STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2714	1	31

REFERENCE: U-2714

PROJECT: 38979

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+00 - 91+64	4-11	12-15
-Y4-	10+00 - 21+32	6,11	16
-Y5-	10+00 - 17+54	6	16

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	12+00 - 89+00	17-29
-Y4-	17+50	30
-Y5-	16+50	31

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *WAYNE*

PROJECT DESCRIPTION *US 117A (N. WILLIAM ST) FROM NORTH OF US 70 TO SR 1571 (TOMMY'S RD)*

INVENTORY

CAUTION NOTICE

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

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

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

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

PERSONNEL

B. KEANEY

C. JONES

B. HOWEY

C. TAYLOR

M. MORGAN

INVESTIGATED BY *HDR ENGINEERING, INC. HDR-ICA*

DRAWN BY *CBJ*

CHECKED BY *ECH*

SUBMITTED BY *HDR ENGINEERING, INC.*

DATE *9/2016*

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SIGNATURE DATE

NORTH CAROLINA PROFESSIONAL SEAL 020175 ENGINEER ELIZABETH C. HOWEY

SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
R-5311A	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,
VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #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 EXCAVATION
- 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:
- [X] CME-45C
- [ ] CME-55
- [ ] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [ ] _____
- [ ] _____

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

ELEVATION: FEET

NOTES:

BORING AND GROUND SURFACE ELEVATIONS OBTAINED FROM NCDOT- PROVIDED DTM FILE LABELED "U2714_ls_tin.tin" DATED 1/27/16

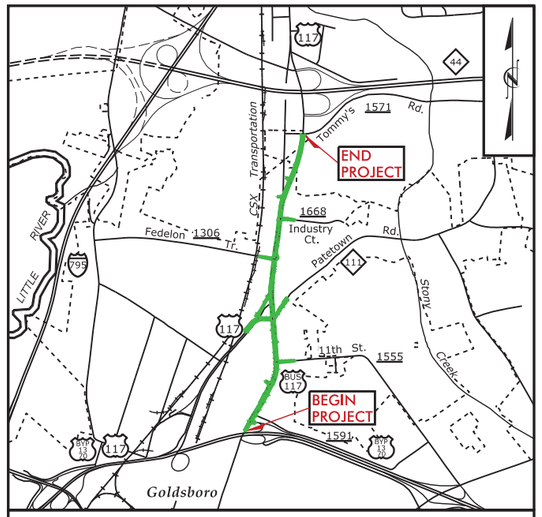
FIAD- FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

CONTRACT:

TIP PROJECT: U–2714

See Sheet 1-A For Index of Sheets



VICINITY MAP
(NOT TO SCALE)

25% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

WAYNE COUNTY

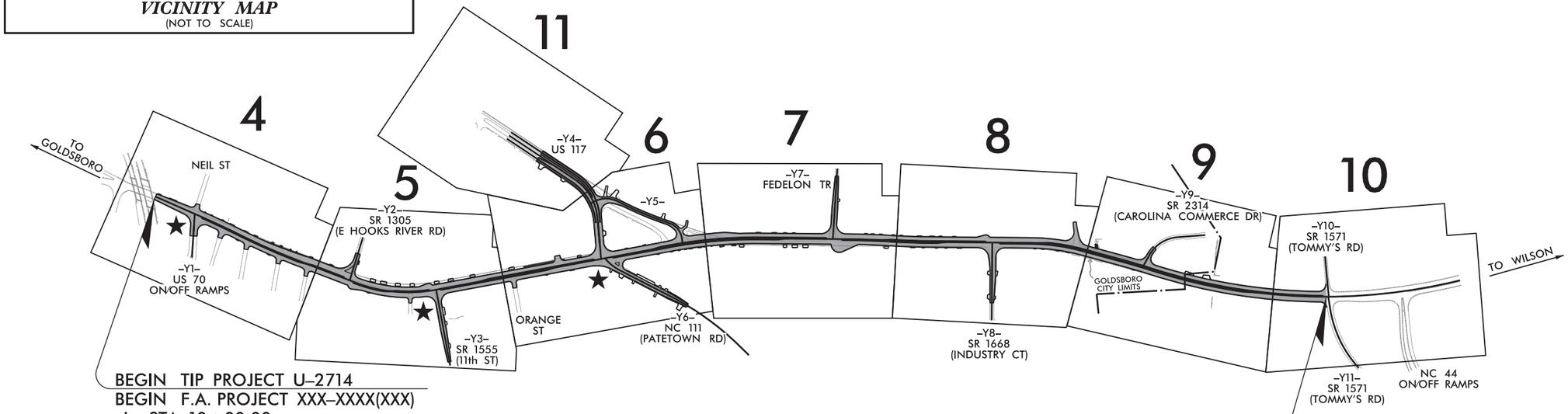
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U–2714	3	31

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

LOCATION: US 117A (N. WILLIAMS ST) FROM NORTH OF US 70 TO SR 1571 (TOMMY'S RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT AND SIGNALS

NAD 83



BEGIN TIP PROJECT U–2714
BEGIN F.A. PROJECT XXX–XXXX(XXX)
–L– STA. 10+00.00

BEGIN TIP PROJECT U–2714
BEGIN F.A. PROJECT XXX–XXXX(XXX)
–L– STA. 91+64.74

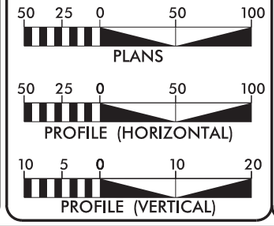
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ___
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF GOLDSBORO

★ PROPOSED TRAFFIC SIGNAL

Prepared by the Office of:
HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

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

GRAPHIC SCALES



DESIGN DATA

ADT 2018 = 17,390
ADT 2038 = 27,310
DHV = 9 %
D = 60 %
T = 4 % *
V = 40 MPH
(* TTST =1% + DUAL 3%)
FUNC CLASS =
MINOR ARTERIAL (URBAN)
STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U–2714 = 1.546 MILES
TOTAL LENGTH TIP PROJECT U–2714 = 1.546 MILES

Prepared for the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 17, 2017

LETTING DATE:
FEBRUARY 20, 2018

CALVIN W. MOODY, III, P.E.
PROJECT ENGINEER

CASEY E. HARRIS, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION

September 30, 2016

STATE PROJECT: 38979.1.2
TIP NUMBER: U-2714
COUNTY: Wayne
DESCRIPTION: US 117A (N. Williams St) from North of US 70 to SR 1571 (Tommy's Rd)

SUBJECT: Geotechnical Roadway Inventory Report

PROJECT DESCRIPTION

The U-2714 project is an existing alignment designed to help increase the flow of traffic around the city of Goldsboro in eastern North Carolina. The U-2714 project consists of improving the current US 117 Business / US 117 roadway by widening the current roadway from just north of US 70 to just south of NC 44 (Goldsboro Bypass). It also includes improvements along tie in alignments. The project length is approximately 1.5 miles along US 117 Business / US 117.

The field investigation was conducted in June 2016, using a CME-45C track rig with automatic hammer. Standard Penetration Tests (SPT) were performed at selected locations. Representative soil samples were collected and kept for in-office identification purposes. All available test locations are plotted on the plan view and also appear projected into the profiles and selected cross sections.

The following alignments, totaling approximately 1.7 miles, were investigated

Line	Station			Length (ft)
-L-	10+00	to	91+64	8,164
-Y4-	10+00	to	21+32.34	1,132
-Y5-	10+00	to	17+54.20	754
			Total =	10,050 (~1.9 miles)

PHYSIOGRAPHY AND GEOLOGY

Physiography and Geography

The project is located in the Coastal Plain Physiographic Province. Geologically, it is located in an area mapped as Tertiary Age deposits of the Yorktown Formation described as fossiliferous clay with varying amounts of fine grained sand. The topography is flat and the drainage from the area is very poor. The soils along the project were deposited during periods of fluctuating shoreline.

Soil Properties

Soils encountered on the project site include alluvium, existing roadway embankment fill, and Undivided Coastal Plain sediments.

Existing roadway embankment fill soils are present in the upper few feet along part of the existing mainline alignment –L- and consist of fine to coarse sand (A-3), clayey sand (A-2-6) and sandy clay (A-6).

Alluvial soils were encountered in the hand auger boring advanced near the inlet of the existing box culvert at Station 75+50. These soils consist of clayey fine to coarse sand (A-2-6).

The Undivided Coastal Plain deposits are present at all boring locations except the shallow hand auger boring at -L- Station 75+50 and consist of fine to coarse sand and clayey sand (A-3, A-2-4, A-2-6/7), clay (A-6, A-7-6) and silt (A-4, A-5). The consistency of the sands is generally loose to medium dense while the consistency of the clays and silts is generally medium stiff to stiff. The field moisture content of the soils sampled was described as moist to wet.

Groundwater

Only 0 hour measurements were taken due to the boring locations being in or next to the roadway. For safety reasons, borings were backfilled immediately after drilling. Borings were either dry at the time of drilling or the 0 hour groundwater was encountered from approximately 5.4 to 8.4 feet below the existing ground surface at the boring locations. Based on the proposed grades, no special ditches for groundwater are anticipated.

Pavement

Eight of the borings were advanced through existing roadway pavement and pavement cores were obtained. For borings advanced through existing roadway pavement and at 4 other locations, the subgrade was tested with a Kessler Dynamic Cone Penetrometer. The cone penetrometer results were correlated to the California Bearing Ratio for subgrade quality based on the NCDOT correlation method. See the Pavement Design Investigation for the pavement core photos and CBR correlations. The pavement thicknesses are provided in the table below.

Boring	Thickness (in)
L_1200L	7
L_1853L	7
L_2352L	6
L_2800	6
L_3445L	4.5
L_6300R	5.5
L_8100R	5.5
L_8900L	6.5

hdrinc.com

555 Fayetteville Street, Suite 900, Raleigh, NC 27601
(919) 232-6600

Areas of Special Geotechnical Interest

The following areas encountered moderately plastic cohesive soil at subgrade:

Alignment	Begin Station	End Station
-L-	14+25	21+50

Sincerely,

Elizabeth C. Howey, PE, PG
Senior Geotechnical Project Manager
HDR ENGINEERING, INC.

PROJECT REFERENCE NO.	SHEET NO.
U-2714	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
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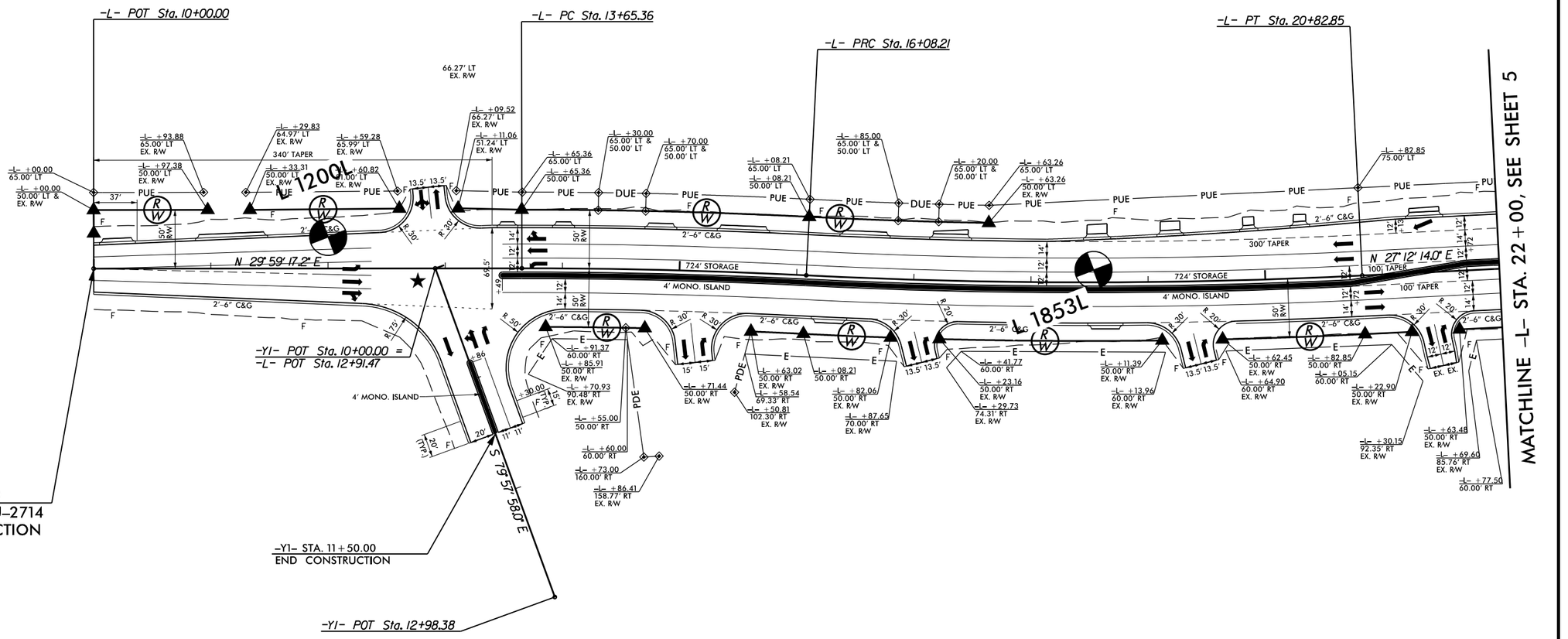
N.C.B.E.L.S. License Number: F-0116

NAD 83

10 15 20



2018 ADT / 2038 ADT (ADT IN 100's)	NEIL ST	
	8/9	
143/253	5/4	2/5 159/283
US 117		US 117
	14/25	33/54
	48/79	
US 13/70 BYP		

-L-	
PI Sta 14+86.81	PI Sta 18+45.73
Δ = 2° 55' 01.3" (RT)	Δ = 5° 42' 04.5" (LT)
D = 1° 12' 04.2"	D = 1° 12' 04.2"
L = 242.85'	L = 474.64'
T = 121.45'	T = 237.52'
R = 4,770.00'	R = 4,770.00'
SE = NC	SE = NC

★ PROPOSED SIGNAL
SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 16 FOR -Y1- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

REVISIONS

PLOT DRIVER: $PLTDRVS$ DATE: $DATE$ PENTABLE: $PENTBLS$
USER: $USER$ TIME: $TIME$
FILE: $PWVARVAULTPATHDESC$

PROJECT REFERENCE NO.	SHEET NO.
U-2714	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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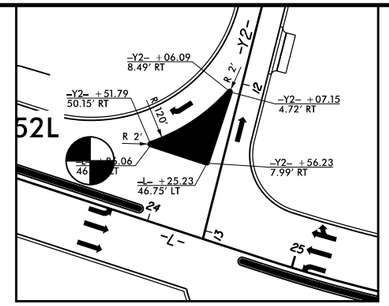
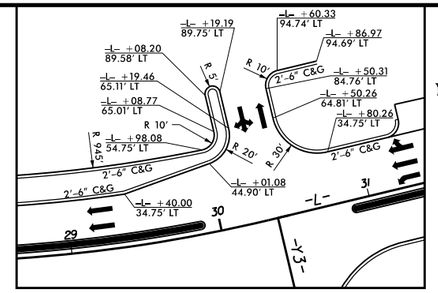
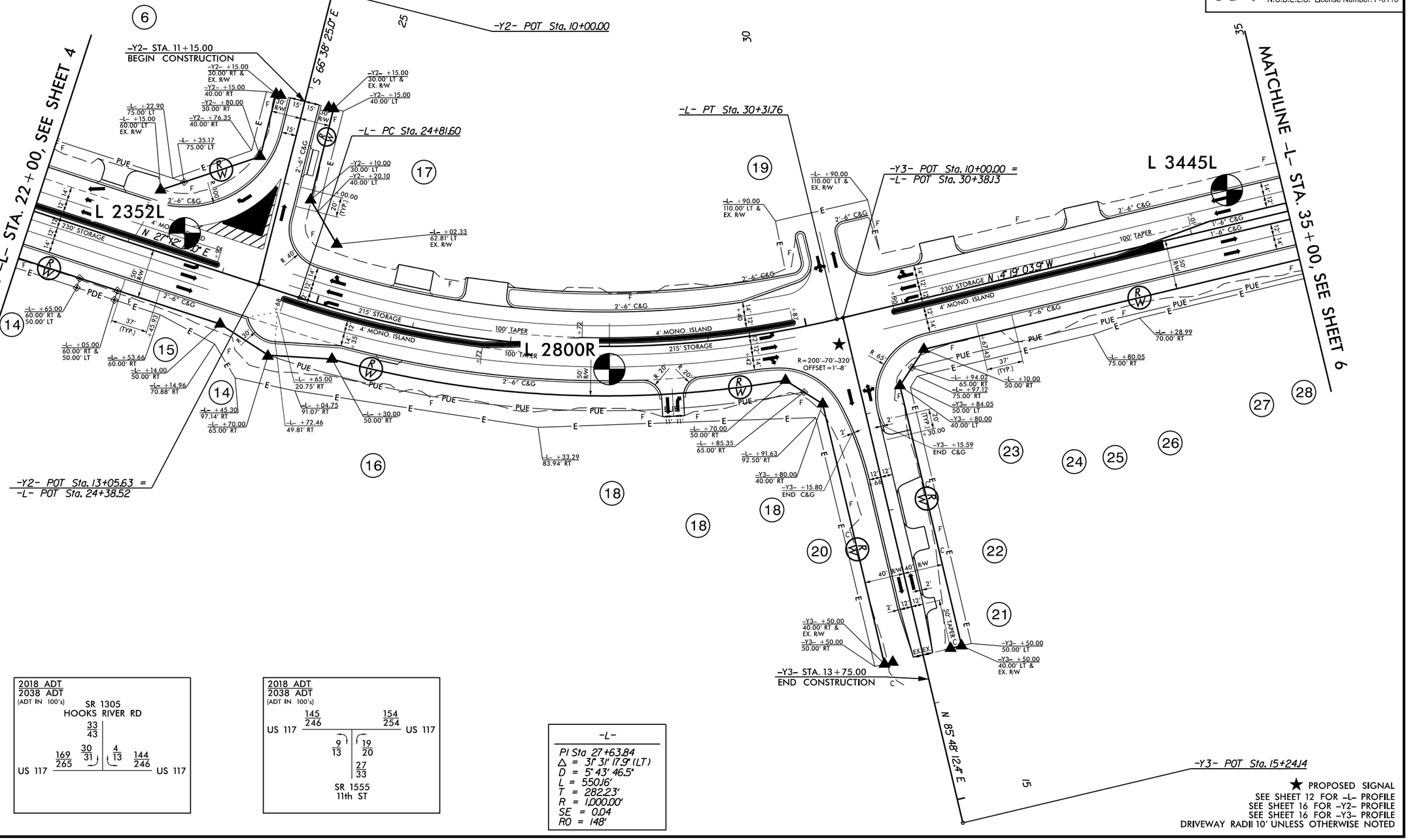




NAD 83



-L-
PI Sta 27+63.84
Δ = 31° 31' 17.9" (LT)
D = 5° 43' 46.5"
L = 550.16'
T = 282.23'
R = 1,000.00'
SE = 0.04
RO = 148'

REVISIONS

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
PENTABLE: $PENTBLS$
DATE: $DATE$
TIME: $TIME$

PROJECT REFERENCE NO.	SHEET NO.
U-2714	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROPOSED SIGNAL ★
PAVEMENT REMOVAL

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 18 FOR -Y4- PROFILE
SEE SHEET 17 FOR -Y4RT- PROFILE
SEE SHEET 17 FOR -Y4LT- PROFILE
SEE SHEET 18 FOR -Y5- PROFILE
SEE SHEET 19 FOR -Y6- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

NAD 83

MATCHLINE -Y4RT- STA. 16+50, SEE SHEET 11

MATCHLINE -L- STA. 35+00, SEE SHEET 5

MATCHLINE -L- STA. 49+00, SEE SHEET 7

-Y4-
PI Sta 17+04.64
Δ = 51° 19' 16.9" (RT)
D = 15° 54' 55.8"
L = 322.46'
T = 172.95'
R = 360.00'
SE = 0.06

-Y4RT-
PI Sta 17+06.56
Δ = 51° 19' 16.9" (RT)
D = 15° 54' 55.8"
L = 322.46'
T = 172.95'
R = 360.00'
SE = 0.06
R0 = 70'

-Y4LT-
PI Sta 17+02.72
Δ = 51° 19' 16.9" (RT)
D = 15° 54' 55.8"
L = 322.46'
T = 172.95'
R = 360.00'
SE = 0.06
R0 = 120'

-L-
PI Sta 49+56.47
Δ = 11° 02' 53.8" (RT)
D = 1° 46' 45.7"
L = 620.91'
T = 311.42'
R = 3,220.00'
SE = RC
R0 = 92.5'

-Y5-
PI Sta 11+21.89
Δ = 53° 36' 11.2" (RT)
D = 32° 44' 25.6"
L = 163.72'
T = 88.40'
R = 175.00'

PI Sta 13+68.75
Δ = 9° 01' 08.6" (LT)
D = 2° 38' 03.4"
L = 342.37'
T = 171.54'
R = 2,175.00'
SE = RC
R0 = 50'

PI Sta 16+52.17
Δ = 62° 18' 22.2" (RT)
D = 45° 50' 11.8"
L = 135.93'
T = 75.56'
R = 125.00'

-Y6-
PI Sta 10+78.94
Δ = 19° 32' 16.4" (LT)
D = 17° 54' 17.8"
L = 109.12'
T = 55.09'
R = 320.00'

PI Sta 16+13.43
Δ = 5° 59' 09.7" (RT)
D = 2° 03' 13.0"
L = 291.49'
T = 145.88'
R = 2,790.00'
SE = EX.

2018 ADT US 117A
2038 ADT PATETOWN RD
(ADT IN 100's)
US 117 — NC 111 PATETOWN RD

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-2714	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St. Suite 900 Raleigh, N.C. 27601
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2018 ADT
2038 ADT
(ADT IN 100's)

SR 1306
FEDELON TRL

US 117 — 139/225 — 28/40 — 33/47 — 5/7 — 116/192 — US 117

NAD 83

-Y7- STA. 10+50.00
BEGIN CONSTRUCTION

-Y7- POT Sta. 10+00.00

-Y7- POT Sta. 14+79.82 =
-L- POT Sta. 57+66.16

-L- PT Sta. 52+65.96

-L- PC Sta. 58+88.35

-L- PRC Sta. 61+55.88

MATCHLINE -L- STA. 49+00, SEE SHEET 6

MATCHLINE -L- STA. 62+00, SEE SHEET 8

L 5150L

N 6° 43' 49.9" E 4' MONO. ISLAND

L 5823R

S 80° 08' 37.0" E

-L-
PI Sta 49+56.47
Δ = 11° 02' 53.8" (RT)
D = 1° 46' 45.7"
L = 620.91'
T = 311.42'
R = 3,220.00'
SE = RC

-L-	
PI Sta 60+22.15	PI Sta 62+89.67
Δ = 3° 12' 48.3" (RT)	Δ = 3° 12' 48.3" (LT)
D = 1° 12' 04.2"	D = 1° 12' 04.2"
L = 267.52'	L = 267.52'
T = 133.80'	T = 133.80'
R = 4,770.00'	R = 4,770.00'
SE = NC	SE = NC

SEE SHEET 13 FOR -L- PROFILE
SEE SHEET 19 FOR -Y7- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

REVISIONS

PLOT DRIVER: $PLTDRVS$ PENTABLE: $PENTBLS$
USER: $USER$ DATE: $DATE$ TIME: $TIME$
FILE: $PWVARVAULTPATHDESC$

PROJECT REFERENCE NO.	SHEET NO.
U-2714	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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NAD 83

-L-
PI Sta 72+89.74
Δ = 14° 37' 34.0" (RT)
D = 4° 10' 55.8"
L = 349.72'
T = 175.82'
R = 1,370.00'
SE = 0.03
RO = 111'

-L- PT Sta. 64+23.40

-DR1- STA. 10+00.00
BEGIN CONSTRUCTION

-DR1- POT Sta. 10+00.00

-DR1- POT Sta. 11+82.60 =
-Y8- POT Sta. 10+00.00 =
-L- POT Sta. 68+75.47

S 83° 16' 57.3" E

N 6° 43' 49.9" E

L 6780L

L 6300R

L 7360L

-Y8- PC Sta. 11+03.14

-Y8- PRC Sta. 12+20.63

-Y8- PT Sta. 13+38.11

-Y8- POT Sta. 15+30.57

-Y8- STA. 14+10.00
END CONSTRUCTION

-L- PC Sta. 71+13.92

-L- PT Sta. 74+63.65

N 21° 21' 23.9" E

MATCHLINE -L- STA. 62+00, SEE SHEET 7

MATCHLINE -L- STA. 75+00, SEE SHEET 9

-L-	
PI Sta 60+22.15	PI Sta 62+89.67
Δ = 3° 12' 48.3" (RT)	Δ = 3° 12' 48.3" (LT)
D = 1° 12' 04.2"	D = 1° 12' 04.2"
L = 267.52'	L = 267.52'
T = 133.80'	T = 133.80'
R = 4,770.00'	R = 4,770.00'
SE = NC	SE = NC

2018 ADT
2038 ADT
(ADT IN 100's)

US 117 105/172 — 107/167 US 117

12/19 — 14/14

25/32

SR 1668
INDUSTRY CT

-Y8-	
PI Sta 11+62.11	PI Sta 12+79.59
Δ = 12° 14' 19.5" (RT)	Δ = 12° 14' 19.5" (LT)
D = 10° 25' 02.7"	D = 10° 25' 02.7"
L = 117.48'	L = 117.48'
T = 58.97'	T = 58.97'
R = 550.00'	R = 550.00'
SE = 0.02	SE = 0.02
RO = 40'	RO = 40'

SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 20 FOR -Y8- PROFILE
SEE SHEET 20 FOR -DR1- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

REVISIONS

PLOT DRIVER: $PLTDRVS$ DATE: $DATE$ PENTABLE: $PENTBLS$
USER: $USER$ TIME: $TIME$
FILE: $PWVARVAULTPATHDESC$

PROJECT REFERENCE NO.	SHEET NO.
U-2714	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83

-Y9-
PI Sta 12+19.55
△ = 56° 46' 43.9" (RT)
D = 23° 40' 33.4"
L = 239.82'
T = 130.79'
R = 242.00'
SE = EX.

87

75

-Y9- PT Sta. 13+28.57

-Y9- POT Sta. 15+16.60

-Y9- STA. 11+50.00
END CONSTRUCTION

80

N 2° 07' 32.9" E

15

85

93

MATCHLINE -L- STA. 75+00, SEE SHEET 8

HA-1

PDE

+32.59
124.78' LT

+42.00
92.29' LT
EX. R/W

-Y9- +88.76
END C&G

+90.00

30'
(TYP.)

-Y9- +95.53
END C&G

-Y9- PC Sta. 10+88.76

15'

GRAU 350 TL-3

37'
(TYP.)

2'-6" C&G

1'-6" C&G

N 54° 39' 11.0" W

N 21° 21' 23.9" E

CAT-1

94.39

42'
(TYP.)

-Y9- POT Sta. 10+00.00 =
-L- POC Sta. 78+94.15

92

-L- PC Sta. 77+38.96

-L- PRC Sta. 79+62.39

+90.00
100.00' &
75.91' LT
EX. R/W

+45.00
100.00' LT

+70.00
81.57' LT
EX. R/W

PDE

R 20'

L 8100R

4' MONO. ISLAND

398' STORAGE

150' TAPER

±90

MATCHLINE -L- STA. 88+00, SEE SHEET 10

-L-

PI Sta 78+50.70	PI Sta 90+49.87
△ = 2° 41' 01.5" (RT)	△ = 31° 39' 47.4" (LT)
D = 1° 12' 04.2"	D = 1° 29' 38.5"
L = 223.43'	L = 2,119.32'
T = 111.73'	T = 1,087.48'
R = 4,770.00'	R = 3,835.00'
SE = NC	SE = 0.03
	RO = 126°

SEE SHEET 14 FOR -L- PROFILE
SEE SHEET 20 FOR -Y9- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

REVISIONS

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

PROJECT REFERENCE NO.	SHEET NO.
U-2714	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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N.C.B.E.L.S. License Number: F-0116

NAD 83

REVISIONS

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
PENTABLE: $PENTBLS$
DATE: $DATE$
TIME: $TIME$

96

95

100

-Y10- POT Sta. 10+00.00

-L- PT Sta. 100+81.71

-Y11- POT Sta. 10+00.00 =
-L- POC Sta. 91+76.39

-Y10- POT Sta. 12+75.17 =
-L- POC Sta. 91+79.74

S 89° 03' 00" E

N 87° 11' 29" E

-Y11- PC Sta. 10+84.47

MATCHLINE -L- STA. 88+00, SEE SHEET 9

2'-6" C&G

4' MONO ISLAND

-L 8900L

-L- STA. 91+64.74
END PROJECT U-2714
END CONSTRUCTION

-L-
PI Sta 90+49.87
Δ = 31° 39' 47.4" (LT)
D = 1° 29' 38.5"
L = 2,119.32'
T = 1,087.48'
R = 3,835.00'
SE = 0.03
R0 = 126'

-Y11-
PI Sta 13+14.09
Δ = 33° 12' 31.5" (LT)
D = 7° 26' 27.6"
L = 446.29'
T = 229.61'
R = 770.00'

SEE SHEET 15 FOR -L- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

PROJECT REFERENCE NO.	SHEET NO.
U-2714	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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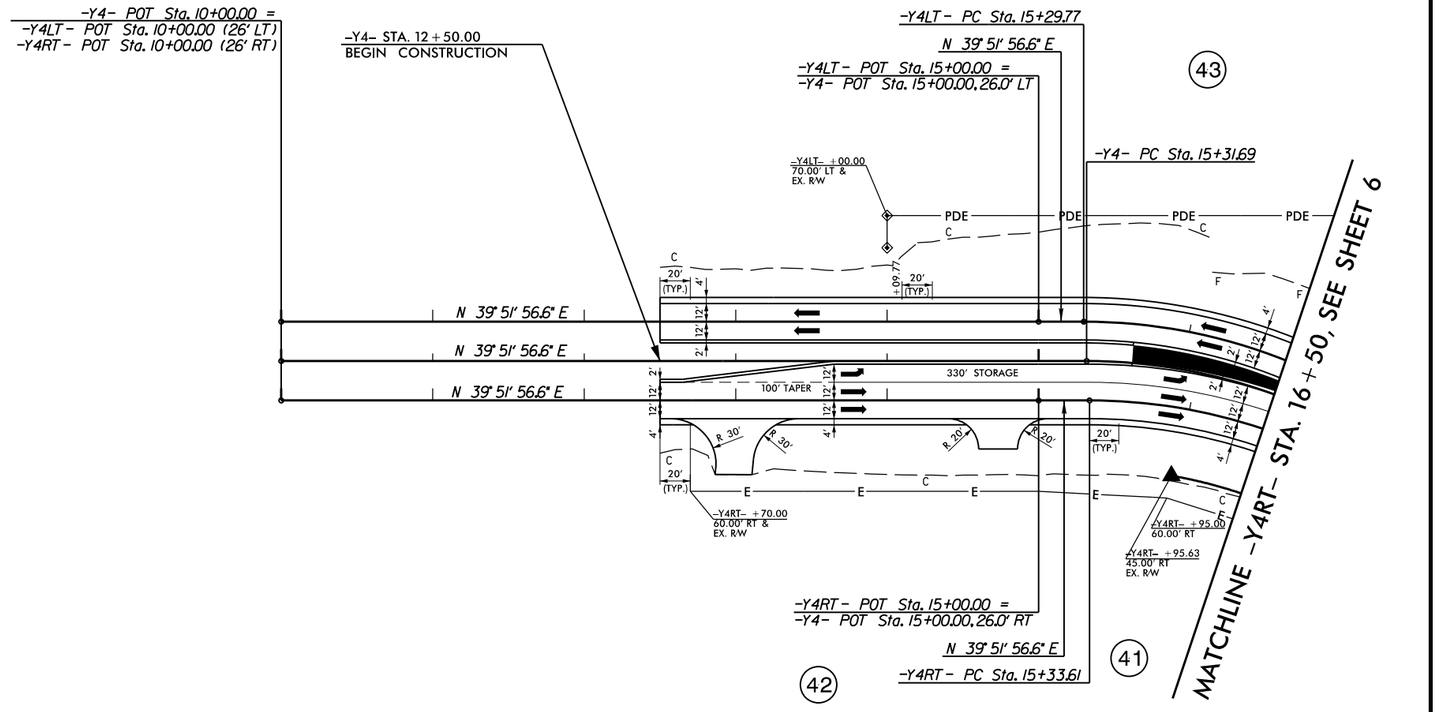
N.C.B.E.L.S. License Number: F-0116

-Y4RT-	-Y4-	-Y4LT-
PI Sta 17+06.56	PI Sta 17+04.64	PI Sta 17+02.72
Δ = 5° 19' 16.9" (RT)	Δ = 5° 19' 16.9" (RT)	Δ = 5° 19' 16.9" (RT)
D = 15° 54' 55.8"	D = 15° 54' 55.8"	D = 15° 54' 55.8"
L = 322.46'	L = 322.46'	L = 322.46'
T = 172.95'	T = 172.95'	T = 172.95'
R = 360.00'	R = 360.00'	R = 360.00'
SE = 0.06	SE = 0.06	SE = 0.06

NAD 83

15



SEE SHEET 18 FOR -Y4- PROFILE
SEE SHEET 17 FOR -Y4RT- PROFILE
SEE SHEET 17 FOR -Y4LT- PROFILE
DRIVEWAY RADII 10' UNLESS OTHERWISE NOTED

REVISIONS

PLOT DRIVER: $PLTDRVS$ PENTABLE: $PENTBLS$
USER: $USER$ DATE: $DATE$ TIME: $TIME$
FILE: $PWVARVAULTPATHDESC$

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2714	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#1
-L- STA. 10+00.00
S 19°0' 21.3" W (442.59')
EL. = 117.49'
BM NAIL IN WOOD POWERPOLE

BEGIN TIP PROJECT U-2714
BEGIN GRADE
BEGIN CONSTRUCTION
-L- STA. 10+00.00
EL. = 117.87'

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-1	11LT	18+53	4.40-5.90	A-7-6(5)	48	20	45.8	9.4	7.3	37.4	99.9	64.4	44.8	20	-

-L- STA. 12+91.47
-Y1- STA. 10+00.00

PI = 15+50.00
EL = 119.52'
K = 533
VC = 260'

PI = 18+00.00
EL = 121.49'
K = 492
VC = 240'

PI = 21+00.00
EL = 122.39'
K = 267
VC = 160'

(A) ASPHALT PAVEMENT
(B) ROADWAY EMBANKMENT FINE TO COARSE SAND W/CLAY & BLACK SUBBASE (A-2-7)

SS-1

PROPOSED GRADE

L1200L
27' LT

L1853L
11' LT

(+)0.3000%
(+)0.7876%
(+)0.7876%
(+)0.3000%
(-)0.3000%

GRAY & TAN, MOIST, STIFF, FINE TO COARSE SANDY CLAY (A-7-6)(5).

EXISTING GROUND

UNDIVIDED COASTAL PLAIN

UNDIVIDED COASTAL PLAIN
RED-ORANGE AND BROWN, CLAYEY FINE TO COARSE SAND (A-2-6), MOIST, LOOSE TO MEDIUM DENSE

BT
FIAD

SEE SHEET 4 FOR -L- PLAN

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-1	26LT	23+52	4.50-6.00	A-2-6(2)	36	18	63.0	8.4	6.6	19.1	97.	48.6	26.4	14	-

PI = 23+00.00
EL = 121.79'
K = 350
VC = 240'

-L- STA. 24+38.52
-Y2- STA. 13+05.63

-L- STA. 30+38.13
-Y3- STA. 10+00.00

PI = 31+85.00
EL = 125.21'
K = 355
VC = 270'

PI = 34+95.00
EL = 124.05'
K = 510
VC = 350'

(A) ASPHALT PAVEMENT

SS-1

L2352L
26' LT

PROPOSED GRADE

L2800R
23' RT

L3435L
35' LT

(-)0.3000%
(+)0.3862%
(+)0.3862%
(-)0.3740%
(-)0.3740%

UNDIVIDED COASTAL PLAIN
BROWN GRAY & ORANGE, CLAYEY FINE TO COARSE SAND (A-2-6)(2), MOIST, LOOSE TO MEDIUM DENSE

BM#2
-L- STA. 34+34.08 (355' LT.)
EL. = 117.40'
BM NAIL IN WOOD POWERPOLE

UNDIVIDED COASTAL PLAIN
GRAY, BROWN AND TAN, SILTY, CLAYEY FINE TO COARSE SAND (A-2-4),(A-2-6) AND SAND (A-3), LOOSE TO MEDIUM DENSE, MOIST

EXISTING GROUND

BT
FIAD

SEE SHEET 5 FOR -L- PLAN

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00
22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00

70 80 90 100 110 120 130 140 150 160

REVISIONS

PLOT DRIVER: $PLTDRVS$ USER: $USER$ FILE: $PWVARVAULTPATHDESC$ DATE: $DATE$ TIME: $TIME$ PENTABLE: $PENTBLS$

HDR Engineering, Inc. of the Carolinas
555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2714	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PI = 34+95.00
EL = 124.05'
K = 510
VC = 350'

BM#3
-L- STA. 39+65.52 (270' LT.)
EL. = 124.89'
BM NAIL IN 14" PECAN TREE

PI = 39+20.00
EL = 125.38'
K = 808
VC = 500'

-L- STA. 41+79.02
-Y4- STA. 21+32.34

-L- STA. 42+04.87
-Y6- STA. 10+00.00

PI = 44+00.00
EL = 123.91'
K = 66
VC = 130'

-L- STA. 47+43.29
-Y5- STA. 17+54.20

PROPOSED GRADE

L4052R 36' RT (A) ASPHALT PARKING LOT PAVEMENT

(+)0.3126%
(-)0.3061%
(-)0.3061%
(+)11.6616%

UNDIVIDED COASTAL PLAIN
RED-ORANGE & BROWN, SANDY CLAY (A-6), MOIST, STIFF

EXISTING GROUND

10 06/16
7 BT
FIAD

LIGHT GRAY & WHITE, FINE TO COARSE SAND (A-2-4), LOOSE, MOIST TO WET

SEE SHEET 6 FOR -L- PLAN

PI = 51+70.00
EL = 136.70'
K = 142
VC = 400'

L5150L 37' LT (A) ASPHALT PARKING LOT PAVEMENT

(+)11.6616%
(-)11.1513%

UNDIVIDED COASTAL PLAIN
RED-ORANGE, BROWN & GRAY, CLAYEY FINE TO COARSE SAND (A-2-7), MOIST, MEDIUM DENSE

11 11 BT
DRY (06/16)
FIAD

RED-ORANGE & GRAY, SANDY CLAY (A-6), MOIST, STIFF

EXISTING GROUND

PROPOSED GRADE

-L- STA. 57+66.6
-Y7- STA. 14+79.82

L5823R 63' RT (A) ASPHALT PARKING LOT PAVEMENT

(-)11.1513%

6 7 BT
DRY (06/16)
FIAD

UNDIVIDED COASTAL PLAIN
TAN & BROWN-ORANGE, CLAYEY FINE TO COARSE SAND (A-2-7), MOIST, LOOSE

RED-ORANGE & GRAY, SANDY CLAY (A-6), MOIST, STIFF

PI = 61+00.00
EL = 125.99'
K = 345
VC = 500'

(-)11.1513%
(+)10.3000%

SEE SHEET 7 FOR -L- PLAN

35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00
49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00

170 160 150 140 130 120 110 100 90 80

REVISIONS

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2714	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-1	33LT	67+80	4.70-6.20	A-4(2)	27	6	2.9	22.7	21.1	53.2	99.9	98.6	81.3	17.7	-

BM#7
-L- STA. 72+85.31 (340' RT.)
EL. = 123.21'
BM 12" SPIKE IN POWERPOLE

PI = 64+75.00
EL = 127.12'
K = 415
VC = 250'

-L- STA. 68+75.47
-Y8- STA. 10+00.00
-DRI- STA. 11+82.60

PI = 69+85.00
EL = 125.58'
K = 128
VC = 180'

PI = 72+05.00
EL = 128.00'
K = 158
VC = 260'

Ⓐ ASPHALT PAVEMENT
Ⓒ CONCRETE PAVEMENT

L6300R
21' RT

(+)0.3000%
(-)0.3018%
(+)0.3000%
(-)0.3018%
(+)1.1000%
(-)0.5475%
(-)0.5475%

UNDIVIDED COASTAL PLAIN
LIGHT BROWN, GRAY & ORANGE, CLAYEY SILT (A-4)(2) WITH SOME FINE SAND, MOIST, SOFT

PROPOSED GRADE

SS-1

L6780L
33' LT

L7369L
21' LT

Ⓓ ROADWAY EMBANKMENT
TAN & BROWN-ORANGE, FINE SAND (A-3), LOOSE, MOIST

UNDIVIDED COASTAL PLAIN
LIGHT BROWN, GRAY & ORANGE, SANDY CLAY (A-6), MOIST, VERY SOFT TO MEDIUM STIFF

EXISTING GROUND

BROWN-ORANGE AND TAN, SANDY CLAY (A-6), MEDIUM STIFF, MOIST

BT
DRY (06/16)
FIAD

BROWN-ORANGE, GRAY & TAN, CLAYEY FINE TO COARSE SAND (A-2-6), LOOSE TO MEDIUM DENSE, MOIST

SEE SHEET 8 FOR -L- PLAN

PI = 76+85.00
EL = 125.37'
K = 619
VC = 540'

-L- STA. 78+94.15
-Y9- STA. 10+00.00

Ⓐ ASPHALT PAVEMENT
Ⓕ ROADWAY EMBANKMENT
TAN, ORANGE AND GRAY, CLAYEY FINE TO COARSE SAND (A-2-6), LOOSE, MOIST

Ⓔ ALLUVIAL
TAN & BROWN-ORANGE, CLAYEY FINE TO COARSE SAND (A-2-6), MOIST
HA-1
74' LT

L8100R
9' RT

PROPOSED GRADE

(-)0.5475%
(+)0.3250%

EXISTING GROUND

UNDIVIDED COASTAL PLAIN
TAN, ORANGE AND GRAY, CLAYEY FINE TO COARSE SAND (A-2-6), LOOSE, MOIST

BT
DRY (06/16)
FIAD

SEE SHEET 9 FOR -L- PLAN

62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00
75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00 88+00
170 160 150 140 130 120 110 100 90 80

REVISIONS

PLOT DRIVER: $PLTDRVS$ USER: $USER$ FILE: $PWVARVAULTPATHDESC$ DATE: $DATE$ TIME: $TIME$ PENTABLE: $PENTBLS$

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-1	15LT	89+00	4.60-6.10	A-6(2)	14	11	0.3	24.8	24.8	22.4	99.7	82.2	51.8	14.0	-

END TIP PROJECT U-2714
END GRADE
END CONSTRUCTION
-L- STA. 91+64.74
EL. = 128.84'

PI = 89+50.00
EL = 129.48'
K = 320
VC = 200'

(A) ASPHALT PAVEMENT

(G) ROADWAY EMBANKMENT
TAN, GRAY, BROWN-ORANGE & ORANGE, FINE TO COARSE SANDY CLAY (A-6) WITH SOME SILT, MOIST, SOFT

SS-1
L8900L
15'LT
(+)0.3250%
(-)0.3000%

PROPOSED GRADE

EXISTING GROUND

(A) (G)
(3) UNDIVIDED COASTAL PLAIN
TAN, GRAY, BROWN ORANGE & ORANGE FINE TO COARSE SANDY CLAY (A-6)(2) WITH SOME SILT, MOIST, SOFT
(4) BT
DRY (0616)
FIAD

BM#8
-L- STA. 91+64.74
N 0°28' 15.2" E (1030.39')
EL. = 128.88'
BM CHISELED X IN CONC. W/ ORANGE PAINT

SEE SHEET 10 FOR -L- PLAN

170 160 150 140 130 120 110 100 90 80

88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00 96+00 97+00 98+00 99+00 100+00

88 89 90 91 92 93 94 95 96 97 98 99 100

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PROJECT REFERENCE NO.	SHEET NO.
U-2714	15

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

PROJECT REFERENCE NO.	SHEET NO.
U-2714	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BM#4
-Y4- STA. 10+00.00
S 48°6' 48.8" W (489.25')
EL. = 117.48'
BM NAIL IN 20" SWEET GUM TREE

BEGIN GRADE
-Y4- STA. 18+86.19
EL. = 123.21'

PI = 19+90.00
EL = 124.25'
K = 119
VC = 180'

END GRADE
-Y4- STA. 20+97.43
EL. = 123.70'

PROPOSED GRADE

-Y4- STA. 17+39.67
-Y5- STA. 10+21.06

Y4_1754L
9' LT

(+)1.0000%
(-)0.5102%

UNDIVIDED COASTAL PLAIN
GRAY, BROWN AND ORANGE, CLAYEY
FINE TO COARSE SAND (A-2-6), LOOSE, MOIST

8
8
BT
DRY (06/16)
FIAD

EXISTING GROUND

-Y4-

SEE SHEET 6 & 11 FOR -Y4- PLAN

BEGIN GRADE
-Y5- STA. 10+53.49
EL. = 125.00'

PI = 11+25.00
EL = 125.72'
K = 56
VC = 140'

PI = 12+80.00
EL = 123.42'
K = 61
VC = 170'

PI = 14+50.00
EL = 125.63'
K = 340
VC = 170'

END GRADE
-Y5- STA. 17+19.45
EL. = 130.48'

PROPOSED GRADE

Y5_1709

(+)1.0000%
(-)1.4808%
(-)1.4808%
(+)1.3000%
(+)1.3000%
(+)1.8000%

UNDIVIDED COASTAL PLAIN
BROWN, ORANGE AND GRAY, SANDY, CLAYEY
SILT (A-5), SOFT, MOIST

4
13
BT
DRY (06/16)
FIAD

RED AND BROWN, SANDY
CLAY (A-6), STIFF, MOIST

EXISTING GROUND

-Y5-

SEE SHEET 6 FOR -Y5- PLAN

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00

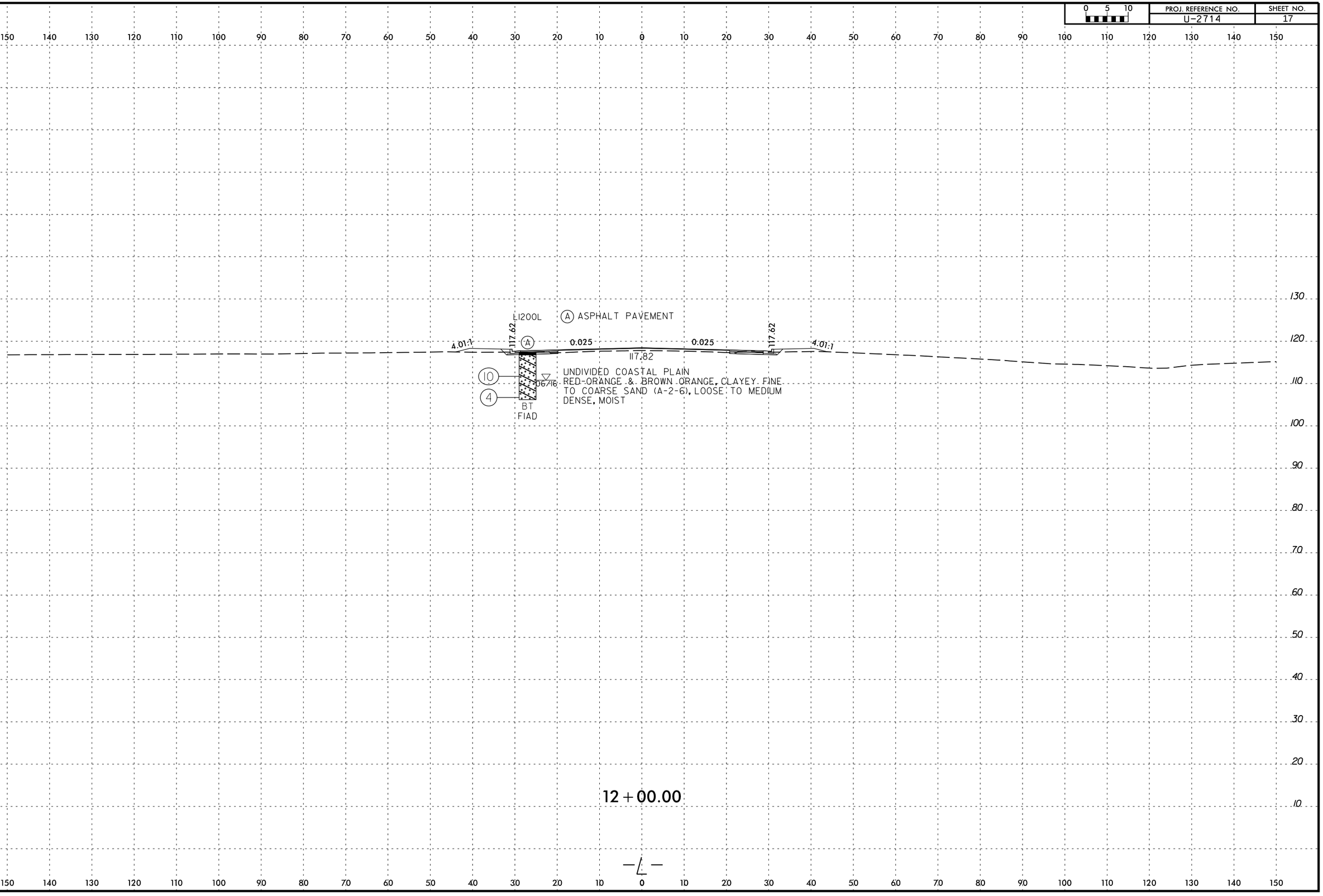
70 80 90 100 110 120 130 140 150 160

REVISIONS

PLOT DRIVER: $PLTDRVS$ USER: $USER$ FILE: $PWVARVAULTPATHDESC$ DATE: $DATE$ TIME: $TIME$ PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	17



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USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	18

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1	11 LT	18+53	4.40-5.90	A-7-6(5)	48	20	45.8	9.4	7.3	37.4	99.9	64.4	44.8	20	-

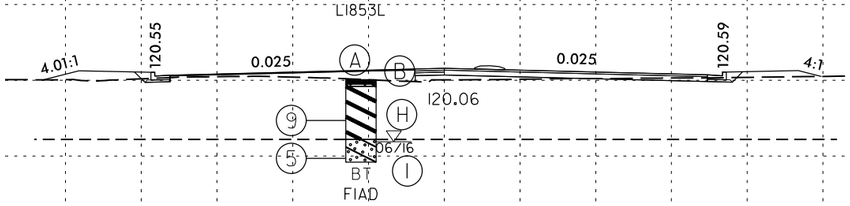
(A) ASPHALT PAVEMENT

(B) ROADWAY EMBANKMENT
BROWN, FINE TO COARSE SAND (A-2-7) WITH CLAY AND BLACK SUBBASE

(H) UNDIVIDED COASTAL PLAIN
GRAY AND TAN, FINE TO COARSE SANDY CLAY (A-7-6)(5), STIFF, MOIST

(I) GRAY, CLAYEY FINE TO COARSE SAND (A-2-7), LOOSE, WET

SS-1
L1853L



18+50.00

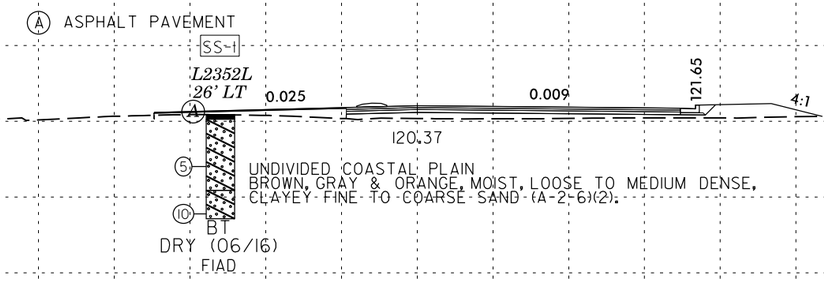
PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	19

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-1	26LT	23+52	4.50-6.00	A-2-6(2)	36	18	63.0	8.4	6.6	19.1	97.1	48.6	26.4	14	-



23 + 50.00

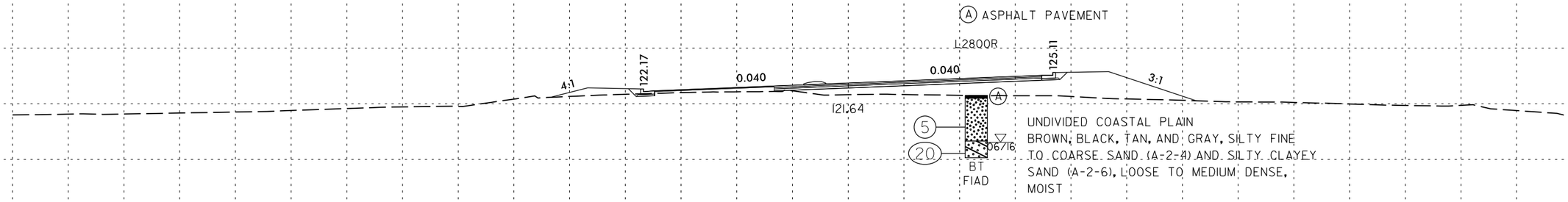
PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	20

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

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



28+00.00

—L—

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

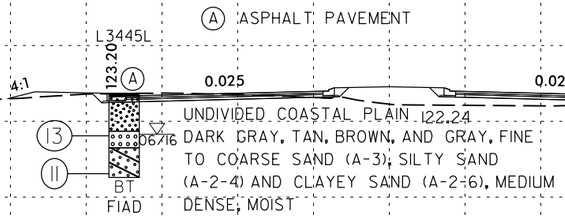
PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	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

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



34 + 50.00

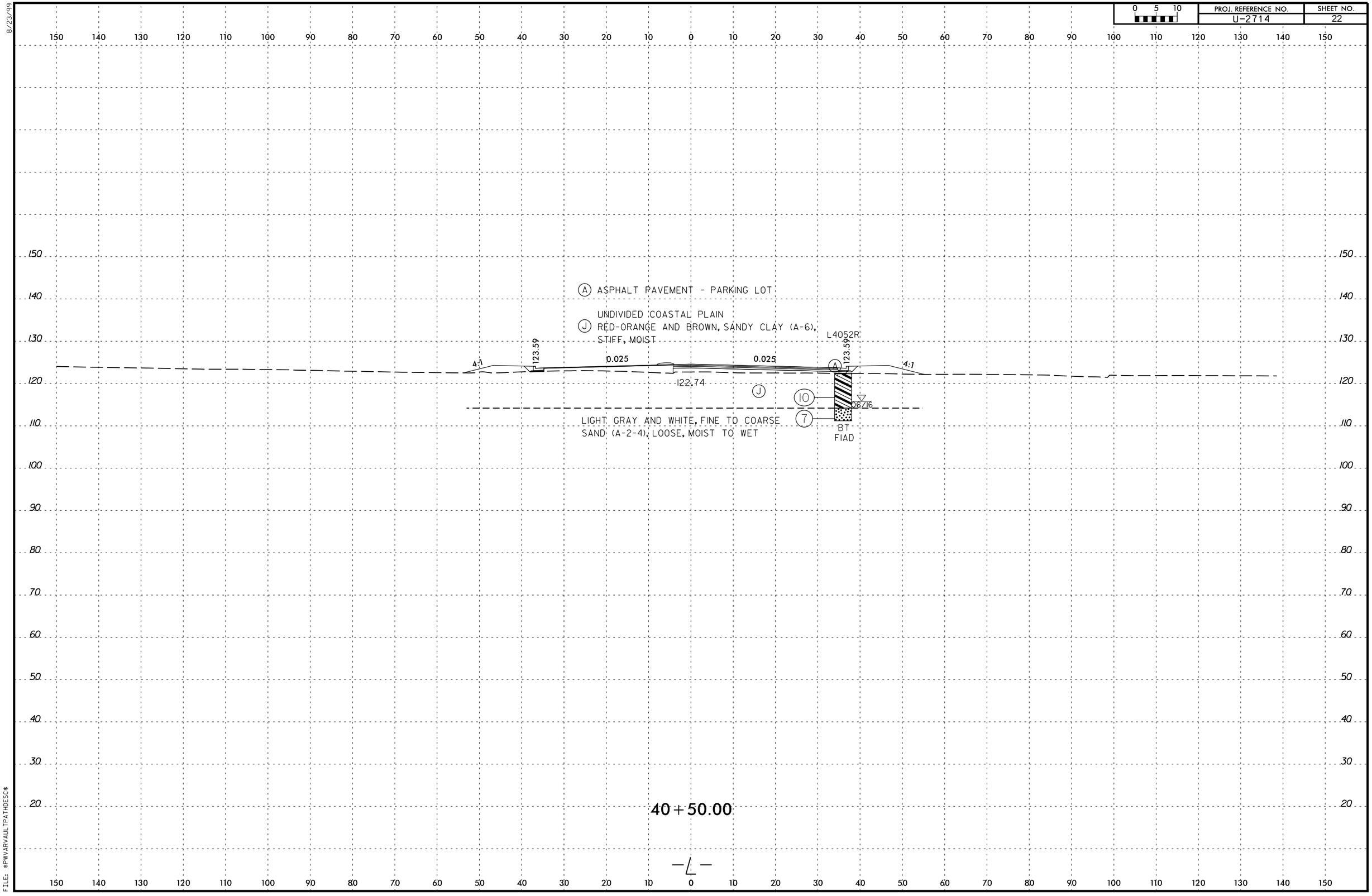
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-2714	22

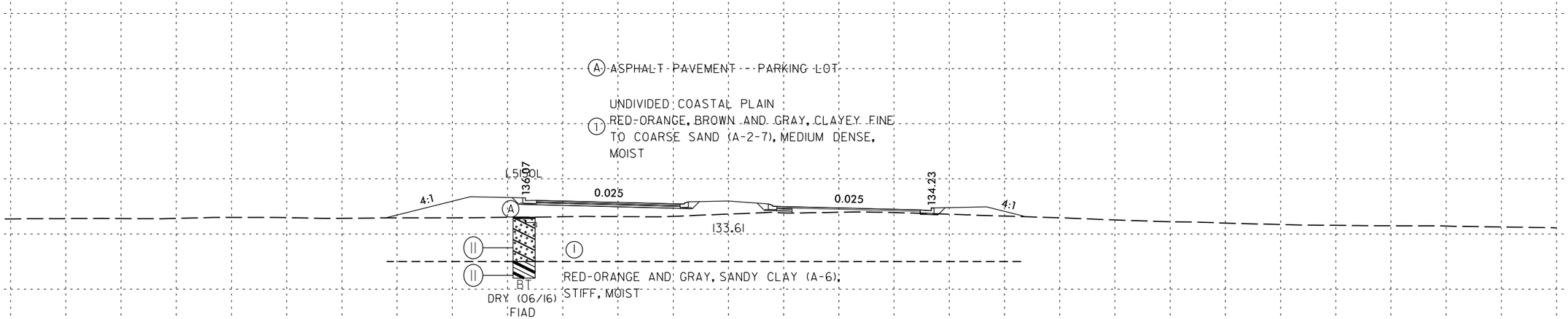
0 5 10



PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	23

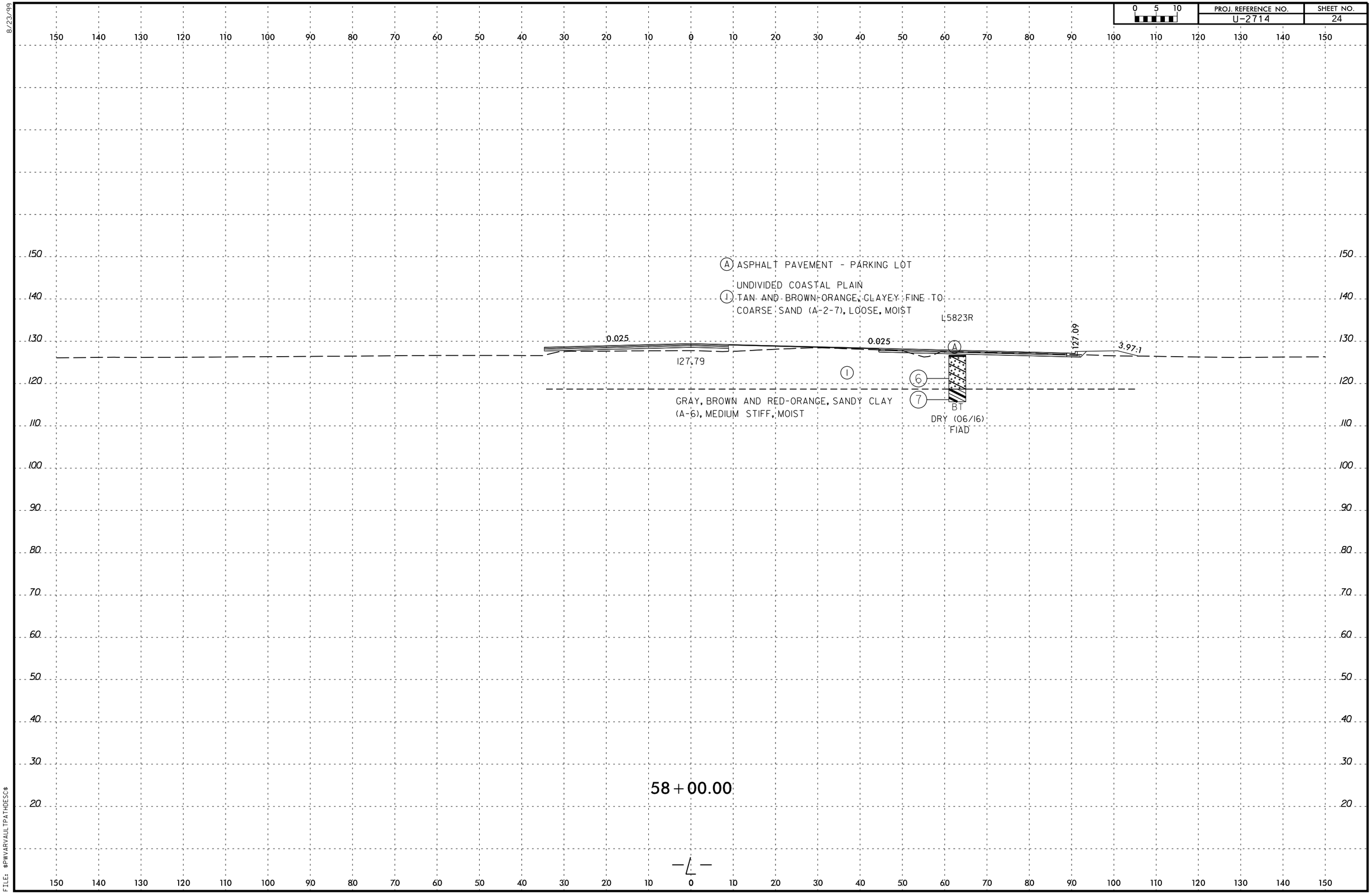


51+50.00

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	24



PLOT DRIVER: $PLTDRVS$
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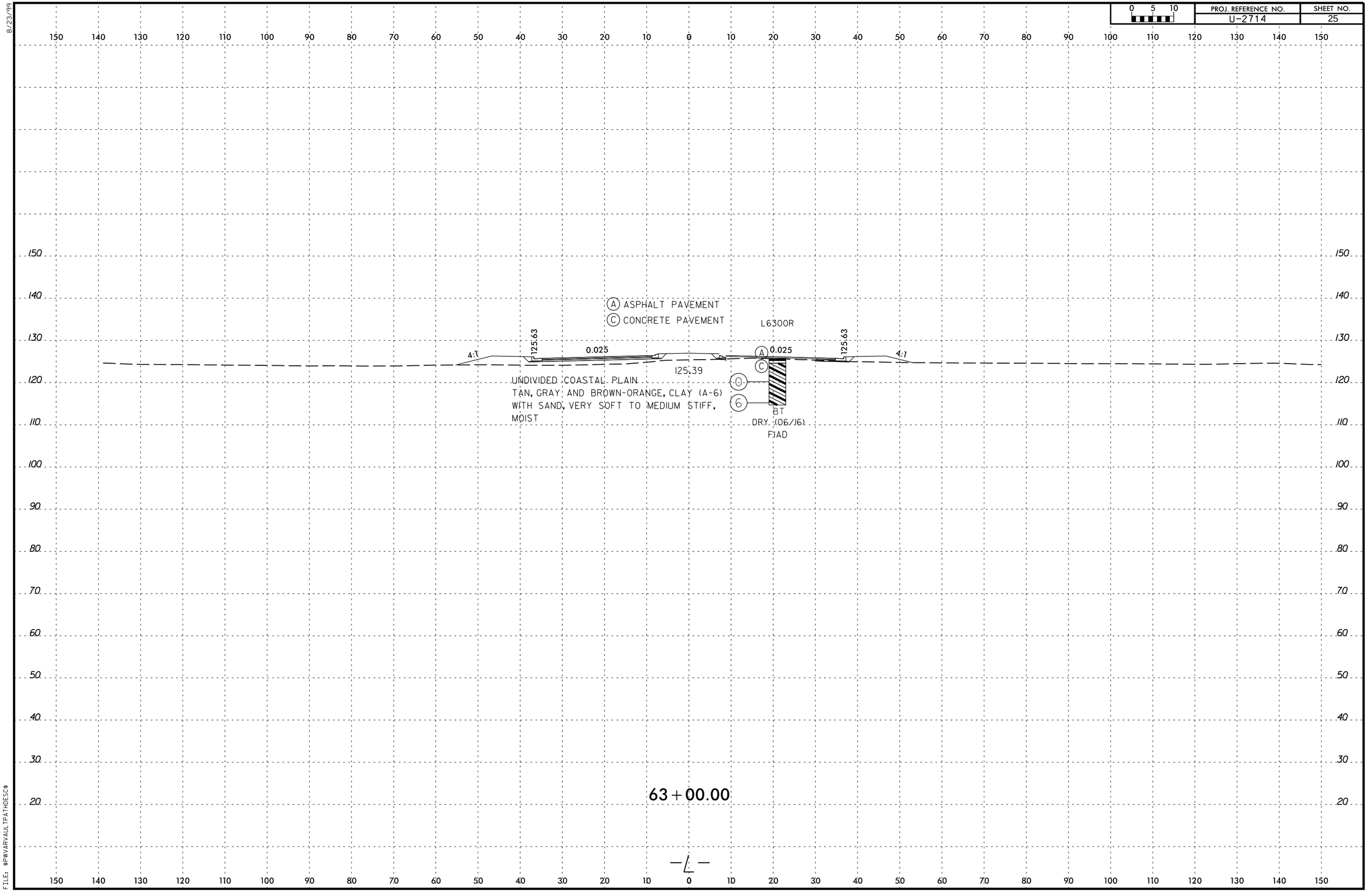
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	25



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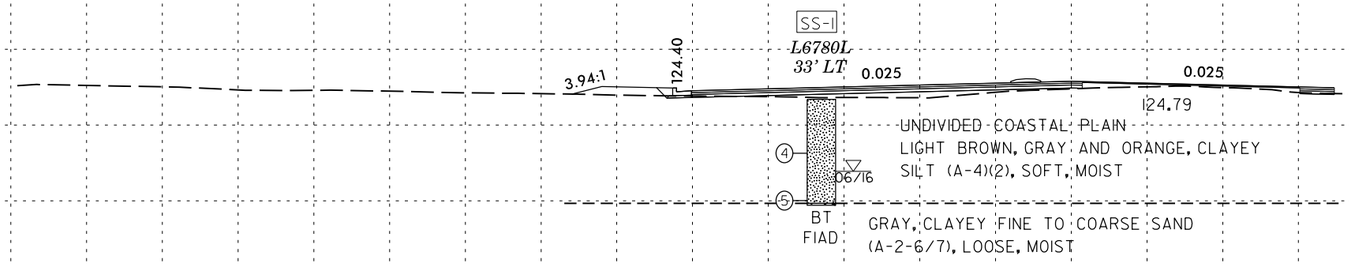
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	26

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-1	33LT	67+80	4.70-6.20	A-4(2)	21	6	2.9	22.7	21.1	53.2	99.9	98.6	81.3	17.7	–



68+00.00

—L—

PLOT DRIVER: $PLTDRVS$ DATE: $DATE$ PENTABLE: $PENTBLS$
USER: $USER$ TIME: $TIME$
FILE: $PWVARVAULTPATHDESC$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	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

160
150
140
130
120
110
100
90
80
70
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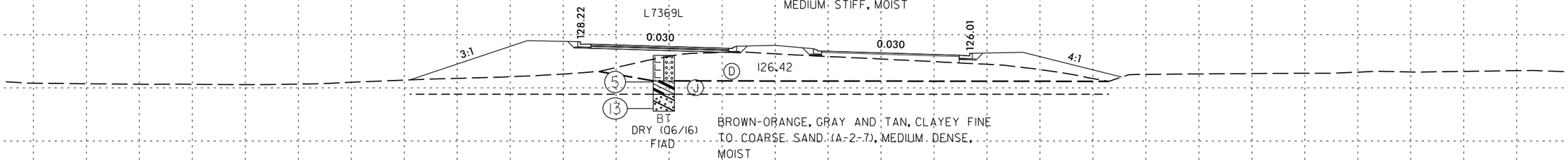
40
30
20
10



73 + 50.00

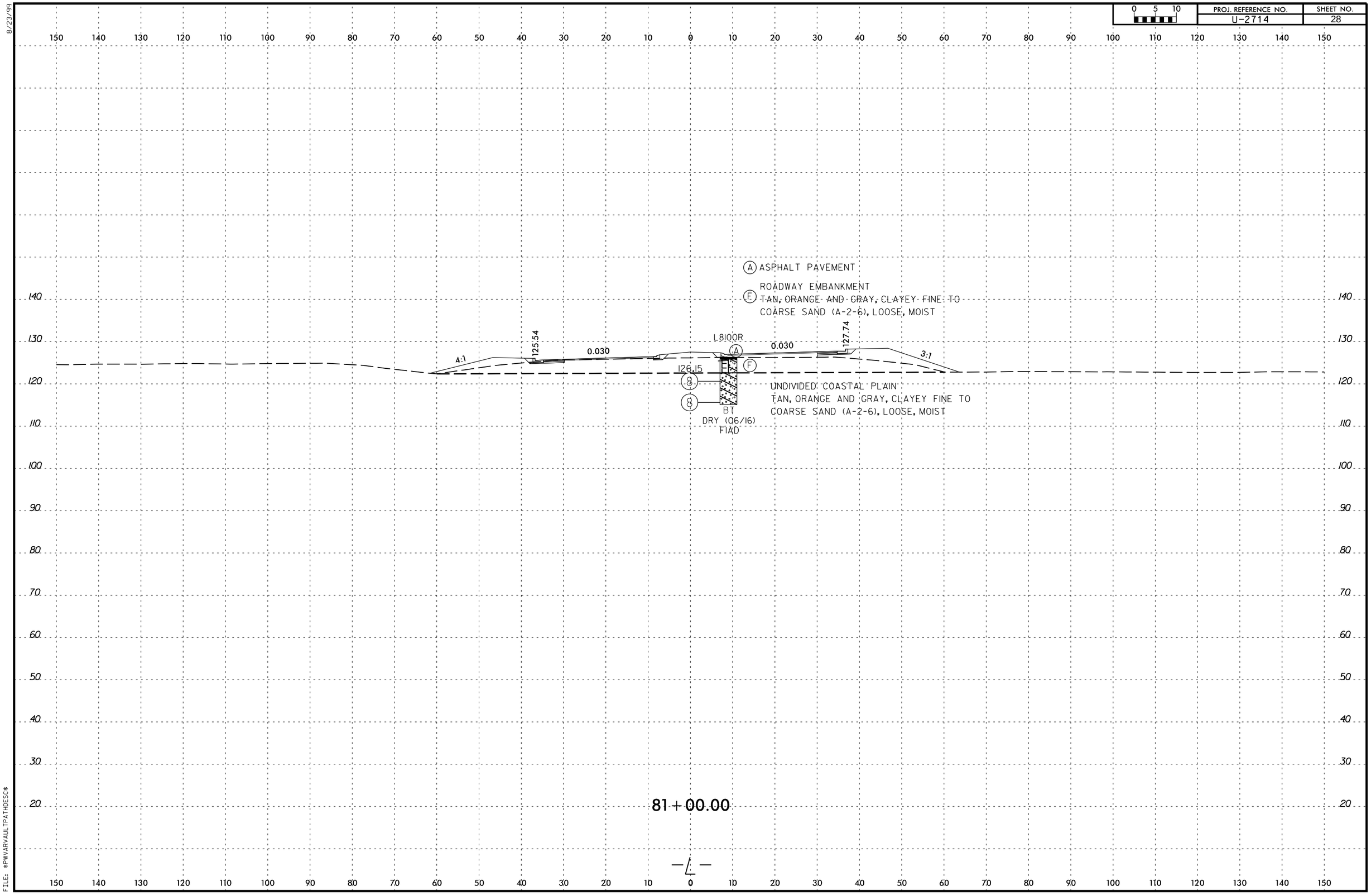
—L—

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

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	28



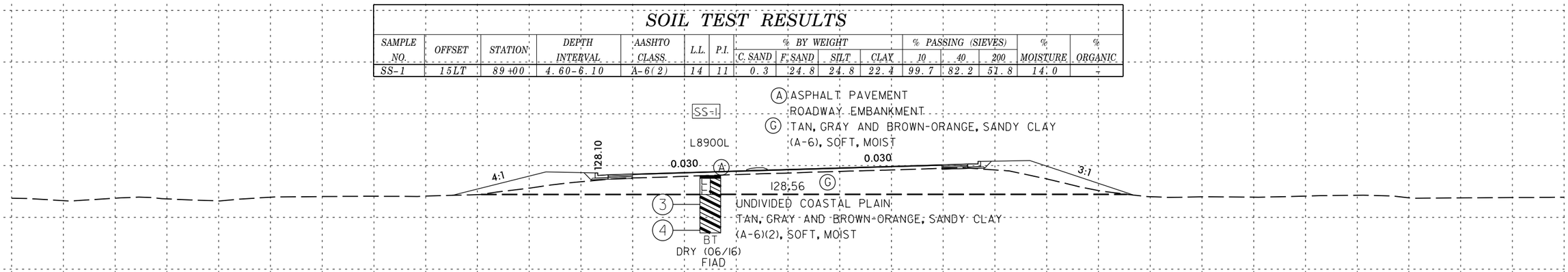
PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	29

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-1	15LT	89+00	4.60-6.10	A-6(2)	14	11	0.3	24.8	24.8	22.4	99.7	82.2	51.8	14.0	-



89+00.00

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	30

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

140
130
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110
100
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70
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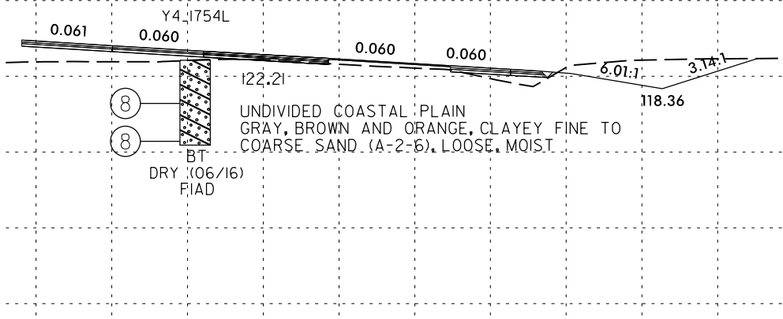
20
10



17 + 50.00

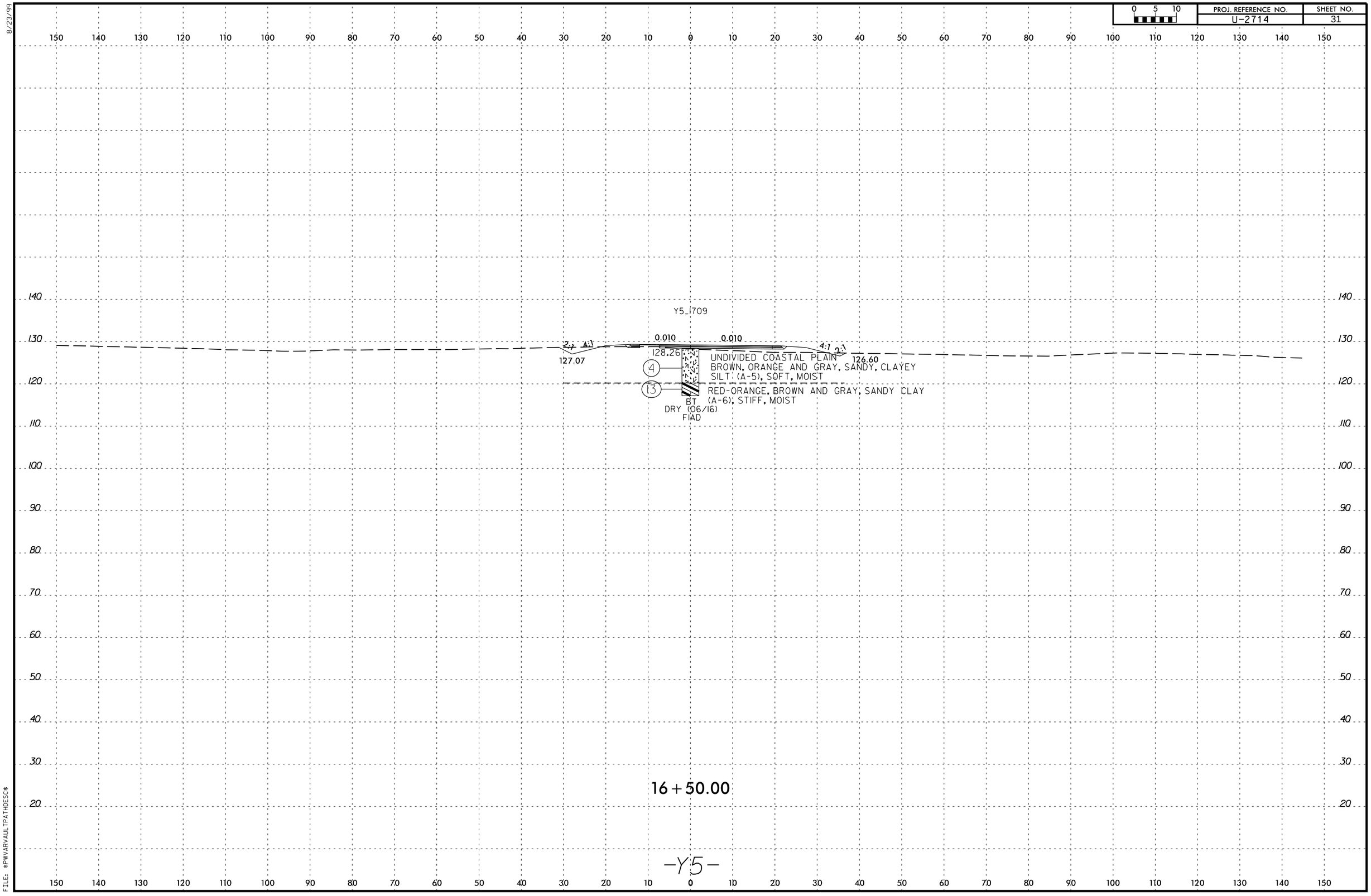
-Y4-

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

PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
TIME: $TIME$
PENTABLE: $PENTBLS$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2714	31



PLOT DRIVER: $PLTDRVS$
USER: $USER$
FILE: $PWVARVAULTPATHDESC$
DATE: $DATE$
PENTABLE: $PENTBLS$
TIME: $TIME$