

REFERENCE: B-5614

PROJECT: 45569

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CONTENTS

<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>
-L-	11+00-32+00	4, 5
-YI-	10+00-12+50	5
-DRIVE-	10+00-11+95	4

CONTENTS

<u>LINE</u>	<u>STATION</u>	<u>SHEET</u>
-L-	12+00-17+79	6-10
-L-	27+29-32+00	11-13
-YI-	10+50-12+50	14, 15
-DRIVE-	10+50-11+50	16, 17

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

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY BEAUFORT
PROJECT DESCRIPTION BRIDGE NO. 9 ON -L- (SR 1112)
OVER BLOUNTS CREEK

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5614	1	17

CAUTION NOTICE

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

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

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

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

PERSONNEL

S.N. ZIMARINO

R.E. SMITH

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY S.N. ZIMARINO

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE JUNE 2020



DocuSigned by:

Tyler C. Bottoms

6/18/2020

48A2D3BD086C6A

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

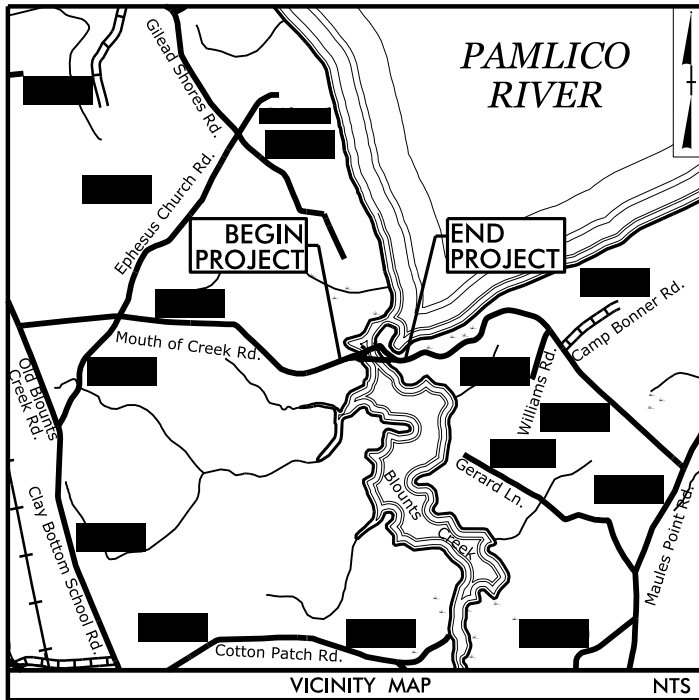
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:										ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOOGED 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 (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										WEATHERED ROCK (WR)										CRISTALLINE ROCK (CR)									
GENERAL CLASS.										THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.										FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.										FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.									
GRANULAR MATERIALS (≤ 35% PASSING #200)										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.										NON-CRYSTALLINE ROCK (NCR)										COASTAL PLAIN SEDIMENTARY ROCK (CP)									
SILT-CLAY MATERIALS (> 35% PASSING #200)										COMPRESSIBILITY										SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE										LL < 31 LL = 31 - 50 LL > 50									
ORGANIC MATERIALS										PERCENTAGE OF MATERIAL										WEATHERING										FRESH									
GENERAL CLASS.										ORGANIC MATERIAL										VERY SLIGHT (V SL.)										SLIGHT (SL.)									
GROUP CLASS.										TRACE OF ORGANIC MATTER LITTLE ORGANIC MATTER MODERATELY ORGANIC HIGHLY ORGANIC										MODERATE (MOD.)										MODERATELY SEVERE (MOD. SEV.)									
SYMBOL										GROUND WATER										SEVERE (SEV.)										VERY SEVERE (V SEV.)									
Z PASSING #10 #40 #200										WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING										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.									
MATERIAL PASSING #40 LL PI										STATIC WATER LEVEL AFTER 24 HOURS										VERY HARD										HARD									
GROUP INDEX										PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA										MODERATELY HARD										MEDIUM HARD									
USUAL TYPES OF MAJOR MATERIALS										SPRING OR SEEP										SOFT										VERY SOFT									
GEN. RATING AS SUBGRADE										MISCELLANEOUS SYMBOLS										ROCK HARDNESS										FRACTURE SPACING									
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION										VERY HARD										TERM									
CONSISTENCY OR DENSENESS										SOIL SYMBOL										HARD										THICKNESS									
PRIMARY SOIL TYPE										ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT										MODERATELY HARD										TERM									
COMPACTNESS OR CONSISTENCY										INFERRED SOIL BOUNDARY										MEDIUM HARD										THICKLY BEDDED									
RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)										INFERRED ROCK LINE										SOFT										THINLY BEDDED									
RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)										ALLUVIAL SOIL BOUNDARY										VERY SOFT										THICKLY LAMINATED									
TEXTURE OR GRAIN SIZE										RECOMMENDATION SYMBOLS										UNDERCUT										THINLY LAMINATED									
U.S. STD. SIEVE SIZE OPENING (MM)										SHALLOW UNDERCUT										UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE										UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK									
BOULDER (BLDR.)										ABBREVIATIONS										AR - AUGER REFUSAL										MED. - MEDIUM									
COBBLE (COB.)										BT - BORING TERMINATED										CL - CLAY										MICA - MICACEOUS									
GRAVEL (GR.)										CPT - CONE PENETRATION TEST										CSE - COARSE										MOD. - MODERATELY									
COARSE SAND (CSE, SD.)										DMT - DILATOMETER TEST										DPT - DYNAMIC PENETRATION TEST										ORG. - ORGANIC									
FINE SAND (F SD.)										DPT - DYNAMIC PENETRATION TEST										PMT - PRESSUREMETER TEST										SAP - SAPROLITIC									
SILT (SL.)										F - FINE										SD - SAND, SANDY										SL - SILT, SILTY									
CLAY (CL.)										FOSS. - FOSSILIFEROUS										SLI - SLIGHTLY										ST - SHELBY TUBE									
										FRAC. - FRACTURED, FRACTURES										TCR - TRICONE REFUSAL										RS - ROCK									
										FRAGS. - FRAGMENTS										w - MOISTURE CONTENT										RT - RECOMPACTED TRIAXIAL									
										HL - HIGHLY										V - VERY										CBR - CALIFORNIA BEARING RATIO									
										EQUIPMENT USED ON SUBJECT PROJECT										DRILL UNITS:										ADVANCING TOOLS:									
																				☐ CME-45C										☐ CLAY BITS									
																				☐ CME-55										☐ 6" CONTINUOUS FLIGHT AUGER									
																				☐ CME-550										☐ 8" HOLLOW AUGERS									
																				☐ VANE SHEAR TEST										☐ HARD FACED FINGER BITS									
																				☐ PORTABLE HOIST										☐ TUNG.-CARBIDE INSERTS									
																				☐										☐ CASING ☐ W/ ADVANCER									
																				☐										☐ TRICONE _____ * STEEL TEETH									
																				☐										☐ TRICONE _____ * TUNG.-CARB.									
																				☐										☐ CORE BIT									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									
																				☐										☐									

09/08/99

TIP PROJECT: B-5614



See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

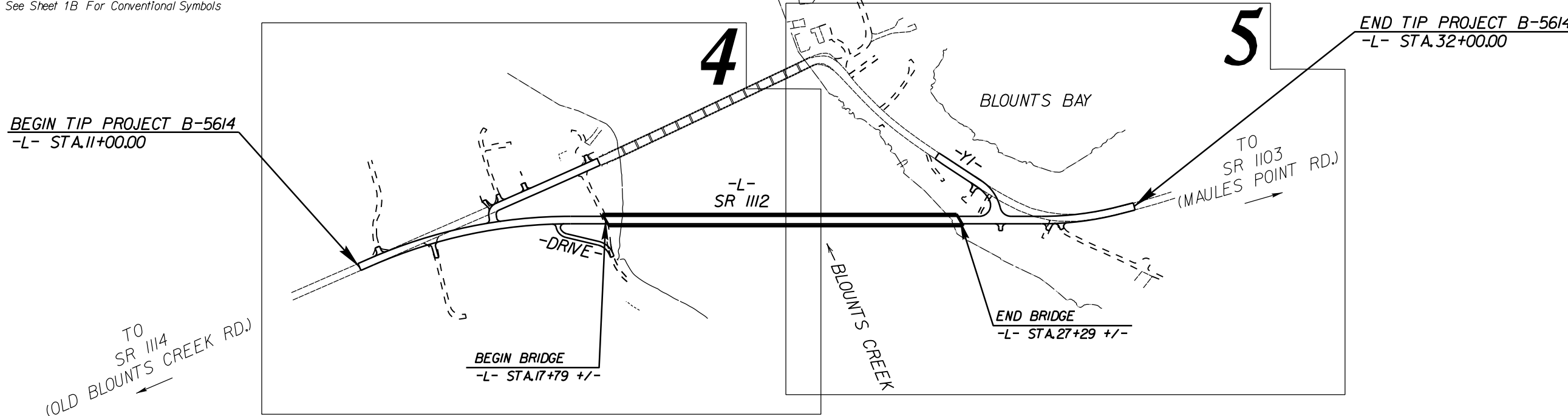
BEAUFORT COUNTY

LOCATION: BRIDGE NO. 9 ON SR 1112
OVER BLOUNTS CREEK

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5614	3	17
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
45569.1.1	N/A	PE	

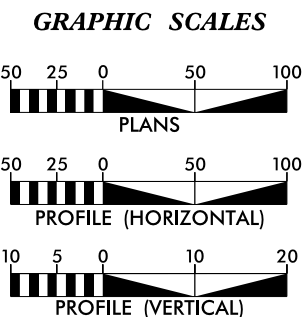
25% REVIEW PLANS
FOR REVIEW ONLY



CLEARING ON THIS PROJECT SHALL BE TO LIMITS ESTABLISHED USING METHOD _____.
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

CONTRACT:



DESIGN DATA
2021 ADT = <1000
2041 ADT = <1000
V = 60 MPH

FUNC. CLASS. = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH
LENGTH ROADWAY TIP PROJECT B-5614 = 0.218 mi.
LENGTH STRUCTURES TIP PROJECT B-5614 = 0.180 mi.
TOTAL LENGTH TIP PROJECT B-5614 = 0.398 mi.

Prepared in the Offices of:

223 S. WEST ST. STE 1100
RALEIGH, NC 27603
704.386.8750

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 19, 2020

LETTING DATE:
JUNE 15, 2021

ANDY YOUNG, PE
PROJECT ENGINEER

ROBERT WILLIAMS, PE
PROJECT DESIGN ENGINEER

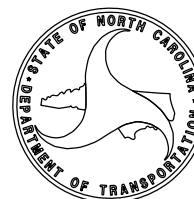
DAVID STUTTS, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



19-MAY-2020 13:47 Investigation\TIP\B5614_GEO_RDWY_CADD_GEO\TECH\Site&Sub\B5614_RDY_TSH.dgn
S:\ERO\Greenville
\$\$\$\$\$USERNAME\$\$\$\$\$



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

June 4, 2020

State Project: 45569.1.1 (B-5614)
F.A. Project: N/A
County: Beaufort
Description: Bridge No. 9 on SR 1112 over Blounts Creek

Subject: Geotechnical Inventory Report

Project Description

This project begins approximately 6 miles north of the town of Blounts Creek in Beaufort County and extends east along SR 1112 (-L-) for approximately 0.2 miles and across Blounts Creek. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in April of 2020. Hand auger borings, push probes, and vane shear tests were completed at various offsets along the project corridor. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments were investigated. Selected cross sections of these alignments are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	11+00 to 32+00
-Y1-	10+00 to 12+50
-DRIVE-	10+00 to 11+95

Areas of Special Geotechnical Interest

- 1) The entire project was found to exhibit seasonal high ground water.
- 2) The following sections contain cohesive soils which have the potential to cause embankment/subgrade and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	11+00 to 14+25
-L-	14+75 to 15+25
-L-	29+75 to 32+00

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237
Website: www.ncdot.org/doh

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

- 3) The following sections contain organic soils which have the potential to cause embankment/subgrade and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	14+25 to 17+79
-DRIVE-	10+25 to 11+95

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations ranged from -9± to 11± feet above sea level.

Surficial soils in this area are generally classified as alluvial sediments and are underlain by formational soils belonging to the Yorktown Formation. The Yorktown Formation was not encountered during this investigation.

Ground Water

Ground water data was collected in May of 2020. Ground water elevations ranged from 0± to 5± feet above sea level.

Soils

Soils encountered within this project area have been divided into two categories: Roadway Embankment and alluvial soils.

Roadway embankment soils were found along the existing SR 1112 corridor. Where encountered it was composed of 1± to 3± feet of medium dense sand (A-2-4).

Soils identified as alluvial are composed of 1± to 10± or more feet of loose to medium dense sand (A-2-4), 2± to 3± feet of medium stiff sandy clay (A-6), 1± to 4± feet of medium stiff silty clay (A-7-6), and 2± to 8± feet of very soft and very loose muck and moderately organic sand. Moisture samples taken from within the muck and organic sand returned a natural moisture content ranging from 167% to 174%. Organic samples taken within the muck and moderately organic sand returned organic contents ranging from 9.7% to 24%. Vane Shear Tests were completed at -L- Sta. 15+00 and -L- Sta. 16+00 and returned shear strength (psf) values between 167 and 1419 psf in the organic soils. An overabundance of roots and wood fragments resulted in higher than average shear strength values.

Respectfully Submitted,

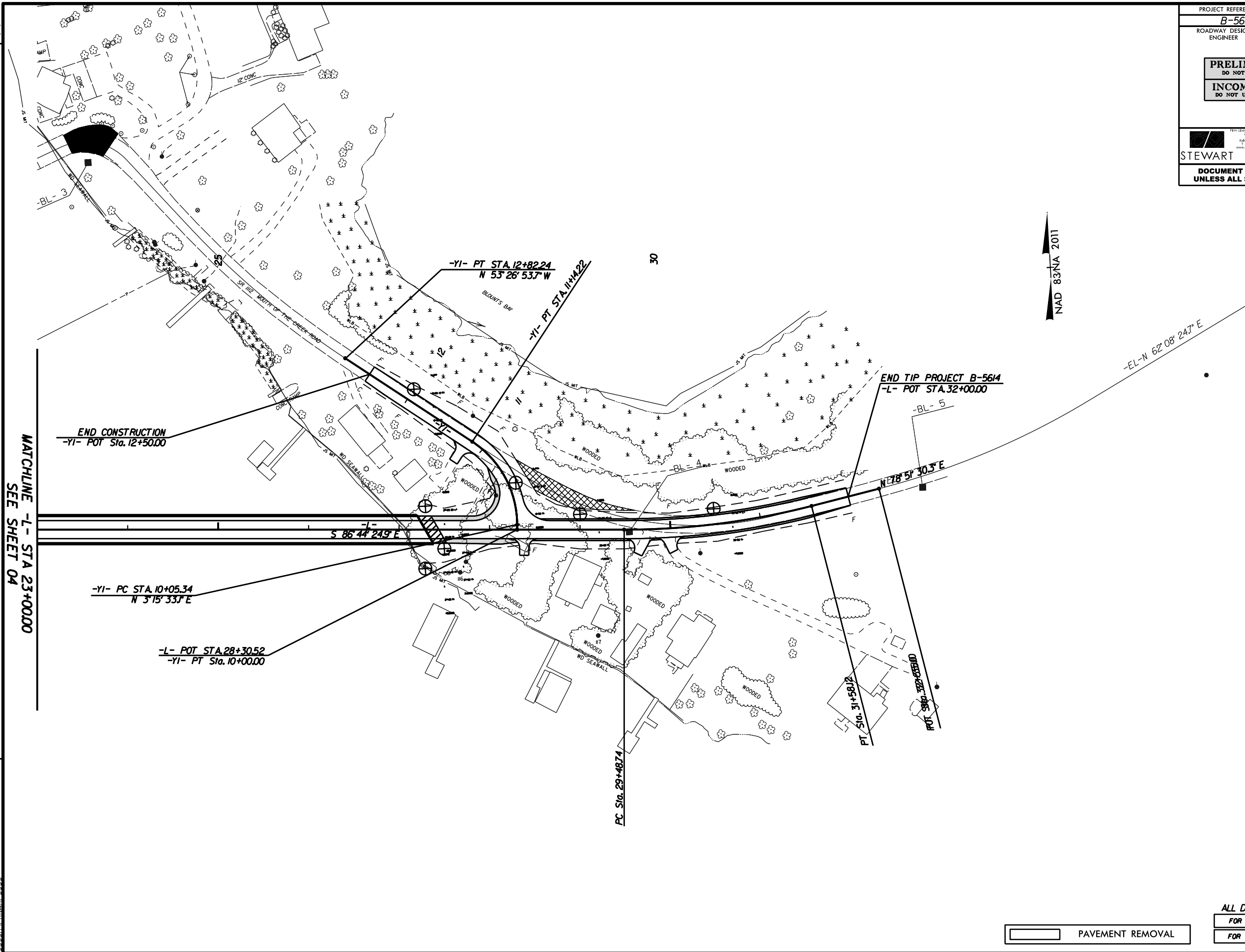
Tyler C. Bottoms, L.G.
Project Engineering Geologist

8/17/99

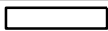
U:\MAY 2020 1406 Investigation\TIP\B5614.GEO RDW\CADD\GEOTECH\Site&Sub\B5614.RDY_PSH05.dgn

REVISIONS

MATCHLINE -L- STA 23+00.00
SEE SHEET 04



PROJECT REFERENCE NO.		SHEET NO.	
B-5614		5	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
 Firm Address: Box C-5951 223 W. Wendle Dr. Suite 1100 Raleigh, NC 27603 T 919.876.1900 www.stewartinc.com		 VHB Engineering NC, P.C. (C-3705) 940 Main Campus Drive, Suite 500 Raleigh, NC 27606	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

 PAVEMENT REMOVAL

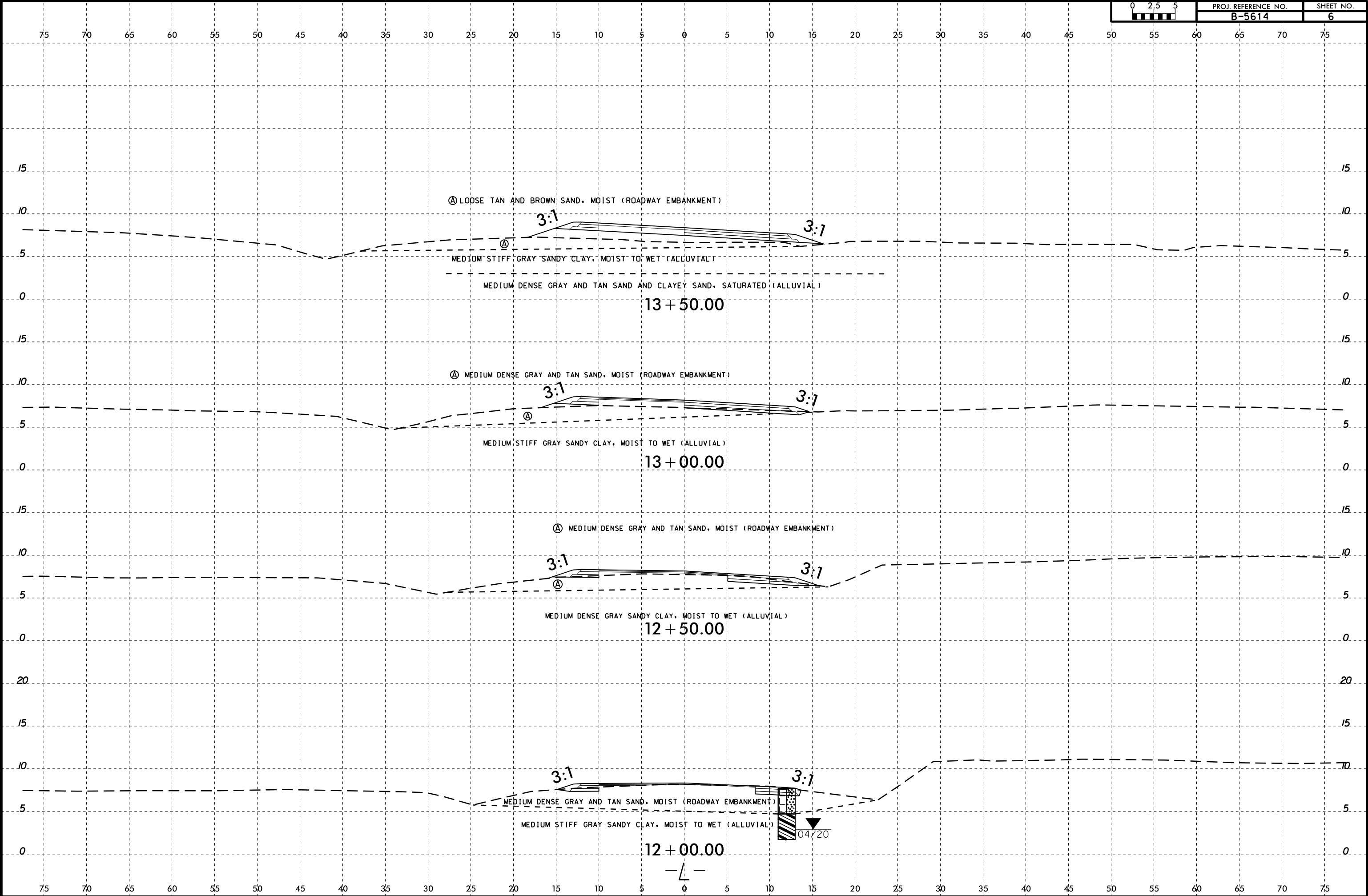
ALL DRIVEWAY RADII ARE 10'
FOR -L- PROFILE SEE SHEET 7
FOR -YI- PROFILE SEE SHEET 8

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-5614	6

01-JUN-2020 14:41
S:\VERO\Greenville_Investigation\TIP\B5614_GEO_RDWY\CADD_GEO\TECH\XSE\B5614_RDWY_L_XPL.dgn
\$\$\$USERNAME\$\$\$

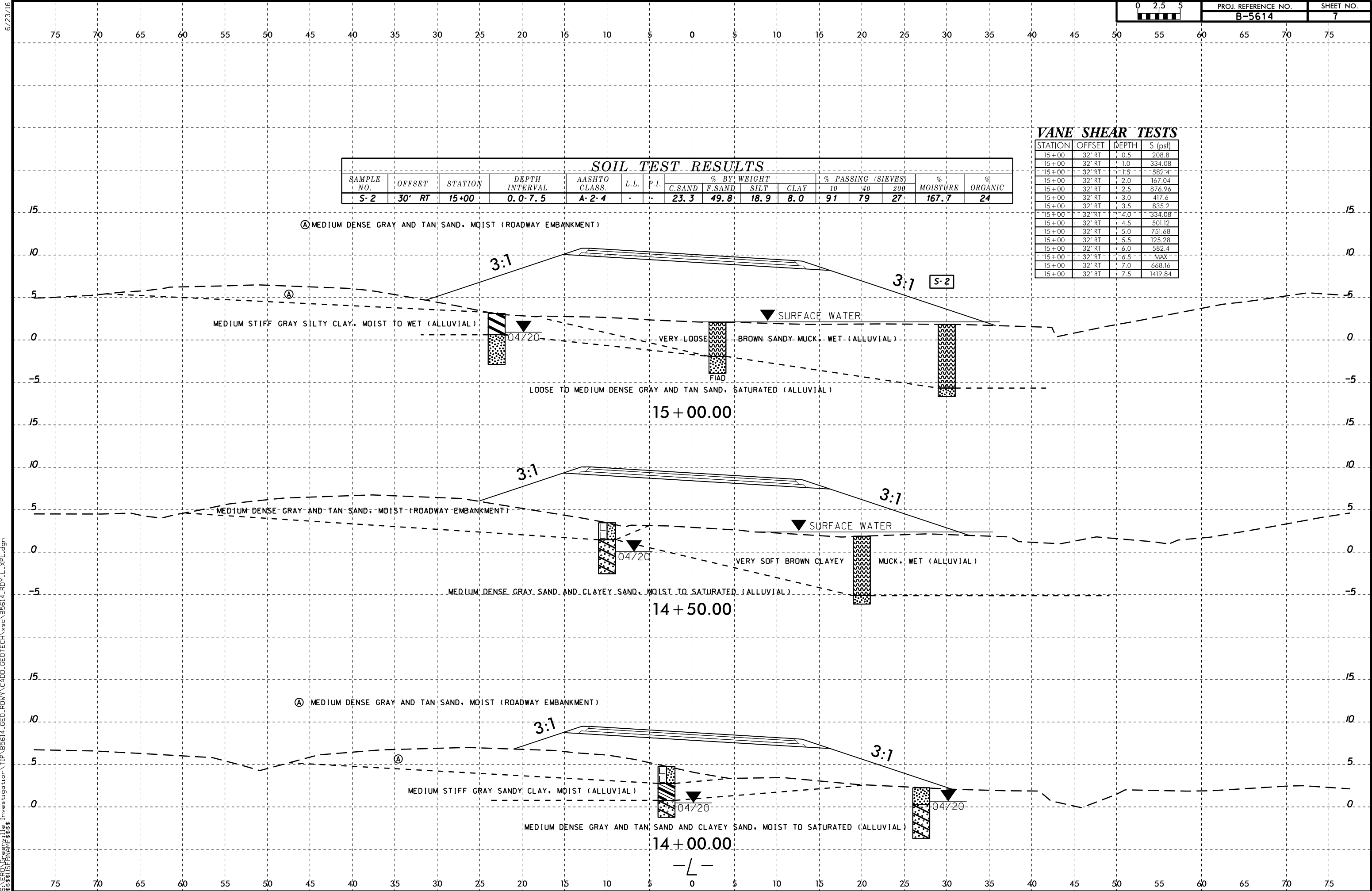




SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-2	30' RT	15+00	0.0-7.5	A-2-4	-	-	23.3	49.8	18.9	8.0	91	79	27	167.7	24

VANE SHEAR TESTS

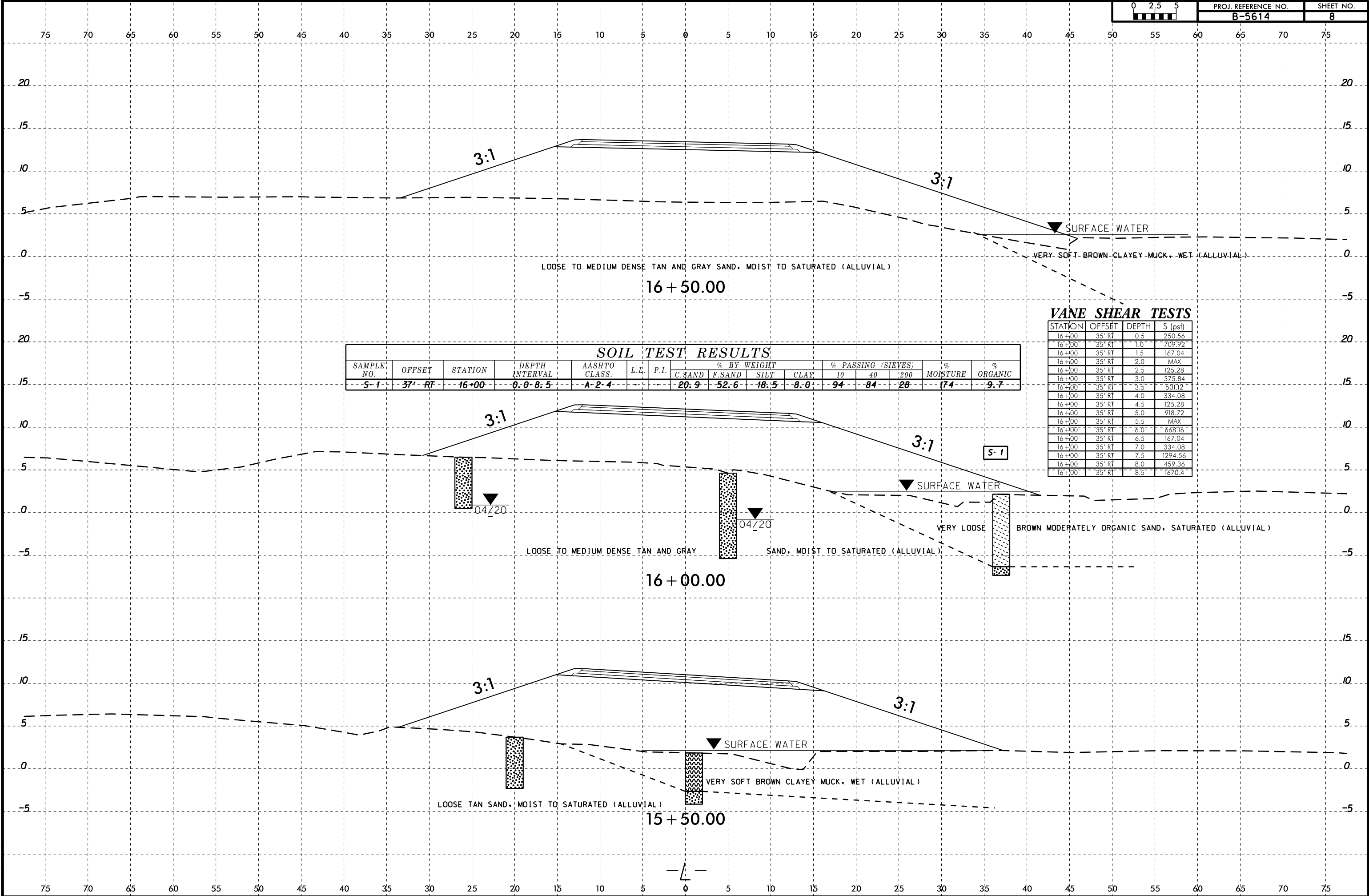
STATION	OFFSET	DEPTH	S (psf)
15+00	32' RT	0.5	208.8
15+00	32' RT	1.0	334.08
15+00	32' RT	1.5	582.4
15+00	32' RT	2.0	167.04
15+00	32' RT	2.5	876.96
15+00	32' RT	3.0	407.6
15+00	32' RT	3.5	835.2
15+00	32' RT	4.0	334.08
15+00	32' RT	4.5	501.12
15+00	32' RT	5.0	751.68
15+00	32' RT	5.5	125.28
15+00	32' RT	6.0	582.4
15+00	32' RT	6.5	MAX
15+00	32' RT	7.0	668.16
15+00	32' RT	7.5	1419.84



6/23/16

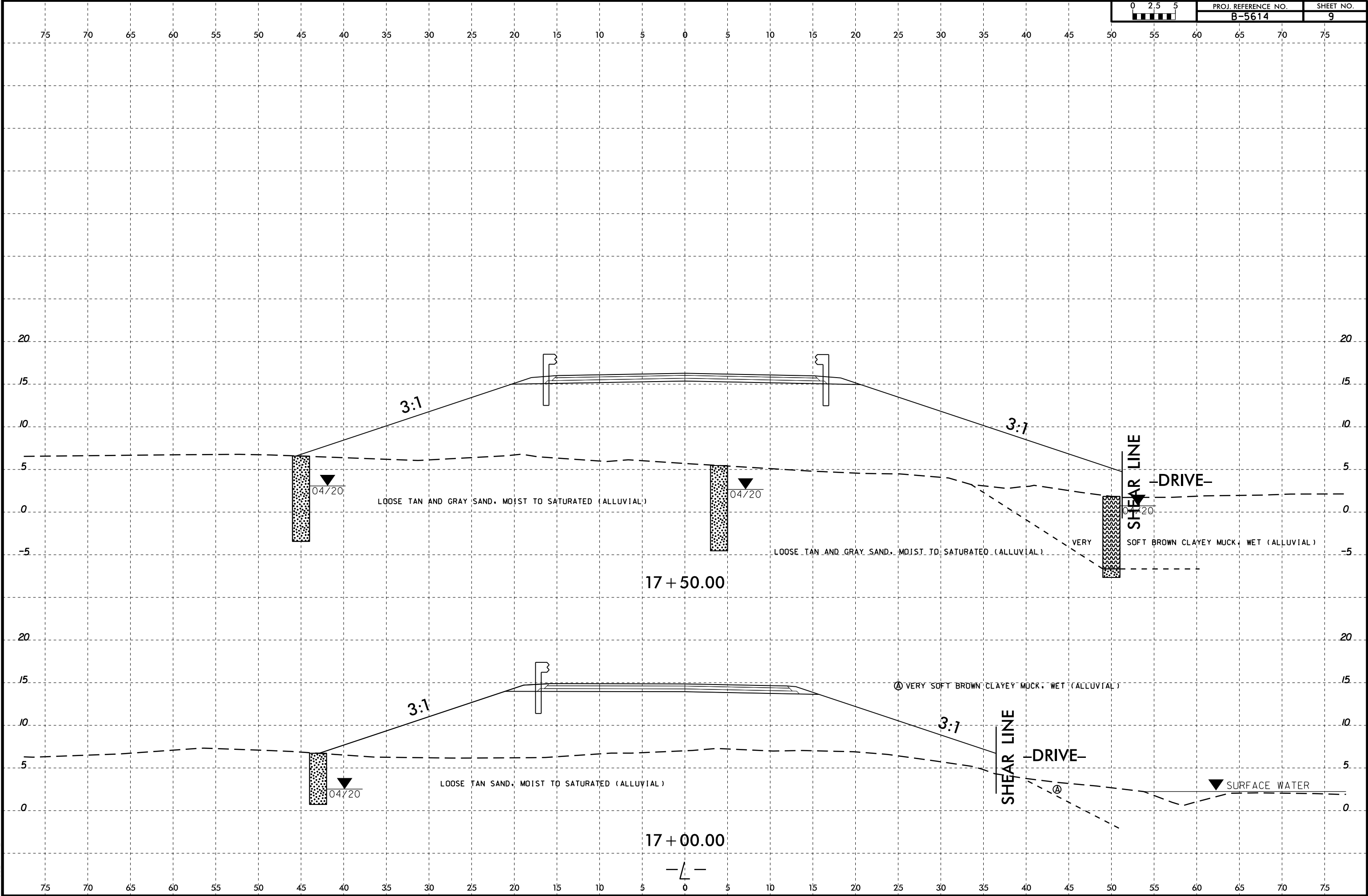


PROJ. REFERENCE NO.	SHEET NO.
B-5614	8

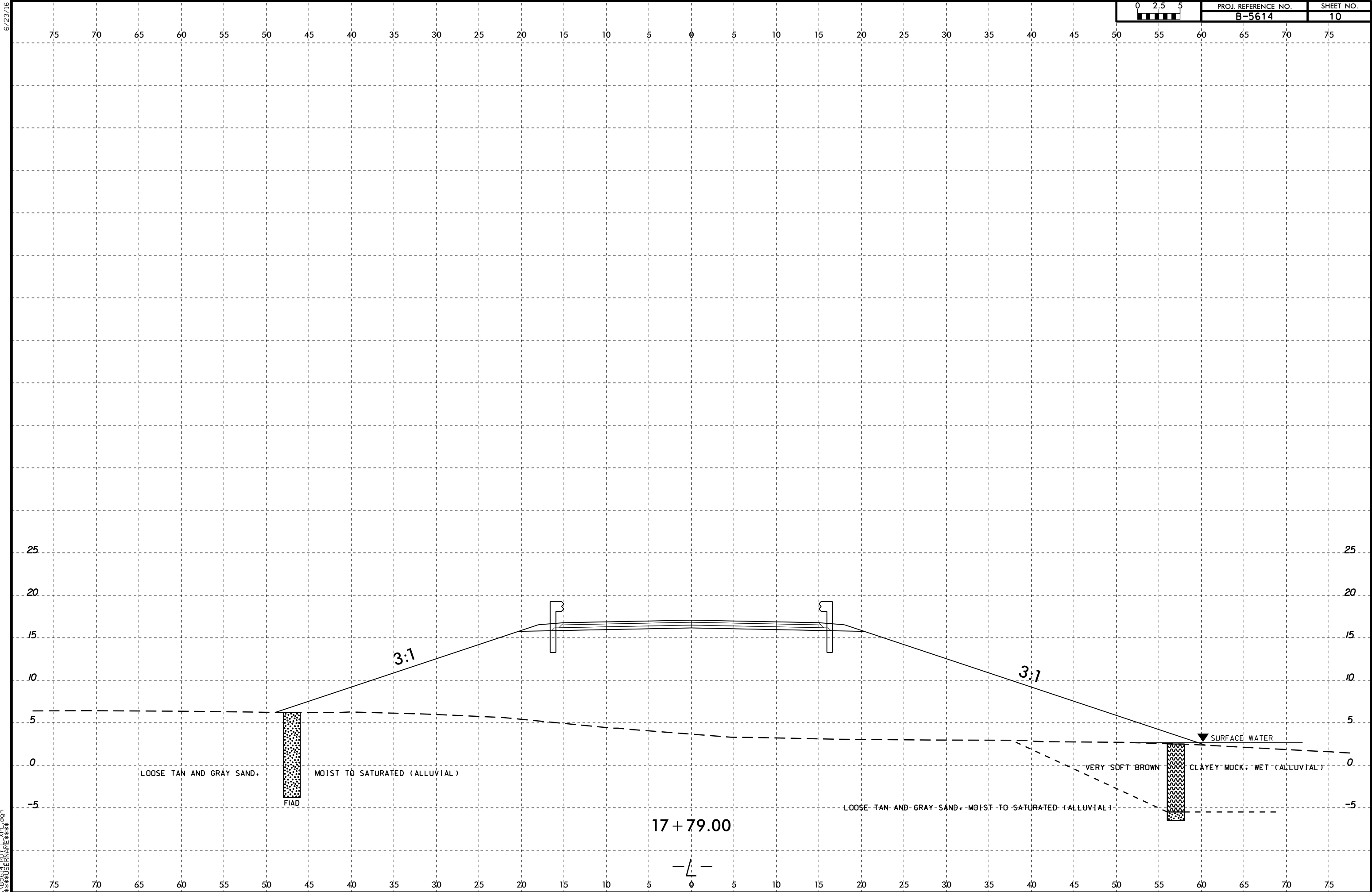




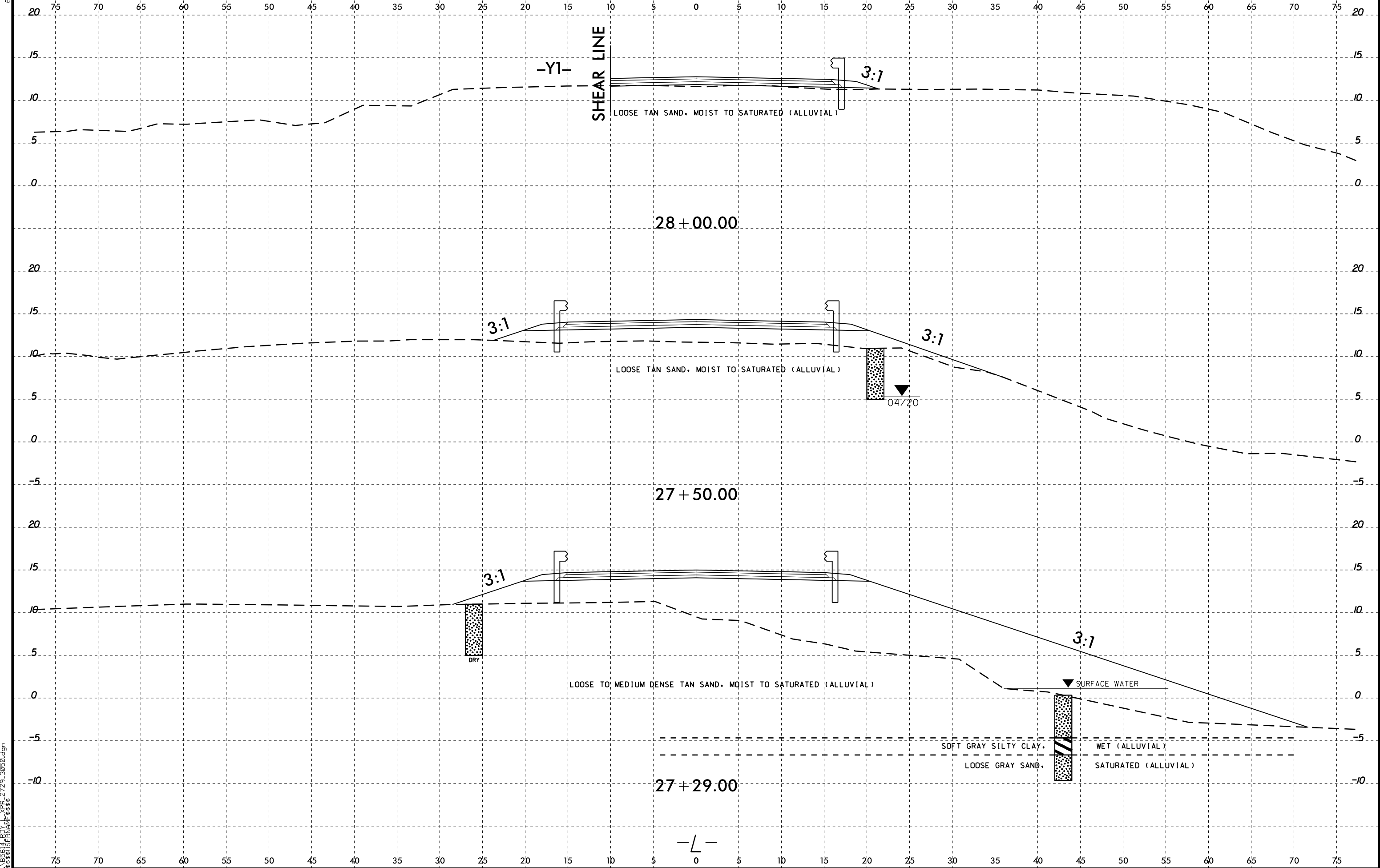
PROJ. REFERENCE NO.	SHEET NO.
B-5614	9



6/23/16



6/23/16

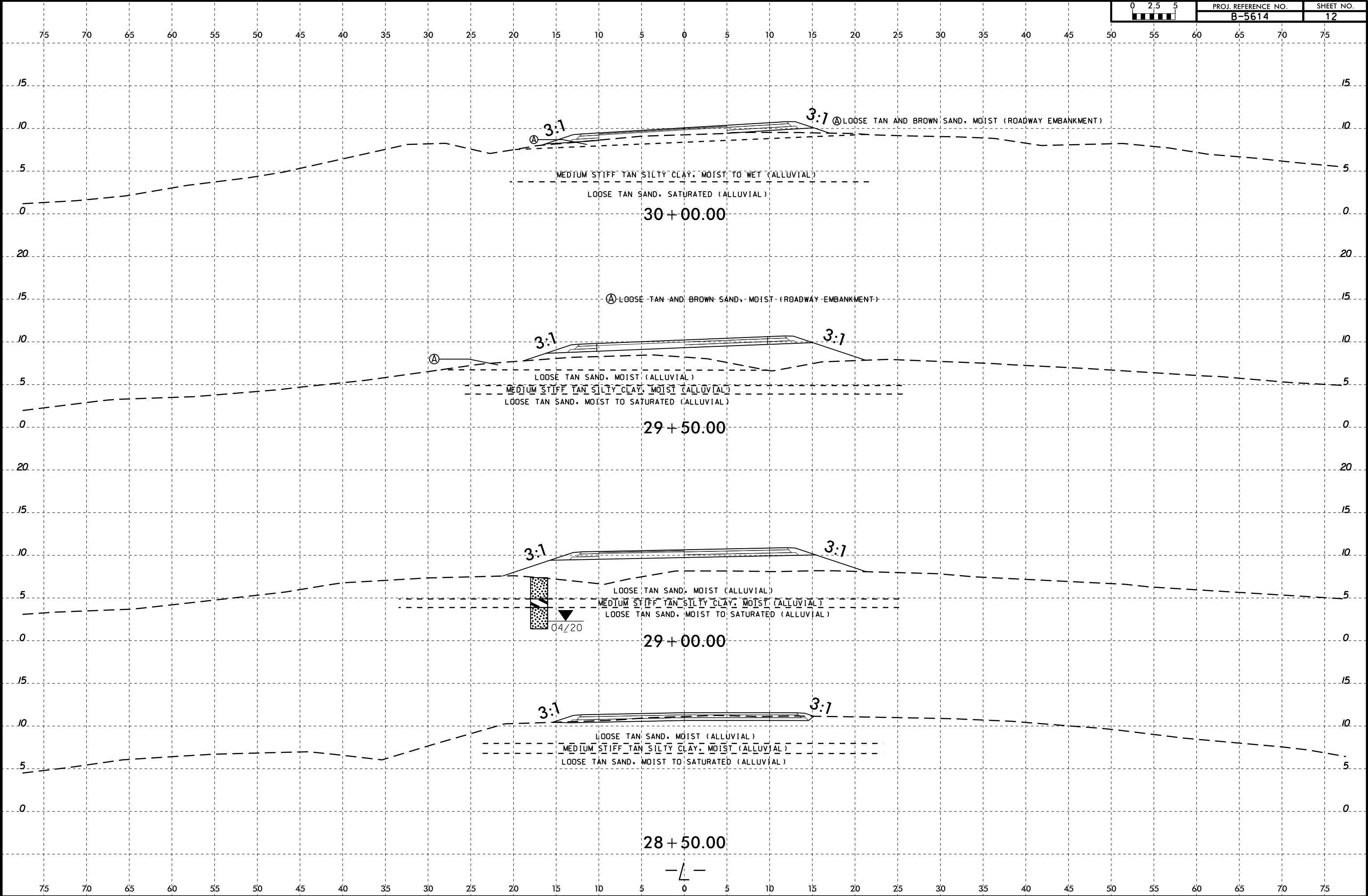


6/23/16



PROJ. REFERENCE NO.	SHEET NO.
B-5614	12

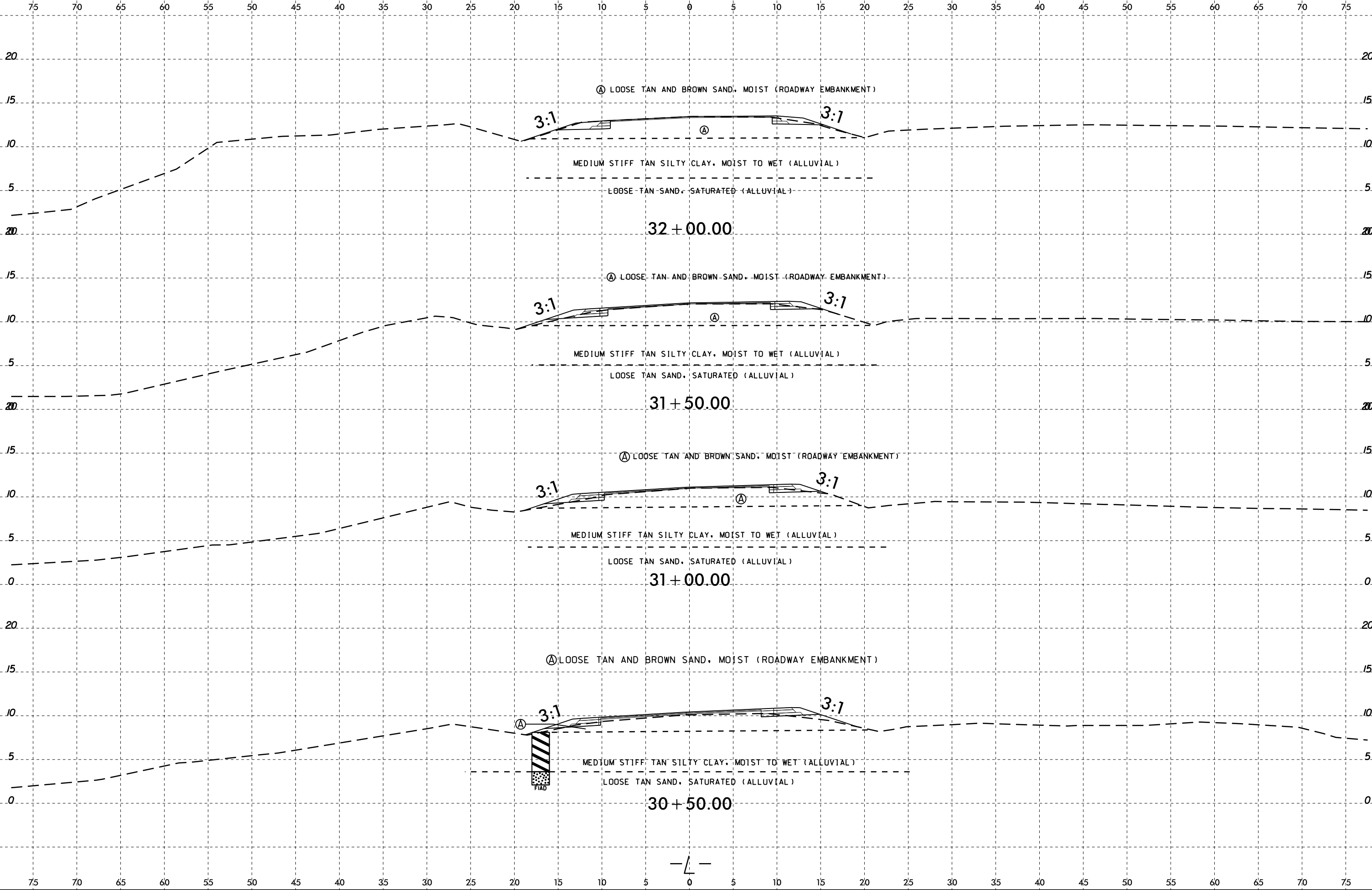
27-MAY-2020 16:11
\\B5614-ROY-XPL-2729_3050.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$



6/23/16

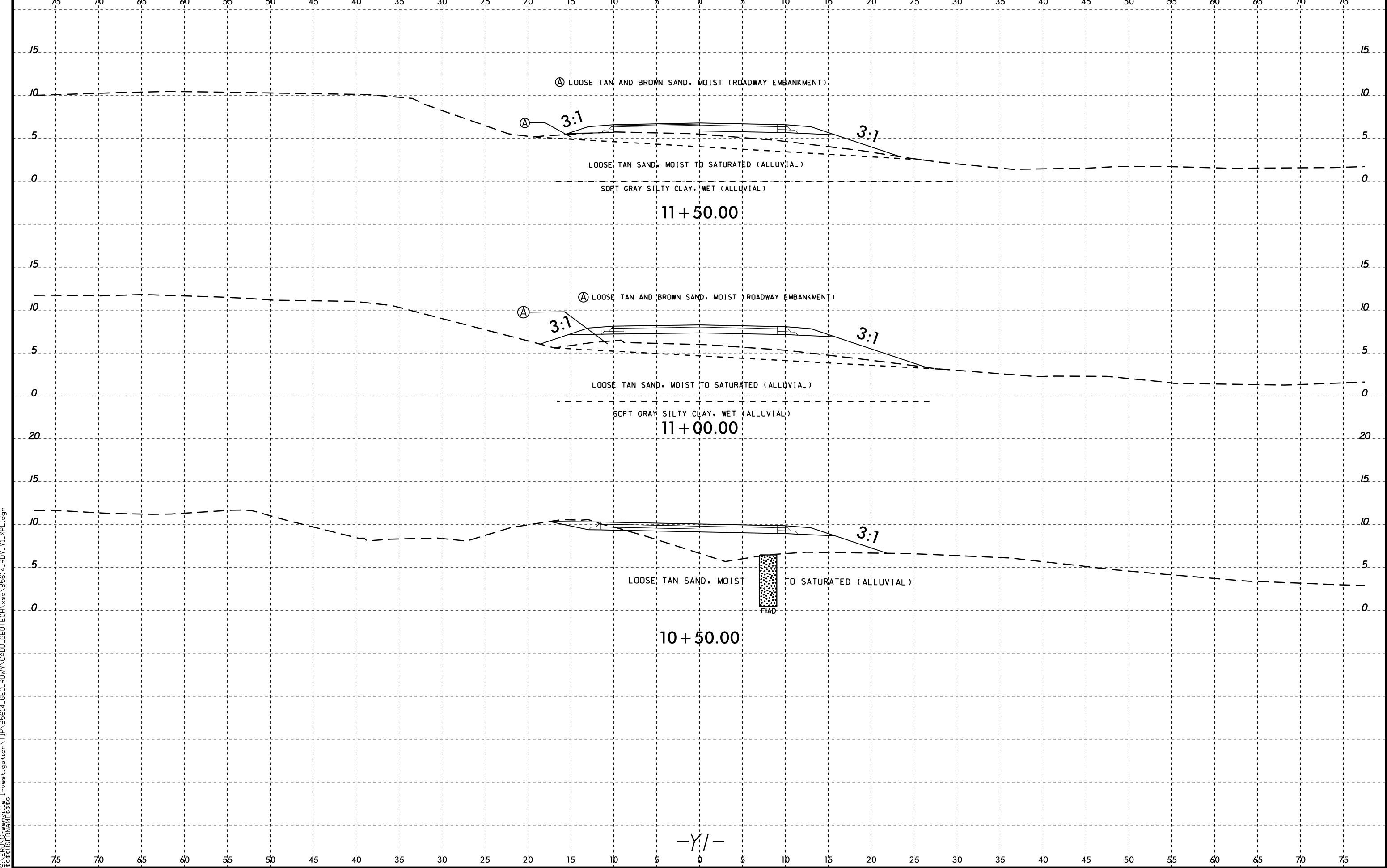


PROJ. REFERENCE NO.	SHEET NO.
B-5614	13



28-MAY-2020 10:47
S:\FRODO\Greenville_Investigation\TIP\B5614_GEO_RDWY\CADD_GEO\TECH\XSE\B5614_RDWY_L_XPL_2729_3050.dgn
\$\$\$\$\$USERNAME\$\$\$\$\$

6/23/16



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

15 15

10 10

5 5

0 0

-5 -5

15 15

10 10

5 5

0 0

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

Ⓐ LOOSE TAN AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓐ

3:1

LOOSE TAN SAND, MOIST TO SATURATED (ALLUVIAL)

SOFT GRAY SILTY CLAY, WET (ALLUVIAL)

12 + 50.00

Ⓐ LOOSE TAN AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

Ⓐ

3:1

3:1

LOOSE TAN SAND, MOIST TO SATURATED (ALLUVIAL)

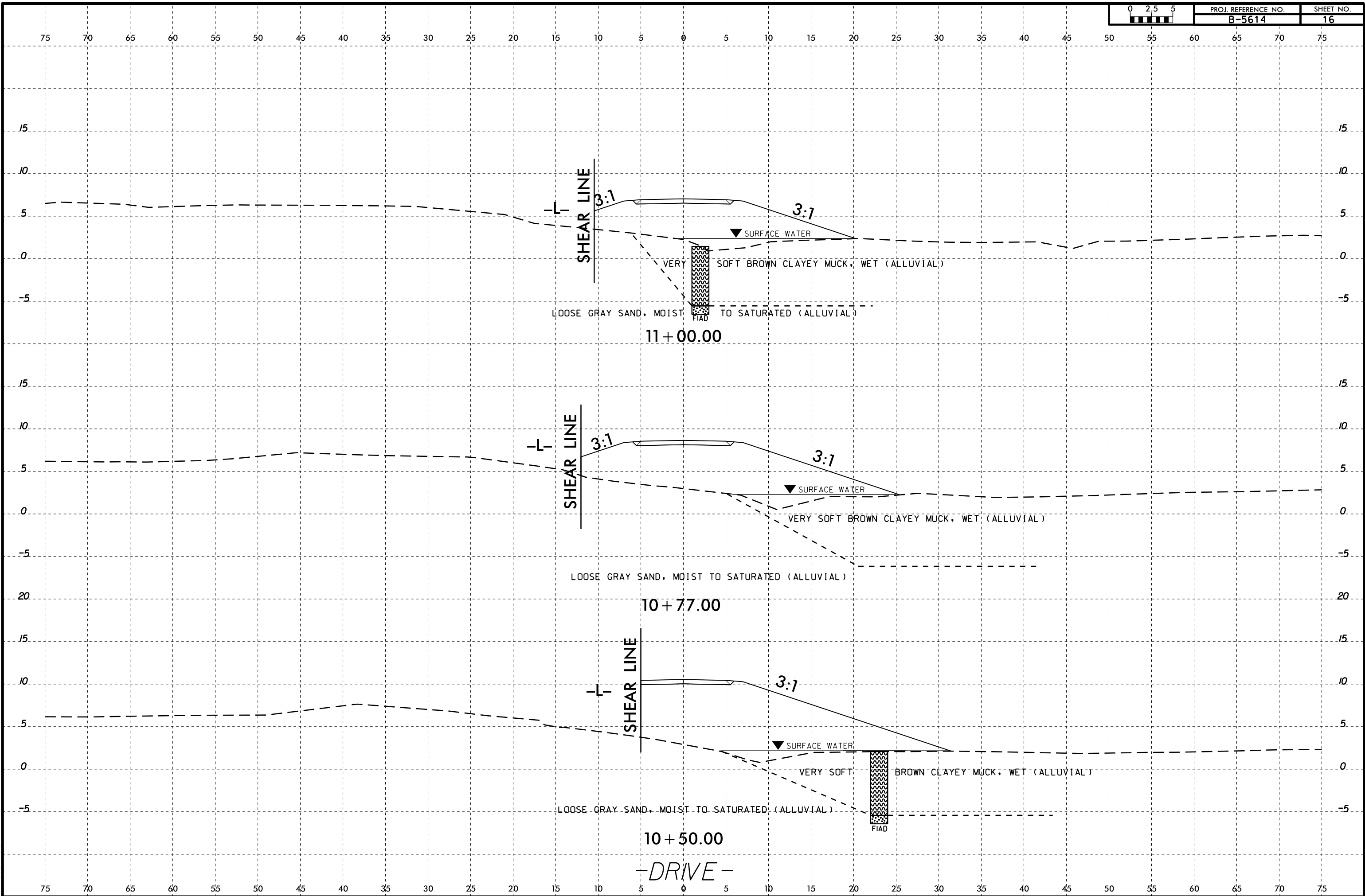
SOFT GRAY SILTY CLAY, WET (ALLUVIAL)



FIAD

12 + 00.00

-Y/-



6/23/16

