

REFERENCE: U-4758

PROJECT: 40251

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	19+00 - 28+00	4-9
-L-	114+50 - 122+00	10-15
-L-	134+50 - 136+00	16-17
-L-	137+50 - 141+00	18-20
-L-	144+00 - 148+00	21-23
-L-	184+00 - 191+00	24-27
-L-	195+50 - 202+00	28-31
-L-	220+00 - 225+00	32-35
-L-	234+00 - 237+50	36-38
-L-	242+50 - 244+50	39-40
-Y5-	14+50 - 17+50	41-42
-Y8-	10+50 - 12+50	43-44
-Y12-	13+00 - 15+50	45-46
-Y13-	10+50 - 16+00	47-49
-Y15-	12+00 - 14+50	50-51
-Y17-	10+00 - 15+00	52-55
-Y29-	26+50 - 29+00	56-57

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

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY GUILFORD
PROJECT DESCRIPTION IMPROVE SR 1818 (JOHNSON STREET) /SR 1850 (SANDY RIDGE ROAD) FROM SR 1820 (SKEET CLUB ROAD) TO I-40

RECOMMENDATIONS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4758	1	57

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

A. BHUIYAN

H. CAMP

J. MARLOW

R. NORWOOD

INVESTIGATED BY S&ME, INC.

DRAWN BY J. SWARTLEY

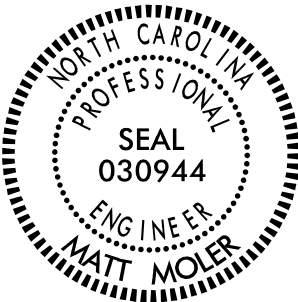
CHECKED BY M. MOLER

SUBMITTED BY S. LANEY

DATE OCTOBER 2021



9751 SOUTHERN PINE BLVD
CHARLOTTE, NC 28273
(704) 523-4726



DocuSigned by:

Matt Moler

6/27/2022

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SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS			
GROUP CLASS.	A-1	A-3	A-2		A-2-6		A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	
SYMBOL																
% PASSING																
#10	50 MX	30 MX	50 MX	51 MN												
#40	15 MX	25 MX	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN					
#200																
MATERIAL PASSING #40																
LL	—	—	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER				HIGHLY ORGANIC SOILS
PI	6 MX	NP	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN	11 MN					
GROUP INDEX	0	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 RESISTANCE (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 OPENING (MM)	4	10	40	60	200	270
	4.75	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
PLASTIC RANGE (PI)	LL	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
	PL		SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
		- WET - (W)	
	OM	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL	- 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

	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY

GROUND WATER

WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
 STATIC WATER LEVEL AFTER 24 HOURS
 PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
 SPRING OR SEEP

MISCELLANEOUS SYMBOLS

ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
 SOIL SYMBOL
 ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
 INFERRED SOIL BOUNDARY
 INFERRED ROCK LINE
 ALLUVIAL SOIL BOUNDARY
 DIP & DIP DIRECTION OF ROCK STRUCTURES
 SPT
 DMT
 VST
 AUGER BORING
 CORE BORING
 MONITORING WELL
 PIEZOMETER
 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
HL - 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

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)
 CRYSTALLINE ROCK (CR)
 NON-CRYSTALLINE ROCK (NCR)
 COASTAL PLAIN SEDIMENTARY ROCK (CP)

NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
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.
COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH
VERY SLIGHT (V SL.)
SLIGHT (SL.)
MODERATE (MOD.)
MODERATELY SEVERE (MOD. SEV.)
SEVERE (SEV.)
VERY SEVERE (V SEV.)
COMPLETE

ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
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.
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.
ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
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*
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
HARD
MODERATELY HARD
MEDIUM HARD
SOFT
VERY SOFT

CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
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.
CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
CAN BE 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.
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
VERY WIDE
WIDE
MODERATELY CLOSE
CLOSE
VERY CLOSE

SPACING
MORE THAN 10 FEET
3 TO 10 FEET
1 TO 3 FEET
0.16 TO 1 FOOT
LESS THAN 0.16 FEET

BEDDING

TERM
VERY THICKLY BEDDED
THICKLY BEDDED
THINLY BEDDED
VERY THINLY BEDDED
THICKLY LAMINATED
THINLY LAMINATED

THICKNESS
4 FEET
1.5 - 4 FEET
0.16 - 1.5 FEET
0.03 - 0.16 FEET
0.008 - 0.03 FEET
< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE
MODERATELY INDURATED
INDURATED
EXTREMELY INDURATED

RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
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 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.

BENCH MARK: • SEE NOTE

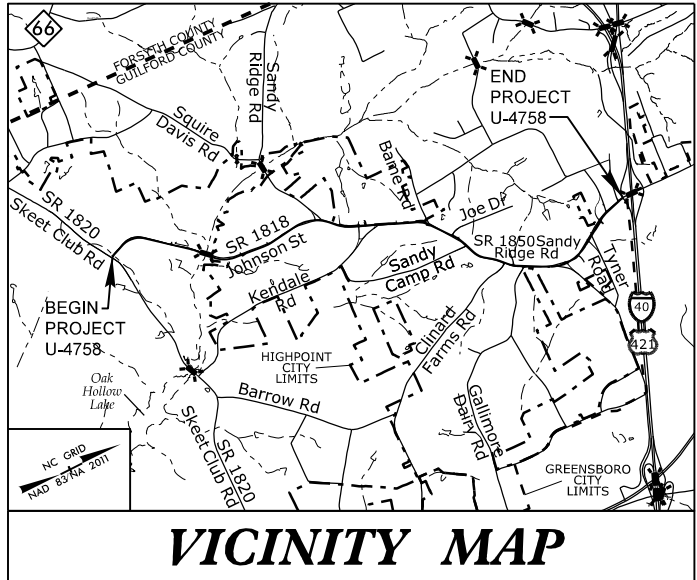
ELEVATION: FEET

NOTES:
• Elevations derived from geopak and the .tin file u4758.ls.tin.tin dated 10/16/18

DATE: 8-15-14

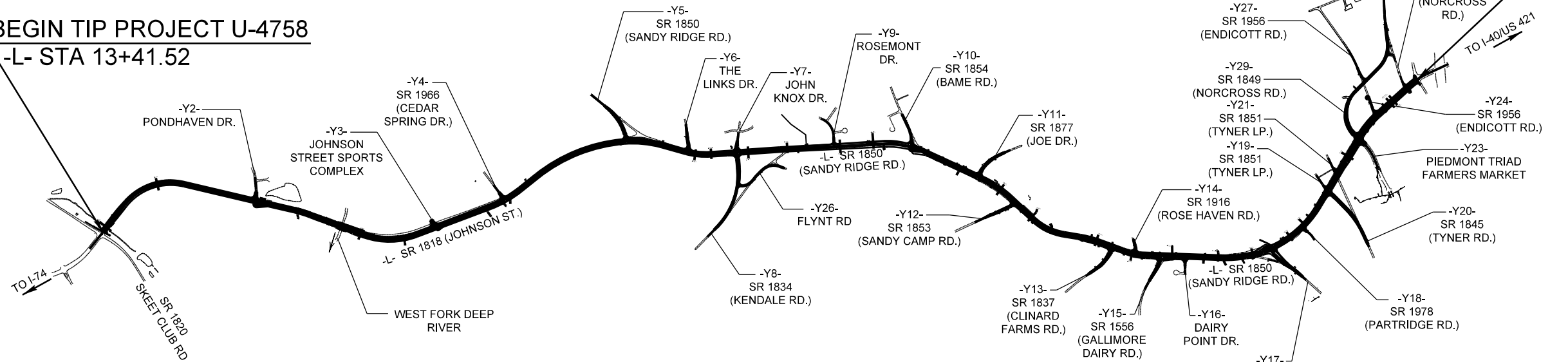
TIP PROJECT: U-4758

CONTRACT:



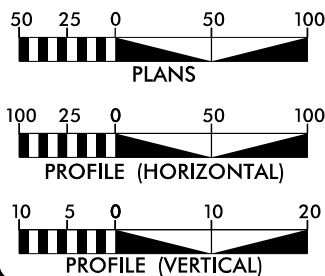
VICINITY MAP

BEGIN TIP PROJECT U-4758
-L- STA 13+41.52



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF HIGH POINT.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____.

GRAPHIC SCALES



DESIGN DATA

ADT 2017 = 21,780
ADT 2040 = 36,400
K = 11 %
D = 60 %
T = 9 %*
V = 50 MPH
*TTST = 4% DUAL = 5%
FUNC CLASS =
URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4758 = 4.394 MILES
LENGTH STRUCTURES TIP PROJECT U-4758 = 0.025 MILES
TOTAL LENGTH TIP PROJECT U-4758 = 4.419 MILES

NCDOT CONTACT: LAURA SUTTON, P.E

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

LOCATION: SR 1818 (JOHNSON STREET) /SR 1850 (SANDY RIDGE ROAD) FROM
SR 1820 (SKEET CLUB ROAD) TO I-40

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING, SIGNALS,
AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4758	3	57
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

END TIP PROJECT U-4758
-L- STA 246+71.60

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

Prepared In the Office of:
ATKINS
1616 EAST MILLBROOK ROAD, SUITE 160
RALEIGH, NORTH CAROLINA 27609
(919) 876-6888 NCBEES #F-0326

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 27, 2019

LETTING DATE: SEPTEMBER 21, 2021

CLINTON J. MORGAN, P.E.
PROJECT ENGINEER

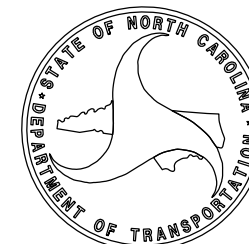
BRYAN S. LAMBETH, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

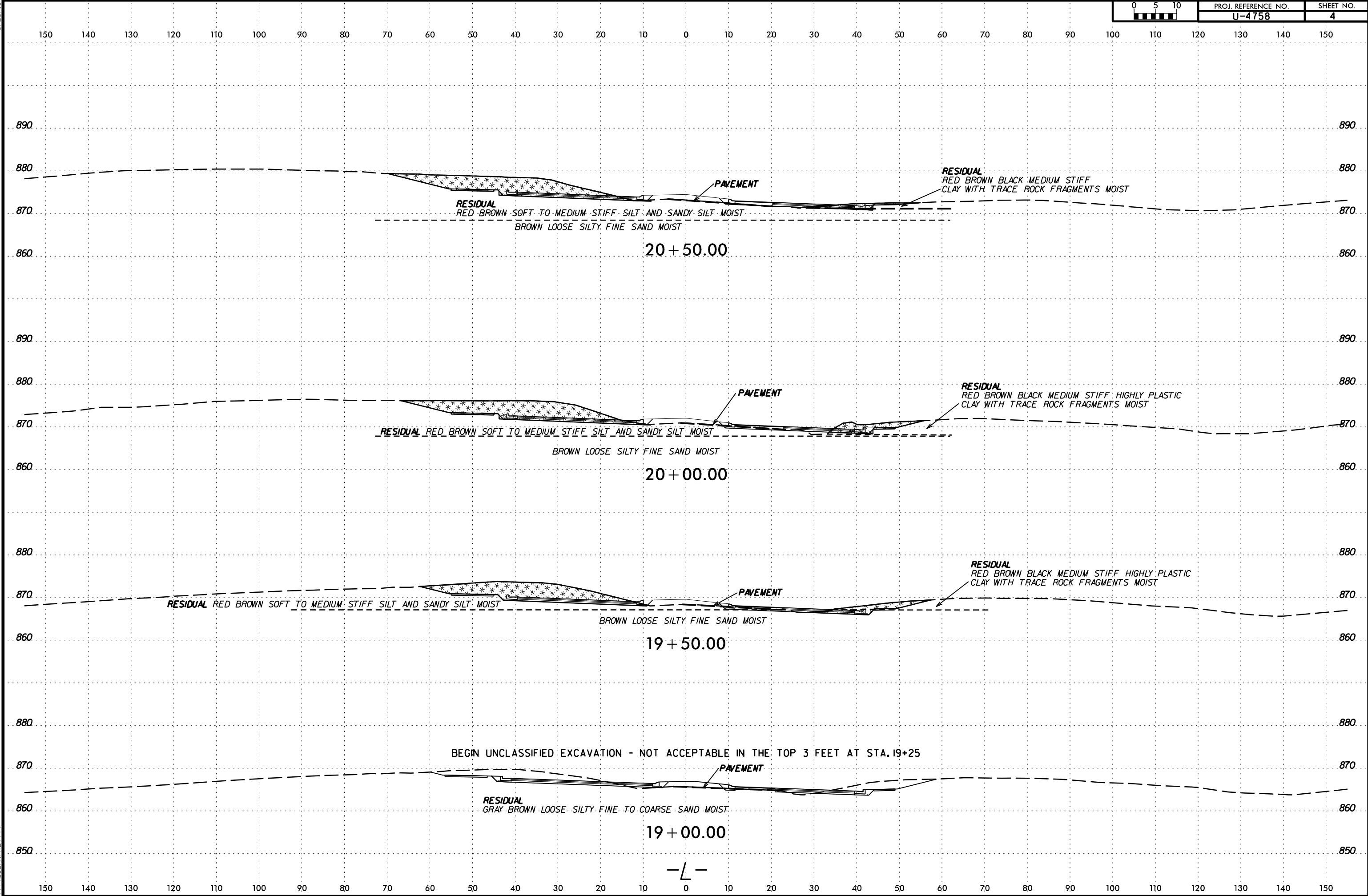
SIGNATURE: _____ P.E.



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	4

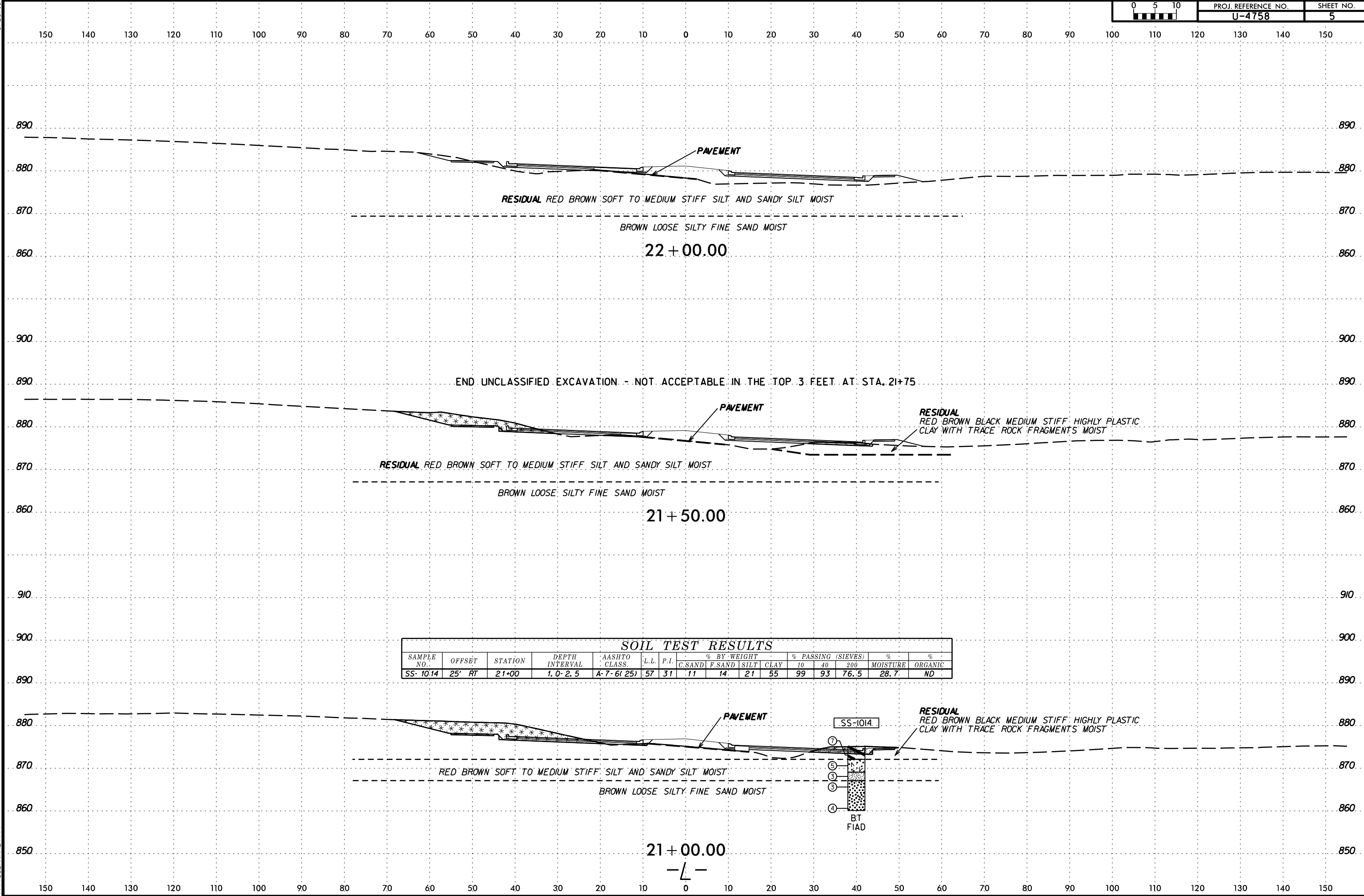


6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
5



SOIL TEST RESULTS

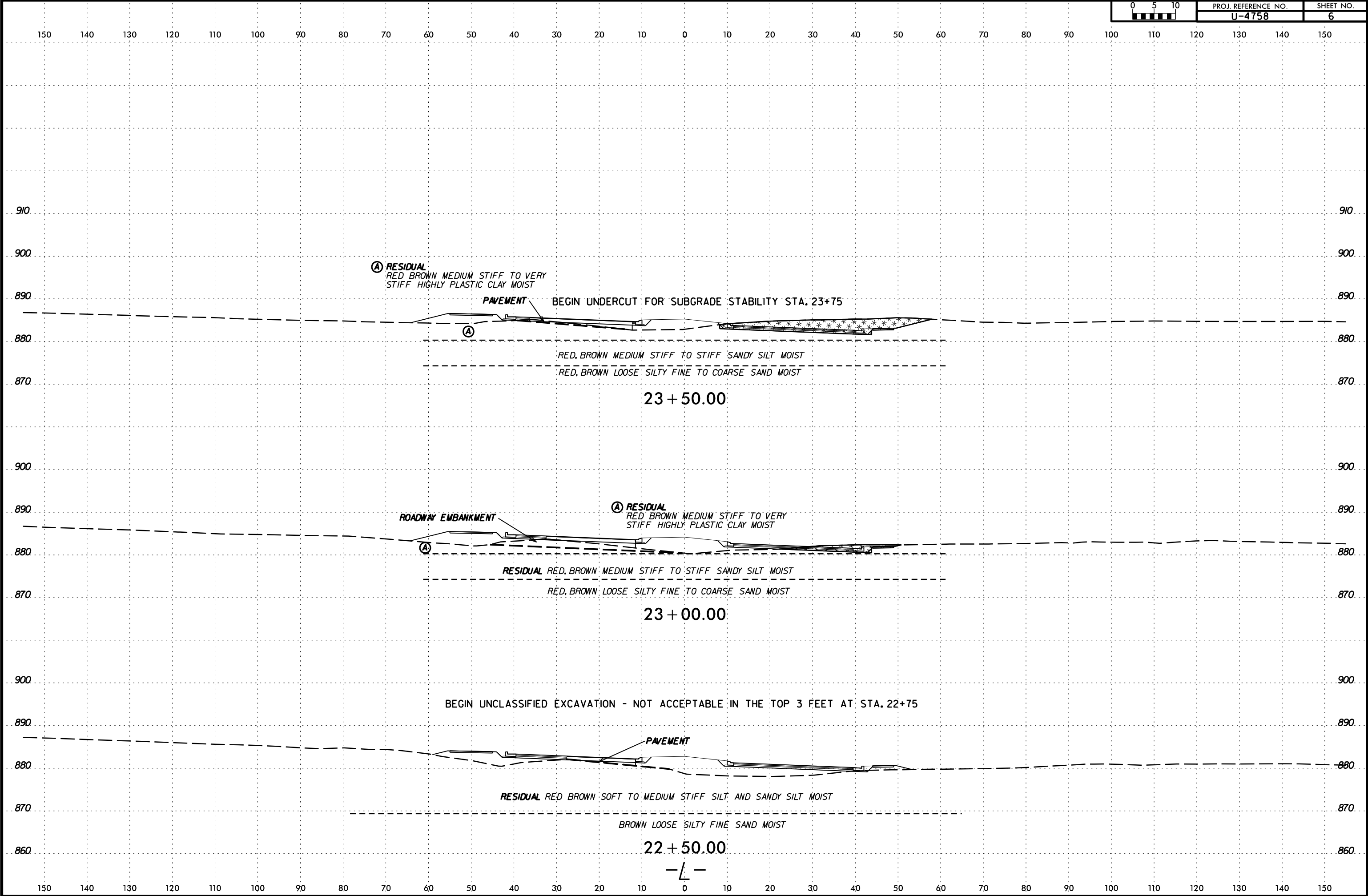
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-1014	25' RT	21+00	1.0-2.5	A-7-61(25)	57	31	11	14	21	55	99	93	76.5	28.7	ND

6/23/16



PROJ. REFERENCE NO.
U-4758

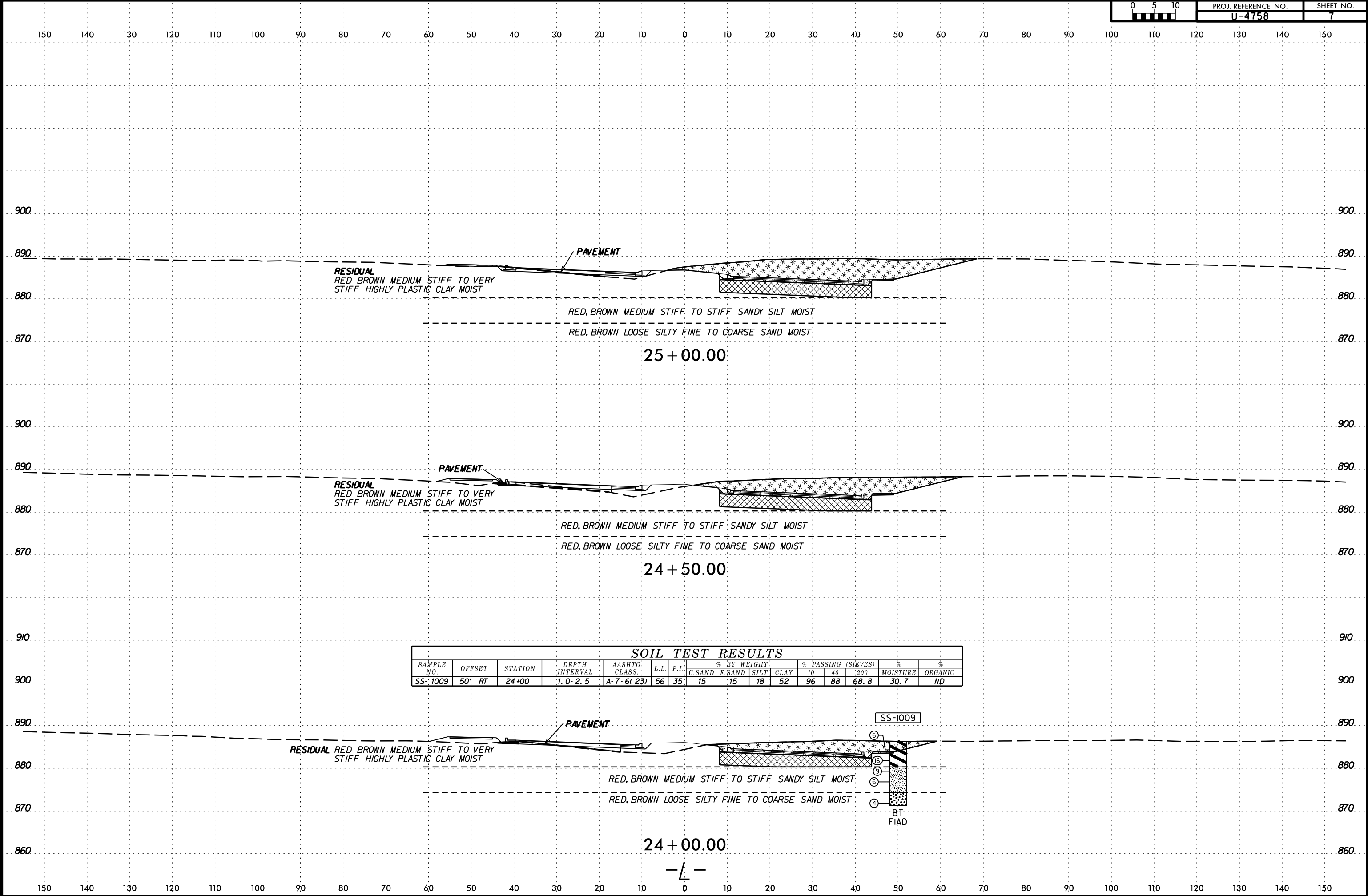
SHEET NO.
6



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	7



SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200	
SS-1009	50' RT	24+00	1.0-2.5	A-7-6(23)	56	35	15	15	18	52	96	88	68.8	ND

SS-1009

6

6

9

6

4

BT

FIAD

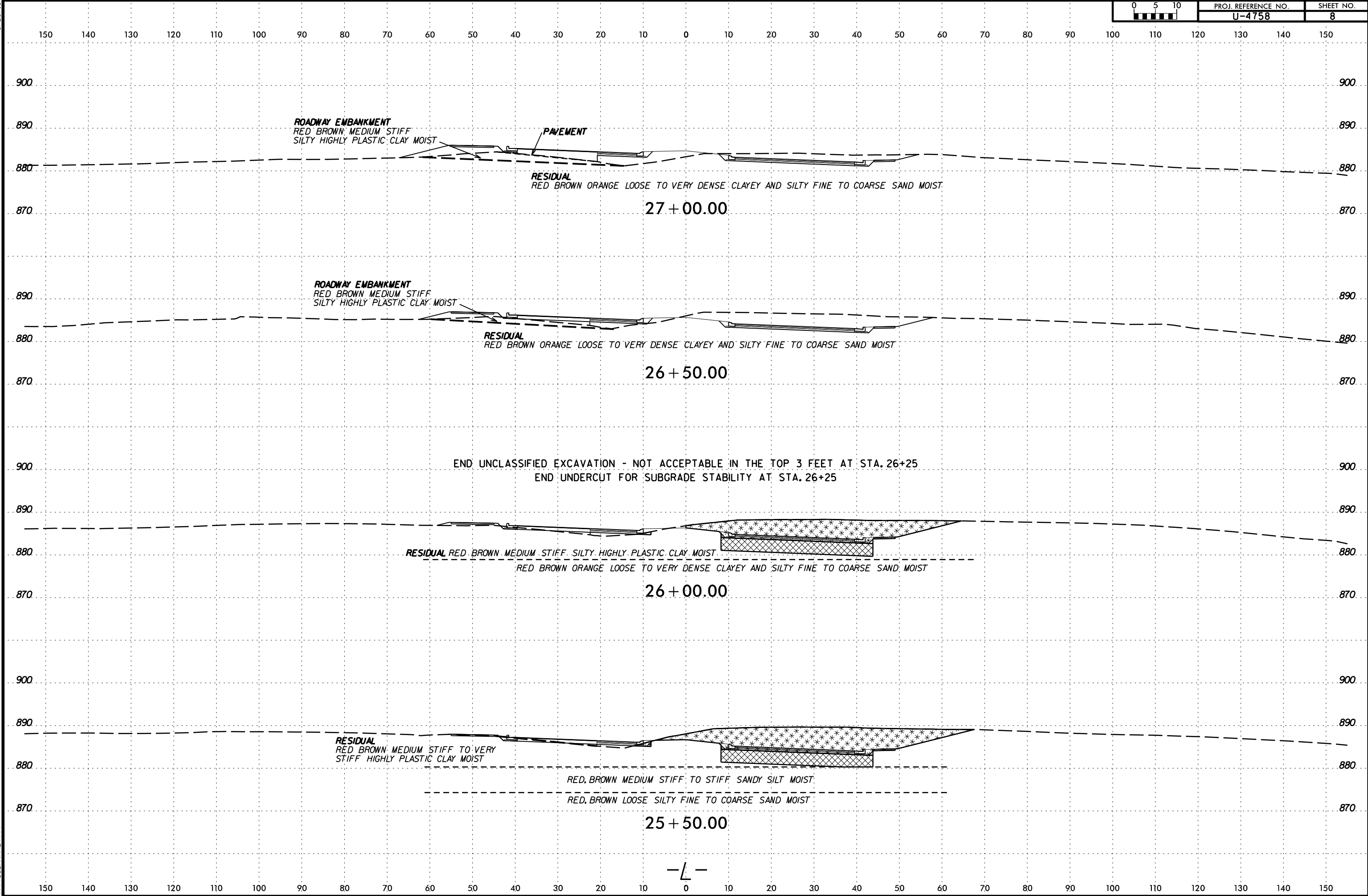
6/23/16
SS-1009
50' RT
24+00
1.0-2.5
A-7-6(23)
56
35
15
15
18
52
96
88
68.8
ND

6/23/16

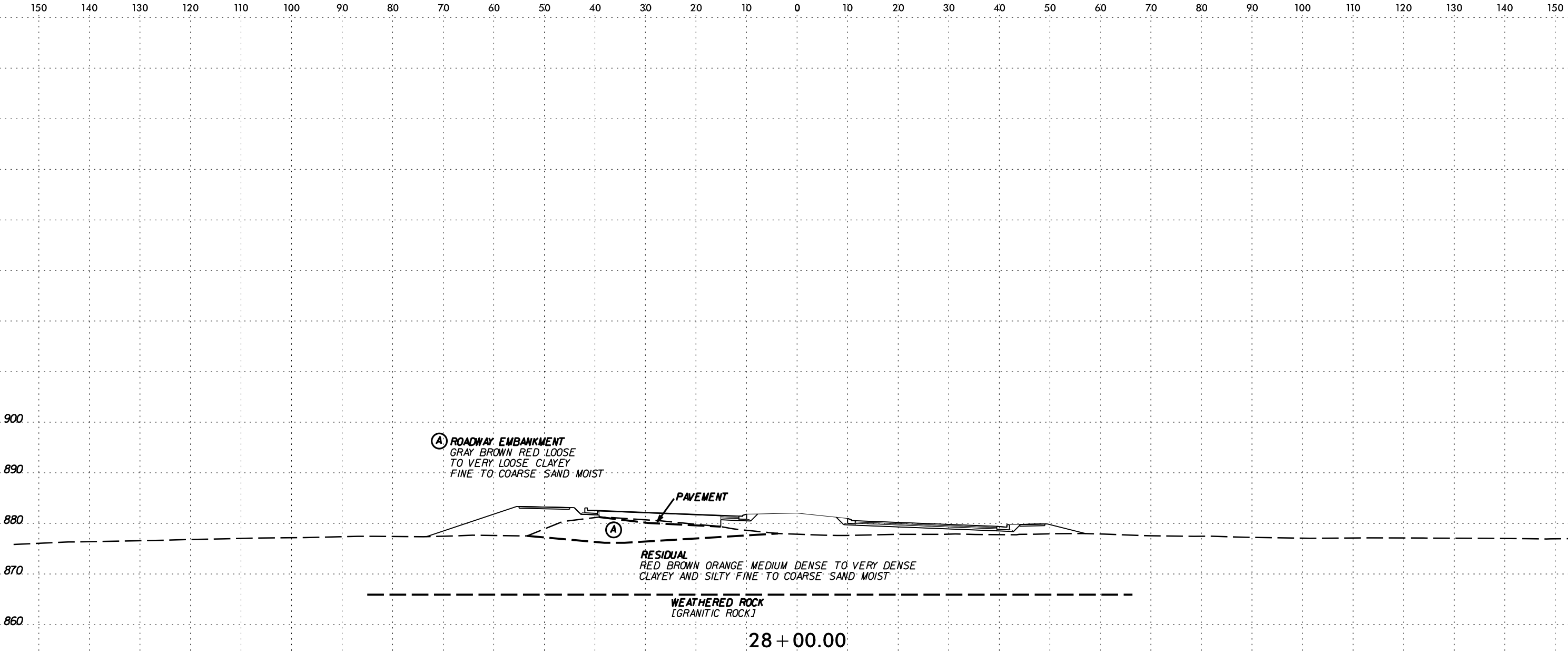


PROJ. REFERENCE NO.
U-4758

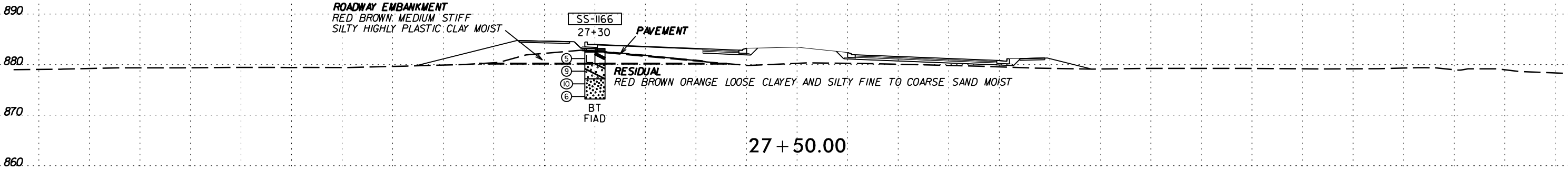
SHEET NO.
8



6/23/16



SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.I.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%
							C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE
SS-1166	40' LT	27+30	1.0-2.5	A-7-5(45)	82	49	6	9	19	66	98	94	84.1	39.9
														ND



-L-

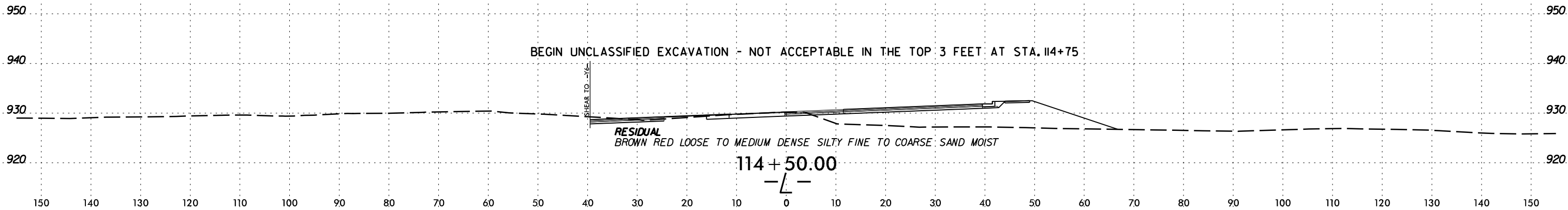
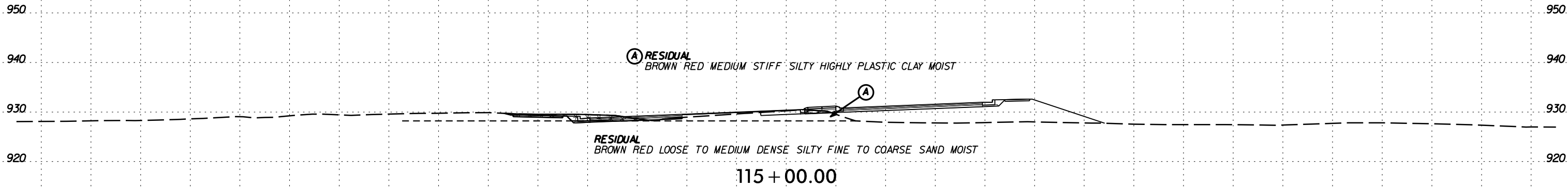
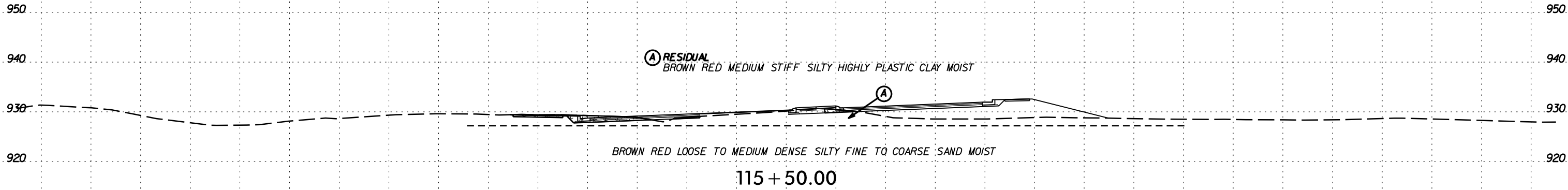
6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
10

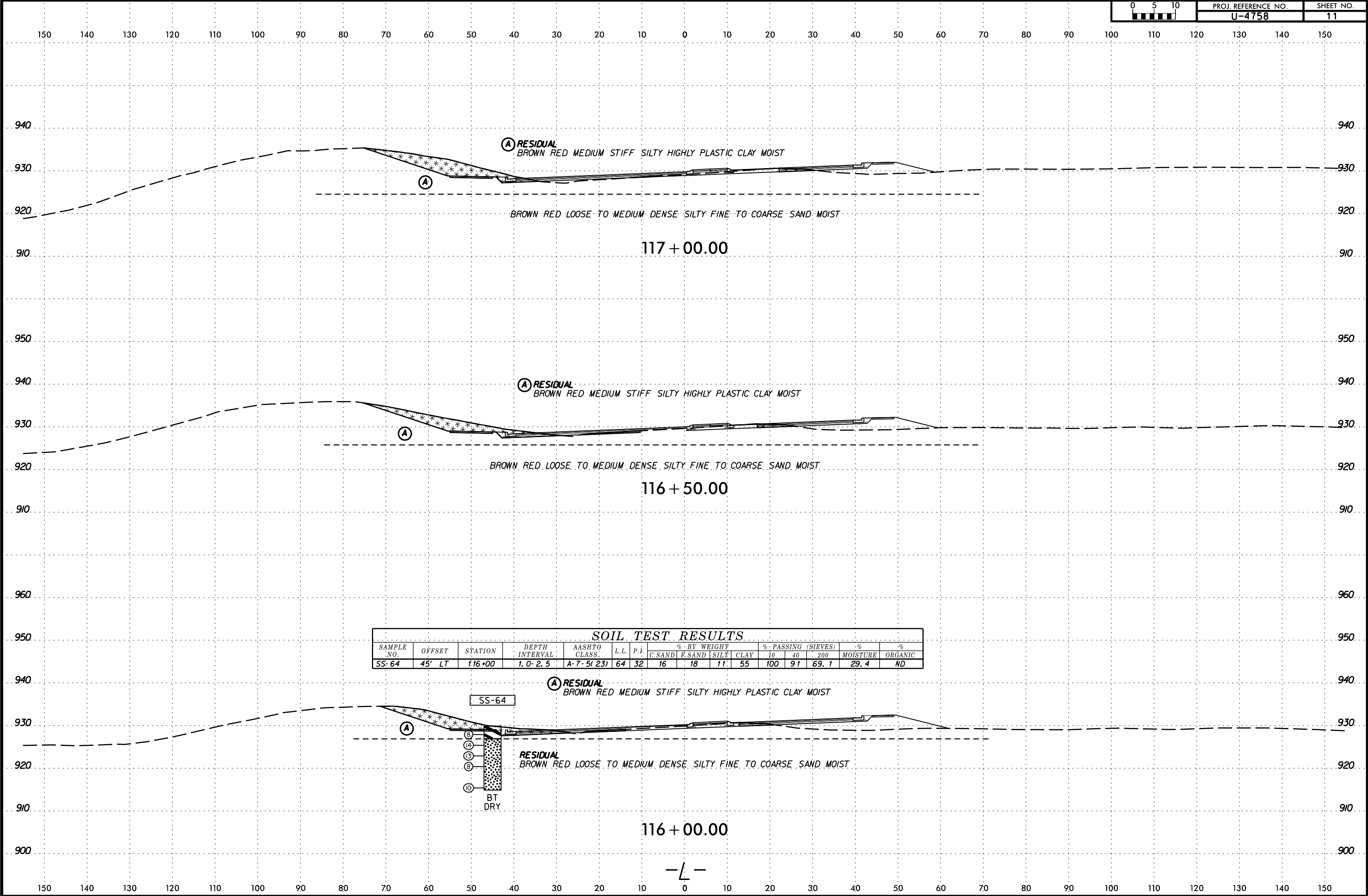
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	11

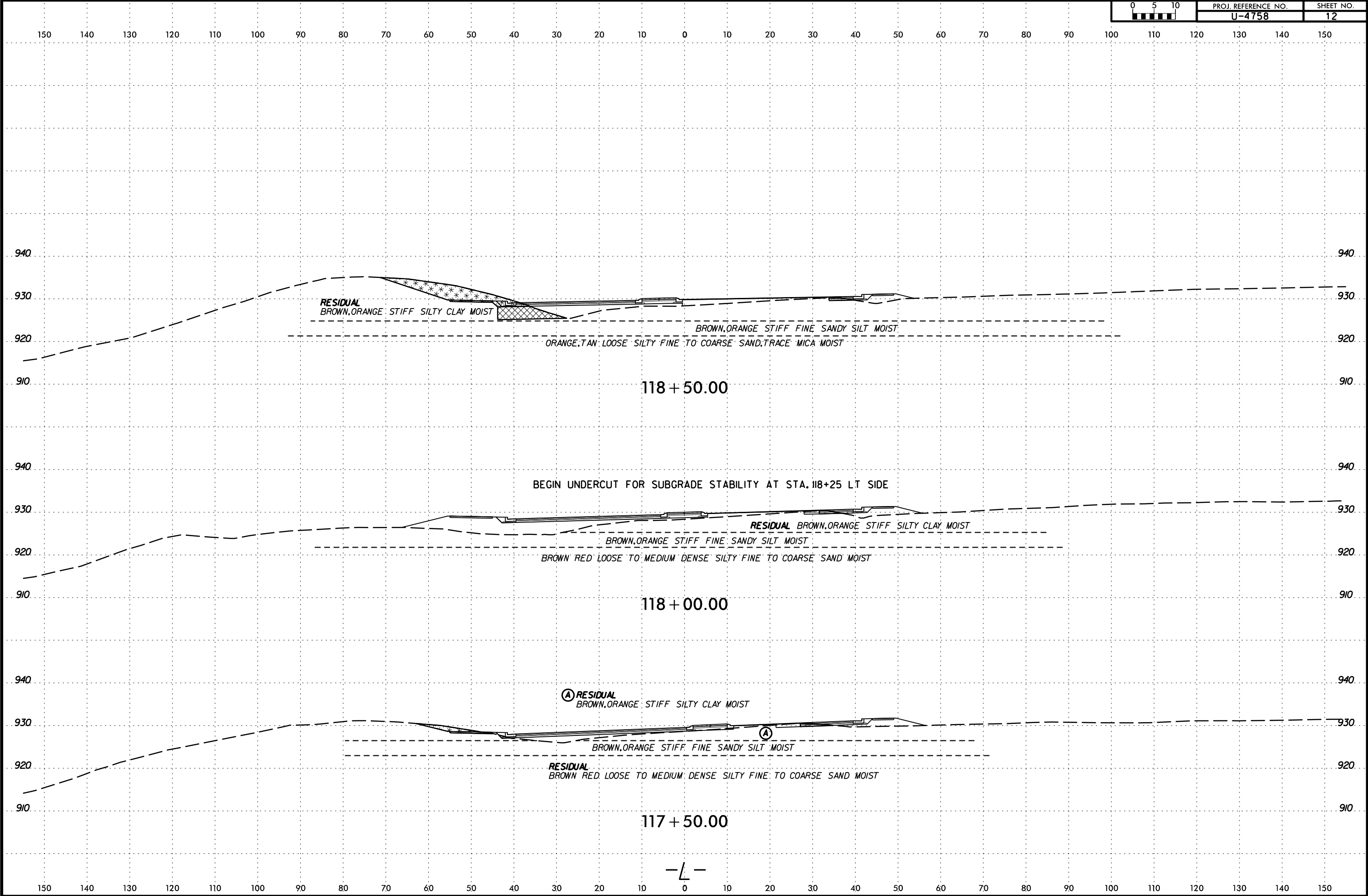


6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
12

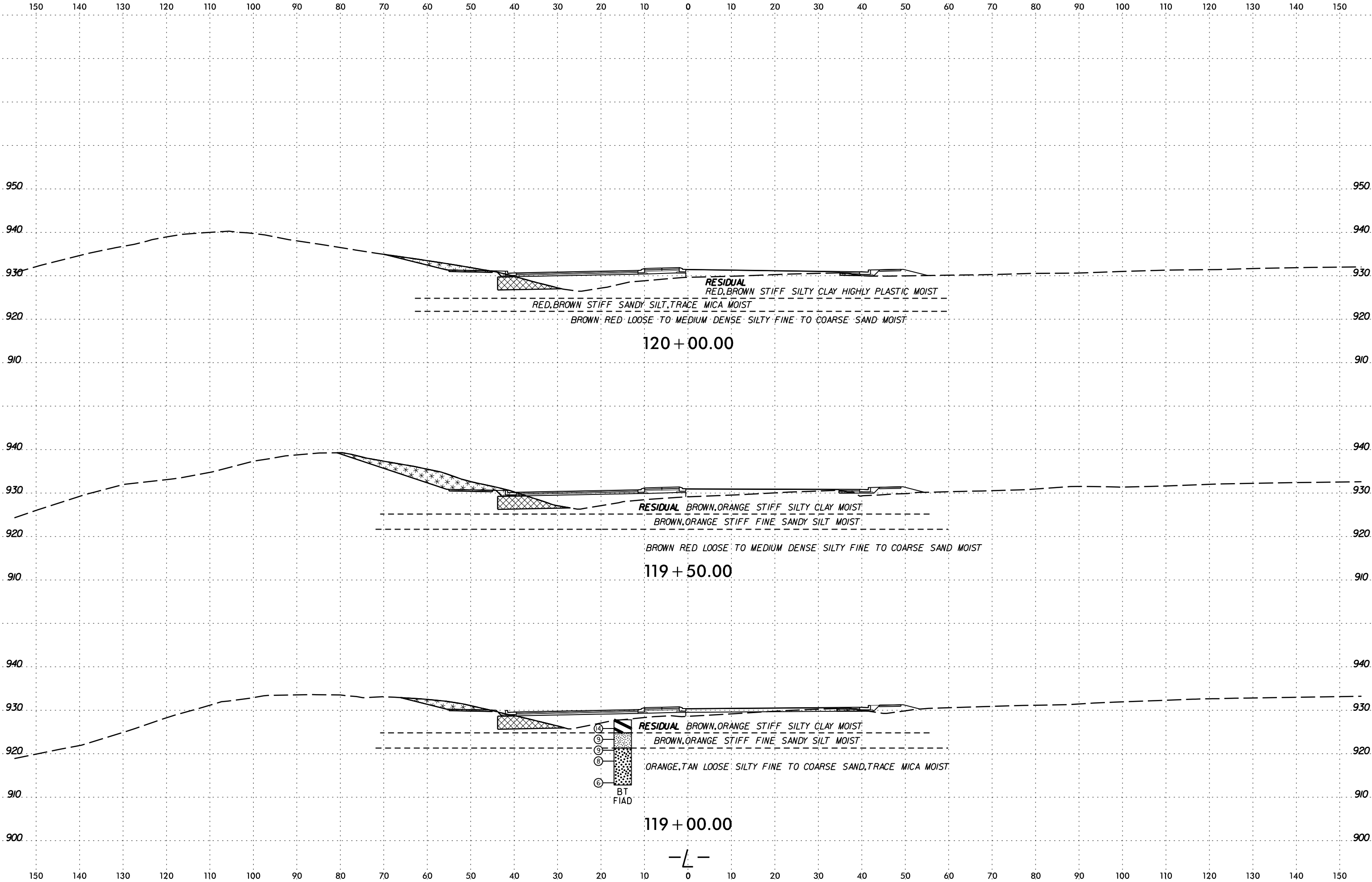


6/23/16



PROJ. REFERENCE NO.
U-4758

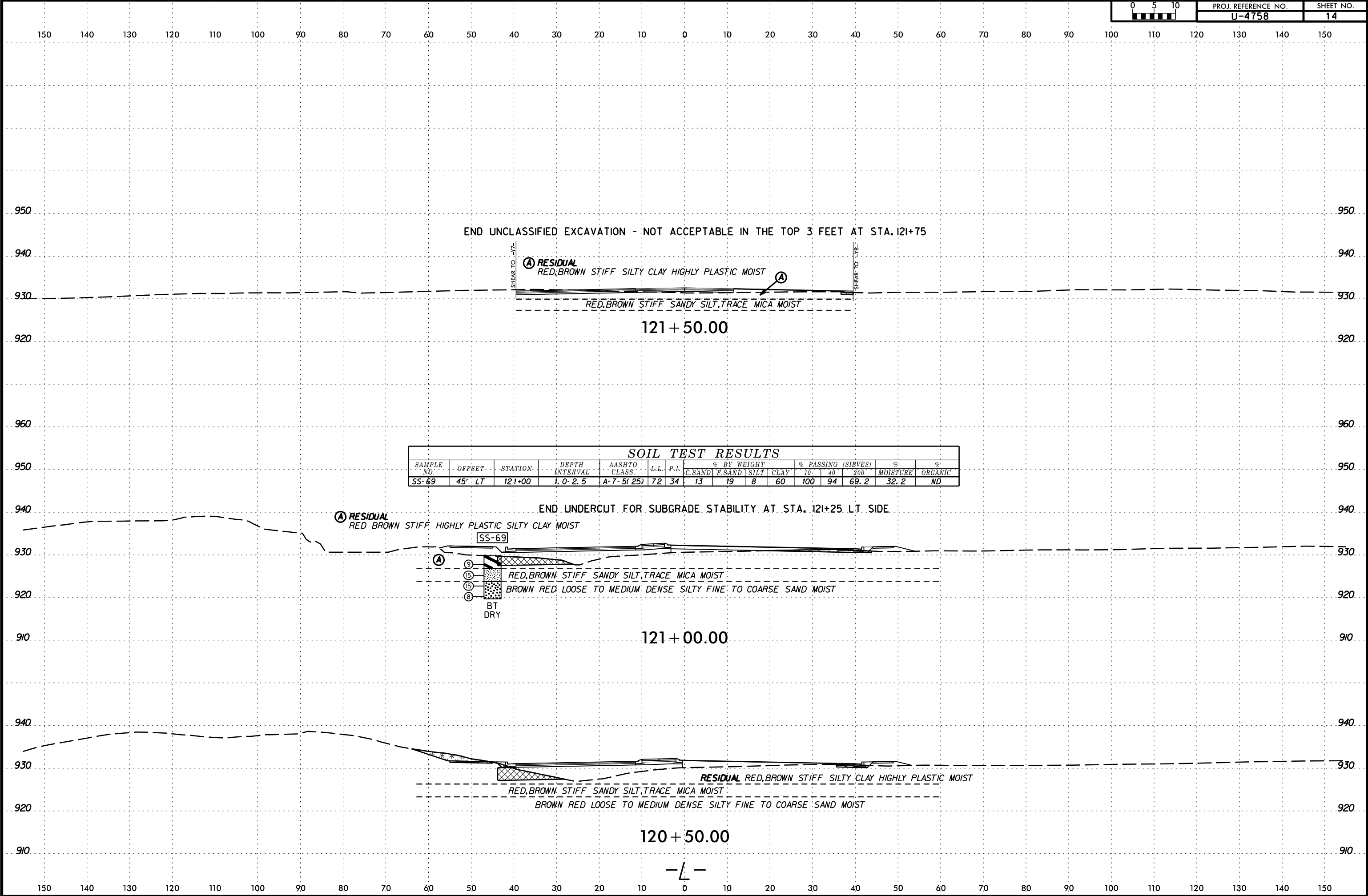
SHEET NO.
13

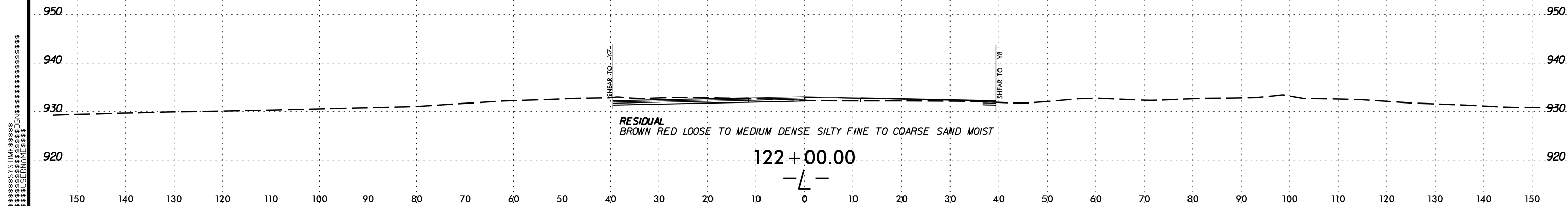


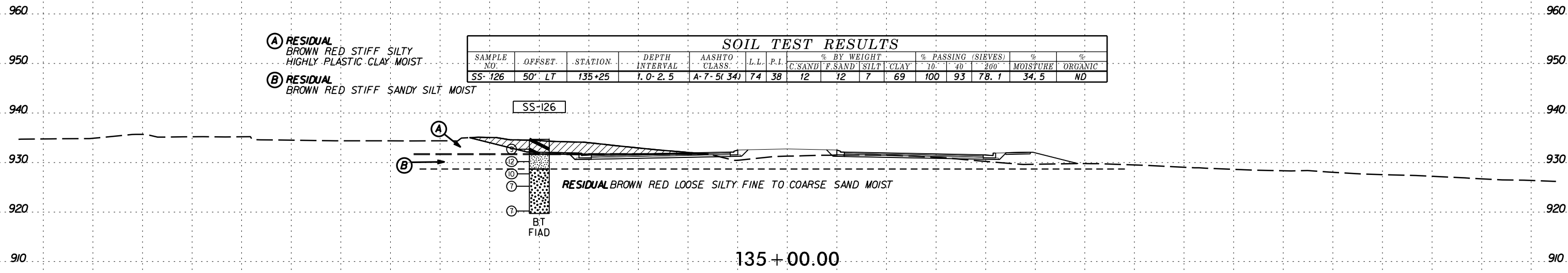
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	14





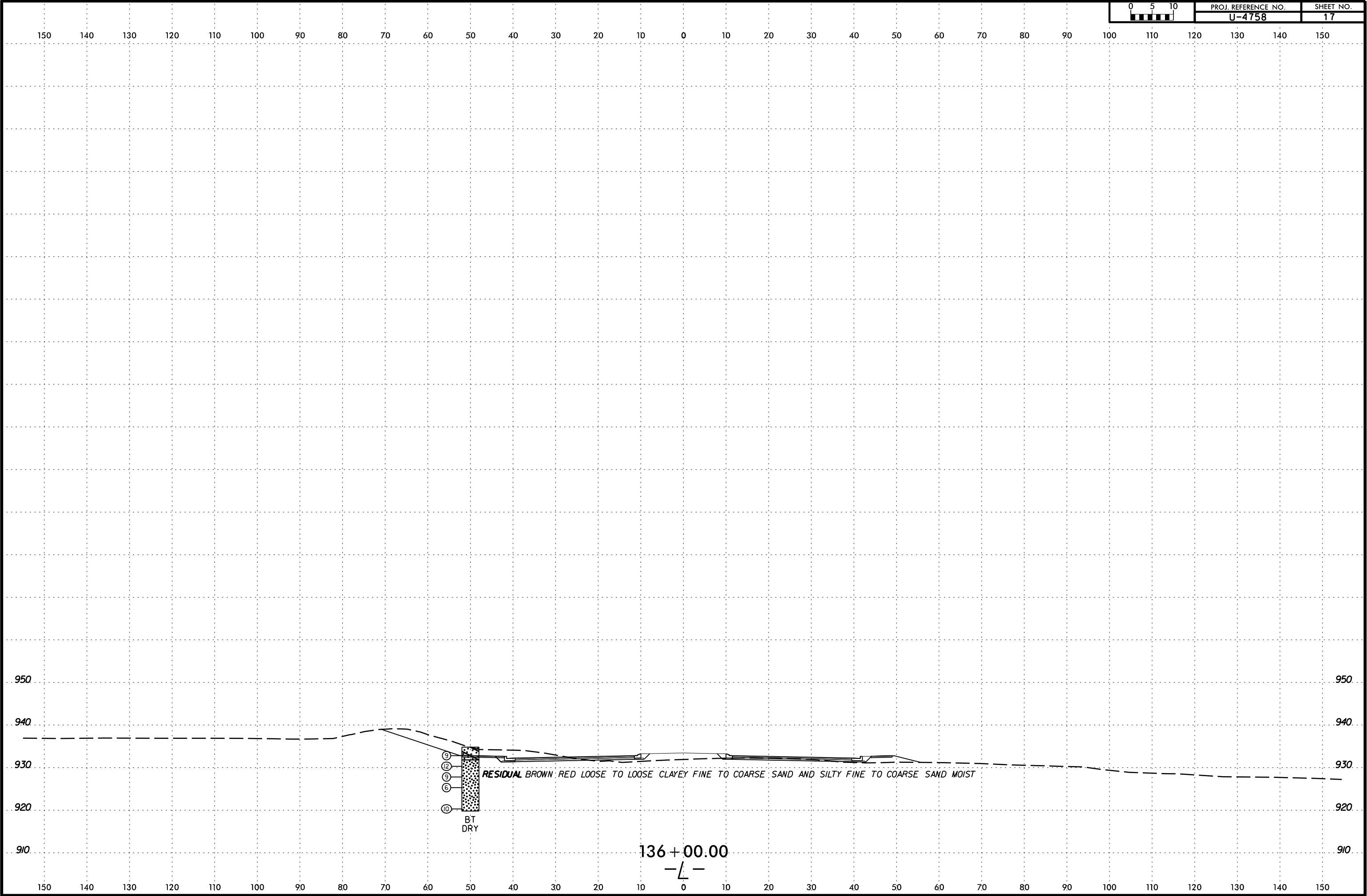


The longitudinal profile view displays the road's elevation and stationing. The vertical axis represents elevation in feet, ranging from 920 to 950. The horizontal axis represents stationing, ranging from 150 to 0 and then 0 to 150. The profile shows a dashed line for the existing ground surface and a solid line for the proposed road grade. A note indicates the start of unclassified excavation for unsuitable waste at station 134+75. The soil conditions are described as residual brown red, loose to medium dense silty fine to coarse sand, moist. The station 134+50.00 is marked with a vertical line and a small 'L' symbol.

BEGIN UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE AT STA. 134+75

RESIDUAL BROWN RED, LOOSE TO MEDIUM DENSE SILTY FINE TO COARSE SAND MOIST

134+50.00

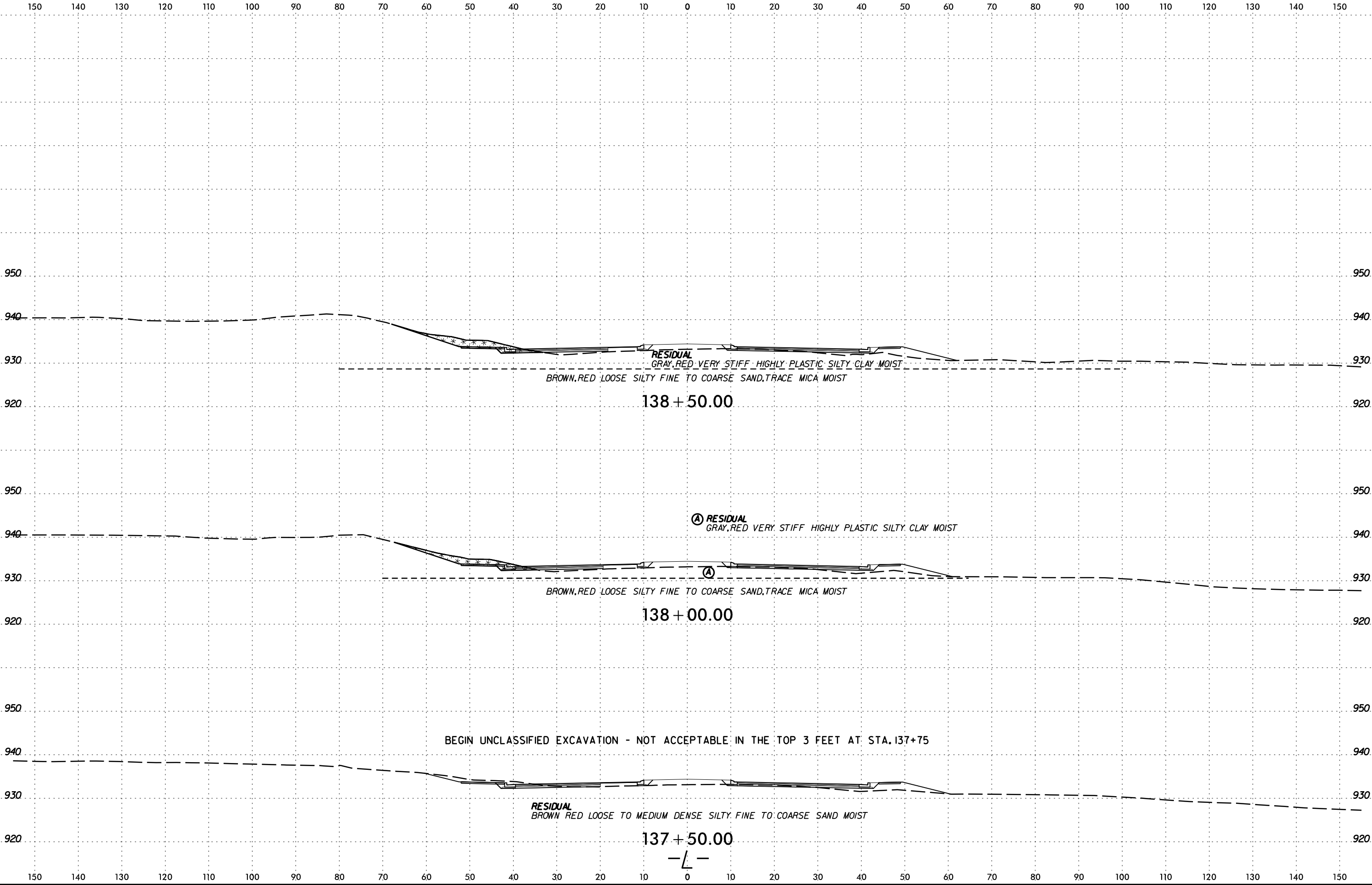


6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
18

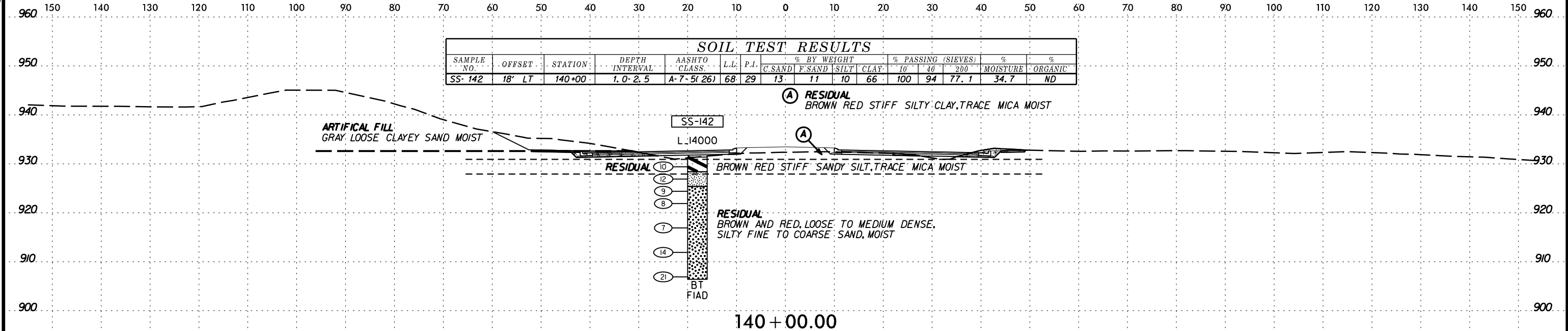


6/23/16

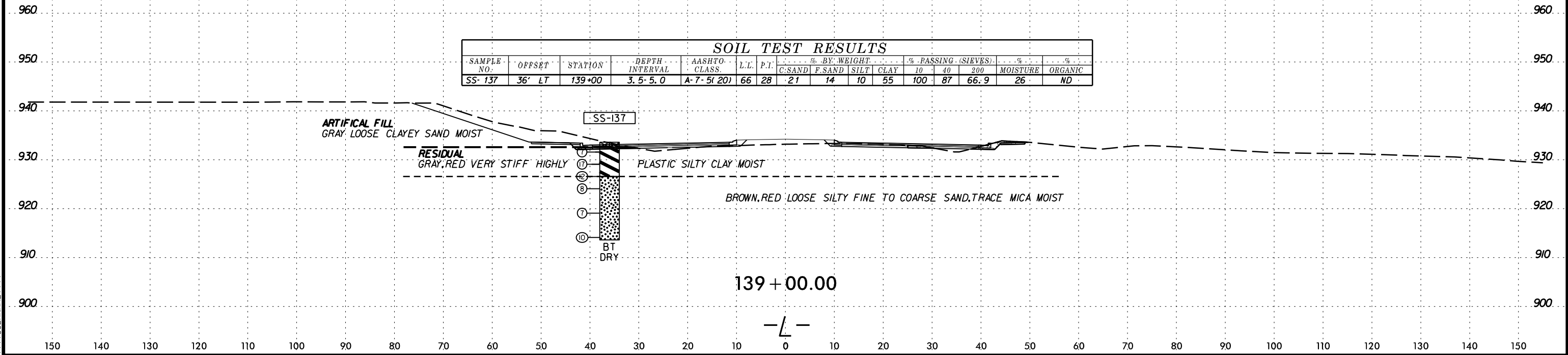


PROJ. REFERENCE NO.	SHEET NO.
U-4758	19

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200	
SS-142	18' LT	140+00	1.0-2.5	A-7-5(26)	68	29	13	11	10	66	100	94	77.1	34.7 ND



SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200	
SS-137	36' LT	139+00	3.5-5.0	A-7-5(20)	66	28	21	14	10	55	100	87	66.9	26 ND



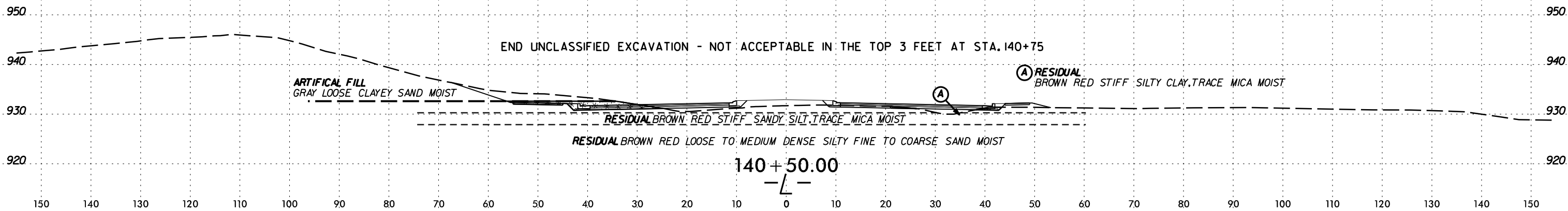
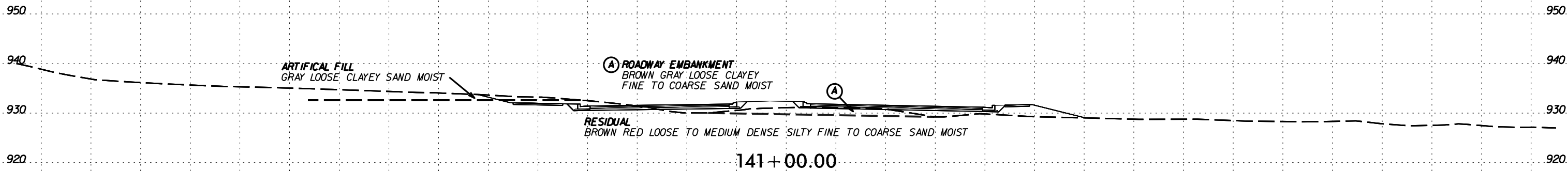
6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
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

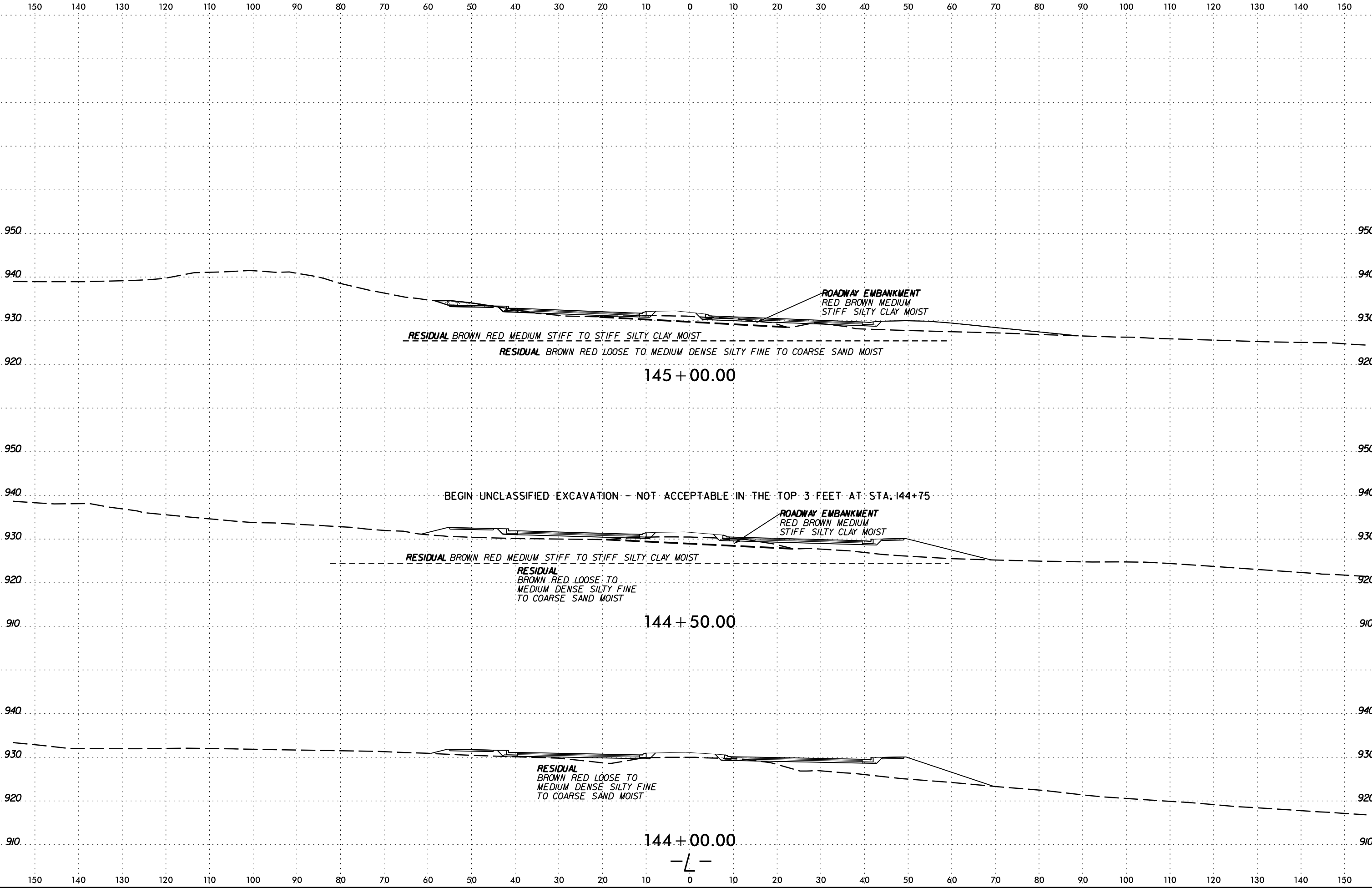


6/23/16



PROJ. REFERENCE NO.
U-4758

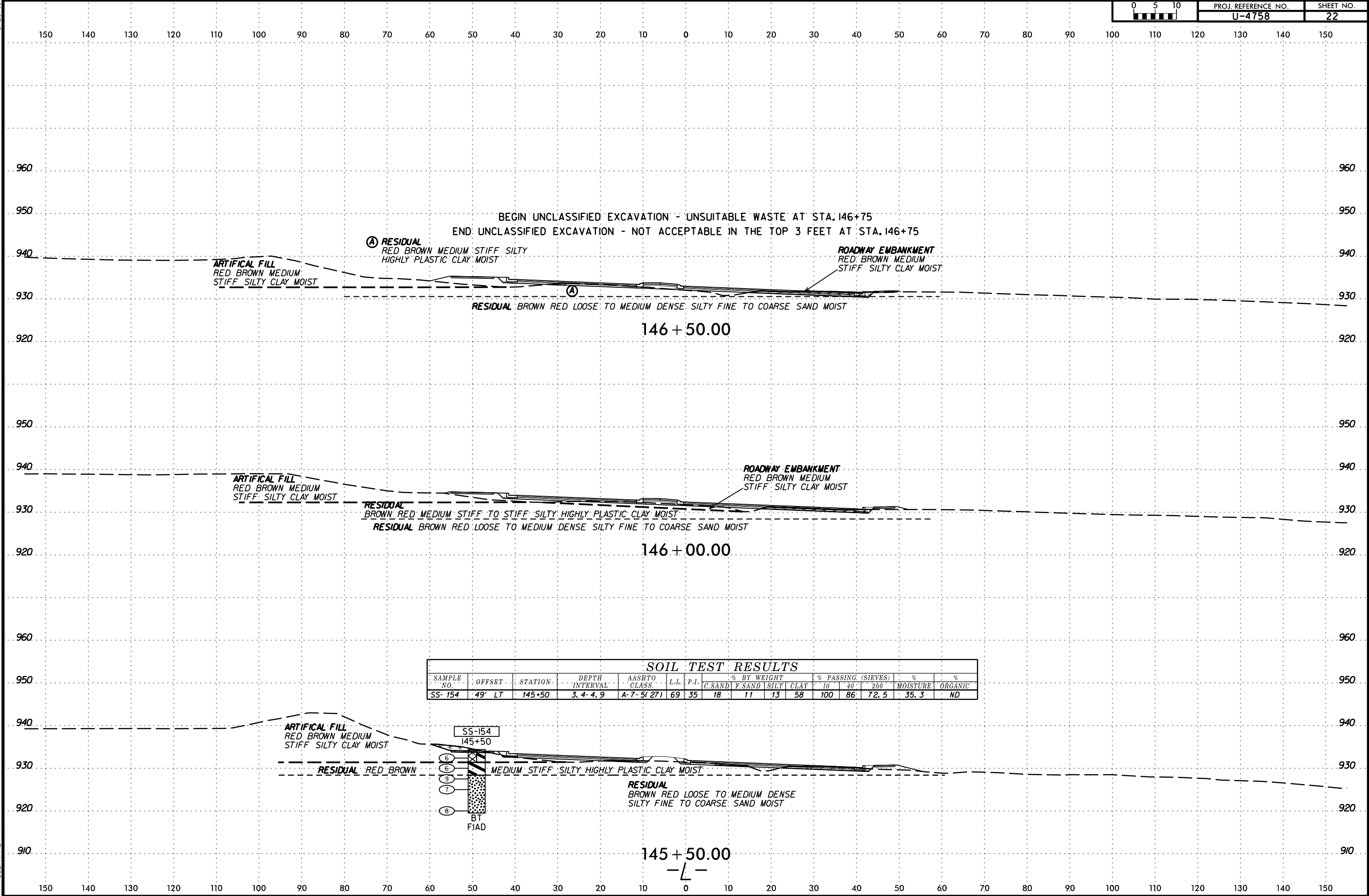
SHEET NO.
21



6/23/16



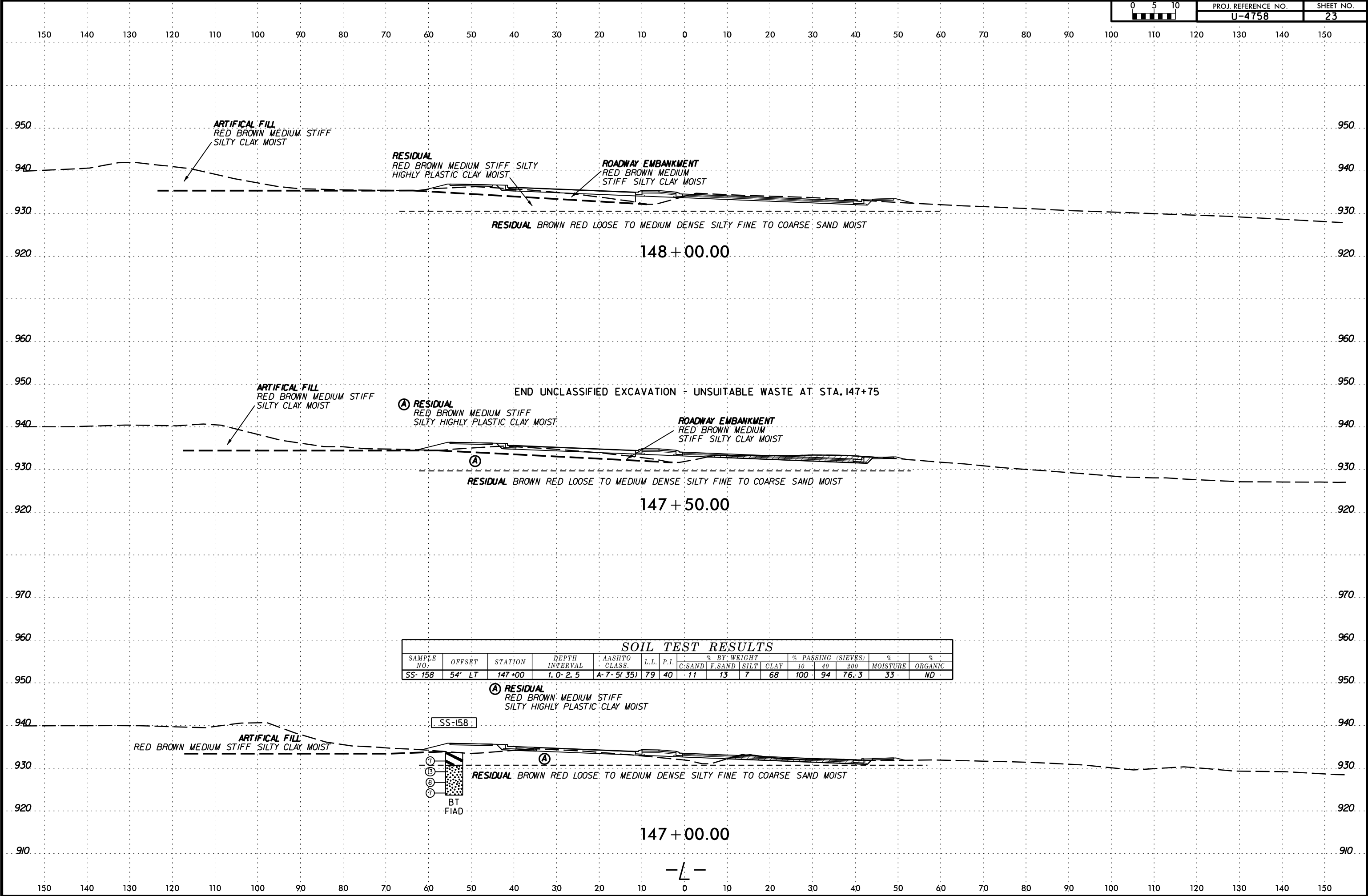
PROJ. REFERENCE NO.	SHEET NO.
U-4758	22



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	23

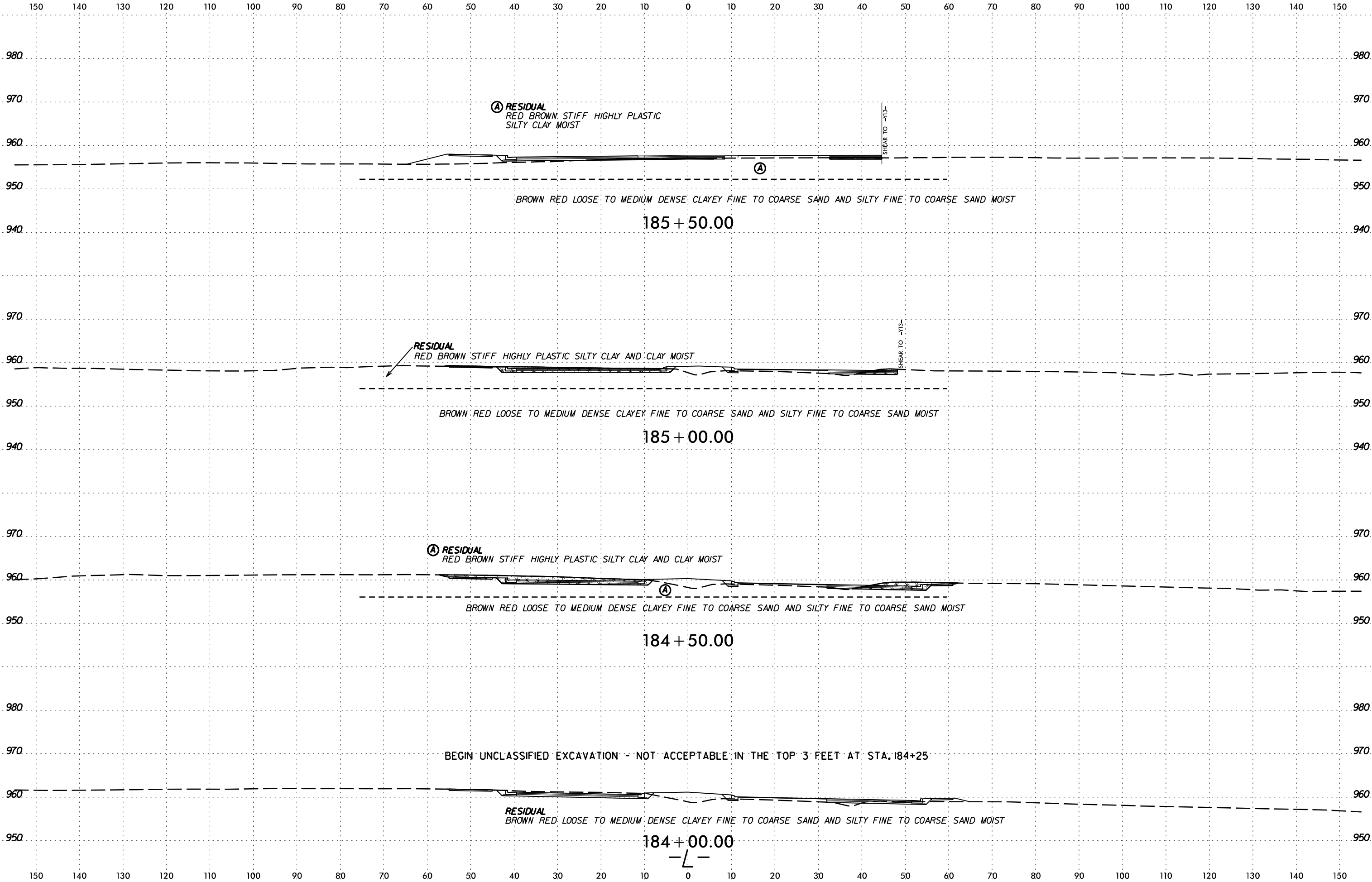


6/23/16



PROJ. REFERENCE NO.
U-4758

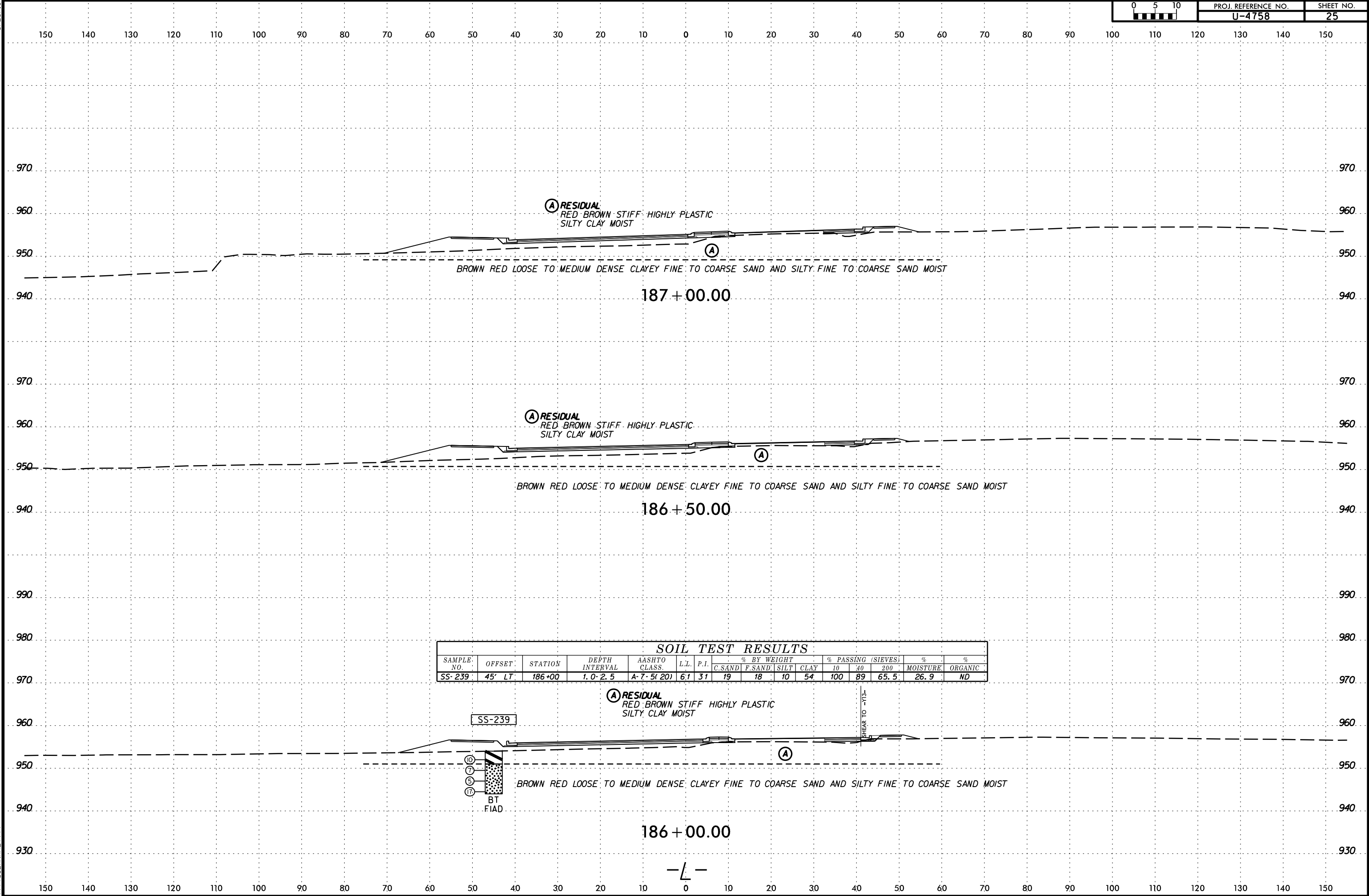
SHEET NO.
24



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	25



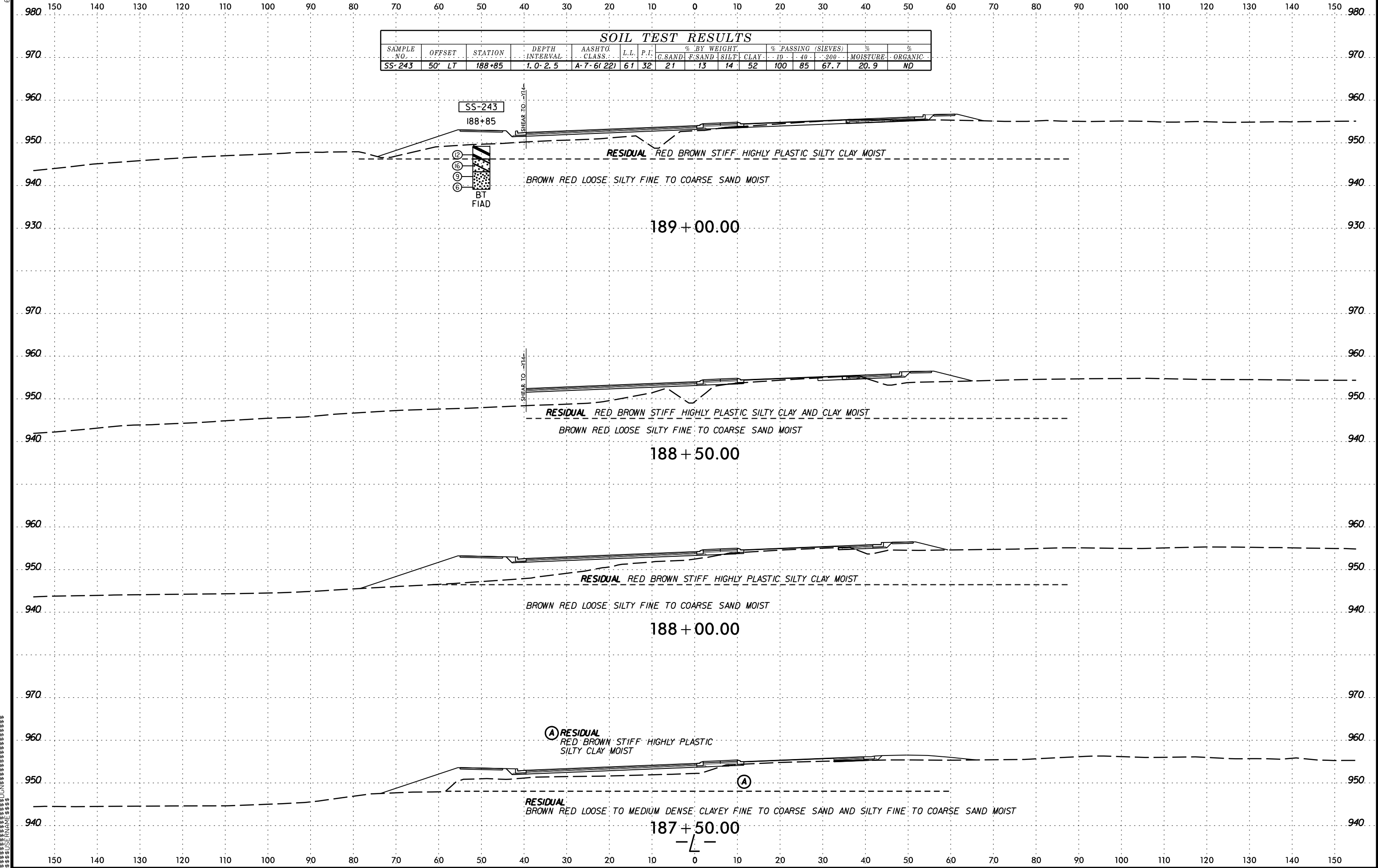
SECTION 186+00.00 TO 186+50.00
SUBGRADE

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	26

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-243	50' LT	188+85	1.0-2.5	A-7-6(22)	61	32	21	13	14	52	100	85	67.7	20.9	ND

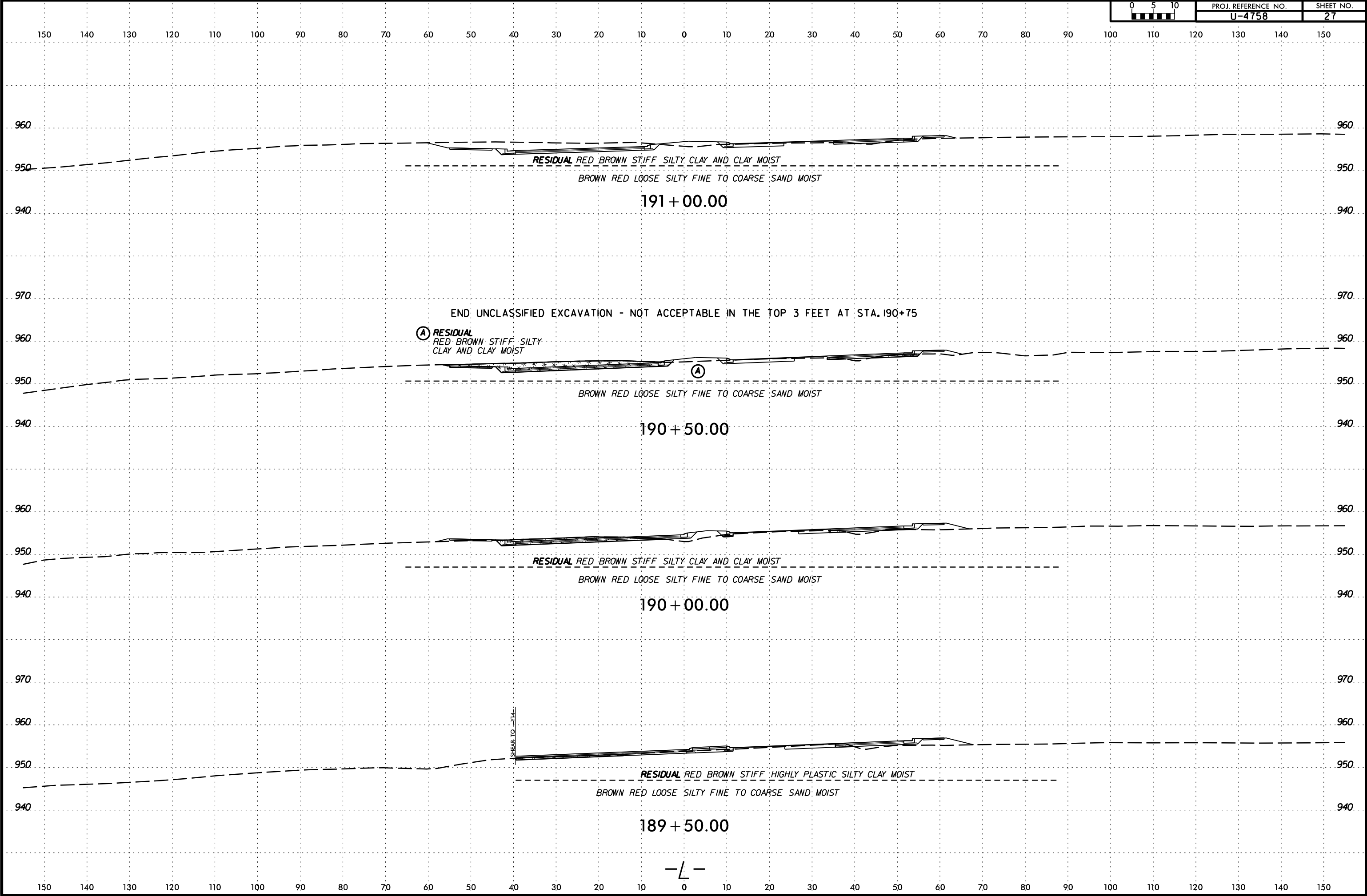


6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
27

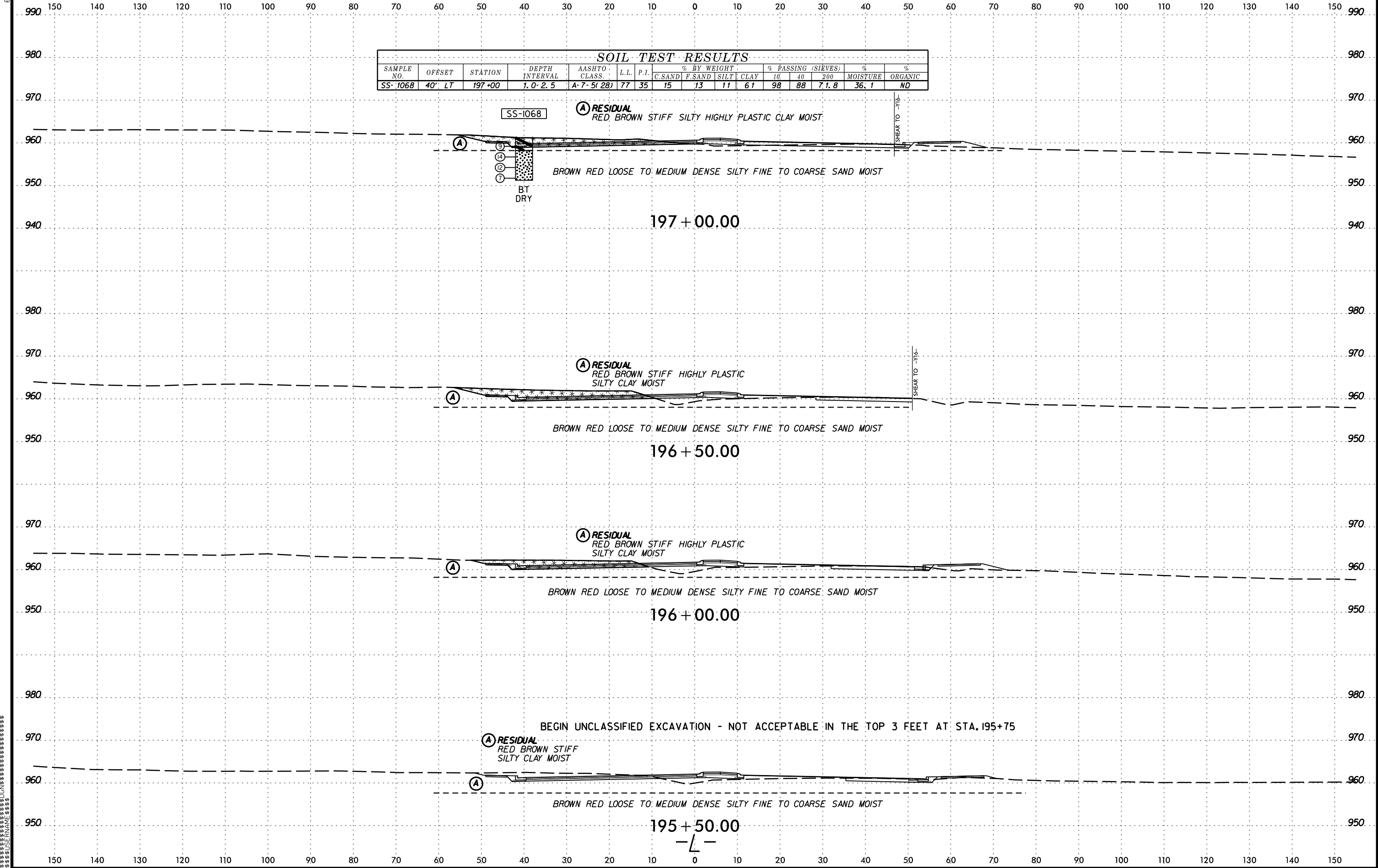


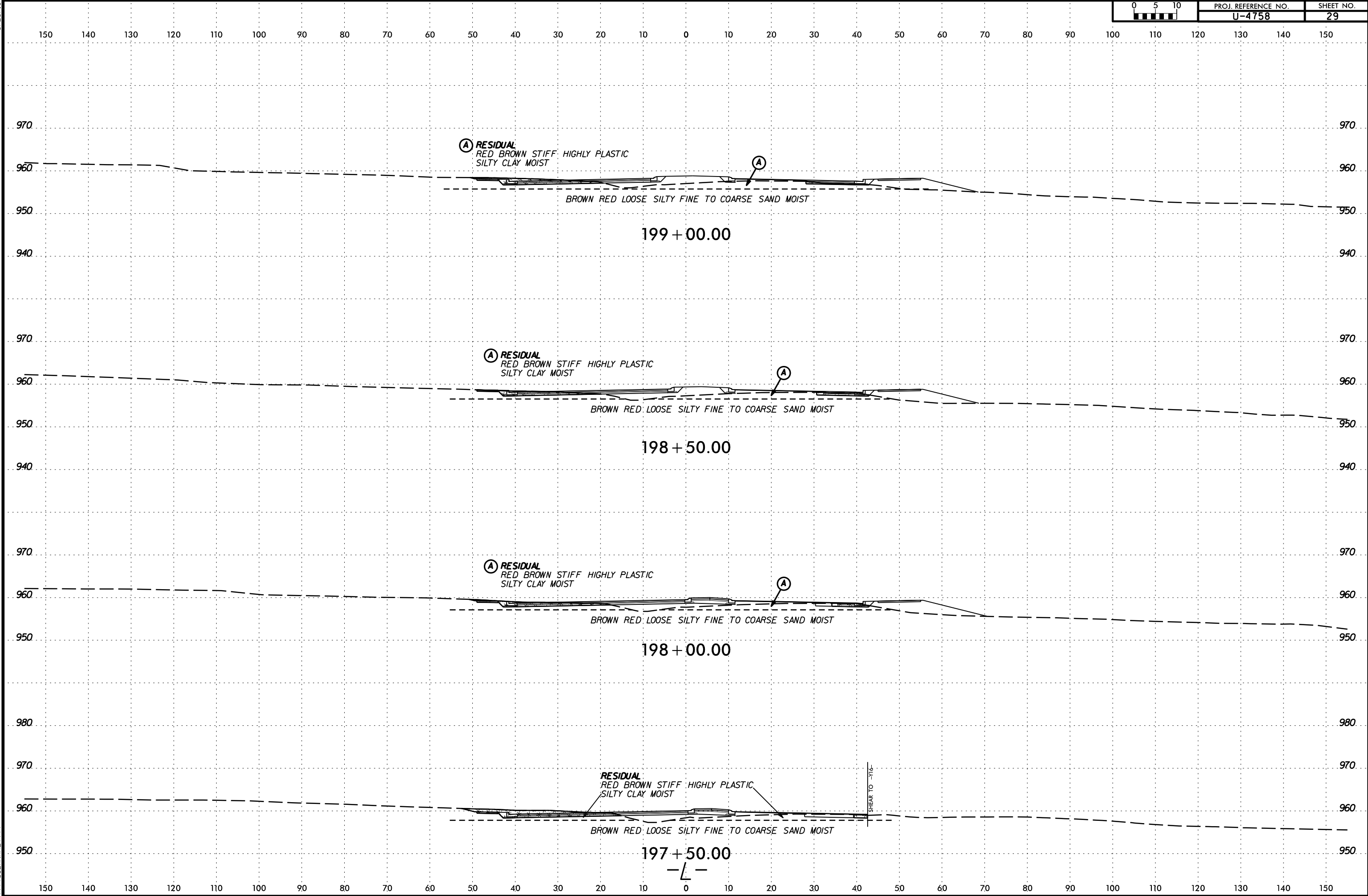
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	28

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200	
SS-1068	40' LT	197+00	1.0-2.5	A-7.5(28)	77	35	15	13	11	61	98	88	71.8	36.1 ND

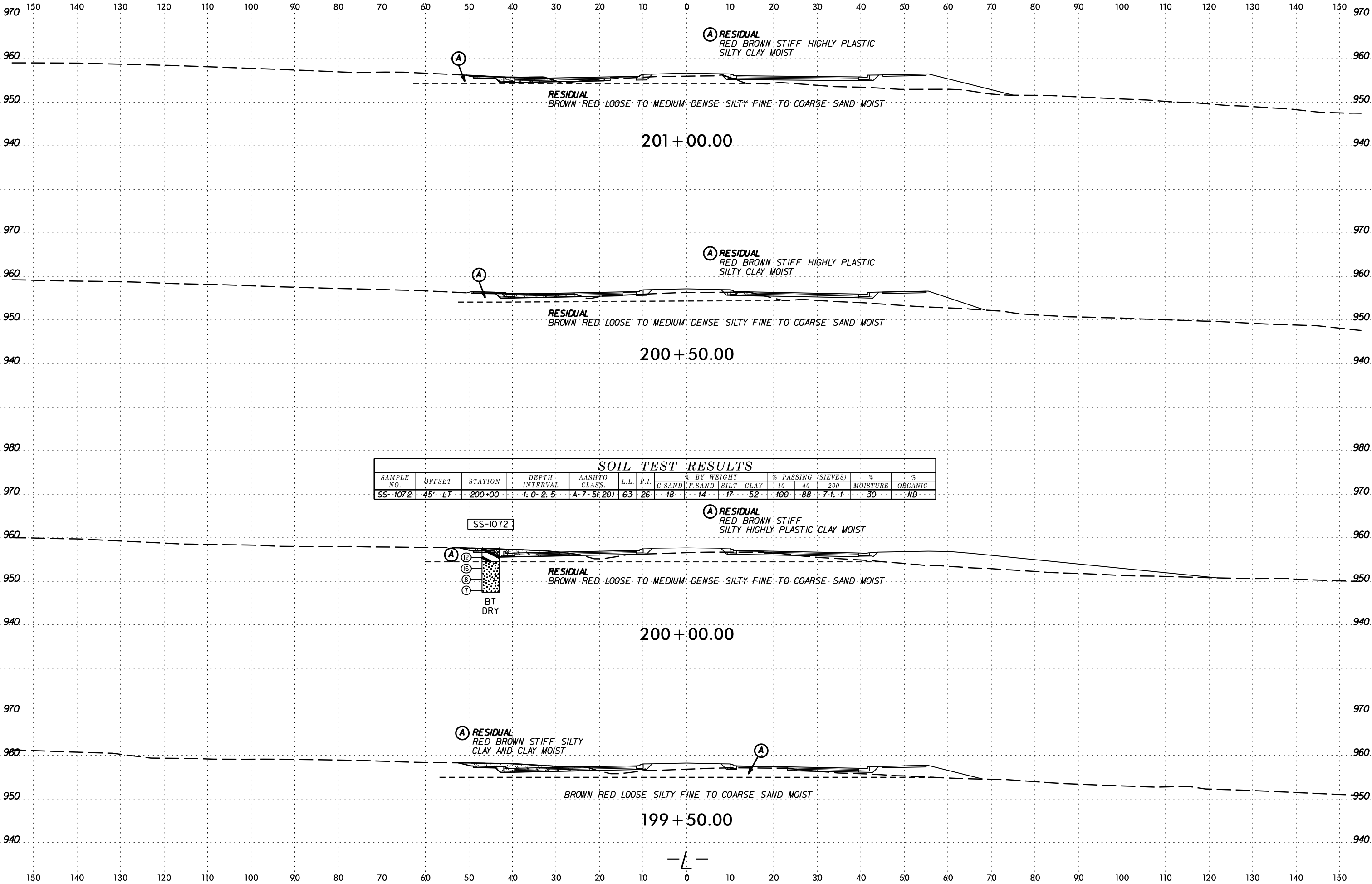




6/23/16

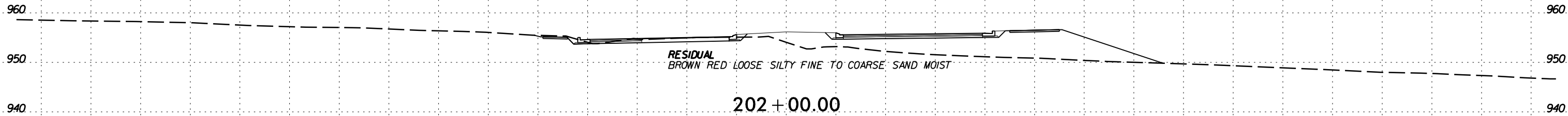


PROJ. REFERENCE NO.	SHEET NO.
U-4758	30

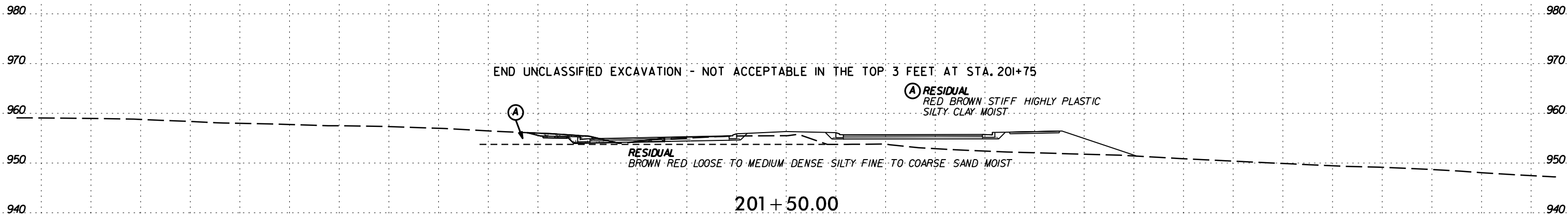




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



END UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 201+75

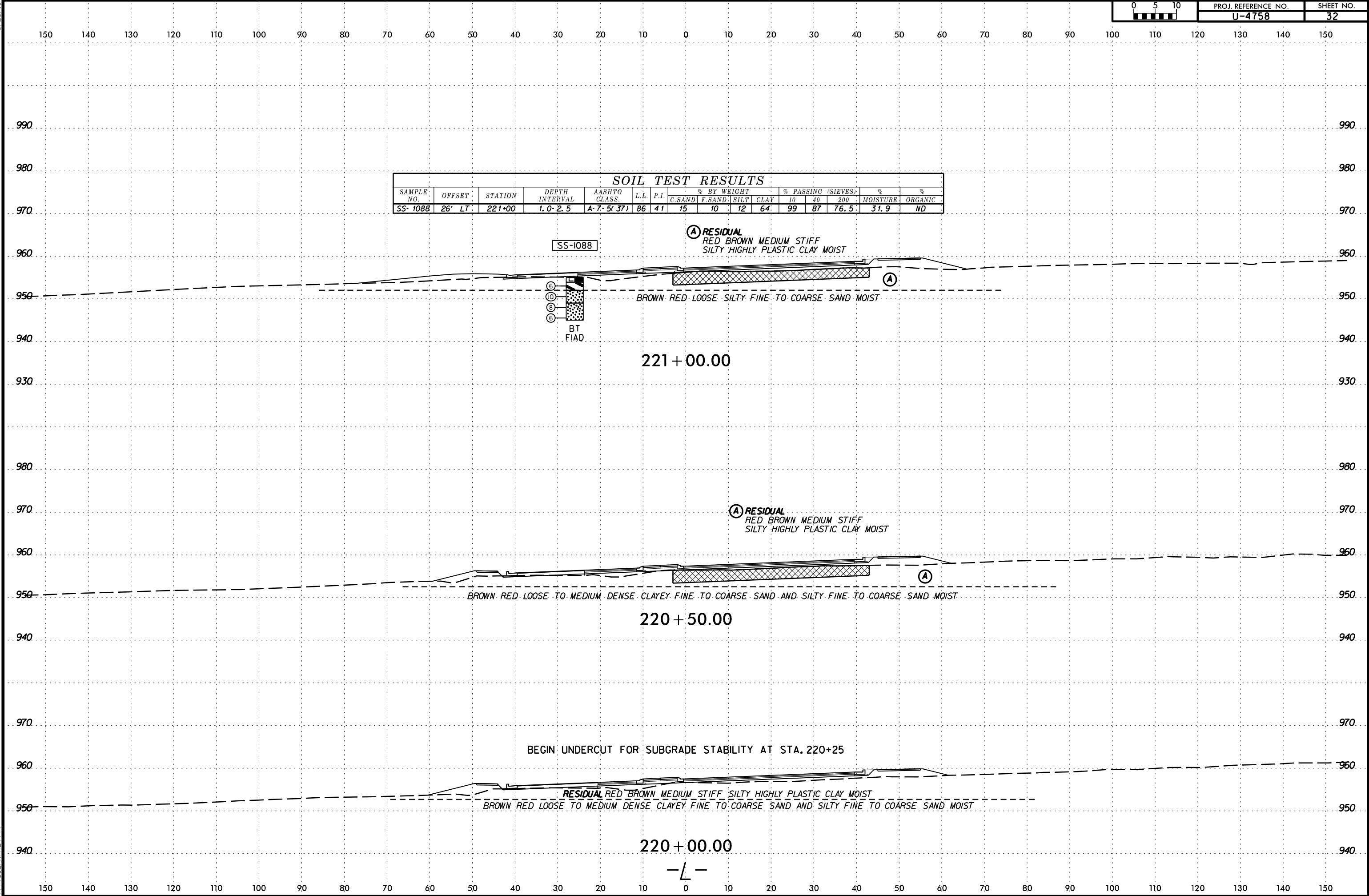


— L —

6/23/16

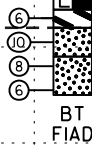


PROJ. REFERENCE NO.	SHEET NO.
U-4758	32



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-1088	26' LT	221+00	1.0-2.5	A-7-5(37)	86	41	15	10	12	64	99	87	76.5	31.9	ND

SS-1088



RESIDUAL
RED BROWN MEDIUM STIFF
SILTY HIGHLY PLASTIC CLAY MOIST

BROWN RED LOOSE SILTY FINE TO COARSE SAND MOIST

221+00.00

RESIDUAL
RED BROWN MEDIUM STIFF
SILTY HIGHLY PLASTIC CLAY MOIST

BROWN RED LOOSE TO MEDIUM DENSE CLAYEY FINE TO COARSE SAND AND SILTY FINE TO COARSE SAND MOIST

220+50.00

BEGIN UNDERCUT FOR SUBGRADE STABILITY AT STA. 220+25

RESIDUAL RED BROWN MEDIUM STIFF SILTY HIGHLY PLASTIC CLAY MOIST
BROWN RED LOOSE TO MEDIUM DENSE CLAYEY FINE TO COARSE SAND AND SILTY FINE TO COARSE SAND MOIST

220+00.00

-L-

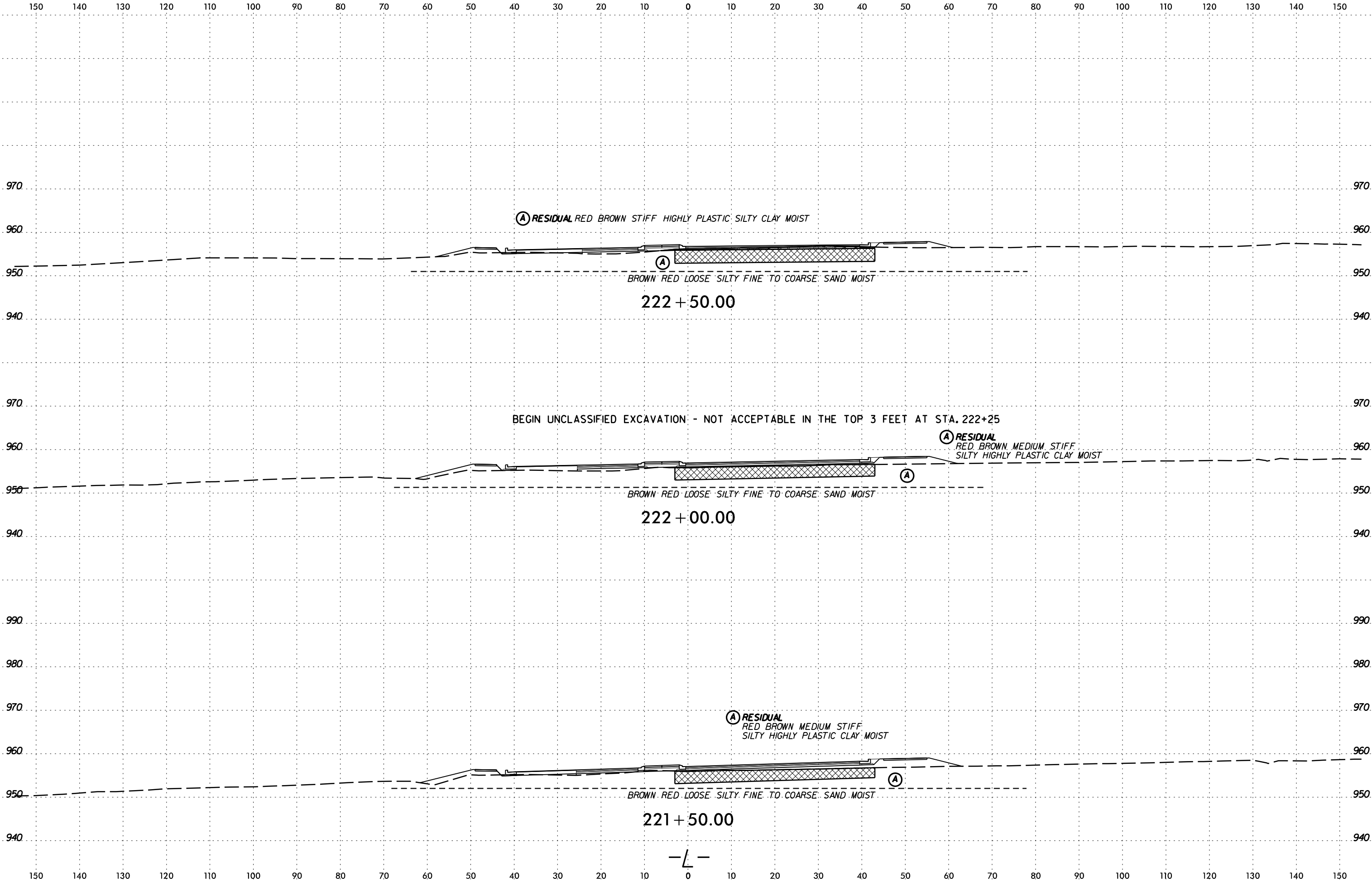
EXISTING GROUND
PROPOSED ROAD GRADE
SUBGRADE

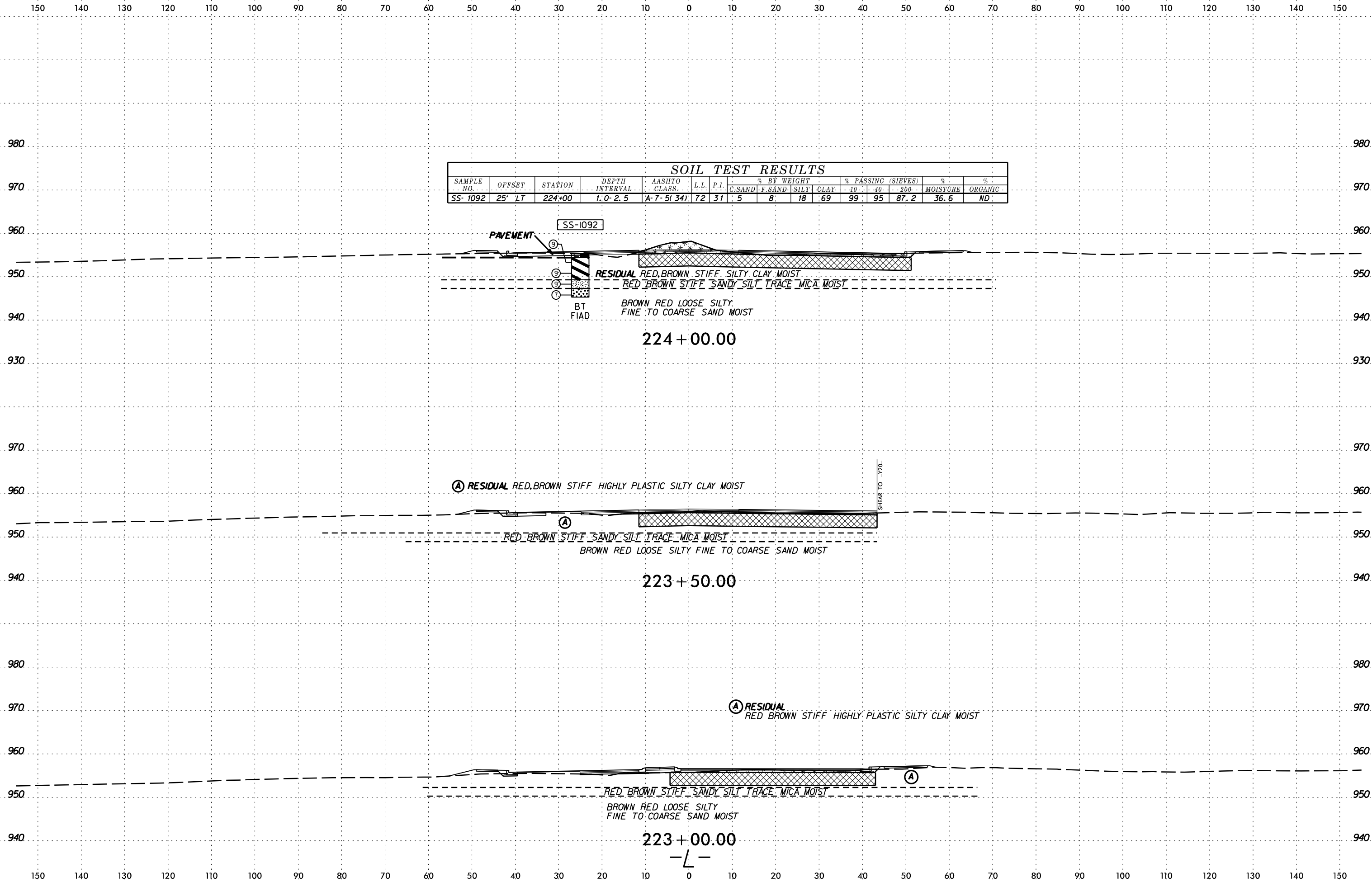
6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
33





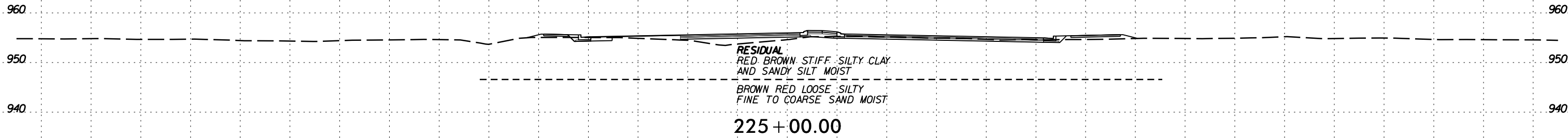
6/23/16



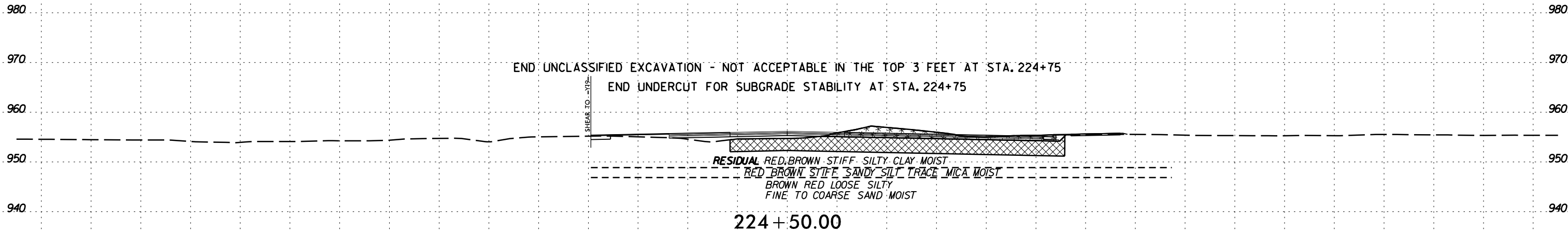
PROJ. REFERENCE NO.
U-4758

SHEET NO.
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



END UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 224+75
END UNDERCUT FOR SUBGRADE STABILITY AT STA. 224+75



-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

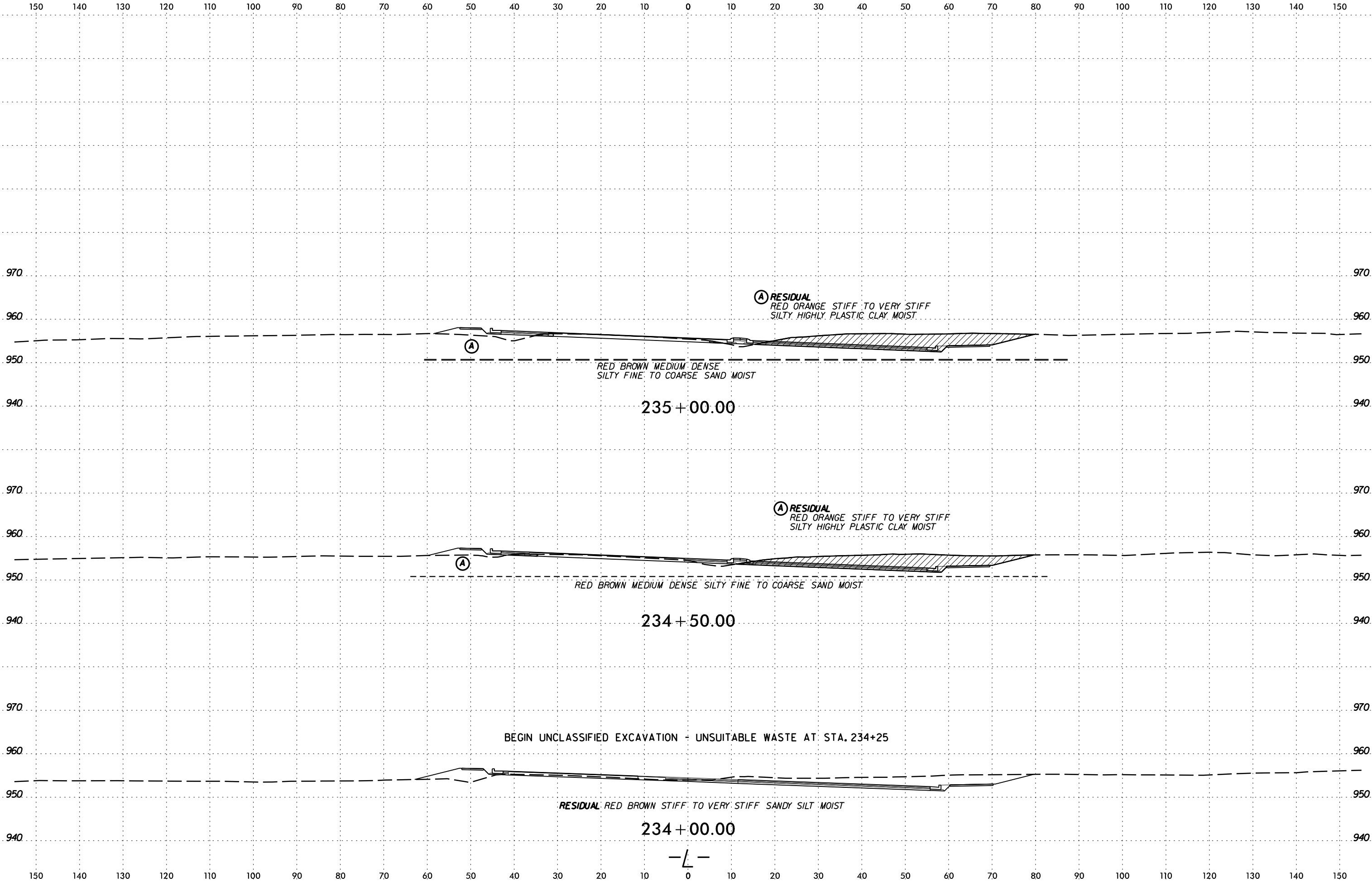
SECTION
SUBGRADE

6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
36



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	37

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

980 980

970 970

960 960

950 950

970 970

960 960

950 950

940 940

990 990

980 980

970 970

960 960

950 950

940 940

930 930

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

RESIDUAL
RED ORANGE STIFF TO VERY STIFF
SILTY HIGHLY PLASTIC CLAY MOIST

RED BROWN MEDIUM DENSE SILTY FINE TO COARSE SAND MOIST

236 + 50.00

RESIDUAL
RED ORANGE STIFF TO VERY STIFF SILTY HIGHLY PLASTIC CLAY MOIST

RED BROWN MEDIUM DENSE SILTY FINE TO COARSE SAND MOIST

236 + 00.00

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-539	55' RT	235+50	1.0-2.5	A-7-5(36)	72	36	9	8	11	72	100	94	84.3	33.6	ND

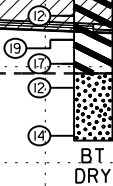
SS-539

RESIDUAL RED BROWN STIFF TO VERY STIFF SILTY HIGHLY PLASTIC CLAY MOIST

RED BROWN MEDIUM DENSE SILTY FINE TO COARSE SAND MOIST

235 + 50.00

-L-



6/23/16
SS-539
55' RT
235+50
1.0-2.5
A-7-5(36)
72
36
9
8
11
72
100
94
84.3
33.6
ND

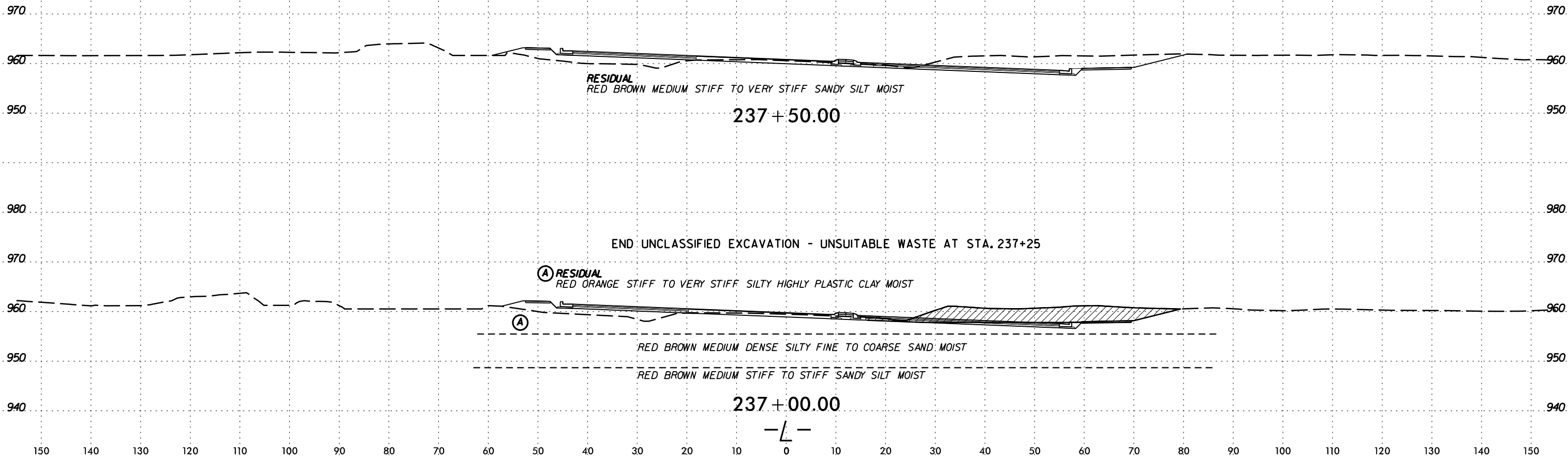
6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
38

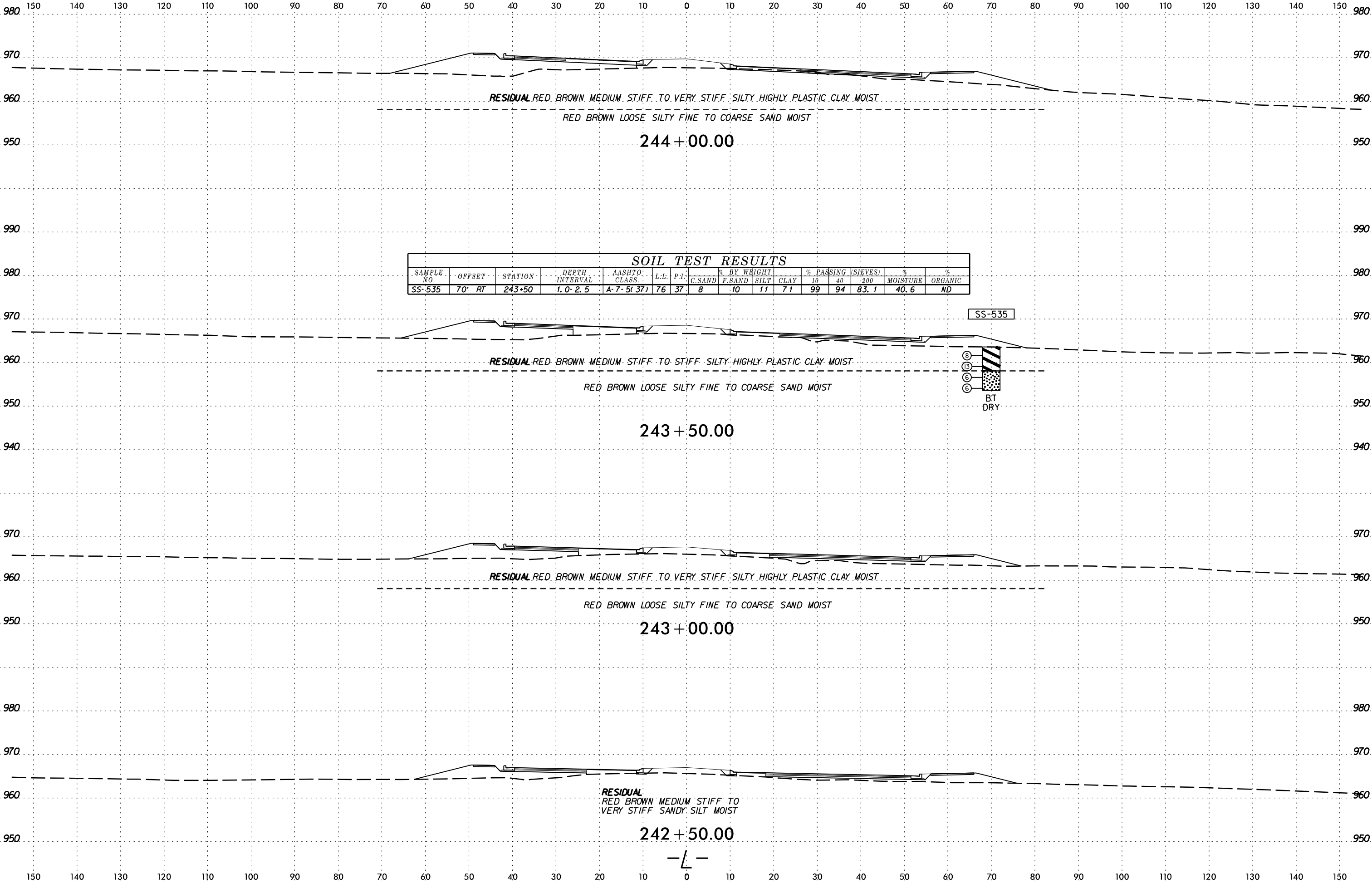
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6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	39



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-535	70' RT	243+50	1.0-2.5	A-7-5(37)	76	37	8	10	11	71	99	94	83.1	40.6	ND

SS-535

BT
DRY

6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
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

980

980

970

970

960

960

950

950

RESIDUAL
RED BROWN MEDIUM STIFF TO VERY STIFF SANDY SILT MOIST

244+50.00

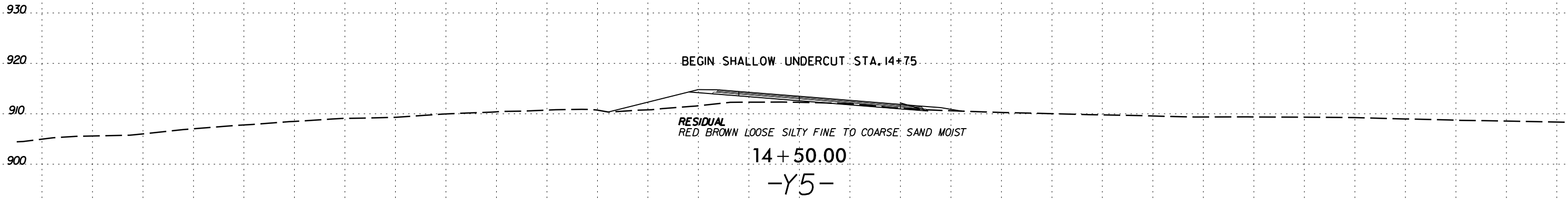
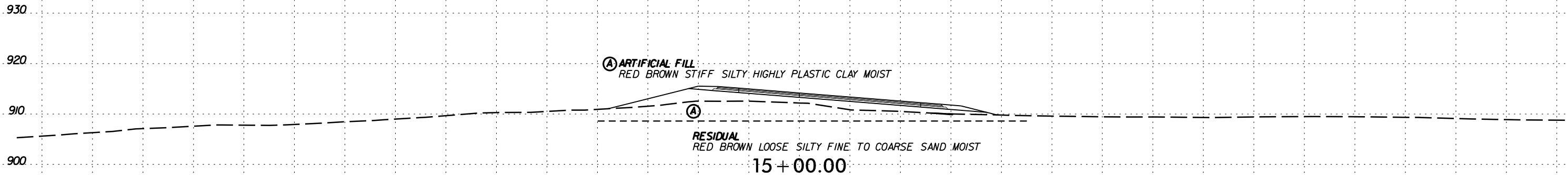
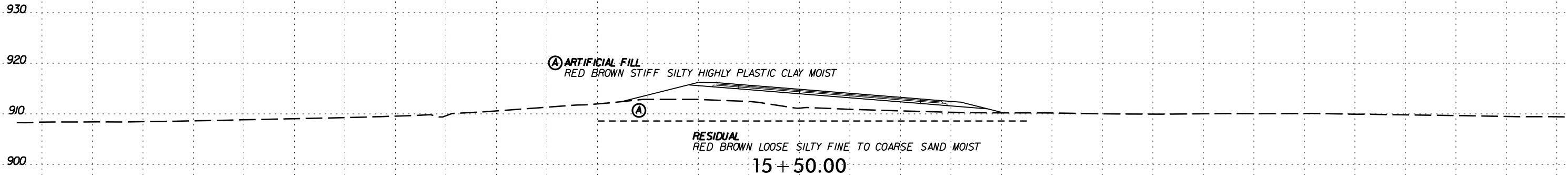
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SYNTHETIC
CONCRETE
CURB



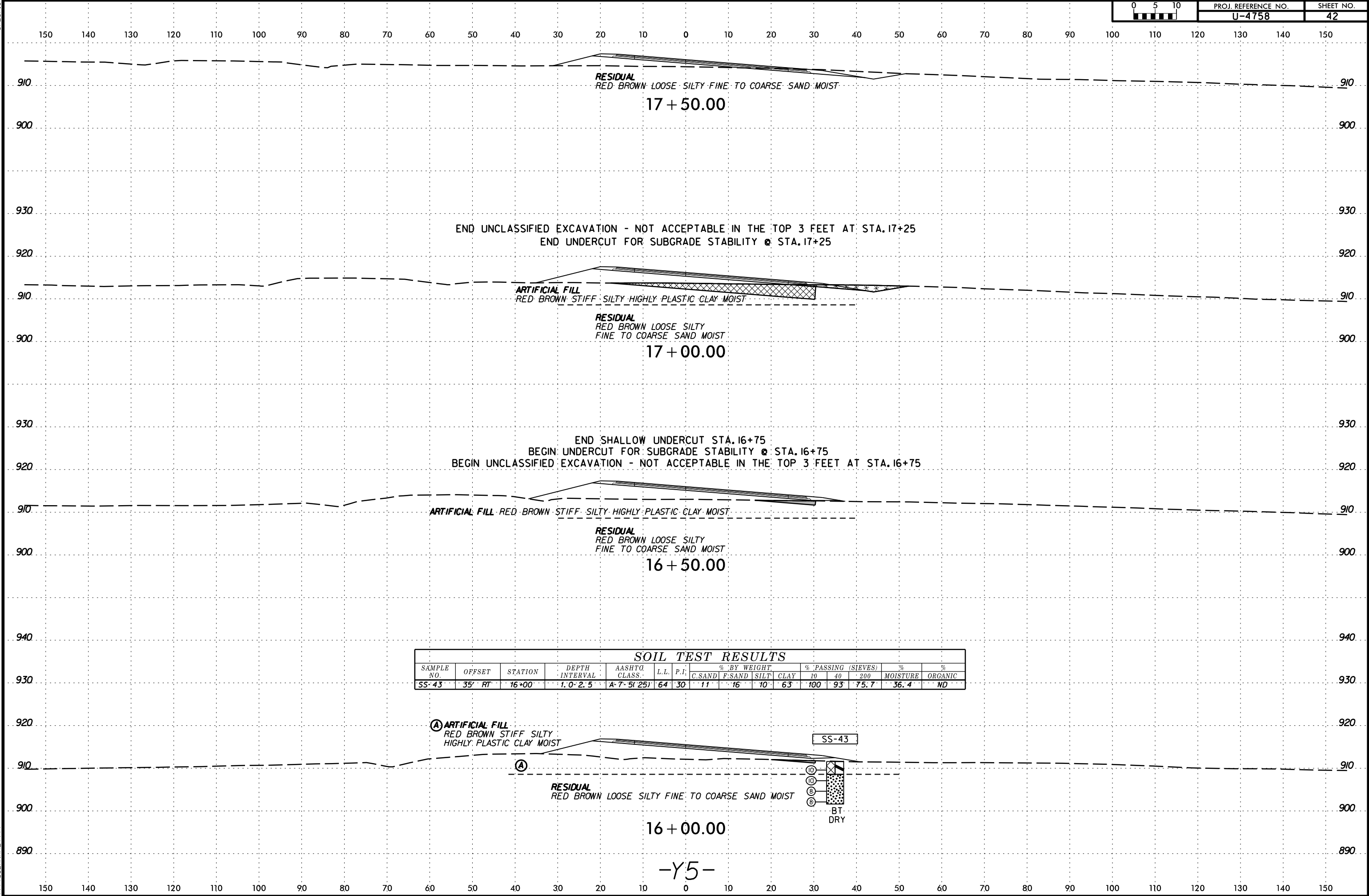
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6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	42



END UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 17+25
END UNDERCUT FOR SUBGRADE STABILITY @ STA. 17+25

ARTIFICIAL FILL
RED BROWN STIFF SILTY HIGHLY PLASTIC CLAY MOIST

RESIDUAL
RED BROWN LOOSE SILTY
FINE TO COARSE SAND MOIST

17 + 00.00

END SHALLOW UNDERCUT STA. 16+75
BEGIN UNDERCUT FOR SUBGRADE STABILITY @ STA. 16+75
BEGIN UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 16+75

ARTIFICIAL FILL RED BROWN STIFF SILTY HIGHLY PLASTIC CLAY MOIST

RESIDUAL
RED BROWN LOOSE SILTY
FINE TO COARSE SAND MOIST

16 + 50.00

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-43	35' RT	16+00	1.0-2.5	A-7-5(25)	64	30	11	16	10	63	100	93	75.7	36.4	ND

A ARTIFICIAL FILL
RED BROWN STIFF SILTY
HIGHLY PLASTIC CLAY MOIST

A

RESIDUAL
RED BROWN LOOSE SILTY FINE TO COARSE SAND MOIST

16 + 00.00

-Y5-

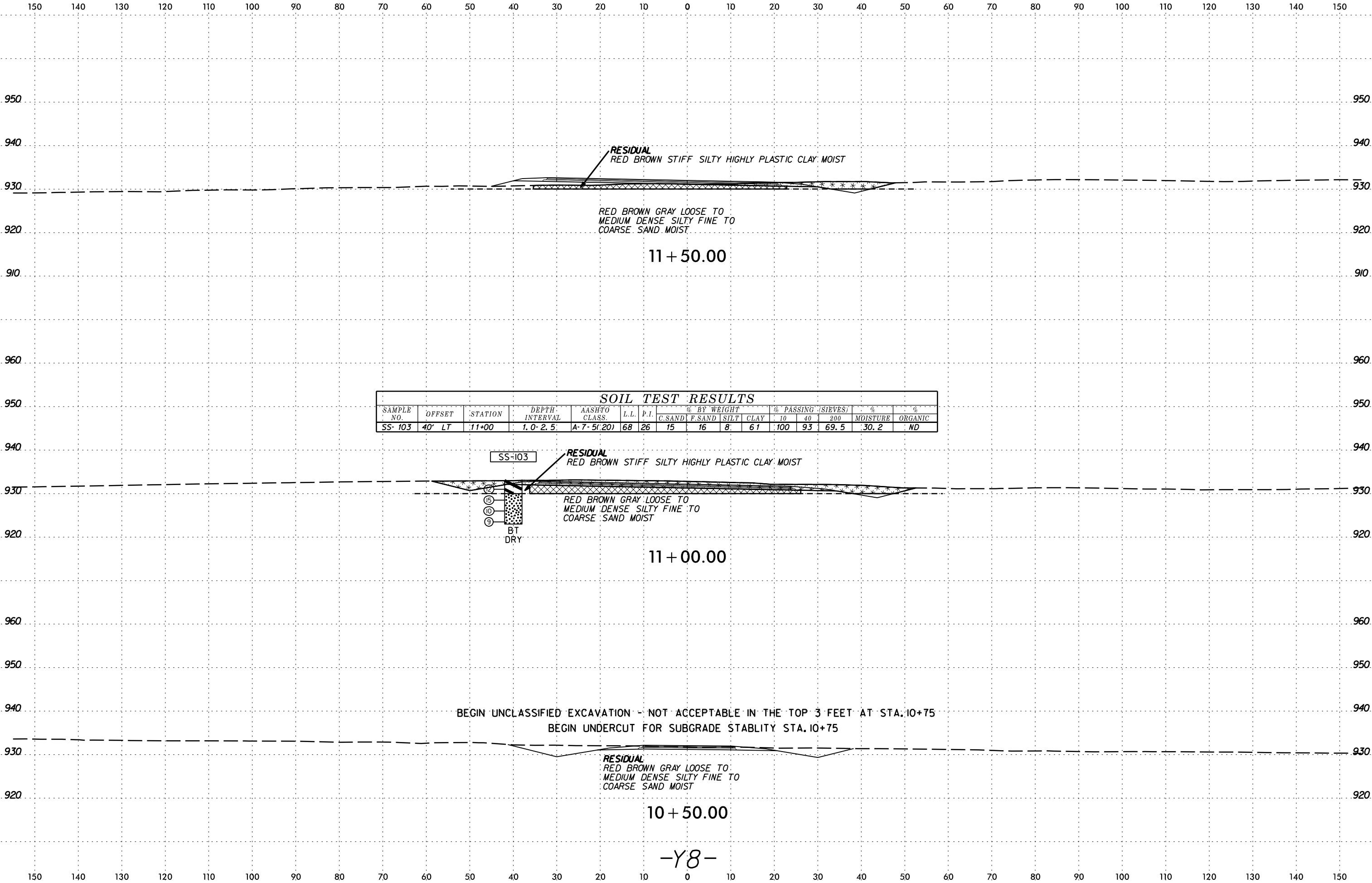
SS-43

BT
DRY

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	43



SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE
SS-103	40' LT	11+00	1.0-2.5	A-7-5(20)	68	26	15	16	8	61	100	93	69.5	30.2
														ND

SS-103

12
15
10
9
BT
DRY

SECTION 10+50.00 TO 11+50.00
SUBGRADE

6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
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

940

930

920

910

960

950

940

930

920

910

RESIDUAL
RED BROWN GRAY LOOSE TO
MEDIUM DENSE SILTY FINE TO
COARSE SAND MOIST

12 + 50.00

END UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 12+25
END UNDERCUT FOR SUBGRADE STABILITY @ STA. 12+25

RESIDUAL
RED BROWN STIFF SILTY HIGHLY PLASTIC CLAY MOIST

RED BROWN GRAY LOOSE TO
MEDIUM DENSE SILTY FINE TO
COARSE SAND MOIST

12 + 00.00

-Y8-

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

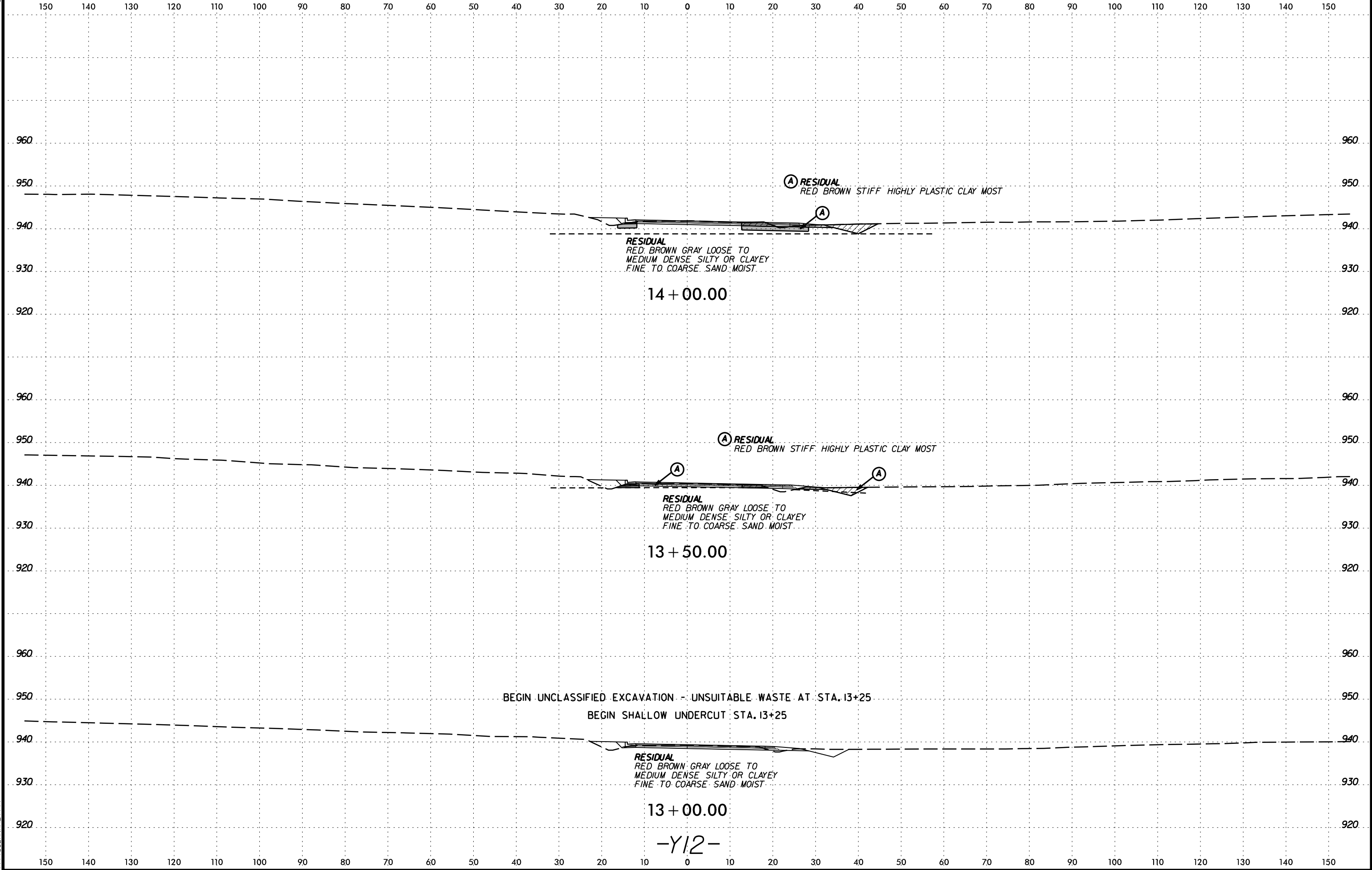
SECTION 8-1
SUBGRADE

6/23/16

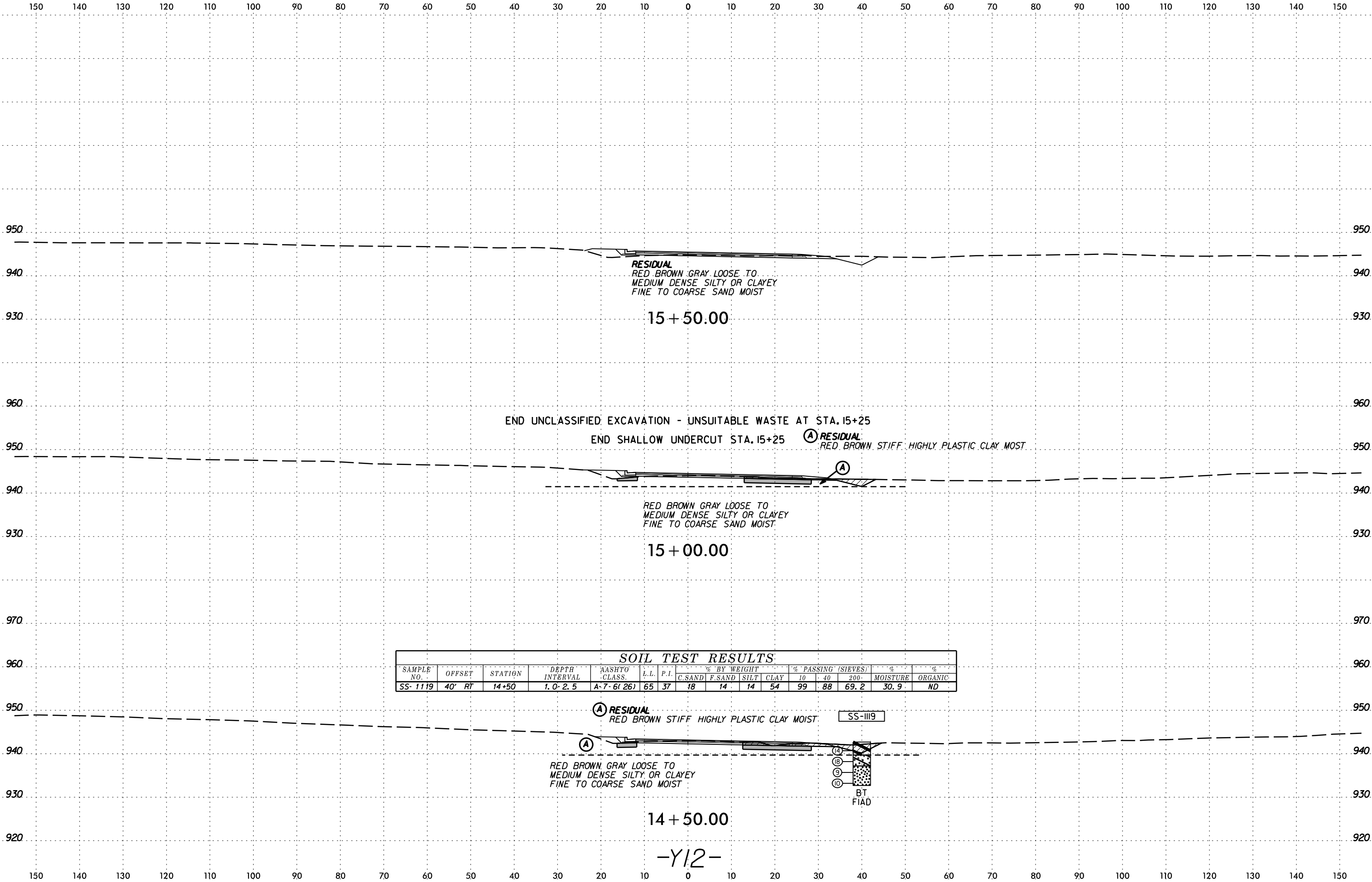


PROJ. REFERENCE NO.
U-4758

SHEET NO.
45



6/23/16



RESIDUAL
RED BROWN GRAY LOOSE TO
MEDIUM DENSE SILTY OR CLAYEY
FINE TO COARSE SAND MOIST

15 + 50.00

END UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE AT STA. 15+25
END SHALLOW UNDERCUT STA. 15+25

RESIDUAL
RED BROWN STIFF HIGHLY PLASTIC CLAY MOST

RED BROWN GRAY LOOSE TO
MEDIUM DENSE SILTY OR CLAYEY
FINE TO COARSE SAND MOIST

15 + 00.00

SOIL TEST RESULTS													
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	WASH TO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		
							C. SAND	F. SAND	SILT	CLAY	10	40	200
SS-1119	40' RT	14+50	1.0-2.5	A-7-6(26)	65	37	18	14	14	54	99	88	69.2
											MOISTURE		ORGANIC
											30.9		ND

RESIDUAL
RED BROWN STIFF HIGHLY PLASTIC CLAY MOIST

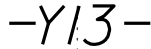
SS-1119

RED BROWN GRAY LOOSE TO
MEDIUM DENSE SILTY OR CLAYEY
FINE TO COARSE SAND MOIST

BT
FIAD

14 + 50.00

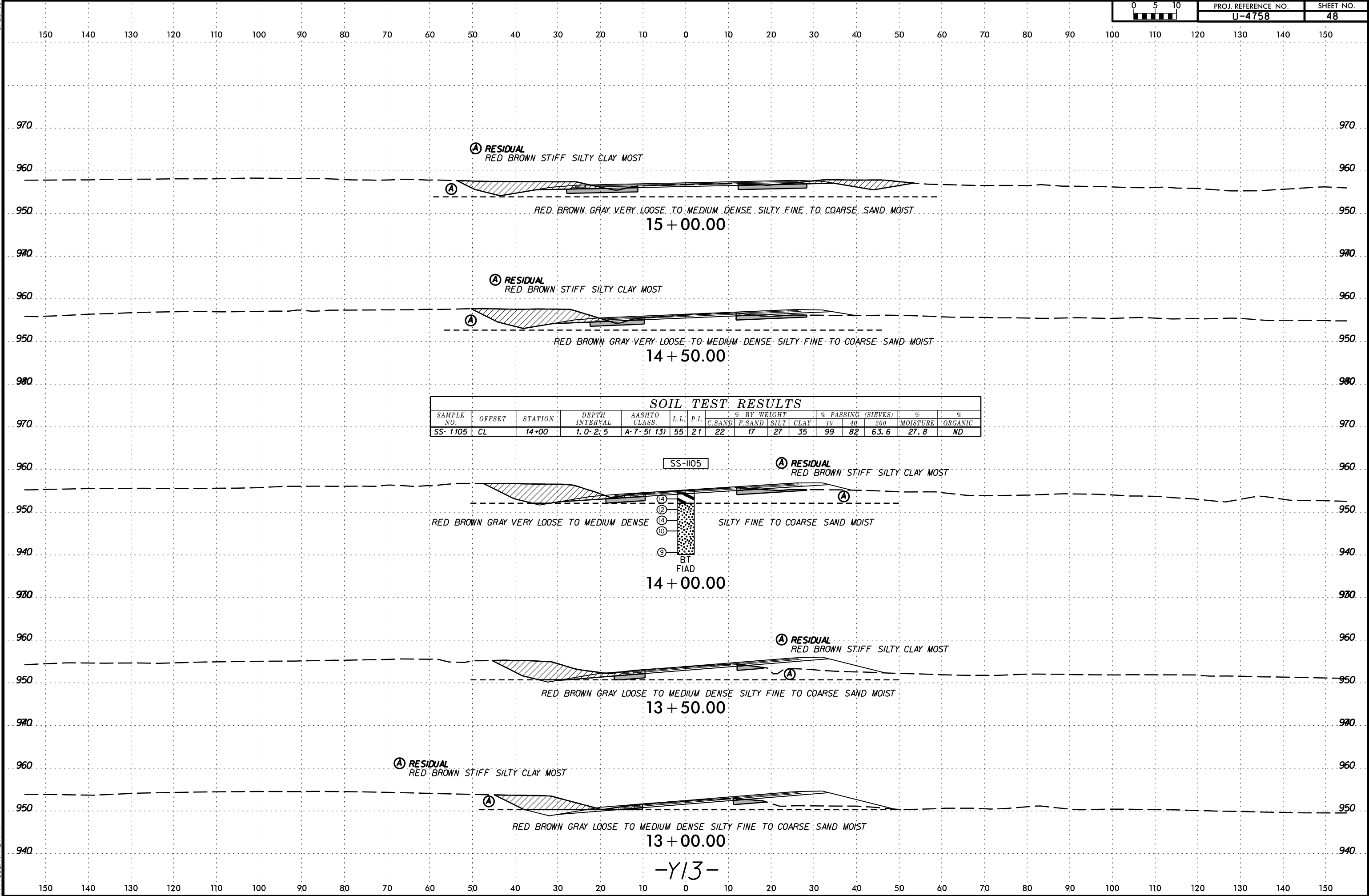
-Y12-



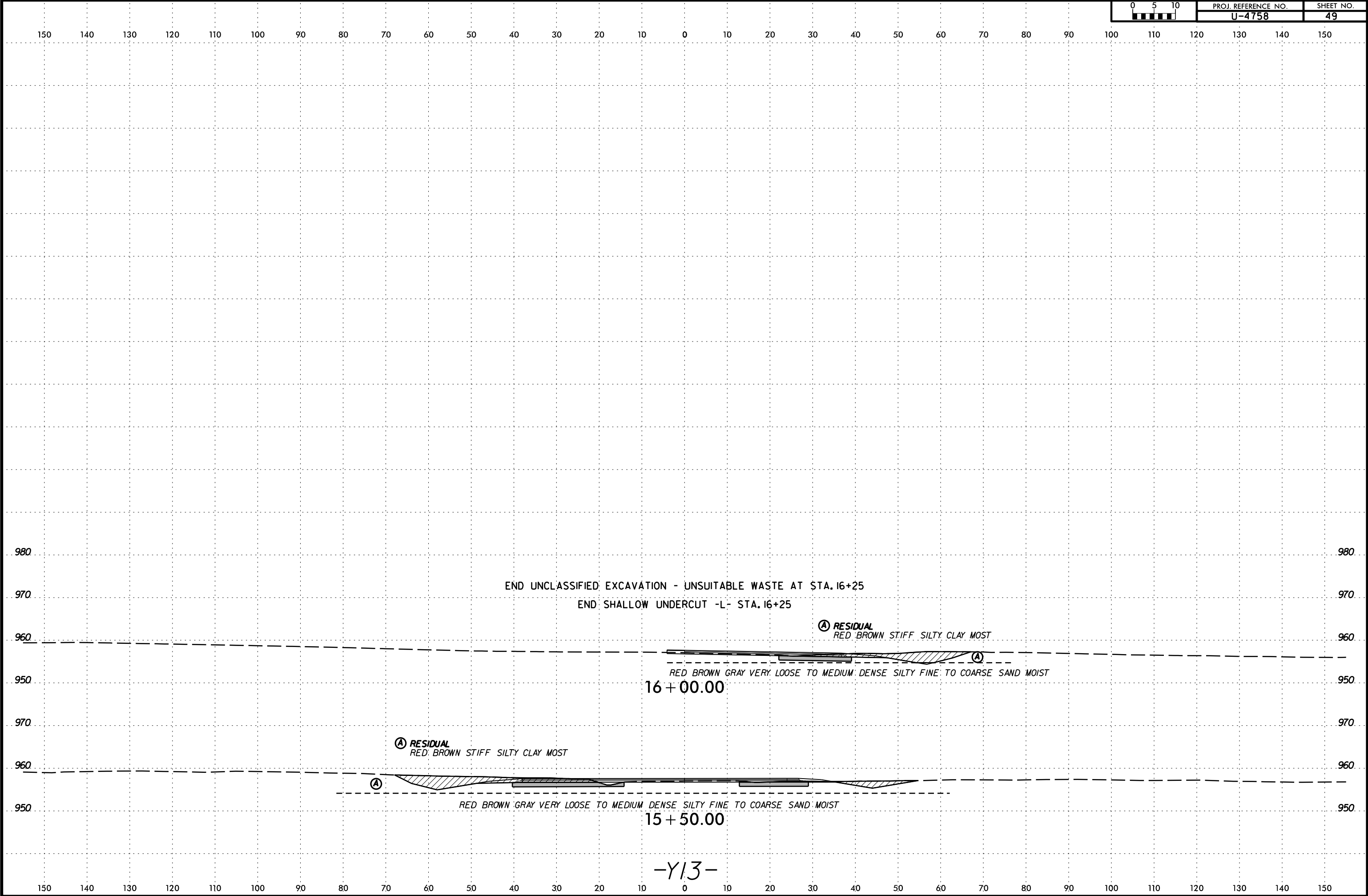
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	48



6/23/16

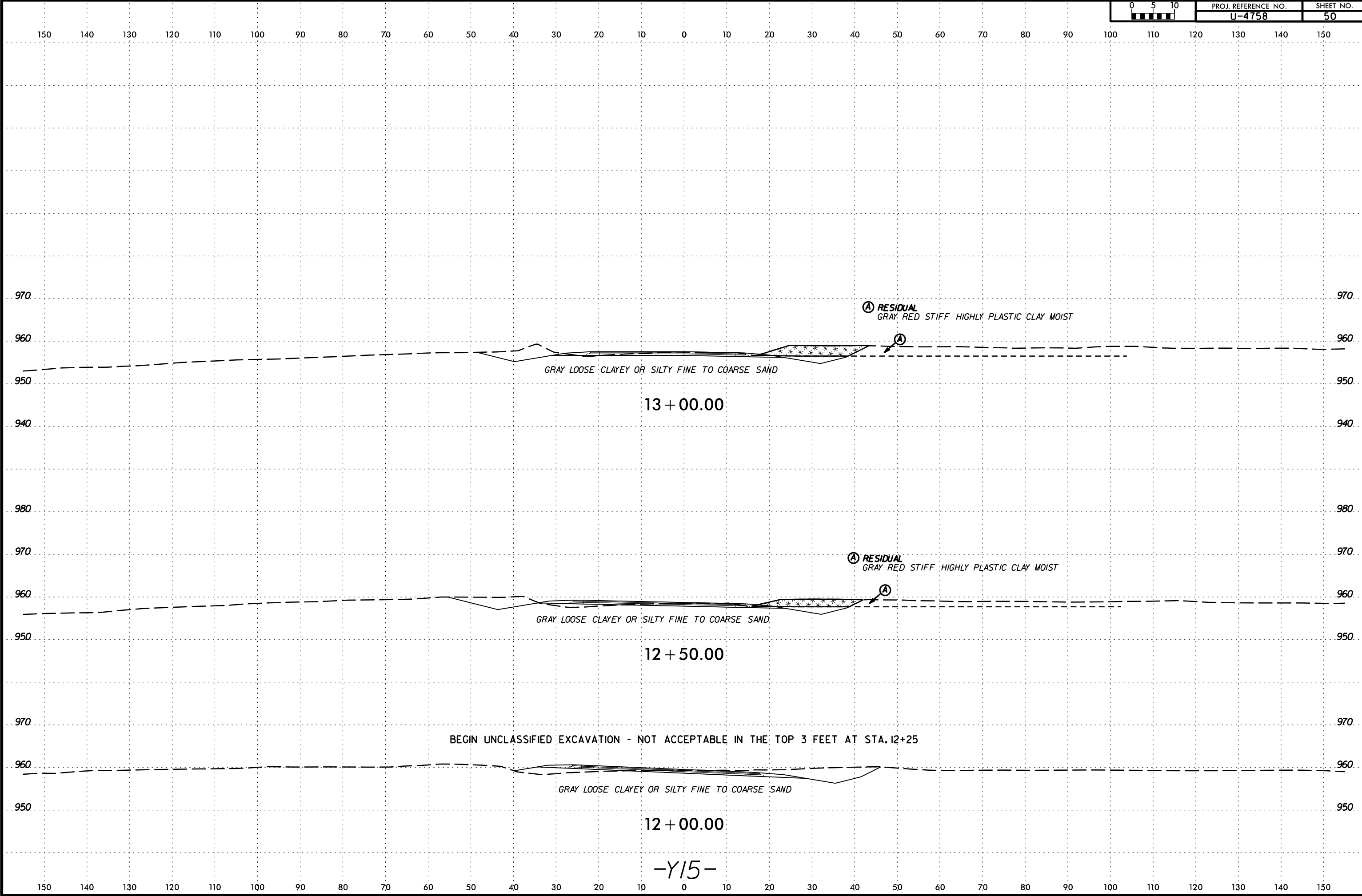


6/23/16



PROJ. REFERENCE NO.
U-4758

SHEET NO.
50



GRAY LOOSE CLAYEY OR SILTY FINE TO COARSE SAND

RESIDUAL
GRAY RED STIFF HIGHLY PLASTIC CLAY MOIST

13 + 00.00

GRAY LOOSE CLAYEY OR SILTY FINE TO COARSE SAND

RESIDUAL
GRAY RED STIFF HIGHLY PLASTIC CLAY MOIST

12 + 50.00

BEGIN UNCLASSIFIED EXCAVATION - NOT ACCEPTABLE IN THE TOP 3 FEET AT STA. 12+25

GRAY LOOSE CLAYEY OR SILTY FINE TO COARSE SAND

12 + 00.00

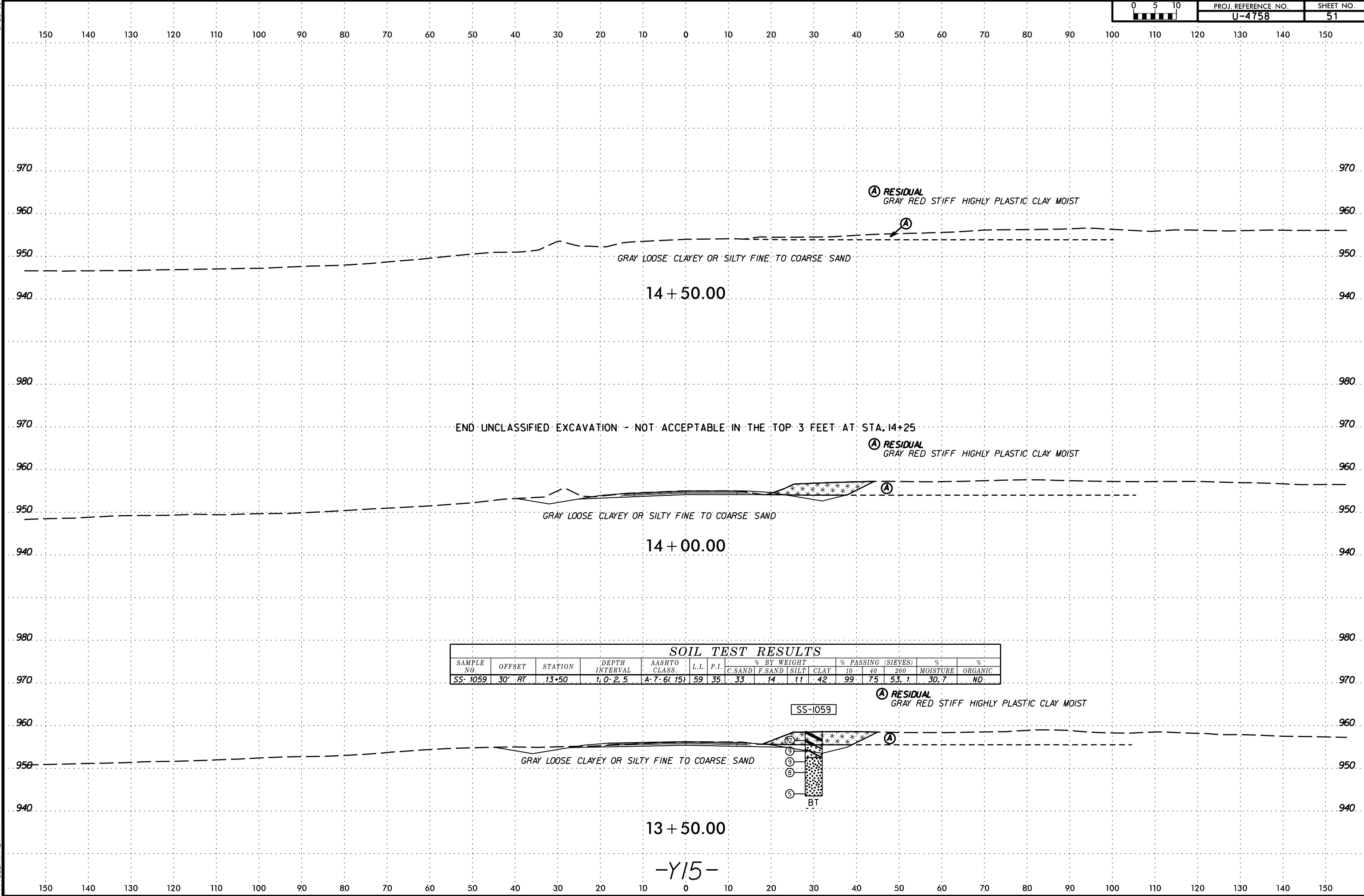
-Y15-

6/23/16



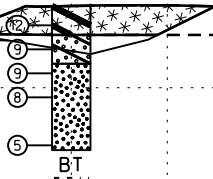
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U-4758

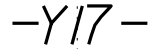
SHEET NO.
51



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS- 1059	30' RT	13+50	1.0- 2.5	A-7-6(15)	59	35	33	14	11	42	99	75	53.1	30.7	ND.

SS-1059



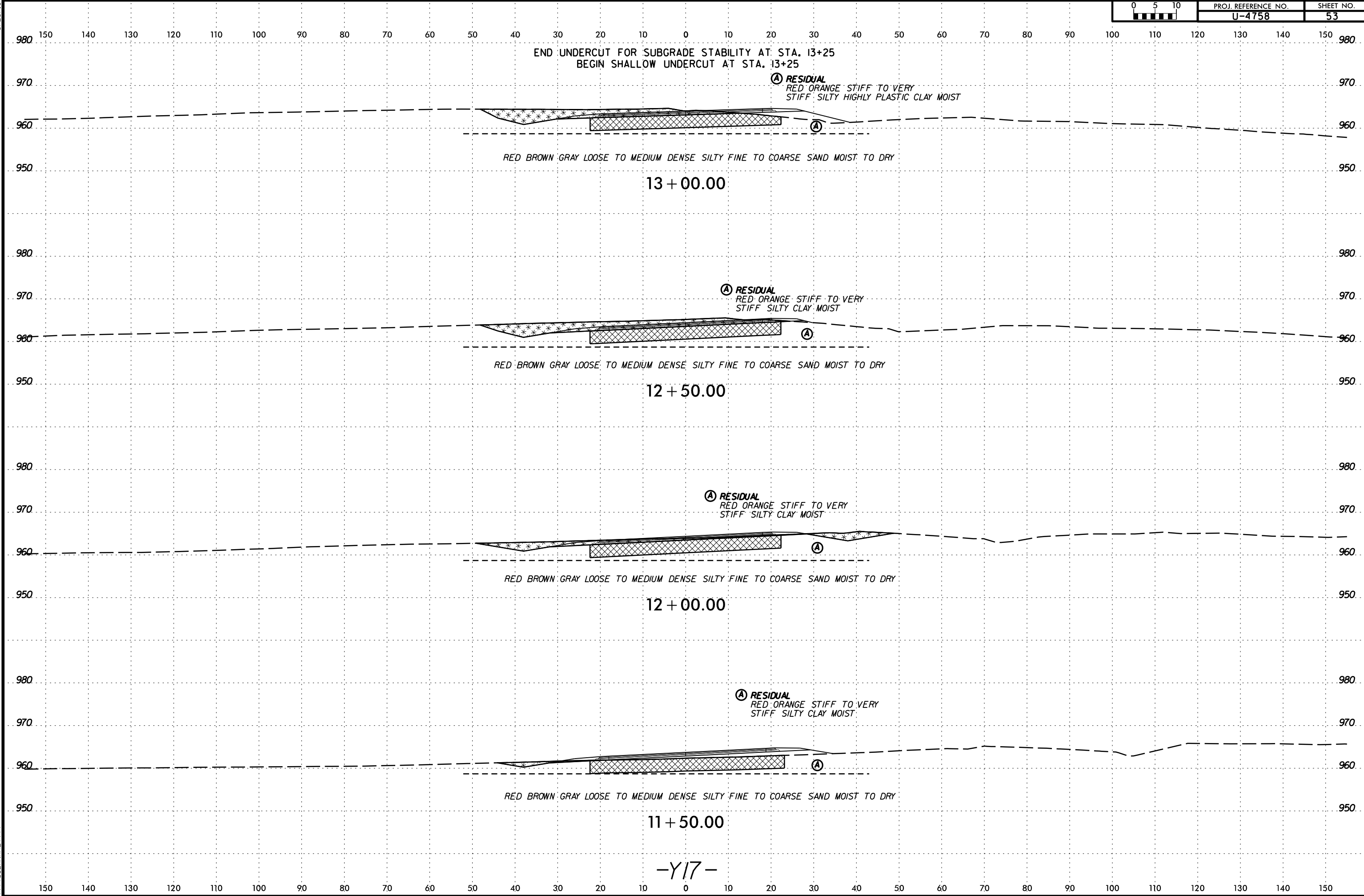


6/23/16



PROJ. REFERENCE NO.
U-4758

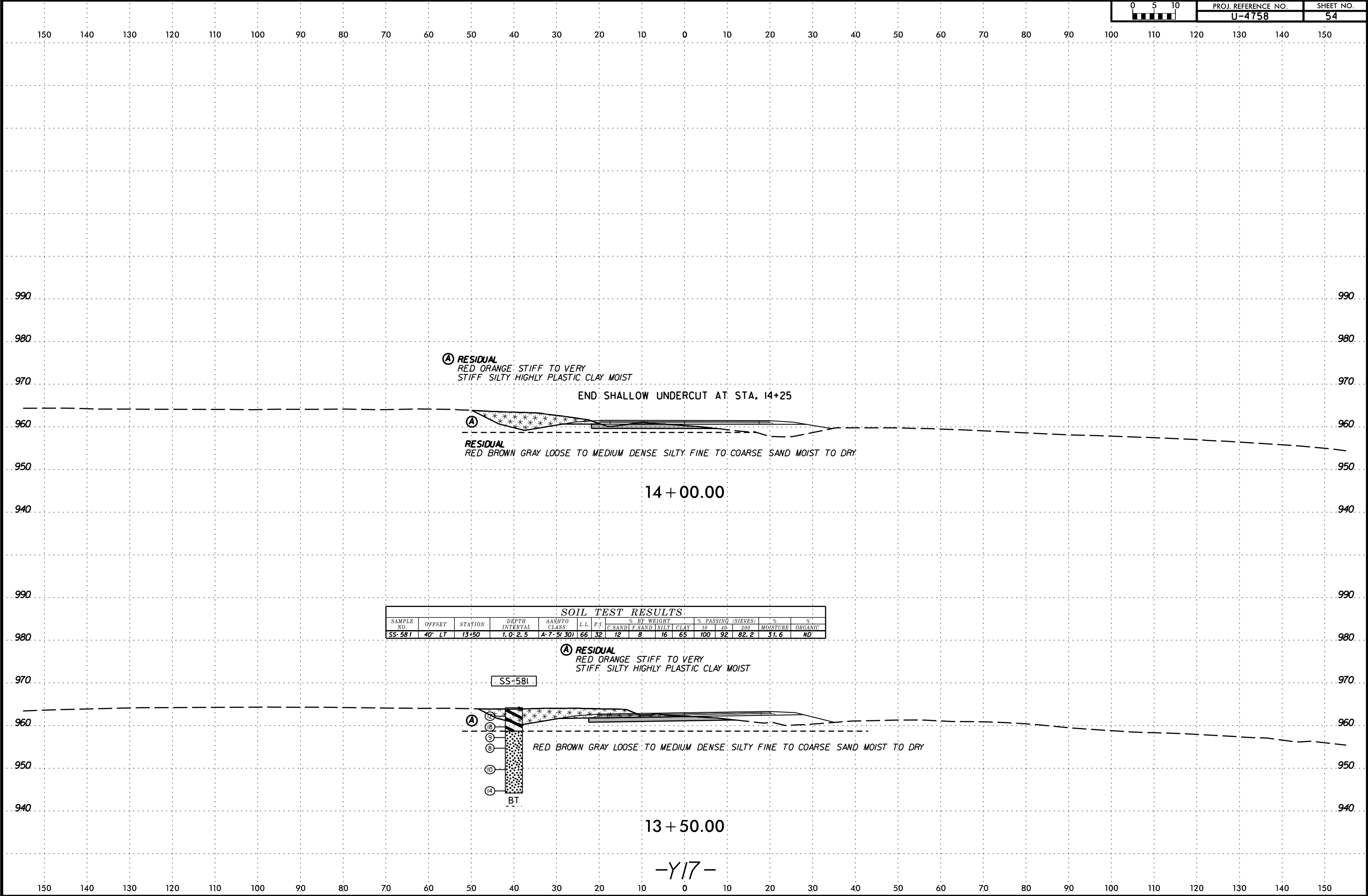
SHEET NO.
53

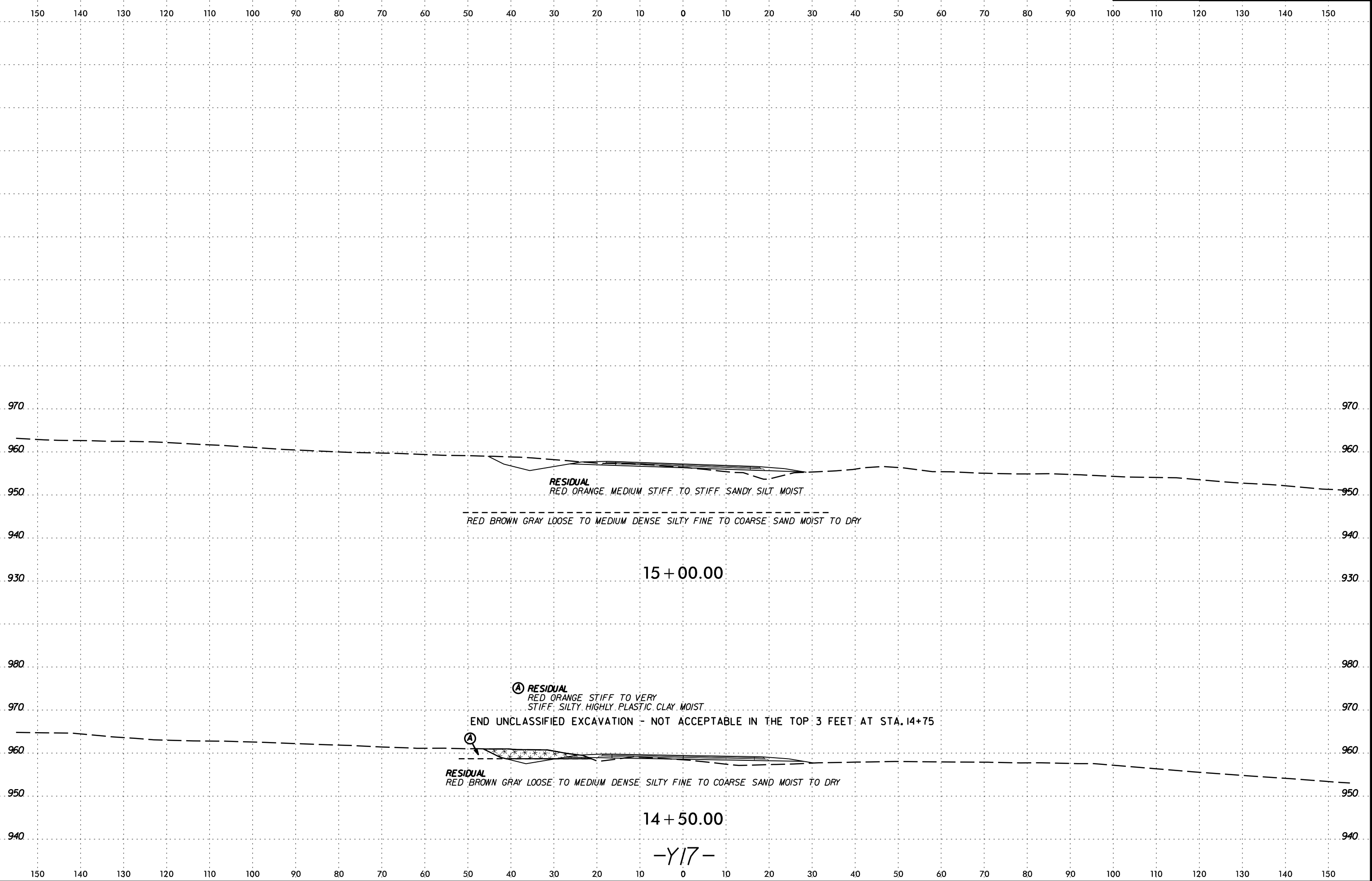


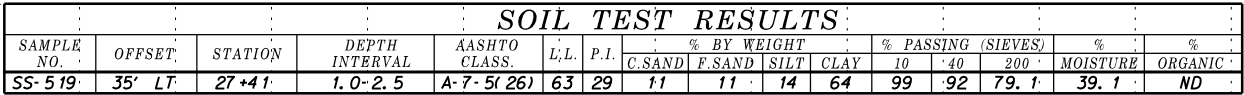
6/23/16



PROJ. REFERENCE NO.	SHEET NO.
U-4758	54







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PROJ. REFERENCE NO.
U-4758

SHEET NO.
57

