6:1 4.01:1

11 4 8

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, VERY LOOSE, TAN, SILTY SAND, MOIST (DUPLIN FORMATION)

LOOSE, GRAY, COARSE SAND, SATURATED

BT
CAVED DRY @ 4.2'
07/19

53+50

-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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	26

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

90
80
70
60

ROADWAY EMBANKMENT (ASPHALT)

6.01:1 6:1 5.674:1 6:1 4:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT BROWN, DARK GRAY, SILTY SAND, DRY TO MOIST

COASTAL PLAIN, MEDIUM DENSE, TAN, COARSE SAND, SATURATED (DUPLIN FORMATION)

56+00

100
90
80
70
60

CBR-2
Y1RPA_1300
55+51 -L-
68' LT

ROADWAY EMBANKMENT (ASPHALT)

6.01:1 6:1 5.094:1 6:1 4:1

16
10
14

LL
PL
MC

BT

CAVED DRY @ 5.7'
07/19

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT BROWN, DARK GRAY, SILTY SAND, DRY TO MOIST

COASTAL PLAIN, MEDIUM DENSE, TAN, COARSE SAND, SATURATED (DUPLIN FORMATION)

55+50

100
90
80
70
60

ROADWAY EMBANKMENT (ASPHALT)

4.82:1 6:1 4.623:1 6:1 4:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT BROWN, DARK GRAY, SILTY SAND, DRY TO MOIST

COASTAL PLAIN, MEDIUM DENSE, TAN, COARSE SAND, SATURATED (DUPLIN FORMATION)

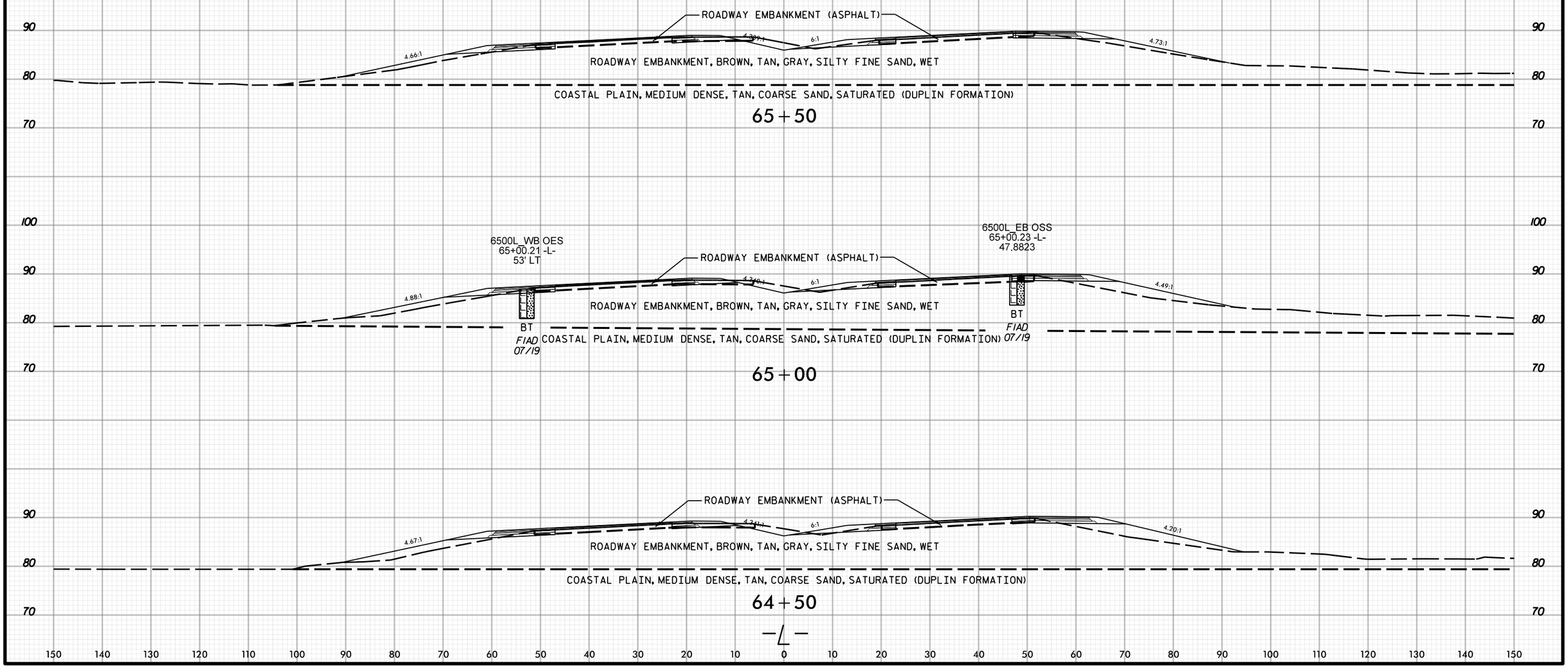
55+00

-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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	27

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



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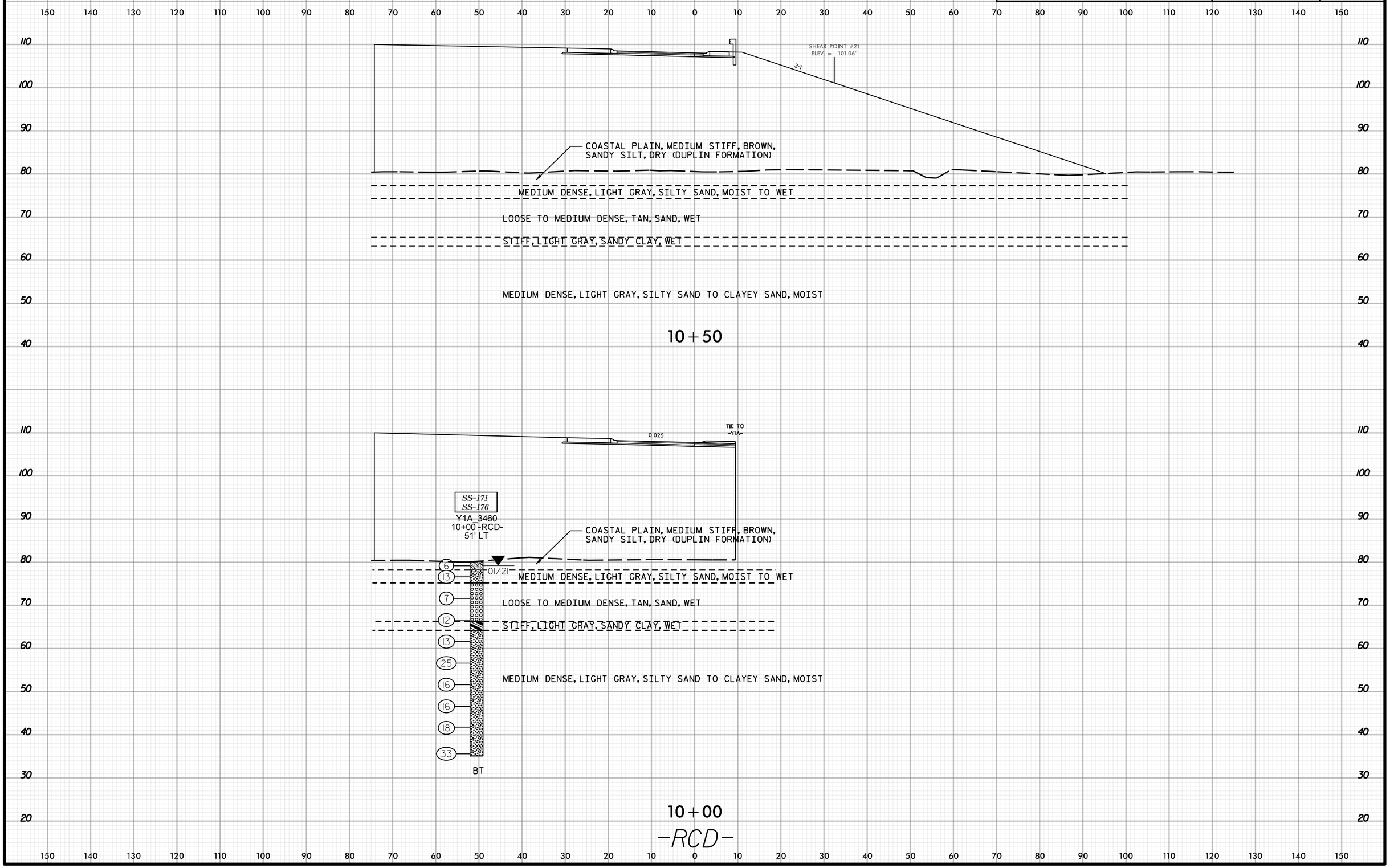
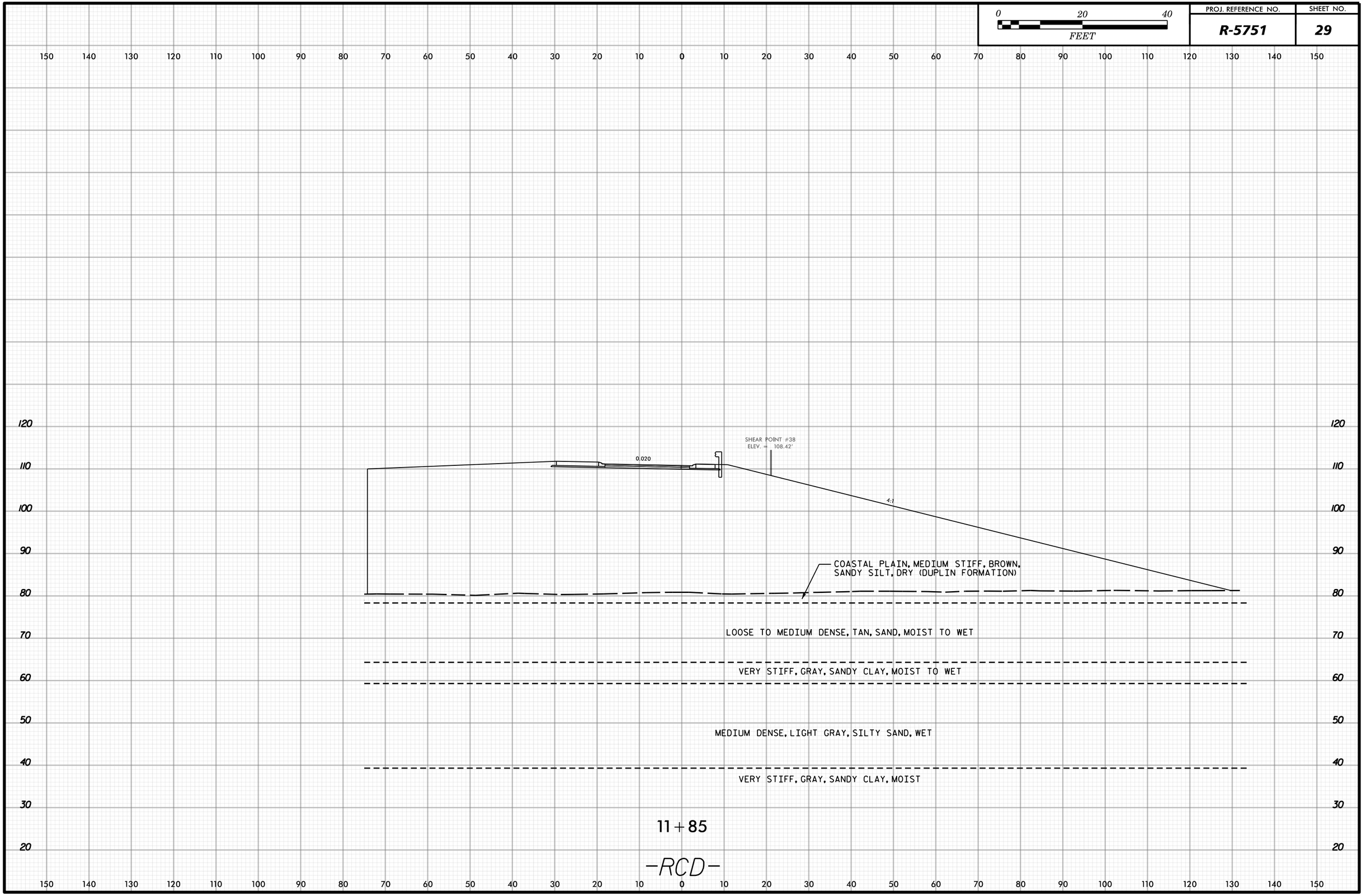
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	28



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	29



PROJ. REFERENCE NO.	SHEET NO.
R-5751	30

0 20 40
FEET

TIE TO
-Y1B-

0.020

SS-188

Y1B 3570
12+36 -RCD-
11' RT

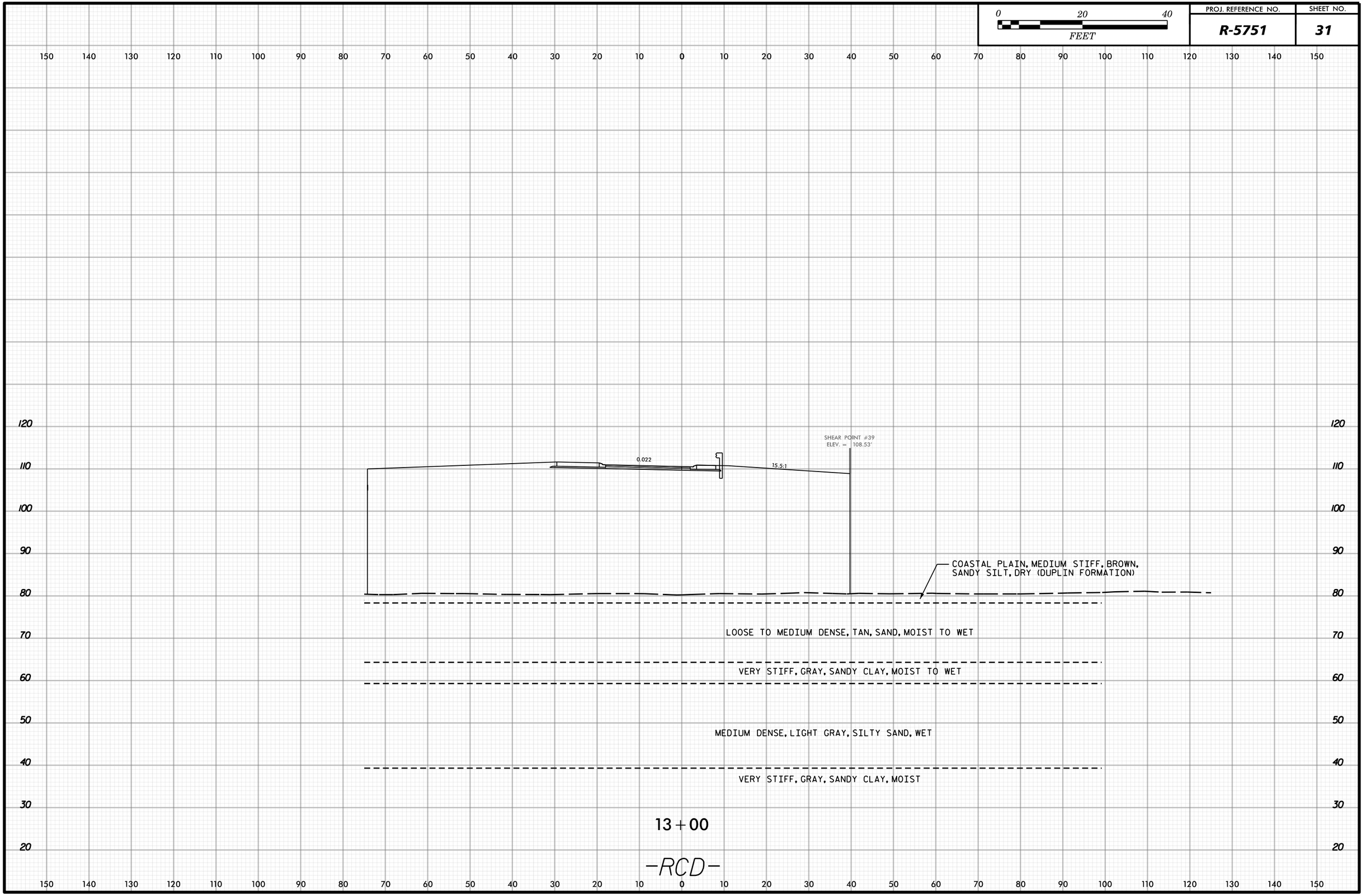
COASTAL PLAIN, MEDIUM STIFF, BROWN, SANDY SILT, DRY (DUPLIN FORMATION)

8
15
6 — LOOSE TO MEDIUM DENSE, TAN, SAND, MOIST TO WET
7
18 — VERY STIFF, GRAY, SANDY CLAY, MOIST TO WET
16
20
18 — MEDIUM DENSE, LIGHT GRAY, SILTY SAND, WET
20
24 — VERY STIFF, GRAY, SANDY CLAY, MOIST

BT
FIAD
07/19

12+35
-RCD-

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	31



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	32

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

ROADWAY EMBANKMENT, VERY LOOSE, DARK BROWN, BLACK, SILTY SAND, MOIST

PAVEMENT (ASPHALT)

4:1 4:1

ALLUVIAL, VERY SOFT, DARK GRAY, BROWN, SANDY CLAY, LITTLE ORGANICS, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, GREEN, SILTY SAND, WET

22+00

ROADWAY EMBANKMENT, VERY LOOSE, DARK BROWN, BLACK, SILTY SAND, MOIST

PAVEMENT (ASPHALT)

4:1 4:1

80 / 70 / 60

ALLUVIAL, VERY SOFT, DARK GRAY, BROWN, SANDY CLAY, LITTLE ORGANICS, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, GREEN, SILTY SAND, WET

21+50

ROADWAY EMBANKMENT, VERY LOOSE, DARK BROWN, BLACK, SILTY SAND, MOIST

PAVEMENT (ASPHALT)

4:1 4:1

80 / 70 / 60

ALLUVIAL, VERY SOFT, DARK GRAY, BROWN, SANDY CLAY, LITTLE ORGANICS, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, GREEN, SILTY SAND, WET

21+00

-Y/A-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	33

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

4:1 4:1

HA-05
23+52 -Y1A-
124' RT

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, BROWN, CLAYEY SAND, TRACE GRAVEL, MOIST

ALLUVIAL, DARK BROWN, SANDY CLAY, WET TO SATURATED

01/21

BT

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET TO SATURATED (DUPLIN FORMATION)

VERY STIFF, LIGHT GRAY, SANDY SILT, MOIST

23+50

90 / 80 / 70 / 60

TIE TO -SRA-

4:1

ROADWAY EMBANKMENT, VERY LOOSE, DARK BROWN, BLACK, SILTY SAND, MOIST

PAVEMENT (ASPHALT)

ALLUVIAL, VERY SOFT, DARK GRAY, BROWN, SANDY CLAY, LITTLE ORGANICS, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, GREEN, SILTY SAND, WET

23+00

90 / 80 / 70 / 60 / 50

SS-211

ROADWAY EMBANKMENT, VERY LOOSE, DARK BROWN, BLACK, SILTY SAND, MOIST

Y1A_2249
22+49 -Y1A-
6CL

PAVEMENT (ASPHALT)

4:1 4:1

4
2
8
5
16

01/21

BT

ALLUVIAL, VERY SOFT, DARK GRAY, BROWN, SANDY CLAY, LITTLE ORGANICS, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET (DUPLIN FORMATION)

MEDIUM DENSE, GREEN, SILTY SAND, WET

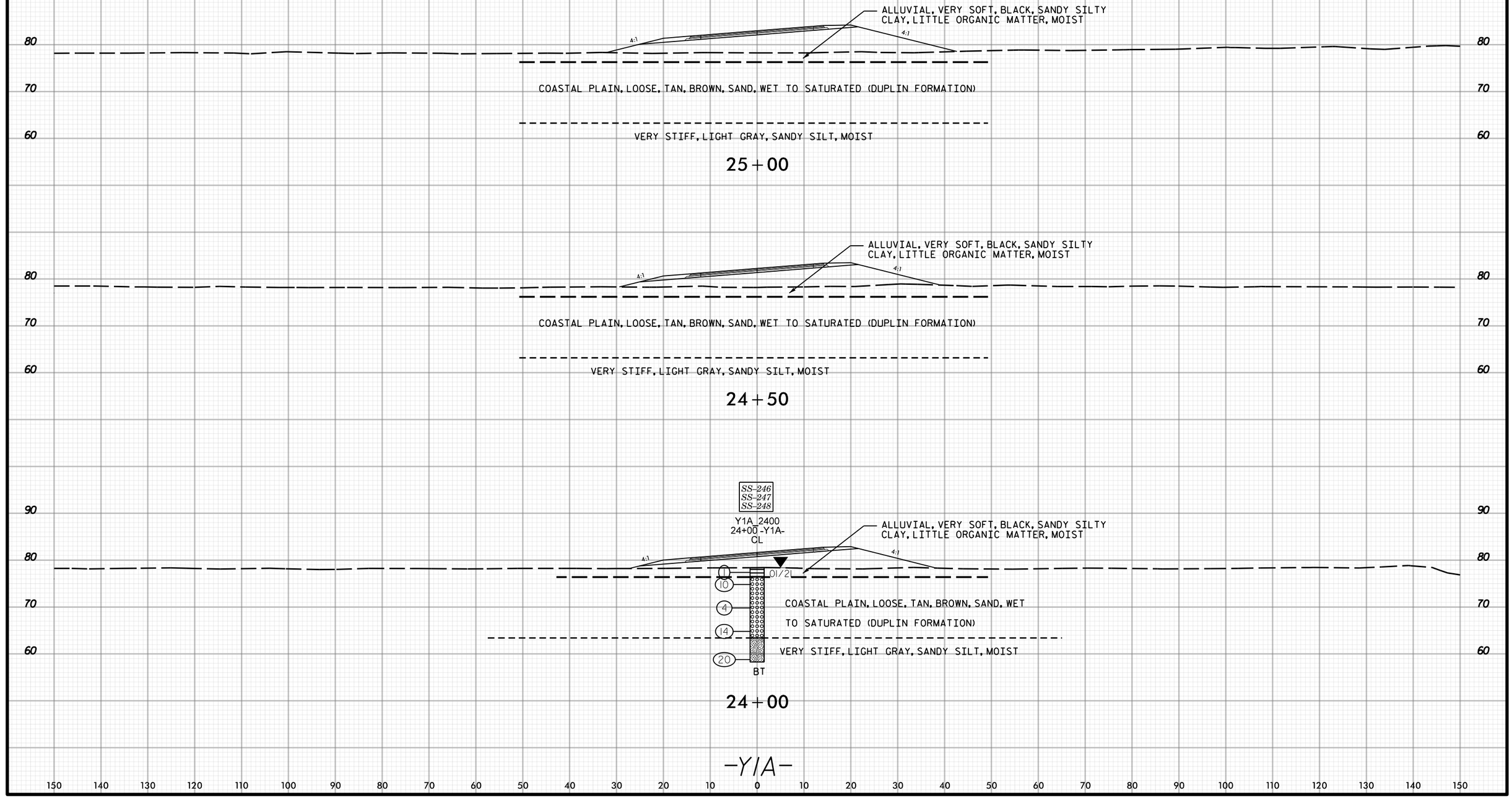
22+50

-Y1A-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	34

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



-Y1A-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	35

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

4:1 4:1

ALLUVIAL, SOFT, DARK BROWN, SILTY CLAY, WET

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, SATURATED (DUPLIN FORMATION)

STIFF, LIGHT GRAY, SILTY CLAY, MOIST

26+50

ST-10
SS-253

Y1A_2600
26+00 -Y1A-
CL

4:1 4:1

01/21

3 ST-10 ALLUVIAL, SOFT, DARK BROWN, SILTY CLAY, WET
9
8 COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, SATURATED (DUPLIN FORMATION)
13 STIFF, LIGHT GRAY, SILTY CLAY, MOIST
15
BT

NOTE:
ST-10 OFFSET AT
STA. 26+00, 4' RT

26+00

4:1 4:1

ALLUVIAL, SOFT, DARK BROWN, SILTY CLAY, MOIST

COASTAL PLAIN, LOOSE, TAN, BROWN, SAND, WET TO SATURATED (DUPLIN FORMATION)

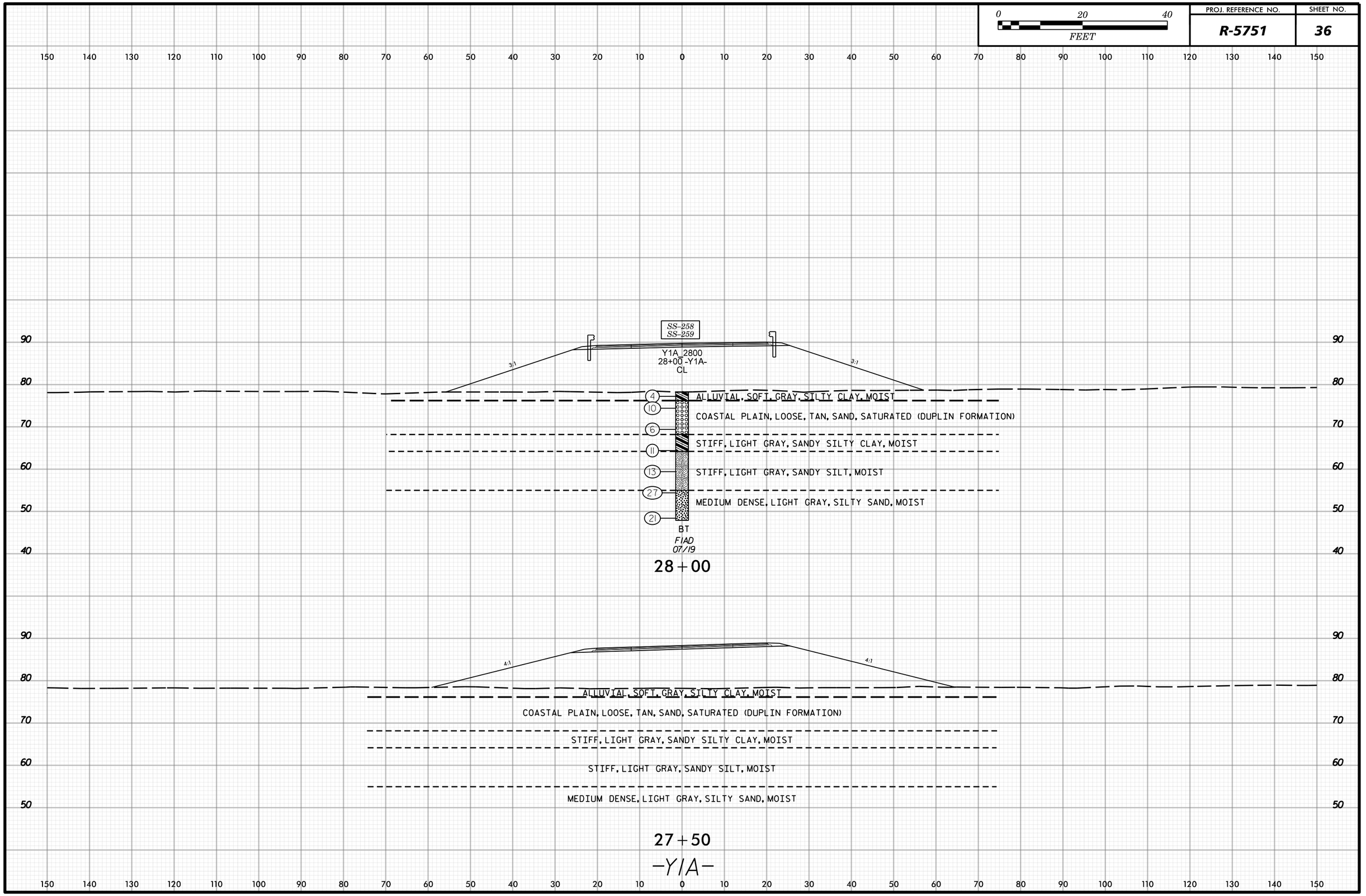
STIFF, LIGHT GRAY, SILTY CLAY, MOIST

25+50

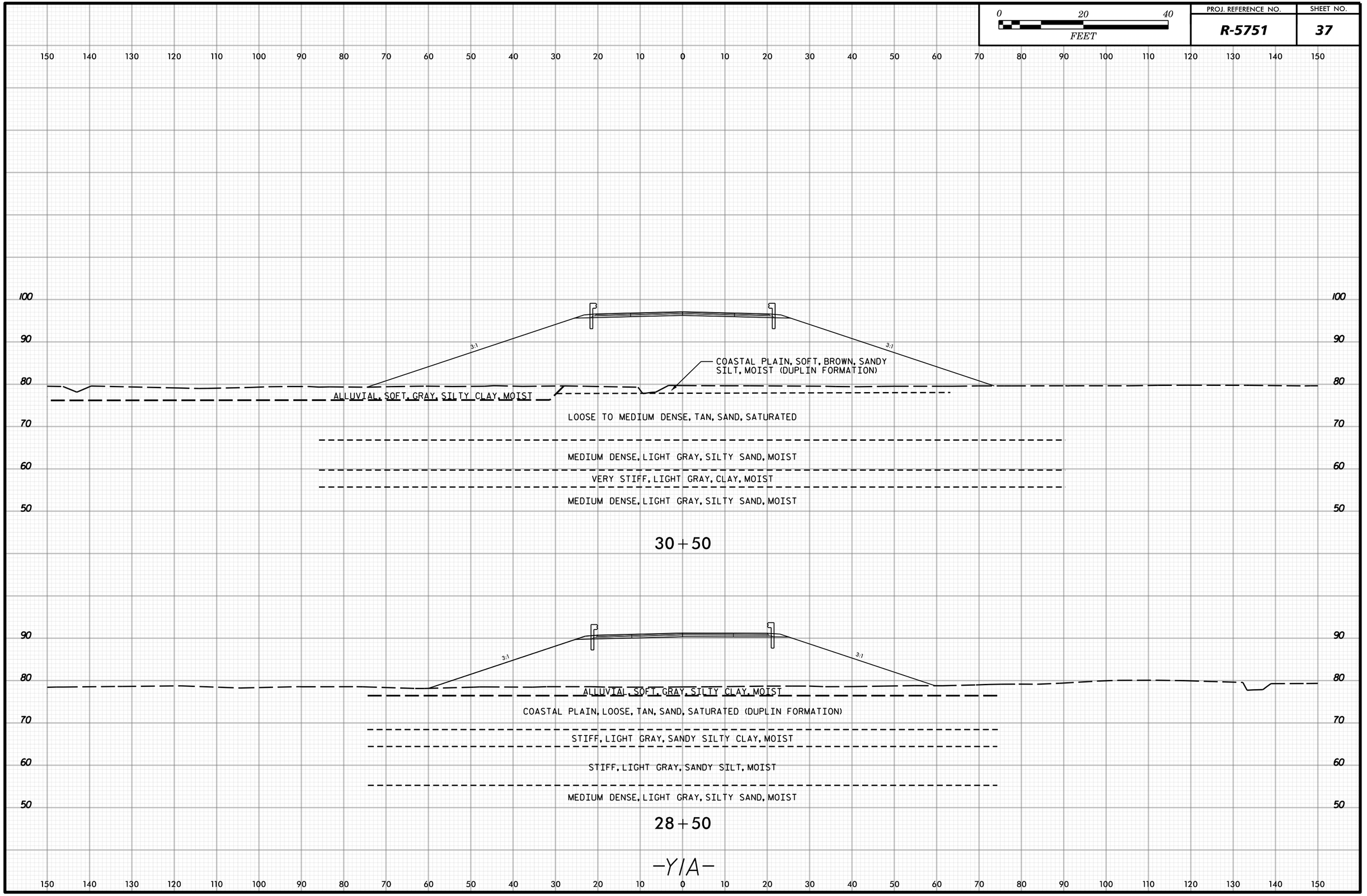
-Y1A-

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

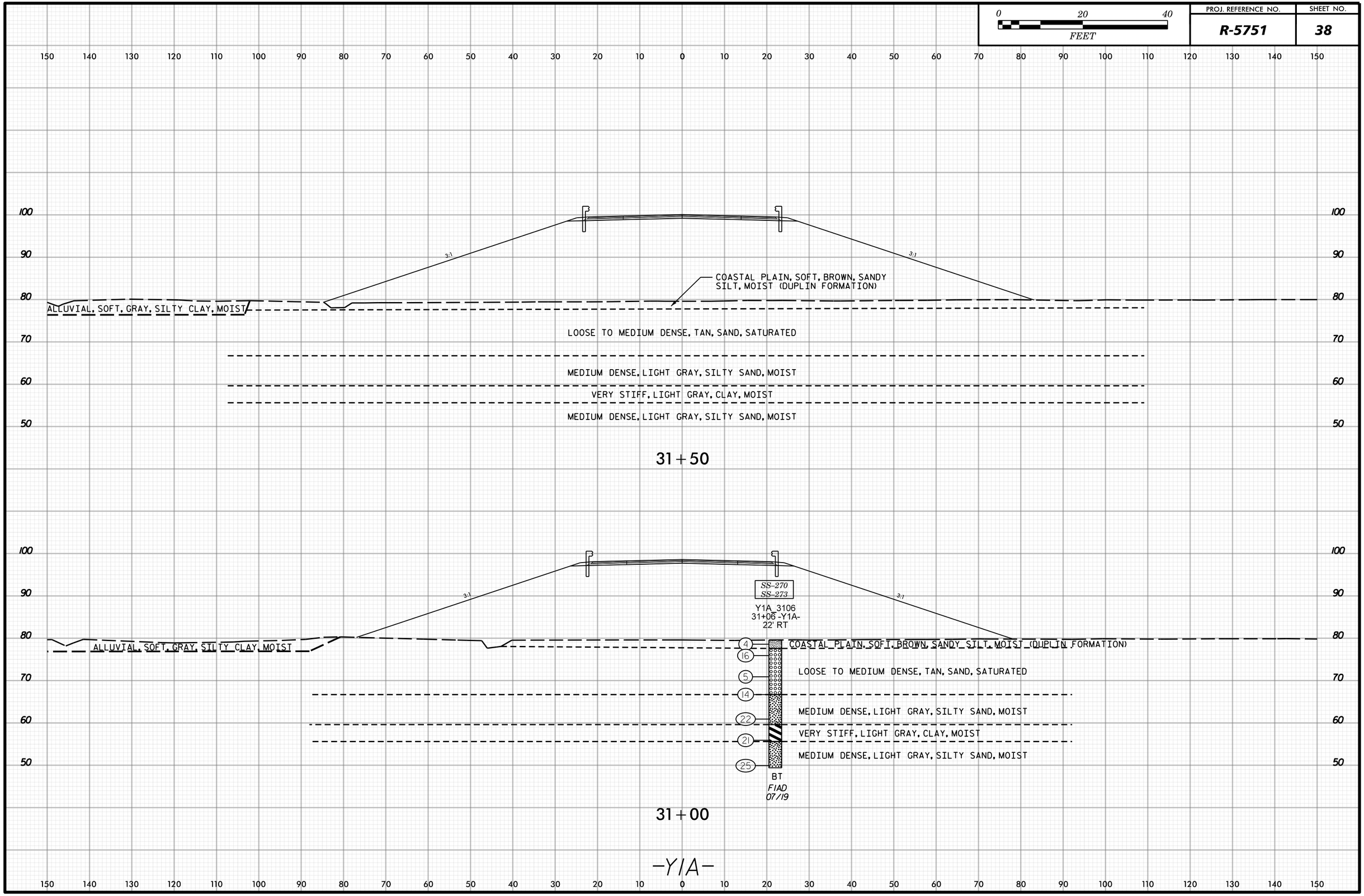
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	36



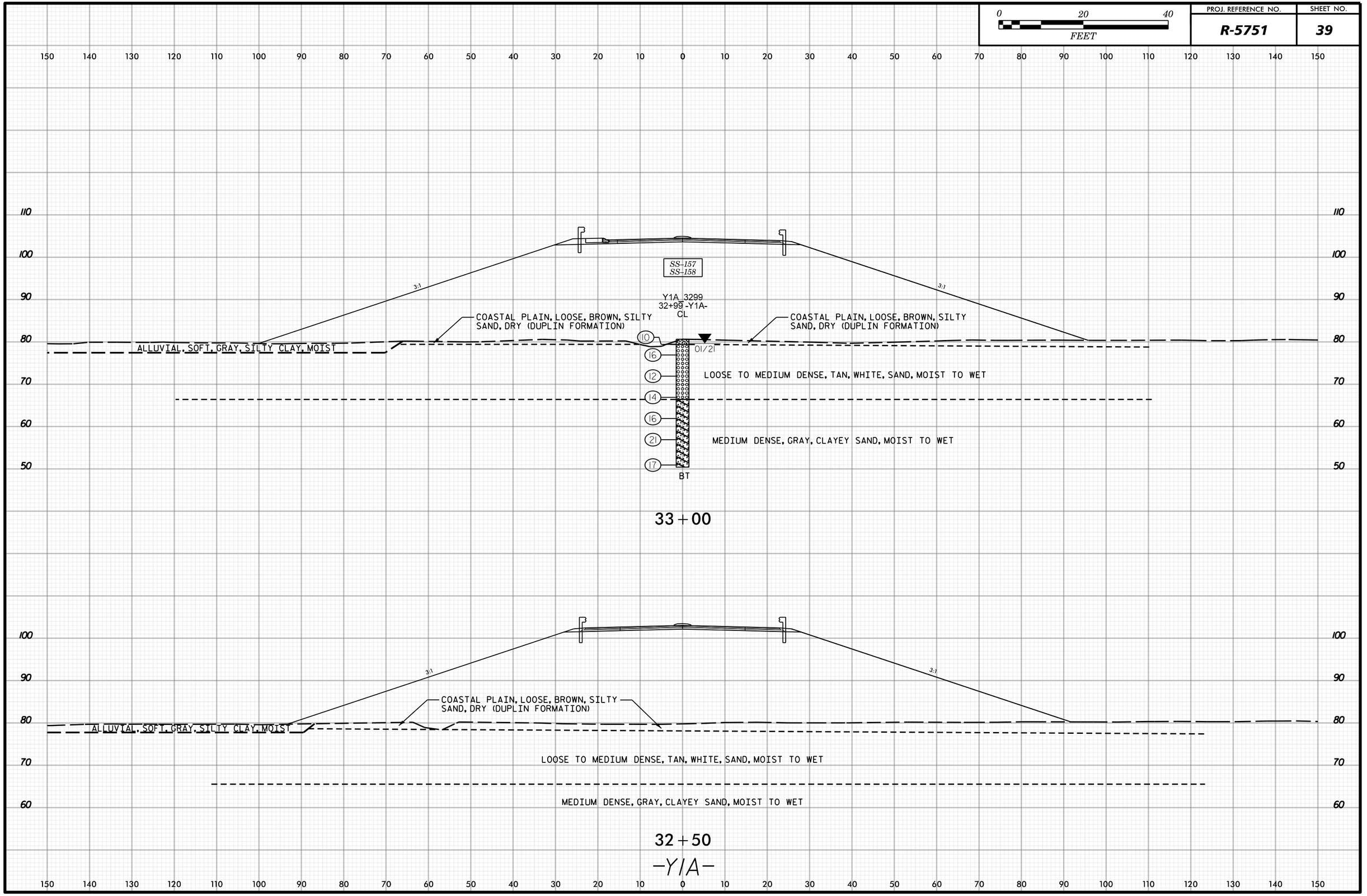
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	37



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	38



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	39



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	40

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

3:1

3:1

COASTAL PLAIN, LOOSE, BROWN, SILTY SAND, DRY (DUPLIN FORMATION)

ALLUVIAL, SOFT, GRAY, SILTY CLAY, MOIST

LOOSE TO MEDIUM DENSE, TAN, WHITE, SAND, MOIST TO WET

MEDIUM DENSE, GRAY, CLAYEY SAND, MOIST TO WET

33+50

-Y1A-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	41

SHEAR POINT #25
ELEV. = 107.17'

SHEAR POINT #39
ELEV. = 108.88'

SHEAR POINT #38
ELEV. = 108.42'

25.21:1

6.82:1

SS-181
SS-183
SS-184
SS-186
SS-188

Y1B_3570
35+70 -Y1B-
CL

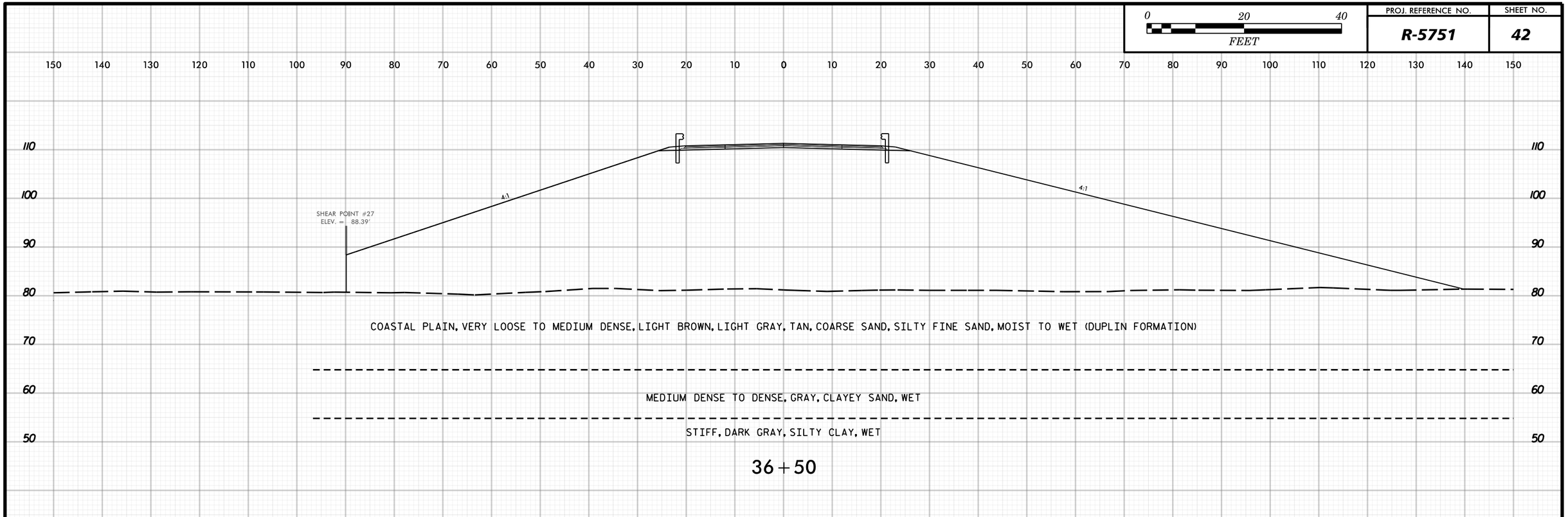
8	COASTAL PLAIN, MEDIUM STIFF, BROWN, SANDY SILT, DRY (DUPLIN FORMATION)
15	
6	LOOSE TO MEDIUM DENSE, TAN, SAND, MOIST TO WET
7	
18	VERY STIFF, GRAY, SANDY CLAY, MOIST
16	
20	MEDIUM DENSE, LIGHT GRAY, SILTY SAND, WET
18	
20	
24	VERY STIFF, GRAY, SILTY CLAY, MOIST

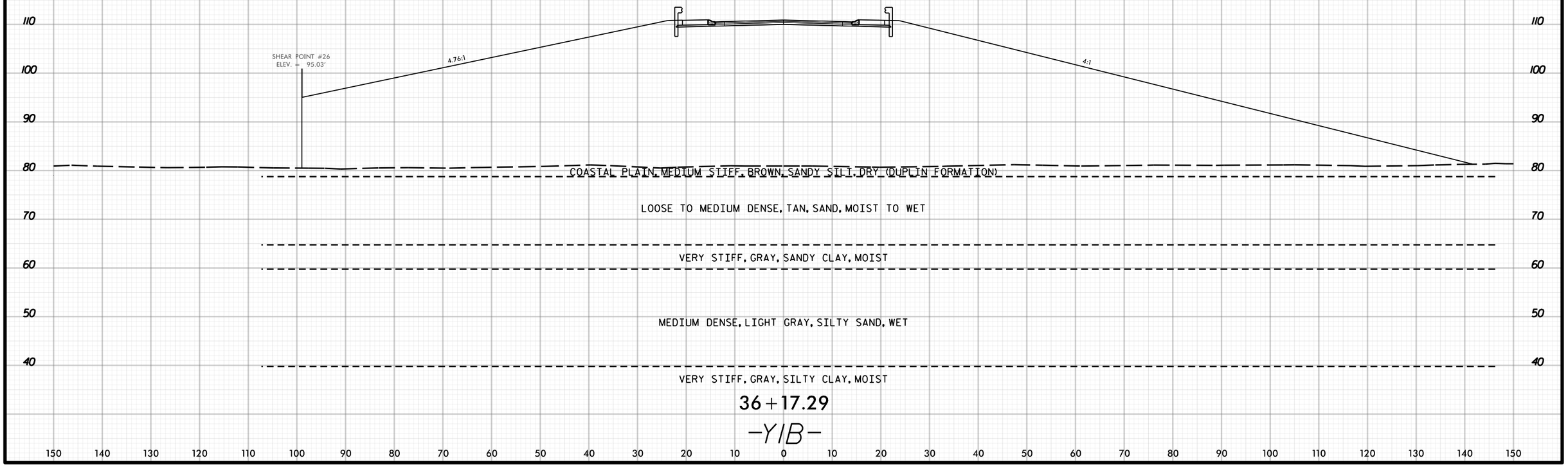
BT
FIAD
07/19

35+59.45

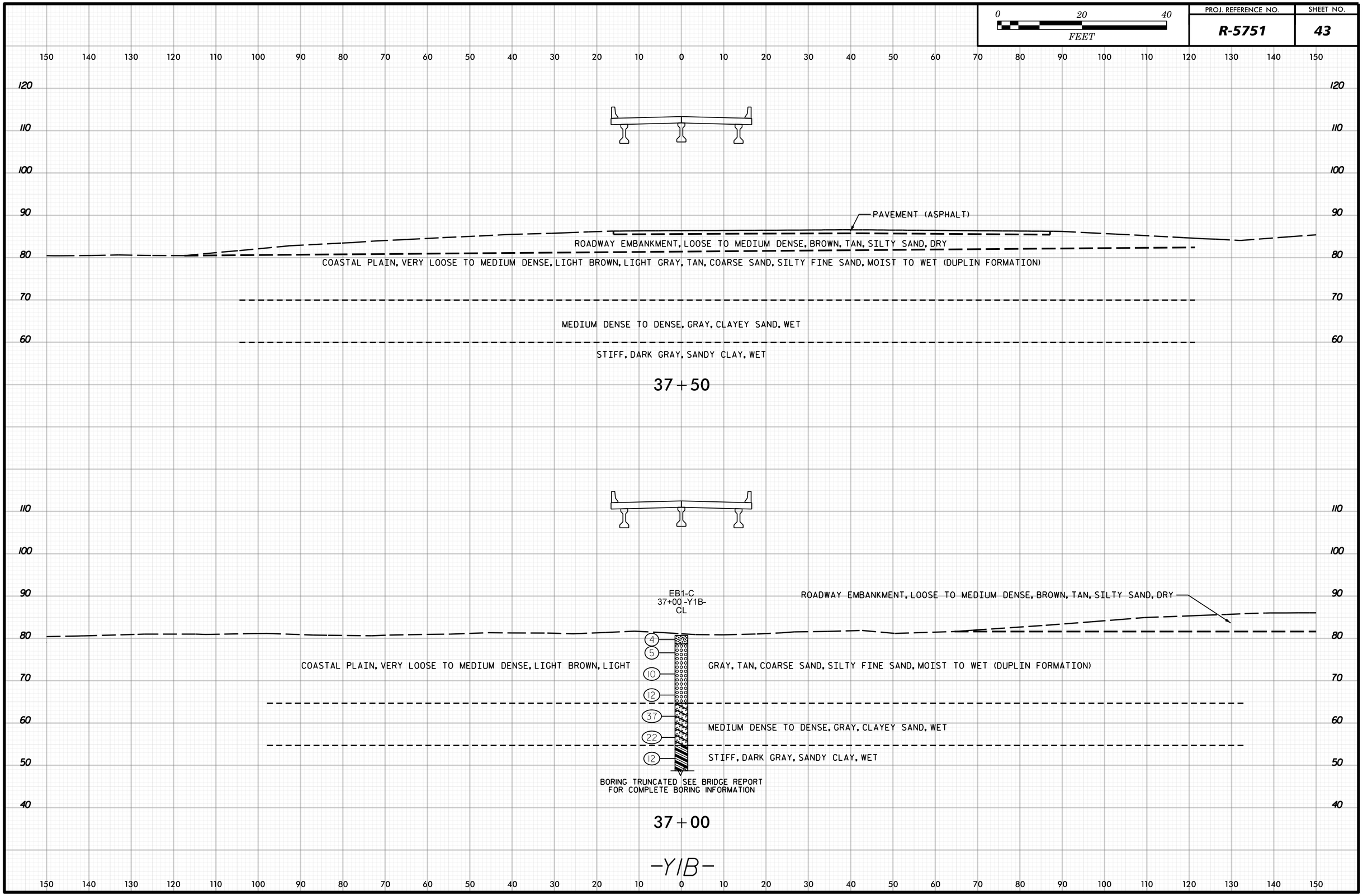
-Y1B-

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	42





0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	43



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	44

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

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, TAN, SILTY SAND, DRY

COASTAL PLAIN, VERY LOOSE TO MEDIUM DENSE, LIGHT BROWN, LIGHT GRAY, TAN, COARSE SAND, SILTY FINE SAND, MOIST TO WET (DUPLIN FORMATION)

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, WET

STIFF, DARK GRAY, SANDY CLAY, WET

38+50

120
110
100
90
80
70
60
50

ST-4

B1-C
38+00 -Y1B-
CL

PAVEMENT (ASPHALT)

PAVEMENT (ASPHALT)

9
17
14
11
11
10

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, TAN, SILTY SAND, DRY

COASTAL PLAIN, MEDIUM DENSE, TAN, SAND, MOIST TO WET (DUPLIN FORMATION)

STIFF, DARK GRAY, SILTY CLAY, HIGHLY PLASTIC, MOIST

ST-4

BORING TRUNCATED SEE BRIDGE REPORT
FOR COMPLETE BORING INFORMATION

NOTE:
ST-4 OFFSET AT
STA. 38+00, 4' LT

38+00

-Y1B-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	45

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 50

4:1

4:1

SHEAR POINT #28
ELEV. = 88.94'

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, TAN, SILTY SAND, DRY

COASTAL PLAIN, VERY LOOSE TO MEDIUM DENSE, LIGHT BROWN, LIGHT GRAY, TAN, COARSE SAND, SILTY FINE SAND, MOIST TO WET (DUPLIN FORMATION)

MEDIUM DENSE TO DENSE, GRAY, CLAYEY SAND, WET

STIFF, DARK GRAY, SANDY CLAY, WET

39 + 50

EB2-C
39+00 -Y1B-
6' LT

HA-03
38+76 -Y1B-
23' RT

COASTAL PLAIN, LOOSE, LIGHT TAN, LIGHT GRAY, DARK GRAY, SILTY SAND, CLAYEY SAND, WET TO SATURATED (DUPLIN FORMATION)

ROADWAY EMBANKMENT, ORANGE, GRAY, SANDY CLAY, MOIST

5
13
6
10
29
25

01/21

BT

LOOSE TO MEDIUM DENSE, LIGHT TAN, COARSE SAND, MOIST TO WET

VERY STIFF, GRAY, SANDY SILT, MOIST

BORING TRUNCATED SEE BRIDGE REPORT
FOR COMPLETE BORING INFORMATION

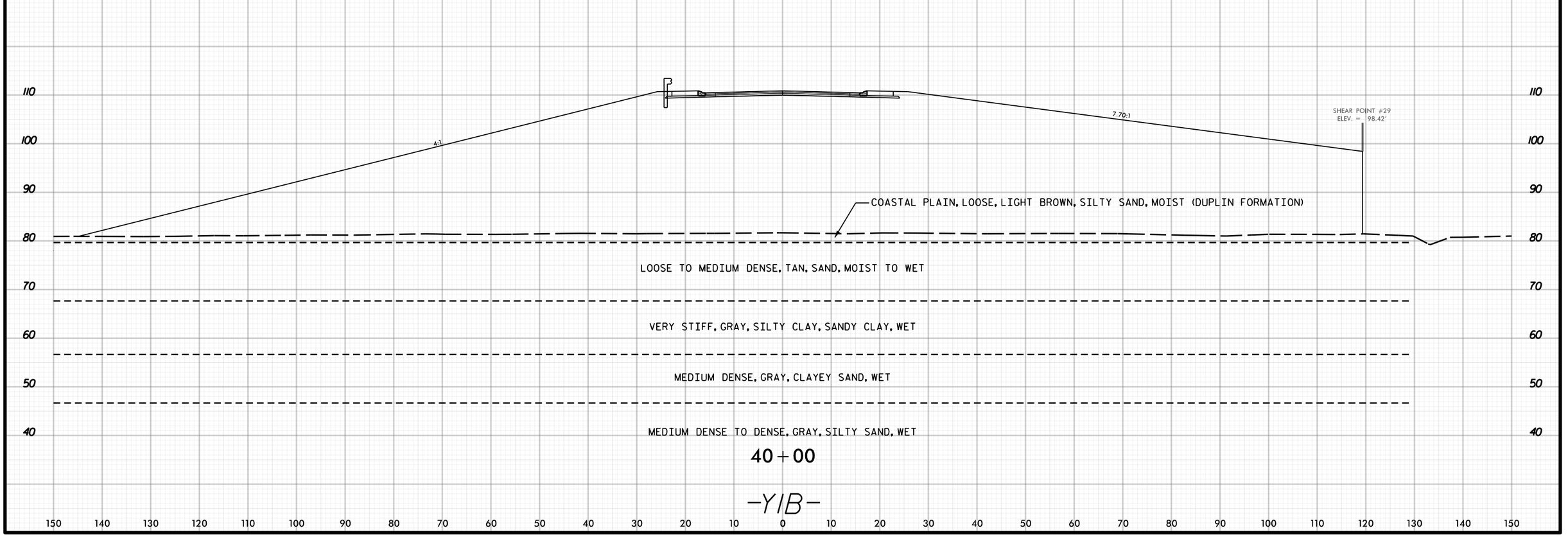
39 + 00

-Y1B-

110 100 90 80 70 60 50

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

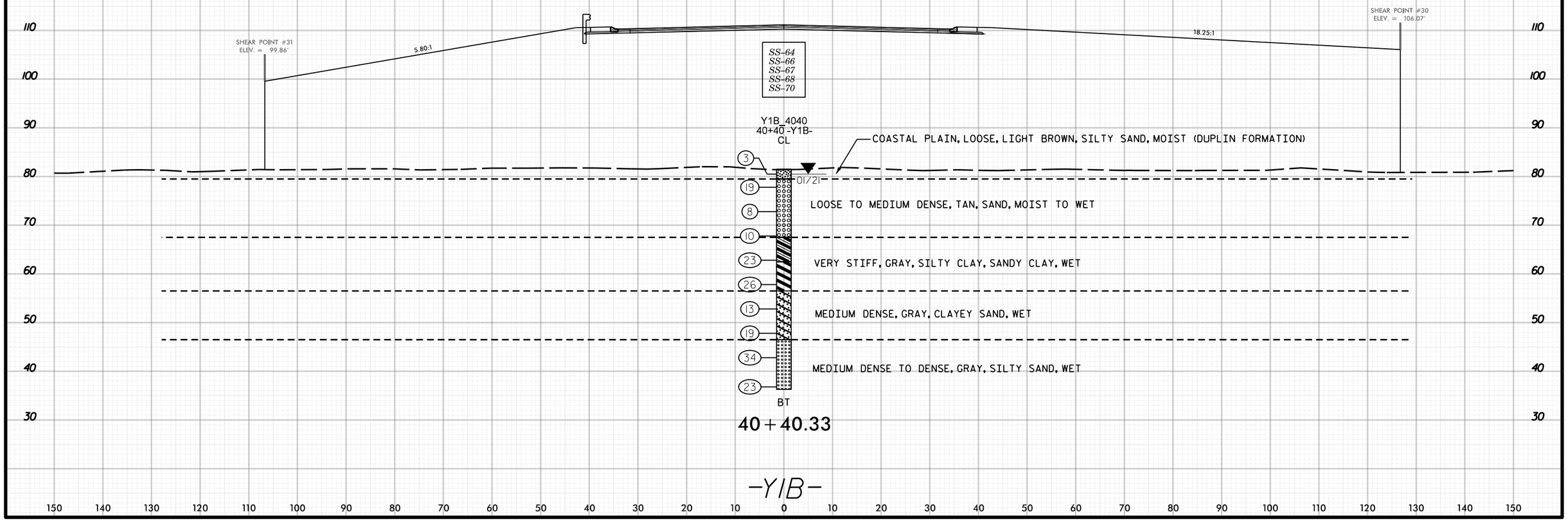
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	46



40+00

-YIB-

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	47



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	48

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT GRAY, BROWN, SILTY FINE SAND, MOIST

4:1

3:1

TOPSOIL, VERY LOOSE, DARK BROWN, CLAYEY SAND, MOIST

COASTAL PLAIN, VERY LOOSE, LIGHT GRAY, SILTY SAND, WET (DUPLIN FORMATION)

LOOSE, LIGHT GRAY, TAN, COARSE SAND, WET

MEDIUM DENSE, LIGHT GRAY, TAN, CLAYEY SAND

42 + 50

SHEAR POINT #33
ELEV. = 98.49'

4.79:1

3.69:1

SHEAR POINT #32
ELEV. = 88.33'

SS-38
SS-39
SS-40
SS-42

Y1C 4220
42+20 -Y1C-
CL

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT GRAY, BROWN, SILTY FINE SAND, MOIST

COASTAL PLAIN, VERY LOOSE, LIGHT GRAY, SILTY SAND, WET (DUPLIN FORMATION)

TOPSOIL, VERY LOOSE, DARK BROWN, CLAYEY SAND, MOIST

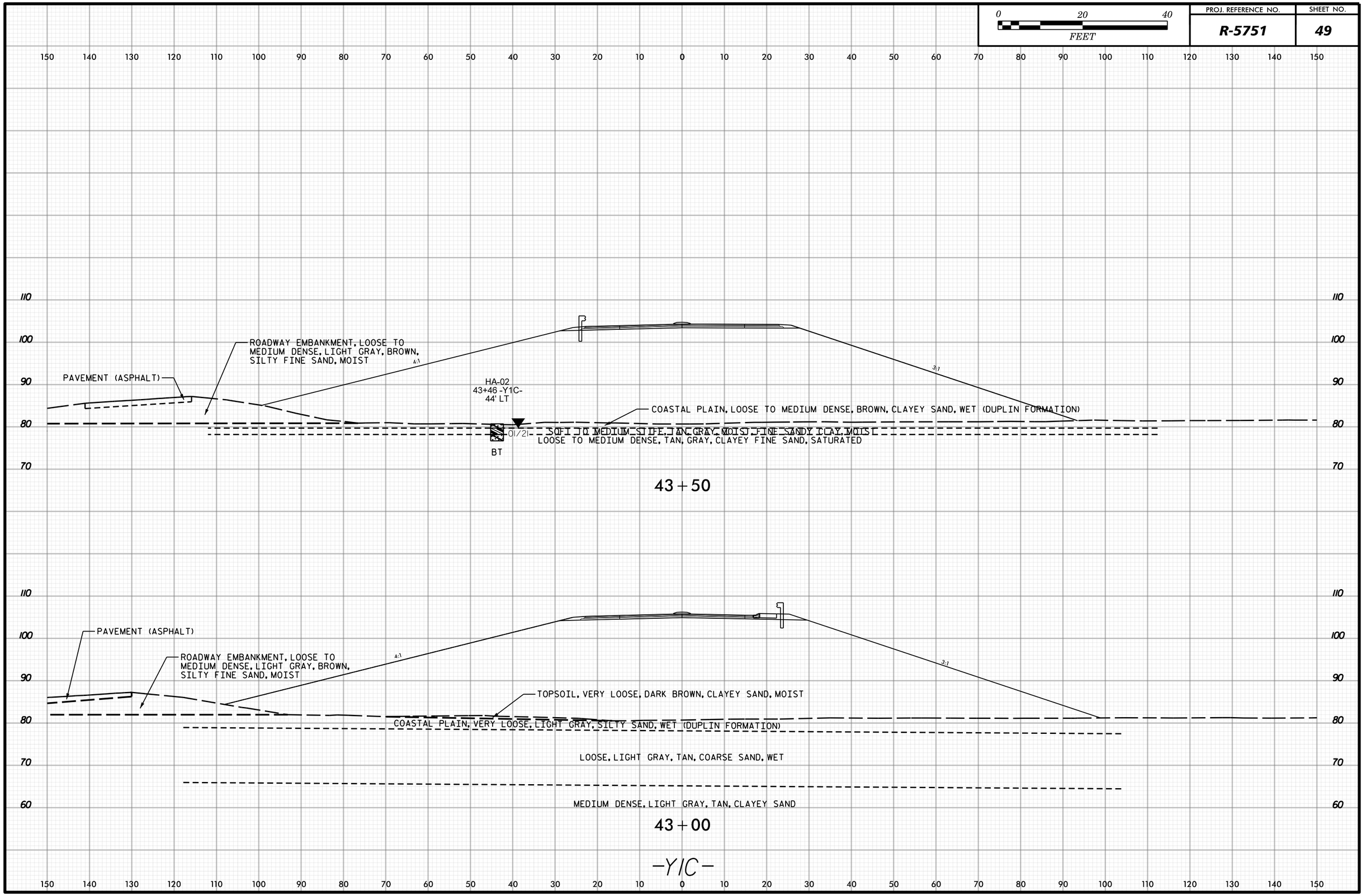
2	WOH/2'
5	
10	LOOSE, LIGHT GRAY, TAN, COARSE SAND, WET
5	
19	
23	MEDIUM DENSE, LIGHT GRAY, TAN, CLAYEY SAND
18	
24	
26	
14	

BT

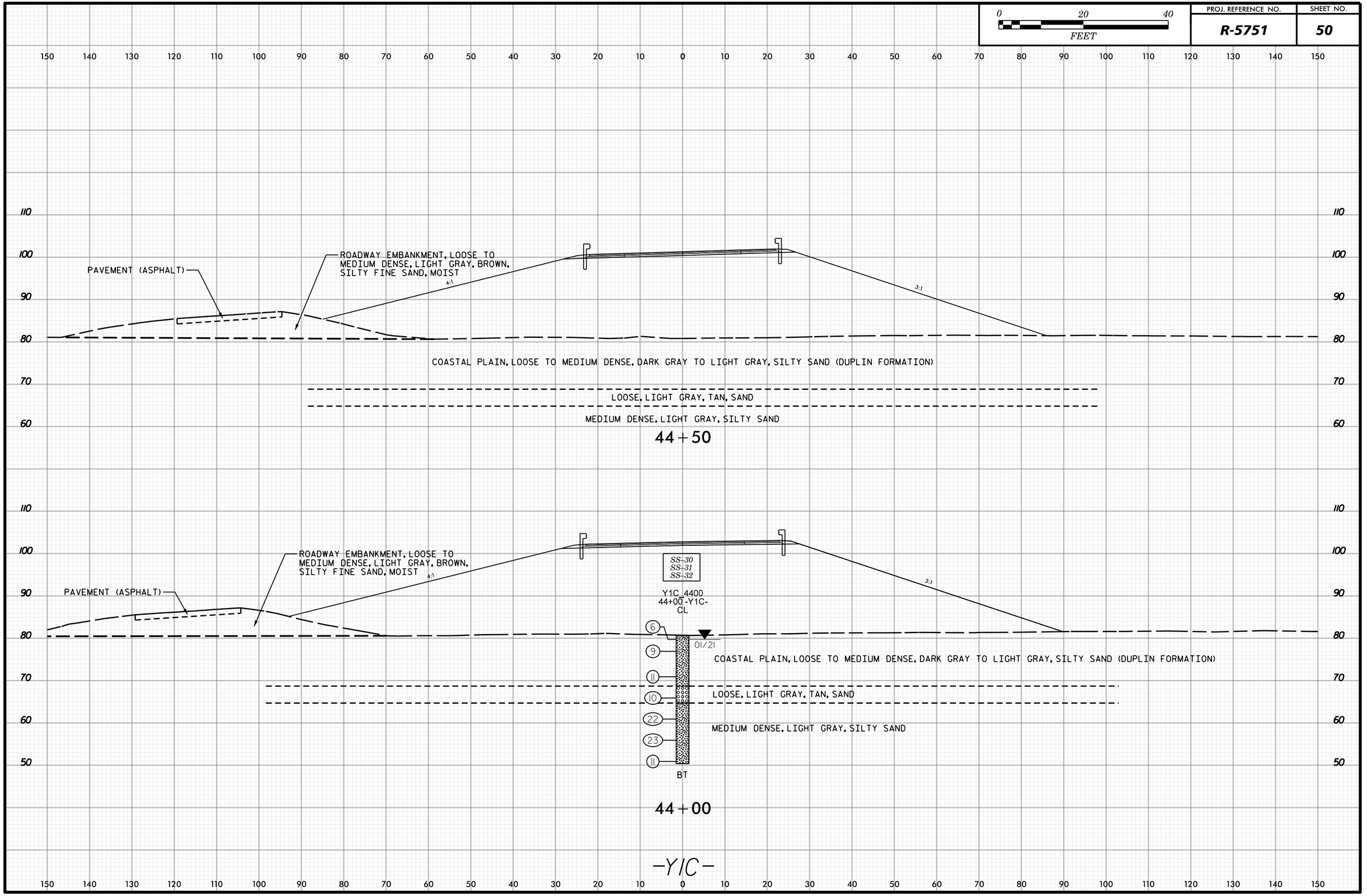
42 + 00

-Y1C-

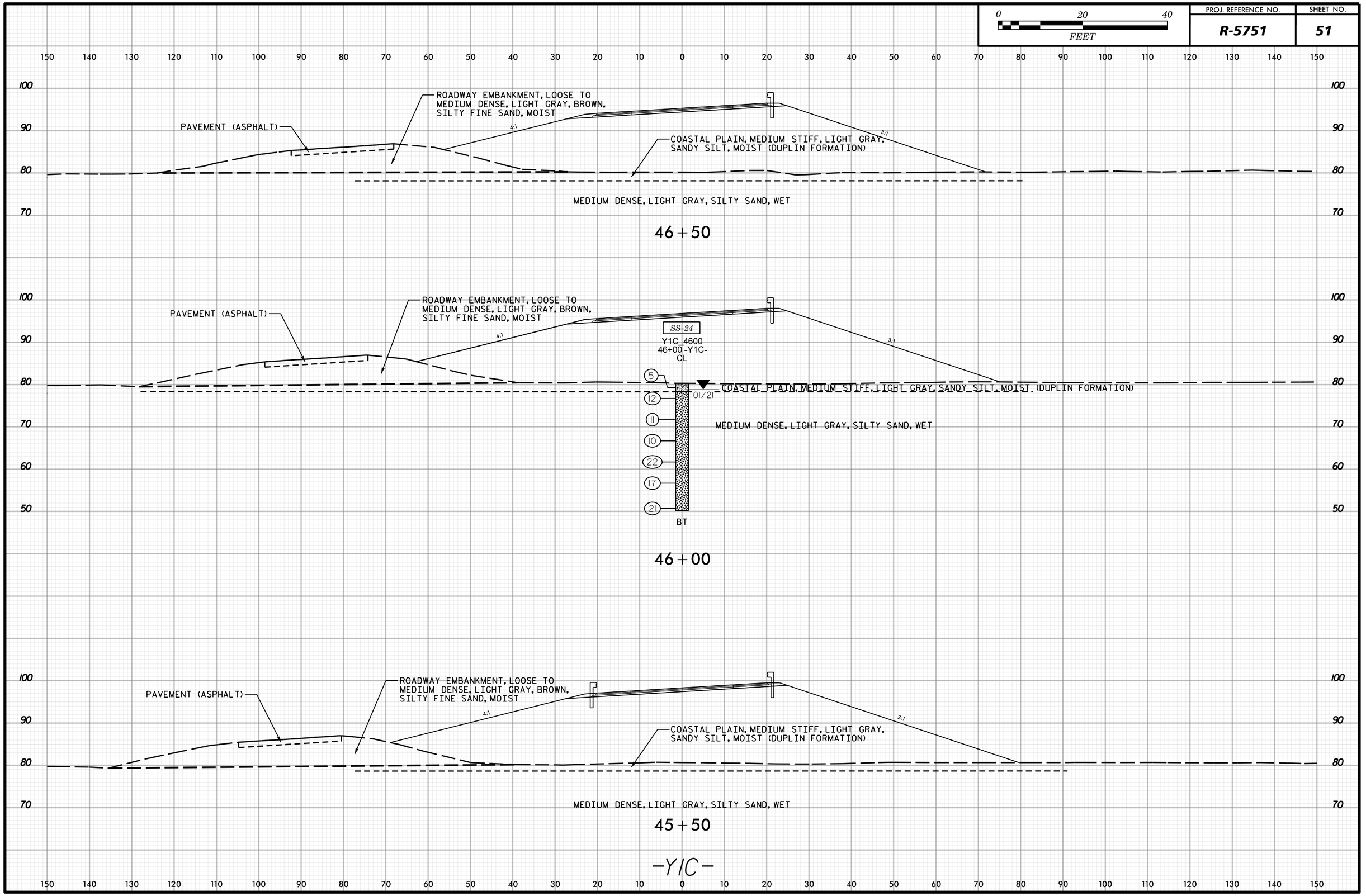
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	49



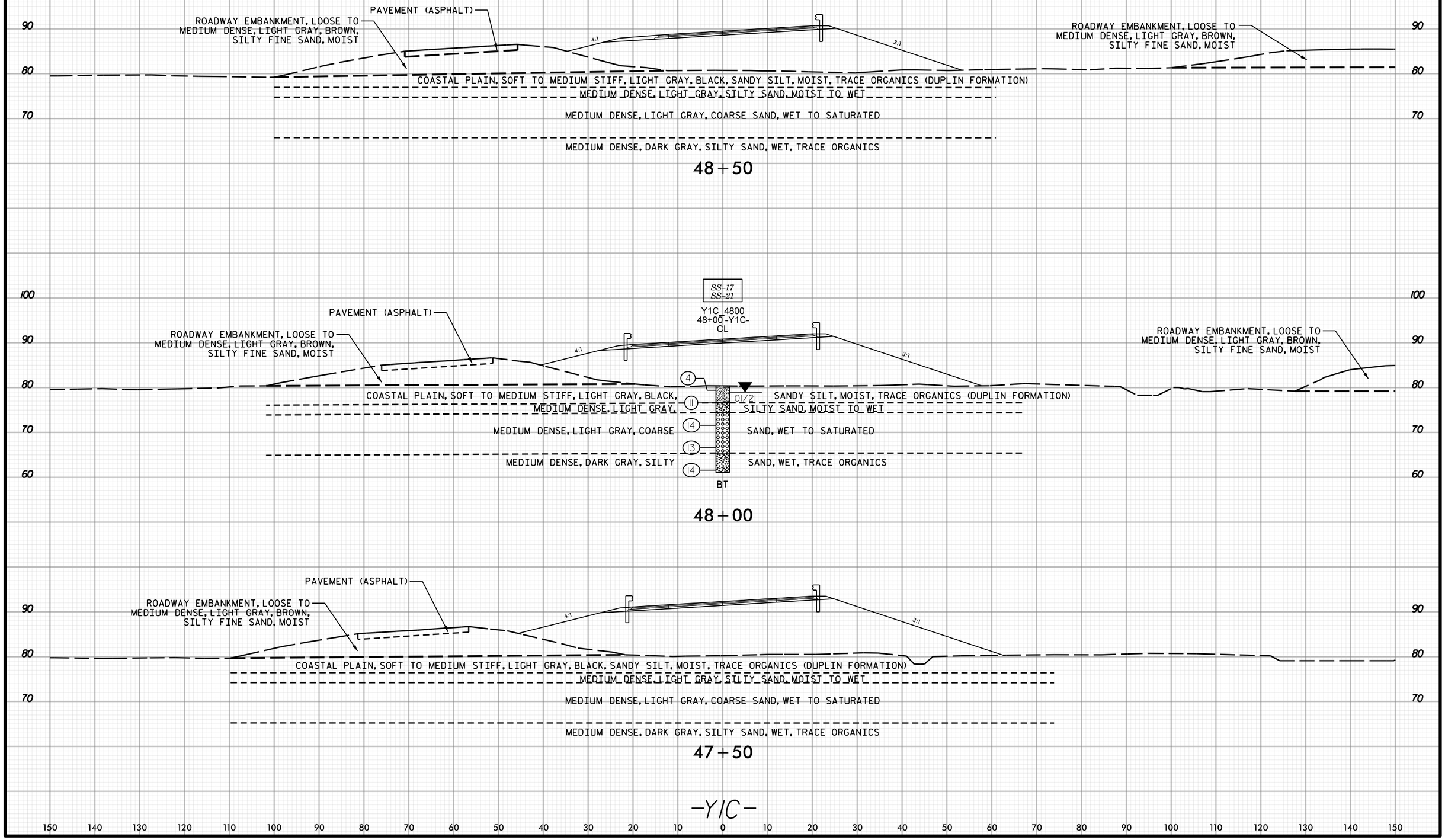
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	50



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	51



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	52



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	53

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

PAVEMENT (ASPHALT)

ALLUVIAL, SOFT TO MEDIUM STIFF, DARK BROWN, SANDY CLAY, WET

ROADWAY EMBANKMENT, LOOSE, BROWN, SILTY SAND, MOIST

COASTAL PLAIN, LOOSE, LIGHT GRAY, COARSE SAND, WET (DUPLIN FORMATION)

51 + 50

PAVEMENT (ASPHALT)

ALLUVIAL, SOFT TO MEDIUM STIFF, DARK BROWN, SANDY CLAY, WET

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT GRAY, BROWN, BLACK, FINE SAND, SILTY SAND, MOIST

COASTAL PLAIN, MEDIUM DENSE, LIGHT GRAY, COARSE SAND, WET (DUPLIN FORMATION)

50 + 50

Y1C_5010
50+10 -Y1C-
CL

PAVEMENT (ASPHALT)

6

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, 18 LIGHT GRAY, BROWN, BLACK, FINE SAND, SILTY SAND, MOIST

COASTAL PLAIN, MEDIUM DENSE, LIGHT GRAY, 11 COARSE SAND, WET (DUPLIN FORMATION)

BT

CAVED DRY @ 4.7'
07/19

50 + 00

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, LIGHT GRAY, BROWN, BLACK, FINE SAND, SILTY SAND, MOIST

COASTAL PLAIN, MEDIUM DENSE, LIGHT GRAY, COARSE SAND, WET (DUPLIN FORMATION)

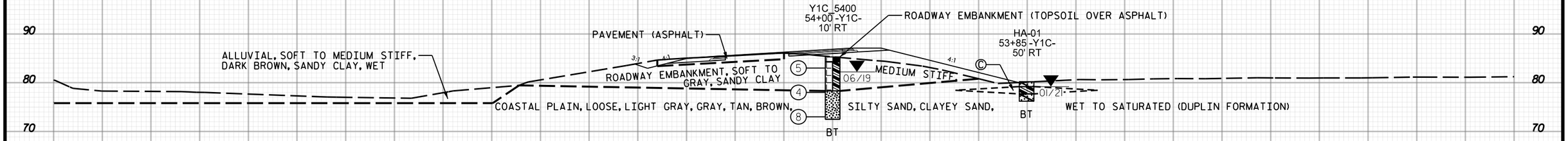
49 + 50

-Y1C-

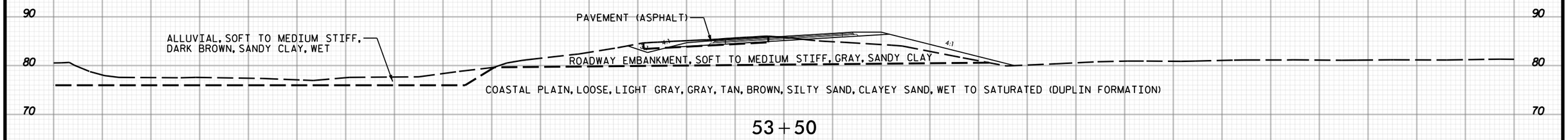
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	54

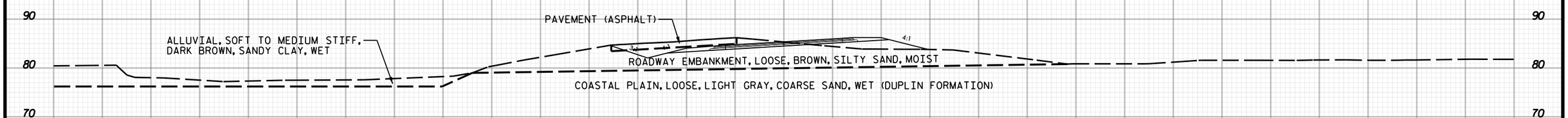
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



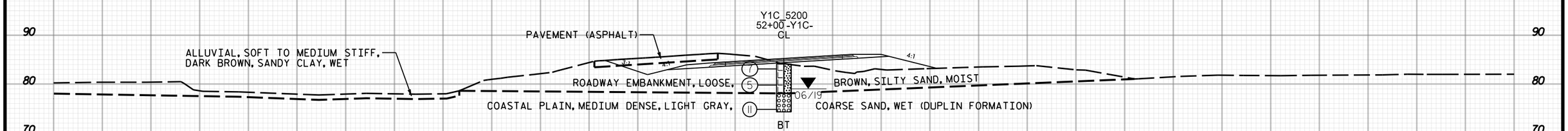
54+00



53+50



52+50



52+00

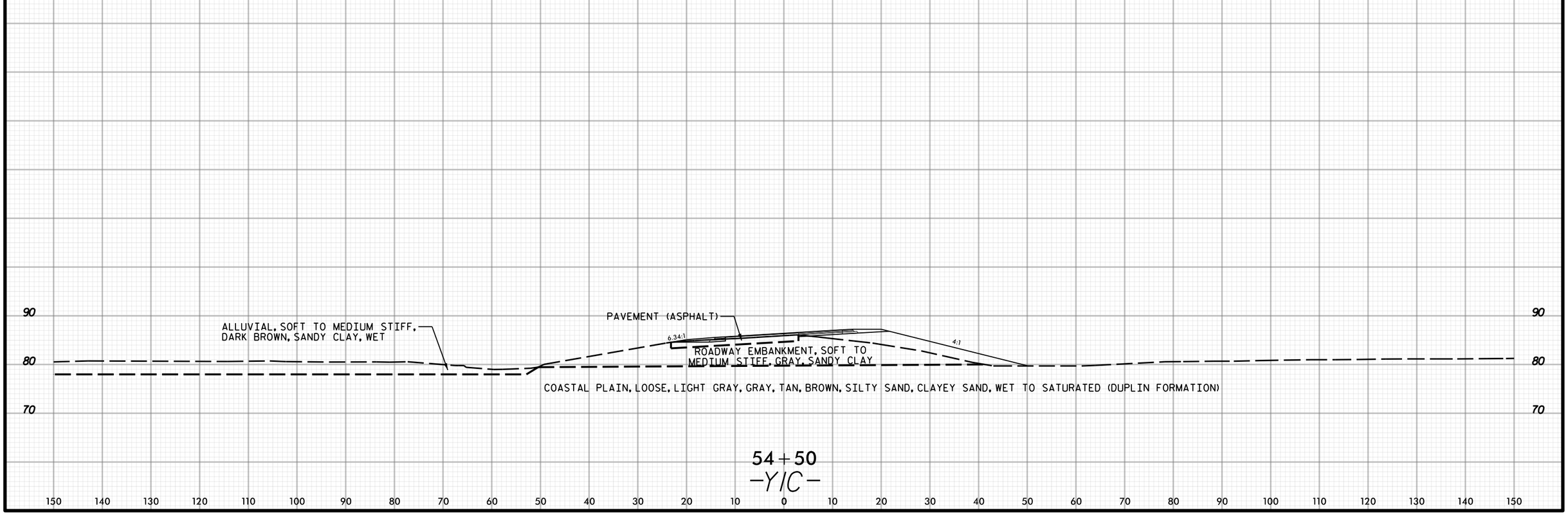
-YIC-

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 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
R-5751	55

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



54+50
-YIC-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	56

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

100 90 80 70

SHEAR POINT #17
ELEV. = 87.23'

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, MEDIUM STIFF, BROWN, SILTY CLAY, MOIST (DUPLIN FORMATION)

VERY LOOSE, LIGHT GRAY, FINE SAND, MOIST TO WET

MEDIUM DENSE, LIGHT GRAY, COARSE SAND, SATURATED

6:1 5.99:1

16 + 50

90 80 70

SHEAR POINT #19
ELEV. = 86.63'

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, VERY LOOSE, TAN, SILTY SAND, MOIST (DUPLIN FORMATION)

LOOSE, GRAY, COARSE SAND, SATURATED

COASTAL PLAIN, MEDIUM STIFF, BROWN, SANDY CLAY, MOIST (DUPLIN FORMATION)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

6:1 5.99:1

15 + 50

90 80 70

SHEAR POINT #20
ELEV. = 86.42'

Y1RPA 1500
15+00 -Y1RPA-
1' LT

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, VERY LOOSE, TAN, SILTY SAND, MOIST (DUPLIN FORMATION)

LOOSE, GRAY, COARSE SAND, SATURATED

11 4 8

06/19

BT

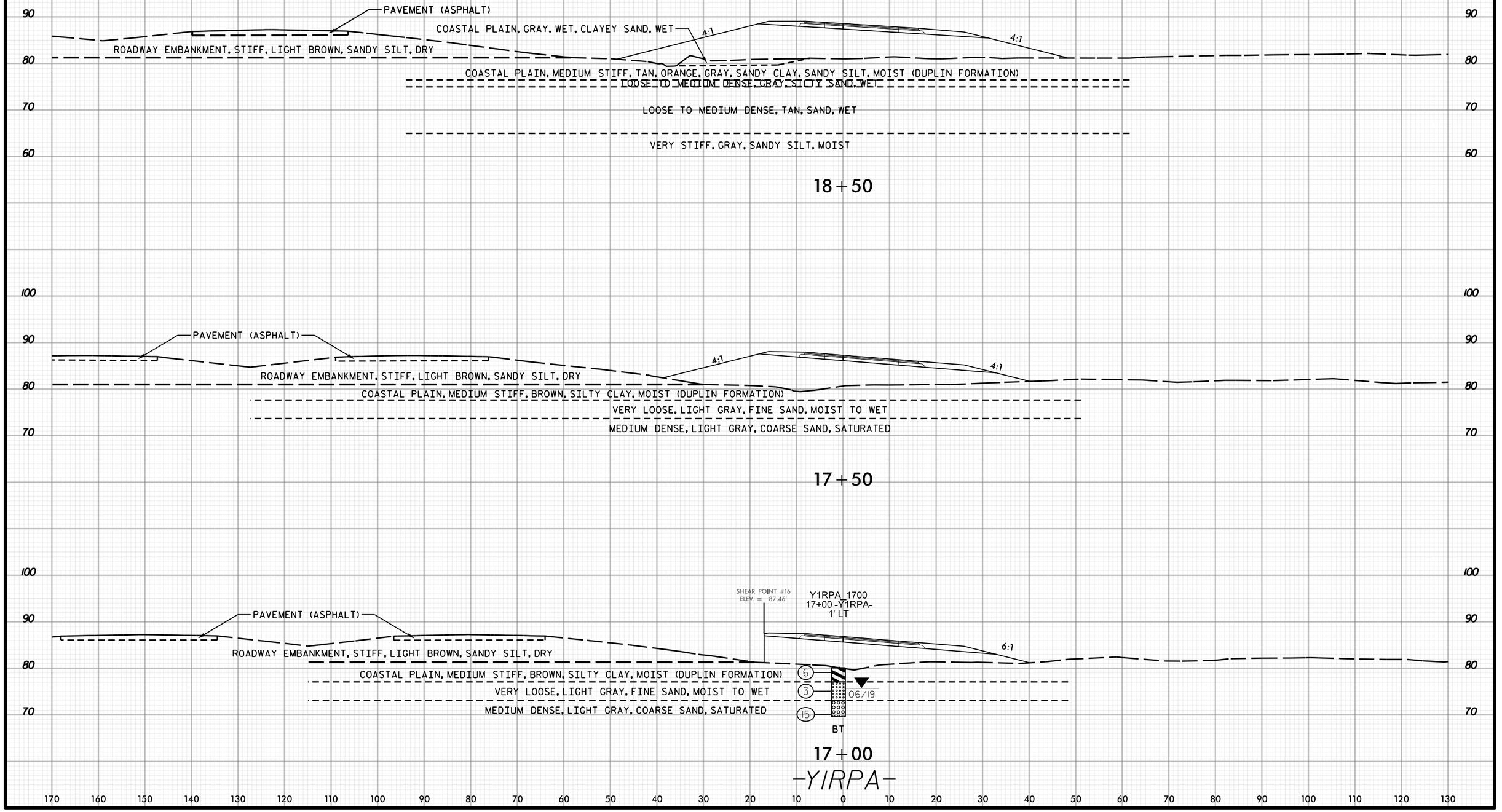
6:1 5.99:1

15 + 00

-YIRPA-

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	57



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	58

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

90
80
70
60

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, MEDIUM STIFF, TAN, SANDY SILT, MOIST (DUPLIN FORMATION)

4:1

3:1

MEDIUM DENSE TO DENSE, LIGHT GRAY, TAN, COARSE TO FINE SAND, CLAYEY FINE SAND, MOIST TO WET

20+50

90
80
70
60

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, GRAY, WET, CLAYEY SAND, WET (DUPLIN FORMATION)

4:1

3:1

MEDIUM STIFF, TAN, ORANGE, GRAY, SANDY CLAY, SANDY SILT, MOIST

LOOSE TO MEDIUM DENSE, GRAY, SILTY SAND, WET

LOOSE TO MEDIUM DENSE, TAN, SAND, WET

VERY STIFF, GRAY, SANDY SILT, MOIST

19+50

100
90
80
70
60

SS-90
ST-3

HA-08
18+85 -Y1RPA-
15' LT

Y1RPA_1901
19+01 -Y1RPA-
CL

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, GRAY, WET, CLAYEY SAND, WET (DUPLIN FORMATION)

4:1

4.01:1

MEDIUM STIFF, TAN, ORANGE, GRAY, SANDY CLAY, SANDY SILT, MOIST

01/21

01/21

ST-3

BT

LOOSE TO MEDIUM DENSE, GRAY, SILTY SAND, WET

LOOSE TO MEDIUM DENSE, TAN, SAND, WET

VERY STIFF, GRAY, SANDY SILT, MOIST

6
6
11
7
24

BT

NOTE:
ST-3 OFFSET AT STA. 19+01, 4' RT

19+00

-Y1RPA-

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	59

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

100 90 80 70

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, MEDIUM STIFF, TAN, SANDY SILT, MOIST (DUPLIN FORMATION)

4:1

3:1

MEDIUM DENSE TO DENSE, LIGHT GRAY, TAN, COARSE TO FINE SAND, CLAYEY FINE SAND, MOIST TO WET

21+50

SS-96
SS-97

Y1RPA_2095
20+95 -Y1RPA-
27' LT

4:1

3:1

ROADWAY EMBANKMENT, STIFF, LIGHT BROWN, SANDY SILT, DRY

COASTAL PLAIN, MEDIUM STIFF, TAN, SANDY SILT, (7) MOIST (DUPLIN FORMATION)

01/21

(12)
(13)
(4)
(19)
(31)
(16)

MEDIUM DENSE TO DENSE, LIGHT GRAY, TAN, COARSE TO FINE SAND, CLAYEY FINE SAND, MOIST TO WET

BT

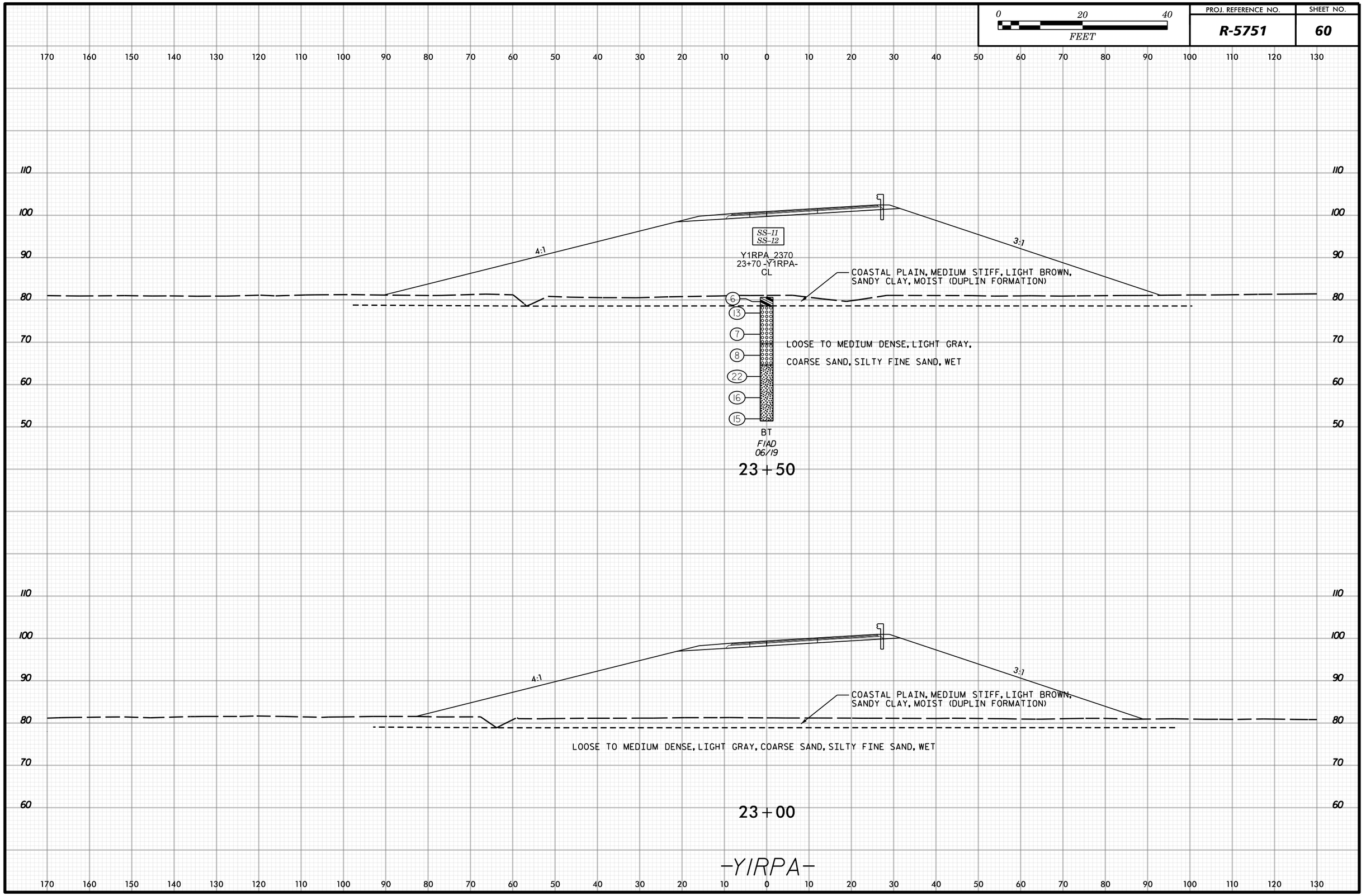
100 90 80 70 60 50

21+00

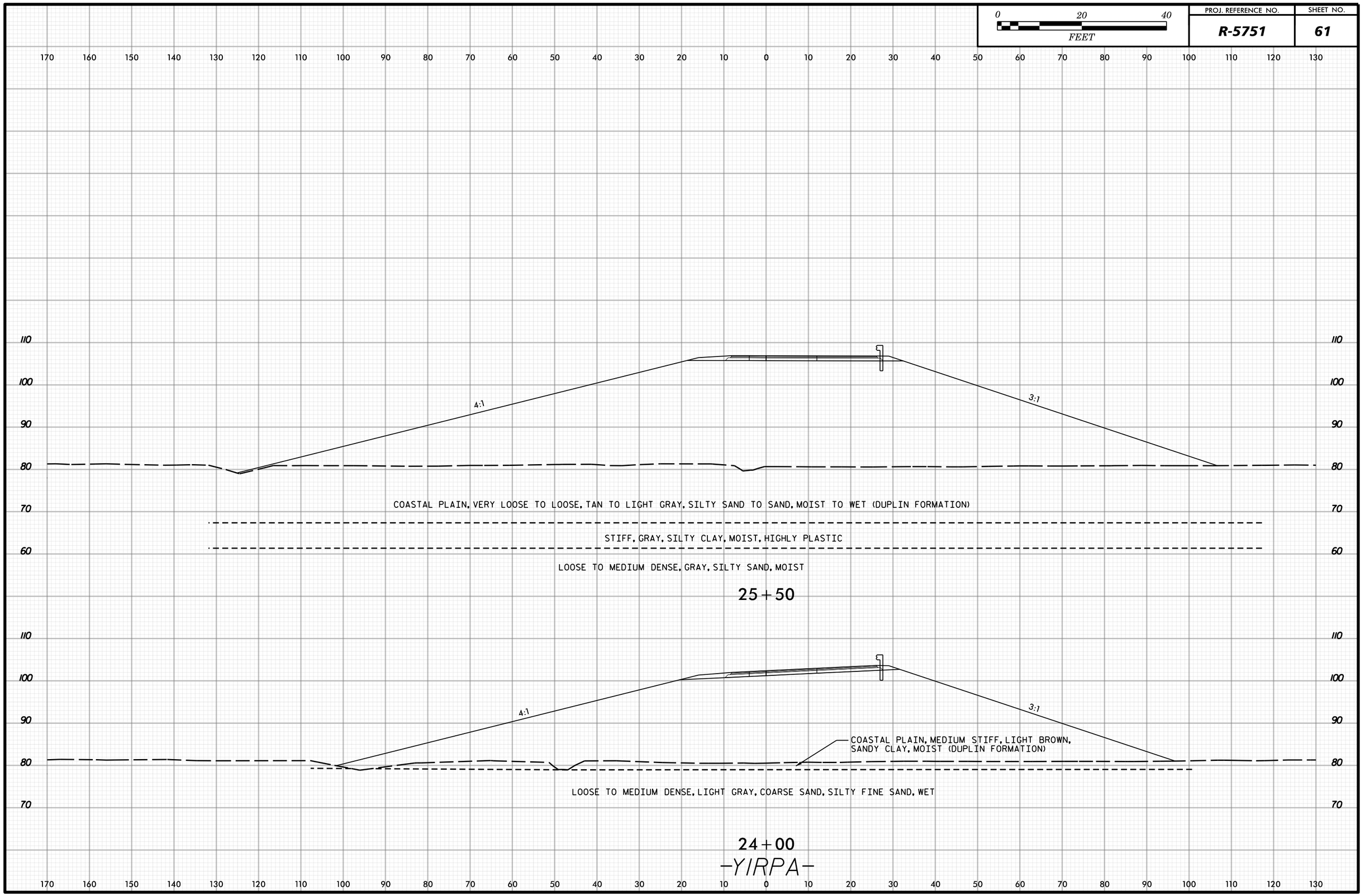
-Y1RPA-

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	60



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	61



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	62

SHEAR POINT #28
ELEV. = 88.94'

SHEAR POINT #29
ELEV. = 98.42'

SHEAR POINT #30
ELEV. = 106.07'

SHEAR POINT #34
ELEV. = 97.61'

5.36:1

3:1

SS-74
SS-76
ST-2

Y1RPA_2600
26+00 -Y1RPA-
1' RT

4
7
9
7
12
10
12

ST-2

COASTAL PLAIN, VERY LOOSE TO LOOSE, TAN TO LIGHT GRAY, SILTY SAND TO SAND, MOIST TO WET (DUPLIN FORMATION)

STIFF, GRAY, SILTY CLAY, MOIST, HIGHLY PLASTIC

LOOSE TO MEDIUM DENSE, GRAY, SILTY SAND, MOIST

BT
FIAD
06/19

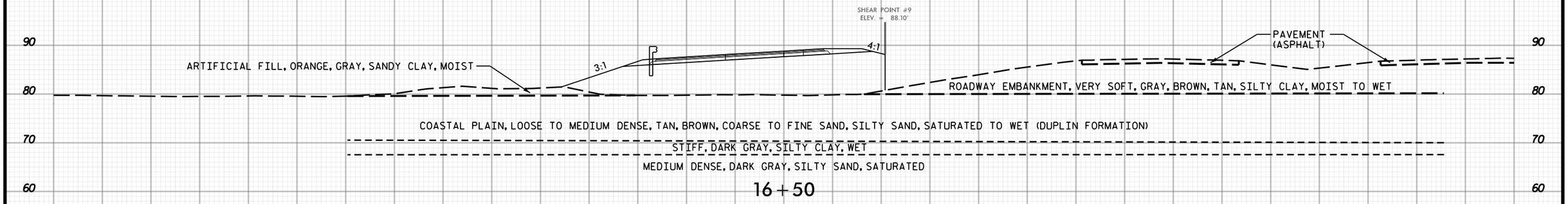
NOTE:
ST-2 OFFSET AT
STA. 26+00, 5' RT

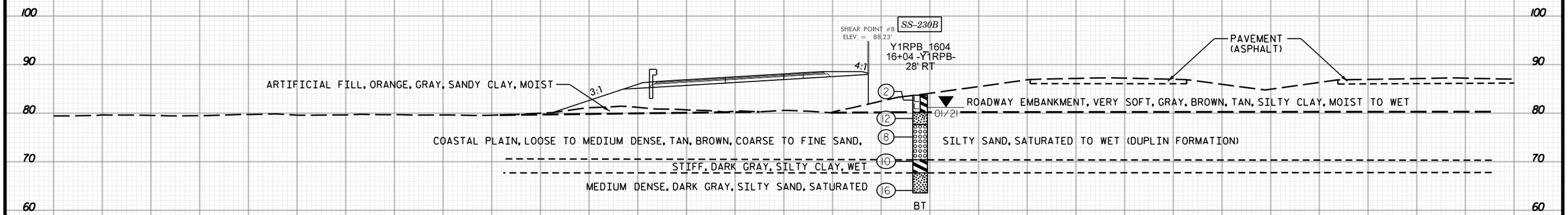
26+00

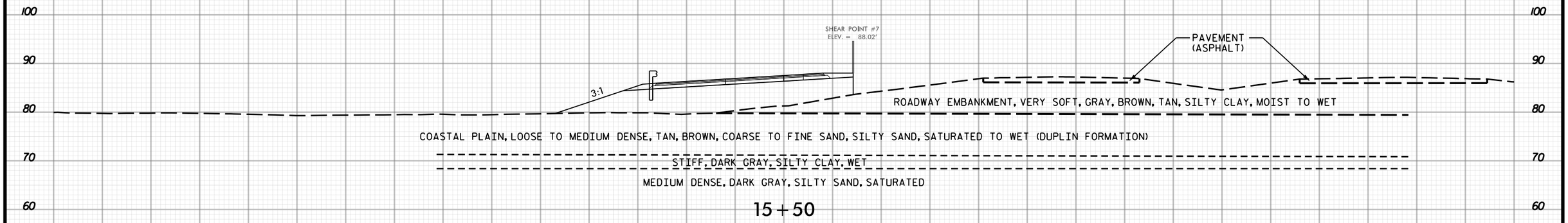
-YIRPA-

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	63

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



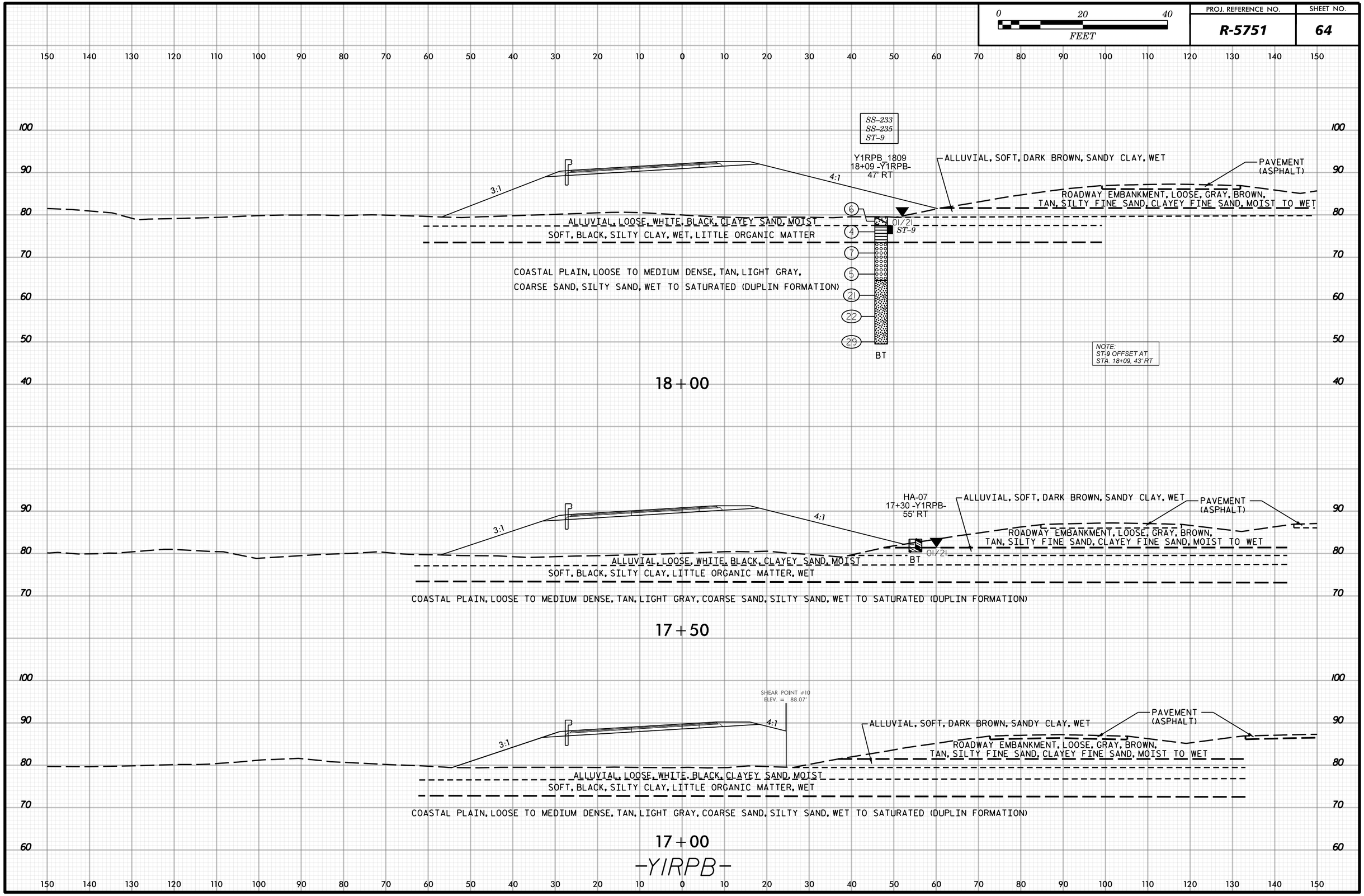




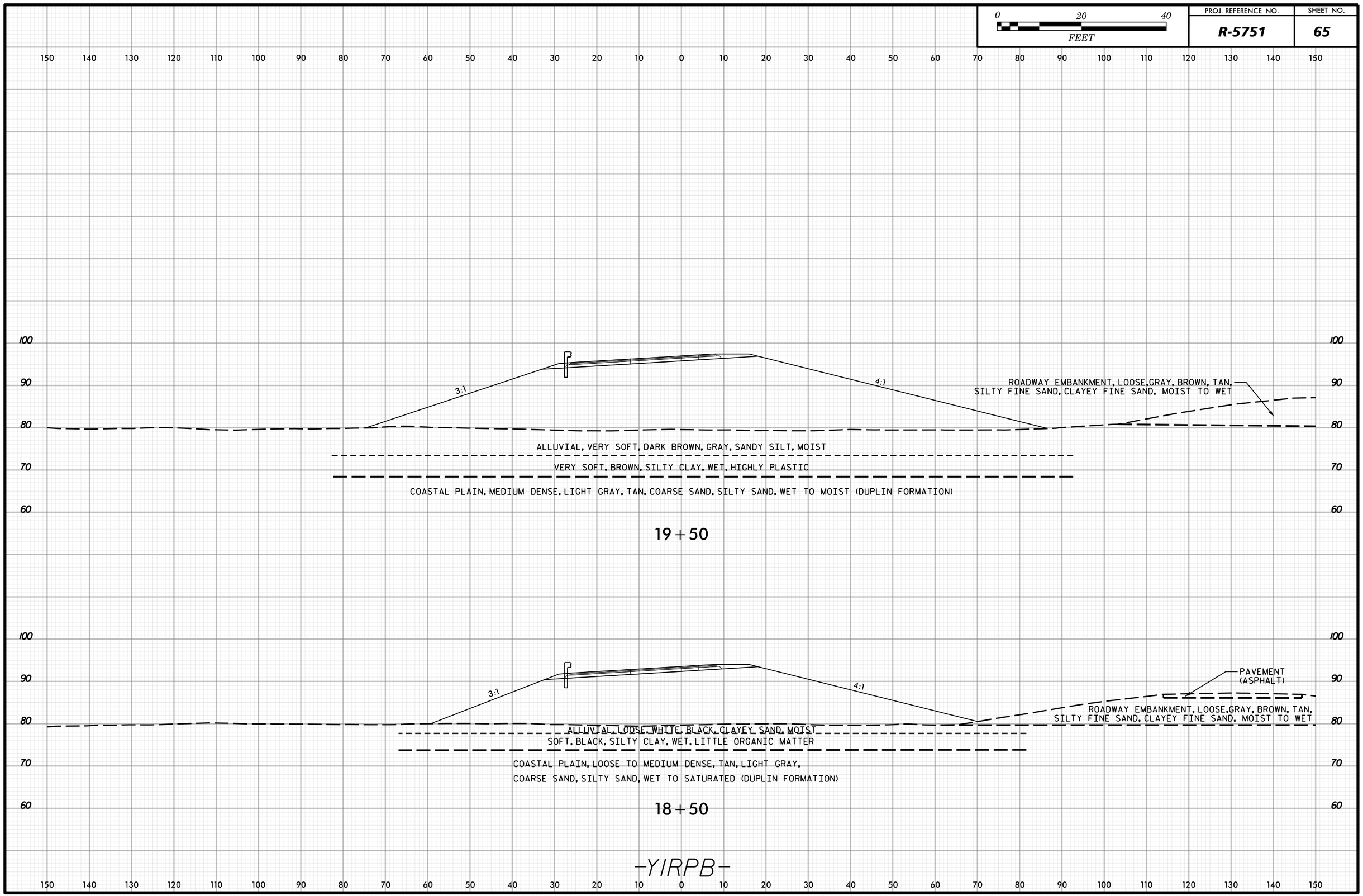
-YIRPB-

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

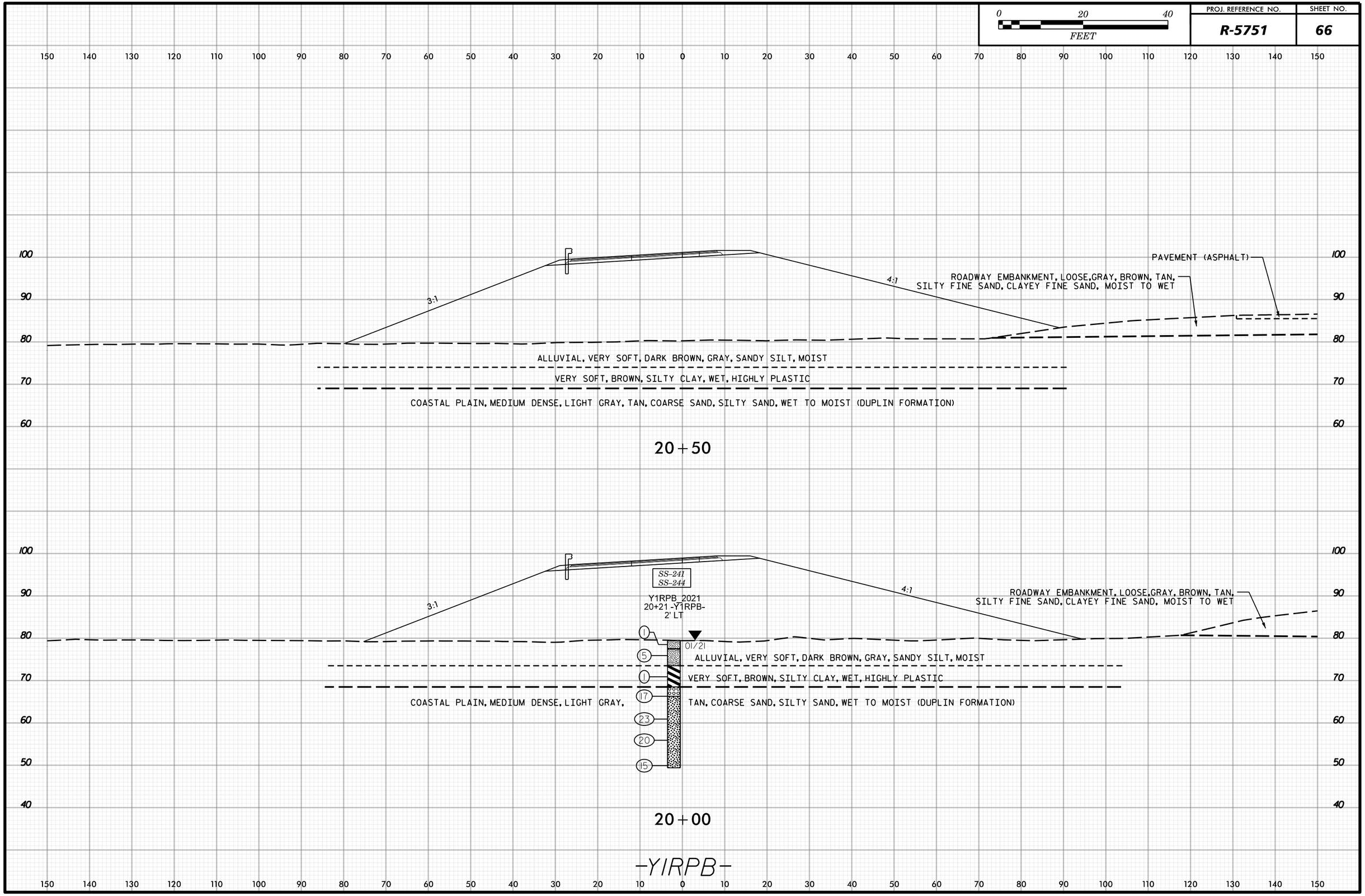
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	64



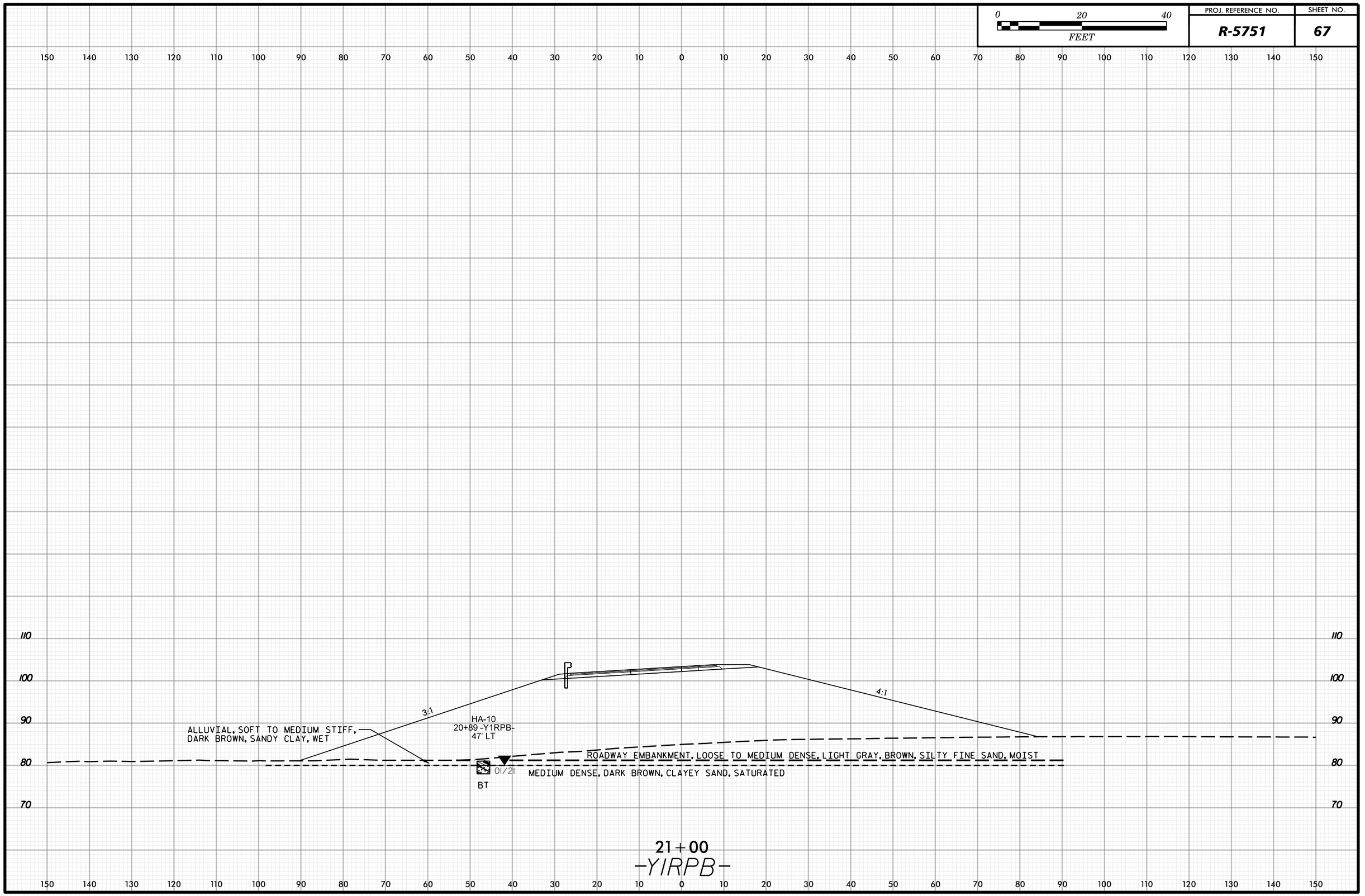
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	65



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	66

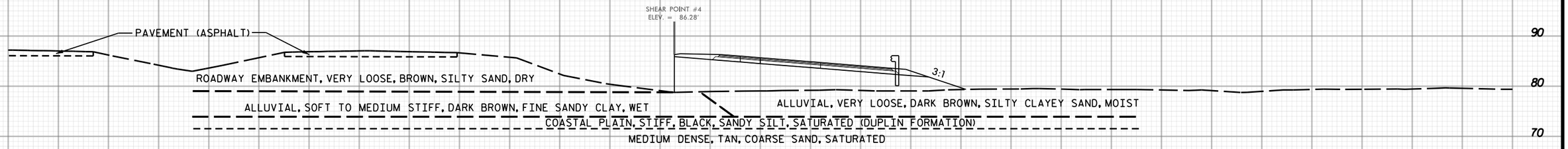


0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	67

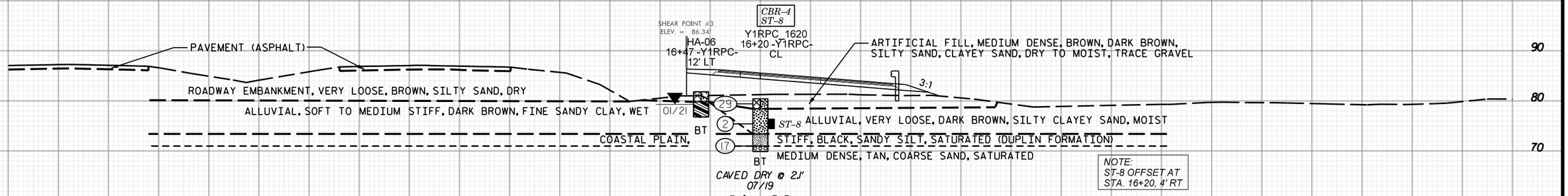


0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	68

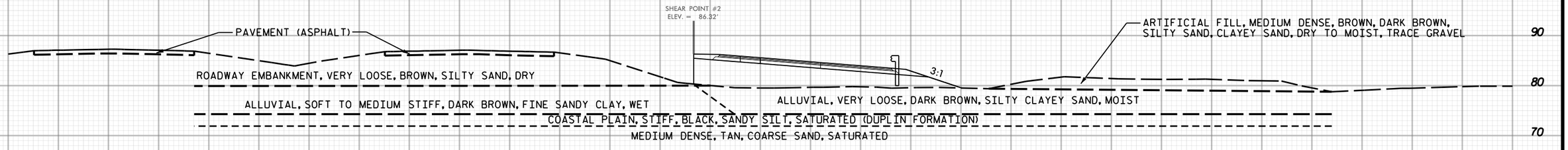
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



16 + 80



16 + 30



15 + 80

-YIRPC-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	69

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

ROADWAY EMBANKMENT, VERY LOOSE, BROWN, TAN, SILTY FINE SAND, MOIST TO WET

4:1

3:1

ALLUVIAL, SOFT TO MEDIUM STIFF, LIGHT GRAY, GRAY, SILTY CLAY, SANDY CLAY, MOIST TO WET

COASTAL PLAIN, MEDIUM DENSE, TAN, COARSE SAND, SATURATED (DUPLIN FORMATION)

VERY STIFF, LIGHT GRAY, SANDY SILTY CLAY, MOIST

DENSE, LIGHT GRAY, SILTY SAND, WET

19+75

100
90
80
70
60

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, VERY LOOSE, BROWN, TAN, SILTY FINE SAND, MOIST TO WET

SS-265
SS-266

Y1RPC_1905
19+05 -Y1RPC-
18' RT

4:1

3:1

4

01/21

ALLUVIAL, SOFT TO MEDIUM STIFF, 5 LIGHT GRAY, GRAY, SILTY CLAY, SANDY CLAY, MOIST TO WET

COASTAL PLAIN, MEDIUM DENSE, TAN, 12 COARSE SAND, SATURATED (DUPLIN FORMATION)

21 VERY STIFF, LIGHT GRAY, SANDY SILTY CLAY, MOIST

31 DENSE, LIGHT GRAY, SILTY SAND, WET

BT

19+25

PAVEMENT (ASPHALT)

ROADWAY EMBANKMENT, VERY LOOSE, BROWN, TAN, SILTY FINE SAND, MOIST TO WET

4:1

3:1

ALLUVIAL, SOFT TO MEDIUM STIFF, LIGHT GRAY, GRAY, SILTY CLAY, SANDY CLAY, MOIST TO WET

COASTAL PLAIN, MEDIUM DENSE, TAN, COARSE SAND, SATURATED (DUPLIN FORMATION)

VERY STIFF, LIGHT GRAY, SANDY SILTY CLAY, MOIST

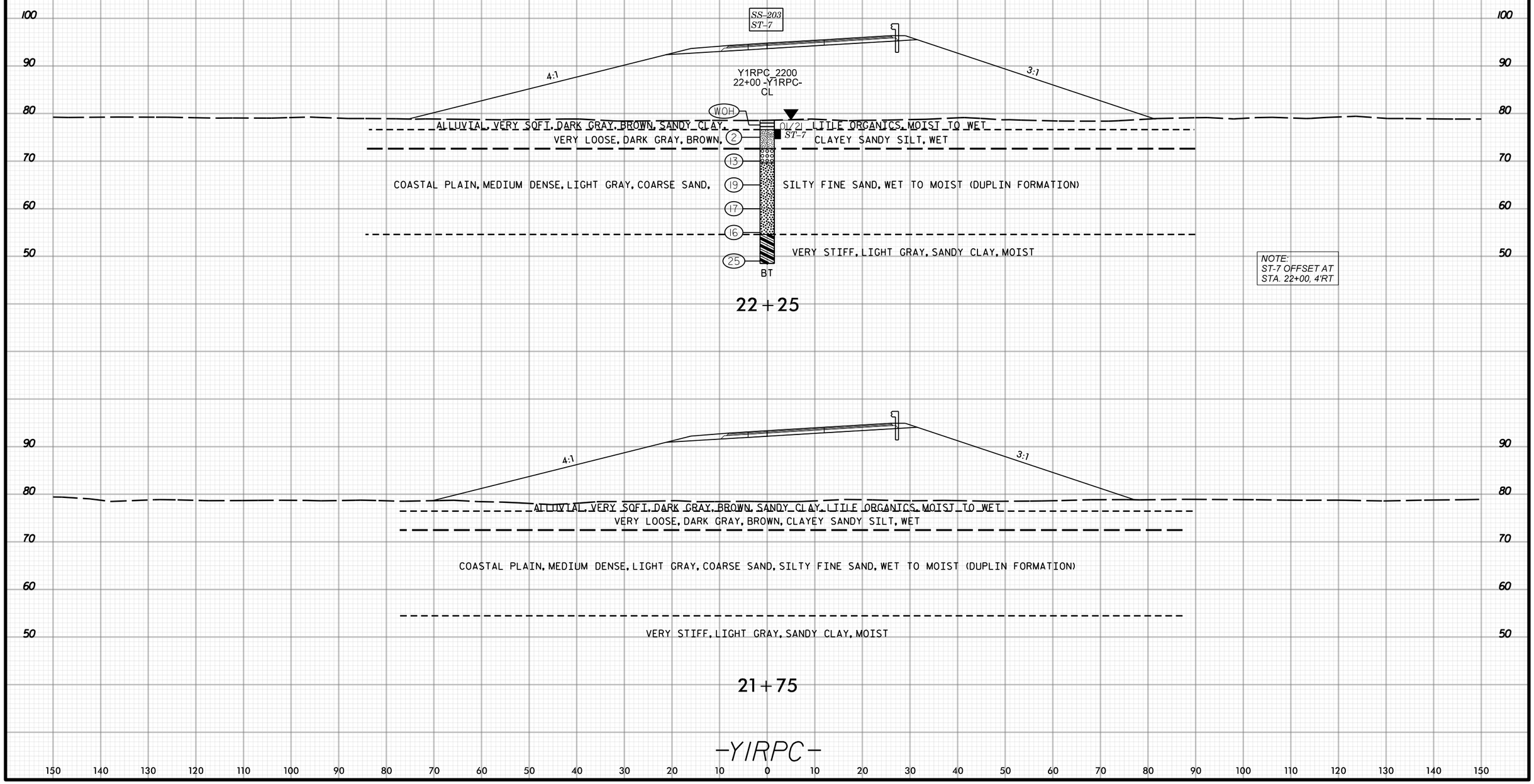
DENSE, LIGHT GRAY, SILTY SAND, WET

18+75

-YIRPC-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	70



NOTE:
ST-7 OFFSET AT
STA. 22+00, 4'RT

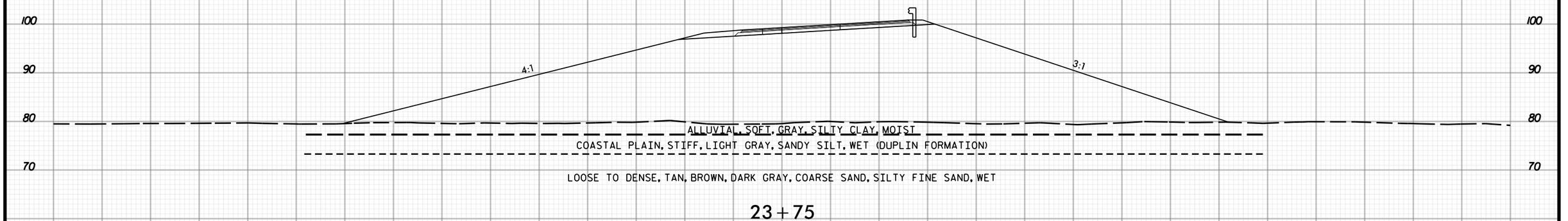
22+25

21+75

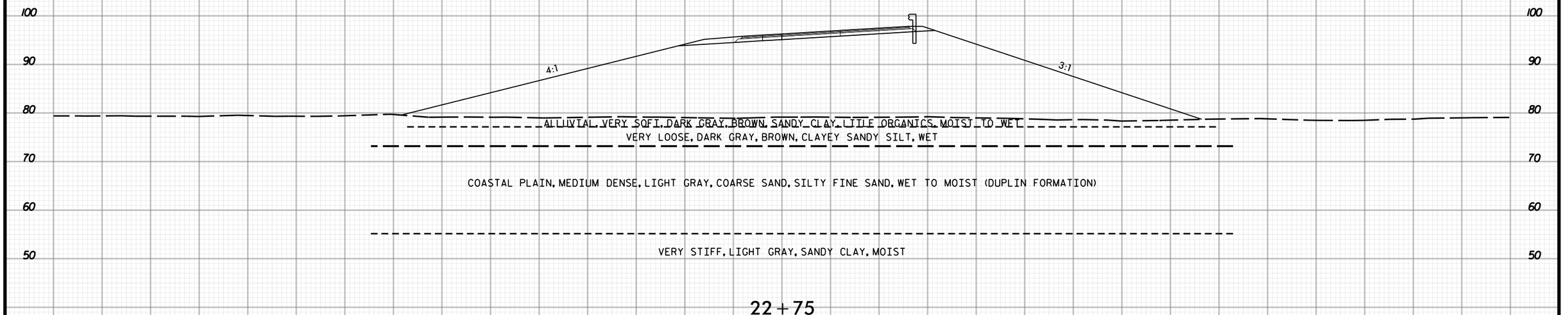
-YIRPC-

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	71

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



23+75

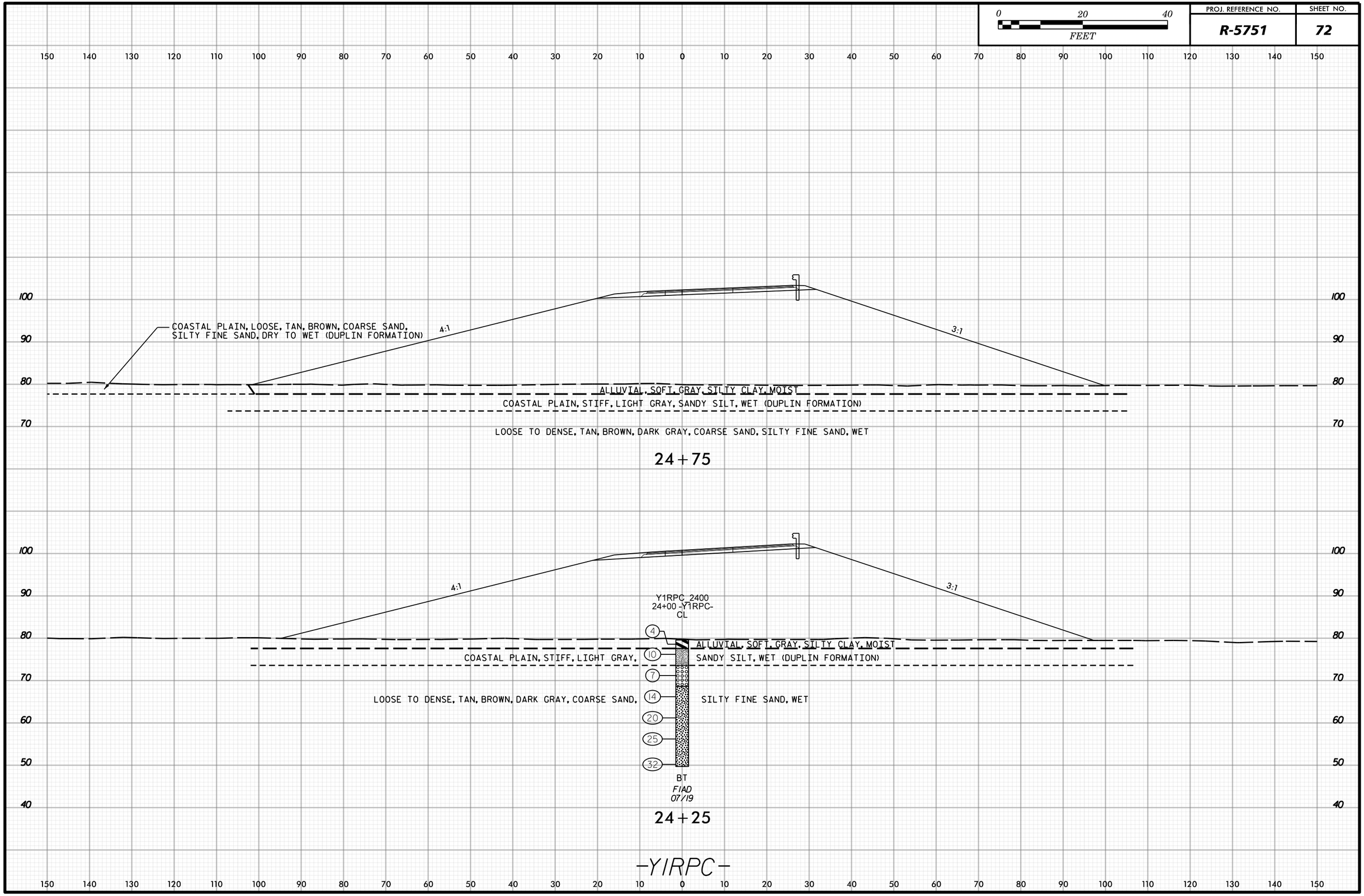


22+75

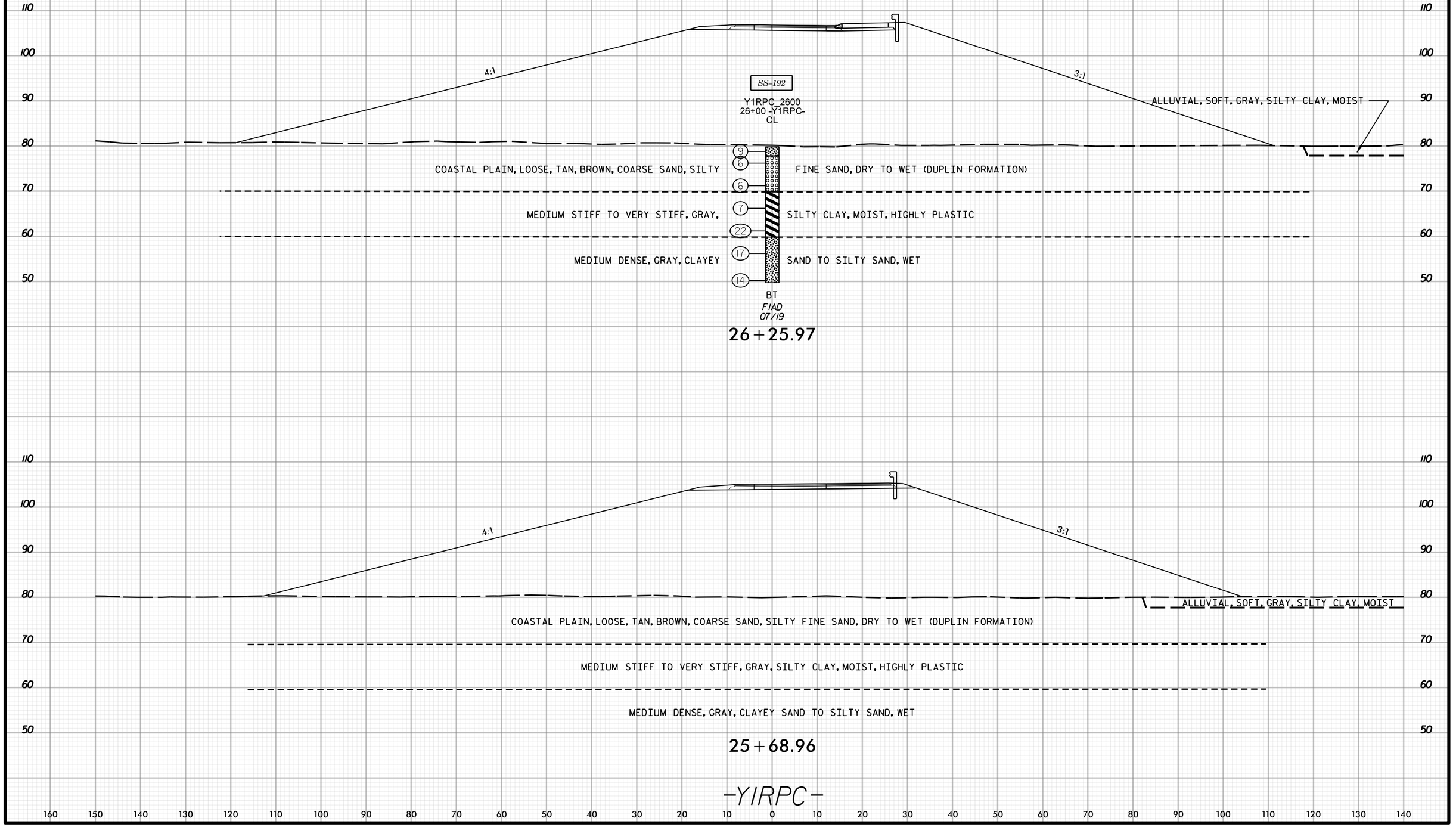
-YIRPC-

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 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	72



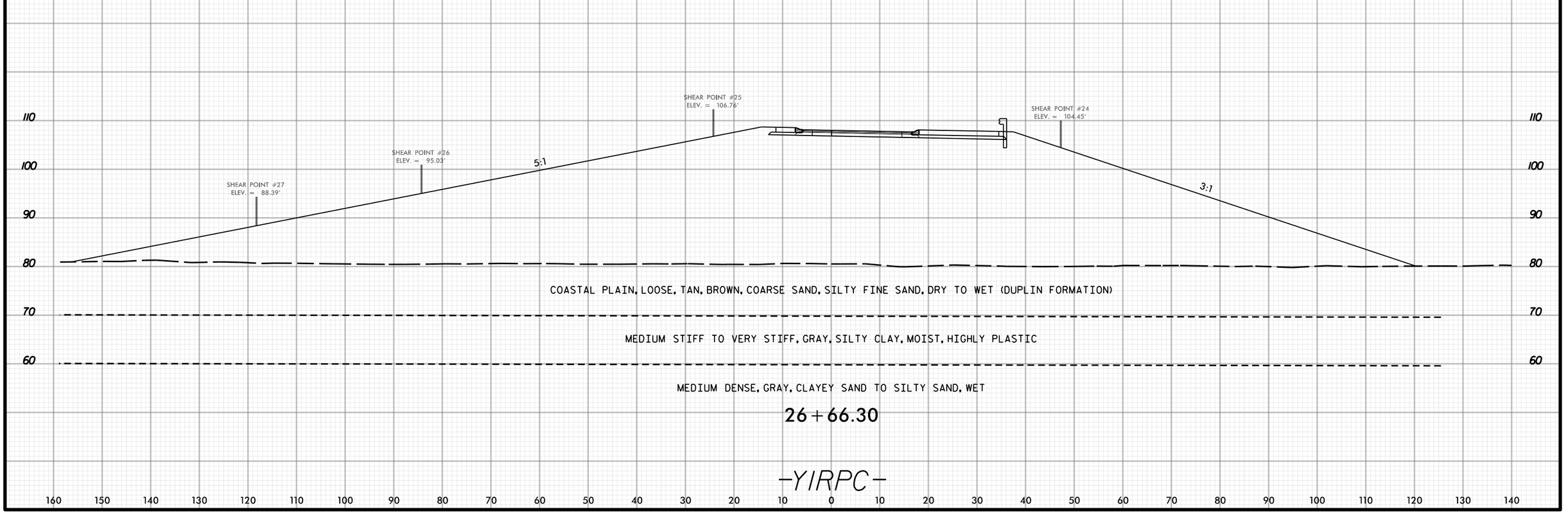
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	73



-YIRPC-

PROJ. REFERENCE NO.	SHEET NO.
R-5751	74

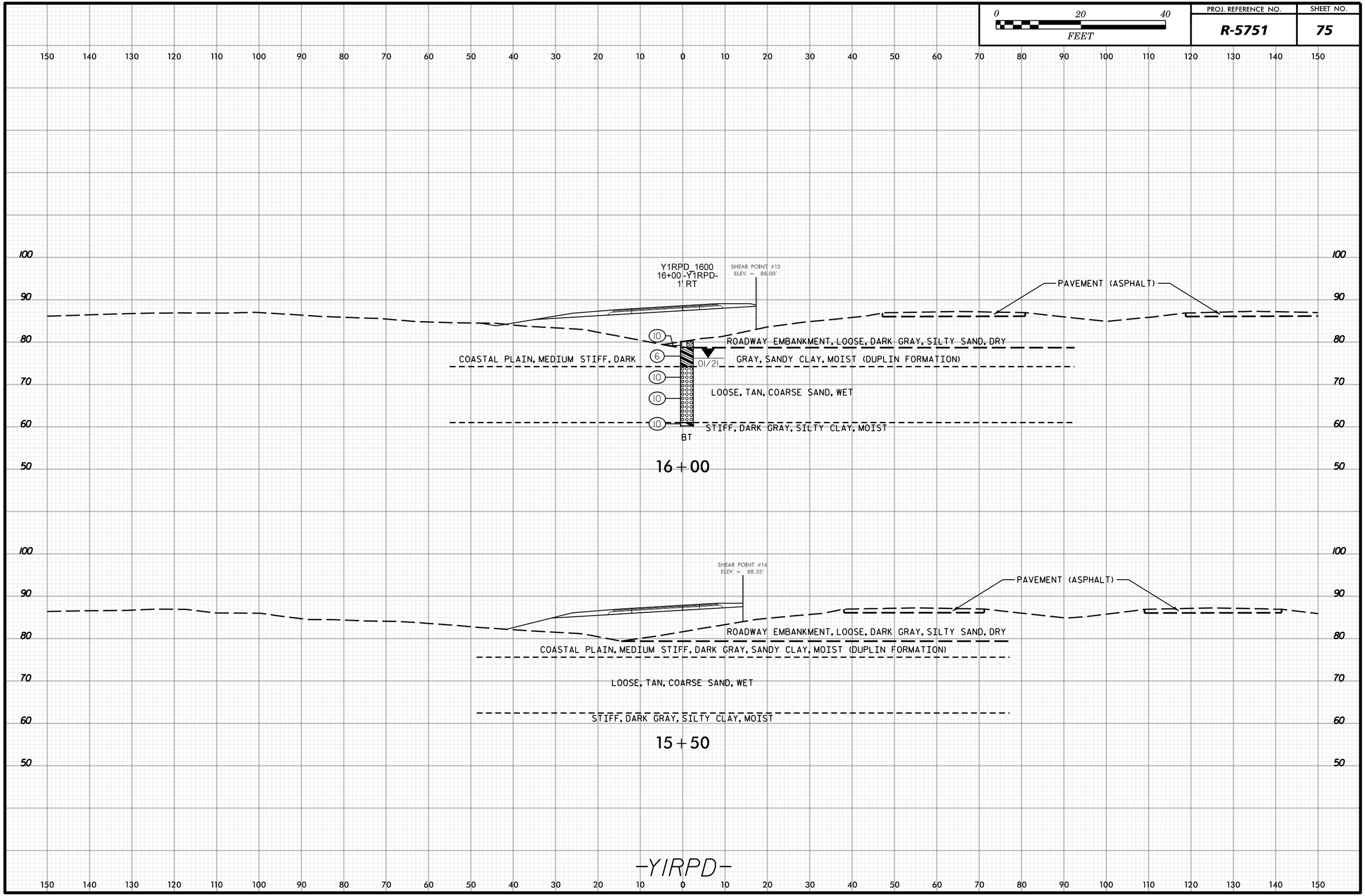
0 20 40
FEET



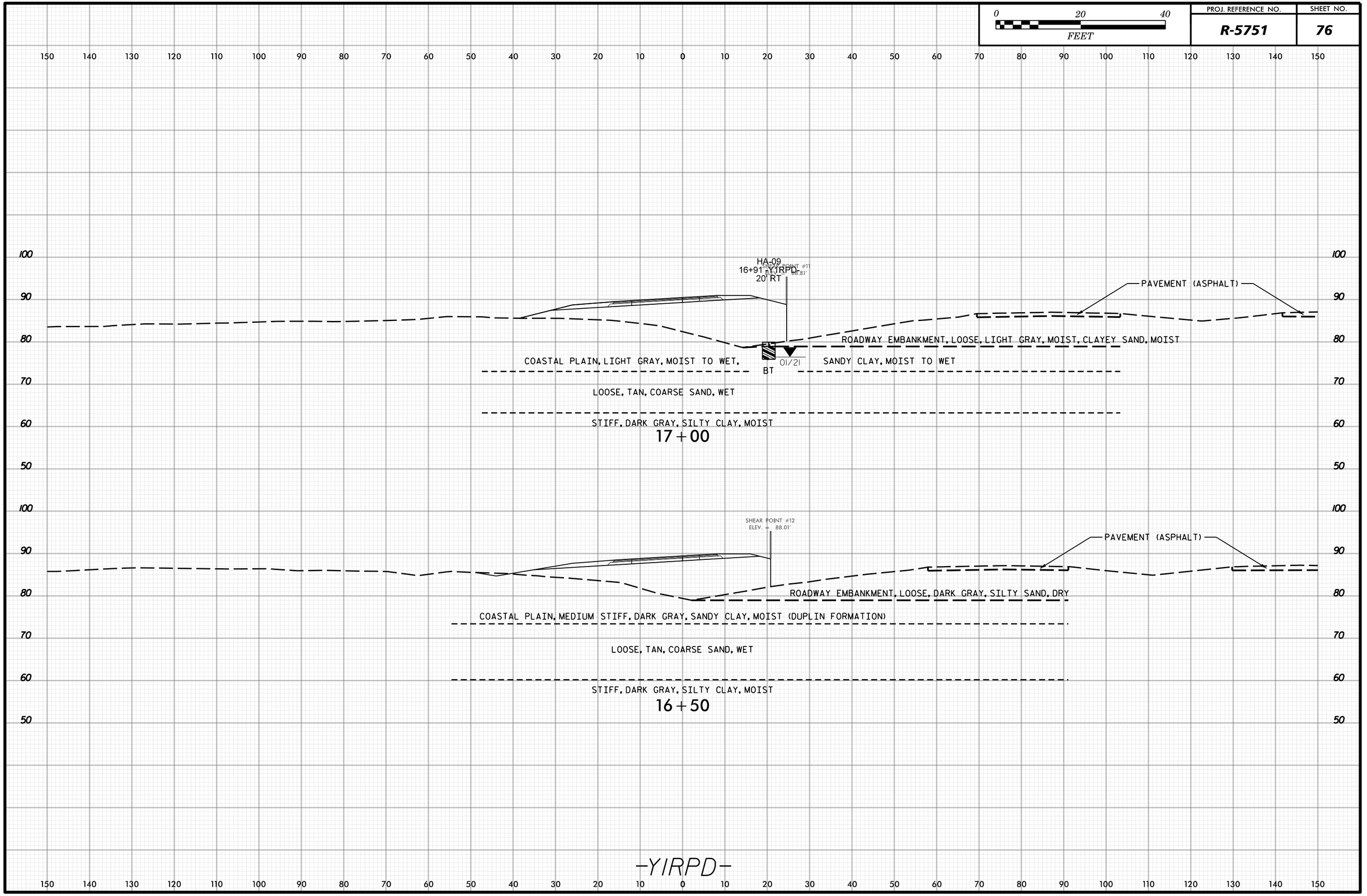
26+66.30

–YIRPC–

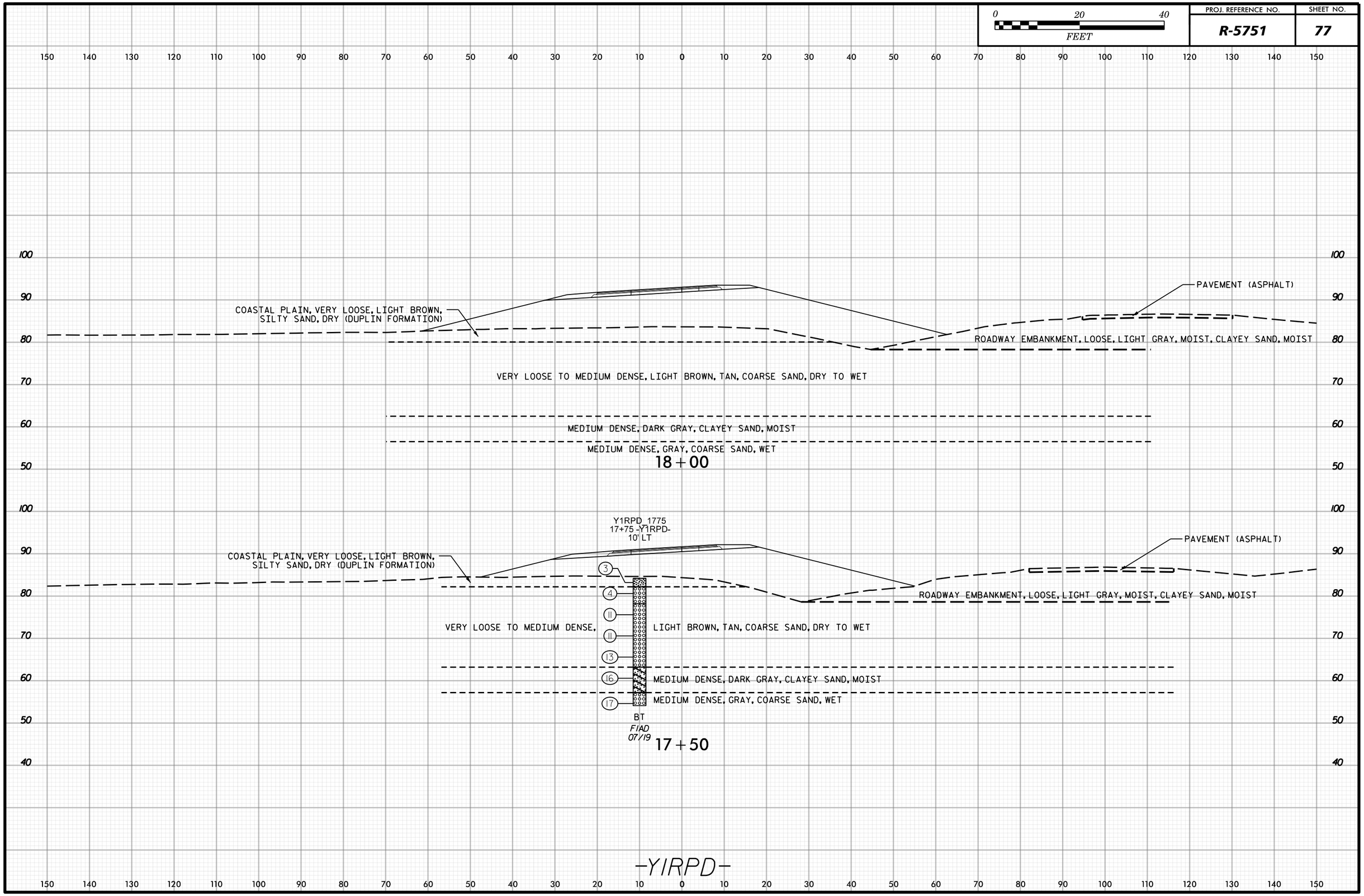
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	75



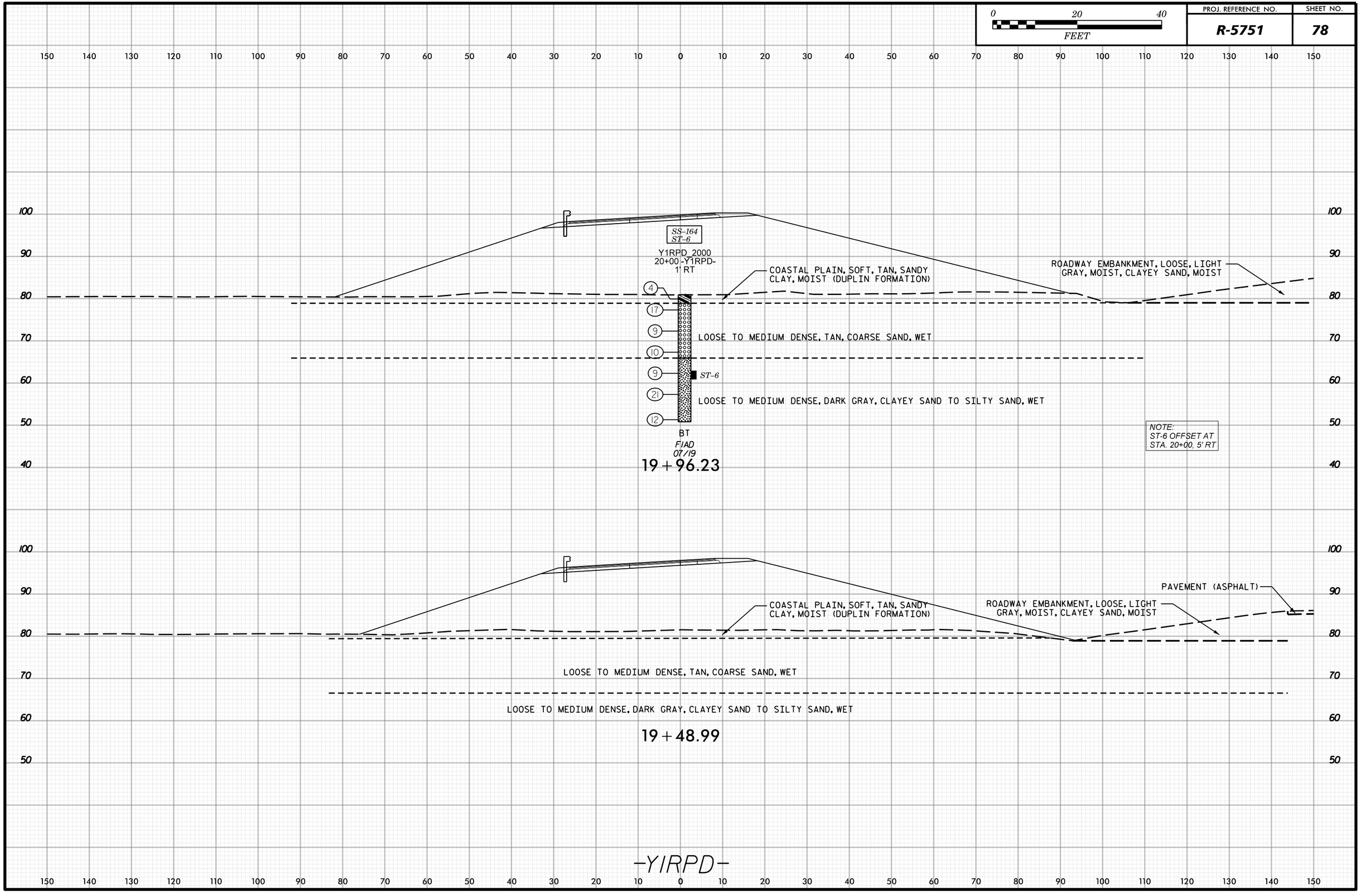
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	76



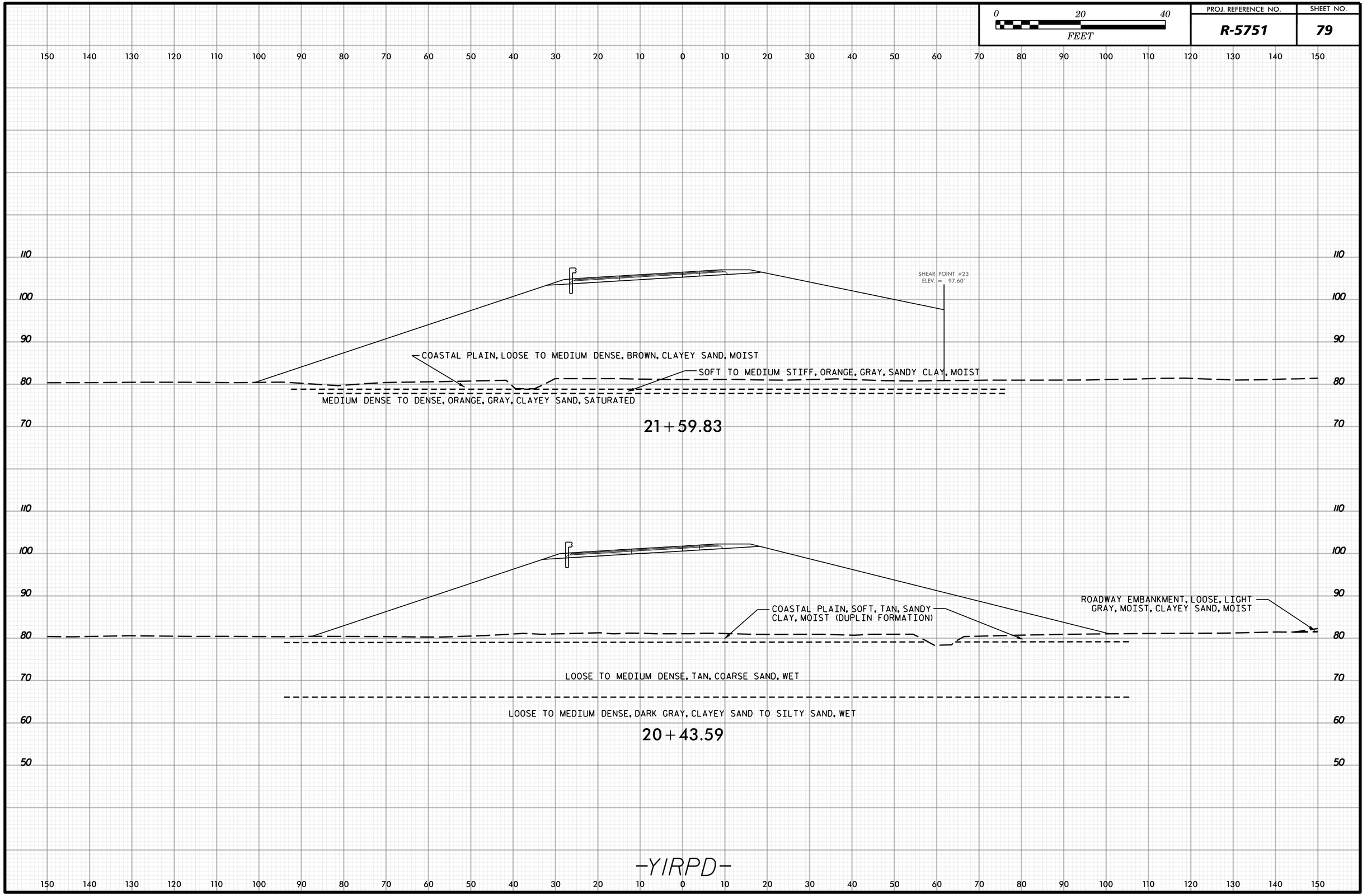
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	77



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	78



0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	R-5751	79



0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
R-5751	80

ELEV. = 110.05'

SHEAR POINT #36
ELEV. = 91.86'

HA-04
21+85 -Y1RPD-
115' LT

COASTAL PLAIN, LOOSE TO MEDIUM DENSE, BROWN, CLAYEY SAND, MOIST

SOFT TO MEDIUM STIFF, ORANGE, GRAY, SANDY CLAY, MOIST

2/20

MEDIUM DENSE TO DENSE, ORANGE, GRAY, CLAYEY SAND, SATURATED

BT

22+00

-YIRPD-

PROJECT REFERENCE NO.	SHEET NO.
R–5751	81

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A

LABORATORY TESTING SUMMARY
CONSOLIDATION TEST RESULTS
CBR – PROCTOR TEST RESULTS

REFERENCE: R–5751

PROJECT: 53087.1.1

Prepared in the Office of:
Terracon
Consulting Engineers and Scientists
2701 WESTPORT ROAD
CHARLOTTE, NORTH CAROLINA 28208
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367

NCDOT LABORATORY TESTING SUMMARY

PROJECT NUMBER: 53087.1.1 **TIP:** R-5751 **COUNTY:** Robeson

DESCRIPTION: US 74 from NC 72/NC 130 Upgrade At-Grade Intersection to Interchange

Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
								Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-11	-Y1RPA-	23+70	CL	2.7-4.2	-	-	-	-	-	-	-	-	-	-	-	18.5	-
SS-12	-Y1RPA-	23+70	CL	7.7-9.2	-	-	-	-	-	-	-	-	-	-	-	20.6	-
SS-17	-Y1C-	48+00	CL	0.0-1.5	A-4(1)	23	8	20.3	40.5	18.9	20.3	0	100	89	45	20.3	2.8
SS-21	-Y1C-	48+00	CL	17.8-19.3	A-2-4(0)	NP	NP	76.8	12.5	6.4	4.3	7	95	55	11	24.7	1.3
SS-24	-Y1C-	46+00	CL	7.6-9.1	-	-	-	-	-	-	-	-	-	-	-	17.9	-
SS-30	-Y1C-	44+00	CL	2.8-4.3	-	-	-	-	-	-	-	-	-	-	-	19.6	-
SS-31	-Y1C-	44+00	CL	8.8-10.3	-	-	-	-	-	-	-	-	-	-	-	20.1	-
SS-32	-Y1C-	44+00	CL	13.8-15.3	A-1-b(0)	NP	NP	83.5	14.0	2.0	0.5	3	91	35	3	19.8	-
SS-38	-Y1C-	42+20	CL	7.3-8.8	-	-	-	-	-	-	-	-	-	-	-	17.4	-
SS-39	-Y1C-	42+20	CL	12.3-13.8	A-1-b(0)	NP	NP	93.0	5.5	1.4	0.5	1	99	42	2	22.8	-
SS-40	-Y1C-	42+20	CL	17.3-18.8	-	-	-	-	-	-	-	-	-	-	-	20.3	-
SS-42	-Y1C-	42+20	CL	27.3-28.8	A-2-6(0)	4	26	57.1	19.3	19.3	9.6	14	1	99	24	20.4	-
SS-64	-Y1B-	40+40	CL	7.7-9.2	A-1-b(0)	NP	NP	83.1	11.4	3.5	2.0	1	95	35	6	20.1	-
SS-66	-Y1B-	40+40	CL	17.7-19.2	A-6(11)	40	23	22.3	22.2	32.6	22.9	0	100	87	59	22.5	-
SS-67	-Y1B-	40+40	CL	22.7-24.2	A-7-6(4)	41	24	40.6	25.7	27.4	6.3	2	97	72	37	20.9	-
SS-68	-Y1B-	40+40	CL	27.7-29.2	A-2-4(0)	NP	NP	51.0	31.0	7.0	11.0	0	99	83	19	28.4	-
SS-70	-Y1B-	40+40	CL	37.7-29.2	A-3(0)	NP	NP	67.0	24.0	5.4	4.0	1	93	93	10	22.3	-
SS-74	-Y1RPA-	26+00	1 RT	7.5-9.0	-	-	-	-	-	-	-	-	-	-	-	16.7	-
SS-76	-Y1RPA-	26+00	1 RT	17.5-19.0	A-7-6(28)	54	37	3.9	23.6	24.9	47.6	0	97	96	76	49.0	-
SS-83	-Y1RPA-	15+00	1 LT	3.4-4.9	-	-	-	-	-	-	-	-	-	-	-	10.6	-
SS-84	-Y1RPA-	15+00	1 LT	8.4-9.9	-	-	-	-	-	-	-	-	-	-	-	19.1	-
SS-90	-Y1RPA-	19+01	CL	8-9.5	-	-	-	-	-	-	-	-	-	-	-	24.9	-
SS-96	-Y1RPA-	20+95	27 LT	12.7-14.2	-	-	-	-	-	-	-	-	-	-	-	25.3	-
SS-97	-Y1RPA-	20+95	27 LT	17.7-19.2	-	-	-	-	-	-	-	-	-	-	-	20.5	-
SS-157	-Y1A-	32+99	CL	7.7-9.2	-	-	-	-	-	-	-	-	-	-	-	23.9	-
SS-158	-Y1A-	32+99	CL	12.7-14.2	A-1-b(0)	NP	NP	90.2	8.0	1.0	0.8	0	98	29	2	21.8	-
SS-164	-Y1RPD-	20+00	1 RT	7.6-9.1	A-1-b(0)	NP	NP	82.0	15.7	1.6	0.7	0	90	32	2	18.4	-
SS-171	-RCD-	10+00	51 LT	7.6-9.1	A-1-b(0)	NP	NP	83.9	11.6	2.7	1.8	1	94	38	5	20.2	-
SS-176	-RCD-	10+00	51 LT	32.6-34.1	A-2-4(0)	28	8	34.3	43.5	8.2	14.0	0	96	71	26	21.7	-
SS-181	-Y1B-	35+70	CL	7.8-9.3	A-1-b(0)	NP	NP	88.3	11.4	0.3	0.0	0	95	36	1	21.1	-
SS-183	-Y1B-	35+70	CL	17.8-19.3	A-6(5)	36	23	35.1	24.2	16.4	24.3	0	95	78	41	22.6	-
SS-184	-Y1B-	35+70	CL	22.8-24.3	A-2-4(0)	25	5	9.6	66.2	12.2	12.0	0	100	97	27	25.1	-
SS-186	-Y1B-	35+70	CL	32.8-34.3	A-6(5)	33	15	8.5	44.0	26.3	21.2	0	99	96	54	34.4	-
SS-188	-Y1B-	35+70	CL	43.8-45.3	A-7-6(15)	48	32	21.7	24.1	19.4	34.8	0	99	89	59	15.1	-
SS-192	-Y1RPC-	26+00	CL	17.6-19.1	A-7-6(21)	57	34	16.9	15.0	32.2	35.9	0	88	78	66	38.8	-
SS-203	-Y1RPC-	22+00	CL	0.0-1.5	A-6(3)	30	13	32.0	22.1	27.2	18.7	1	96	78	47	39.9	5.9
SS-211	-Y1A-	22+49	60 RT	2.3-3.8	A-6(3)	34	12	24.0	32.8	25.3	17.9	0	100	89	47	45.0	5.8
SS-219	-Y1RPC-	14+25	5 RT	3.8-5.3	-	-	-	-	-	-	-	-	-	-	-	17.6	-
SS-220	-Y1RPC-	14+25	5 RT	8.8-10.3	-	-	-	-	-	-	-	-	-	-	-	18.8	-
SS-225	-L-	32+48	77 LT	3.4-4.9	A-7-6(7)	46	17	33.3	14.0	23.9	28.8	0	100	84	54	50.8	-

NP - NON-PLASTIC

Certified Lab Technician Signature

126-01-0910

Certification Number

NCDOT LABORATORY TESTING SUMMARY

PROJECT NUMBER: 53087.1.1 **TIP:** R-5751 **COUNTY:** Robeson

DESCRIPTION: US 74 from NC 72/NC 130 Upgrade At-Grade Intersection to Interchange

Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
								Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-230B	-Y1RPB-	16+04	28 RT	12.6-14.1	-	-	-	-	-	-	-	-	-	-	-	37.4	-
SS-233	-Y1RPB-	18+09	47 RT	2.5-4.0	-	-	-	-	-	-	-	-	-	-	-	-	10.9
SS-235	-Y1RPB-	18+09	47 RT	12.5-14.0	-	-	-	-	-	-	-	-	-	-	-	22.0	-
SS-241	-Y1RPB-	20+21	2 LT	7.6-9.1	A-7-5(34)	72	29	3.9	7.7	65.7	22.7	0	100	98	91	121.0	-
SS-244	-Y1RPB-	20+21	2 LT	22.6-24.1	A-2-4(0)	NP	NP	71.6	11.0	7.1	10.3	1	96	96	17	23.1	-
SS-246	-Y1A-	24+00	CL	0-1.5	A-7-5(4)	50	15	37.0	20.2	24.5	18.3	0	100	79	45	45.0	9.0
SS-247	-Y1A-	24+00	CL	2.6-4.1	-	-	-	-	-	-	-	-	-	-	-	18.7	-
SS-248	-Y1A-	24+00	CL	7.6-9.1	-	-	-	-	-	-	-	-	-	-	-	21.9	-
SS-253	-Y1A-	26+00	CL	7.7-9.2	-	-	-	-	-	-	-	-	-	-	-	20.2	-
SS-258	-Y1A-	28+00	CL	7.8-9.3	-	-	-	-	-	-	-	-	-	-	-	21.0	-
SS-259	-Y1A-	28+00	CL	12.8-14.3	-	-	-	-	-	-	-	-	-	-	-	26.6	-
SS-265	-Y1RPC-	19+05	18 RT	7.7-9.2	-	-	-	-	-	-	-	-	-	-	-	19.8	-
SS-266	-Y1RPC-	19+05	18 RT	12.7-14.2	-	-	-	-	-	-	-	-	-	-	-	17.9	-
SS-270	-Y1A-	31+06	22 RT	7.7-9.2	A-1-b(0)	NP	NP	86.9	9.1	2.7	1.3	2	94	30	4	21.4	-
SS-273	-Y1A-	31+06	22 RT	22.7-24.2	A-7-6(23)	51	25	5.0	14.5	60.1	20.4	0	98	95	85	24.1	-
S-3	-L-	26+00	50 RT	1.0 - 6.0	A-2-4 (0)	NP	NP	53.7	35.7	3.3	7.3	0	99	75	12	--	--
S-8	-L-	36+00	48 LT	2.5 - 6.0	A-2-4 (0)	21	7	34.8	45.3	5.3	14.6	0	100	79	22	--	--
ST-2	-Y1RPA-	26+00	5 RT	2.0-4.0	A-2-4(0)	20	8	56.8	16.7	10.3	16.2	0	99	62	28	12.0	-
ST-3	-Y1RPA-	19+01	4 RT	3.0-5.0	A-2-4(0)	NP	NP	46.8	32.9	8.7	11.6	0	100	83	22	20.0	-
ST-4	-Y1B-	38+00	4 LT	22.0-24.0	A-7-6(29)	60	42	1.4	36.4	30.5	31.7	1	85	99	72	44.9	-
ST-6	-Y1RPD-	20+00	5 RT	18.0-20.0	A-1-b(0)	NP	NP	79.4	8.0	6.4	6.2	0	99	37	13	22.7	-
ST-7	-Y1RPC-	22+00	4 RT	2.0-4.0	A-4(1)	25	7	23.7	36.2	19.7	20.4	0	99	85	46	29.4	-
ST-8	-Y1RPC-	16+20	104 RT	4.0-6.0	A-2-4(0)	24	5	51.0	23.6	8.3	17.1	0	100	75	26	25.9	-
ST-9	-Y1RPB-	18+09	43 RT	2.0-4.0	A-6(12)	38	19	12.9	24.7	25.0	37.4	0	100	92	70	32.0	-
ST-10	-Y1A-	26+00	4 RT	1.0-3.0	A-6(3)	26	11	14.4	35.0	24.6	26.0	6	100	94	55	14.9	-
CBR-1	-L-	54+05	132 RT	0.5-1.5	-	-	-	40.7	45.1	7.2	7.0	0	97	79	15	9.2	-
CBR-2	-L-	55+51	68 LT	0.5-1.5	-	-	-	54.6	31.9	12.5	1.0	0	96	65	14	35.0	-
CBR-4	-Y1RPC-	16+20	4 RT	0.5-1.5	-	-	-	40.7	40.1	11.0	8.2	10	85	67	19	13.8	-

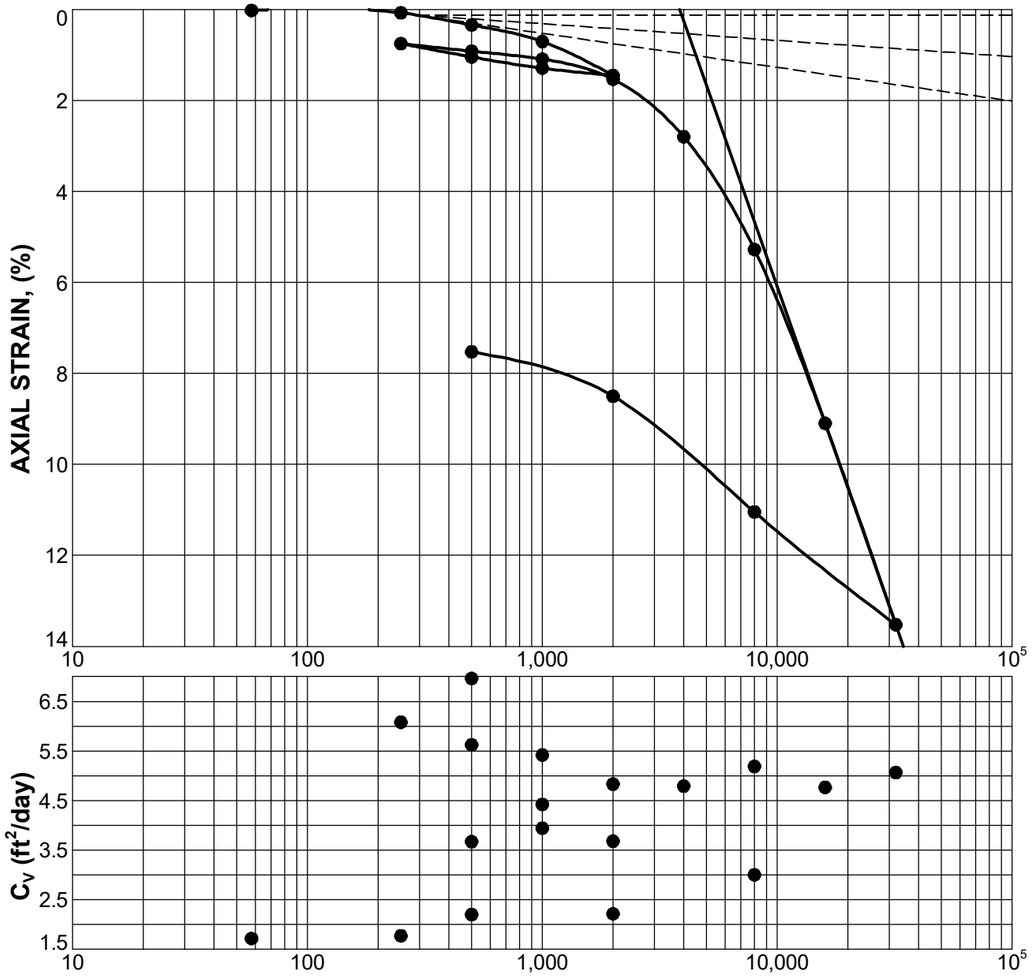
NP - NON-PLASTIC

Certified Lab Technician Signature

126-01-0910

Certification Number

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
90.1 %	44.9 %	72.1	60	42	2.72			14.713	0.779	1.358

MATERIAL DESCRIPTION	USCS	AASHTO
Gray fat CLAY	CH	A-7-6

NOTES: Percent Passing #200 Sieve= 89.3%

Borehole: B1-C Depth: 22 ft Specimen #: 4

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

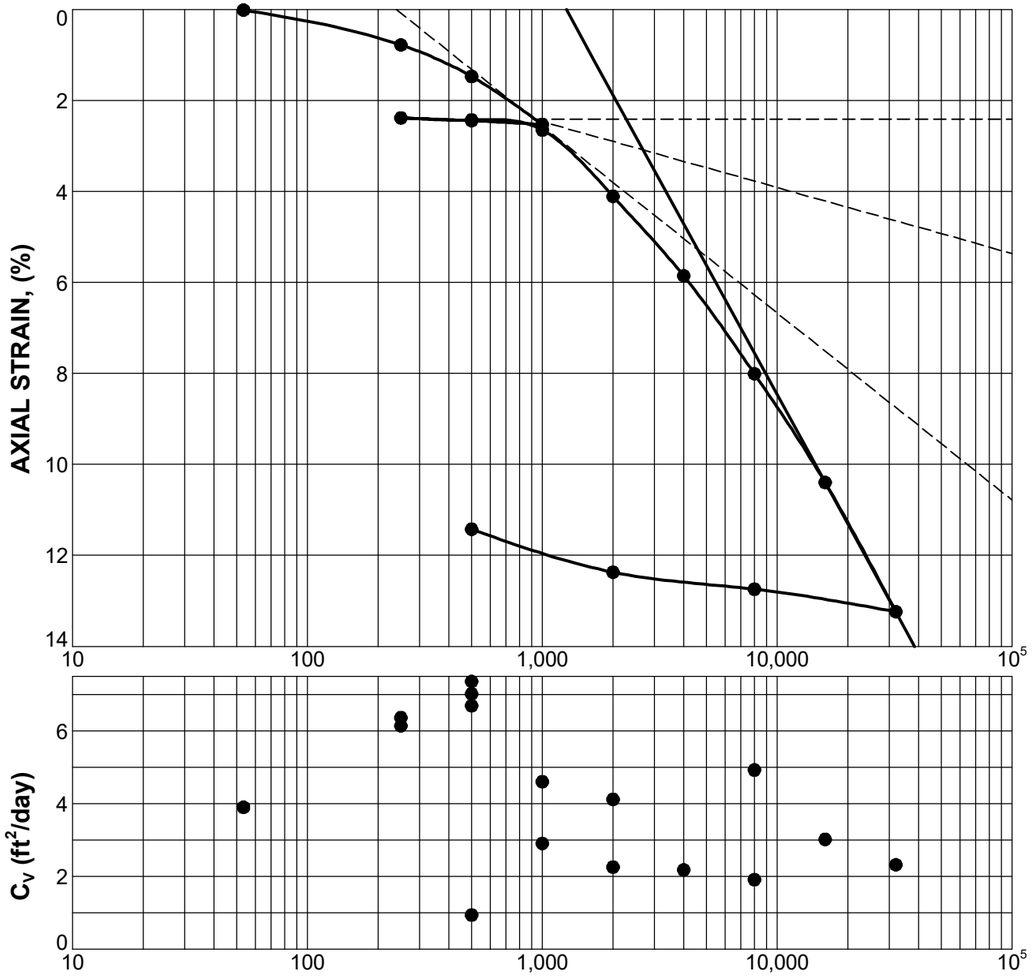
Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-1

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
92.8 %	29.3 %	91.6	26	11	2.74			9.444	0.240	0.865

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY LEAN CLAY	CL	A-6

NOTES:

Borehole: Y1A_2600 Depth: 1 ft Specimen #: 10

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

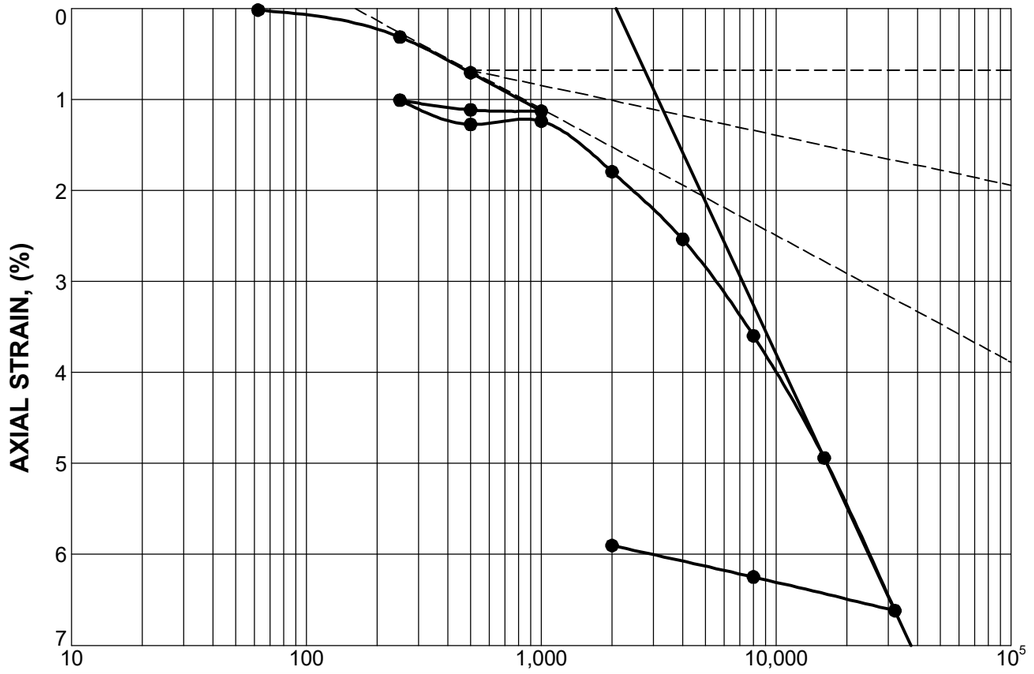
Terracon
2701 Westport Rd
Charlotte, NC

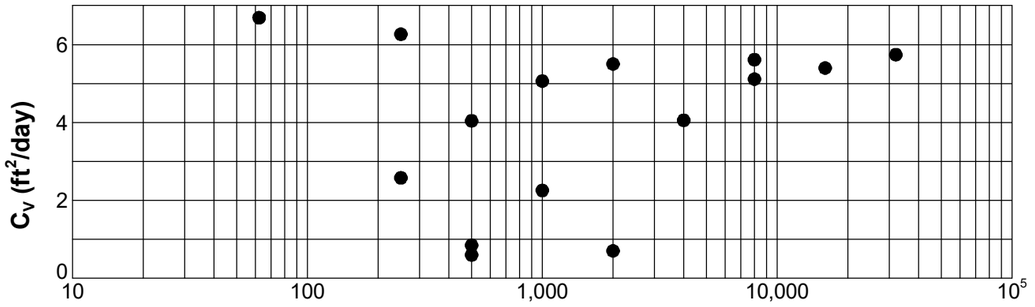
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-2

CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural Saturation	Natural Moisture	Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
81.0 %	19.8 %	100.8	NP	NP	2.67			5.578	0.201	0.654

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY SAND	SM	A-2-4

NOTES:

Borehole: Y1RPA_1901 Depth: 3 ft Specimen #: 3

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

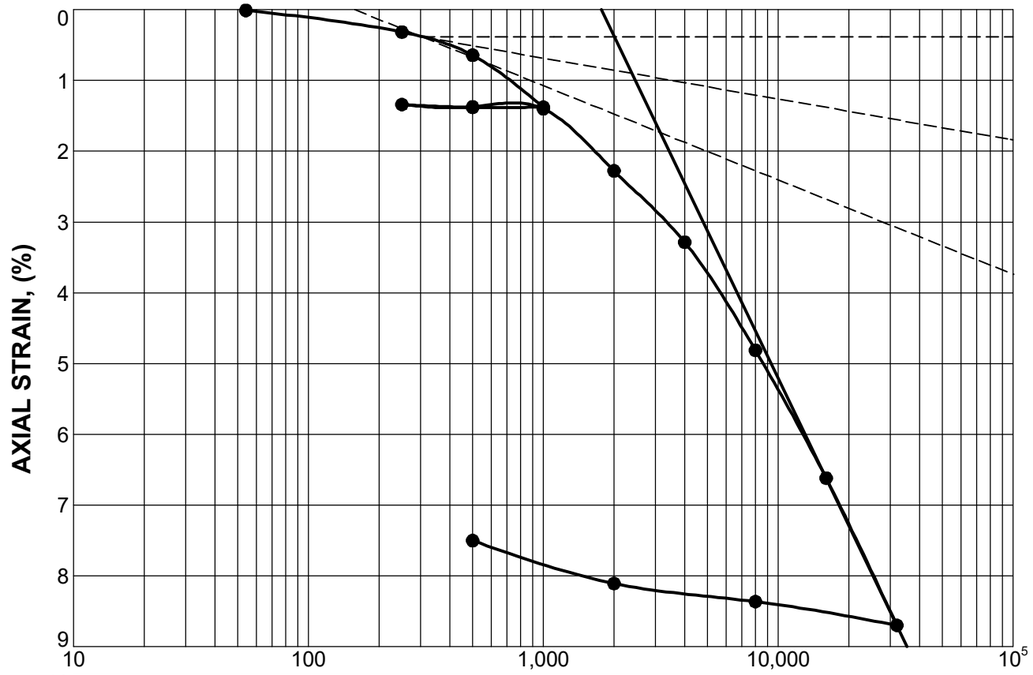
Terracon
2701 Westport Rd
Charlotte, NC

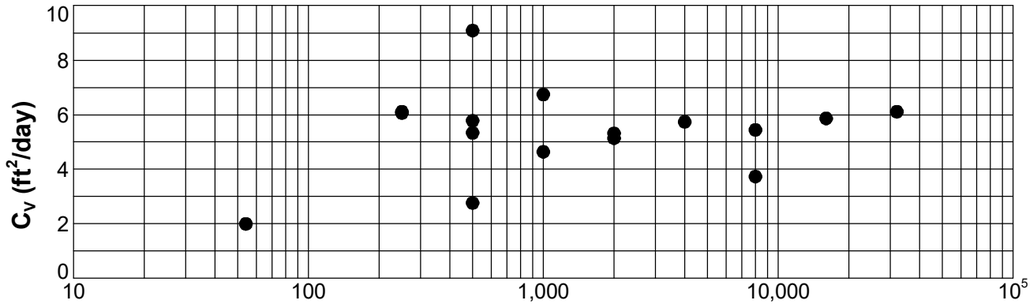
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-3

CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural Saturation	Natural Moisture	Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
80.8 %	13.3 %	114.9	20	8	2.64			6.914	0.059	0.435

MATERIAL DESCRIPTION	USCS	AASHTO
CLAYEY SAND	SC	A-2-4

NOTES:

Borehole: Y1RPA_2600 Depth: 2 ft Specimen #: 2

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

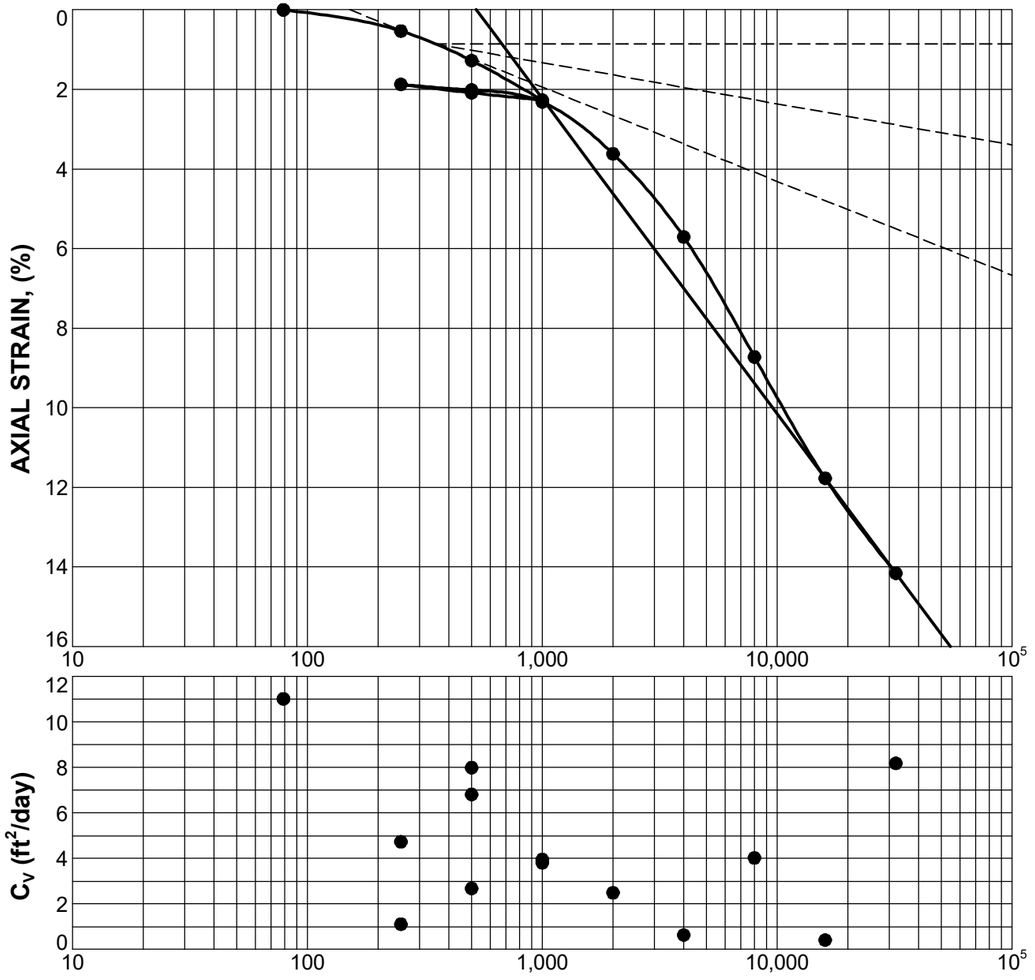
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-4

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CONS_LOAD-DEF_PROP_STRESS-STRAIN_CV R5751_GEO_TERRACONLIBRARY.GPJ TERRACON_DATATEMPLATE.GDT 4/13/20

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
93.4 %	32.3 %	85.8	38	19	2.62			7.929	0.656	0.904

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY LEAN CLAY	CL	A-6

NOTES:

Borehole: Y1RPB_1809 Depth: 2 ft Specimen #: 9

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

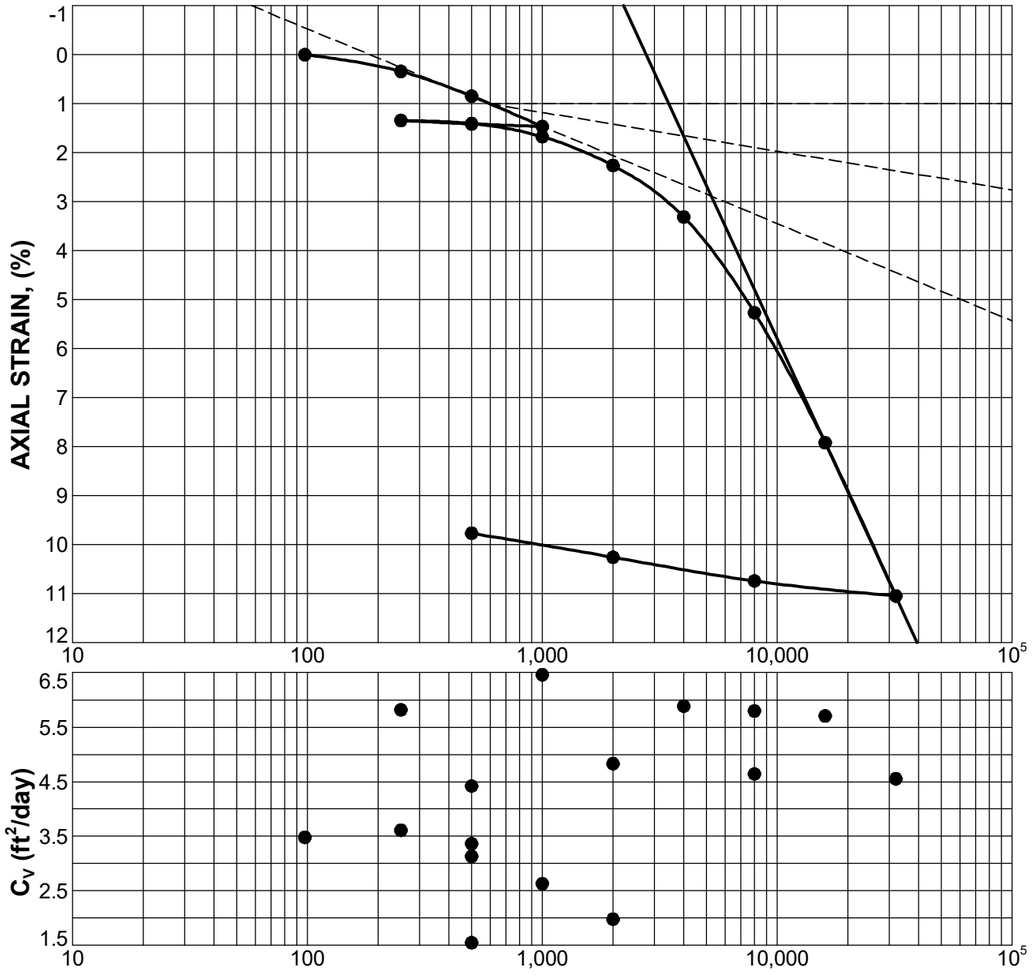
Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-5

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
92.2 %	25.9 %	92.8	24	6	2.55			10.397	0.205	0.716

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY, CLAYEY SAND	SC-SM	A-2-4

NOTES:

Borehole: Y1RPC_1620 Depth: 4 ft Specimen #: 8

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

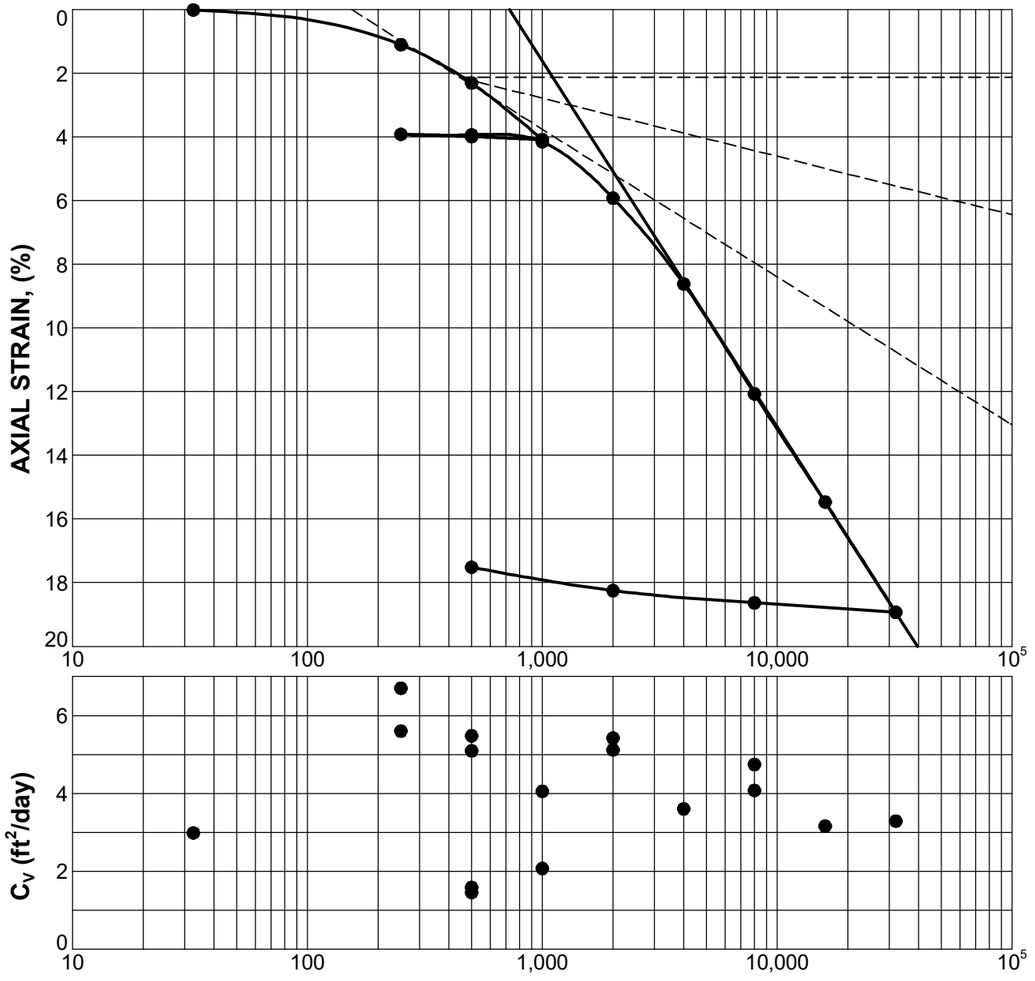
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-6

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CONS_LOAD-DEF_PROP_STRESS-STRAIN_CV R5751_GEO_TERRACONLIBRARY.GPJ TERRACON_DATATEMPLATE.GDT 4/13/20

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
82.4 %	27.6 %	86.8	25	7	2.60			11.513	0.278	0.870

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY, CLAYEY SAND	SC-SM	A-4

NOTES:

Borehole: Y1RPC-2200 Depth: 2 ft Specimen #:7

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

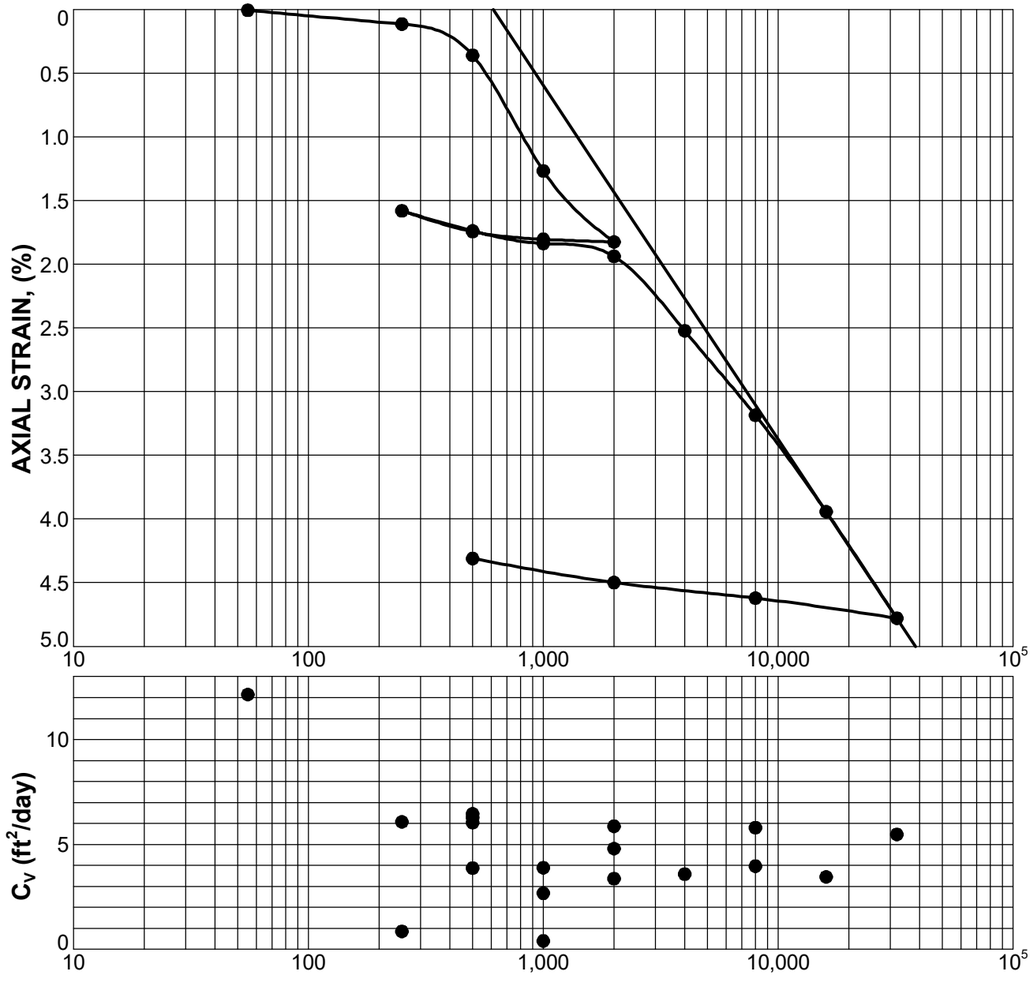
Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-7

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
89.3 %	22.7 %	98.8	NP	NP	2.65			2.781	0.264	0.673

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY SAND	SM	A-2-4

NOTES:

Borehole: Y1RPD_2000 Depth: 18 ft Specimen #: 6

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

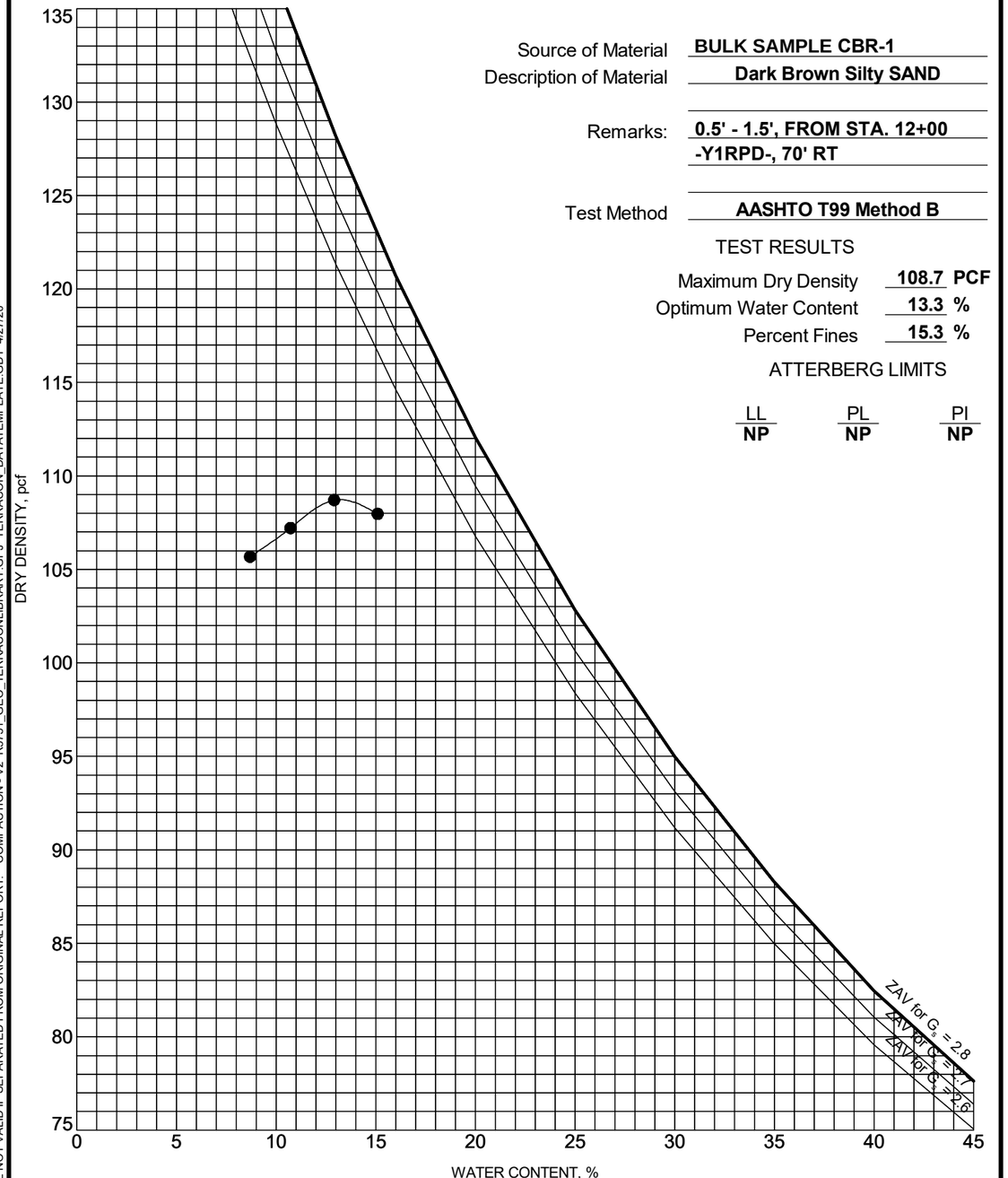
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-8

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **BULK SAMPLE CBR-1**

Description of Material: **Dark Brown Silty SAND**

Remarks: **0.5' - 1.5', FROM STA. 12+00 -Y1RPD-, 70' RT**

Test Method: **AASHTO T99 Method B**

TEST RESULTS

Maximum Dry Density	108.7	PCF
Optimum Water Content	13.3	%
Percent Fines	15.3	%

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

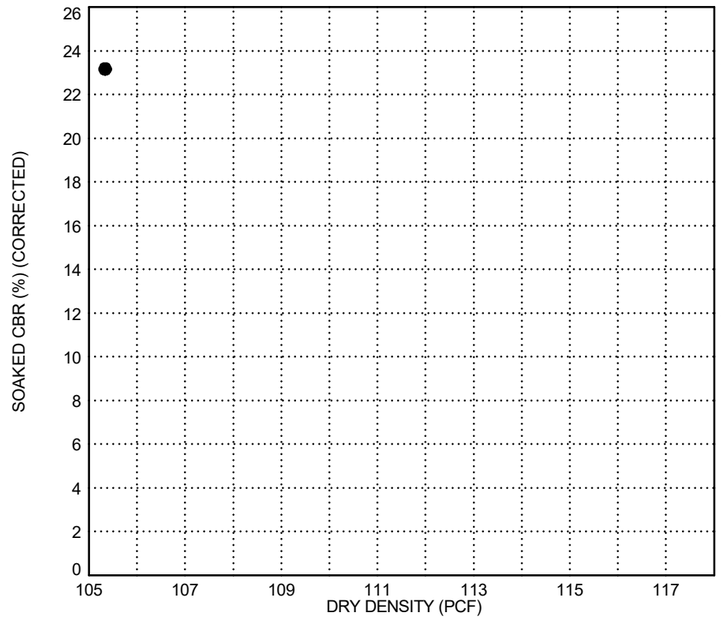
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-1

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



Source of Material: **BULK SAMPLE CBR-1**

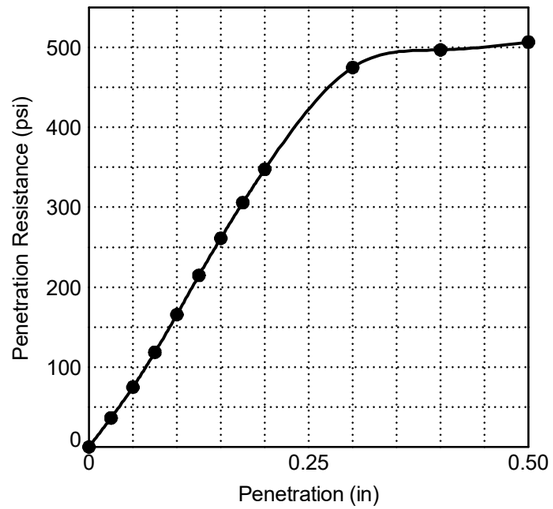
Description of Material: **Dark Brown Silty SAND**

Remarks: **0.5' - 1.5', FROM STA. 12+00 -Y1RPD-, 70' RT**

Percent Fines: **15.3 %**

Atterberg Limits

LL	PL	PI
NP	NP	NP



Sample No.	1
Sample Condition	Soaked
Compaction Method	AASHTO T99B
Maximum Dry Density, (pcf)	108.7
Optimum Moisture Content, (%)	13.3
Dry Density before Soaking, (pcf)	105.34
Moisture Content, (%)	
After Compaction	12.7
Top 1" After Soaking	15.5
Surcharge,. (lbs)	10.00
Swell, (%)	0.44
Bearing Ratio, (%)	23.2

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

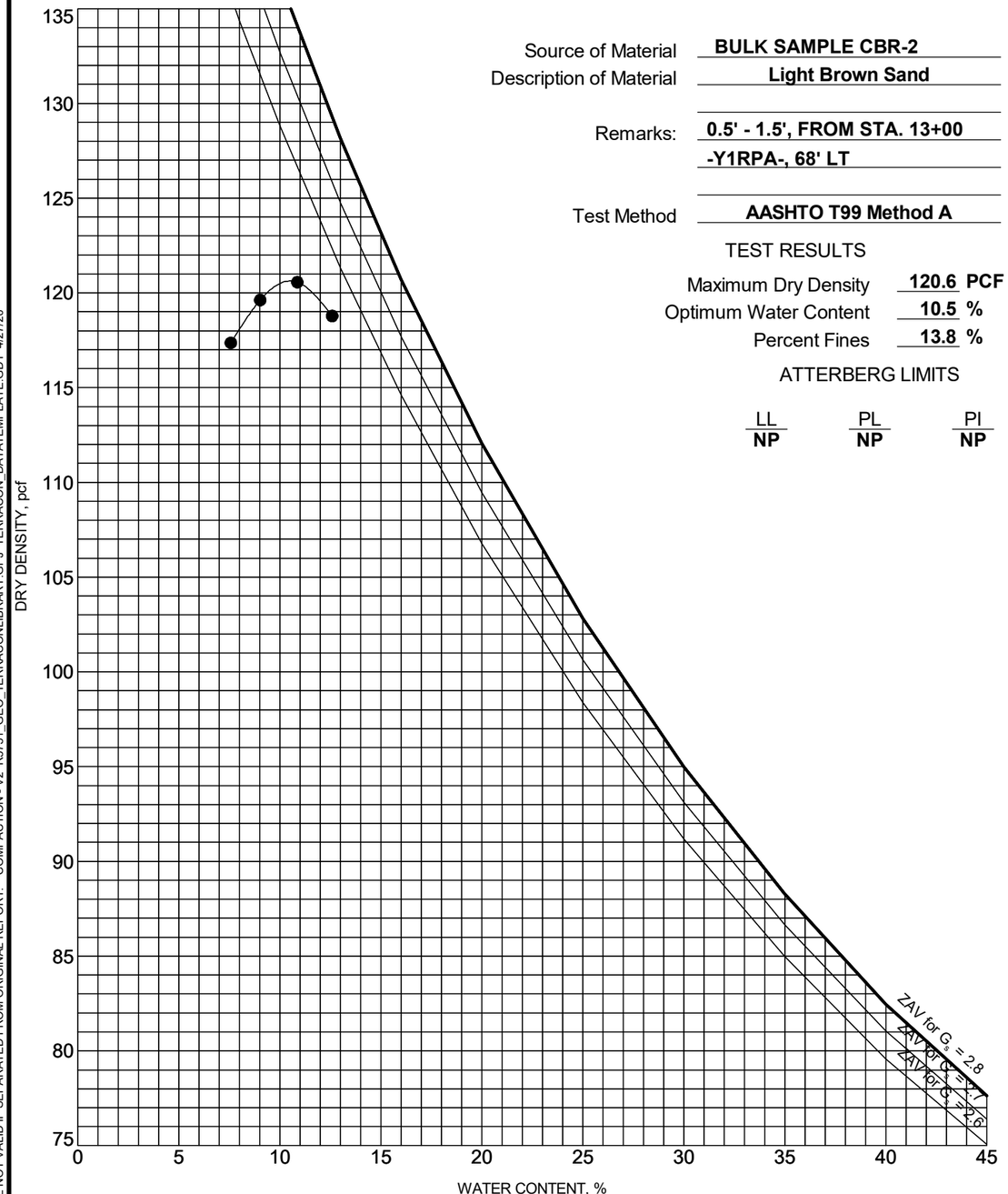
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-1

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **BULK SAMPLE CBR-2**

Description of Material: **Light Brown Sand**

Remarks: **0.5' - 1.5', FROM STA. 13+00 -Y1RPA-, 68' LT**

Test Method: **AASHTO T99 Method A**

TEST RESULTS

Maximum Dry Density	120.6	PCF
Optimum Water Content	10.5	%
Percent Fines	13.8	%

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

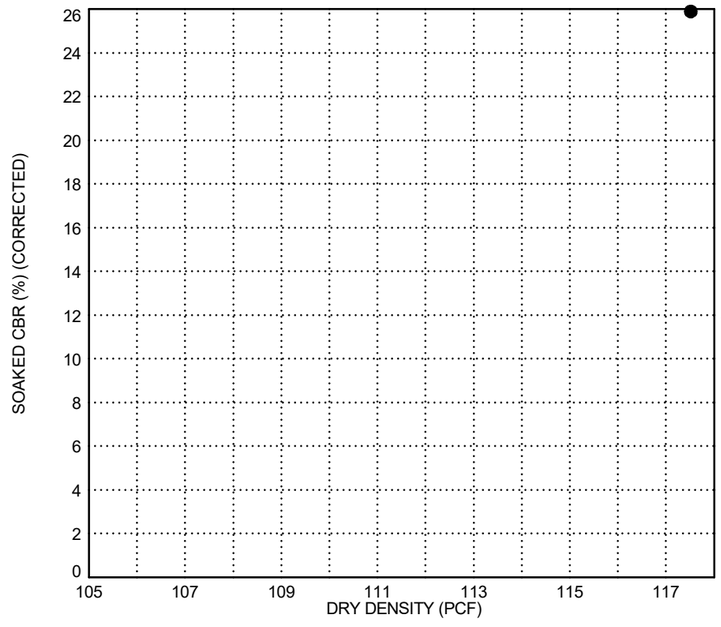
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-2

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



Source of Material: **BULK SAMPLE CBR-2**

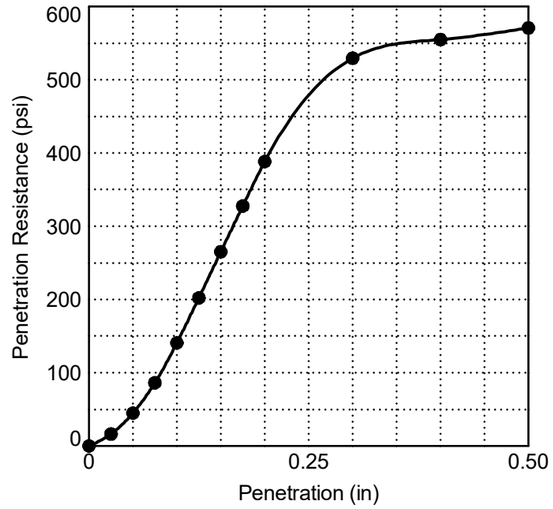
Description of Material: **Light Brown Sand**

Remarks: **0.5' - 1.5', FROM STA. 13+00 -Y1RPA-, 68' LT**

Percent Fines: **13.8 %**

Atterberg Limits

LL	PL	PI
NP	NP	NP



Sample No.	1
Sample Condition	Soaked
Compaction Method	AASHTO T99A
Maximum Dry Density, (pcf)	120.6
Optimum Moisture Content, (%)	10.5
Dry Density before Soaking, (pcf)	117.52
Moisture Content, (%)	
After Compaction	10.2
Top 1" After Soaking	12.1
Surcharge,. (lbs)	10.00
Swell, (%)	0.04
Bearing Ratio, (%)	25.9

PROJECT: ORRUM

SITE: Robeson County
Orrum, NC

Terracon
2701 Westport Rd
Charlotte, NC

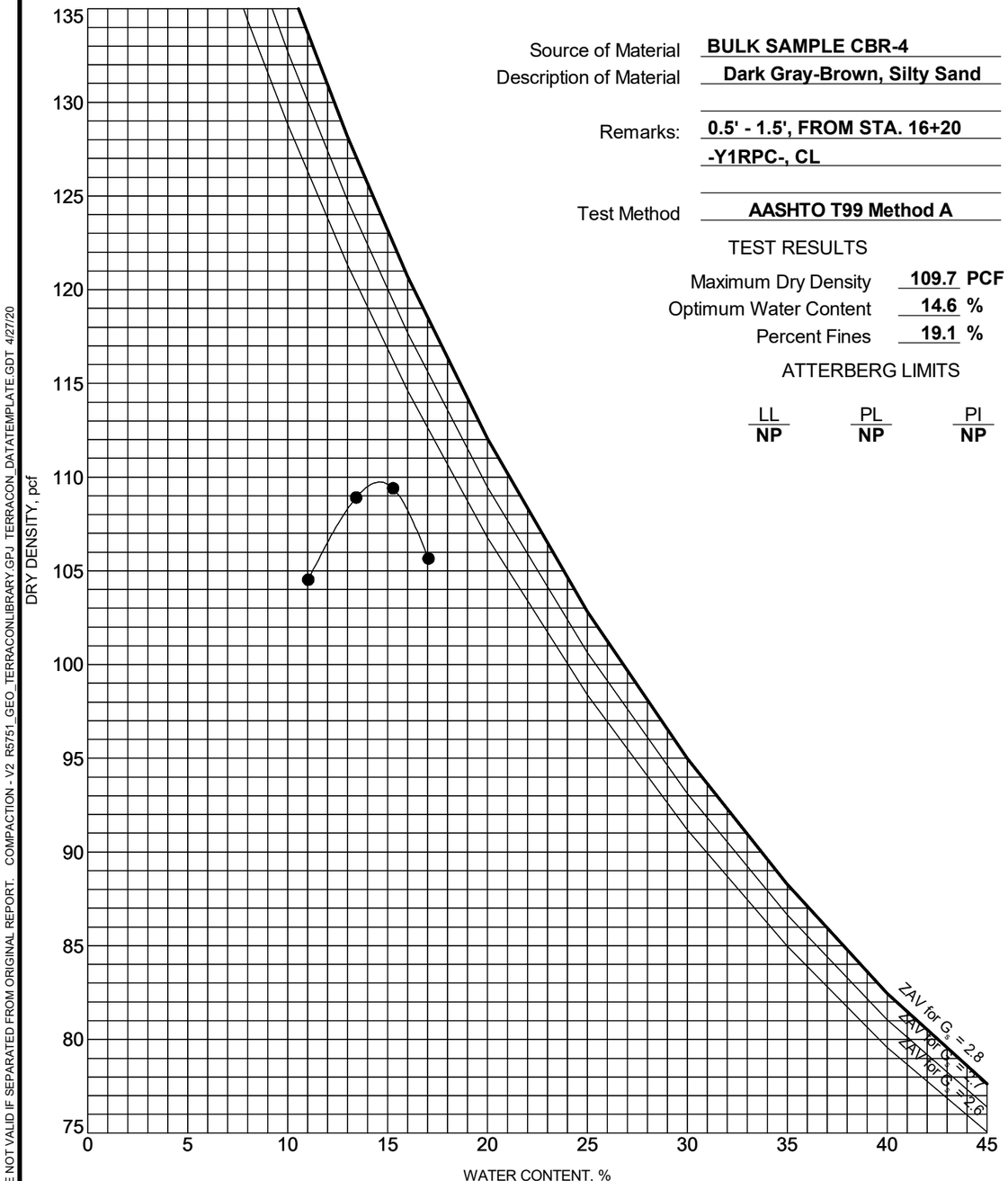
PROJECT NUMBER: 71195028

CLIENT: NCDOT
Charlotte, NC

EXHIBIT: B-2

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **BULK SAMPLE CBR-4**

Description of Material: **Dark Gray-Brown, Silty Sand**

Remarks: **0.5' - 1.5', FROM STA. 16+20 -Y1RPC-, CL**

Test Method: **AASHTO T99 Method A**

TEST RESULTS

Maximum Dry Density	109.7	PCF
Optimum Water Content	14.6	%
Percent Fines	19.1	%

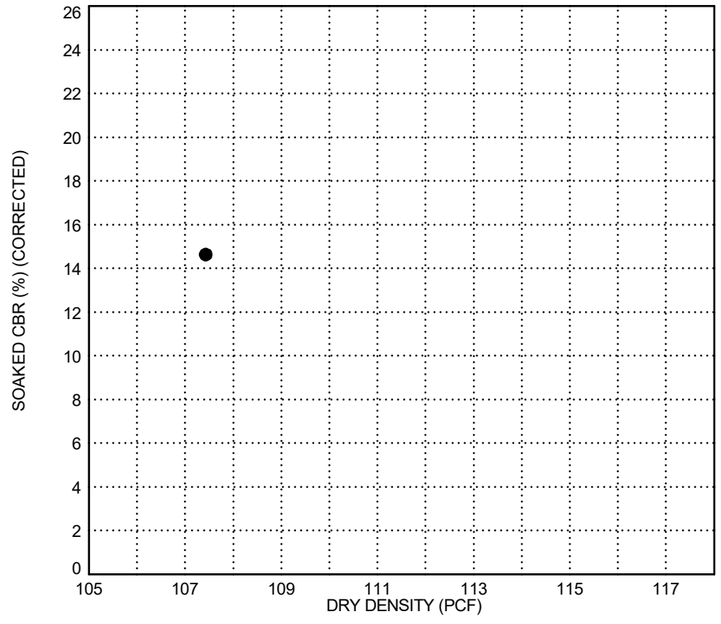
ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP

PROJECT: ORRUM	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195028
SITE: Robeson County Orrum, NC		CLIENT: NCDOT Charlotte, NC
		EXHIBIT: B-3

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



Source of Material: **BULK SAMPLE CBR-4**

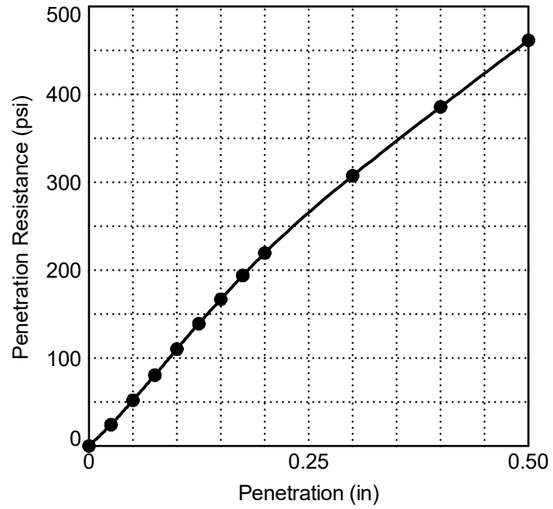
Description of Material: **Dark Gray-Black Silty Sand**

Remarks: **0.5' - 1.5', FROM STA. 16+20 -Y1RPC-, CL**

Percent Fines: **19.1 %**

Atterberg Limits

LL	PL	PI
NP	NP	NP



Sample No.	1
Sample Condition	Soaked
Compaction Method	AASHTO T99A
Maximum Dry Density, (pcf)	109.7
Optimum Moisture Content, (%)	14.6
Dry Density before Soaking, (pcf)	107.43
Moisture Content, (%)	
After Compaction	14.4
Top 1" After Soaking	16.4
Surcharge,. (lbs)	10.00
Swell, (%)	0.26
Bearing Ratio, (%)	14.6

PROJECT: ORRUM	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195028
SITE: Robeson County Orrum, NC		CLIENT: NCDOT Charlotte, NC
		EXHIBIT: B-3